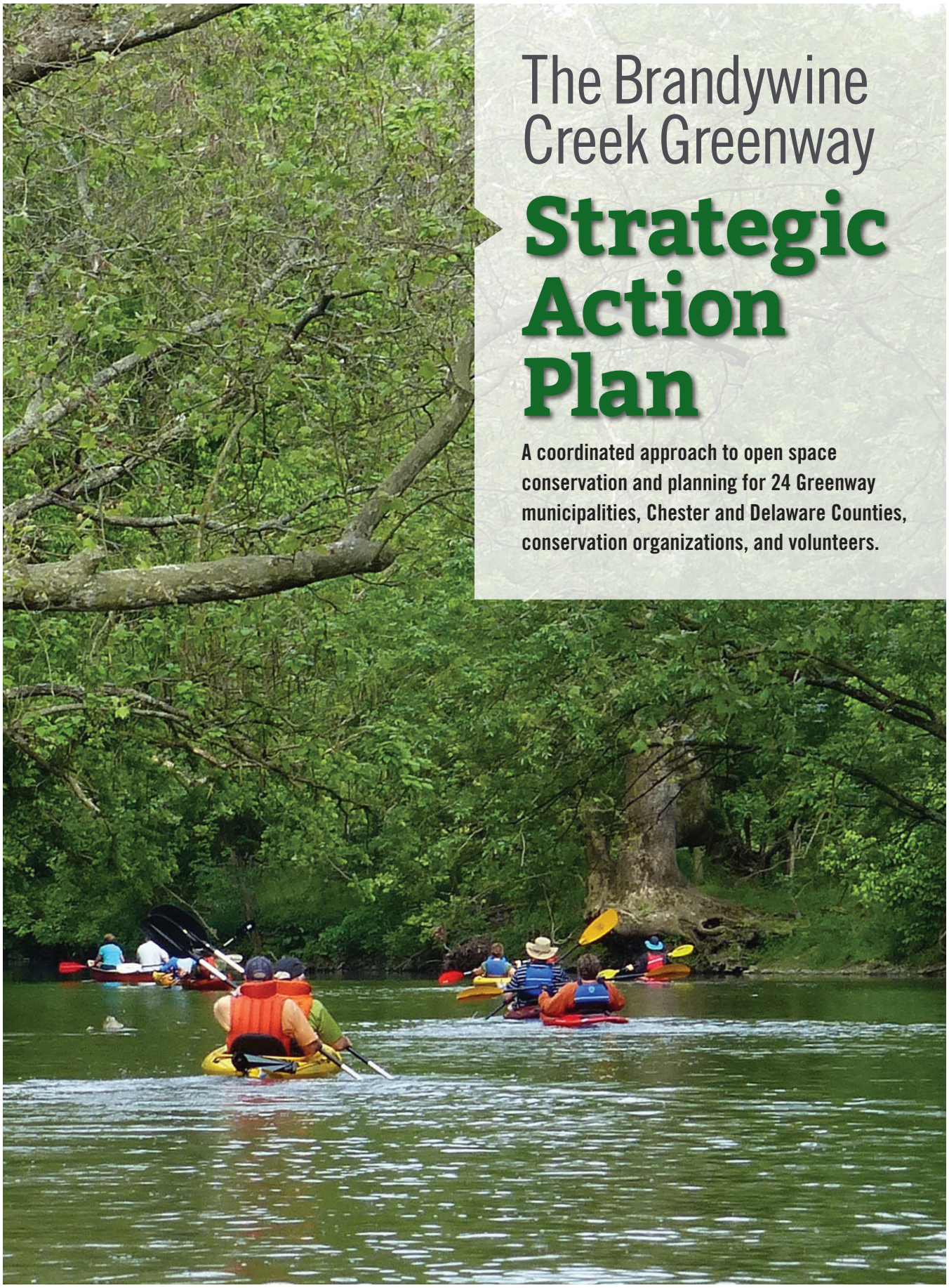

The Brandywine Creek Greenway

Strategic Action Plan

A coordinated approach to open space conservation and planning for 24 Greenway municipalities, Chester and Delaware Counties, conservation organizations, and volunteers.

This project was financed in part by The William Penn Foundation and in part by a grant from the Community Conservation Partnerships Program, Keystone Recreation, Park and Conservation Fund, under the administration of the Pennsylvania Department of Conservation and Natural Resources, Bureau of Recreation and Conservation.

The Brandywine Creek Greenway
Strategic Action Plan

December, 2014

This is a regional planning initiative of

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On the cover: Paddling the Brandywine, photo by Ian Plane

FOREWORD

Water

The elixir of life.
All living things rely upon water to survive and thrive.

Water falls from the skies. It seeps across soils, through underground rock, and fills our streams, creeks and rivers. It seeps into every aspect of human lives. We drink it, prepare our food with it, we bathe in it. We rely on water to serve industry, agriculture, and recreation.

The Brandywine Creek and its tributaries impact the lives of an estimated 500,000 people who live in its watershed, and it has played an important role in the lives of thousands more who have lived here over hundreds of years. The Brandywine Creek and surrounding lands are a functioning Greenway today thanks to the municipalities, county and state governments, private landowners, and conservation organizations who have successfully protected and conserved many of the Greenway's resources. Within the Brandywine watershed, numerous conservation-minded land owners have partnered with private land trusts to protect over 36,000 acres of private land by donating or selling their development rights. Another 5,000 acres of private open space is controlled by Homeowners Associations and is permanently protected by deed restriction. Municipal, county, and state governments have acquired an impressive 4,000 acres of public open space including the Brandywine Battlefield National Historic Landmark, the First State National Monument, three state parks, and over forty municipal parks.

Approximately 24% of land within the Brandywine Creek Greenway is permanently protected. The Greenway's protected open spaces play an essential role in filtering our water, cleaning our air, controlling flooding, and providing a host of other environmental services.

While land and water conservation is the primary motivation for the Greenway, certain municipalities recognize the value in providing public access to protected natural and cultural resources. Sidewalks, footpaths, multi-use trails, bicycle routes and boat launch areas are important facilities that allow people to connect with their natural environment. Trails can provide unparalleled opportunities for environmental education/appreciation for users of all ages and abilities. Each existing household in the Greenway saves hundreds of dollars per year by having open space available for recreation and exercise. Over sixty miles of trails and sidewalks are established within the Greenway today. Several regional trails, included in The Circuit trail network of greater Philadelphia, exist or are planned within the Greenway: the Struble Trail; Uwchlan Trail; and the Chester Valley Trail. Many more trails, including the Brandywine Trail, provide important neighborhood connections into the regional trail network.

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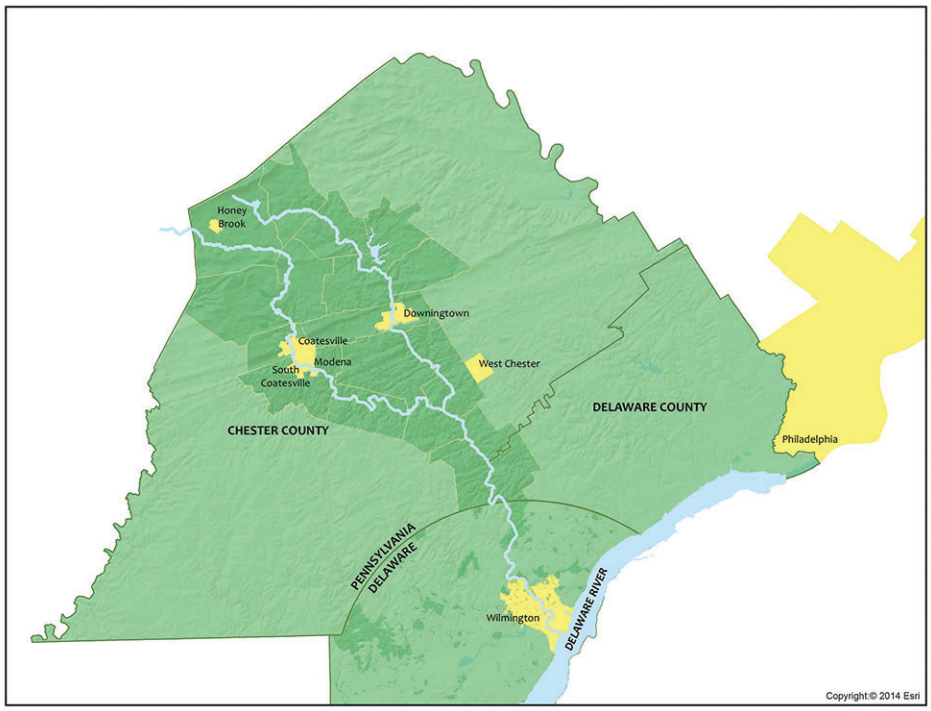
INTRODUCTION



This Strategic Action Plan builds upon the Concept Plan for the Brandywine Creek Greenway (published in June 2012) and its West Branch Addendum (published in 2013). The Concept Plan for the Brandywine Creek Greenway set forth the foundation of a 30-mile long conservation corridor along both branches of the Brandywine Creek from the Delaware state line in Chadds Ford, PA to the headwaters in Honey Brook, PA. The Plan articulated a vision for the Greenway and provided a series of goals and objectives to achieve that vision along the following themes: transportation; conservation; recreation; flood control; culture; aesthetics; education; and economic prosperity. An extensive inventory and analysis of the natural, cultural and recreational features was provided, and a concept map captured the essence of how the Greenway was imagined to look 20 years from today. Both the Concept Plan and the Strategic Action Plan involved substantial public participation through workshops, public presentations, and meetings from 2010 to 2014.

This Strategic Action Plan is intended to provide short, medium, and long term strategies to be implemented by Greenway advocates over a 20+ year timeframe beginning in 2015. It is organized in three sections:

1) **Wide-Ranging Initiatives:** includes over-arching strategies that are applicable to all 24 Greenway municipalities, county agencies, state agencies, non-profit groups, and other stakeholders. It also provides a path towards organization for the Brandywine Creek Greenway partners, referred to here as "enablers".
2) **Project Portfolio:** identifies recommended projects that are unique to each municipality/agency.
3) **Implementation Tool Kit:** provides a set of regulatory and non-regulatory tools, resource summary maps, and sources of funding available to implement wide-ranging initiatives and municipal ventures.

The Strategic Action Plan can be distributed to any who wish to learn more about the Brandywine Creek Greenway, its vision, and opportunities to contribute to the effort.

BCG Partnership: The Enablers

- **Funding Support Thus Far**
  - The William Penn Foundation
  - Pennsylvania Department of Conservation and Natural Resources
  - Chester County Planning Commission
  - The George and Miriam Martin Foundation

- **The Planning team**
  - Brandywine Conservancy
  - Chester County Planning Commission
  - Delaware County Planning Department

- **The 24 Municipalities and their Liaisons**
  - Birmingham Township ..... John Conklin
  - Caln Township..... Greg Prowant
  - Chadds Ford Township ..... Deborah Reardon, Kathleen Goodier
  - City of Coatesville ..... Stephen Cane
  - Downingtown Borough ..... Millie Byerly
  - East Bradford Township ..... Mandie Cantlin, Maria Kenny, Mike Colley, Nancy Danks
  - East Brandywine Township ..... Michael Wagoner, Sandy Moser
  - East Caln Township..... Barb Kelly, Stacy Yoder
  - East Fallowfield Township ..... Vince Lyons, Jan Bowers
  - Honey Brook Borough ..... Mark Lucas
  - Honey Brook Township..... Toni Antonini
  - Modena Borough ..... Jim Bricker, Giselle Constantino
  - Newlin Township ..... Bob Shippee
  - Pennsbury Township..... Kathy Howley, Michael Lane
  - Pocopson Township ..... Mike McGann, Ricki Stumpo
  - South Coatesville Borough ..... Henry Carey, Renee Carey, Barbara Newsuan
  - Uwchlan Township ..... Tara Caputo
  - Upper Uwchlan Township ..... Joe Stoyack, Kevin Kerr, Sally Winterton, Cathy Tomlinson
  - Valley Township..... Karen Chandler, David Porter
  - Wallace Township..... Tish Molloy, Mary Wasko
  - West Bradford Township..... Terry Gallagher, Tommy Ryan
  - West Brandywine Township ..... Bob Schini, John Cassels
  - West Caln Township ..... Susan Gritz
  - West Nantmeal Township ..... Susan Ward

- **Agency representatives**
  - DCNR ..... Cindy Dunlap, Jeff Knowles, Drew Gilchrist
  - Chester County..... Jake Michael, Carol Stauffer, Karen Marshall
  - Delaware County ..... Steven Beckley
  - Brandywine Conservancy ..... Sheila Fleming, Meredith Mayer, John Snook, John Theilacker, Erick Marklund, Michael Denlinger, Beth Burnam, Seung Ah Byun, Rob Daniels, Sherri Evans-Stanton, Teddy Price, David Shields, John Goodall

Goals and Objectives

Community • Conservation • Connection

Is the mantra for the Brandywine Creek Greenway.

The purpose of the Strategic Action Plan is to set forth strategies that can implement the Brandywine Creek Greenway Concept Plan (see figure 1 on page 9). The Strategic Action Plan embraces the Concept Plan's Goals and Objectives for the Greenway:

- **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 recreational 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), Delaware County Planning Department (DCPD), and the PA Department of Conservation and Natural Resources (DCNR).

- **GOAL 8 ECONOMIC PROSPERITY**

To foster economic activity in urbanized areas

–**Objective 1** Increase the number of visitors to existing recreational facilities within the Greenway.

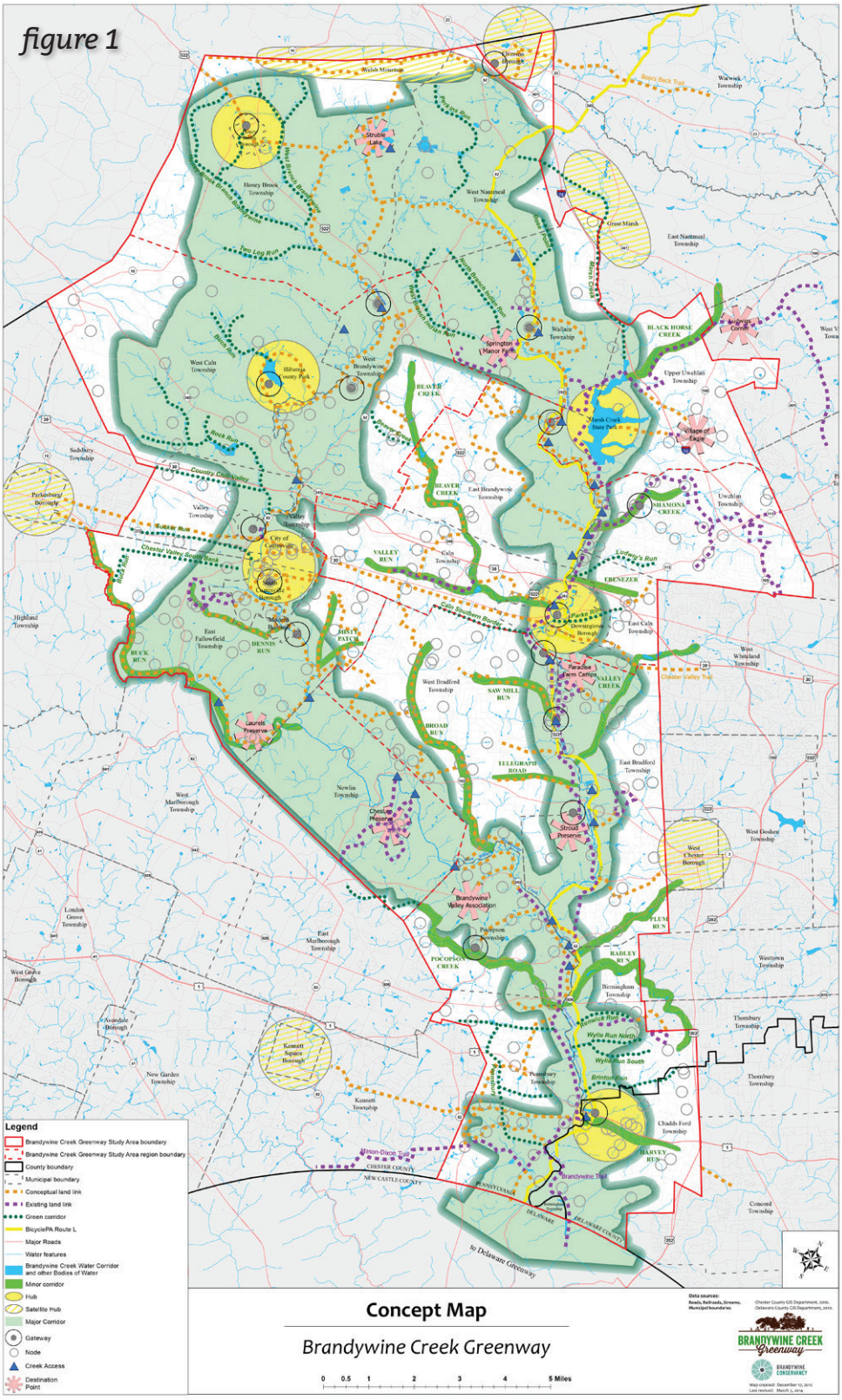
–**Objective 2** Implement regional open space and transportation initiatives such as the Central Chester County Bicycle and Pedestrian Circulation Plan, the Struble Trail, and the Chester Valley Trail.

–**Objective 3** Promote the city and boroughs as trail towns that offer a range of goods and services for Greenway visitors.

CONCEPT MAP

In addition to the Concept Plan's Goals and Objectives, the Strategic Action Plan embraces the Concept Map. The first version of this map was published in the Concept Plan for the Brandywine Creek Greenway in June, 2012, and was later modified in the April, 2013 Addendum to the Concept Plan to add eight west branch municipalities into the study area. The Concept Map was created by those who represented their municipalities in a series of four regional workshops. The current map incorporates corrections and minor modifications requested during meetings with individual municipalities after the Addendum was finalized. The map is a reminder of the broader vision for the Greenway, and is used as the basis for the much more detailed Recreation and Alternative Transportation Priorities map, included in the Project Portfolio.

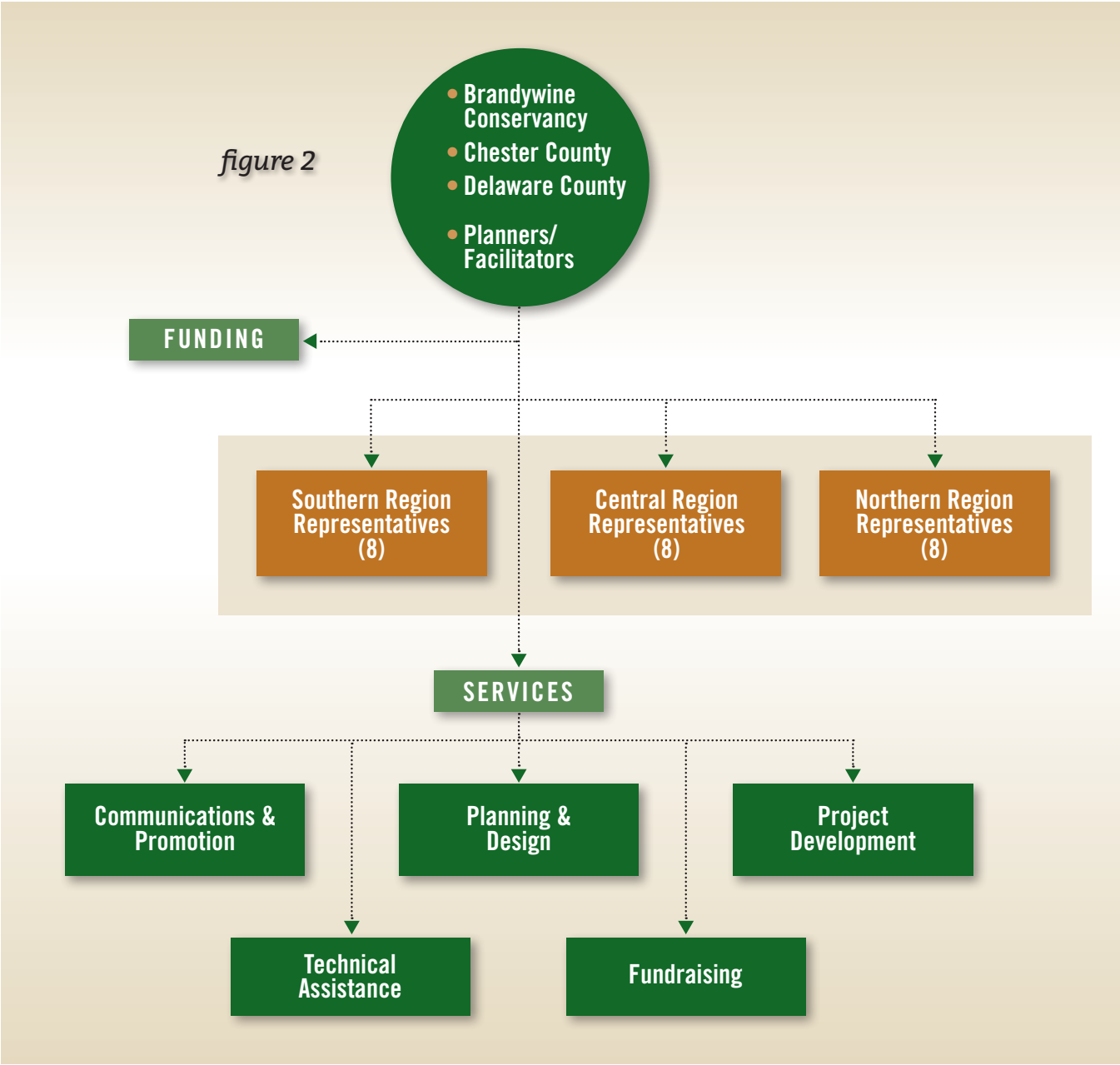
The six sections to follow present the Greenway Strategies: Organization and Management; Recreation and Transportation; Natural Resource Conservation; Cultural Resource Protection; Education and Outreach; and Economic Prosperity.

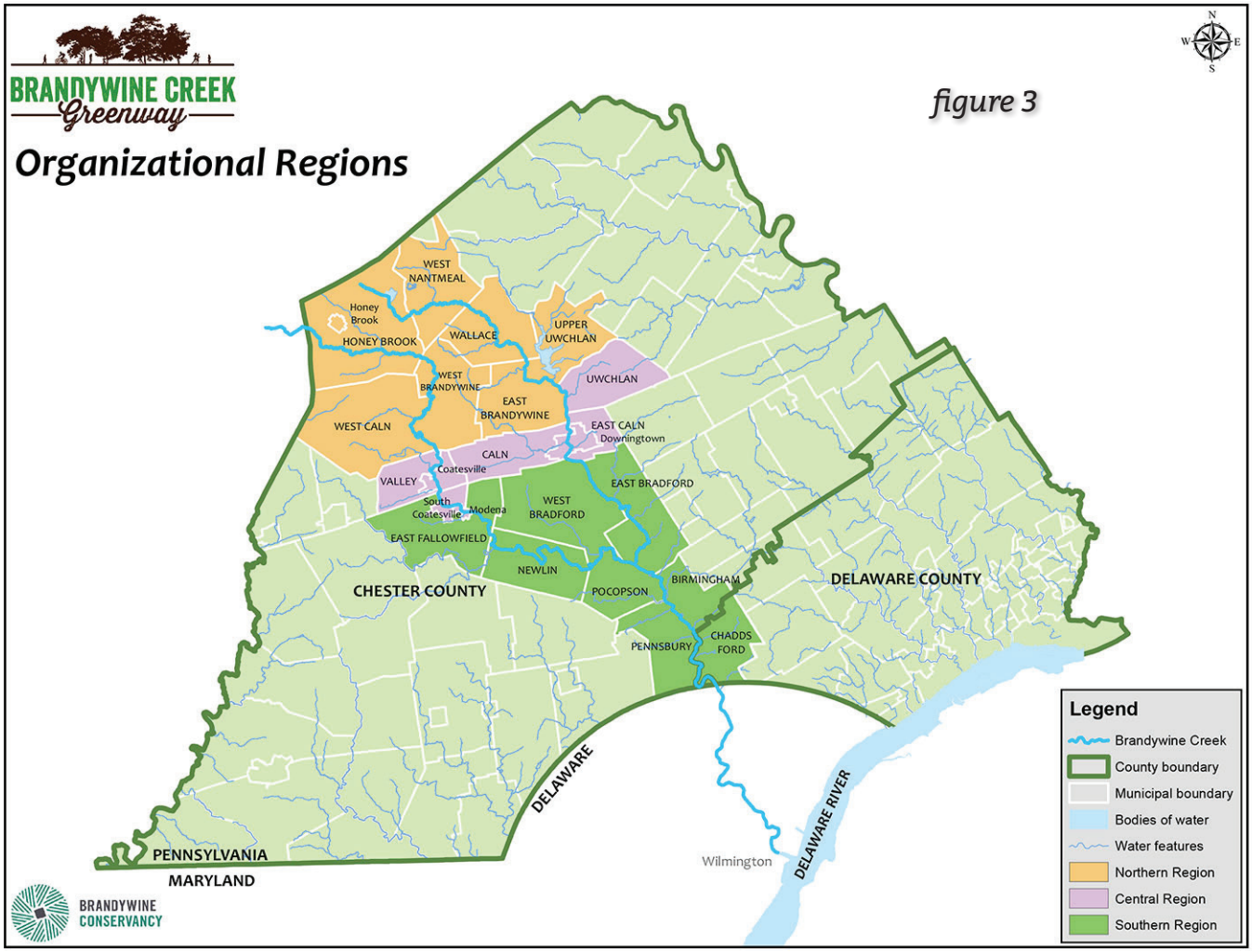


WIDE-RANGING INITIATIVES

Organization and Management

An effective organizational framework to serve the Greenway implementation effort is shown below in Figure 2. It includes the Brandywine Conservancy, Chester County and Delaware County in a leadership role with 24 municipalities, organized by three regions, providing key input and guidance.





The Conservancy and Chester and Delaware Counties will serve the three regions equally (see Figure 3 above) as inter-municipal coordinators and will perform the following functions:

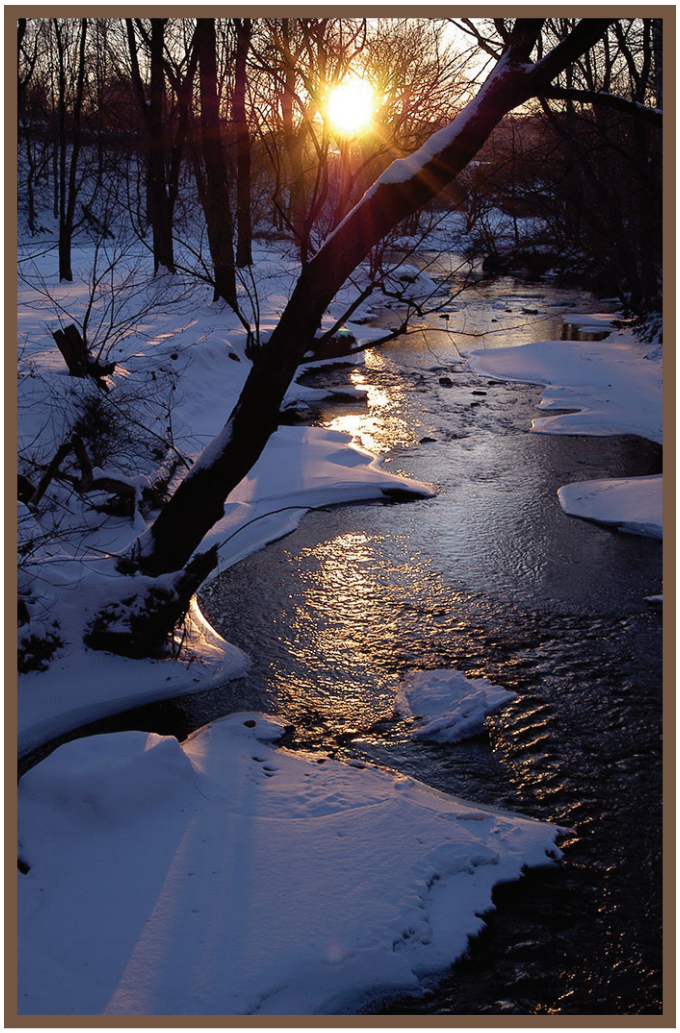
- Engage in regular communications of news and events
- Provide technical assistance
- Provide project planning and design assistance
- Coordinate fundraising
- Assist with project development

Promotion, coordination, organization and ongoing management of Greenway initiatives will be critical for its success. The Brandywine Conservancy will continue its role as the primary planner/facilitator with support from Chester and Delaware Counties, as appropriate. The Conservancy as lead facilitator was supported by the partner municipalities early in the conceptual planning process since it was viewed as a neutral entity. The Conservancy has been actively involved with several municipalities in the Greenway, has planners and conservation specialists on staff, and has demonstrated success in managing the Greenway planning effort.

The Strategic Action Plan will be implemented largely by the 24 municipalities, with support from state, county,and regional agencies, and non-profit partners. Key partners and stakeholders can contribute to Greenway implementation by providing cash or in-kind services. Key partners will include:

- Pennsylvania Department of Transportation
- Pennsylvania Department of Conservation and Natural Resources
- Pennsylvania Department of Environmental Protection
- Delaware Valley Regional Planning Commission
- Chester County Department of Open Space Preservation
- Chester County Planning Commission
- Chester County Water Resources Authority
- Chester County health care community
- Brandywine Valley Scenic Byway Commission
- Delaware County Planning Department
- Delaware Greenways, Inc.
- Local and regional land trusts
- Watershed organizations
- Special interest clubs
  (fishing, birding, hiking, cycling, etc.)
- Chester County Historic Preservation Network
- Brandywine Battlefield Task Force
- Chadds Ford Historical Society
- Local colleges and universities
- School districts
- Boy Scouts of America
- Girl Scouts of America
- Landowners

Successful implementation of the Greenway will depend upon each municipal partner working cooperatively with facilitators and neighboring municipalities to implement project portfolios.



Winter along the Brandywine, photo by Chuck Bowers

Organization and Management

1. Municipalities sign a memorandum of understanding that acknowledges the Strategic Action Plan and recognizes the Brandywine Conservancy and Delaware and Chester Counties as planners/facilitators for Greenway initiatives.

2. Municipalities appoint one representative to participate in a multi-municipal Greenway Steering Committee.
   - **a.** The 24-member committee is to be re-appointed annually.
   - **b.** An annual meeting will be held to review organizational effectiveness for the past year as reported by the Regional Executive Committees.
   - **c.** The annual meeting is to be facilitated by the Brandywine Conservancy and County representatives.

3. Regional Executive Committees for the Southern, Central, and Northern Regions form as subcommittees of the Steering Committee. Their role is to:
   - Plan, design and implement joint venture/multi-municipal Greenway projects
   - Coordinate operations and management of joint ventures
   - Hold quarterly meetings chaired by the Brandywine Conservancy, Chester County, or an appointed member of the Executive Committee

4. Each Executive Committee will measure organizational effectiveness as follows:
   - Establish a process to implement conservation and recreation projects described in Strategic Action Plan
   - Prepare annual work plans with measurable outcomes and key benchmarks

The next five sets of strategies are organized according to themes created during the Greenway planning workshops. These themes are:

- Recreation and Transportation
- Natural Resource Conservation
- Cultural Resource Protection
- Education and Outreach
- Economic Prosperity

These themes are broad in scope, but each strategy addresses one or more of the Greenway Goals and Objectives.

Farm in Honey Brook, photo by David Yori

Recreation and Transportation

Most, but not all, of the twenty-four Greenway municipalities view public open space, recreation and transportation alternatives as some of the most important functions of the Greenway. Many Greenway communities envision more locations where public access to the Brandywine Creek is permitted. Key themes that are found in the objectives for Recreation and Transportation are to provide connections among Greenway destinations, neighborhoods, and recreational lands. The Greenway can be used as a means to provide safer routes for walking and bicycling, paddling, and horse-back riding along the entire length of the Greenway from Chadds Ford to Honey Brook.

Recreation and Transportation

Walking the Struble Trail, photo by Sheila Fleming

1. Pursue interconnectivity among neighborhoods and public lands, and enhance access to the Brandywine Creek for all ages and abilities by implementing the trail projects described in the Project Portfolios. Each Greenway municipality is to take the lead on planned connector trails in Municipal Project Portfolios.
2. Conduct a feasibility study for the Northern Struble Trail from the current terminus of the Struble Trail south of Marsh Creek State Park to Honey Brook Borough. Design and implement the trail for use by pedestrians, cyclists, and equestrians. Chester County is to lead this effort, also described in the municipal Project Portfolios.
3. Cultivate trail easements and/or lease agreements along the historic Brandywine Trail footpath. The immediate priority is to preserve the trail between the Mason Dixon Trail in Pennsbury Township and the paved Brandywine Trail at Route 322 in East Bradford Township. A longer term priority is to preserve the trail from Marsh Creek State Park to Ludwigs Corner in West Vincent Township. Brandywine Conservancy is to lead this effort, also described in the Brandywine Conservancy Project Portfolio.
4. Conduct a feasibility study for BicyclePA Route L to explore combinations of alternative routes, traffic calming, paved shoulders, bike lanes, share the road signage, and other improvements. A short term priority is the section between the paved Brandywine Trail in West Bradford Township and the Struble Trail in Downingtown. A second priority is the section between the PA/DE state line and the paved Brandywine Trail at Route 322 in East Bradford Township. The third priority is the section from the Northern Struble Trail up Route 82 towards East Nantmeal Township. Reassign BicyclePA Route L to follow the future Northern Struble Trail, where appropriate. Chester County is to lead this effort, also described in the municipal Project Portfolios.
5. Municipalities will endeavor to work cooperatively with Chester County to implement recommendations of the Central Chester County Bicycle and Pedestrian Circulation Plan including the Chester Valley Trail. Chester County is to lead this effort.

6. Each municipality will pursue adopting an Official Map that identifies recreation and trail projects described in the Project Portfolios and that are consistent with its Comprehensive Plan.
7. Chester County will monitor the status of rail corridors where planned trails are shown on the Concept Map, and, when feasible, pursue fee ownership when corridors become inactive.
8. Each Greenway municipality is to take the lead on planned gateway facilities within its municipal borders, described in Municipal Project Portfolios.

Natural Resource Conservation

Conservation of vital natural resources within the Brandywine watershed is a key ambition of the Greenway. Beyond land conservation, the Greenway aims to protect existing and restore former habitat areas such as riparian buffers, woodlands, wetlands, and aquatic habitat. Prime agricultural soils are important natural resources to be conserved and managed with best management practices. General themes in the Objectives for natural resource conservation are to protect, maintain and enhance vital natural resources, and to increase infiltration of stormwater. Increased stormwater infiltration will provide a range of benefits including: reducing stormwater runoff; reducing stream bank erosion and sedimentation of streams; reducing the cost of water treatment for drinking water supplies; and enhancing water quality in our streams.

Riding in Pocopson Park, photo by Sheila Fleming

The Chester County Planning Commission evaluated the natural resource protection ordinances of the 23 Greenway municipalities in the County during the preparation of this Plan. The Brandywine Conservancy evaluated the ordinances of Chadds Ford Township in Delaware County. Their findings and recommendations are summarized in each municipal "To Do" Packet (Part 2) of this Plan. Model natural resource protection ordinances are provided for municipal use in the Implementation Tool Kit (Part 3) of this Plan.

Conservation priorities do vary among Greenway municipalities depending upon whether they are agricultural, rural, or urbanized in character. For example, Northern Region municipalities may choose to focus on agricultural resources, while Central Region municipalities that are more urbanized may choose to focus on remnant riparian corridors. No matter what the priorities may be, conservation efforts of any kind are often opportunistic as land owners come forward to voluntarily conserve, protect or enhance the resources on their land or as developers submit preliminary land development plans. In this context, it is important to determine which parcels of land have the greatest conservation potential in order to maximize any public or private investment made. The Greenway's natural resources are mapped in the Implementation Tool Kit (Part 3 of 3) according to three conservation themes:

- Natural Resources (habitat)
- Agricultural Resources (prime agricultural soils)
- Water Resources (headwaters, impaired streams)

Natural Resource Conservation

1. Update the municipal SALDO and ZO to include the following regulatory tools, as appropriate, to help conserve sensitive natural resources and open space: Sketch Plan; Conservation Design; Existing Resources and Site Analysis Plan; Public Parkland and Dedication; Fee in Lieu; Official Map; and Transferrable Development Rights. General descriptions of these regulatory tools are provided in the Implementation Tool Kit (Part 3 of 3). Each Greenway municipality is to take the lead on planned gateway facilities within its municipal borders, described in Municipal "To Do" Packets, Part 2 of 3.
2. Adopt an Official Map that depicts properties where public ownership is desired, as recommended in the municipal Comprehensive Plan. Each Greenway municipality is to take the lead.
3. Municipalities and local land trusts work cooperatively to identify priority parcels of 10-acres or more having critical natural resources and cultivate conservation easements on those lands. Highest priority is placed on unprotected parcels adjacent to protected lands and parcels within the Major Corridor identified on the Concept Map. See also the Natural Resources Summary Maps in the Implementation Tool Kit. The Brandywine Conservancy will lead this strategy.
4. Municipalities, Chester County and local land trusts work cooperatively to identify priority farm parcels of 10-acres or greater having at least 50% prime agricultural soils coverage, and cultivate agricultural easements on those farms. Priority farms are located adjacent to existing agricultural easements within the Agrarian Landscape identified in Chester County's Landscapes 2. The Brandywine Conservancy and Chester County Open Space Department will have key roles in this strategy.

Pennsbury Mill, photo by David Yori

5. Municipalities, Chester County, local land trusts and funding partners work cooperatively with landowners to identify priority conservation land for public ownership and assemble funding required to purchase priority conservation lands through joint ventures and leveraging funds. The Brandywine Conservancy and Chester County Open Space Department will have key roles in this strategy.
6. Municipalities and local land trusts work cooperatively with landowners to design and implement best management practices (BMPs) on publicly-owned lands and privately-preserved lands. Priority areas include the headwaters of the Brandywine and impaired stream sub-watersheds. Examples of BMPs include fencing off cattle from streams and reforestation of steep slopes. The Brandywine Conservancy will lead this strategy.
7. Municipalities and local land trusts work cooperatively to plant trees on privately-preserved lands and publicly-owned land. Each municipality sets a goal for the number of trees to be planted each year in an effort to reduce stormwater runoff and mitigate flooding downstream. The Brandywine Conservancy will lead this strategy.

Cultural Resource Protection

The many historic buildings, historic districts, cultural attractions, and scenic landscapes located throughout the Brandywine Valley contribute greatly to its unique sense of place and provide for value-added recreation. Nationally- and municipally-designated historic resources will be linked into the Greenway open space and trail network, and the story of the historic and cultural resources in the Brandywine Valley will be told to visitors. State- and locally-designated scenic resources will be buffered from new development. Cities and boroughs will be promoted as gateways to the Greenway in order to attract visitors and foster economic activity in urbanized areas.

The Greenway's cultural resources are mapped in the Implementation Tool Kit on the Cultural Resources Summary map (Part 3 of 3) and on the Cultural Resources Inventory map in the Appendix (Part 3 of 3).

Cultural Resource Protection

1. Municipalities will adopt a historic resource protection ordinance or update existing ordinances to include provisions for the establishment of historic districts, protection of historic structures, and conservation of historic landscapes. The Brandywine Conservancy and Delaware and Chester Counties will have key roles in this strategy.
2. Municipalities, Chester County, the Chester County Historic Preservation Network, and landowners work cooperatively to seek National Register Determination of Eligibility for historic structures. Landowners and municipalities will lead Determinations of Eligibility within their municipal borders.
3. Update the municipal SALDO and ZO to include the following regulatory tools, as appropriate, to help conserve important historic and cultural resources: Sketch Plan; Conservation Design; Existing Resources and Site Analysis Plan; Public Parkland and Dedication; Fee in Lieu; Official Map; and Transferrable Development Rights. General descriptions of these regulatory tools are provided in the Implementation Tool Kit (Part 3 of 3). Each Greenway municipality is to take the lead.
4. Municipalities will work collaboratively with the Brandywine Valley Scenic Byway Commission to implement the Management Plan for the Brandywine Valley Scenic Byway, completed in 2014.
5. Municipalities will work collaboratively with the Chester County Planning Commission to pursue implementation of the Brandywine Battlefield Preservation Plan, completed in December 2013.

Curious cow, photo by Sheila Fleming

Autumn waterfalls, photo by Chuck Bowers

Education and Outreach

Education is one of the most effective ways to raise awareness of conservation and best land management practices. Municipalities and other key partners can take an active role in creating and providing educational materials in their parks and along their trails. Educational tools can take a variety of forms including signage along existing trails, interpretive displays, maps of historic and natural features, and educational programs.

Biking and walking the Struble Trail, photo by Sheila Fleming

Education and Outreach

1. Municipalities that host a gateway to the Greenway will partner with Boy Scouts or Girl Scouts to construct informational kiosks at designated gateways.
2. The Brandywine Conservancy and municipalities will design content for the kiosks including maps, cultural and historic interpretive displays, calendar of upcoming volunteer opportunities, and other relevant information. Include displays of the importance of conservation and best land management practices, and highlight the natural, recreational, and cultural features within the Greenway corridor.
3. Kiosks are to be maintained by the host municipality and are to be updated by the municipality and the Brandywine Conservancy seasonally.
4. The Brandywine Conservancy will publish a color recreation map of existing trails, water trails, creek access, boat launch sites, and related facilities to be updated on a yearly basis and available for download from the BCG website.
5. The Brandywine Conservancy will coordinate with equestrian clubs to publish a separate map of equestrian facilities and trails to be updated on a yearly basis.
6. The Brandywine Conservancy will update the Delaware Valley Regional Planning Commission (DVRPC), Chester County Planning Commission (CCPC), Delaware County Planning Department (DCPD), and the PA Department of Conservation and Natural Resources (DCNR) annually on Greenway planning initiatives.
7. Municipalities, Chester County, Delaware County and the Chester County Historic Preservation Network will help to install historic plaques in municipally-designated historic districts, near historic structures listed on the National Register of Historic Places, and near locally-designated resources. Each Greenway municipality will play a lead role within its own municipal borders.
8. The BCG website will be augmented by adding links to websites that highlight historic and cultural features of the Brandywine Valley. For example, provide a link to the Brandywine Battlefield Preservation Plan. The Brandywine Conservancy will lead this effort.
9. Municipalities work with the Chester County Heritage Preservation Network and Chester County will research locally significant historic features within ¼ mile of gateway and craft cultural and historic panels unique to each gateway kiosk. Chester County and Delaware County will play a key role this effort.
10. Municipalities will pursue adding a link to the Brandywine Creek Greenway website onto their municipal web page.

Economic Prosperity

A well planned and implemented Greenway has the potential to increase the number of visitors to open space and recreational facilities within the region. Cities and boroughs can experience an increase in business activity and tourism from visitors who come to the area from abroad to walk, run or bicycle on destination trails such as the Struble Trail or the Chester Valley Trail. Cities and boroughs that are pedestrian and bicycle friendly are more likely to keep existing businesses and attract new ones.

Economic Prosperity

1. Chester County will implement the Struble Trail.
2. Chester County will implement the Chester Valley Trail.
3. Gateways to the regional trail network will be established in each of the urbanized hubs including Honey Brook Borough, Downingtown Borough, City of Coatesville, South Coatesville Borough, and Modena Borough.
4. Gateways will include, at a minimum, one kiosk with maps and interpretive displays, parking facilities, public drinking water, public restrooms, and access (physical or visual) to the Brandywine Creek.
5. Urbanized municipalities will promote themselves as "trail towns" and gateways to the Greenway.
6. The BCG website will be updated with featured links to urbanized gateway communities. Approved sponsors will be encouraged to advertise their business on the Greenway website for an annual donation or fee. The Brandywine Conservancy will lead this effort.

Strategies and Priorities Table

STRATEGIES	SHORT-TERM	INTERMEDIATE	LONG-TERM	ONGOING
Organization and Management				
1. Municipalities sign an MOU	X			
2. Municipalities appoint one representative	X			
3. Form regional executive committees	X			
4. Measures for organizational effectiveness	X			
Recreation and Transportation				
1. Implement trail projects in Portfolios	X			
2. Northern Struble Trail Feasibility Study	X			
3. Cultivate trail easements along Brandywine Trail	X			
4. Bicycle Route L Feasibility Study	X			
5. Implement CCCBPCP	X			
6. Official Map adoption				X
7. Abandoned rail monitoring				X
8. Gateway facilities	X			

MOU (Memorandum of Understanding); CCCBPCP (Central Chester County Bicycle and Pedestrian Circulation Plan).

STRATEGIES	SHORT-TERM	INTERMEDIATE	LONG-TERM	ONGOING
Natural Resource Conservation				
1. Update ordinances	X			
2. Official Map adoption	X			
3. Identify priority lands for conservation easements				X
4. Identify priority lands for ag. preservation				X
5. Identify priority lands for fee interest				X
6. Implement BMPs				X
7. Plant trees				
Cultural Resource Protection				
1. Adopt Historic Preservation ordinance/districts		X		
2. Seek National Register Determination of Eligibility				X
3. Update SALDO and ZO	X			
4. Collaborate with BVSBC				X
5. Collaborate with CCPC re. BBPP				X
Education and Outreach				
1. Install gateway kiosks	X			
2. Design content for kiosks	X			
3. Maintain and update kiosks				X
4. Prepare a recreation map	X			
5. Prepare an equestrian trails map		X		
6. Update agencies annually				X
7. Place historic signage		X		
8. Highlight historic and cultural features on website				X
9. Gateway features of historic importance	X			
10. Municipal website links to Greenway website	X			
Economic Prosperity				
1. Implement Northern Struble Trail	X			
2. Implement Chester Valley Trail		X		
3. City and Boroughs established as gateways	X			
4. Gateway improvements				X
5. City and Boroughs promoted as trail towns				X
6. Website advertisers feature City and Boroughs				X

BMP (Best Management Practices); SALDO (Subdivision and Land Development Ordinance); ZO (Zoning Ordinance); BVSBC (Brandywine Valley Scenic Byway Commission); CCPC (Chester County Planning Commission); BBPP (Brandywine Battlefield Preservation Plan).

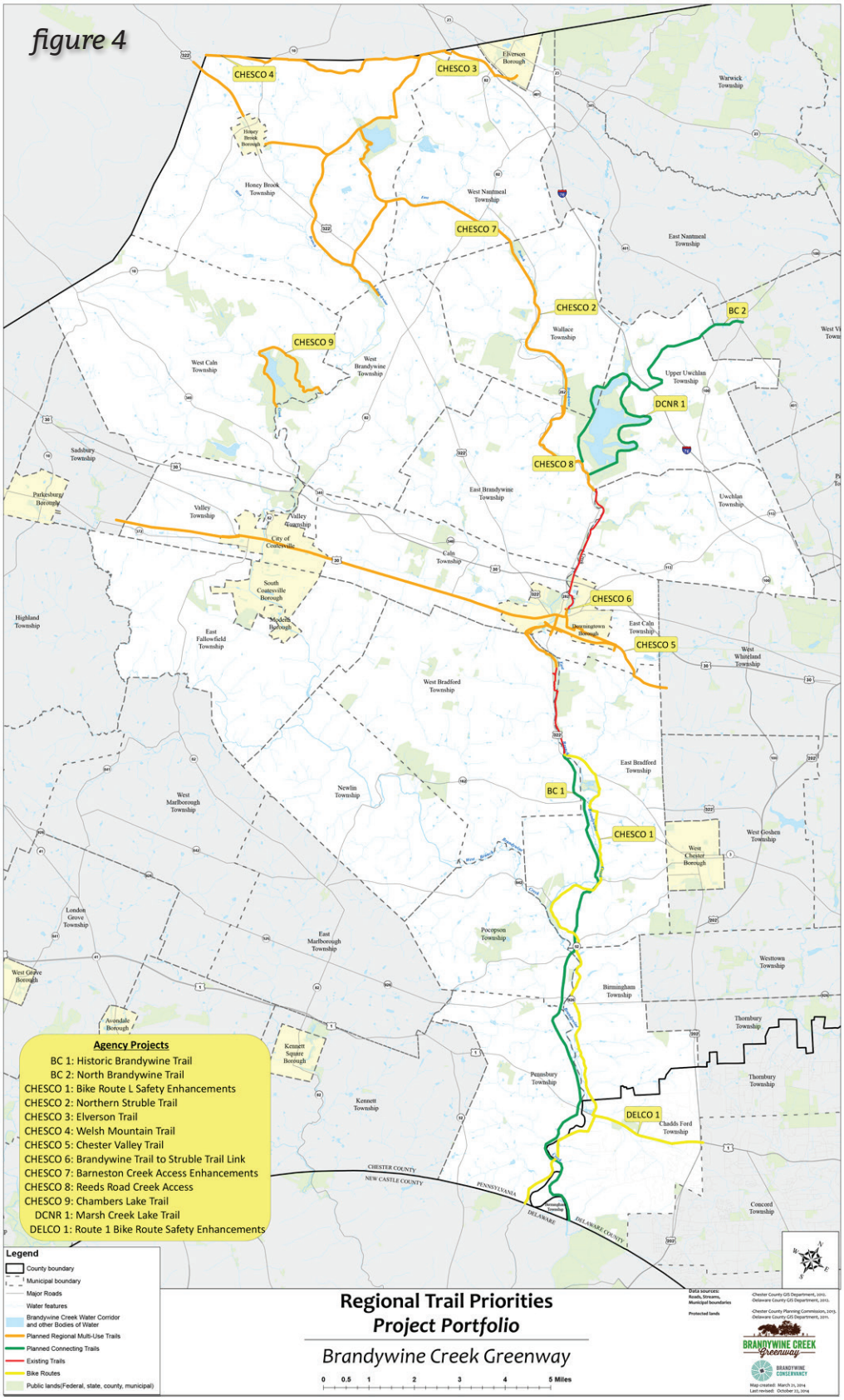
PROJECT PORTFOLIO

The focus of the Project Portfolio section of the Strategic Action Plan is on recreation, alternative transportation priorities, and conservation corridors along creeks and streams that were identified as important resources during one of four regional workshops. This Portfolio is comprised of recommended initiatives for Greenway partners and other advocates. These initiatives are organized by the leading partner agency or municipality. The individual projects are critical parts of the much larger planned regional network of open space, recreation, and transportation alternatives.

The Portfolio first presents a map of regional trail priorities and provides Portfolios for Chester County, Delaware County, PA DCNR, and the Brandywine Conservancy. Subsequently, Portfolios are presented for each of the 24 Greenway Municipalities.

Regional Trail Priorities Map

Regional trails are critical for north-south and east-west connections across the Greenway. They will form the recreational spine that smaller local municipal trails will feed into—creating an integrated network of trails throughout the Greenway. There are four agencies that will facilitate regional trails that traverse multiple municipal boundaries: Chester County; Delaware County; PA DCNR; and the Brandywine Conservancy. Each agency is assigned to facilitate specific regional trail projects. Their Portfolios, presented on the following pages, include project descriptions, key partners, project focus and location, accomplishments to date, and next steps.



CHESTER COUNTY PROJECTS

CHESCO 1

Project Name

Bike Route L Safety Enhancements

Key Partners

DCNR, PennDOT, DVRPC, East Bradford Township, Birmingham Township, Pennsbury Township, Chadds Ford Township, Delaware County Planning

Project Focus and Location

To study the feasibility of improving safety for bicycles and vehicular traffic along PA Bicycle Route L from the Delaware state line to US Route 322 in East Bradford Township.

- Share the road signage
- Re-striping
- Widened shoulders
- Bike lanes
- Off-road alternatives
- Pull-offs
- Realignment options
- Short term need

Accomplishments to Date

– Bike Route L is a well-used bicycle route and north-south travel corridor through Chester County

– Recommended improvements for portions of Bike Route L are included in the Central Chester County Bicycle and Pedestrian Circulation Plan

Next Steps

– Begin dialogue with DCNR, PennDOT, DVRPC

– Submit grant proposal to DCNR for a feasibility study

– 6 years from feasibility study to full implementation

CHESTER COUNTY PROJECTS

CHESCO 2

Project Name

Northern Struble Trail

Key Partners

DCNR, PennDOT, DVRPC, Wallace Township, Upper Uwchlan Township, Brandywine Conservancy, Marsh Creek State Park

Project Focus and Location

To extend the Struble Trail from its current terminus at Dorlans Mill Road in Upper Uwchlan Township to Honey Brook Borough.

- Portions to follow the abandoned rail bed
- Explore alternative routes near private property
- Multi-use trail for walkers, cyclists, equestrians
- Short term need

Accomplishments to Date

– Grant awarded by DCNR/C2P2 for a feasibility study to be completed in 2014.

– Dialogue underway among key partners

– Trail identified in Linking Landscapes

– High priority

Next Steps

– 6 years from feasibility study to full implementation

CHESTER COUNTY PROJECTS

CHESCO 3

Project Name

Elverson Trail

Key Partners

Chester County Planning Commission, West Nantmeal Township, Honey Brook Township, DCNR, PennDOT, DVRPC

Project Focus and Location

To create pedestrian, equestrian, and bicycle connections from Struble Lake to the Boar's Back Trail at Elverson Borough.

- Natural surface footpath
- Portions follow roads
- Portions along private property lines
- Portions along abandoned rail bed
- Long term need once the Northern Struble Trail is implemented

Accomplishments to Date

– Portions of abandoned rail line owned by Chester County

– Shown as a land link on the Concept Map for the Brandywine Creek Greenway

Next Steps

– Begin a dialogue among key partners

– Feasibility study

– 9 years from feasibility study to full implementation

– Long term priority

CHESTER COUNTY PROJECTS

CHESCO 4

Project Name

Welsh Mountain Trail

Key Partners

Chester County Planning Commission, Honey Brook Township, DCNR, PennDOT, DVRPC

Project Focus and Location

To create pedestrian, equestrian, and bicycle connections from Elverson Borough to Caernarvon along the Welsh Mountain.

- Natural surface footpath
- Portions follow roads
- Long term need once the Northern Struble Trail is implemented

Accomplishments to Date

– Shown as a land link on the Concept Map for the Brandywine Creek Greenway

Next Steps

– Begin a dialogue among key partners

– feasibility study

– 9 years from feasibility study to full implementation

– Long term priority

CHESTER COUNTY PROJECTS

CHESCO 5

Project Name

Chester Valley Trail

Key Partners

Chester County Planning Commission, DCNR, DVRPC, Valley Township, City of Coatesville, Caln Township, Downingtown Borough, East Caln Township, landowners, Rails to Trails Conservancy

Project Focus and Location

To implement the Chester Valley Trail alongside the active AMTRAK/SEPTA and Morrisville Line from Parkesburg to the City of Coatesville, Downingtown Borough, and east to the existing Chester Valley Trail.

- A multi-use trail for walking and cycling
- Feasibility Study
- Design and engineering
- Construction
- Long term need

Accomplishments to Date

– Included in Linking Landscapes

– The County has obtained rights-of-way from Downingtown to Marshallton Thorndale Road (Route 340)

Next Steps

– Begin talks with Townships and other key partners

– Pursue funding for a feasibility study

– 10 years from securing funding for a feasibility study to project completion

CHESTER COUNTY PROJECTS

CHESCO 6

Project Name

Brandywine Trail to Struble Trail Link

Key Partners

Chester County Planning Commission, DCNR, DVRPC, PennDOT, business owners, landowners

Project Focus and Location

To provide a connection for hikers, pedestrians and cyclists from the end of the Struble Trail at Kardon Park to the Brandywine Trail trailhead in West Bradford Township.

- Portions sidewalks
- Portions multi-use trail
- Portions shared roadway
- Portions bicycle boulevard
- Short term need

Accomplishments to Date

– Recommended in the Central Chester County Bicycle & Pedestrian Circulation Plan, 2013

– Funding secured for a feasibility study

Next Steps

– Assemble partners and funding

– 3 years to prepare a feasibility study, design and engineering

– 3 years to implement

CHESTER COUNTY PROJECTS

CHESCO 7

Project Name

Barneston Creek Access Enhancements

Key Partners

Wallace Township, DCNR, DVRPC

Project Focus and Location

To enhance water access and recreational opportunities at the Barneston Dam property owned by Chester County.

- Viewing areas
- Picnic facilities
- Water access for fishing, boating, wading
- Parking lot improvements
- Trails
- Signage
- Reforestation
- Short term need

Accomplishments to Date

– Lands owned by Chester County

– Limited parking in place

Next Steps

– Assemble partners and funding

– 3 years to prepare a master plan, design and engineering

– 3 years to implement

CHESTER COUNTY PROJECTS

CHESCO 8

Project Name

Reeds Road Creek Access

Key Partners

Upper Uwchlan Township, DCNR, PennDOT, landowners

Project Focus and Location

To provide access to the Brandywine Creek at Reeds Road for anglers and boaters.

- Minimal parking
- Informal boat launch site
- Directional signage to the Struble Trail
- Interpretive signage for water quality
- Seating
- Long term need after completion of the Struble Trail

Accomplishments to Date

– Lands owned by Chester County

– Northern Struble Trail Feasibility Study underway

Next Steps

– Assemble partners and funding

– Prepare a concept plan and cost estimates—1 year

– Design, engineering—2 years

– Permits, implementation—2 years

CHESTER COUNTY PROJECTS

CHESCO 9

Project Name

Chambers Lake Trail

Key Partners

West Caln Township, West Brandywine Township, DCNR, PennDOT, landowners

Project Focus and Location

To provide a footpath around Chambers Lake in Hibernia County Park for hikers and anglers.

- Natural surface, minimal disturbance
- Gateway kiosk
- Directional signage to the West Branch Brandywine Trail
- Interpretive signage
- Seating, scenic lookouts
- Long term need after completion of the West Branch Brandywine Trail

Accomplishments to Date

– Lands owned by Chester County

– Northern Struble Trail Feasibility Study underway

Next Steps

– Assemble partners and funding

– Prepare a concept plan and cost estimates—1 year

– Design, engineering—2 years

– Permits, implementation—2 years

DELAWARE COUNTY PROJECTS

DELCO 1

Project Name

Route 1 Bike Route Safety Enhancements

Key Partners

DCNR, PennDOT, DVRPC, Pennsbury Township, Chester County Planning Commission, Chadds Ford Township

Project Focus and Location

To design and implement safety enhancements for bicycles travelling along Route 1 from Ring Road to the Brandywine River Museum in Chadds Ford.

Connects to BicyclePA Route L

- Bike lanes both directions
- Signage
- Traffic calming
- Short term initiative

Accomplishments to Date

– Route 1 is part of the On-Road Bicycle Network Improvements Network in Delaware County

– Route 1 is part of the Chester County Bicycle Network

– Chadds Ford Village Master Plan is funded, to be completed in 2015

Next Steps

– Begin dialogue with Chadds Ford Township, DCNR, PennDOT, DVRPC, Chester County

– Prepare design and engineering plans and obtain PennDOT permits

– Submit grant proposal to fund implementation

– 5 years from feasibility study to full implementation

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DCNR PROJECTS

DCNR 1

Project Name

Marsh Creek Lake Trail

Key Partners

Upper Uwchlan Township, Wallace Township, Chester County

Project Focus and Location

To complete a hiking trail around the perimeter of Marsh Creek Lake within the boundaries of Marsh Creek State Park.

- Natural surface path
- Minimal disturbance, rustic
- Hiking
- Equestrian trail
- Long term need once the North Brandywine Trail is secured

Accomplishments to Date

– Portions of the trail already exist within the park

– Portions owned by turnpike authority

– Portions owned by Upper Uwchlan Township

– Portions owned by Chester County

– Discussions underway between UUT representatives and DCNR staff

Next Steps

– Expand dialogue with DCNR

– Submit grant proposal to DCNR for a feasibility study

– 5 years from feasibility study to full implementation

BRANDYWINE CONSERVANCY PROJECTS

BC 1

Project Name

Historic Brandywine Trail

Key Partners

Chester County Planning Commission, Delaware County Planning, DCNR, DVRPC, PennDOT, Chester County Trail Club, Wilmington Trail Club, business owners, landowners

Project Focus and Location

To permanently protect the existing Brandywine Trail as a public footpath along the banks of the Brandywine from the end of the paved Brandywine Trail in East Bradford Township to the Mason Dixon Trail in Pennsbury Township.

- Natural surface footpath for hikers and walkers
- Cultivate trail easements with landowners from the Delaware State line to Creek Road at Twin Bridges
- Implement improvements such as fencing, bridges, and signage
- Expand access to the public
- Retain connectivity of the historic footpath
- Short term need

Accomplishments to Date

– The trail is already in existence on private property and along public and private roads

– The trail is maintained by the Chester County Trail Club and the Wilmington Trail Club

– Brandywine Conservancy has begun to approach select landowners

Next Steps

– Map the location of the existing trail and identify landowners

– Meet with landowners to discuss issues and options

– Easements to be dedicated to the municipality or the Brandywine Conservancy

BRANDYWINE CONSERVANCY PROJECTS

BC 2

Project Name

North Brandywine Trail

Key Partners

Chester County Planning Commission, Delaware County Planning, DCNR, DVRPC, PennDOT, Chester County Trail Club, Wilmington Trail Club, business owners, landowners

Project Focus and Location

To permanently protect the existing Brandywine Trail as a public footpath from Marsh Creek State Park in Upper Uwchlan Township to Ludwigs Corner and the Horse Shoe Trail in West Vincent Township.

- Natural surface footpath for hikers and walkers
- Cultivate trail easements with landowners
- Portions share the road
- Implement improvements such as pavement markings and signage
- Expand access to the public
- Retain connectivity of the historic footpath
- Long term need after completion of the Historic Brandywine Trail

Accomplishments to Date

– The trail is already in existence on private property and along public and private roads

– The trail is maintained by the Chester County Trail Club

– Trail featured on the Upper Uwchlan Township Trails Map

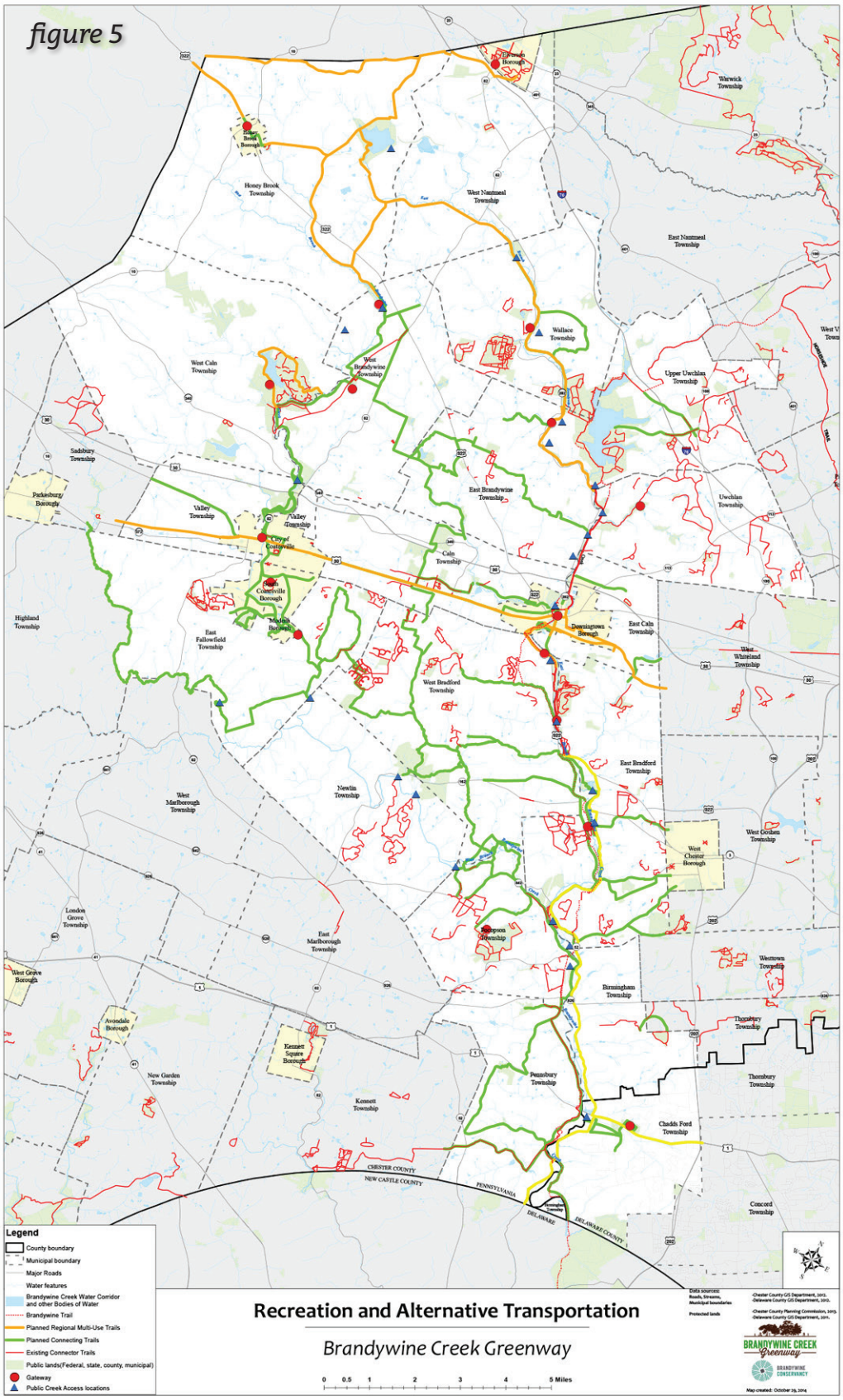
Next Steps

– Map the location of the existing trail and identify landowners

– Meet with landowners to discuss issues and options

– Easements to be dedicated to Upper Uwchlan Township or the Brandywine Conservancy

Each of the agencies and municipalities involved in the Greenway is provided with a suggested Project Portfolio. The Recreation and Alternative Transportation Priorities Map (See figure 5 at right) is used as the basis for the recommended municipal projects. It reflects the planned trails illustrated on the Concept Map (Figure 1) but provides a greater level of mapping accuracy. The Recreation and Alternative Transportation Map provides municipalities with a regional context as they begin to identify neighbors and partners along existing and new trails and green corridors. Note that planned trails shown on this Map are conceptual only and further study will be necessary to determine the exact location and alignment of each trail.



Each municipality's Project Portfolio is unique from the others. Each Portfolio is derived from the Concept Map (See figure 1 on page 9) and the Recreation and Alternative Transportation Map (See figure 5 on page 37). The following informational resources are provided in each Portfolio:

Greenway Functions Checklist: This checklist was completed by a representative of each municipality during a public workshop. The checklist identifies those Greenway functions that are perceived as the most important functions of the Greenway in each municipality. A Greenway can mean different things to different municipalities, and the purpose of the checklist is to remind each municipality of how it views the Greenway as it functions in their municipality.

Natural Resource Protection Ordinance Review: During 2013, the Chester County Planning Commission provided a review of each municipality's current resource protection standards as contained in its municipal ordinances. The Brandywine Conservancy provided a review of Chadds Ford Township ordinances (Delaware County). Each review covers provisions for steep slopes, woodlands, wetlands, riparian buffers, and floodplains. Depending upon the current level of resource protection, the review provides recommendations for updating each municipality's resource protection standards.

Project Portfolio Map: Each feature shown on the Recreation and Alternative Transportation Priorities map is illustrated in greater detail on the Project Portfolio maps.

Project Descriptions: Trail and conservation projects are further described in project description sheets that highlight the project name, key partners, project focus and location, accomplishments to date, and next steps. In almost all planned trail projects, the recommended first step is to prepare a feasibility study that would explore existing and alternative routes. The map and project descriptions are the first step in project development. They are also intended to be utilized as supporting/background information for grant applications. Refer to the Implementation Tool Kit for information on sources of funding.

Brandywine Creek Greenway
Functions Checklist

BIRMINGHAM TOWNSHIP

GREENWAY THEME MAPS	POSSIBLE GREENWAY FUNCTIONS	CHECK ☑ TOP 6
NATURAL FEATURES	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	✓
OPEN SPACE AND RECREATION	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, bicycle, and equestrian	✓
CULTURAL FEATURES	**Buffer** the Brandywine valley from new development	
	Preserve productive **agricultural** lands	
	Protect state- and municipally-designated **scenic** resources	✓
	Preserve nationally and municipally-designated **historic** structures and districts	✓

NOTE: ✓ Top six functions prioritized by this municipality during a regional workshop.

BIRMINGHAM TOWNSHIP

Natural Resource Protection Ordinance Review

Date Reviewed: 7/17/13

Zoning Adopted: 4/03 Zoning Last Amended: 2/16/2011	SLDO Adopted: 2/24/04 SLDO Last Amended: None

CURRENT RESOURCE PROTECTION STANDARDS

1. Steep Slopes (15-25%, 25%+): Somewhat Protected

- ZO 122-97.A: For slopes 25% +, uses are limited to parks, outdoor recreation, forestry, and single-family dwellings that are approved by the Zoning Hearing Board after they review specified plans.

2. Woodlands Protection: Rigorously Protected

- SLDO 103-41.C: Within a wood lot, no more than 25% of 6 in. DBH trees shall be disturbed.

3. Wetlands: Somewhat Protected

- SLDO 103-41.B: Disturbance of delineated wetlands should be minimized. State and federal permits are required prior to disturbance. State and Federal permits required.

4. Riparian Buffers: Somewhat Protected

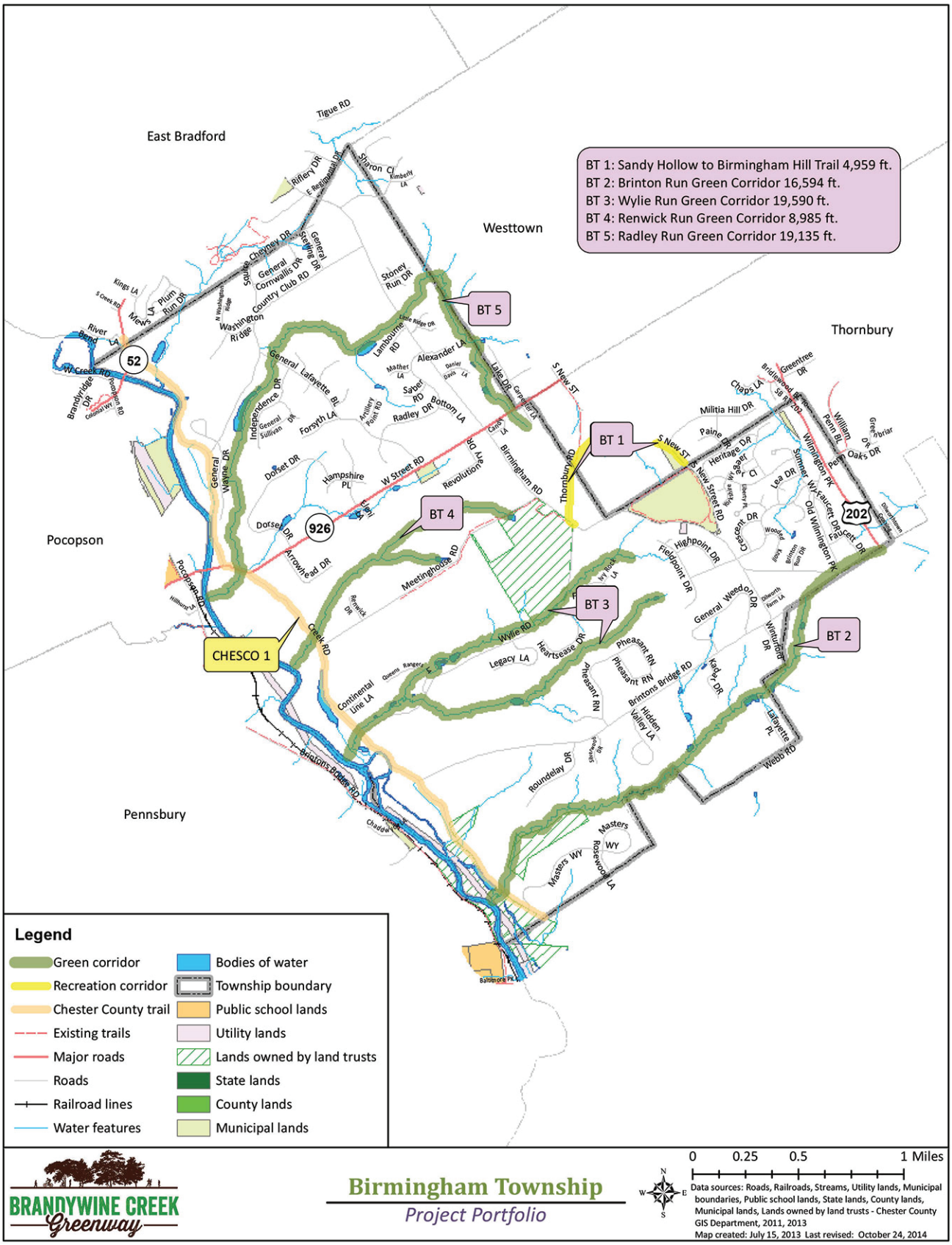
- ZO 122.6: Definition for "riparian buffer" is 35 feet or 10 feet beyond four types of environmentally sensitive areas.
- ZO 122-97: Riparian buffer shall not be disturbed, with specific exceptions.

5. Floodplain: Rigorously Protected

- ZO 122-60.A: For the Flood Hazard Area, development is limited to agriculture, recreation, yards, and permeable parking, with specific exceptions. For floodplain, no fill is permitted, except through special exception by the Zoning Hearing Board. 7/17/13.
- ZO 122-.60.B: Existing structures in the floodway shall not be expanded or enlarged, with specific exceptions.

RECOMMENDED IMPROVEMENTS TO RESOURCE PROTECTION STANDARDS

- **Steep Slopes:** Include maximum disturbance limitations of 30% for areas with slopes of 15 to 25%. Include maximum disturbance limitations of 15% for areas with slopes greater than 25%. Also consider adding steep slope regulations that include: 1.) a description of the slope measuring method; 2.) a listing of specific activities or uses prohibited on steep slopes; and 3.) standards that provide additional guidance for minimizing the disturbance, grading, and erosion of steep slopes.
- **Wetlands:** Include regulations which establish specific wetlands identification and delineation criteria. Add regulations which prohibit the disturbance of a wetland except with state and federal permits. Lastly, consider adding regulations that establish a 50-foot wide margin around all wetlands. Within this 50-foot margin, land disturbance would be limited or prohibited.
- **Riparian Buffers:** Include regulations that establish a riparian buffer which extends 75 to 100 feet from both sides of the stream bank. Also, consider adding requirements that 1.) call for the re-vegetation of un-forested riparian buffers, and 2.) establish a two-tiered riparian buffer with stricter standards applied adjacent to streams. This two-tiered buffer would include a 25-35 foot-wide inner buffer in which disturbance is prohibited, and a 50 to 65 foot-wide outer buffer in which a maximum disturbance limit of 20% is allowed.


BT 1: Sandy Hollow to Birmingham Hill Trail 4,959 ft.
BT 2: Brinton Run Green Corridor 16,594 ft.
BT 3: Wylie Run Green Corridor 19,590 ft.
BT 4: Renwick Run Green Corridor 8,985 ft.
BT 5: Radley Run Green Corridor 19,135 ft.
East Bradford
Westtown
Thornbury
Pocopson
Pennsbury
BT 1
BT 2
BT 3
BT 4
BT 5
CHESCO 1
52
926
202
Legend
Green corridor
Recreation corridor
Chester County trail
Existing trails
Major roads
Roads
Railroad lines
Water features
Bodies of water
Township boundary
Public school lands
Utility lands
Lands owned by land trusts
State lands
County lands
Municipal lands
0 0.25 0.5 1 Miles
Data sources: Roads, Railroads, Streams, Utility lands, Municipal boundaries, Public school lands, State lands, County lands, Municipal lands, Lands owned by land trusts - Chester County GIS Department, 2011, 2013
Map created: July 15, 2013 Last revised: October 24, 2014
BRANDYWINE CREEK Greenway
Birmingham Township
Project Portfolio

BIRMINGHAM TOWNSHIP

BT 1

Project Name

Sandy Hollow to Birmingham Hill Trail

Key Partners

Brandywine Conservancy, Chester County, private landowners

Project Focus and Location

To provide a pedestrian footpath that connects the trail at Sandy Hollow Park to the trail a Birmingham Hill.

- 4,959 linear feet
- Portions on private lands
- At least one road crossing
- Trail easements with private landowners, voluntary
- Pedestrians only
- Natural surface trail
- Short term need

Accomplishments to Date

– Discussions underway with key landowners

– Recreation, Parks and Open Space Committee has worked on this project together with the Brandywine Conservancy

Next Steps

– Continue negotiations with landowners to reach an agreement on trail location

– Submit trail crossing details to PennDOT for approval

– Survey trail routes and mark trail location

– Enter into a lease agreement or trail easement agreement

– 2 years to implement

BIRMINGHAM TOWNSHIP

BT 2

Project Name

Brinton Run Green Corridor

Key Partners

Brandywine Conservancy, Natural Lands Trust, Brandywine Valley Association, DCNR, Chester County WRA, DEP, WCU, landowners, volunteers

Project Focus and Location

To conserve natural areas and enhance water quality along Brinton Run.

- 16,594 linear feet
- Reforestation
- Riparian Buffer restoration
- Restoration of erosion-prone areas
- Promote best land management practices
- Stormwater BMPs
- Ongoing need

Accomplishments to Date

– Portions owned or eased by land trust

– Portions owned by HOAs

Next Steps

– Identify priority projects

– Engage partners

– Pursue funding

– 3-15 years and ongoing

BIRMINGHAM TOWNSHIP

BT 3

Project Name

Wylie Run Green Corridor

Key Partners

Brandywine Conservancy, Natural Lands Trust, Brandywine Valley Association, DCNR, Chester County WRA, DEP, WCU, landowners, volunteers

Project Focus and Location

To conserve natural areas and enhance water quality along Wylie Run.

- 19,590 linear feet
- Reforestation
- Riparian Buffer restoration
- Restoration of erosion-prone areas
- Promote best land management practices
- Stormwater BMPs
- Ongoing need

Accomplishments to Date

– Portions owned or eased by land trust

– Headwaters owned by the municipality at Sandy Hollow

Next Steps

– Identify priority projects

– Engage partners

– Pursue funding

– 3-15 years and ongoing

BIRMINGHAM TOWNSHIP

BT 4

Project Name

Renwick Run Green Corridor

Key Partners

Brandywine Conservancy, Natural Lands Trust, Brandywine Valley Association, DCNR, Chester County WRA, DEP, WCU, landowners, volunteers

Project Focus and Location

To conserve natural areas and enhance water quality along Renwick Run.

- 8,895 linear feet
- Reforestation
- Riparian Buffer restoration
- Restoration of erosion-prone areas
- Promote best land management practices
- Stormwater BMPs
- Ongoing need

Accomplishments to Date

– Headwaters pond owned or eased by land trust

Next Steps

– Identify priority projects

– Engage partners

– Pursue funding

– 3-15 years and ongoing

BIRMINGHAM TOWNSHIP

BT 5

Project Name

Radley Run Green Corridor

Key Partners

Brandywine Conservancy, Natural Lands Trust, Brandywine Valley Association, DCNR, Chester County WRA, DEP, WCU, landowners, volunteers

Project Focus and Location

To conserve natural areas and enhance water quality along the Brinton Run Minor Corridor.

- 19,135 linear feet
- Reforestation
- Riparian Buffer restoration
- Restoration of erosion-prone areas
- Promote best land management practices
- Stormwater BMPs
- Ongoing need

Accomplishments to Date

– Reforestation implemented at Knolls of Birmingham HOA open space in partnership with the Brandywine Conservancy

– Portions owned by HOA's

– Portions owned by Radley Run Country Club

Next Steps

– Identify priority projects

– Engage partners

– Pursue funding

– 3-15 years and ongoing

Brandywine Creek Greenway
Functions Checklist

CITY OF COATSVILLE

GREENWAY THEME MAPS	POSSIBLE GREENWAY FUNCTIONS	CHECK ☑ TOP 6
NATURAL FEATURES	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	
OPEN SPACE AND RECREATION	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, bicycle, and equestrian	
CULTURAL FEATURES	**Buffer** the Brandywine valley from new development	
	Preserve productive **agricultural** lands	
	Protect state- and municipally-designated **scenic** resources	
	Preserve nationally and municipally-designated **historic** structures and districts	✓

NOTE: ✓ Top six functions prioritized by this municipality during a regional workshop.

CITY OF COATSVILLE

Natural Resource Protection Ordinance Review

Date Reviewed: 8/8/13

Zoning Adopted: 4/01 Zoning Last Amended: 6/27/11	SLDO Adopted: 8/8/13 SLDO Last Amended: None

RESOURCE AND PROTECTION STANDARDS

1. Steep Slopes (15-25%, 25%+): Rigorously Protected

- ZO 224-30.F: No more than 30% of 15-25% slope areas shall be disturbed. No more than 15% of 25% + slope areas shall be disturbed.
- SLDO 197-51.F: Reiterates ZO 244-30.F.

2. Woodlands Protection: Rigorously Protected

- ZO 224-30.J: No more than 20% of woodlands which overlap other natural resource areas may be disturbed. No more than 50% of woodlands which do not overlap other natural resource areas may be disturbed.
- SLDO 197-51.H.: Reiterates ZO 224-30.J.

3. Wetlands: Rigorously Protected

- ZO 224-30.H: Wetlands shall not be disturbed, except as permitted through state and federal permits.
- ZO 224-30.I: Establishes a "Wetland Margin" extending 100 feet from wetlands or the limits of hydric soils, whichever is less. Up to 20% of a wetland margin may be disturbed.

4. Riparian Buffers: Rigorously Protected

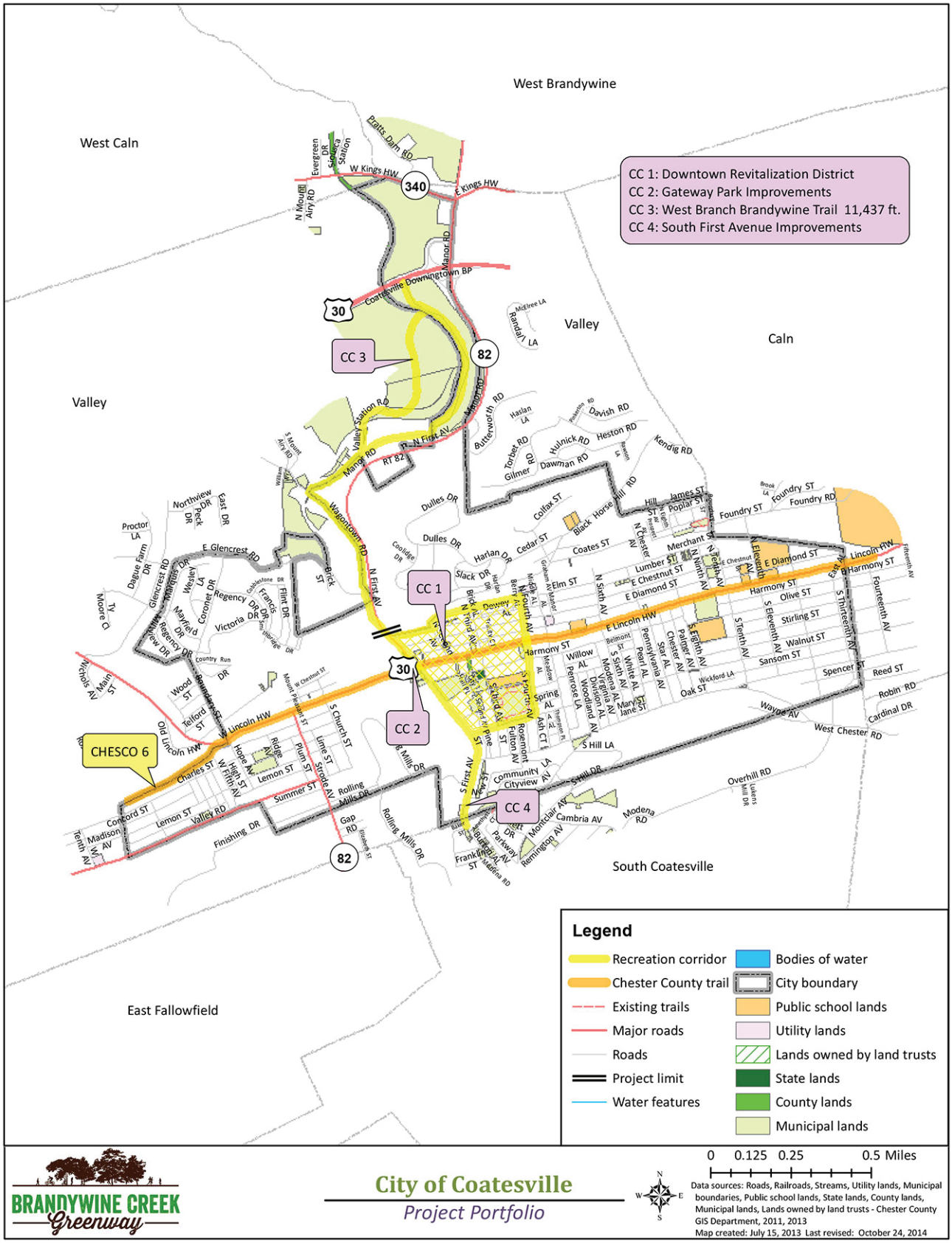
- ZO 224-30.G: No structure or land use may be located within 50 feet of a waterway.
- ZO 224-30.D: Defines "Lake and Pond Shoreline" as extending 100 feet from a lake or pond. Up to 20% of a lake or pond shoreline may be disturbed.

5. Floodplain: Rigorously Protected

- ZO 224-24: Defines "Floodplain Districts" as areas subject to 100-year flooding, namely the "flood district," "flood-fringe district," and "general floodplain district."
- ZO 224-25: Permits limited land uses within floodplain districts.

RECOMMENDED IMPROVEMENTS TO RESOURCE PROTECTION STANDARDS

- **None:** All evaluated standard provide rigorous resource protection.



BRANDYWINE CREEK Greenway

City of Coatesville

Project Portfolio

CITY OF COATESVILLE

CC 1

Project Name

Downtown Revitalization District

Key Partners

Chester County, DCED, DCNR, business community

Project Focus and Location

To promote a vibrant, safe atmosphere in the downtown area that will attract visitors to the greenway and foster business growth.

- Upgrade pedestrian crosswalks
- Directional signage
- Provide bus shelters
- Street furniture such as benches, trash receptacles, theme lighting
- Historic plaques on historic buildings and places
- Promote pedestrian connections among urban parks and the downtown areas to the Riverwalk Trail
- Restrooms at city clock apartments in center of town to be privately-owned and City managed
- Short term need

Accomplishments to Date

– Plans for the new SEPTA rail station and Third Avenue streetscape enhancements underway

– Riverwalk Trail Park complete

– Downtown Revitalization District newly established by Council

– Consistent with comprehensive plan

Next Steps

– Assemble partners and funding

– Prepare a master plan

– 3 years to complete master plan

– 6 years to implement

CITY OF COATESVILLE

CC 2

Project Name

Gateway Park Improvements

Key Partners

Chester County, DCED, DCNR, business community, Iron and Steel Heritage Museum

Project Focus and Location

To provide additional recreational facilities for visitors to Gateway Park and the greenway.

- Gateway kiosk
- Flexible community event space
- Park entrance sign
- Re-locate veterans memorial to S. First Avenue and Harmony Street
- Pedestrian crosswalk to veterans memorial site
- Safe pedestrian connection to Riverwalk Trail and park
- Lighting
- landscaping
- Intermediate need

Accomplishments to Date

– Lands owned and maintained by the City

– Consistent with comprehensive plan

Next Steps

– Assemble partners and funding

– Prepare a park master plan

– 3 years to design and engineer

– 2 years to construct

CITY OF COATESVILLE

CC 3

Project Name

West Branch Brandywine Trail

Key Partners

Chester County, Chester County Trail Club, DCNR, DVRPC, DCED, local businesses, Valley Township, landowners, railways, PECO, PennDOT, pipelines, Iron and Steel Heritage Museum, Arcelor-Mittal

Project Focus and Location

To provide additional greenway and trail opportunities for visitors by extending the River Walk Trail along the West Branch of the Brandywine to the Route 30 bypass.

- # Linear feet
- Multi-use trail
- Rails with trails
- Portions natural surface
- Pedestrian/bicycle bridge across the Brandywine at the Marriott Hotel will create a loop trail through Valley Township open space
- Intermediate need

Accomplishments to Date

– Right-of-way for the bridge over the Brandywine was recorded with the Marriott Hotel land development plan

– Trail feasibility study completed

– Consistent with the comprehensive plan

Next Steps

– Meet with Valley Township to discuss mutual goals

– Update and adopt the Feasibility Study

– Assemble partners and funding

– 2 years to update feasibility study

– 6 years to complete acquisitions and complete the trail

CITY OF COATESVILLE

CC 4

Project Name

South First Avenue Improvements

Key Partners

Chester County, Borough of South Coatesville, Iron and Steel Heritage Museum, Arcelor-Mittal, local businesses, PennDOT, DCED, landowners, PECO

Project Focus and Location

- To implement recommendations in the South First Avenue Master Plan.
- Streetscape enhancements
- Pedestrian connections
- Bicycle connections
- Business district revitalization
- Short term need

Accomplishments to Date

– Master Plan adopted

– Consistent with comprehensive plan

– Portions implemented by South Coatesville Borough

Next Steps

– Assemble partners and funding

– Prioritize improvements

– 6 years to implement

Brandywine Creek Greenway
Functions Checklist

CHADDS FORD TOWNSHIP

GREENWAY THEME MAPS	POSSIBLE GREENWAY FUNCTIONS	CHECK ☑ TOP 6
NATURAL FEATURES	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	
OPEN SPACE AND RECREATION	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, bicycle, and equestrian	
CULTURAL FEATURES	**Buffer** the Brandywine valley from new development	
	Preserve productive **agricultural** lands	
	Protect state- and municipally-designated **scenic** resources	✓
	Preserve nationally and municipally-designated **historic** structures and districts	✓

NOTE: ✓ Top six functions prioritized by this municipality during a regional workshop.

CHADDS FORD TOWNSHIP

Natural Resource Protection Ordinance Review

Date Reviewed: 1/9/2014

Zoning Adopted: 1951 Zoning Last Amended: 2009	SLDO Adopted: 1985 SLDO Last Amended: 2009	SWM Adopted: 2005 SWM Last Amended: 2009

CURRENT RESOURCE PROTECTION STANDARDS

1. Steep Slopes (15-25%, 25%+): Not Well Protected

- SLDO §110-7: Steep slopes defined as those with slope between 15-25%
- SLDO §110-7 & ZO §135-4: Very steep slopes defined as those with slope 25% and greater
- ZO §135-4: 70% of very steep slopes to be excluded from lot area calculation

2. Woodlands Protection: Not Well Protected

- ZO §135-64.A(21): Conditional use standards require the preservation of woodlands and other trees "to the maximum extent possible."
- SWM §105-22.C(12): Trees of 12" or greater caliper to be preserved to maximum extent possible.

3. Wetlands: Somewhat Protected

- SWM §105-11.C(6): Wetlands to be reserved for permanent open space.
- ZO §135-4: 85% of area within wetlands, and 50% of area within wetland margins, to be excluded from lot area calculation.
- ZO §135-4: Wetland margin extends 25' from edge of wetland.
- ZO §135-36.C(3): 50% of area covered by wetlands not permitted to be counted in required open space.

4. Riparian Buffers: Somewhat Protected

- SWM §105-7: Riparian buffer to contain appropriate native vegetation.
- SWM §105-19.A(2): Riparian buffer to extend 50' from centerline of stream and maintained with appropriate native vegetation. Can be reduced to a minimum of 10' when overlapping a rear or sideyard setback.
- SWM §105-21.K: Riparian buffers to be provided in new developments. Alteration of stream prohibited in most cases.

5. Floodplain: Not Well Protected

- ZO §135-4: 85% of area of floodplain to be excluded from lot area calculation.
- ZO §§135-92–: Very few restrictions on development within the floodplain.

RECOMMENDED IMPROVEMENTS TO RESOURCE PROTECTION STANDARDS

- **Steep Slopes:** Include maximum disturbance limitations of 30% for areas with slopes of 15 to 25%. Include maximum disturbance limitations of 15% for areas with slopes greater than 25%. Also consider adding steep slope regulations that include: 1.) a description of the slope measuring method; 2.) a listing of specific activities or uses prohibited on steep slopes; and 3.) standards that provide additional guidance for minimizing the disturbance, grading, and erosion of steep slopes.

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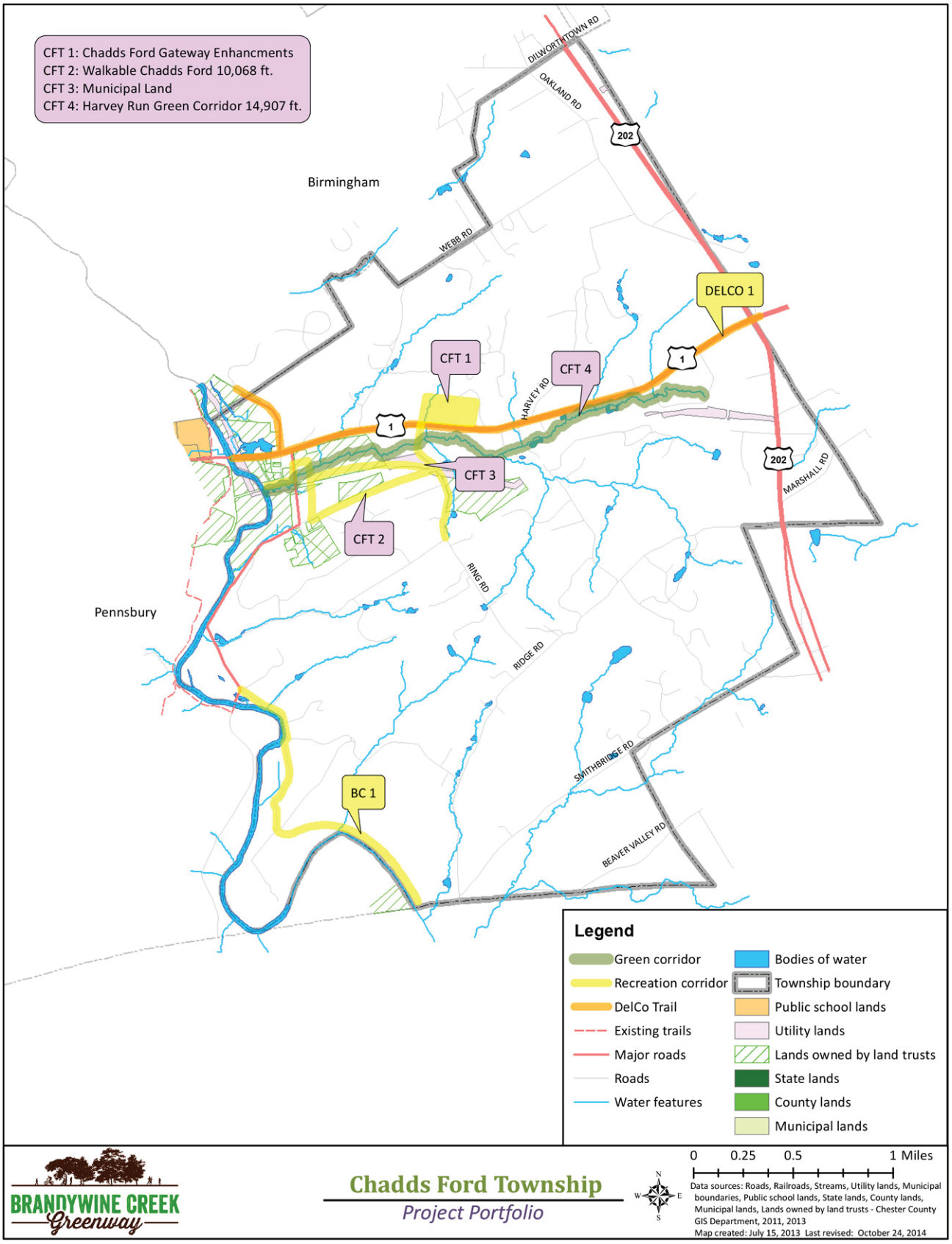
CHADDS FORD TOWNSHIP, CONT.

Natural Resource Protection Ordinance Review

- **Woodlands:** Include regulations that limit disturbance of a woodlands to a maximum of 50%. Such regulations would establish a definition for "woodland" that is defined in a measurable way, such as a definition that is based on the number of trees within a wooded area that have grown to a specific diameter at breast height (dbh). Also, consider adding forestry regulations that: 1.) include exceptions for forestry or timber harvesting, as set forth in the MPC, and 2.) require a timber harvesting plan. Lastly, consider adding tree protection regulations that: 1.) include measures that protect the trees remaining on a construction site from construction activities that could be damaging to trees; 2.) prohibit disturbing specimen trees and PNDI sites unless there is no feasible alternative; and 3.) call for tree replacement if more than a specified area or number of trees are removed.
- **Wetlands:** Include regulations which establish specific wetlands identification and delineation criteria. Lastly, consider adding regulations that establish a 50'-wide margin around all wetlands. Within this 50-foot margin, land disturbance would be limited or prohibited.
- **Riparian Buffers:** Include regulations that establish a riparian buffer which extends 100' from both sides of the stream bank (or 150' feet if the stream is impaired). Also, consider adding requirements that 1.) call for the re-vegetation of un-forested riparian buffers, and 2.) establish a two-tiered riparian buffer with stricter standards applied adjacent to streams. This two-tiered buffer would include a 50'-wide inner buffer in which disturbance is prohibited, and a 50' to 100'-wide outer buffer in which a maximum disturbance limit of 20% is allowed, and no new impervious surface.
- **Floodplain:** Include regulations that prohibit both land disturbance and the construction of new structures within a floodplain (which includes both the floodway and the flood fringe.)



BRANDYWINE CREEK Greenway

Chadds Ford Township

Project Portfolio

CHADDS FORD TOWNSHIP

CFT 1

Project Name

Chadds Ford Gateway Enhancements

Key Partners

Chester County Planning Commission, Delaware County Planning, Brandywine Conservancy, Friends of the Brandywine Battlefield, local businesses, DVRPC, PennDOT

Project Focus and Location

To enhance the visitor experience at the Brandywine Battlefield Park Gateway and promote safe pedestrian access to the Chadds Ford Township Building.

- Directional signage
- Historic/interpretive signage for the Pyle Studio/Municipal Building, Harvey Run Trail
- Trailhead kiosk
- Orientation maps to the battlefield and the greenway
- Short term need

Accomplishments to Date

– Park actively supported by a volunteer group

– Brandywine Battlefield Task Force actively working on a strategic plan update

– Grant application submitted to C2P2 2013 round re. a feasibility study for a safe pedestrian crossing at Route 1 at Ring Road

Next Steps

– 1 year to design/install kiosk and signage

– 1 year for construction

CHADDS FORD TOWNSHIP

CFT 2

Project Name

Walkable Chadds Ford

Key Partners

DVRPC, PennDOT, Delaware County Planning, local businesses

Project Focus and Location

To provide a network of trails and sidewalks that would connect people to destinations within the Chadds Ford HARB district.

- 10,068 linear feet of trails
- Traffic calming along Route 1
- Reduced speeds along Route 1
- Design guide
- Historic Resource Walking Tour Guide
- Create a sense of community center at the township building
- To benefit Chadds Ford residents, businesses, and visitors
- Intermediate need

Accomplishments to Date

– Funding secured for transportation study/design guide

– LTAP project underway

Next Steps

– Feasibility Study for safe road crossings

– 3 years to complete feasibility study

– 3 years to implement safe crossings

CHADDS FORD TOWNSHIP

CFT 3

Project Name

Municipal Lands

Key Partners

PennDOT, Delaware County Planning, local businesses

Project Focus and Location

To create a community center/village green for community events in the heart of Chadds Ford Village.

- Community green south of Harvey Run off Ring Road
- Connect people
- Parking, trails along Harvey Run
- Trails connect to Township Building
- Picnic area
- Intermediate need

Accomplishments to Date

– Land owned by Chadds Ford Township

– Harvey Run Trail feasibility study complete

– Funding acquired to implement the Harvey Run Trail

– Village Master Plan funded, to be completed in 2015

– Invasive plant management/clearing

Next Steps

– Engineering for road crossings, RFP preparation, implementation

– 2 years to design and engineer

– 3 years to construct

CHADDS FORD TOWNSHIP

CFT 4

Project Name

Municipal Lands

Key Partners

PennDOT, Delaware County Planning, local businesses

Project Focus and Location

To create a community center/village green for community events in the heart of Chadds Ford Village.

- Community green south of Harvey Run off Ring Road
- Connect people
- Parking, trails along Harvey Run
- Trails connect to Township Building
- Picnic area
- Intermediate need

Accomplishments to Date

– Land owned by Chadds Ford Township

– Harvey Run Trail feasibility study complete

– Grant proposals in process for the Harvey Run Trail

– Invasive plant management/clearing

Next Steps

– Secure funding for a master plan

– Design, engineering, cost estimates

– Secure funding for construction

– 2 years to design and engineer

– 3 years to construct

Brandywine Creek Greenway
Functions Checklist

CALN TOWNSHIP

GREENWAY THEME MAPS	POSSIBLE GREENWAY FUNCTIONS	CHECK ☑ TOP 6
NATURAL FEATURES	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	✓
OPEN SPACE AND RECREATION	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, bicycle, and equestrian	✓
CULTURAL FEATURES	**Buffer** the Brandywine valley from new development	
	Preserve productive **agricultural** lands	
	Protect state- and municipally-designated **scenic** resources	
	Preserve nationally and municipally-designated **historic** structures and districts	✓

NOTE: ✓ Top six functions prioritized by this municipality during a regional workshop.

CALN TOWNSHIP

Natural Resource Protection Ordinance Review

Date Reviewed: 8/6/13

Zoning Adopted: 11/11 Zoning Last Amended: None	SLDO Adopted: 11/11 SLDO Last Amended: None

CURRENT RESOURCE PROTECTION STANDARDS

1. Steep Slopes (15-25%, 25%+): Somewhat Protected

- ZO 155-36.B: Defines 15-20% slopes as "steep," and 20%+ as "very steep."
- ZO 155-36.E: No more than 75% of steep slopes may be disturbed.
- ZO 155-36.G: No more than 50% of very steep slopes may be disturbed, with specific exceptions.

2. Woodlands: Somewhat Protected

- ZO 155-37.A: Establishes a "Woodland Protection and Management Overlay District."
- ZO 155-137.1B: For projects that disturb from 20-40% of woodlands, mitigation with replacement of 2 trees per lot is required.
- ZO 155-37.1C: For projects that disturb from 40-60% of woodlands, mitigation with replacement of 10 trees per acre is required. Up to 60% of a woodland may be disturbed.

3. Wetlands: Rigorously Protected

- ZO 155-35.A: Establishes a "Wetlands and Hydric Soils Overlay District."
- ZO 155-35.D: No areas within 25 feet of a wetland may be disturbed if a jurisdictional determination has been approved by the ACOE. No area within 50 feet of a wetland may be disturbed if no jurisdictional determination has been approved by the ACOE.

4. Riparian Buffers: Rigorously Protected

- SLDO 137-44.1B: Defines a "Riparian Buffer Zone" as all areas that are adjacent to wetlands or water bodies and that are also located within a drainage area that exceeds 75 acres. Establishes 3 zones. Zone 1 extends 15 feet and no disturbance is permitted. Zone 2 extends out from Zone 1 to the 10-year floodplain, whichever is larger, and disturbance is restricted to that which "minimally disrupts" vegetation." Zone 3 extends out 50 feet from Zone 2 and permits disturbance as long as the channelization and point source discharges are avoided.

5. Floodplain: Somewhat Protected

- ZO 155-34A and B: Establishes a "Floodplain Overlay District," that includes floodway, floodway fringe, the 100-year floodplain and other FEMA mapped features.
- ZO 155-34.L: Limits land uses to agriculture, recreation, yards, parking, and other uses.

RECOMMENDED IMPROVEMENTS TO RESOURCE PROTECTION STANDARDS

- **Steep Slopes**: Include maximum disturbance limitations of 30% for areas with slopes of 15 to 25%. Include maximum disturbance limitations of 15% for areas with slopes greater than 25%. Also consider adding steep slope regulations that include: 1.) a description of the slope measuring method; 2.) a listing of specific activities or uses prohibited on steep slopes; and 3.) standards that provide additional guidance for minimizing the disturbance, grading, and erosion of steep slopes.

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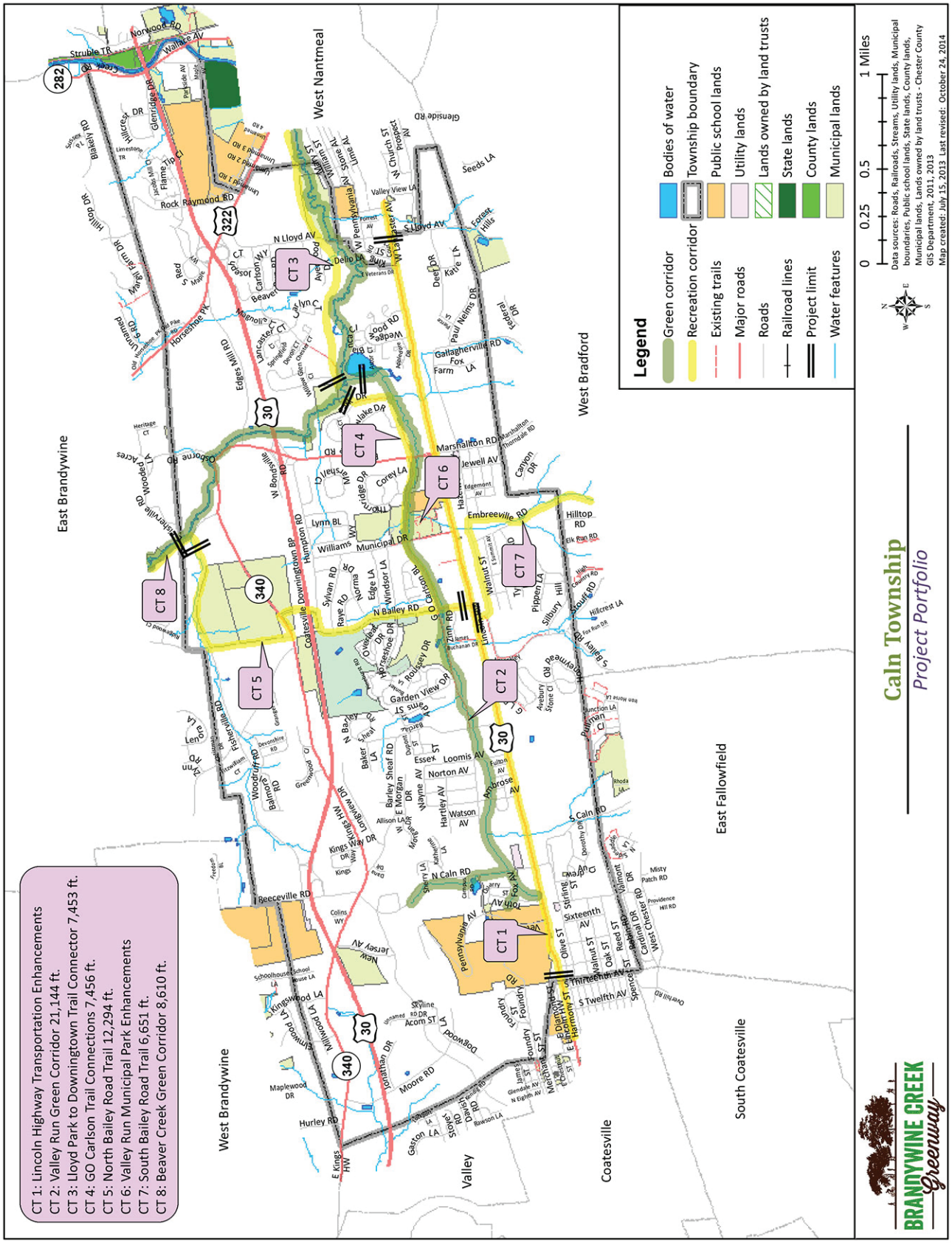
CALN TOWNSHIP, CONT.

Natural Resource Protection Ordinance Review

- **Woodlands:** Include regulations that limit disturbance of a woodlands to a maximum of 50%. Such regulations would establish a definition for "woodland" that is defined in a measurable way, such as a definition that is based on the number of trees within a wooded area that have grown to a specific diameter at breast height (dbh). Also, consider adding forestry regulations that: 1.) include exceptions for forestry or timber harvesting, as set forth in the MPC, and 2.) require a timber harvesting plan. Lastly, consider adding tree protection regulations that: 1.) include measures that protect the trees remaining on a construction site from construction activities that could be damaging to trees; 2.) prohibit disturbing specimen trees and PNDI sites unless there is no feasible alternative; and 3.) call for tree replacement if more than a specified area or number of trees are removed.
- **Floodplains:** Include regulations that prohibit both land disturbance and the construction of new structures within a floodplain (which includes both the floodway and the flood fringe.)


CT 1: Lincoln Highway Transportation Enhancements
CT 2: Valley Run Green Corridor 21,144 ft.
CT 3: Lloyd Park to Downingtown Trail Connector 7,453 ft.
CT 4: GO Carlson Trail Connections 7,456 ft.
CT 5: North Bailey Road Trail 12,294 ft.
CT 6: Valley Run Municipal Park Enhancements
CT 7: South Bailey Road Trail 6,651 ft.
CT 8: Beaver Creek Green Corridor 8,610 ft.
Legend
Green corridor
Recreation corridor
Existing trails
Major roads
Roads
Railroad lines
Project limit
Water features
Bodies of water
Township boundary
Public school lands
Utility lands
Lands owned by land trusts
State lands
County lands
Municipal lands
0 0.25 0.5 1 Miles
Data sources: Roads, Railroads, Streams, Utility lands, Municipal boundaries, Public school lands, State lands, County lands, Municipal lands, Lands owned by land trusts - Chester County GIS Department, 2011, 2013
Map created: July 15, 2013 Last revised: October 24, 2014
Caln Township
Project Portfolio
BRANDYWINE CREEK Greenway
East Brandywine
West Nantmeal
West Bradford
East Fallowfield
South Coatesville
Coatesville
Valley
West Brandywine
CT 1
CT 2
CT 3
CT 4
CT 5
CT 6
CT 7
CT 8

CALN TOWNSHIP

CT 1

Project Name

Lincoln Highway Business District Enhancements

Key Partners

Chester County Transportation, DCNR, PennDOT, DVRPC, Chester County Cycling Coalition, business community, DCED

Project Focus and Location

To provide facilities for cyclists and pedestrians along Lincoln Highway from Coatesville to Downingtown and to enhance the Thorndale Village District to make it a more viable business district.

- Streetscape improvements
- Sidewalks and crosswalks
- Bicycle lanes or share the road signage
- Re-striping to accommodate bicycles
- Lighting
- Signage
- Short term need

Accomplishments to Date

– LERTA designation

– Thorndale has an active business community

– Train Station planned

– Supported by Board of Commissioners and Planning Commission

Next Steps

– Ordinance review and update

– Public workshop and conceptual design study

– Master Plan, Design and engineering

– Apply for grants

– 3 years to complete design and engineering

– 6 years to implement

CALN TOWNSHIP

CT 2

Project Name

Valley Run Green Corridor

Key Partners

Chester County WRA, DEP, DCNR, Chester County Parks and Recreation, community volunteers, scouts

Project Focus and Location

To protect and enhance the riparian areas along Valley Run

- 21,144 linear feet
- Reforestation
- Landscaping with native plants
- Reduce maintenance
- Enhance stormwater management performance
- Enhance the Lincoln Highway business district
- Short term need

Accomplishments to Date

– Much of the land along G.O. Carlson Blvd is owned by Caln Township

Next Steps

– Identify areas for reforestation or native plantings

– Secure funding for plantings

– Organize community volunteer planting events

– 3 years to implement

CALN TOWNSHIP

CT 3

Project Name

Lloyd Park to Downingtown Trail Connector

Key Partners

Chester County, DCNR, Chester County Parks and Recreation, Downingtown Borough

Project Focus and Location

To provide a pedestrian connection between Kerr Park in Downingtown Borough and Lloyd Park in Caln Township.

- 7,453 linear feet
- 6 foot paved multi-use trail
- Follows Beaver Creek to the Brandywine
- Intermediate need

Accomplishments to Date

– Supported by Board of Commissioners and Planning Commission

Next Steps

– Coordinate with Downingtown Borough Parks and Recreation

– Secure funding for a feasibility study

– Complete feasibility study, design and engineering

– Apply for grants to purchase land or easements

– 3 years to complete design and engineering

– 3 years to implement

CALN TOWNSHIP

CT 4

Project Name

GO Carlson Trail Connections

Key Partners

Chester County Parks and Recreation, DCNR, local businesses,

Project Focus and Location

To complete missing sections of the GO Carlson Trail from Lloyd Park to Barley Sheaf Road.

- 7,456 linear feet
- Trail along G.O. Carlson Blvd
- 6 foot paved multi-use trail
- Follows Beaver Creek and Valley Run Minor Corridor
- Future pedestrian bridge over Valley Run – short term
- Future pedestrian bridge over Beaver Creek – short term
- Future vehicular bridge over Beaver Creek – long term
- Short term need

Accomplishments to Date

– Much of the trail long G.O. Carlson Blvd already exists

– Bridges would connect existing trail sections

– Supported by Board of Commissioners and Planning Commission

Next Steps

– Trail gap analysis

– Design and engineering of missing sections of trail

– Bridge design and engineering of pedestrian bridges

– Apply for grants

– 3 years to complete design and engineering

– 3 years to implement

CALN TOWNSHIP

CT 5

Project Name

North Bailey Road Trail

Key Partners

Chester County Parks and Recreation, DCNR, local businesses, East Brandywine Township

Project Focus and Location

To provide a path for pedestrians and cyclists along North Bailey Road and Fisherville Road (Beaver Creek Minor Corridor) that would connect Kings Highway Park in Caln Township to Bondsville Mill Park in East Brandywine Township.

- 12,294 linear feet
- Portions off-road
- Portions share-the-road
- Crosses Route 30
- Crosses Route 340
- Long term need

Accomplishments to Date

– Ingleside Golf Course owned by Caln Township

– Future connection shown in East Brandywine Comprehensive Plan

– Supported by Board of Commissioners and Planning Commission

Next Steps

– Feasibility Study

– Design and engineering

– Bridge design and engineering where major road crossings

– Apply for grants

– 3 years to complete design and engineering

– 6 years to implement

CALN TOWNSHIP

CT 6

Project Name

Valley Run Municipal Park Enhancements

Key Partners

Chester County Parks and Recreation, DCNR, local businesses, volunteers

Project Focus and Location

To provide new park amenities at the Valley Run Municipal Park and adjacent Del Toyota open space.

- Picnic tables
- Seating
- Naturalized landscaping
- Short term need

Accomplishments to Date

– Ingleside Golf Course owned by Caln Township

– Future connection shown in East Brandywine Comprehensive Plan

– Supported by Board of Commissioners and Planning Commission

Next Steps

– Feasibility Study

– Design and engineering

– Bridge design and engineering where major road crossings

– Apply for grants

– 3 years to complete design and engineering

– 6 years to implement

CALN TOWNSHIP

CT 7

Project Name

South Bailey Road Trail

Key Partners

Chester County Parks and Recreation, DCNR, local businesses, West Bradford Township, landowners, volunteers

Project Focus and Location

To provide a path for pedestrians and cyclists from Thorndale along South Bailey Road, Price Street, Embreeville Road and Broad Run Road to Broad Run Park and Beacon Hill Park in West Bradford Township.

- 6,651 linear feet
- Portions off-road
- Portions share-the-road
- Crosses Route 30
- Crosses Route 340
- Long term need

Accomplishments to Date

– Destinations in Thorndale and West Bradford Parks

– Future connection shown in West Bradford Township Comprehensive Plan

– Supported by Board of Commissioners and Planning Commission

Next Steps

– Feasibility Study

– Design and engineering

– Apply for grants

– 3 years to complete design and engineering

– 6 years to implement

CALN TOWNSHIP

CT 8

Project Name

Beaver Creek Green Corridor

Key Partners

DEP, DCNR, East Brandywine Township, land trusts, landowners, volunteers, scouts

Project Focus and Location

To protect and enhance water quality along Beaver Creek.

- 8,610 linear feet
- Reforestation
- Stormwater BMPs
- Land stewardship
- Natural resource protection
- Ongoing need

Accomplishments to Date

– Future land use shown as Conservation in the Comprehensive Plan

Next Steps

– Natural resource protection ordinance review and update

– Education and outreach to landowners

– Identify opportunities for reforestation

– Recruit volunteers for plantings and stream cleanup

Brandywine Creek Greenway
Functions Checklist

DOWNINGTOWN BOROUGH

GREENWAY THEME MAPS	POSSIBLE GREENWAY FUNCTIONS	CHECK ☑ TOP 6
NATURAL FEATURES	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	✓
OPEN SPACE AND RECREATION	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, bicycle, and equestrian	✓
CULTURAL FEATURES	**Buffer** the Brandywine valley from new development	
	Preserve productive **agricultural** lands	
	Protect state- and municipally-designated **scenic** resources	
	Preserve nationally and municipally-designated **historic** structures and districts	✓

NOTE: ✓ Top six functions prioritized by this municipality during a regional workshop.

DOWNINGTOWN BOROUGH

Natural Resource Protection Ordinance Review

Date Reviewed: 8/6/13

Zoning Adopted: 6/08 Zoning Last Amended: 7/18/12	SLDO Adopted: 12/17/91 SLDO Last Amended: 12/1/1999

RESOURCE AND PROTECTION STANDARDS

1. Steep Slopes (15-25%, 25%+): Somewhat Protected

- ZO 287-12.C: Establishes a "Steep Slope Conservation District," defined as 20%+ slopes.
- ZO 287-13.E.: Limits disturbance to parks, roads and other limited uses, with specific exceptions that may permit single-family detached dwellings.

2. Woodlands Protection: Somewhat Protected

- ZO 278-15: Requires disturbance to be minimized at any site with an approved plan.

3. Wetlands: Rigorously Protected

- ZO 287-14: Requires wetlands be delineated. Allows disturbance only as set forth through state and federal permits.

4. Riparian Buffers: Not Protected

- None.

5. Floodplain: Somewhat Protected

- ZO 287-12.C.: Defines floodplain as the 100-Year floodplain, floodway, flood fringe, and approximate floodplain.
- ZO 287-12.E, F and G: Limits land uses to agriculture, selective cutting of trees, recreation, wildlife sanctuaries, temporary festival grounds, and other limited uses, with specific exceptions.
- ZO 287-12.H: Includes standards that limit structures built on floodplains to those that minimize obstruction of flood water flow.

RECOMMENDED IMPROVEMENTS TO RESOURCE PROTECTION STANDARDS

- **Steep Slopes:** Include maximum disturbance limitations of 30% for areas with slopes of 15 to 25%. Include maximum disturbance limitations of 15% for areas with slopes greater than 25%. Also consider adding steep slope regulations that include: 1.) a description of the slope measuring method; 2.) a listing of specific activities or uses prohibited on steep slopes; and 3.) standards that provide additional guidance for minimizing the disturbance, grading, and erosion of steep slopes.
- **Woodlands:** Include regulations that limit disturbance of a woodlands to a maximum of 50%. Such regulations would establish a definition for "woodland" that is defined in a measurable way, such as a definition that is based on the number of trees within a wooded area that have grown to a specific diameter at breast height (dbh). Also, consider adding forestry regulations that: 1.) include exceptions for forestry or timber harvesting, as set forth in the MPC, and 2.) require a timber harvesting plan. Lastly, consider adding tree protection regulations that: 1.) include measures that protect the trees remaining on a construction site from construction activities that could be damaging to trees; 2.) prohibit disturbing specimen trees and PNDI sites unless there is no feasible alternative; and 3.) call for tree replacement if more than a specified area or number of trees are removed.

continued on page 76

DOWNINGTOWN BOROUGH, CONT.

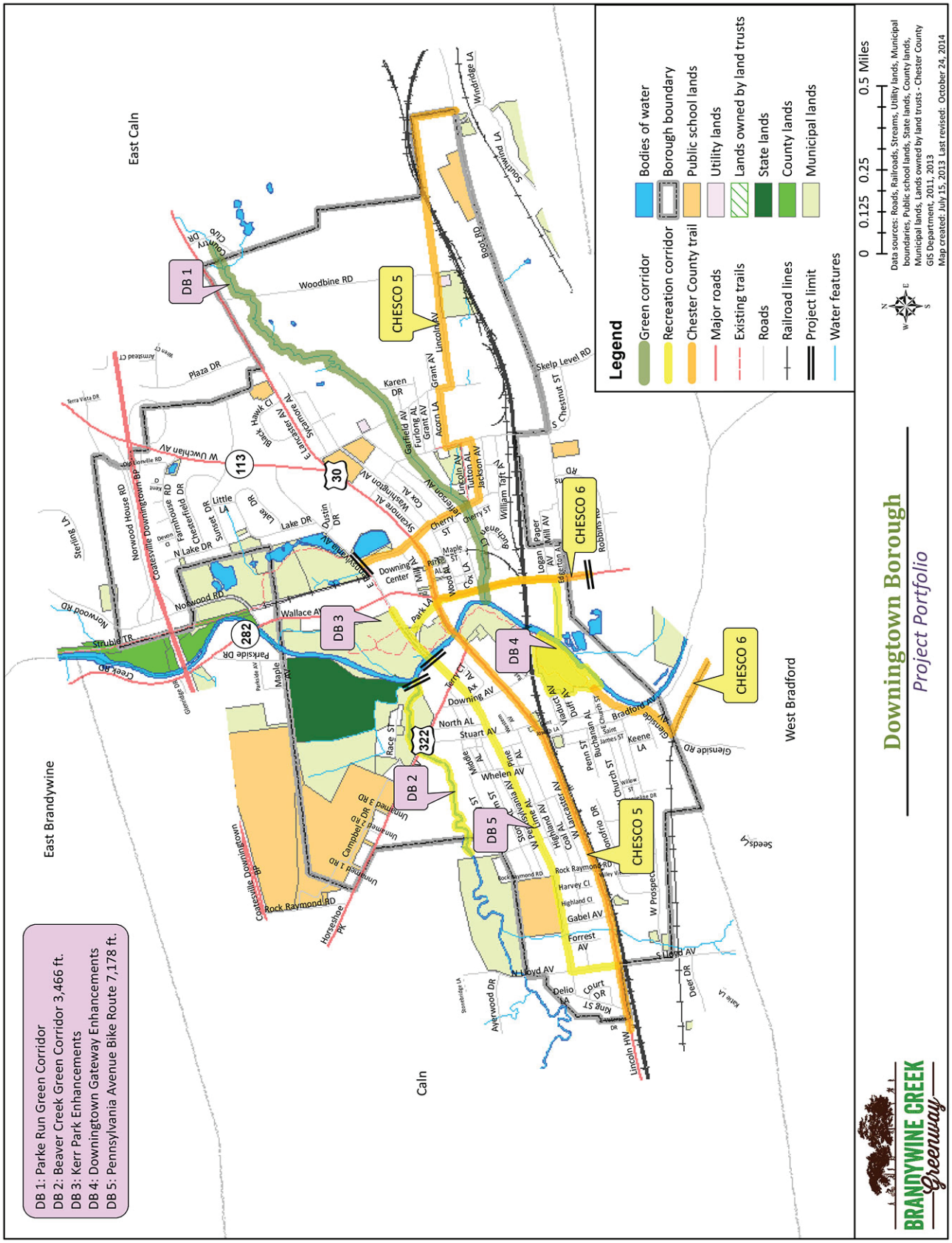
Natural Resource Protection Ordinance Review

Editor's note: in urbanized areas, the focus on Woodlands could include new tree plantings rather than trying to protect existing woodlands which are rare. This is consistent with the municipal Comprehensive Plan Update 2013, page 6.6.

- **Riparian Buffers:** Include regulations that establish a riparian buffer which extends 35 to 50 feet from both sides of the stream bank. Also, consider adding requirements that call for the re-vegetation of un-forested riparian buffers.

  Editor's note: The Planning Commission does not think it appropriate to require existing property owners in the borough to re-vegetate. It thinks riparian buffer restoration should be addressed with education and voluntary plantings. This approach is consistent with the municipal Comprehensive Plan Update 2013, page 6.6.

- **Floodplains:** Include regulations that either prohibit the construction of new structures within a floodplain (which includes both the floodway and the flood fringe), or allow only those structures or additions to structures that meet specific flood-proofing standards consistent with regulations.


DB 1: Parke Run Green Corridor
DB 2: Beaver Creek Green Corridor 3,466 ft.
DB 3: Kerr Park Enhancements
DB 4: Downingtown Gateway Enhancements
DB 5: Pennsylvania Avenue Bike Route 7,178 ft.
DB 1
DB 2
DB 3
DB 4
DB 5
CHESCO 5
CHESCO 6
East Caln
East Brandywine
West Bradford
Caln
Legend
Green corridor
Recreation corridor
Chester County trail
Major roads
Existing trails
Roads
Railroad lines
Project limit
Water features
Bodies of water
Borough boundary
Public school lands
Utility lands
Lands owned by land trusts
State lands
County lands
Municipal lands
0 0.125 0.25 0.5 Miles
Data sources: Roads, Railroads, Streams, Utility lands, Municipal boundaries, Public school lands, State lands, County lands, Municipal lands, Lands owned by land trusts - Chester County GIS Department, 2011, 2013
Map created: July 15, 2013 Last revised: October 24, 2014
Downingtown Borough
Project Portfolio
BRANDYWINE CREEK Greenway

DOWNINGTOWN BOROUGH

DB 1

Project Name

Parke Run Green Corridor

Key Partners

East Caln Township, Chester County, DEP, DCNR, HOAs, land trusts, landowners

Project Focus and Location

To promote the restoration of riparian buffers and water quality along Parke Run from the Brandywine Creek to the boundary with East Caln Township.

- Conservation easements
- Riparian buffer restoration
- Invasive vegetation management
- Land and water stewardship BMPs
- Fish habitat restoration
- Stream bank stabilization
- Interpretive signage
- Ongoing need

Accomplishments to Date

– Portions floodplain

– Portions wetlands (n/f)

– Portions owned by HOAs

Next Steps

– Landowner education and outreach regarding Brandywine watershed

– Explore opportunities for reforestation

– Explore opportunities for stream bank and habitat enhancement

DOWNINGTOWN BOROUGH

DB 2

Project Name

Beaver Creek Green Corridor

Key Partners

Caln Township, Chester County, DEP, DCNR, land trusts, landowners

Project Focus and Location

To provide pedestrian and cycling connections from Kerr Park in Downingtown to Lloyd Park in Caln Township by way of Beaver Creek.

- 3,466 linear feet
- Multi-use trail
- Pedestrian bridge at Race Street
- Crossing at Manor Avenue
- Connects Caln Township to the Struble Trail
- Short term need

Accomplishments to Date

– Connections recommended in the Central Chester County Bicycle & Pedestrian Circulation Plan, 2013

– Portions public land

– Portions in floodplain

Next Steps

– Assemble partners and funding

– Feasibility study, design, engineering

– 3 years feasibility study and design

– 3 years to implement

DOWNINGTOWN BOROUGH

DB 3

Project Name

Kerr Park Enhancements

Key Partners

Chester County, DCNR, DCED, PECO Green Region, local businesses

Project Focus and Location

To attract visitors and to enhance the visitor experience at the Kerr Park Gateway.

- Lighted pedestrian walkways and sidewalks
- Bicycle racks
- Trash cans
- Seating
- Landscaping
- Signage
- Kayak launch/water access
- Gateway kiosk and other improvements
- Short term need

Accomplishments to Date

– Park currently offers many public facilities

– Construction road serves as kayak launch/creek access point

– Consistent with comprehensive plan

Next Steps

– Identify details and locations of new facilities

– Assemble partners and funding

– 3 years to implement enhancements

DOWNINGTOWN BOROUGH

DB 4

Project Name

Downingtown Gateway Enhancements

Key Partners

Chester County, DCNR, DCED, PECO Green Region, local businesses, Downingtown Historical Society

Project Focus and Location

To institute improvements to the downtown area that will attract Struble Trail and Chester Valley Trail users to visit Downingtown.

- Lighted trails and walkways from Kerr Park to Johnsontown Park
- Signage directing visitors to the BCG
- Bicycle racks on Lancaster Avenue from Downingtown Train Station to Green Street.
- Signage directing visitors to greenway attractions and facilities
- Historic plaques for buildings and historic places
- Short term need

Accomplishments to Date

– Trail from Kerr Park to Johnsontown Park in place

– Consistent with comprehensive plan

Next Steps

– Assemble partners and funding

– Prepare design prototypes for lighting, signage, bike racks, historic plaques

– 3 years to implement

DOWNINGTOWN BOROUGH

DB 5

Project Name

Pennsylvania Avenue Bike Route

Key Partners

Chester County, DCNR, PennDOT, local businesses

Project Focus and Location

To provide an alternative bike route along Pennsylvania Avenue from Lloyd Avenue and the Beaver Creek Elementary School to the Kerr Park Gazebo

- 7,178 linear feet
- Alternative route for bicycles and pedestrians
- Share the road for bikes
- Line striping and signage
- Sidewalks for pedestrians
- Short term need

Accomplishments to Date

– $14,000 local match in hand

– Sidewalks in place

– Recommendation in the Central Chester County Bicycle & Pedestrian Circulation Plan, 2013

– Consistent with comprehensive plan

Next Steps

– Assemble partners and funding

– Prepare design and engineering

– Conference with PennDOT

– 3 years to design and construct

Brandywine Creek Greenway
Functions Checklist

EAST BRADFORD TOWNSHIP

GREENWAY THEME MAPS	POSSIBLE GREENWAY FUNCTIONS	CHECK ☑ TOP 6
NATURAL FEATURES	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	
OPEN SPACE AND RECREATION	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, bicycle, and equestrian	✓
CULTURAL FEATURES	**Buffer** the Brandywine valley from new development	✓
	Preserve productive **agricultural** lands	✓
	Protect state- and municipally-designated **scenic** resources	
	Preserve nationally and municipally-designated **historic** structures and districts	

NOTE: ✓ Top six functions prioritized by this municipality during a regional workshop.

EAST BRADFORD TOWNSHIP

Natural Resource Protection Ordinance Review

Date Reviewed: 7/18/13

Zoning Adopted: 6/19/07 Zoning Last Amended: 3/12/13	SLDO Adopted: 6/07 SLDO Last Amended: 9/19/11

RESOURCES AND PROTECTION STANDARDS

1. Steep Slopes (15-25%, 25%+): Somewhat Protected

- ZO 115-6: Defines 20%+ slopes as "Steep,' and 30%+ slopes as "prohibitive." 7/18/13
- ZO 115-43.C: Establishes a Steep Slope Conservation District" of 20%+, within which disturbance must be minimized. 7/18/13

2. Woodlands Protection: Rigorously Protected

- ZO 115-45.B: Limits disturbance to no more than 20% of any existing tree mass, tree line, or hedgerow. Individual trees of 6 in. DBH+ cannot be disturbed without compensatory planting. 7/18/13

3. Wetlands: Somewhat Protected

- ZO 115-45.3.C: See Riparian Buffers.

4. Riparian Buffers: Rigorously Protected

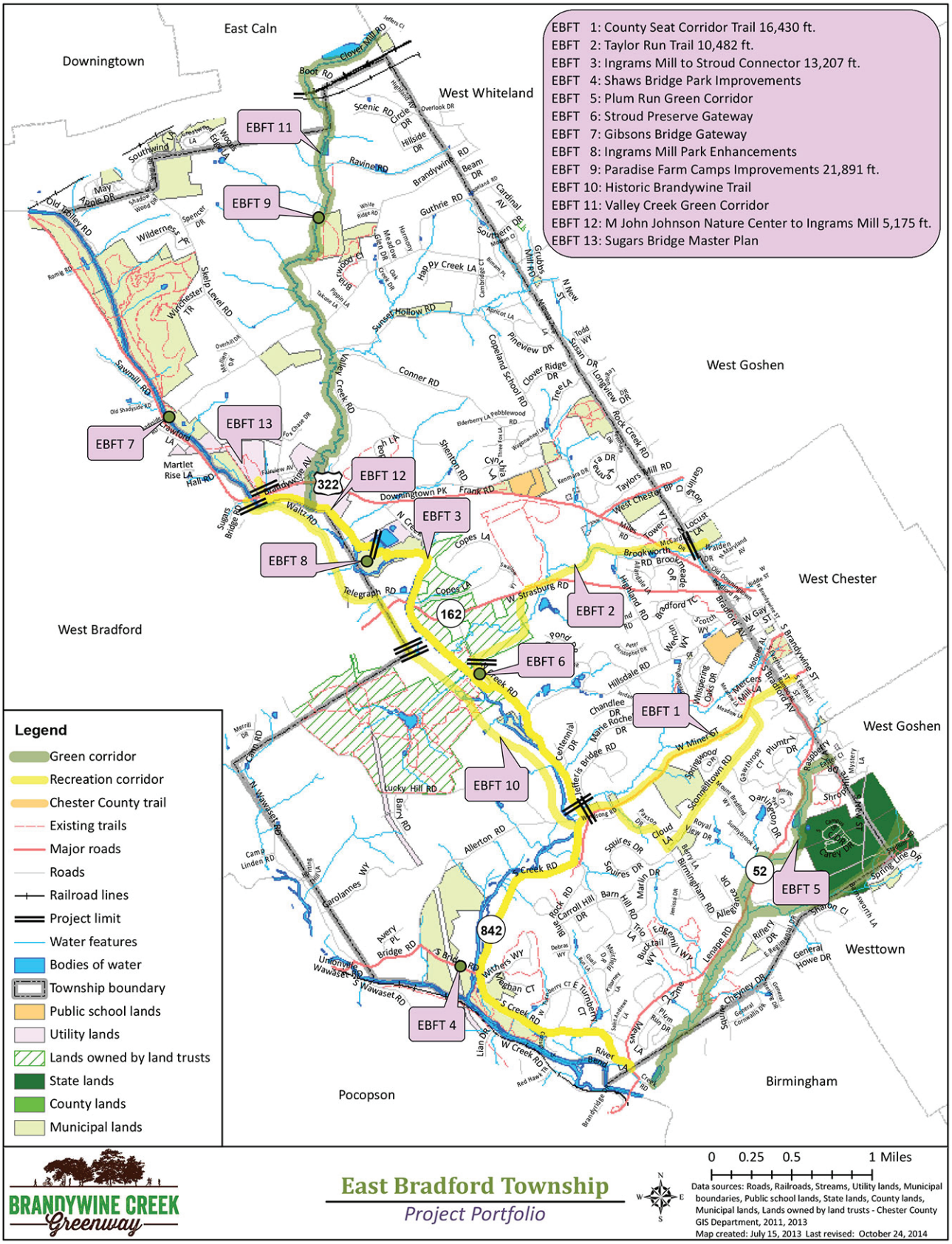
- ZO 115-45.3.C: Establishes a Riparian Buffer Area Conservation District that includes: 100 feet beyond the edge of most water bodies; all floodplain along with 50 feet of adjacent land; and wetlands of 20,000 square feet plus an additional 50 feet of adjacent land, with specific exceptions. The district is divided into two areas. "Area 1" is 25 feet beyond water bodies or wetlands, and includes any contiguous slopes of 15%+."Area 2" is the remainder of the district.
- ZO 115-45.3.D: Area 1 limits uses to low impact and public infrastructure. Area 2 limits disturbance to agriculture, low impact uses and public infrastructure.

5. Floodplain: Rigorously Protected

- ZO 115.42.D: Establishes a Floodplain District including the floodway, floodway fringe, and 100-year floodplain. Permitted uses are limited to agriculture, recreation and infrastructure.

RECOMMENDED IMPROVEMENTS TO RESOURCE PROTECTION STANDARDS

- Steep Slopes: Include maximum disturbance limitations of 30% for areas with slopes of 15 to 25%. Include maximum disturbance limitations of 15% for areas with slopes greater than 25%. Also consider adding steep slope regulations that include: 1.) a description of the slope measuring method; 2.) a listing of specific activities or uses prohibited on steep slopes; and 3.) standards that provide additional guidance for minimizing the disturbance, grading, and erosion of steep slopes.
- Wetlands: Include regulations which establish specific wetlands identification and delineation criteria. Add regulations which prohibit the disturbance of a wetland except with state and federal permits. Lastly, consider adding regulations that establish a 50-foot wide margin around all wetlands. Within this 50-foot margin, land disturbance would be limited or prohibited.


EBFT 1: County Seat Corridor Trail 16,430 ft.
EBFT 2: Taylor Run Trail 10,482 ft.
EBFT 3: Ingrams Mill to Stroud Connector 13,207 ft.
EBFT 4: Shaws Bridge Park Improvements
EBFT 5: Plum Run Green Corridor
EBFT 6: Stroud Preserve Gateway
EBFT 7: Gibsons Bridge Gateway
EBFT 8: Ingrams Mill Park Enhancements
EBFT 9: Paradise Farm Camps Improvements 21,891 ft.
EBFT 10: Historic Brandywine Trail
EBFT 11: Valley Creek Green Corridor
EBFT 12: M John Johnson Nature Center to Ingrams Mill 5,175 ft.
EBFT 13: Sugars Bridge Master Plan
East Caln
Downingtown
West Whiteland
West Goshen
West Chester
West Bradford
Westtown
Pocopson
Birmingham
Legend
Green corridor
Recreation corridor
Chester County trail
Existing trails
Major roads
Roads
Railroad lines
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Water features
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Map created: July 15, 2013 Last revised: October 24, 2014
BRANDYWINE CREEK Greenway
East Bradford Township
Project Portfolio

EAST BRADFORD TOWNSHIP

EBFT 1

Project Name

County Seat Corridor Trail

Key Partners

Chester County, West Chester Borough, HOAs, landowners, PennDOT, DVRPC, DCED, YMCA, NALT, DCNR, health care community, businesses, volunteers

Project Focus and Location

To design and construct pedestrian and bicycle facilities that would link from Price Street in West Chester Borough to the Brandywine Trail via Route 842 and/or Sconnelltown Road.

- 16,430 linear feet
- Portions share the road for bicycles
- Most direct link from West Chester Borough to the greenway system
- Long term need to be implemented once the Brandywine Trail is complete (see EBFT-10).

Accomplishments to Date

– Feasibility Study completed for portions along Sconnelltown Road

– Acquired Mount Bradford Preserve

– Widened Price Street to create wider shoulders for walking/cycling

– Installed share the road signs on Price Street

Next Steps

– Feasibility Study

– Design and engineering

– Secure funding and grants

– 3 years for design/engineering

– 3-6 years implementation

EAST BRADFORD TOWNSHIP

EBFT 2

Project Name

Taylor Run Trail

Key Partners

Chester County, West Chester Borough, HOAs, landowners, Natural Lands Trust, YMCA, health care community, businesses, volunteers

Project Focus and Location

To design and construct a hiking trail that follows Taylor Run from Hoopes Park in West Chester Borough to trails in the Stroud Preserve.

- 10,482 linear feet
- PennDOT road crossings
- Easement/fee acquisitions
- Off road trail for hikers
- Natural surface trail
- Scenic trail that follows a small stream
- Requires several stream crossings
- Long term need

Accomplishments to Date

– Portions owned by Natural Lands Trust

– Portions owned by landowners of Singer Farm

– Portions owned by HOAs

– Shown as future trail routes in the Comprehensive Plan

Next Steps

– Discuss opportunities with landowners and HOAs

– Feasibility Study

– Design and engineering

– Secure funding and grants

– S3 years for design/engineering

– S3-6 years implementation

EAST BRADFORD TOWNSHIP

EBFT 3

Project Name

Ingrams Mill to Stroud Connector

Key Partners

Chester County, West Chester Borough, HOAs, landowners, Natural Lands Trust, PennDOT, DVRPC, YMCA, NLT, AquaPA, health care community, businesses, volunteers

Project Focus and Location

To design and install a hiking trail that would connect trails at Ingrams Mill to the Brandywine Trail at Route 842.

- 13,207 linear feet
- Natural surface trail
- Route 162 road crossing
- Taylor Run creek crossing
- Improvements in stream for fish habitat and erosion control
- Short term need

Accomplishments to Date

– Sections of trail are in place

– Negotiations with HOA underway

– Discussions with Natural Lands Trust underway

– Shown as future trail route in the Comprehensive Plan

Next Steps

– Discuss opportunities with landowners and HOAs

– Feasibility Study for trail and improvements at Taylor Run

– Design and engineering

– Secure funding and grants

– 1 year for design/engineering

– 2 years implementation

EAST BRADFORD TOWNSHIP

EBFT 4

Project Name

Shaws Bridge Park Improvements

Key Partners

Chester County, NALT, LWCF, DCNR, volunteers, businesses

Project Focus and Location

To provide additional facilities for visitors to Shaws Bridge Park and the park expansion on the west side of the Brandywine.

- Parking lot on west side of the Brandywine
- Creek access
- Dog park with fenced in area adjacent to the creek
- Signage
- Seating
- Picnic tables
- Waste receptacles
- Landscaping
- Short term need

Accomplishments to Date

– Township owns the land

– Shaw's Park Dog Group of supporters and users

– Support from Park and Recreation

– Support from Board of Supervisors

Next Steps

– Design and engineering

– Secure funding and grants

– 1 year for design/engineering

– 1 year implementation

EAST BRADFORD TOWNSHIP

EBFT 5

Project Name

Plum Run Green Corridor

Key Partners

Brandywine Conservancy, Natural Lands Trust, Brandywine Valley Association, DCNR, Chester County WRA, DEP, NLT, WCU, landowners

Project Focus and Location

To conserve natural areas and enhance water quality along the Plum Run Minor Corridor.

- Reforestation
- Riparian Buffer restoration
- Restoration of erosion-prone areas
- Stormwater BMPs
- Interpretive signage
- Promote best land management practices
- Footpath from the Brandywine Creek to the WCU campus parking area and Gordon Natural Area (GNA)
- Ongoing need

Accomplishments to Date

– Reforestation projects by Brandywine Valley Association

– Stream bank stabilization projects underway

– Available parking adjoins the Gordon Natural Area at the head of the trail

– On the west side of South New Street and south of Tigue Road near Plum Run, a recreational trail has been created by West Chester University on the western section of the GNA. This could be considered the beginning of the Plum Run Trail.

Next Steps

– Plum Run Trail Feasibility Study

– Explore opportunities for reforestation

– Engage partners

– Pursue funding

– 3-15 years and ongoing

EAST BRADFORD TOWNSHIP

EBFT 6

Project Name

Stroud Preserve Gateway

Key Partners

Natural Lands Trust, Brandywine Conservancy

Project Focus and Location

To provide additional amenities for those who access the greenway through the Stroud Preserve gateway.

- Water access
- Interpretive signage
- Seating
- Information kiosk and orientation maps
- Gateway interpretive kiosk
- Intermediate need

Accomplishments to Date

– Public parking facilities and trails are in place

Next Steps

– Begin a dialogue with NLT and BC regarding opportunities for new facilities

– 2 years to obtain approvals

– 2 years to implement

EAST BRADFORD TOWNSHIP

EBFT 7

Project Name

Gibsons Bridge Gateway

Key Partners

NALT, Chester County, PECO Green Region, volunteers, local businesses, scouts

Project Focus and Location

To provide additional facilities for those who access the greenway via the Gibsons Bridge Gateway.

- Portable toilets
- Directional signage
- Historic plaque for bridge and historic trolley line
- Seating near kiosk looking away from the trail
- Gateway interpretive kiosk
- Intermediate need

Accomplishments to Date

– Parking area exists and functions as a gateway to the greenway

– Supported in concept by Parks and Recreation and the Board of Supervisors

Next Steps

– Signage design

– Historic plaque design

– Secure funding

– Recruit volunteers

– 1 year to design

– 1 year to implement

EAST BRADFORD TOWNSHIP

EBFT 8

Project Name

Ingrams Mill Park Enhancements

Key Partners

DCNR, PA Fish and Boat, DEP, NLT, AquaPA, Chester County Parks and Recreation, volunteers, businesses, scouts

Project Focus and Location

To enhance the park visitor experience by providing better creek access and facilities for recreational fishing.

- Future trail head
- Interpretive signage at fish habitat improvement areas
- Fishing pier, handicap accessible
- Fish cleaning station
- Directional signage from parking area
- Picnic tables and seating
- Short term need

Accomplishments to Date

– Fish habitat improvements completed with assistance from PA Fish and Boat Commission

– Parking area in place

Next Steps

– Signage design

– Design of cleaning station and fishing pier

– Secure funding

– Recruit eagle scouts for picnic tables

– Design and engineer and permitting for fishing pier

– 2 years to design and engineer

– 3 years to implement fishing pier

EAST BRADFORD TOWNSHIP

EBFT 9

Project Name

Paradise Farm Camps Improvements

Key Partners

Children's Country Week Association, DCED, Natural Lands Trust, Chester County, DCNR

Project Focus and Location

To enhance the greenway visitor experience at Paradise Farm Camps.

- 21,891 linear feet
- Expanded trail network
- Interpretive signage and/or trailhead kiosk
- Reforestation of open areas
- Stream bank restoration
- Seating and bicycle racks
- Picnic areas
- Outdoor amphitheater
- Public parking
- Drinking water
- Creek access
- Orientation maps and greenway guides
- Long term need

Accomplishments to Date

– Negotiations underway to connect trails at Harmony Hill Nature Area at Skelp Level Road

– Future trails shown in Comprehensive Plan Trails Map 7-1

Next Steps

– Continue dialogue and coordination with CCW representative

– Ongoing timeline

EAST BRADFORD TOWNSHIP

EBFT 10

Project Name

Historic Brandywine Trail

Key Partners

Chester County Planning Commission, Brandywine Conservancy, DCNR, CCTC, private landowners

Project Focus and Location

To permanently protect the Brandywine Trail as a historic footpath.

- Cultivate trail easements with landowners from Stroud Preserve to Delacey Fields
- Re-route the existing trail that follows roadways to the banks of the Brandywine
- Short term need

Accomplishments to Date

– The trail currently exists although in most places follows roadways

– Shown as a planned trail in Comprehensive Plan Trails Map 7-1.

Next Steps

– Work with landowners to cultivate and dedicate trail easements to East Bradford Township

– Feasibility Study

– Secure funding to purchase easements and implement the trail

– Apply for grants to match local funding

– 3 years to complete the feasibility study

EAST BRADFORD TOWNSHIP

EBFT 11

Project Name

Valley Creek Green Corridor

Key Partners

Brandywine Conservancy, Natural Lands Trust, Brandywine Valley Association, DCNR, Chester County WRA, DEP, NALT, landowners, Children's Country Week Association

Project Focus and Location

To conserve natural areas and enhance water quality along the Valley Creek Minor Corridor.

- Reforestation
- Riparian Buffer restoration
- Restoration of erosion-prone areas
- Interpretive signage
- Promote best land management practices
- Ongoing need

Accomplishments to Date

– Significant areas in protected open space including:

– Portions owned by East Bradford Township

– Portions owned by Children's Country Week Association

Next Steps

– Identify priority projects

– Engage partners

– Pursue funding

– 3-15 years and ongoing

EAST BRADFORD TOWNSHIP

EBFT 12

Project Name

M. John Johnson Nature Center to Ingrams Mill Connector

Key Partners

Chester County, landowners, PennDOT, PECO, DVRPC, YMCA, NLT, AquaPA, health care community, businesses, volunteers

Project Focus and Location

To design and implement a hiking trail connection between West Valley Nature Area and Ingrams Mill along the banks of the Brandywine.

- 5,175 linear feet
- Natural surface footpath
- Beginning at the West Valley Nature Area parking lot
- Ending at the Ingrams Mill Nature Area parking lot
- Footbridge over Valley Creek south of Route 322
- Short term need

Accomplishments to Date

– Portions with an existing trail easement, not formally open

– Negotiations underway with PECO

– Shown as a planned trail in Comprehensive Plan Trails Map 7-1

Next Steps

– Feasibility study

– Design and engineering

– Engage partners

– Pursue funding

– 2 years feasibility study

– 3 years to implement

EAST BRADFORD TOWNSHIP

EBFT 13

Project Name

Sugars Bridge Master Plan

Key Partners

Chester County, DCNR, NALT, business community, scouts, volunteers

Project Focus and Location

To prepare a Master Plan for improvements to the Sugar's Bridge Nature Area.

- Restoration of the stream to its natural course
- seating
- trails
- additional parking
- stream crossings
- signage
- information kiosks
- connections to the Brandywine Trail
- Long term need

Accomplishments to Date

– Park owned by East Bradford Township

– Shown with planned trails on Comprehensive Plan Trails Map 7-1

Next Steps

– Master plan and cost estimate

– Secure funding and grants

– 3 years to complete master plan

– 3-6 years to implement recommendations

Brandywine Creek Greenway
Functions Checklist

EAST BRANDYWINE TOWNSHIP

GREENWAY THEME MAPS	POSSIBLE GREENWAY FUNCTIONS	CHECK ☑ TOP 6
NATURAL FEATURES	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	
OPEN SPACE AND RECREATION	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, bicycle, and equestrian	✓
CULTURAL FEATURES	**Buffer** the Brandywine valley from new development	
	Preserve productive **agricultural** lands	
	Protect state- and municipally-designated **scenic** resources	✓
	Preserve nationally and municipally-designated **historic** structures and districts	✓

NOTE: ✓ Top six functions prioritized by this municipality during a regional workshop.

EAST BRANDYWINE TOWNSHIP

Natural Resource Protection Ordinance Review

Date Reviewed: 8/8/13

Zoning Adopted: 6/03 Zoning Last Amended: 4/20/11	SLDO Adopted: 6/1/03 SLDO Last Amended: 1/3/11

RESOURCE AND PROTECTION STANDARDS

1. Steep Slopes (15-25%, 25%+): Rigorously Protected

- ZO 399-14.C: Establishes a "Steep Slope Conservation District" of 20%+ slopes.
- ZO 399-14.D: Restricts land uses to parks, forestry, driveways, access roads, and accessory uses (but not swimming pools). 25%+ slopes shall not be disturbed.

2. Woodlands Protection: Rigorously Protected

- ZO 399-17.A: Up to 25% of woodland may be disturbed, with specific exceptions.
- SLDO 350-53.C: Reiterates ZO 399-17.A.

3. Wetlands: Rigorously Protected*

- ZO 399-15.B: Wetlands shall only be disturbed as permitted by state and federal permits,

4. Riparian Buffers: Rigorously Protected

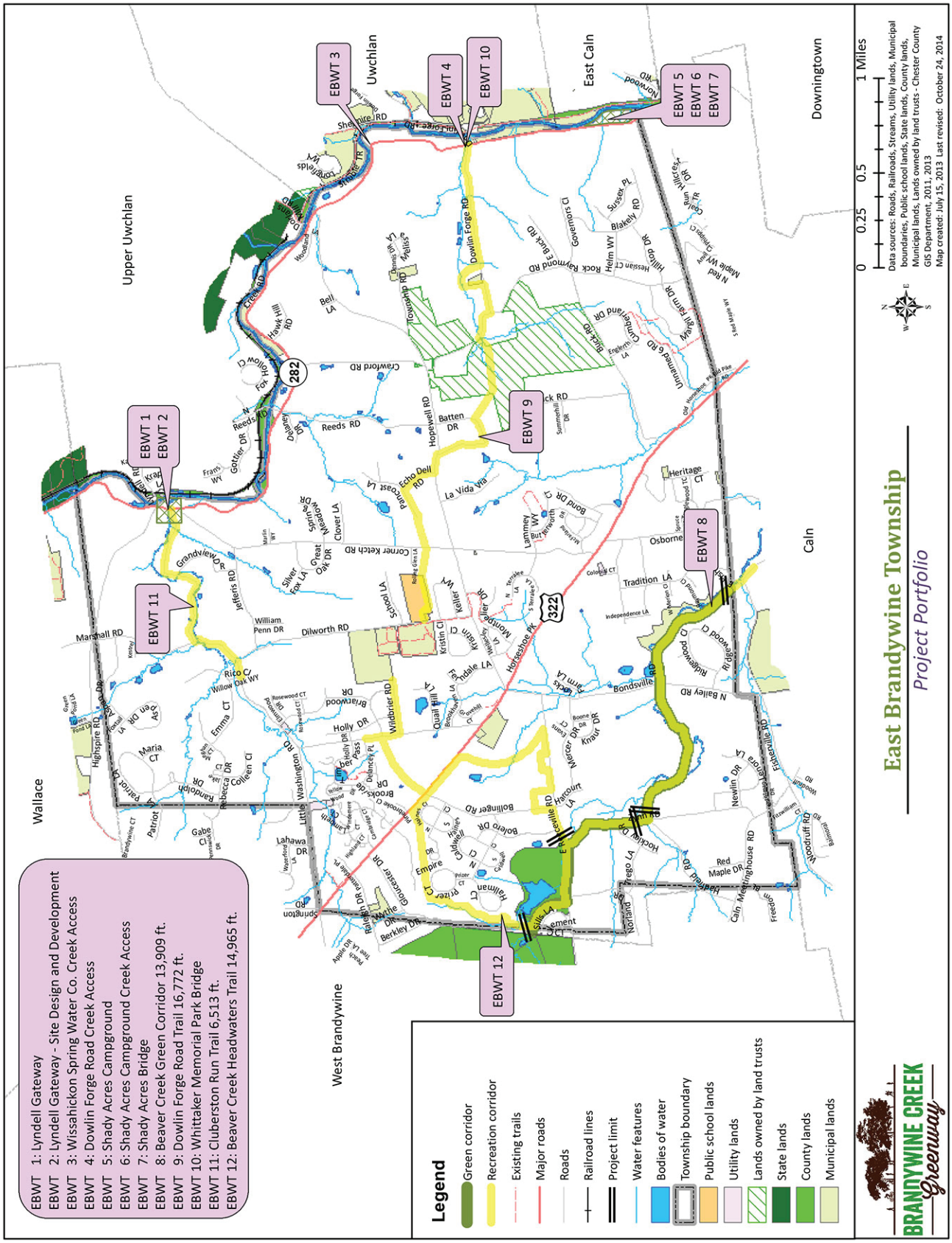
- ZO 399-13.1.B: Establishes a "Riparian Corridor Conservation District," (RCCP) extending out 75 feet from a water course, or to the 100-year floodplain, whichever is greater; and 25 feet from a wetland of 10,000 square feet=, or a pond of 5,000 square feet
- ZO 399-3.1.C: Limits land use within the RCCD.

5. Floodplain: Rigorously Protected

- ZO 399-13.C: Defines the "Floodplain District" as "Floodway," "Floodway," "Flood Fringe" and "Approximate Floodplain."
- ZO 399.3.1.E: Limits land use to agriculture, forestry, recreation, preserves, wells, and dams.

RECOMMENDED IMPROVEMENTS TO RESOURCE PROTECTION STANDARDS

- **None:** All evaluated standard provide rigorous resource protection.
- **Notes:*** Regarding wetlands, consider adding regulations that establish a 50-foot wide margin around all wetlands. Within this 50-foot margin, land disturbance would be limited or prohibited.


EBWT 1: Lyndell Gateway
EBWT 2: Lyndell Gateway - Site Design and Development
EBWT 3: Wissahickon Spring Water Co. Creek Access
EBWT 4: Dowlin Forge Road Creek Access
EBWT 5: Shady Acres Campground
EBWT 6: Shady Acres Campground Creek Access
EBWT 7: Shady Acres Bridge
EBWT 8: Beaver Creek Green Corridor 13,909 ft.
EBWT 9: Dowlin Forge Road Trail 16,772 ft.
EBWT 10: Whittaker Memorial Park Bridge
EBWT 11: Cluberston Run Trail 6,513 ft.
EBWT 12: Beaver Creek Headwaters Trail 14,965 ft.
Legend
Green corridor
Recreation corridor
Existing trails
Major roads
Roads
Railroad lines
Project limit
Water features
Bodies of water
Township boundary
Public school lands
Utility lands
Lands owned by land trusts
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Wallace
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West Brandywine
Caln
EBWT 1
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EBWT 9
EBWT 10
EBWT 11
EBWT 12
282
322
0 0.25 0.5 1 Miles
Data sources: Roads, Railroads, Streams, Utility lands, Municipal boundaries, Public school lands, State lands, County lands, Municipal lands, Lands owned by land trusts - Chester County GIS Department, 2011, 2013
Map created: July 15, 2013 Last revised: October 24, 2014
East Brandywine Township
Project Portfolio
BRANDYWINE CREEK Greenway

EAST BRANDYWINE TOWNSHIP

EBWT 1

Project Name

Lyndell Gateway—fee interest

Key Partners

Chester County Parks and Recreation, Brandywine Conservancy, DCNR

Project Focus and Location

To acquire fee interest in property at Highspire Rd. and Creek Rd. in Lyndell.

- The property will be made available for public use
- Tasks include: discussions with land owner(s); obtaining an appraisal; dedicating municipal funds; applying for county and state grants; closing costs
- A place to park and enter Marsh Creek State Park and Struble Trail systems for cyclists, walkers, handicap accessible. Facilities will include trailhead kiosk, public parking, interpretive signage, orientation maps, bicycle parking, picnic facilities, drinking water, seating
- Long term need that corresponds with the extension of the North Struble Trail

Accomplishments to Date

– Informal discussions within the Township Open Space Committee and Planning Commission

Next Steps

– Lobby for political support

– Pursue funding

– 1 year project after funding is secured

EAST BRANDYWINE TOWNSHIP

EBWT 2

Project Name

Lyndell Gateway—site design and development

Key Partners

Chester County Parks and Recreation, DCNR

Project Focus and Location

To design and construct the Lyndell Gateway.

- Master plan; design; implementation
- Facilities will include trailhead kiosk; public parking; interpretive signage; orientation maps; drinking water, bicycle parking, horse hitching; picnic facilities, seating, creek access at Culbertson Run
- A place to park and enter the greenway for cyclists, walkers, handicap accessible.
  A place to rest and to hitch and water your horse
- Gateway kiosk
- Long term need that corresponds with the extension of the North Struble Trail

Accomplishments to Date

– Informal discussions within the Township Open Space Committee and Planning Commission

Next Steps

– Conceptual Master Plan

– Site Design and Construction

– 3 years from acquisition to design and implement

EAST BRANDYWINE TOWNSHIP

EBWT 3

Project Name

Wissahickon Spring Water Co. Creek Access

Key Partners

Chester County Parks and Recreation, Brandywine Conservancy, DCNR

Project Focus and Location

To design and implement creek access for recreational boating at the former Wissahickon Spring Water Company property near Reeds Road.

- The property will be made available for boaters and fishing, picnicking
- Facilities will include: public parking; interpretive signage; orientation maps; drinking water, bicycle parking, horse hitching; picnic facilities, seating, canoe/kayak access to the Brandywine
- Tasks include: concept plan; site design; engineering; construction
- A place to park and enter Marsh Creek State Park and Struble Trail systems for cyclists, walkers, handicap accessible
- Short term need that corresponds with the township acquiring fee interest in the property

Accomplishments to Date

– Informal discussions among the Township Boards and Commissions

Next Steps

– Pursue funding

– 5 year project after funding is secured

EAST BRANDYWINE TOWNSHIP

EBWT 4

Project Name

Dowlin Forge Road Creek Access

Key Partners

Chester County Parks and Recreation, Brandywine Conservancy, DCNR

Project Focus and Location

To design and implement creek access for recreational boating

- The property will be made available for boaters and fishing, picnicking, walking
- Facilities will include: public parking; interpretive signage; orientation maps; bicycle parking; horse hitching; picnic facilities, seating, canoe/kayak access to the Brandywine.
- Tasks include: concept plan; site design; engineering; construction
- See also EBWT-10 Whittaker Memorial Park Bridge over the Brandywine which will provide access to the Struble Trail for walkers, cyclists, handicap accessible
- Short term need that corresponds with the township acquiring funds

Accomplishments to Date

– Township has acquired property at this location

– Reforestation and trail alignment completed

Next Steps

– Conceptual Design

– Pursue funding

– 3 year project after funding is secured

EAST BRANDYWINE TOWNSHIP

EBWT 5

Project Name

Shady Acres Campground Fee Interest

Key Partners

Chester County Parks and Recreation, Brandywine Conservancy, DCNR

Project Focus and Location

To acquire fee interest in Shady Acres Campground on Route 282 south of Dowling Forge Road

- The property will be made available for public use
- Tasks include: working with the land owner(s); obtaining an appraisal; dedicating municipal funds; applying for county and state grants; closing costs
- Addresses Recreation Goal 3/3 and 3/4
- A place to park and access the Brandywine for boating, fishing, picnicking, handicap accessible
- Short term need

Accomplishments to Date

– Informal discussions within the landowner and municipal representatives

Next Steps

– Continue negotiations

– Commitment with municipal funding

– 1 year project after negotiated agreement

EAST BRANDYWINE TOWNSHIP

EBWT 6

Project Name

Shady Acres Campground Creek Access

Key Partners

Chester County Parks and Recreation, Brandywine Conservancy, DCNR

Project Focus and Location

To make improvements to Shady Acres Campground

- The property will be made available for boaters, walkers, picnicking, fishing, and potential access to the Struble Trail
- Facilities to include parking, interpretive signage, canoe/kayak launch, fishing area, fish cleaning station, parking for cars and trailers, seating, picnic areas, creek-side viewing areas
- Tasks include: conceptual master plan; design; engineering; construction of improvements
- Addresses Recreation Goal 3/3 and 3/4, Culture Goal 5/1 and 5/2, Education Goal 7/2, and Economic Goad 8/1
- A resting place to park a car or bicycle, drinking water, handicap accessible
- Short term need

Accomplishments to Date

– Informal discussions among municipal Boards and Commissions

Next Steps

– Acquire fee interest

– Pursue funding for conceptual master plan

– 5 year project after funding is secured

EAST BRANDYWINE TOWNSHIP

EBWT 7

Project Name

Shady Acres Bridge

Key Partners

Chester County Parks and Recreation, Brandywine Conservancy, DCNR

Project Focus and Location

To construct a pedestrian bridge across the Brandywine at Shady Acres

- The bridge would connect the Shady Acres Campground parking and other recreational facilities to the Struble Trail on the eastern side of the Brandywine
- Tasks include: design; engineering; construction
- Addresses Transportation Goal 1 objective 1, Recreation Goal 3 objectives 3 and 4, Culture Goal 5 objective 2, and Economic Goal 8 objective 1
- Long term need after establishment of Shady Acres

Accomplishments to Date

– Municipal representatives have engaged in informal discussions with potential funders

Next Steps

– Acquire fee interest of Shady Acres

– Pursue funding

– 2 year project after funding is secured

EAST BRANDYWINE TOWNSHIP

EBWT 8

Project Name

Beaver Creek Green Corridor

Key Partners

Chester County Parks and Recreation, Brandywine Conservancy, DCNR

Project Focus and Location

To establish a conservation corridor along Beaver Creek as it follows Hadfield Road and Bondsville Road.

- Natural surface footpath to be explored
- Conservation easements
- Riparian buffer restoration
- Invasive vegetation management
- Land and water stewardship BMPs
- Stormwater BMPs
- Agricultural BMPs
- Fish habitat restoration
- Stream bank stabilization
- Ongoing need

Accomplishments to Date

– Portions in Coatesville Country Club

– Portions privately owned or eased by land trusts

– Portions owned or eased by land trust

Next Steps

– Inventory existing resources

– Identify opportunities for conservation and preservation

EAST BRANDYWINE TOWNSHIP

EBWT 9

Project Name

Dowlin Forge Road Trail

Key Partners

Chester County Parks and Recreation, Brandywine Conservancy, Morrison property, DCNR, PennDOT

Project Focus and Location

To establish an off-road multi-use trail from East Brandywine Community Park to the Whittaker Memorial Park and Dowling Forge Road Creek Access

- The trail will connect to a pedestrian bridge across the Brandywine and the Struble Trail in Uwchlan Township
- Part of an east-west trail link between Marsh Creek State Park and Hibernia County Park
- Tasks include: feasibility study; design; engineering; construction
- Addresses Transportation Goal 1 objective 1, Recreation Goal 3 objectives 3 and 4, Culture Goal 5 objective 2, Economic Goal 8 objective 1
- Short term need to connect residential areas to municipal lands on the Brandywine at Dowlin Forge Road

Accomplishments to Date

– This trail is shown on the EBWT Official Map

– Some trail easements have been acquired by the Township

– Feasibility Study started in 2014

Next Steps

– Complete Feasibility Study

– Pursue funding

– 5-20 year project

EAST BRANDYWINE TOWNSHIP

EBWT 10

Project Name

Whittaker Memorial Park Bridge

Key Partners

Chester County Parks and Recreation, Brandywine Conservancy, DCNR, PennDOT

Project Focus and Location

To construct a pedestrian bridge across the Brandywine at Whittaker Memorial Park

- The bridge would connect the Whittaker Memorial Park and the Dowlin Forge Road Trail to the Struble Trail on the eastern side of the Brandywine
- Tasks include: design; engineering; construction
- Addresses Transportation Goal 1 objective 1, Recreation Goal 3 objectives 3 and 4, Culture Goal 5 objective 2, Economic Goal 8 objective 1
- Long term need after establishment of Whittaker Memorial Park

Accomplishments to Date

– Municipal representatives and private individuals have engaged in informal discussions with potential funders

Next Steps

– Feasibility Study

– Pursue funding

– 5 year project

EAST BRANDYWINE TOWNSHIP

EBWT 11

Project Name

Culbertson Run Trail

Key Partners

Chester County Parks and Recreation, Brandywine Conservancy, DCNR, PennDOT

Project Focus and Location

To construct a multi-use trail that would connect Lyndell Road Gateway to Hideaway Farms and the Southdown Homes subdivision trails

- Tasks include: feasibility study; design; engineering; construction
- Addresses Transportation Goal 1 objective 1, Recreation Goal 3 objectives 3 and 4, Culture Goal 5 objective 2, Economic Goal 8 objective 1
- Long term need after establishment of Lyndell Road Gateway

Accomplishments to Date

– Introduced to municipal representatives in the Concept Plan for the Brandywine Creek Greenway, 2012

Next Steps

– Feasibility Study

– Pursue funding

– 5 year project

EAST BRANDYWINE TOWNSHIP

EBWT 12

Project Name

Beaver Creek Headwaters Trail

Key Partners

East Brandywine Township, Chester County Parks and Recreation, Brandywine Conservancy, DCNR

Project Focus and Location

To construct a pedestrian and bicycle loop trail that would connect the Applecross neighborhood and Guthriesville to the Beaver Creek Green Corridor.

- Tasks include: feasibility study; design; engineering; construction
- Addresses Transportation Goal 1 objective 1, Recreation Goal 3 objectives 3 and 4, Culture Goal 5 objective 2, Economic Goal 8 objective 1
- Long term need after establishment of the Beaver Creek Green Corridor trail

Accomplishments to Date

– Introduced to municipal representatives in the Concept Plan for the Brandywine Creek Greenway, 2012

Next Steps

– Feasibility Study

– Pursue funding

– 5 year project

Brandywine Creek Greenway
Functions Checklist

EAST CALN TOWNSHIP

GREENWAY THEME MAPS	POSSIBLE GREENWAY FUNCTIONS	CHECK ☑ TOP 6
NATURAL FEATURES	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	✓
OPEN SPACE AND RECREATION	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, bicycle, and equestrian	✓
CULTURAL FEATURES	**Buffer** the Brandywine valley from new development	✓
	Preserve productive **agricultural** lands	
	Protect state- and municipally-designated **scenic** resources	
	Preserve nationally and municipally-designated **historic** structures and districts	

NOTE: ✓ Top six functions prioritized by this municipality during a regional workshop.

EAST CALN TOWNSHIP

Natural Resource Protection Ordinance Review

Date Reviewed: 8/13/13

Zoning Adopted: 1/15/06 Zoning Last Amended: 12/7/11	SLDO Adopted: 1/15/06 SLDO Last Amended: None

RESOURCE AND PROTECTION STANDARDS

1. Steep Slopes (15-25%, 25%+): Rigorously Protected

- ZO 225-23: Defines "moderately steep slopes" as 15 to 25%, and "steep slopes" as 25%+.
- ZO 225-23.E: The area which is disturbed shall not exceed 50% of moderately steep slopes within a property, up to a maximum disturbance of 10 acres of moderately steep slopes. The area which is disturbed shall not exceed 25% of steep slopes within a property, up to a maximum disturbance of 5 acres of moderately steep slopes.

2. Woodlands Protection: Somewhat Protected

- SLDO 185-40.B: Up to 75% of all trees 6 inches in caliper (measured 12 inches above the ground) may be disturbed.

3. Wetlands: Not Protected

- None.

4. Riparian Buffers: Not Protected

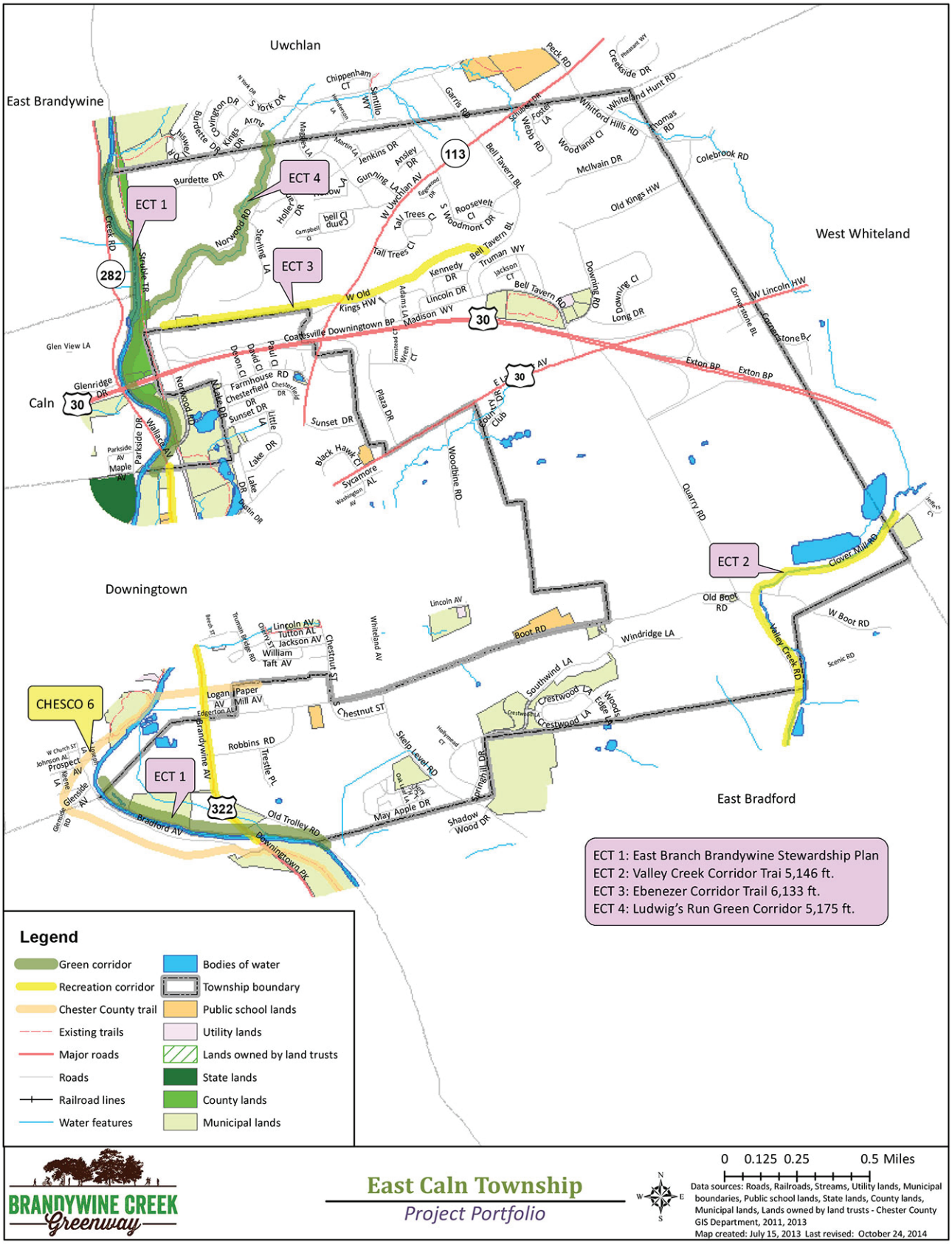
- None.

5. Floodplain: Rigorously Protected

- ZO 225-24B: Establishes a "Floodplain Conservation District" that consists of areas subject to 100-year flood, Floodway District, Flood Fringe District, and General Floodplain District.
- ZO 225.24C: Limits land use to agriculture, preserves, forestry, recreation, and pervious parking, with specific exceptions.

RECOMMENDED IMPROVEMENTS TO RESOURCE PROTECTION STANDARDS

- **Woodlands:** Include regulations that limit disturbance of a woodlands to a maximum of 50%. Such regulations would establish a definition for "woodland" that is defined in a measurable way, such as a definition that is based on the number of trees within a wooded area that have grown to a specific diameter at breast height (dbh). Also, consider adding forestry regulations that: 1.) include exceptions for forestry or timber harvesting, as set forth in the MPC, and 2.) require a timber harvesting plan. Lastly, consider adding tree protection regulations that: 1.) include measures that protect the trees remaining on a construction site from construction activities that could be damaging to trees; 2.) prohibit disturbing specimen trees and PNDI sites unless there is no feasible alternative; and 3.) call for tree replacement if more than a specified area or number of trees are removed.
- **Wetlands:** Include regulations which establish specific wetlands identification and delineation criteria. Add regulations which prohibit the disturbance of a wetland except with state and federal permits. Lastly, consider adding regulations that establish a 50-foot wide margin around all wetlands. Within this 50-foot margin, land disturbance would be limited or prohibited.
- **Riparian Buffers:** Include regulations that establish a riparian buffer which extends 75 to 100 feet from both sides of the stream bank. Also, consider adding requirements that 1.) call for the re-vegetation of un-forested riparian buffers, and 2.) establish a two-tiered riparian buffer with stricter standards applied adjacent to streams. This two-tiered buffer would include a 25-35 foot-wide inner buffer in which disturbance is prohibited, and a 50 to 65 foot-wide outer buffer in which a maximum disturbance limit of 20% is allowed.



BRANDYWINE CREEK Greenway

East Caln Township

Project Portfolio

EAST CALN TOWNSHIP

ECT 1

Project Name

East Branch Brandywine Stewardship Plan

Key Partners

DCNR, Brandywine Conservancy, Trout Unlimited, area schools, volunteers, Brandywine Valley Association, DCNR, DEP, DCED, Water Resources Authority, PECO

Project Focus and Location

To prepare a stewardship plan for County and municipal land that front on the Brandywine Creek

- Restore native habitats
- Vegetation management
- Manage visitor usage of the Struble Trail
- Reforestation opportunities
- Wetland protection
- Interpretive signage
- Stream bank restoration
- Fish habitat construction
- Short term need and ongoing

Accomplishments to Date

– Large sections of creek frontage are owned by Chester County or East Caln Township

– Consistent with the Upper East Branch Watershed Restoration Plan

Next Steps

– Assemble partners and secure funding

– Issue an RFP to prepare a stewardship plan

EAST CALN TOWNSHIP

ECT 2

Project Name

Valley Creek Corridor Trail

Key Partners

East Bradford Township, Downingtown Quarry, Hanson Aggregates, landowners, DCNR, DEP

Project Focus and Location

To promote the conservation and connection of open space along the Valley Creek corridor at Clover Mill Road and Valley Creek Road.

- Conservation easements
- Riparian buffer restoration
- Reforestation
- Land and water stewardship BMPs
- Proposed future bike route along Valley Creek Road
- Connect into the East Bradford Township trails at Paradise Valley Nature Area
- Long term need

Accomplishments to Date

– Shown as a future bicycle route in East Bradford Township comprehensive plan

– East Caln Township comprehensive plan recommendation to explore trail linkages with adjacent municipalities

Next Steps

– Assemble partners and funding for trail feasibility study

– Explore opportunities for preservation, reforestation and BMPs

– 3 years for feasibility study and 3 years to implement

– Preservation and best management practices ongoing

EAST CALN TOWNSHIP

ECT 3

Project Name

Ebenezer Corridor Trail

Key Partners

Chester County, PennDOT, PECO, DCNR, proposed Williams Pipeline, landowners

Project Focus and Location

To establish a pedestrian and bicycle route from Bell Tavern Park to the Struble Trail.

- Sidewalks and roadways exist along most of the route
- Signage and sidewalk infill
- Striping for bike lanes
- Major surface crossing at Route 113
- Explore off-road alternatives through undeveloped areas
- Serves densely populated area of the township
- Possible future connection to East Brandywine Township via Shady Acres Campground bridge over the Brandywine
- Short term need

Accomplishments to Date

– East Caln Township comprehensive plan recommendation to explore trail linkages with adjacent municipalities

Next Steps

– Assemble partners and funding for trail feasibility study

– 3 years for feasibility study and 3 years to implement

EAST CALN TOWNSHIP

ECT 4

Project Name

Ludwig's Run Green Corridor

Key Partners

Uwchlan Township, Chester County, PennDOT, DEP, DCNR, HOAs, land trusts, landowners

Project Focus and Location

To promote the conservation and preservation of water quality along Ludwig's Run from the Struble Trail to Williamsburg Road in Uwchlan Township.

- Conservation easements
- Riparian buffer restoration
- Invasive vegetation management
- Land and water stewardship BMPs
- Fish habitat restoration
- Stream bank stabilization
- Ongoing need

Accomplishments to Date

– Existing footpath

– Largely forested

– Parallels Norwood Road/highly visible

– Portions owned by HOAs

– Portions protected by conservation easement

– Portions owned by land trust

Next Steps

– Inventory existing resources

– Identify opportunities for conservation and preservation

Brandywine Creek Greenway
Functions Checklist

EAST FALLOWFIELD TOWNSHIP

GREENWAY THEME MAPS	POSSIBLE GREENWAY FUNCTIONS	CHECK ☑ TOP 6
NATURAL FEATURES	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	✓
OPEN SPACE AND RECREATION	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, bicycle, and equestrian	✓
CULTURAL FEATURES	**Buffer** the Brandywine valley from new development	
	Preserve productive **agricultural** lands	✓
	Protect state- and municipally-designated **scenic** resources	✓
	Preserve nationally and municipally-designated **historic** structures and districts	

NOTE: ✓ Top six functions prioritized by this municipality during a regional workshop.

EAST FALLOWFIELD TOWNSHIP

Natural Resource Protection Ordinance Review

Date Reviewed: 8/13/13

Zoning Adopted: 3/23/10 Zoning Last Amended: 8/13/09	SLDO Adopted: Not Applicable SLDO Last Amended: None

RESOURCE AND PROTECTION STANDARDS

1. Steep Slopes (15-25%, 25%+): Rigorously Protected

- ZO 27-1402.3: Defines "moderately steep slopes as 15 to 25%, and "very steep slopes as 25%+. Up to 30% of moderately steep slopes may be disturbed. Up to 15% of very steep slopes may be disturbed. Limits land uses to forestry and driveways, with specific exceptions.

2. Woodlands Protection: Rigorously Protected

- ZO 27-1402.7: Except for timbering, up to 35% of woodlands may be disturbed for residential uses and up to 50% of woodlands for non-residential uses.

3. Wetlands: Rigorously Protected

- ZO 1402.4: Wetlands may be disturbed only after state and federal permits have been obtained.
- ZO 1402.5: Wetland margins extend out 25 feet, or to the extent of hydric soils up to 100 feet from wetlands. Up to 20% of wetland margins can be disturbed.

4. Riparian Buffers: Rigorously Protected

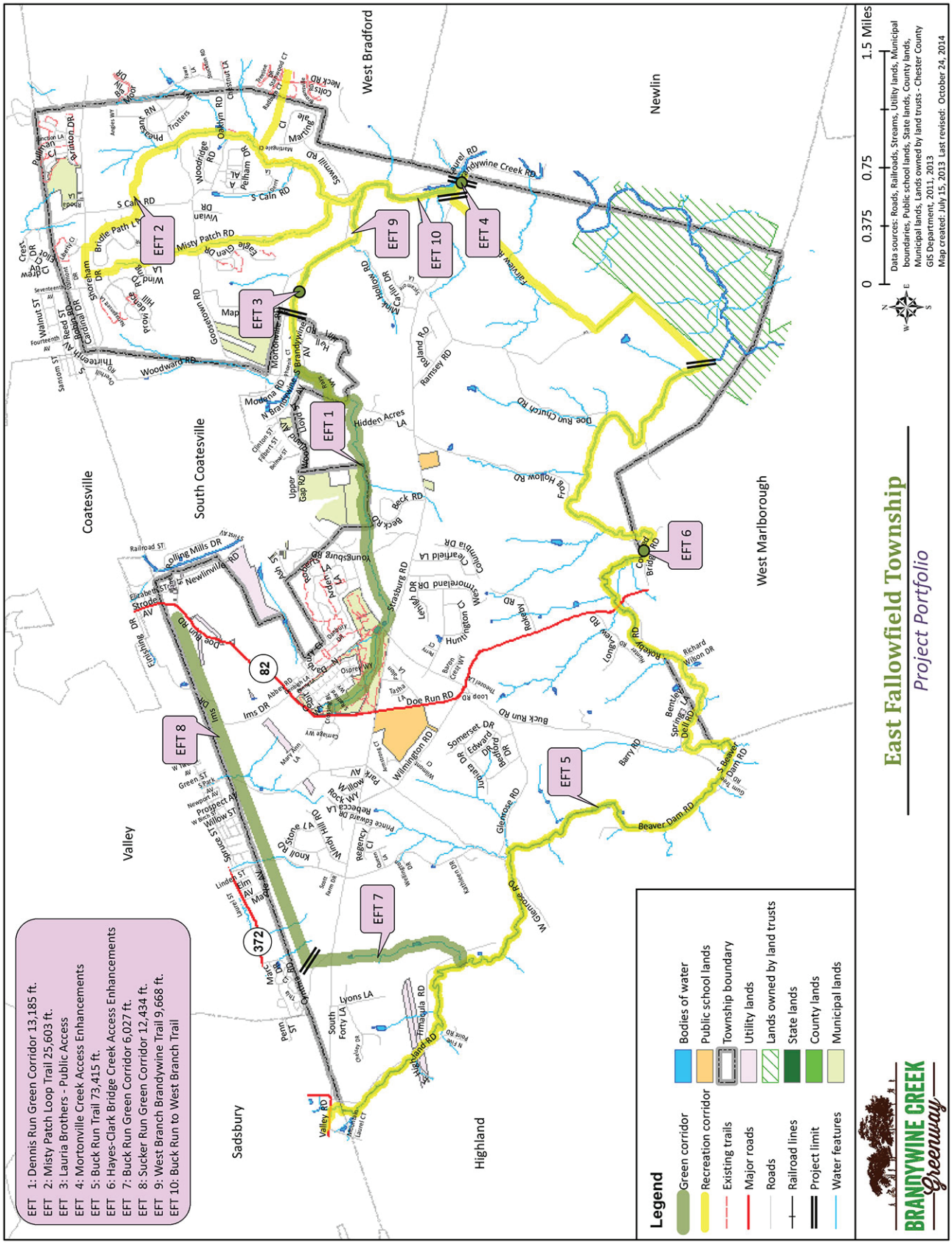
- ZO 1402.6: Established 2 zones, in which land use is limited to regulated activities, trails, and vegetation management. Zone 1 extends out 35 feet from any watercourse, and includes all adjoining very steep slopes. Zone 2 extends out 45 feet For Zone 1, land use is heavily restricted. For Zone 2, up to 20% may be disturbed.

5. Floodplain: Rigorously Protected

- ZO 27-1503.1: Defines "Flood Hazard District" as areas subject to 100-Year flood, Floodway, Flood Fringe, and General Floodplain Area.
- ZO 27-1504.1: No construction in the floodplain within 50 feet of a waterway, unless allowed by a DEP permit. For the Floodway, no disturbance, with specific exceptions. For Flood Fringe and General Floodplain Area land use is limited to agriculture, yards, and municipal used, with specific exceptions.

RECOMMENDED IMPROVEMENTS TO RESOURCE PROTECTION STANDARDS

- **None:** All evaluated standard provide rigorous resource protection.


East Fallowfield Township
Project Portfolio
EFT 1: Dennis Run Green Corridor 13,185 ft.
EFT 2: Misty Patch Loop Trail 25,603 ft.
EFT 3: Lauria Brothers - Public Access
EFT 4: Mortonville Creek Access Enhancements
EFT 5: Buck Run Trail 73,415 ft.
EFT 6: Hayes-Clark Bridge Creek Access Enhancements
EFT 7: Buck Run Green Corridor 6,027 ft.
EFT 8: Sucker Run Green Corridor 12,434 ft.
EFT 9: West Branch Brandywine Trail 9,668 ft.
EFT 10: Buck Run to West Branch Trail
Legend
Green corridor
Recreation corridor
Existing trails
Major roads
Roads
Railroad lines
Project limit
Water features
Bodies of water
Public school lands
Township boundary
Utility lands
Lands owned by land trusts
State lands
County lands
Municipal lands
0 0.375 0.75 1.5 Miles
Data sources: Roads, Railroads, Streams, Utility lands, Municipal boundaries, Public school lands, State lands, County lands, Municipal lands, Lands owned by land trusts - Chester County GIS Department, 2011, 2013
Map created: July 15, 2013 Last revised: October 24, 2014
BRANDYWINE CREEK Greenway
Coatesville
South Coatesville
West Bradford
Newlin
West Marlborough
Valley
Sadsbury
Highland
EFT 1
EFT 2
EFT 3
EFT 4
EFT 5
EFT 6
EFT 7
EFT 8
EFT 9
EFT 10

EAST FALLOWFIELD TOWNSHIP

EFT 1

Project Name

Dennis Run Conservation

Key Partners

Modena Borough, South Coatesville Borough, Chester County Conservation District, Brandywine Valley Association, Brandywine Conservancy, DCNR

Project Focus and Location

To work with landowners to conserve and protect the natural resources along Dennis Run.

- Stormwater BMPs for water quality in the municipal park
- Conservation easements with private landowners, voluntary
- Trail easements with private landowners, voluntary
- Restoration of degraded areas
- Habitat enhancement
- Explore opportunities for a natural surface or stone dust trail that would connect East Fallowfield Township Park to Mortonville Road and the Mill Trail Section 4 in Modena/South Coatesville
- BMPs for water quality
- Fencing
- Gateway and interpretive signage
- Long term need after the west branch trail is complete

Accomplishments to Date

– Headwaters of the stream begin in the municipal park at Strasburg Road and Route 82

Next Steps

– Begin landowner outreach regarding conservation easements

– Pursue partners and funding

– 5 years for trail feasibility study, design, and implementation

– 10 years to achieve permanent protection

EAST FALLOWFIELD TOWNSHIP

EFT 2

Project Name

Misty Patch Loop Trail

Key Partners

Chester County Planning Commission, Brandywine Conservancy, DCNR, Chester County Trail Club, private landowners, West Bradford Township

Project Focus and Location

To explore the feasibility of a looped trail that follows existing trails and headwater streams, begins and ends at Misty Patch Road/Sawmill Road intersection.

- Natural surface footpath for hikers and walkers, mountain bikes
- Portions share the road, portions off-road
- Cultivate trail easements with landowners and HOAs
- Connection into West Bradford Township trails and the West Branch Brandywine Trail
- Short term need

Accomplishments to Date

– Portions of trail are already constructed in HOA open space

– Portions of tail are in the design or construction phase

– Some lands preserved in open space owned by HOAs

Next Steps

– Map the location of the existing trail and identify landowners

– Meet with landowners to discuss issues and options

– Easements to be dedicated to East Fallowfield Township

– 4+ years to record trail easements and install improvements (e.g., fencing, signage) as requested by landowners

EAST FALLOWFIELD TOWNSHIP

EFT 3

Project Name

Lauria Brothers—Public Access

Key Partners

Modena Borough, Chester County, DCNR, DEP

Project Focus and Location

To obtain permission for public access to the Lauria Brothers property on the West Branch of the Brandywine.

- The property is a former superfund site that, if safe, can be used as a passive park
- Create a new gateway to the greenway at Modena Borough/East Fallowfield Township
- Provide passive open space, picnic area, footpath close to urban areas
- Passive open space
- Public access through easement or lease agreement
- Opportunity to raise awareness of water quality
- Short term need

Accomplishments to Date

– Municipality is familiar with environmental issues on the site

– Informal discussion among municipal boards and commissions

Next Steps

– Research superfund status

– Initiate discussions with area land owners

– Real estate appraisal

– Pursue funding with Chester County, DCNR, private donations

– 2 years to finalize easement or lease agreement

EAST FALLOWFIELD TOWNSHIP

EFT 4

Project Name

Mortonville Creek Access Enhancements

Key Partners

Chester County, Brandywine Conservancy, DCNR, Chester County Trail Club, private landowners

Project Focus and Location

To provide new facilities that enhance public access to the West Branch of the Brandywine Creek at Mortonville Road south of Strasburg Road.

- Additional parking for trail users and kayaks/canoes
- Information/greenway orientation kiosk
- Interpretive signage
- Directional signage
- Explore opportunities for better access to the Brandywine Creek with adjacent landowners
- Short term need

Accomplishments to Date

– Creek frontage is privately owned by Brandywine Outfitters, and public is sometimes allowed to access the creek with permission from the landowner

– Area suitable for a pull-off parking area is located within the Mortonville Road ROW near the railroad tracks

Next Steps

– Map the location of the existing creek access facilities and identify landowners

– Meet with landowners to discuss issues and options

– Easements to be dedicated to East Fallowfield Township

– 4+ years to negotiate access agreement and install improvements (e.g. parking area, fencing, signage) as requested by landowners

EAST FALLOWFIELD TOWNSHIP

EFT 5

Project Name

Buck Run Trail

Key Partners

Chester County, Brandywine Conservancy, DCNR, Chester County Trail Club, private landowners, Buck and Doe Run Watershed Organization, land trusts, Water Resources Authority

Project Focus and Location

To explore the feasibility of a natural surface footpath along Doe Run from Mortonville Road to Old Stottsville Road.

- Natural surface footpath for hikers and walkers
- Portions share the road
- Portions rails to trails
- Cultivate conservation easements and trail easements with landowners
- Implement improvements such as fencing, bridges, and signage
- Explore use of abandoned utilities, rail beds, unpaved roads
- Long term need

Accomplishments to Date

– Bert Reel Park exists as the northern destination area

– Laurels preserve and trails exist at the southern destination area

– Portions currently under conservation easement

– New public access point proposed at Covered Bridge Road

Next Steps

– Map the Buck Run and identify landowners

– Meet with landowners to discuss issues and options

– Research ownership of abandoned railway

– Easements to be dedicated to East Fallowfield Township

– 10+ years to cultivate and record trail easements

EAST FALLOWFIELD TOWNSHIP

EFT 6

Project Name

Hayes-Clark Bridge Creek Access Enhancements

Key Partners

Chester County, DCNR, private landowners, PennDOT

Project Focus and Location

To provide parking and access to Buck Run and Trail near Covered Bridge Road and Frog Hollow Road.

- Portions private property
- State set to re-build roads
- Coordinate with PennDOT to implement improvements such parking, trailhead, and signage
- Short term need

Accomplishments to Date

– PennDOT is scheduled to re-build roads in this area

– A PennDOT right-of-way exists at the Hayes-Clark Bridge with sufficient room for parking

– Brandywine Conservancy has approached select landowners

Next Steps

– Identify landowners

– Map the intersection

– Meet with PennDOT representative to discuss issues and options

– Meet with landowners for input

– 5+ years to design and install improvements

EAST FALLOWFIELD TOWNSHIP

EFT 7

Project Name

Buck Run Green Corridor

Key Partners

Brandywine Conservancy, land trusts, watershed organizations, private landowners

Project Focus and Location

To permanently protect and conserve natural, scenic, and water resources at the headwaters of Buck Run.

- Cultivate conservation easements with landowners
- Assist landowners with farm preservation easements
- Riparian buffer restoration to enhance water quality
- Reforestation of open areas to enhance interior woodland habitat
- Short term need

Accomplishments to Date

– This region is included in the Lower Brandywine PA Scenic River Corridor

– Brandywine Conservancy is actively involved with landowner outreach in the region

Next Steps

– Map the headwaters region and identify landowners

– Meet with landowners to discuss conservation options

– Easements to be conveyed to the Brandywine Conservancy or Chester County (ag.)

– 5+ years to cultivate landowners and record easements

EAST FALLOWFIELD TOWNSHIP

EFT 8

Project Name

Sucker Run Green Corridor

Key Partners

Brandywine Conservancy, land trusts, watershed organizations, private landowners, Valley Township

Project Focus and Location

To conserve and enhance the woodlands along the banks and steep slopes near Sucker Run (in adjacent Valley Township).

- Review and update woodland protection ordinance
- Review and update steep slope ordinance
- Work with landowners and HOAs to reforest riparian buffers and gaps in woodlands
- Education and outreach regarding woodlands and water quality
- Short term need

Accomplishments to Date

– Portions owned by HOAs in protected open space

Next Steps

– Map the Sucker Run corridor and identify landowners

– Identify potential reforestation projects

– Landowner education and outeach regarding forest cover and water quality, impact on real estate value

– Meet with landowners to discuss potential projects

– 5+ years to identify and implement reforestation initiatives

EAST FALLOWFIELD TOWNSHIP

EFT 9

Project Name

West Branch Brandywine Trail

Key Partners

Chester County, Brandywine Conservancy, DCNR, Chester County Trail Club, private landowners, Modena, South Coatesville

Project Focus and Location

To explore the feasibility of a share the road trail along Mortonville Road from Modena/Lauria Brothers Gateway to the Mortonville Creek Access.

- Trail for walkers and bicycles
- Portions share the road
- Portions off road
- Cultivate trail easements with landowners
- Implement improvements such as fencing, bridges, and signage
- Promote public access to adjacent Mill Trail loop and West Branch Brandywine Trail
- Long term need once the Mill Trail is completed in Modena/South Coatesville

Accomplishments to Date

– Identified in the comprehensive plan as a planned trail

Next Steps

– Map the location of the planned trail and identify landowners

– Meet with South Coatesville and Modena representatives for an update on the Mill Trail project

– Meet with landowners to discuss issues and options

– Easements to be dedicated to East Fallowfield Township

– 5+ years to cultivate and record trail easements

EAST FALLOWFIELD TOWNSHIP

EFT 10

Project Name

Buck Run to West Branch Trail

Key Partners

Chester County, Brandywine Conservancy, DCNR, Chester County Trail Club, private landowners,

Project Focus and Location

To explore the feasibility of a share the road trail along Mortonville Road from Modena/Lauria Brothers Gateway to the Mortonville Creek Access.

- Trail for walkers and bicycles
- Portions share the road
- Portions off road
- Cultivate trail easements with landowners
- Implement improvements such as fencing, bridges, and signage
- Promote public access to adjacent Buck Run Trail and West Branch Brandywine Trail
- Long term need

Accomplishments to Date

– Portions owned by land trusts

Next Steps

– Map the location of the planned trail and identify landowners

– Meet with landowners to discuss issues and options

– Easements to be dedicated to East Fallowfield Township

– 5+ years to cultivate and record trail easements

Brandywine Creek Greenway
Functions Checklist

HONEY BROOK BOROUGH

GREENWAY THEME MAPS	POSSIBLE GREENWAY FUNCTIONS	CHECK ☑ TOP 6
NATURAL FEATURES	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	
OPEN SPACE AND RECREATION	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, bicycle, and equestrian	✓
CULTURAL FEATURES	**Buffer** the Brandywine valley from new development	
	Preserve productive **agricultural** lands	
	Protect state- and municipally-designated **scenic** resources	✓
	Preserve nationally and municipally-designated **historic** structures and districts	✓

NOTE: ✓ Top six functions prioritized by this municipality during a regional workshop.

HONEY BROOK BOROUGH

Natural Resource Protection Ordinance Review

Date Reviewed: 8/12/13

Zoning Adopted: 11/18/02 Zoning Last Amended: None	SLDO Adopted: 5/9/07 SLDO Last Amended: 2/17/11

RESOURCE AND PROTECTION STANDARDS

1. Steep Slopes (15-25%, 25%+): No

- None.

2. Woodlands Protection: Somewhat Protected

- SLDO 22-202: Defines woodlands as a mass of trees of 0.25 acres or more.
- SLDO 22-629.1: Requires new developments to minimize disturbance to woodlands.

3. Wetlands: Rigorously Protected

- ZO 115.B: Wetlands may only be disturbed as allowed by state and federal permits.

4. Riparian Buffers: Not Protected

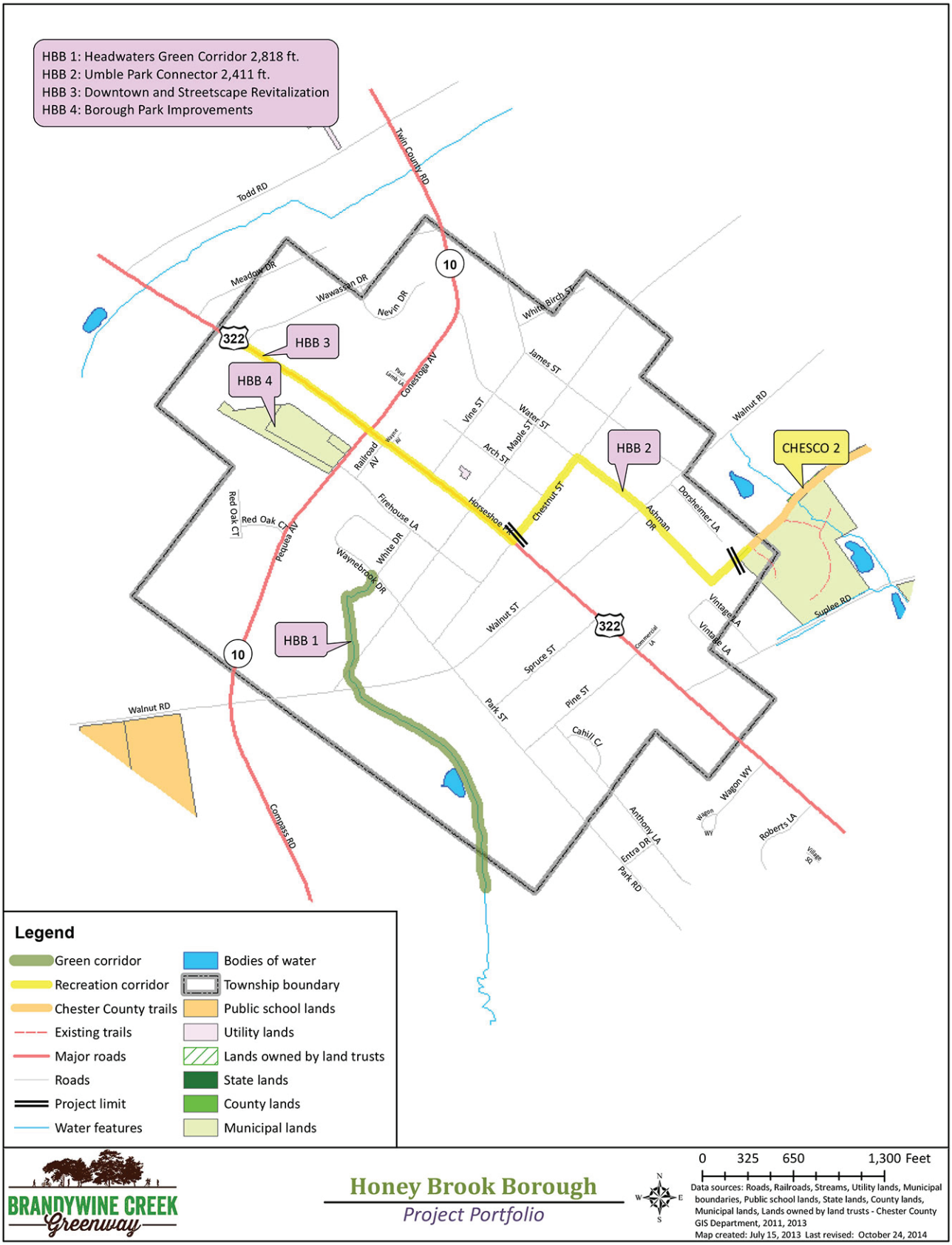
- None

5. Floodplain: Rigorously Protected

- Honey Brook Borough has no floodplains, and so has sufficient regulations.

RECOMMENDED IMPROVEMENTS TO RESOURCE PROTECTION STANDARDS

- **Steep Slopes:** Include maximum disturbance limitations of 30% for areas with slopes of 15 to 25%. Include maximum disturbance limitations of 15% for areas with slopes greater than 25%. Also consider adding steep slope regulations that include: 1.) a description of the slope measuring method; 2.) a listing of specific activities or uses prohibited on steep slopes; and 3.) standards that provide additional guidance for minimizing the disturbance, grading, and erosion of steep slopes.
- **Woodlands:** (Honey Brook Borough had few if any wooded lots, and so the following recommendation may not be applicable.) Include regulations that limit disturbance of a woodlands to a maximum of 50%. Such regulations would establish a definition for "woodland" that is defined in a measurable way, such as a definition that is based on the number of trees within a wooded area that have grown to a specific diameter at breast height (dbh). Also, consider adding forestry regulations that: 1.) include exceptions for forestry or timber harvesting, as set forth in the MPC, and 2.) require a timber harvesting plan. Lastly, consider adding tree protection regulations that: 1.) include measures that protect the trees remaining on a construction site from construction activities that could be damaging to trees; 2.) prohibit disturbing specimen trees and PNDI sites unless there is no feasible alternative; and 3.) call for tree replacement if more than a specified area or number of trees are removed.
- **Riparian Buffers:** (Honey Brook Borough had few if any waterways or intermittent streams, and so the following recommendation may not be applicable.) Include regulations that establish a riparian buffer which extends 35 to 50 feet from both sides of the stream bank. Also, consider adding requirements that call for the re-vegetation of un-forested riparian buffers.


HBB 1: Headwaters Green Corridor 2,818 ft.
HBB 2: Umble Park Connector 2,411 ft.
HBB 3: Downtown and Streetscape Revitalization
HBB 4: Borough Park Improvements
HBB 1
HBB 2
HBB 3
HBB 4
CHESCO 2
Todd RD
Twin County RD
Meadow DR
Wawassan DR
Nevin DR
White Birch ST
James ST
Conestoga AV
Vine ST
Water ST
Maple ST
Arch ST
Walnut RD
Railroad AV
Chestnut ST
Ashman DR
Dorsheimer LA
Red Oak CT
Pequea AV
Firehouse LA
Horseshoe Pk
White DR
Waynebrook DR
Walnut ST
Spruce ST
Pine ST
Park ST
Cahill Cl
Vintage LA
Suplee RD
Wagon WY
Roberts LA
Anthony LA
Entra DR
Park RD
Compass RD
10
322
Legend
Green corridor
Recreation corridor
Chester County trails
Existing trails
Major roads
Roads
Project limit
Water features
Bodies of water
Township boundary
Public school lands
Utility lands
Lands owned by land trusts
State lands
County lands
Municipal lands
BRANDYWINE CREEK Greenway
Honey Brook Borough
Project Portfolio
0 325 650 1,300 Feet
Data sources: Roads, Railroads, Streams, Utility lands, Municipal boundaries, Public school lands, State lands, County lands, Municipal lands, Lands owned by land trusts - Chester County GIS Department, 2011, 2013
Map created: July 15, 2013 Last revised: October 24, 2014

HONEY BROOK BOROUGH

HBB 1

Project Name

Headwaters Green Corridor

Key Partners

Chester County, DCNR, DEP, DCED, local businesses, land trusts, developer, property owners, Honey Brook Community Partnership, volunteers

Project Focus and Location

To educate greenway visitors regarding the origin of the West Branch Brandywine Creek and the importance of headwater streams for water quality.

- Headwaters Visitors Center
- Gateway kiosk
- Reforestation of riparian buffer
- Restoration of native plant community
- Interpretive signage
- Orientation maps
- Greenway guides
- Public parking
- Short term need

Accomplishments to Date

– Consistent with comprehensive plan

Next Steps

– Assemble partners and funding

– Prepare and adopt a concept plan for the interpretive center

– Interpretive center to be implemented possibly at land development

– Approach landowners regarding restoration of riparian buffer

– 1 year to implement landscape restoration

– 3 years to complete a concept plan

– Visitor center contingent upon land development

HONEY BROOK BOROUGH

HBB 2

Project Name

Umble Park Connector

Key Partners

Honey Brook Township, Chester County, local businesses, landowners, DCNR, DCED, Gateway Baptist Church, Honey Brook Community Partnership, volunteers

Project Focus and Location

To provide pedestrian and bicycle connections from downtown Honey Brook Borough/Horseshoe Pike to James A. Umble Memorial Park in Honey Brook Township and the future Northern Struble Trail.

- Portions follow edge of Gateway Baptist Church property
- Portions follow the edge of an agricultural field
- Portions follow Water Street and Walnut Road
- Multi use off-road trail
- Share the road and/or paved side paths
- Short term need

Accomplishments to Date

– Consistent with comprehensive plan

– Consistent with Linking Landscapes

Next Steps

– Assemble partners and funding

– Meet with landowners

– Prepare a feasibility study

– 3 years for feasibility study

– 3 years to implement

HONEY BROOK BOROUGH

HBB 3

Project Name

Downtown Gateway Revitalization

Key Partners

Chester County, DCNR, DCED, local businesses, Honey Brook Community Partnership, volunteers

Project Focus and Location

To implement improvements along Horseshoe Pike that will promote visits to Honey Brook and establish the Borough as a gateway to the greenway.

- Sidewalk and pedestrian crosswalk upgrades from Walnut Street to Route 10 and the Borough Park
- Street lighting
- Street furniture including seating, trash receptacles, bike racks
- Signage
- Street trees and planters
- Orientation maps
- Historic plaques or markers for historic buildings and places
- Short term need

Accomplishments to Date

– Urban Revitalization plan completed with funding from Chester County

– Consistent with the comprehensive plan

Next Steps

– Update and adopt Urban Revitalization Plan

– Assemble partners and funding to implement the plan

– 1 year to update the plan

– 3 years for design and engineering

– 3 years to implement

HONEY BROOK BOROUGH

HBB 4

Project Name

Borough Park Improvements

Key Partners

Chester County, DCNR, DCED, local businesses, Honey Brook Community Partnership, landowners, volunteers

Project Focus and Location

To plan and implement improvements to the Borough Park and provide pedestrian connections to the Headwaters Visitors Center (HBB-1).

- Expand public parking
- Directional Signage to the visitors center
- Bike racks
- Drinking water
- Public restrooms
- Long term need once the Headwaters Visitors Center is established

Accomplishments to Date

– Crosswalk across Route 10 is in place

– Sidewalks in place

– Consistent with comprehensive plan

Next Steps

– Assemble partners and funding

– Add bike racks, drinking water, restrooms

– Meet with landowners of adjacent properties regarding additional parking

– Prepare site design and engineering

– 3 years to design and engineer

– 2 years to construct parking area

Brandywine Creek Greenway
Functions Checklist

HONEY BROOK TOWNSHIP

GREENWAY THEME MAPS	POSSIBLE GREENWAY FUNCTIONS	CHECK ☑ TOP 6
NATURAL FEATURES	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	
OPEN SPACE AND RECREATION	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, bicycle, and equestrian	✓
CULTURAL FEATURES	**Buffer** the Brandywine valley from new development	
	Preserve productive **agricultural** lands	✓
	Protect state- and municipally-designated **scenic** resources	✓
	Preserve nationally and municipally-designated **historic** structures and districts	

NOTE: ✓ Top six functions prioritized by this municipality during a regional workshop.

HONEY BROOK TOWNSHIP

Natural Resource Protection Ordinance Review

Date Reviewed: 8/8/13

Zoning Adopted:10/10/07 Zoning Last Amended: 5/9/07	SLDO Adopted: 5/9/07 SLDO Last Amended: 2/17/11

RESOURCE AND PROTECTION STANDARDS

1. Steep Slopes (15-25%, 25%+): Rigorously Protected

- ZO 27-1303.2: Establishes a "Steep Slope Conservation District." Defines precautionary slopes as 15% to 25%, and prohibitive slopes as 25%+.
- ZO 27-1303.6: Restricts land use in prohibitive slopes to recreation, forestry, and driveways, with specific exceptions.

2. Woodlands Protection: Rigorously Protected

- ZO 27-1306.1: Refers to Comp. Plan page 38 which defines woodlands as Class I (50+ ac.), Class II (30-50 ac.), and Class III (under 30 ac.) Up to 5% of Class 1 on prohibitive slopes may be disturbed. Up to 15% of Class 1 and 2 may be disturbed. Up to 25% of Class 3 woodlands may be disturbed.

3. Wetlands: Somewhat Protected

- SLDO 22-628.1: Forbids disturbing wetlands with seasonally high water tables and areas of surface water concentrations unless authorized by the Township Engineer.
- (Note: The wetland provisions may not be consistent with current state and federal laws.)

4. Riparian Buffers: Rigorously Protected

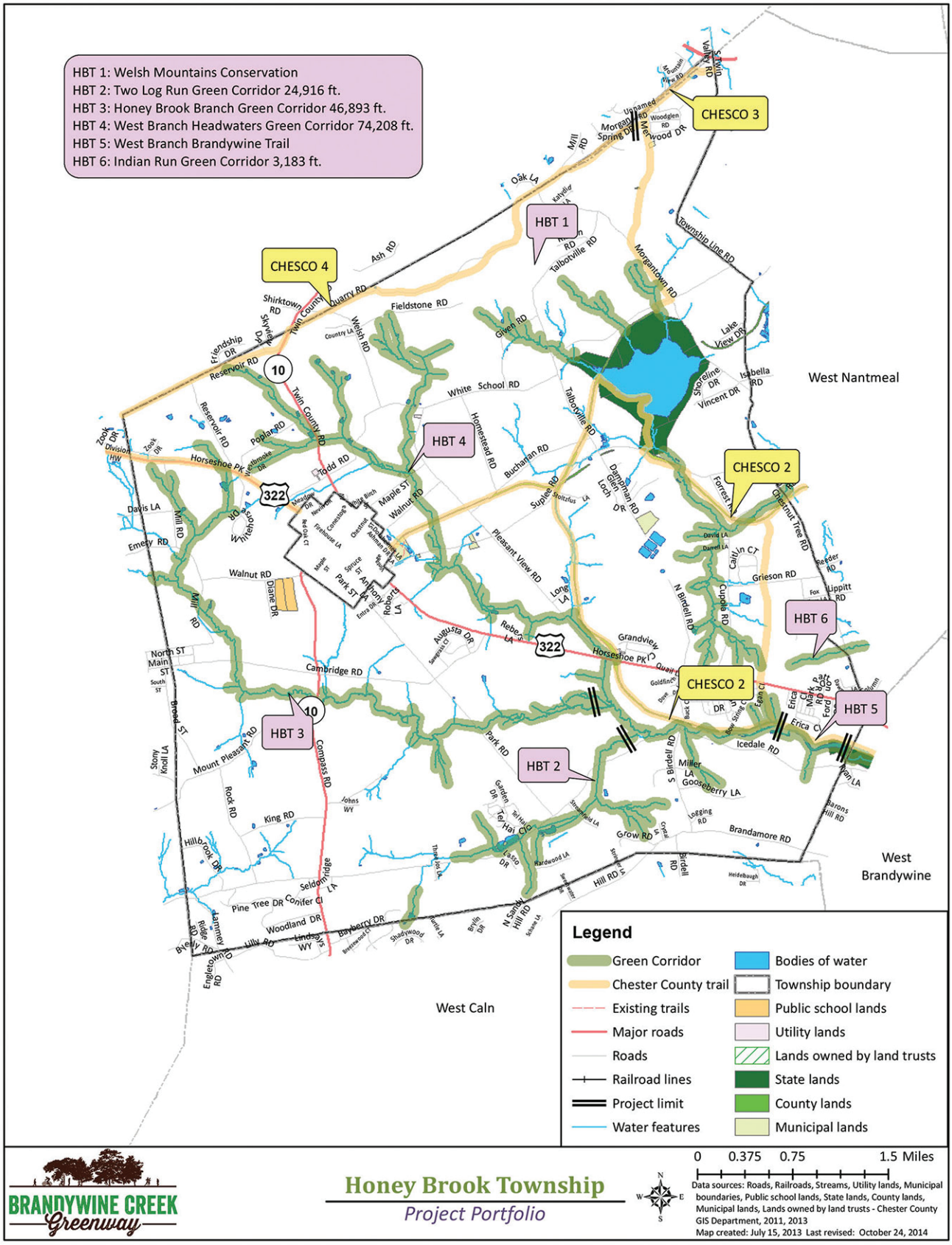
- ZO 27-1304.2: Establishes a "Riparian Corridor Conservation District" with zones. Zone 1 extends 25 feet from the watercourse. Zone 2 extends out 50 feet from Zone 1, and will include the 100-year floodplain if that floodplain extends more than 75 feet from the waterway. Limits land uses to agriculture, preserves, and driveways, with specific exceptions.

5. Floodplain: Somewhat Protected

- ZO 27-1320.2: Defines floodplains as areas subject to the 100-year flood.
- ZO 27-1302.57: Limits land uses to agriculture, recreation, preserves, stream improvements, yards, bridges, and driveways, with specific exceptions.

RECOMMENDED IMPROVEMENTS TO RESOURCE PROTECTION STANDARDS

- **Wetlands:** Include regulations which establish specific wetlands identification and delineation criteria. Add regulations which prohibit the disturbance of a wetland except with state and federal permits. Lastly, consider adding regulations that establish a 50-foot wide margin around all wetlands. Within this 50-foot margin, land disturbance would be limited or prohibited.
- **Floodplains:** Include regulations that prohibit both land disturbance and the construction of new structures within a floodplain (which includes both the floodway and the flood fringe.)


HBT 1: Welsh Mountains Conservation
HBT 2: Two Log Run Green Corridor 24,916 ft.
HBT 3: Honey Brook Branch Green Corridor 46,893 ft.
HBT 4: West Branch Headwaters Green Corridor 74,208 ft.
HBT 5: West Branch Brandywine Trail
HBT 6: Indian Run Green Corridor 3,183 ft.
CHESCO 3
CHESCO 4
CHESCO 2
HBT 1
HBT 4
HBT 6
HBT 5
HBT 3
HBT 2
West Nantmeal
West Brandywine
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Legend
Green Corridor
Chester County trail
Existing trails
Major roads
Roads
Railroad lines
Project limit
Water features
Bodies of water
Township boundary
Public school lands
Utility lands
Lands owned by land trusts
State lands
County lands
Municipal lands
0 0.375 0.75 1.5 Miles
Data sources: Roads, Railroads, Streams, Utility lands, Municipal boundaries, Public school lands, State lands, County lands, Municipal lands, Lands owned by land trusts - Chester County GIS Department, 2011, 2013
Map created: July 15, 2013 Last revised: October 24, 2014
BRANDYWINE CREEK Greenway
Honey Brook Township
Project Portfolio

HONEY BROOK TOWNSHIP

HBT 1

Project Name

Welsh Mountains Conservation

Key Partners

Natural Lands Trust, Brandywine Conservancy, Brandywine Valley Association, DCNR, Chester County, landowners

Project Focus and Location

To conserve and protect the woodlands and steep slopes along the southern edge of the Welsh Mountains and to enhance water quality in impaired headwater streams

- Utilize conservation easements to prevent woodland disturbance and new development
- Natural resource protection ordinance updates
- Promote woodlands and agricultural best management practices
- Short term need

Accomplishments to Date

– Shown on Figure 4: Greenways Plan in the Comprehensive Plan

– Currently zoned RC Resource Conservation

– Included in the PA Highlands Greenway region

Next Steps

– Coordinate with key partners and the PA Highlands Initiative/Natural Lands Trust

– Upgrade woodland protection regulations

– Designate the Welsh Mountains area as a TDR sending area

– 1 year to adopt ordinance modifications

– Multi-year effort to cultivate conservation easements

HONEY BROOK TOWNSHIP

HBT 2

Project Name

Two Log Run Green Corridor

Key Partners

Natural Lands Trust, Brandywine Conservancy, Brandywine Valley Association, DCNR, Chester County, landowners

Project Focus and Location

To conserve and protect the woodlands and steep slopes along Two Log Run at the northern edge of the Barren Hills.

- Utilize conservation easements to prevent woodland disturbance and new development
- Natural resource protection ordinance updates
- Promote woodlands and forestry best management practices
- Short term need

Accomplishments to Date

– Shown on Figure 4: Greenways Plan in the Comprehensive Plan

– Currently zoned RC Resource Conservation

– Included in the PA Highlands Greenway region

Next Steps

– Coordinate with key partners and the PA Highlands Initiative/Natural Lands Trust

– Upgrade woodland protection regulations

– Designate the Welsh Mountains area as a TDR sending area

– 1 year to adopt ordinance modifications

– Multi-year effort to cultivate conservation easements

HONEY BROOK TOWNSHIP

HBT 3

Project Name

Honey Brook Branch Green Corridor

Key Partners

Natural Lands Trust, Brandywine Conservancy, Brandywine Valley Association, DEP, Chester County Water Resources Authority, landowners, City of Wilmington

Project Focus and Location

To enhance impaired water quality along the headwater streams of the Brandywine from Route 322 west of Honey Brook Borough to the Barren Hills

- Promote riparian buffer restoration and reforestation of steep slopes where feasible
- Promote agricultural best management practices including stream fencing and controlled stream crossings for livestock
- Facilitate and promote the use of conservation easements, agricultural easements and TDR
- Implement the City of Wilmington's Source Water Protection Plan
- Short term need

Accomplishments to Date

– Shown on Figure 4: Greenways Plan in the Comprehensive Plan

– Most adjacent properties are located within the TDR sending zone

– At least 2 farms have agricultural easements

– Multiple riparian buffer reforestation and stream fencing efforts underway by multiple key partners

– Included in the PA Highlands Greenway region

Next Steps

– Continue coordination among key partners

– Multi-year effort to cultivate landowners and correct impaired streams

HONEY BROOK TOWNSHIP

HBT 4

Project Name

West Branch Headwaters Green Corridor

Key Partners

Natural Lands Trust, Brandywine Conservancy, Brandywine Valley Association, DCNR, Chester County, landowners

Project Focus and Location

To enhance impaired water quality along the headwater streams of the Brandywine from Route 10 north of Honey Brook Borough to the Barren Hills

- Promote riparian buffer restoration and reforestation of steep slopes where feasible
- Promote agricultural best management practices including stream fencing and controlled stream crossings for livestock
- Facilitate and promote the use of conservation easements, agricultural easements and TDR
- Utilize conservation design to cluster new development
- Implement the City of Wilmington's Source Water Protection Plan
- Short term need

Accomplishments to Date

– Shown on Figure 4: Greenways Plan in the Comprehensive Plan

– Many adjacent properties are located within the TDR sending zone

– At least 2 farms have agricultural easements (?)

– Multiple riparian buffer reforestation and stream fencing efforts underway by multiple key partners

– Included in the PA Highlands Greenway region

Next Steps

– Continue coordination among key partners

– Multi-year effort to cultivate landowners and correct impaired streams

HONEY BROOK TOWNSHIP

HBT 5

Project Name

West Branch Brandywine Trail

Key Partners

Chester County, Hibernia County Park, DCNR, West Brandywine Township, private landowners

Project Focus and Location

To study the feasibility of a multi-use trail along the West Branch of the Brandywine.

- Explore opportunities for a stone dust trail that would connect to Valley Township/Coatesville trails to the south and to Honey Brook Township trails to the north
- Portions abandoned rail line as a potential route
- Portions rural share the road trail
- Trail easements with private landowners, voluntary
- For pedestrians, cyclists, and equestrians
- Short term need

Accomplishments to Date

– Portions owned by Chester County

– Portions used informally by residents

– Shown on Map 8-1 in the municipal Comprehensive Plan

Next Steps

– Pursue partners and funding for a feasibility study

– 5 years for trail feasibility study, design, and implementation

HONEY BROOK TOWNSHIP

HBT 6

Project Name

Indian Run Green Corridor

Key Partners

Private landowners, DCNR, land trusts, Chester County, West Nantmeal Township.

Project Focus and Location

To implement conservation efforts that could include conservation easements, agricultural easements, agricultural BMPs, stream restoration, reforestation of riparian buffers, habitat restoration, and other efforts.

- Ongoing need

Accomplishments to Date

– Shown as a green corridor on the Brandywine Creek Greenway Concept Map

Next Steps

– Land trusts and Chester County continue to cultivate landowners for agricultural easements, conservation easements, and agricultural BMPs

– Ongoing efforts required

– Ongoing conservation opportunities

Brandywine Creek Greenway
Functions Checklist

MODENA BOROUGH

GREENWAY THEME MAPS	POSSIBLE GREENWAY FUNCTIONS	CHECK ☑ TOP 6
NATURAL FEATURES	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	✓
OPEN SPACE AND RECREATION	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, bicycle, and equestrian	
CULTURAL FEATURES	**Buffer** the Brandywine valley from new development	✓
	Preserve productive **agricultural** lands	
	Protect state- and municipally-designated **scenic** resources	✓
	Preserve nationally and municipally-designated **historic** structures and districts	

NOTE: ✓ Top six functions prioritized by this municipality during a regional workshop.

MODENA BOROUGH

Natural Resource Protection Ordinance Review

Date Last Reviewed: 7/23/13

Zoning Adopted: 9/24/09 Zoning Last Amended: None	SLDO Adopted: 3/82 SLDO Last Amended:11/2/09

RESOURCE AND PROTECTION STANDARDS

1. Steep Slopes (15-25%, 25%+): Rigorously Protected

- ZO 1104.B: Defines steep slopes as 25%+. Limits disturbance to parks, open space preservation, recreation forestry and agriculture, with specified exceptions.

2. Woodlands protection: Rigorously Protected

- ZO 1107.A: Except for timber harvesting, disturbing woodlands shall be: no more than 75% on 1 acre or less; no more than 65% on greater than 1 acre to less than 5 acres; and no more than 50% of 5 acres +.
- SLDO 522.A: Establishes woodland replacement standards.

3. Wetlands: Rigorously Protected

- ZO 202: Defines "Wetland Margin" as extending out 50 ft from a wetland boundary.
- ZO 1106.G: Wetlands shall not be disturbed. Limits disturbance to 20% of a wetland margin.
- SLDO 502.B: Low lying wetlands shall not be built upon unless drained.
- (Note: SLDO Wetland provision may contradict state and federal wetland regulations.)

4. Riparian Buffers: Rigorously Protected

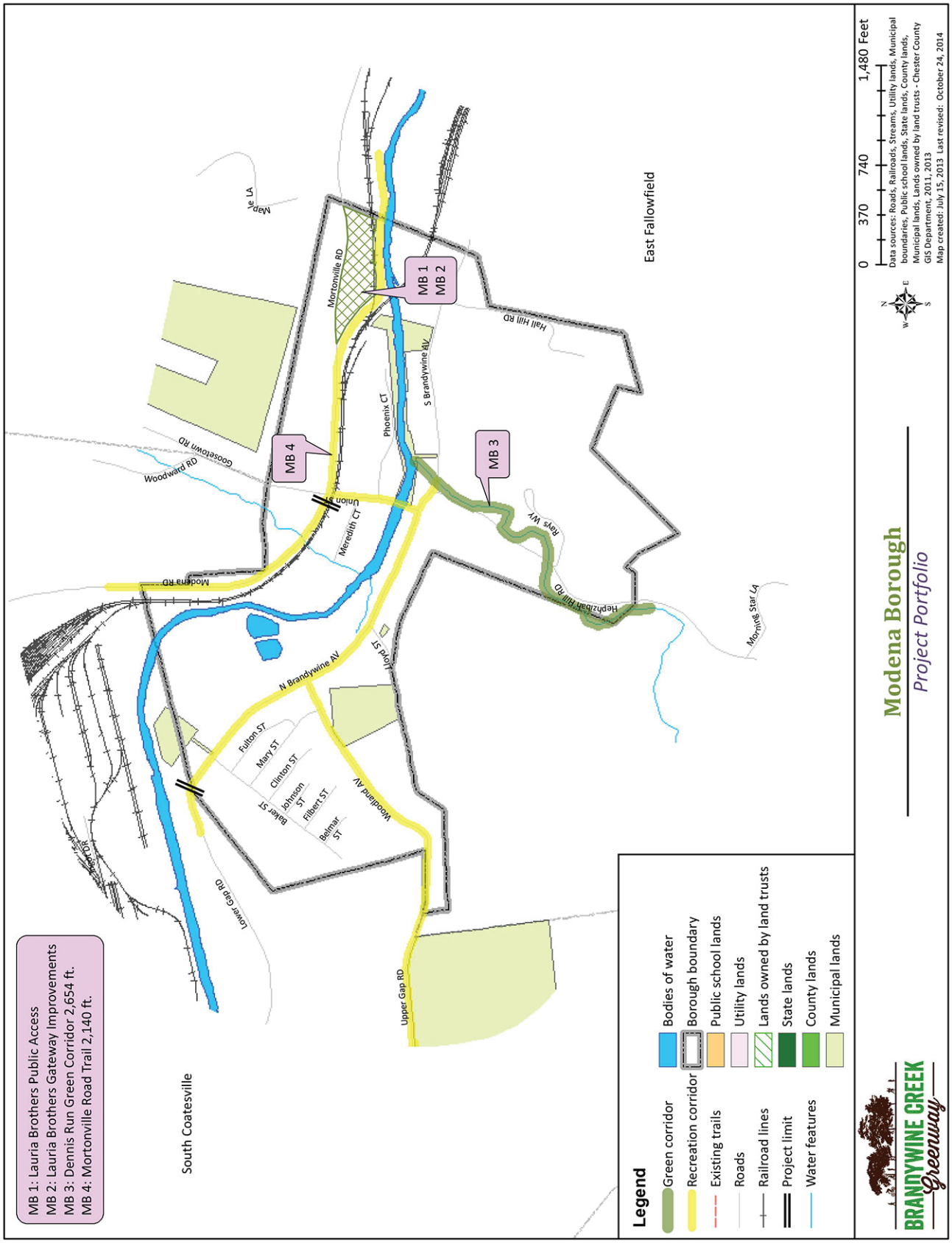
- 1105.C: Buffer extends out 50 feet from waterways, and 20 feet out from intermittent streams and lakes or ponds. Buffer may also include 25%+ slopes beyond 50 feet
- 1105.D: No more than 5% of the buffer may be disturbed. No buffer may be reduced to less than 10 feet wide. Reducing a buffer to less than 20 feet wide requires specific management measures.

5. Floodplain; Rigorously Protected

- ZO 1103. C: Establishes a Flood Hazard District consisting of the Floodway Area, Flood-Fringe Area and General Floodplain Area.
- ZO 1103. D: Within an Floodway Area, no new construction is permitted that would cause and increase in the 100-year flood elevation. No new construction is permitted without a DEP permit. Within and General Floodplain Area, no construction is permitted within 50 feet of the watercourse.

RECOMMENDED IMPROVEMENTS TO RESOURCE PROTECTION STANDARDS

- **None:** All evaluated standard provides rigorous resource protection.


MB 1: Lauria Brothers Public Access
MB 2: Lauria Brothers Gateway Improvements
MB 3: Dennis Run Green Corridor 2,654 ft.
MB 4: Mortonville Road Trail 2,140 ft.
South Coatesville
East Fallowfield
MB 1
MB 2
MB 3
MB 4
Mortonville RD
Hall Hill RD
S Brandywine AV
Phoenix CT
Goosetown RD
Woodward RD
Union ST
Meredith CT
Modena RD
Rays WY
Hephzibah Hill RD
Morning Star LA
N Brandywine AV
Lloyd ST
Fulton ST
Mary ST
Clinton ST
Johnson ST
Filbert ST
Baker ST
Belmar ST
Woodland AV
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Recreation corridor
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Data sources: Roads, Railroads, Streams, Utility lands, Municipal boundaries, Public school lands, State lands, County lands, Municipal lands, Lands owned by land trusts - Chester County GIS Department, 2011, 2013
Map created: July 15, 2013 Last revised: October 24, 2014
Modena Borough
Project Portfolio
BRANDYWINE CREEK Greenway

MODENA BOROUGH

MB 1

Project Name

Lauria Brothers—Public Access

Key Partners

East Fallowfield Township, Chester County, DCNR, DEP

Project Focus and Location

To obtain permission for public access to the Lauria Brothers property on the West Branch of the Brandywine.

- The property is a former superfund site that, if safe, might be used as a passive park
- Create a new gateway to the greenway at Modena Borough/East Fallowfield Township
- Provide passive open space, picnic area, footpath close to urban areas
- Passive open space
- Public access through easement or lease agreement
- Opportunity to raise awareness of water quality
- Short term need

Accomplishments to Date

– Informal discussion among Modena Borough Council

– Identified as future open space on Recreation and Trail Map 4.1 in the Modena Borough Comprehensive Plan

Next Steps

– Research superfund status

– Initiate discussions with land owner

– Establish a vision and partners

– Real estate appraisal

– Pursue funding with Chester County, DCNR, private donations

– 1 year to negotiate access agreement with landowner

MODENA BOROUGH

MB 2

Project Name

Lauria Brothers Gateway—Improvements

Key Partners

Modena Borough, East Fallowfield Township, Chester County, DCNR, DEP, Brandywine Conservancy.

Project Focus and Location

To provide park amenities and other improvements near the Lauria Brothers Park on the West Branch of the Brandywine.

- Trailhead kiosk
- Public parking at nearby site
- Interpretive signage
- Orientation maps
- Greenway guides
- Bicycle parking
- Picnic facilities/seating
- Portable restrooms
- Creek access/fishing area/viewing area
- Long term need after public access is negotiated

Accomplishments to Date

– Informal discussion among Modena Borough Council

– Informal discussion with local business to provide an alternative gateway location along the Brandywine

– Identified as future open space on Recreation and Trail Map 4.1 in the Modena Borough Comprehensive Plan

– Explore opportunities for parking and public access from adjacent properties

– Conceptual site design

Next Steps

– Assemble partners

– Pursue funding with Chester County, DCNR, private donations

– 2 years to plan and implement

MODENA BOROUGH

MB 3

Project Name

Dennis Run Green Corridor

Key Partners

Modena Borough, South Coatesville Borough, East Fallowfield Township, Chester County Conservation District, Brandywine Valley Association, Brandywine Conservancy, DCNR

Project Focus and Location

To work with landowners to conserve and protect the natural resources along Dennis Run.

- 2,654 linear feet
- Conservation easements
- Restoration of degraded areas
- Habitat enhancement
- BMPs for water quality
- Fencing
- Signage
- Ongoing

Accomplishments to Date

– Informal discussion among Modena Borough Council members

Next Steps

– Begin landowner outreach regarding conservation easements

– Identify erosion-prone areas

– Pursue partners and funding

– 10 years to achieve permanent protection

MODENA BOROUGH

MB 4

Project Name

Mortonville Road Trail

Key Partners

East Fallowfield Township, Chester County Conservation District, Brandywine Valley Association, Brandywine Conservancy, DCNR, DVRPC, South Coatesville Borough

Project Focus and Location

To continue the Mill Trail along Mortonville Road to the Lauria Brothers Gateway and into East Fallowfield.

- 2,140 linear feet
- Line striping
- Signage
- Banners
- Short term need in concert with completion of the Mill Trail

Accomplishments to Date

– Informal discussion among Modena Borough Council members

– Sections of Mortonville Road are abandoned and may be suitable for trail use

Next Steps

– Begin landowner outreach regarding trail concept

– Cultivate partners

– Pursue funding

– 5 years to establish the trail

Brandywine Creek Greenway
Functions Checklist

NEWLIN TOWNSHIP

GREENWAY THEME MAPS	POSSIBLE GREENWAY FUNCTIONS	CHECK ☑ TOP 6
NATURAL FEATURES	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	
OPEN SPACE AND RECREATION	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, bicycle, and equestrian	
CULTURAL FEATURES	**Buffer** the Brandywine valley from new development	
	Preserve productive **agricultural** lands	
	Protect state- and municipally-designated **scenic** resources	
	Preserve nationally and municipally-designated **historic** structures and districts	

NOTE: ✓ Top six functions prioritized by this municipality during a regional workshop.

NEWLIN TOWNSHIP

Natural Resource Protection Ordinance Review

Date Reviewed: 7/22/13

Zoning Adopted: 3/11/13 Zoning Last Amended: None	SLDO Adopted: 3/1/13 SLDO Last Amended: None

RESOURCE AND PROTECTION STANDARDS

1. Steep Slopes (15-25%, 25%+): Rigorously Protected

- ZO 529 C: Establishes a Steep Slope Conservation Overlay District consisting of 20%+ slopes.
- ZO 529 D: Limits uses to outdoor recreation, forestry, agricultural uses, driveways, and yards, with specific exceptions. Special exception uses must be authorized by the Zoning Hearing Board.
- SLDO 601.F: Defines moderately steep slopes as 15% to 25%, and steep slopes as 25%+. Forbids disturbance of steeps slopes, with specific exceptions. Disturbance of moderately slopes shall be minimized.

2. Woodlands Protection: Somewhat Protected

- SLDO 601. D. Healthy woodlands exceeding one acre shall be preserved and designated as Greenway areas, to the maximum extent possible. Proposed site improvements shall be located, designed and constructed to minimize the loss or degradation of woodland areas. Disturbance of removal of woodlands occupying environmentally sensitive areas shall be undertaken only when approved by the Township. 7/22/13

3. Wetlands: Somewhat Protected

- SLDO 601.C.2: Disturbance of year-round wetlands shall be minimized. 7/22/13

4. Riparian Buffers: Not Protected

- None.

5. Floodplain: Rigorously Protected

- 410.B: Establishes a floodplain district, consisting of a Floodway, Flood Fringe, and "Approximate Flood Plain."
- 401 D. Disturbance is limited to "passive agriculture," natural habitat preserves, municipal use, recreational use, yards and impervious paving.

RECOMMENDED IMPROVEMENTS TO RESOURCE PROTECTION STANDARDS

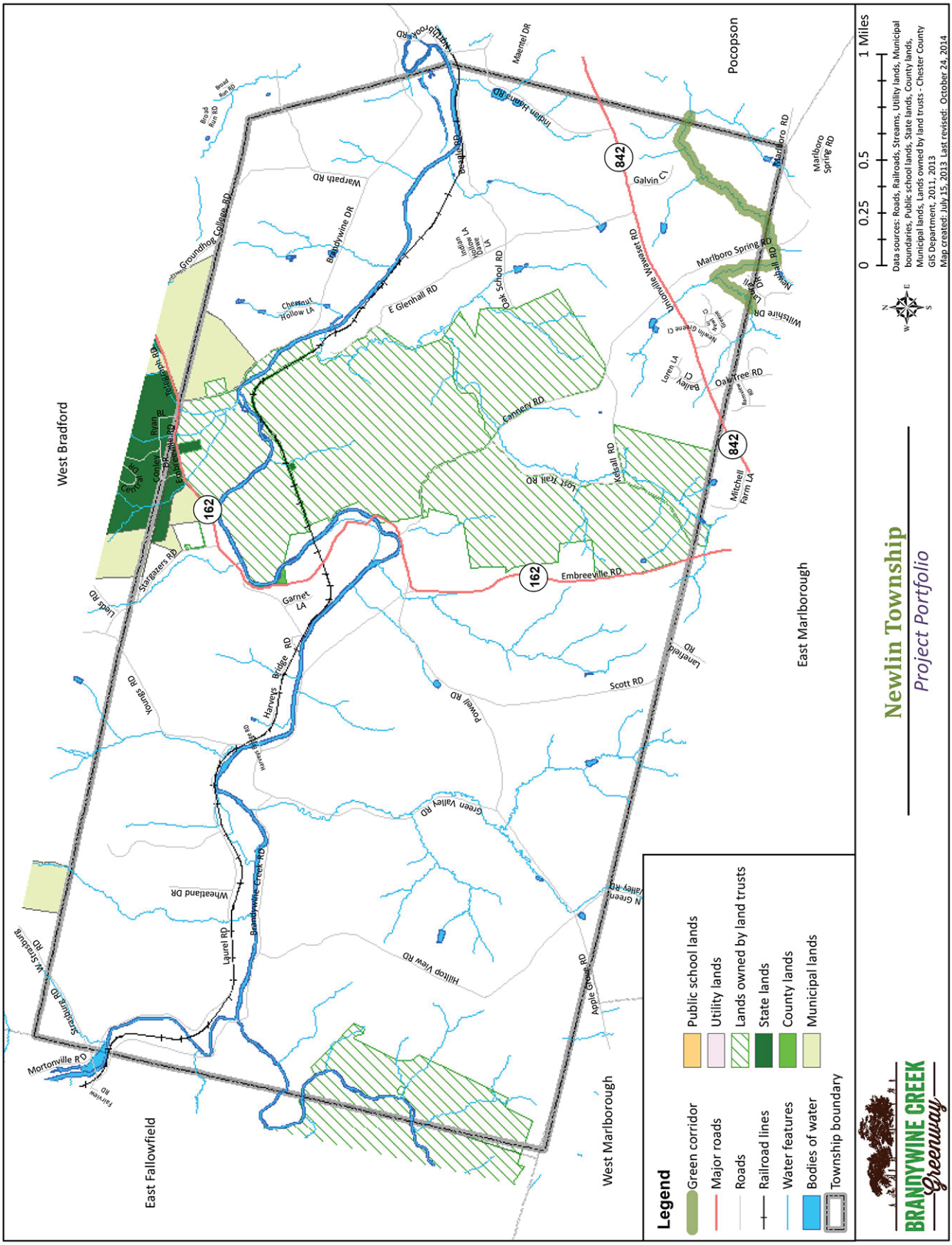
- **Woodlands:** Include regulations that limit disturbance of a woodlands to a maximum of 50%. Such regulations would establish a definition for "woodland" that is defined in a measurable way, such as a definition that is based on the number of trees within a wooded area that have grown to a specific diameter at breast height (dbh). Also, consider adding forestry regulations that: 1.) include exceptions for forestry or timber harvesting, as set forth in the MPC, and 2.) require a timber harvesting plan. Lastly, consider adding tree protection regulations that: 1.) include measures that protect the trees remaining on a construction site from construction activities that could be damaging to trees; 2.) prohibit disturbing specimen trees and PNDI sites unless there is no feasible alternative; and 3.) call for tree replacement if more than a specified area or number of trees are removed.
- **Wetlands:** Include regulations which establish specific wetlands identification and delineation criteria. Add regulations which prohibit the disturbance of a wetland except with state and federal permits. Lastly, consider adding regulations that establish a 50-foot wide margin around all wetlands. Within this 50-foot margin, land disturbance would be limited or prohibited.

continued on page 159

NEWLIN TOWNSHIP, CONT.

Natural Resource Protection Ordinance Review

- **Riparian Buffers:** Include regulations that establish a riparian buffer which extends 75 to 100 feet from both sides of the stream bank. Also, consider adding requirements that 1.) call for the re-vegetation of un-forested riparian buffers, and 2.) establish a two-tiered riparian buffer with stricter standards applied adjacent to streams. This two-tiered buffer would include a 25-35 foot-wide inner buffer in which disturbance is prohibited, and a 50 to 65 foot-wide outer buffer in which a maximum disturbance limit of 20% is allowed.


Newlin Township
Project Portfolio
Legend
Green corridor
Major roads
Roads
Railroad lines
Water features
Bodies of water
Township boundary
Public school lands
Utility lands
Lands owned by land trusts
State lands
County lands
Municipal lands
0 0.25 0.5 1 Miles
Data sources: Roads, Railroads, Streams, Utility lands, Municipal boundaries, Public school lands, State lands, County lands, Municipal lands, Lands owned by land trusts - Chester County GIS Department, 2011, 2013
Map created: July 15, 2013 Last revised: October 24, 2014
BRANDYWINE CREEK Greenway
West Bradford
East Fallowfield
West Marlborough
East Marlborough
Pocopson
Marlboro Spring RD
Embreeville RD
Scott RD
Powell RD
Green Valley RD
Hilltop View RD
Mortonville RD
Brandywine Creek RD
Laurel RD
Wheatland DR
Youngs RD
Stargazers RD
Garnet LA
Harveys Bridge RD
Lieds RD
Cannery RD
Lost Trail RD
Kelsall RD
Mitchell Farm LA
Oak Tree RD
Oak School RD
E Glenhall RD
Warpath RD
Groundhog College RD
Chestnut Hollow LA
Indian Hollow LA
Indian Hanna RD
Marlboro RD
Marlboro Spring RD
Newhall RD
Wiltshire DR
Galvin CT
Unionville Wawaset RD
Lanefield RD
Apple Grove RD
N Green Valley RD
Fairview RD
W Strasburg RD
Strasburg RD
Telegraph RD
Ryan BL
Embreeville RD
Central DR
Conley DR
Broad Run RD
Maentel DR
Beagle RD
Brandywine DR
Bailey CT
Loren LA
Newlin Greene CT
Newlin Greene RD
162
842

Brandywine Creek Greenway
Functions Checklist

PENNSBURY TOWNSHIP

GREENWAY THEME MAPS	POSSIBLE GREENWAY FUNCTIONS	CHECK ☑ TOP 6
NATURAL FEATURES	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	
OPEN SPACE AND RECREATION	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, bicycle, and equestrian	
CULTURAL FEATURES	**Buffer** the Brandywine valley from new development	✓
	Preserve productive **agricultural** lands	
	Protect state- and municipally-designated **scenic** resources	✓
	Preserve nationally and municipally-designated **historic** structures and districts	✓

NOTE: ✓ Top six functions prioritized by this municipality during a regional workshop.

PENNSBURY TOWNSHIP

Natural Resource Protection Ordinance Review

Date Reviewed: 7/15/13

Zoning Adopted: 12/10/12 Zoning Last Amended: No amendments	SLDO Adopted: 12/99 SLDO Last Amended: 10/24/02

RESOURCES AND PROTECTION STANDARDS

1. Steep Slopes (15-25%, 25%+): Rigorously Protected

- ZO 162-1503.B: For 15-25% slopes, no more than 30% disturbance. For 25%+ slopes, no more than 15% disturbance.
- SLDO 138-42.A.b: No earth moving or stripping of vegetation permitted on 25%+ slopes without supervisor's approval.

2. Woodlands Protection: Rigorously Protected

- ZO 162-1503.C.2: For residential use, no more than 30% of woodlands may be disturbed. For non-residential use, no more than 50% of woodlands may be disturbed. Applicant shall consider impacts to woodlands, especially those exceeding 10 acres.
- SLDO 138-41.F: Requires that all 6 in. or more DBH trees be replaced based on detailed guidelines.

3. Wetlands: Rigorously Protected

- ZO 162-1503.F: Wetlands shall not be disturbed except where federal and state permits have been obtained.
- ZO 162-1503.G: Wetland margins extend out 50 feet. No more than 20% of wetland margin shall be disturbed.

4. Riparian Buffers: Rigorously Protected, 7/15/13

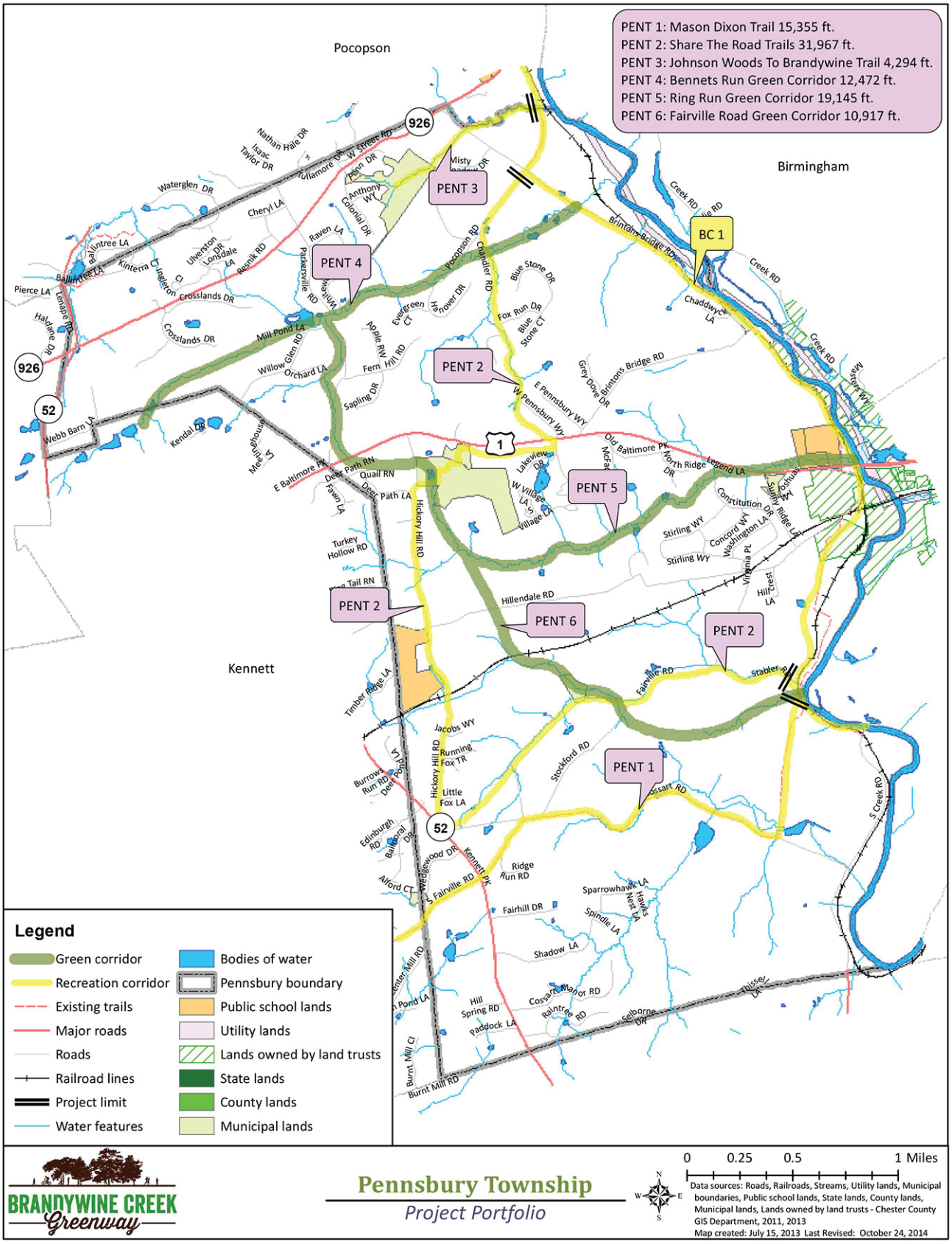
- ZO 162-1503.E: Minimum of 100 feet riparian buffer required with two zones. Inner "Zone 1" is 35 feet, and shall not be disturbed with specific exceptions. Outer "Zone 2" is up to 65 feet with specific exceptions and no more than 20% may be disturbed, with specific exceptions.

5. Floodplain: Rigorously Protected, 7/15/13

- ZO 162-1503.E: The 100-year floodplain shall not be disturbed, with specific exceptions.
- ZO 162-1503.A: The 100-year Flood Hazard District shall not be disturbed, except as specified in ZO 162-1504 and ZO Art. XVI.
- ZO 162-1504: Requires compliance with a Flood District Overlay.
- ZO Art. XVI: Requires compliance with Natural Resources Protection Standards.

RECOMMENDED IMPROVEMENTS TO RESOURCE PROTECTION STANDARDS

- **None:** All evaluated standards provide rigorous resource protection.



BRANDYWINE CREEK Greenway

Pennsbury Township

Project Portfolio

PENNSBURY TOWNSHIP

PENT 1

Project Name

Mason Dixon Trail

Key Partners

Chester County Planning Commission, Brandywine Conservancy, DCNR, Martin Foundation, private landowners, Chester County Trail Club, Wilmington Trail Club

Project Focus and Location

To permanently protect the Mason Dixon Trail as a public footpath.

- Negotiate and record trail easements with landowners along the existing trail route
- Coordinate with PennDOT and trail clubs
- Install directional signage
- Implement improvements such as fencing, bridges, signage
- Promote the trail for public use
- Short term need

Accomplishments to Date

– The trail is already in existence. Portions are on private property, and portions follow public roads

– The trail is shown in the municipal Comprehensive Plan

Next Steps

– Review the existing trail conditions

– Identify opportunities for improving the trail experience with directional signage, share the road signage, roadway maintenance

– 3 years from initial review to completion of improvements

PENNSBURY TOWNSHIP

PENT 2

Project Name

Share the Road Trails

Key Partners

Landowners, PennDOT, Brandywine Conservancy, Chester County

Project Focus and Location

To implement a network of rural footpaths that will follow local roads to connect neighborhoods with each other and the Brandywine Trail

- Route begins at Stabler Road/Creek Road and the Brandywine Trail, follows Stabler Road, Fairville Road, Cossart Road, Hickory Hill Road, Pennsbury Township Park, Route 1, Chandler Road, and Pocopson Road to Brintons Bridge Road and the Brandywine Trail
- Mobility study for pedestrian and bicycle use along the trail route
- Design and engineering
- Implementation could include signage, maintenance considerations, roadway markings, cartway or should widening, etc.
- Long term need

Accomplishments to Date

– The trail route is shown in the municipal Comprehensive Plan

Next Steps

– Divide the project into 3 or more phases

– Pursue funding for mobility study

– 2 years from securing funding for a mobility study to project completion

PENNSBURY TOWNSHIP

PENT 3

Project Name

Johnson Woods to Brandywine Trail

Key Partners

Conservation easement landowners with trail easements, PennDOT, Chester County, Brandywine Conservancy, landowners, HOAs

Project Focus and Location

To implement a footpath that would connect the trails at Johnson Woods Preserve to the Brandywine Trail at the outflow of Pocopson Creek.

- Route to follow existing trail easements, sidewalks and roads
- Pedestrian use only
- Short term need

Accomplishments to Date

– Trails exist in Johnson Woods Preserve

– Trail easements exist along portions of the trail

– The trail route is shown in the municipal Comprehensive Plan

Next Steps

– Begin discussions with key landowners and trail easement landowners

– Prepare a concept plan and implementation plan/cost estimate

– Secure funding

– 3 years from concept plan to completion

PENNSBURY TOWNSHIP

PENT 4

Project Name

Bennetts Run Green Corridor

Key Partners

Landowners, land trusts, developers

Project Focus and Location

To promote the conservation and connection of open space along key corridors in the township.

- Key corridors include Bennett's Run, Ring Run, and Craigs Mill Run
- Conservation easements
- Riparian buffer restoration
- Reforestation
- Land and water stewardship BMPs
- Long term need

Accomplishments to Date

– Consistent with map 6-3 Proposed Open Space Network as shown in the municipal Comprehensive Plan

– Significant areas already owned or eased by land trusts, owned by the township

Next Steps

– Partner with land trusts to cultivate conservation easements on land that is open and developable and to promote best land management practices

– Ongoing and long term

PENNSBURY TOWNSHIP

PENT 5

Project Name

Ring Run Green Corridor

Key Partners

Landowners, land trusts, developers

Project Focus and Location

To promote the conservation and connection of open space along key corridors in the township.

- Key corridors include Bennett's Run, Ring Run, and Craigs Mill Run
- Conservation easements
- Riparian buffer restoration
- Reforestation
- Land and water stewardship BMPs
- Long term need

Accomplishments to Date

– Consistent with map 6-3 Proposed Open Space Network as shown in the municipal Comprehensive Plan

– Significant areas already owned or eased by land trusts, owned by the township

Next Steps

– Partner with land trusts to cultivate conservation easements on land that is open and developable and to promote best land management practices

– Ongoing and long term

PENNSBURY TOWNSHIP

PENT 6

Project Name

Fairville Road Green Corridor

Key Partners

Landowners, land trusts, developers

Project Focus and Location

To promote the conservation and connection of open space along key corridors in the township.

- Key corridors include Bennett's Run, Ring Run, and Craigs Mill Run
- Conservation easements
- Riparian buffer restoration
- Reforestation
- Land and water stewardship BMPs
- Long term need

Accomplishments to Date

– Consistent with map 6-3 Proposed Open Space Network as shown in the municipal Comprehensive Plan

– Significant areas already owned or eased by land trusts, owned by the township

Next Steps

– Partner with land trusts to cultivate conservation easements on land that is open and developable and to promote best land management practices

– Ongoing and long term

Brandywine Creek Greenway
Functions Checklist

POCOPSON TOWNSHIP

GREENWAY THEME MAPS	POSSIBLE GREENWAY FUNCTIONS	CHECK ☑ TOP 6
NATURAL FEATURES	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	✓
OPEN SPACE AND RECREATION	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, bicycle, and equestrian	✓
CULTURAL FEATURES	**Buffer** the Brandywine valley from new development	✓
	Preserve productive **agricultural** lands	
	Protect state- and municipally-designated **scenic** resources	
	Preserve nationally and municipally-designated **historic** structures and districts	✓

NOTE: ✓ Top six functions prioritized by this municipality during a regional workshop.

POCOPSON TOWNSHIP

Natural Resource Protection Ordinance Review

Date Reviewed: 8/13/13

Zoning Adopted: 6/15/2006 Zoning Last Amended: 12/3/12	SLDO Adopted: 5/06 SLDO Last Amended: 5/9/11

RESOURCE AND PROTECTION STANDARDS

1. Steep Slopes (15-25%, 25%+): Rigorously Protected

- ZO 250-6: Defines moderately steep slopes as 10 to 20%, very steep slopes as 20%+, and steep slope margins as within 25 feet upslope of any steep slope
- ZO 250-87.D: Up to 25% of moderately steep slopes or steep slope margins may be disturbed. Up to 10% of very steep slopes may be disturbed. Land use on very steep slopes is limited to forestry, driveways, and trails.

2. Woodlands Protection: Rigorously Protected

- ZO 250-6: Defines woodlands as tree masses of 0.25 acres or more. Designates 3 classifications of woodlands as delineated on the approved Township Woodland Classification Map.
- ZO 250-87.K: Up to 15% of Class I or Class II woodland may be disturbed. Up to 25% of any Class III Woodland may be disturbed.

3. Wetlands: Rigorously Protected

- ZO 250-6: Defines "Riparian Buffer" in 2 zones. Zone 1 (Inner Riparian Buffer) extends out 15 feet from wetlands, and includes very steep slopes up to 75 feet Zone 2 (Outer Riparian Buffer) extends out 75 feet from wetlands.
- ZO 250-87.B: Wetlands may only be disturbed as allowed by state and federal permits.

4. Riparian Buffers: Rigorously Protected

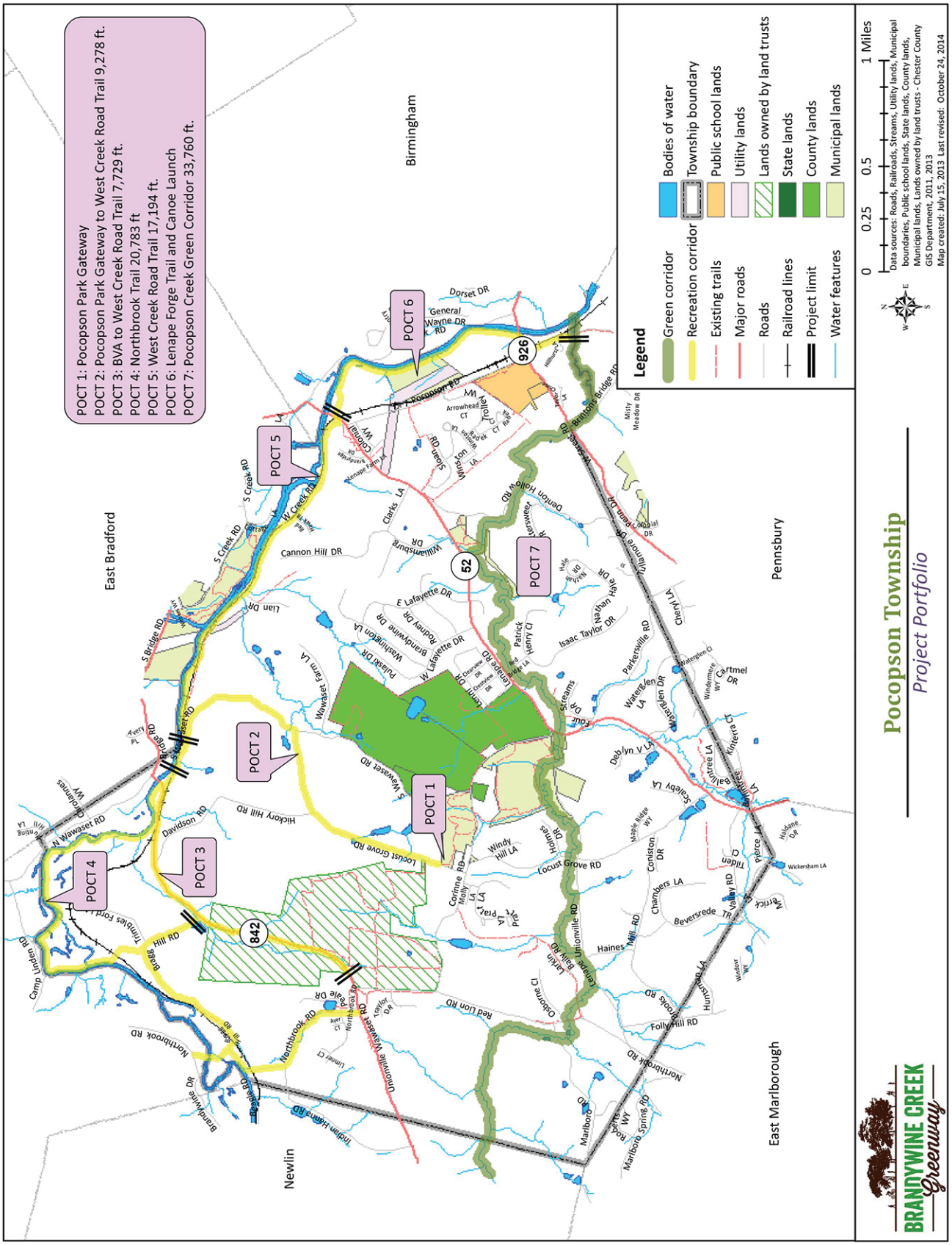
- ZO 250-6: Defines "Riparian Buffer" in 2 zones. Zone 1 (Inner Riparian Buffer) extends out 25 feet from any watercourse, and includes very steep slopes up to 100 feet Zone 2 (Outer Riparian Buffer) extends out 100 feet from any watercourse.
- ZO 20-87.F: For Zone 1, no disturbance is permitted. For Zone 2, up to 15% may be disturbed.

5. Floodplain: Rigorously Protected

- ZO 250-31.A: Establishes a "Floodplain Conservation District" that includes the floodway, flood fringe, and general floodplain area.
- ZO 250-38.C: Limits land uses to agriculture, recreation, yards, and forestry, with specific exceptions.

RECOMMENDED IMPROVEMENTS TO RESOURCE PROTECTION STANDARDS

- **None:** All evaluated standards provide rigorous resource protection.


POCT 1: Pocopson Park Gateway
POCT 2: Pocopson Park Gateway to West Creek Road Trail 9,278 ft.
POCT 3: BVA to West Creek Road Trail 7,729 ft.
POCT 4: Northbrook Trail 20,783 ft
POCT 5: West Creek Road Trail 17,194 ft.
POCT 6: Lenape Forge Trail and Canoe Launch
POCT 7: Pocopson Creek Green Corridor 33,760 ft.
Legend
Green corridor
Recreation corridor
Existing trails
Major roads
Roads
Railroad lines
Project limit
Water features
Bodies of water
Township boundary
Public school lands
Utility lands
Lands owned by land trusts
State lands
County lands
Municipal lands
0 0.25 0.5 1 Miles
Data sources: Roads, Railroads, Streams, Utility lands, Municipal boundaries, Public school lands, State lands, County lands, Municipal lands, Lands owned by land trusts - Chester County GIS Department, 2011, 2013
Map created: July 15, 2013 Last revised: October 24, 2014
Pocopson Township
Project Portfolio
BRANDYWINE CREEK Greenway
Birmingham
East Bradford
Pennsbury
Newlin
East Marlborough
POCT 1
POCT 2
POCT 3
POCT 4
POCT 5
POCT 6
POCT 7
842
52
926

POCOPSON TOWNSHIP

POCT 1

Project Name

Pocopson Park Gateway

Key Partners

Pocopson Township, Chester County Parks and Recreation, DCNR

Project Focus and Location

To upgrade existing facilities and provide new facilities for visitors at the Pocopson Park

- Trailhead kiosk
- Interpretive signage
- Orientation maps
- Greenway guides
- Bicycle parking
- Drinking water
- Short term need

Accomplishments to Date

– Informal discussions within the Township Open Space Committee

Next Steps

– Prepare cost estimates

– Pursue funding

– Completion 1 year project after funding is secured

POCOPSON TOWNSHIP

POCT 2

Project Name

Pocopson Park Gateway to West Creek Road Trail

Key Partners

Pocopson Township, Chester County Parks and Recreation, DCNR, Brandywine Valley Association

Project Focus and Location

To implement planned trail segments in the Pocopson Township Community Trails Master Plan from the Pocopson Park Gateway to the West Creek Road Trail

- Natural surface trail
- Portions follow road
- Portions off road
- Short term need

Accomplishments to Date

– Feasibility study and cost estimates completed

– Existing trail easements in place

Next Steps

– Coordinate partners

– Negotiate with landowners for trail easement

– Pursue funding

– 3 years to implement after funding is secured

POCOPSON TOWNSHIP

POCT 3

Project Name

BVA to West Creek Road Trail

Key Partners

Pocopson Township, Chester County Parks and Recreation, Brandywine Valley Association, DCNR

Project Focus and Location

To implement planned trail segments in the Pocopson Township Community Trails Master Plan, 2010.
Implement trail segments:

- 10103, 10104, and 10105 along Unionville Wawaset Road
- Long term need

Accomplishments to Date

– Feasibility study and cost estimates completed

– One trail easement in place

Next Steps

– Coordinate with PennDOT

– Negotiate with landowners for trail easement

– Pursue funding

– 5 year project after funding is secured

POCOPSON TOWNSHIP

POCT 4

Project Name

Northbrook Trail

Key Partners

Pocopson Township, Chester County Parks and Recreation, Brandywine Valley Association, DCNR, landowners, Northbrook Canoe

Project Focus and Location

To implement planned trail segments in the Pocopson Township Community Trails Master Plan, 2010.
Implement trail segments:

- 10404 at Beagle Road
- 10403 at Northbrook Road
- 10501, 10502, 10503 at Bragg Hill Road
- 10601, 10602, 10603 along the Brandywine
- Long term need

Accomplishments to Date

– Feasibility study and cost estimates completed

– One trail easement in place

– One section complete

Next Steps

– Negotiate with landowners for trail easement

– Pursue funding

– 5 year project after funding is secured

POCOPSON TOWNSHIP

POCT 5

Project Name

West Creek Road Trail

Key Partners

Pocopson Township, Chester County Parks and Recreation, Brandywine Conservancy, DCNR

Project Focus and Location

To implement planned trail segments in the Pocopson Township Community Trails Master Plan, 2010.
Implement trail segments:

- 20302 at West Creek Road
- 20303 at West Creek Road
- Crossing at Route 52
- Add signage to existing trail segments
- Short term need

Accomplishments to Date

– Feasibility study and cost estimates completed

– One trail easement in place

– One section complete

Next Steps

– Negotiate with landowners for trail easements

– Pursue funding

– 2 year project after funding is secured

POCOPSON TOWNSHIP

POCT 6

Project Name

Lenape Forge Trail and Canoe Launch

Key Partners

Pocopson Township, Chester County Parks and Recreation, Brandywine Conservancy, DCNR, Lenape Forge, owner (n/f) Simon Pearce Studio, Northbrook Canoe.

Project Focus and Location

To implement improvements and planned trail segments on lands owned by Pocopson Township along the Brandywine south to Pocopson Creek.

- Implement trail segments 30101 and 30103 along the Brandywine near Lenape Forge as identified in the Trails Master Plan
- Parking
- Interpretive signage
- Canoe/kayak launch
- Fishing area
- Fish cleaning stations
- Seating
- Picnic tables
- Creek-side viewing areas
- Short term need

Accomplishments to Date

– Feasibility study for trail completed

– Informal discussions with Lenape Forge regarding access easement

Next Steps

– Negotiate shared parking with former Simon Pearce owner

– Site design and permitting

– Pursue funding

– 2 year project after funding and easement is secured

POCOPSON TOWNSHIP

POCT 7

Project Name

Pocopson Creek Green Corridor

Key Partners

Pocopson Township, Brandywine Conservancy, DCNR, landowners

Project Focus and Location

To conserve and enhance the Pocopson Creek Minor Corridor

- Reforestation
- Riparian Buffer restoration
- Interpretive signage
- Viewing areas
- Fishing access
- Acquire trail easements as identified in the Trails Master Plan for a natural surface footpath
- Long term need

Accomplishments to Date

– Feasibility study for trail completed

– Some trail easements in place

– Some trail sections completed

Next Steps

– Negotiate missing link trail easements

– Pursue funding

– Design and implementation

– 5 year project

Brandywine Creek Greenway
Functions Checklist

SOUTH COATESVILLE BOROUGH

GREENWAY THEME MAPS	POSSIBLE GREENWAY FUNCTIONS	CHECK ☑ TOP 6
NATURAL FEATURES	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	
OPEN SPACE AND RECREATION	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, bicycle, and equestrian	
CULTURAL FEATURES	**Buffer** the Brandywine valley from new development	
	Preserve productive **agricultural** lands	
	Protect state- and municipally-designated **scenic** resources	
	Preserve nationally and municipally-designated **historic** structures and districts	

NOTE: ✓ Top six functions prioritized by this municipality during a regional workshop.

SOUTH COATESVILLE BOROUGH

Natural Resource Protection Ordinance Review

Date Reviewed: 8/12/13

Zoning Adopted: 1982 Zoning Last Amended: 7/9/09	SLDO Adopted: 8/98 SLDO Last Amended: 10/14/03

RESOURCE AND PROTECTION STANDARDS

1. Steep Slopes (15-25%, 25%+): Rigorously Protected

- ZO 123-68: Establishes a "Steep Slope Conservation District" composed of slopes of 25%+.
- ZO 123-69: Limits land use to preserves, forestry, or yards.

2. Woodlands Protection: Somewhat Protected

- SLDO 101-44.1B: Requires the preservation of 12 in. DBH trees. For each 12 in. DBH tree removed, 1 tree of at least 2 in, DBH must be planted.
- Notes: Regs. do not detail what "preserved" means, and not clear if the mitigated tree must survive.

3. Wetlands: Not Protected

- None.

4. Riparian Buffers: Not Protected

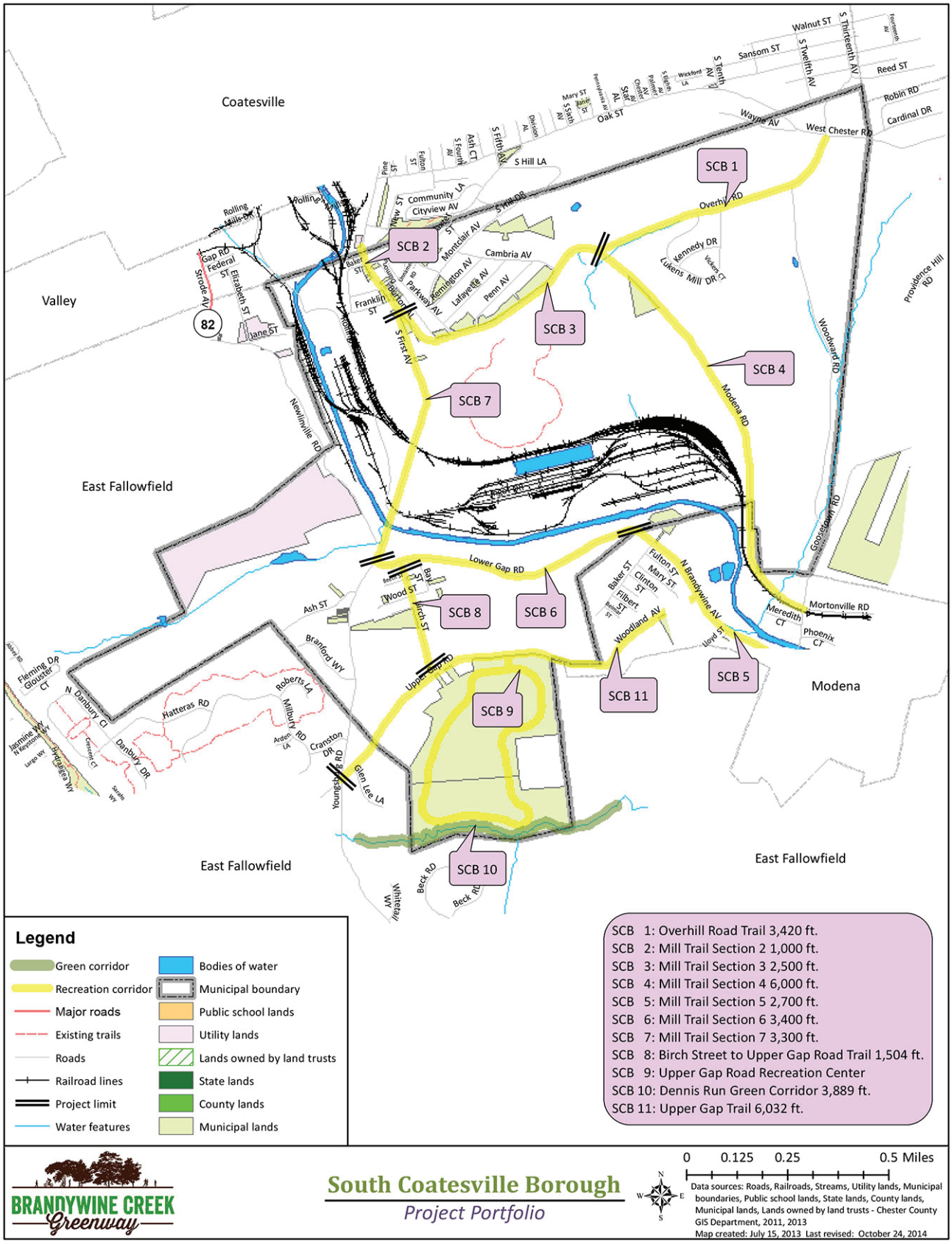
- None.

5. Floodplain: Rigorously Protected

- ZO 123-62: Establishes a "Flood Hazard Distinct" as areas subject to 100-year floods.
- ZO 123-63: Limits land uses to agriculture, recreation, pervious parking and other uses, with exceptions.

RECOMMENDED IMPROVEMENTS TO RESOURCE PROTECTION STANDARDS

- **Woodlands:** Include regulations that limit disturbance of a woodlands to a maximum of 50%. Such regulations would establish a definition for "woodland" that is defined in a measurable way, such as a definition that is based on the number of trees within a wooded area that have grown to a specific diameter at breast height (dbh). Also, consider adding forestry regulations that: 1.) include exceptions for forestry or timber harvesting, as set forth in the MPC, and 2.) require a timber harvesting plan. Lastly, consider adding tree protection regulations that: 1.) include measures that protect the trees remaining on a construction site from construction activities that could be damaging to trees; 2.) prohibit disturbing specimen trees and PNDI sites unless there is no feasible alternative; and 3.) call for tree replacement if more than a specified area or number of trees are removed.
- **Wetlands:** Include regulations which establish specific wetlands identification and delineation criteria. Add regulations which prohibit the disturbance of a wetland except with state and federal permits. Lastly, consider adding regulations that establish a 50-foot wide margin around all wetlands. Within this 50-foot margin, land disturbance would be limited or prohibited.
- **Riparian Buffers:** Include regulations that establish a riparian buffer which extends 35 to 50 feet from both sides of the stream bank. Also, consider adding requirements that call for the re-vegetation of un-forested riparian buffers.


Coatesville
Valley
East Fallowfield
Modena
SCB 1
SCB 2
SCB 3
SCB 4
SCB 5
SCB 6
SCB 7
SCB 8
SCB 9
SCB 10
SCB 11
Legend
Green corridor
Recreation corridor
Major roads
Existing trails
Roads
Railroad lines
Project limit
Water features
Bodies of water
Municipal boundary
Public school lands
Utility lands
Lands owned by land trusts
State lands
County lands
Municipal lands
SCB 1: Overhill Road Trail 3,420 ft.
SCB 2: Mill Trail Section 2 1,000 ft.
SCB 3: Mill Trail Section 3 2,500 ft.
SCB 4: Mill Trail Section 4 6,000 ft.
SCB 5: Mill Trail Section 5 2,700 ft.
SCB 6: Mill Trail Section 6 3,400 ft.
SCB 7: Mill Trail Section 7 3,300 ft.
SCB 8: Birch Street to Upper Gap Road Trail 1,504 ft.
SCB 9: Upper Gap Road Recreation Center
SCB 10: Dennis Run Green Corridor 3,889 ft.
SCB 11: Upper Gap Trail 6,032 ft.
BRANDYWINE CREEK Greenway
South Coatesville Borough
Project Portfolio
0 0.125 0.25 0.5 Miles
Data sources: Roads, Railroads, Streams, Utility lands, Municipal boundaries, Public school lands, State lands, County lands, Municipal lands, Lands owned by land trusts - Chester County GIS Department, 2011, 2013
Map created: July 15, 2013 Last revised: October 24, 2014

SOUTH COATESVILLE BOROUGH

SCB 1

Project Name

Overhill Road Trail

Key Partners

Coatesville, Chester County, DCNR, DCED, DVRPC

Project Focus and Location

To provide pedestrian and bicycle routes from residential neighborhoods in Coatesville and East Fallowfield Township to the Mill Trail in South Coatesville.

- 3,420 linear feet
- Line striping
- sidewalks
- Signage
- Long term need to begin once the Mill Trail is completed

Accomplishments to Date

– Feasibility examined in the Brandywine Trail Feasibility Study, 2012

Next Steps

– Bring together partners and secure local funding

– Apply for matching grants for implementation

– 1 year to implement

SOUTH COATESVILLE BOROUGH

SCB 2

Project Name

Mill Trail—Section 2

Key Partners

Modena Borough, Coatesville, Chester County Planning Commission, PennDOT, DVRPC, business community, schools

Project Focus and Location

To implement the Brandywine Trail as detailed in the Brandywine Trail Feasibility Study, 2012 from the South Coatesville line at Coatesville to Modena Road.

- 1,000 linear feet
- Line striping
- Signage
- Banners
- Wall murals
- Historic interpretive elements
- Short term need

Accomplishments to Date

– Feasibility Study is complete

– Matching funds in place

Next Steps

– PennDOT permits

– 2 years to completion

SOUTH COATESVILLE BOROUGH

SCB 3

Project Name

Mill Trail—Section 3

Key Partners

Modena Borough, Coatesville, Chester County Planning Commission, PennDOT, DVRPC, business community, schools

Project Focus and Location

To implement the Brandywine Trail as detailed in the Brandywine Trail Feasibility Study, 2012 from Modena Road/First Avenue to Overhill Road.

- 2,500 linear feet
- Line striping
- Signage
- Historic interpretive elements
- Gateway kiosk
- Short term need

Accomplishments to Date

– Feasibility Study is complete

– Matching funds in place

Next Steps

– PennDOT permits

– 2 years to completion

SOUTH COATESVILLE BOROUGH

SCB 4

Project Name

Mill Trail—Section 4

Key Partners

Modena Borough, Coatesville, Chester County Planning Commission, PennDOT, DVRPC, business community, schools

Project Focus and Location

To implement the Brandywine Trail as detailed in the Brandywine Trail Feasibility Study, 2012 from Modena Road/Overhill Road to the bridge over the Brandywine in Modena Borough. 6,000 linear feet.

- 6,000 linear feet
- Line striping
- Signage
- Historic interpretive elements
- Short term need

Accomplishments to Date

– Feasibility Study is complete

– Matching funds in place

Next Steps

– PennDOT permits

– 2 years to completion

SOUTH COATESVILLE BOROUGH

SCB 5

Project Name

Mill Trail—Section 5

Key Partners

Modena Borough, Coatesville, Chester County Planning Commission, PennDOT, DVRPC, business community, schools

Project Focus and Location

To implement the Brandywine Trail as detailed in the Brandywine Trail Feasibility Study, 2012 from Modena Bridge in Modena Borough to South Coatesville Borough Line.

- 2,700 linear feet
- Line striping
- Signage
- Historic interpretive elements
- Intermediate need

Accomplishments to Date

– Feasibility Study is complete

– Matching funds in place

Next Steps

– PennDOT permits

– 2 years to completion

SOUTH COATESVILLE BOROUGH

SCB 6

Project Name

Mill Trail—Section 6

Key Partners

Modena Borough, Coatesville, Chester County Planning Commission, PennDOT, DVRPC, business community, schools

Project Focus and Location

To implement the Brandywine Trail as detailed in the Brandywine Trail Feasibility Study, 2012 from South Coatesville Borough line/Lower Gap Road to South First Avenue.

- 3,400 linear feet
- Line striping
- Signage
- Historic interpretive elements
- Intermediate need

Accomplishments to Date

– Feasibility Study is complete

– Matching funds in place

Next Steps

– PennDOT permits

– 2 years to completion

SOUTH COATESVILLE BOROUGH

SCB 7

Project Name

Mill Trail—Section 7

Key Partners

Modena Borough, Coatesville, Chester County Planning Commission, PennDOT, DVRPC, business community, schools

Project Focus and Location

To implement the Brandywine Trail as detailed in the Brandywine Trail Feasibility Study, 2012 from Lower Gap Road along First Avenue to Modena Road.

- 3,300 linear feet
- Line striping
- Signage
- Historic interpretive elements
- Intermediate need

Accomplishments to Date

– Feasibility Study is complete

– Matching funds in place

Next Steps

– PennDOT permits

– 2 years to completion

SOUTH COATESVILLE BOROUGH

SCB 8

Project Name

Birch Street to Upper Gap Road Trail

Key Partners

Chester County Planning Commission, DCED, DVRPC, business community, bicycle clubs, YMCA, Chester County Heath Care community

Project Focus and Location

To implement the Brandywine Trail as detailed in the Brandywine Trail Feasibility Study, 2012 from Lower Gap Road along Birch Street and Upper Gap Road to municipal lands on Upper Gap Road.

- 1,504 linear feet
- Line striping
- Signage
- Long term need

Accomplishments to Date

– Included in the Brandywine Trail Feasibility Study, 2012

– Local roads

Next Steps

– Assemble partners and funding

– 1 year to implement

SOUTH COATESVILLE BOROUGH

SCB 9

Project Name

Upper Gap Road Recreation Center

Key Partners

Modena Borough, Chester County Parks and Recreation, DCNR, DCED, Chester County Health Care Community

Project Focus and Location

To design and construct a community recreation center and trails on lands owned by South Coatesville on Upper Gap Road. The Center would also serve as a location for seniors to meet and interact.

- Upper Gap Road Natural Area trails and scenic vistas
- Architectural design
- Land development process
- Long term need

Accomplishments to Date

– South Coatesville owns land on Upper Gap Road where a recreation center can be constructed

– This project has the political support of Borough Council

Next Steps

– Community workshop to determine needs

– Work with an architect to develop a building and site design

– Interior design

– Cost estimates

– Secure local funding

– Apply for grants

– 5 years to ribbon cutting

SOUTH COATESVILLE BOROUGH

SCB 10

Project Name

Dennis Run Green Corridor

Key Partners

Modena Borough, South Coatesville Borough, East Fallowfield Township, Chester County Conservation District, Brandywine Valley Association, Brandywine Conservancy, DCNR

Project Focus and Location

To conserve and protect the natural resources along Dennis Run.

- 3,889 linear feet
- Restoration of degraded areas
- Habitat enhancement
- BMPs for water quality
- Fencing
- Interpretive signage
- Ongoing need

Accomplishments to Date

– Property along Dennis Run is owned by the Borough

Next Steps

– Contact the Brandywine Conservancy regarding funding for reforestation

– Coordinate volunteer tree planting

– 2 years to complete a riparian buffer reforestation project

SOUTH COATESVILLE BOROUGH

SCB 11

Project Name

Upper Gap Trail

Key Partners

Modena Borough, South Coatesville Borough, East Fallowfield Township, Chester County, DCNR, Brandywine Conservancy

Project Focus and Location

To implement a trail from Upper Gap Road/Youngsburg Road along Youngsburg Road and Woodland Avenue to North Brandywine Avenue in Modena.

- 6,032 linear feet
- Line striping
- Signage
- Long term need once the Mill Trail is completed

Accomplishments to Date

– Feasibility examined in the Brandywine Trail Feasibility Study, 2012

– Municipal roads

Next Steps

– Meet with Modena Borough and East Fallowfield Township

– Pursue funding with Chester County, DCNR, PennDOT, private donations

– 1 year to design and implement

Brandywine Creek Greenway
Functions Checklist

UWCHLAN TOWNSHIP

GREENWAY THEME MAPS	POSSIBLE GREENWAY FUNCTIONS	CHECK ☑ TOP 6
NATURAL FEATURES	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	
OPEN SPACE AND RECREATION	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, bicycle, and equestrian	✓
CULTURAL FEATURES	**Buffer** the Brandywine valley from new development	✓
	Preserve productive **agricultural** lands	
	Protect state- and municipally-designated **scenic** resources	
	Preserve nationally and municipally-designated **historic** structures and districts	✓

NOTE: ✓ Top six functions prioritized by this municipality during a regional workshop.

UWCHLAN TOWNSHIP

Natural Resource Protection Ordinance Review

Date Reviewed: 8/7/13

Zoning Adopted: 5/10 Zoning Last Amended: 12/13	SLDO Adopted: 4/8/13 SLDO Last Amended: 12/9/1991

RESOURCE AND PROTECTION STANDARDS

1. Steep Slopes (15-25%, 25%+): Somewhat Protected

- SLDO 406.1: Requires an Environmental Impact Assessment (EIA) that depicts 0-15%, 15-25%, and 25%+ slopes.

2. Woodlands Protection: Somewhat Protected

- SLDO 406.1.F: EIA must map woodlands, hedgerows and specimen trees, and a woodland management plan must be provided.

3. Wetlands: Somewhat Protected

- ZO 301: Defines "Riparian Setback and Buffer Area" as extending out 50 feet from any wetland as determined by the ACOE.
- SLDO 406.1.e: Requires a wetland delineation report if any wetland disturbance is provided.

4. Riparian Buffers: Somewhat Protected

- ZO 301: Defines "Riparian Setback and Buffer Area" as extending out 50 feet from any permanent or impermanent water body.
- ZO 510.9: Prohibits all construction except pervious trails, undeveloped woods or meadows, passive recreation or accessory residential structure (such as decks), with specific exceptions.

5. Floodplain: Rigorously Protected

- 510.3: Defines floodplain as the 100-year floodplain.
- 501.8: Prohibits all structures and buildings within the floodplain, with specific exceptions.

RECOMMENDED IMPROVEMENTS TO RESOURCE PROTECTION STANDARDS

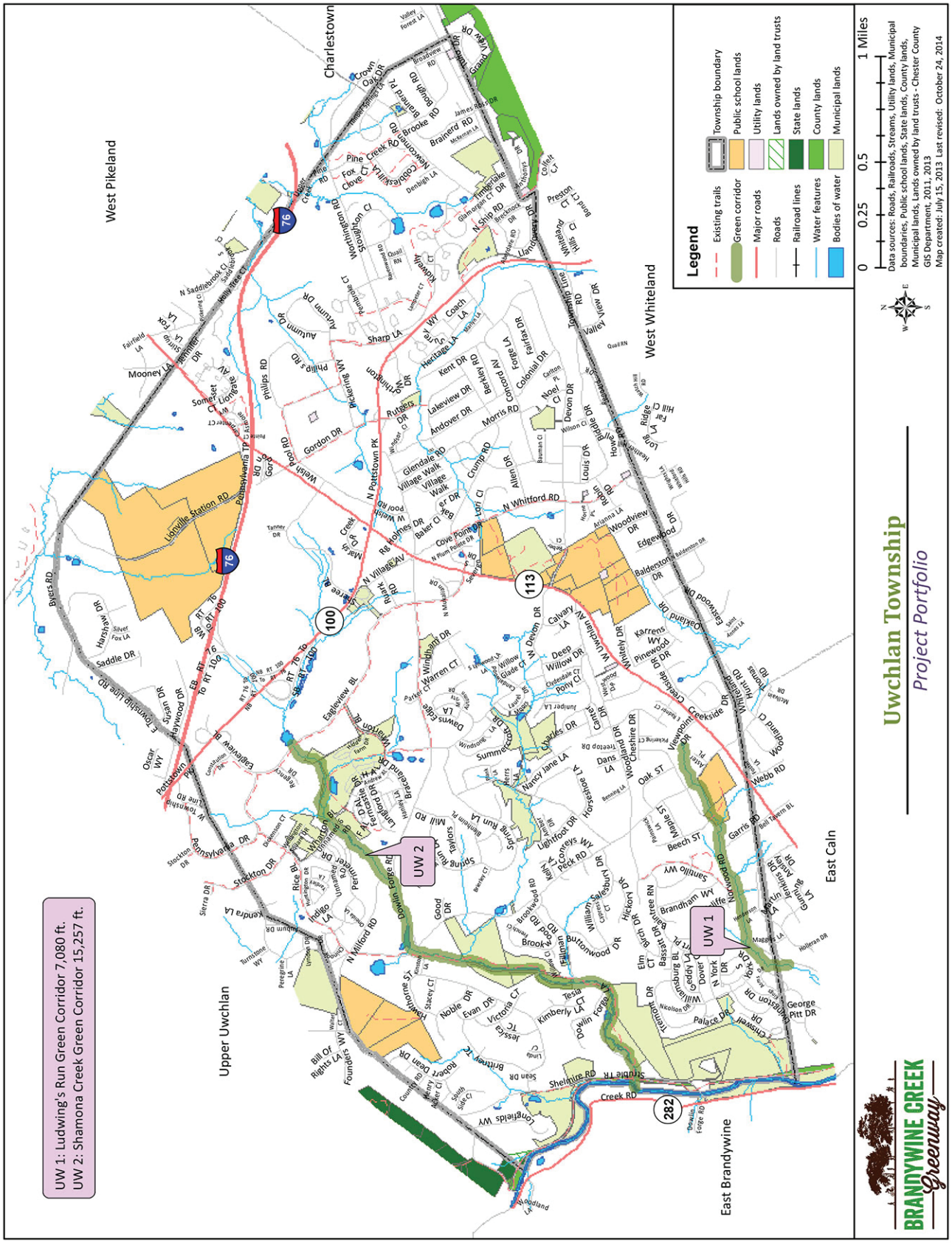
- **Steep Slopes:** maximum disturbance limitations of 30% for areas with slopes of 15 to 25%. Include maximum disturbance limitations of 15% for areas with slopes greater than 25%. Also consider adding steep slope regulations that include: 1.) a description of the slope measuring method; 2.) a listing of specific activities or uses prohibited on steep slopes; and 3.) standards that provide additional guidance for minimizing the disturbance, grading, and erosion of steep slopes.
- **Woodlands:** Include regulations that limit disturbance of a woodlands to a maximum of 50%. Such regulations would establish a definition for "woodland" that is defined in a measurable way, such as a definition that is based on the number of trees within a wooded area that have grown to a specific diameter at breast height (dbh). Also, consider adding forestry regulations that: 1.) include exceptions for forestry or timber harvesting, as set forth in the MPC, and 2.) require a timber harvesting plan. Lastly, consider adding tree protection regulations that: 1.) include measures that protect the trees remaining on a construction site from construction activities that could be damaging to trees; 2.) prohibit disturbing specimen trees and PNDI sites unless there is no feasible alternative; and 3.) call for tree replacement if more than a specified area or number of trees are removed.

continued on page 198

UWCHLAN TOWNSHIP, CONT.

Natural Resource Protection Ordinance Review

- **Wetlands:** Include regulations which establish specific wetlands identification and delineation criteria. Add regulations which prohibit the disturbance of a wetland except with state and federal permits. Lastly, consider adding regulations that establish a 50-foot wide margin around all wetlands. Within this 50-foot margin, land disturbance would be limited or prohibited.
- **Riparian Buffers:** Include regulations that establish a riparian buffer which extends 75 to 100 feet from both sides of the stream bank. Also, consider adding requirements that 1.) call for the re-vegetation of un-forested riparian buffers, and 2.) establish a two-tiered riparian buffer with stricter standards applied adjacent to streams. This two-tiered buffer would include a 25-35 foot-wide inner buffer in which disturbance is prohibited, and a 50 to 65 foot-wide outer buffer in which a maximum disturbance limit of 20% is allowed.


UW 1: Ludwing's Run Green Corridor 7,080 ft.
UW 2: Shamona Creek Green Corridor 15,257 ft.
UW 1
UW 2
Uwchlan Township
Project Portfolio
Legend
Existing trails
Green corridor
Major roads
Roads
Railroad lines
Water features
Bodies of water
Township boundary
Public school lands
Utility lands
Lands owned by land trusts
State lands
County lands
Municipal lands
0 0.25 0.5 1 Miles
Data sources: Roads, Railroads, Streams, Utility lands, Municipal boundaries, Public school lands, State lands, County lands, Municipal lands, Lands owned by land trusts - Chester County GIS Department, 2011, 2013
Map created: July 15, 2013 Last revised: October 24, 2014
West Pikeland
Charlestown
West Whiteland
East Caln
Upper Uwchlan
East Brandywine
BRANDYWINE CREEK Greenway

UWCHLAN TOWNSHIP

UW 1

Project Name

Ludwig's Run Green Corridor

Key Partners

East Caln Township, Chester County, PennDOT, DEP, DCNR, HOAs, land trusts, landowners

Project Focus and Location

To promote the conservation and preservation of water quality along Ludwig's Run along Norwood Road from the municipal boundary to Uwchlan Hills Elementary School.

- Conservation easements
- Riparian buffer restoration
- Invasive vegetation management
- Land and water stewardship BMPs
- Fish habitat restoration
- Stream bank stabilization
- Ongoing need

Accomplishments to Date

– Largely forested

– Parallels Norwood Road/highly visible

– Portions owned by HOAs

– Portions owned or eased by land trust

Next Steps

– Inventory existing resources

– Identify opportunities for conservation and preservation

UWCHLAN TOWNSHIP

UW 2

Project Name

Shamona Creek Green Corridor

Key Partners

Chester County, DEP, DCNR, HOAs, land trusts, landowners

Project Focus and Location

To promote the conservation and preservation of water quality along Shamona Creek from the Struble Trail to Eagleview.

- Conservation easements
- Riparian buffer restoration
- Invasive vegetation management
- Land and water stewardship BMPs
- Fish habitat restoration
- Stream bank stabilization
- Gateway kiosk and other improvements
- Ongoing need

Accomplishments to Date

– Existing footpaths and municipal park

– Largely forested

– Parallels Dowlin Forge Road/highly visible

– Portions owned by HOAs

– Portions owned by municipality

Next Steps

– Inventory existing resources

– Identify opportunities for conservation and preservation

Brandywine Creek Greenway
Functions Checklist

UPPER UWCHLAN TOWNSHIP

GREENWAY THEME MAPS	POSSIBLE GREENWAY FUNCTIONS	CHECK ☑ TOP 6
NATURAL FEATURES	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	✓
OPEN SPACE AND RECREATION	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, bicycle, and equestrian	✓
CULTURAL FEATURES	**Buffer** the Brandywine valley from new development	
	Preserve productive **agricultural** lands	✓
	Protect state- and municipally-designated **scenic** resources	
	Preserve nationally and municipally-designated **historic** structures and districts	

NOTE: ✓ Top six functions prioritized by this municipality during a regional workshop.

UPPER UWCHLAN TOWNSHIP

Natural Resource Protection Ordinance Review

Date Reviewed: 8/6/13

Zoning Adopted: 9/05 Zoning Last Amended: 11/19/12	SLDO Adopted: 9/2005 SLDO Last Amended: 9/17/2010

RESOURCE AND PROTECTION STANDARDS

1. Steep Slopes(15-25%, 25%+): Rigorously Protected

- ZO 200-107.A: Defines "Steep Slope Conservation District" as Prohibitive Slopes (25%+) and Precautionary Slopes (15% to 25%).
- ZO 200-107.D: Limits land uses to parks, forestry, driveways, and yards, with specific exceptions.

2. Woodlands Protection: Rigorously Protected

- SLDO 162-55.B: Woodland and hedgerow shall be minimized to no more than 25% to 50% depending on specific criteria. Woodland replacement is required for specified large-scale woodland disturbance activities.

3. Wetlands: Rigorously Protected

- SLDO 162-55.C: No wetlands shall be disturbed, except if permits have been obtained.

4. Riparian Buffers: Rigorously Protected

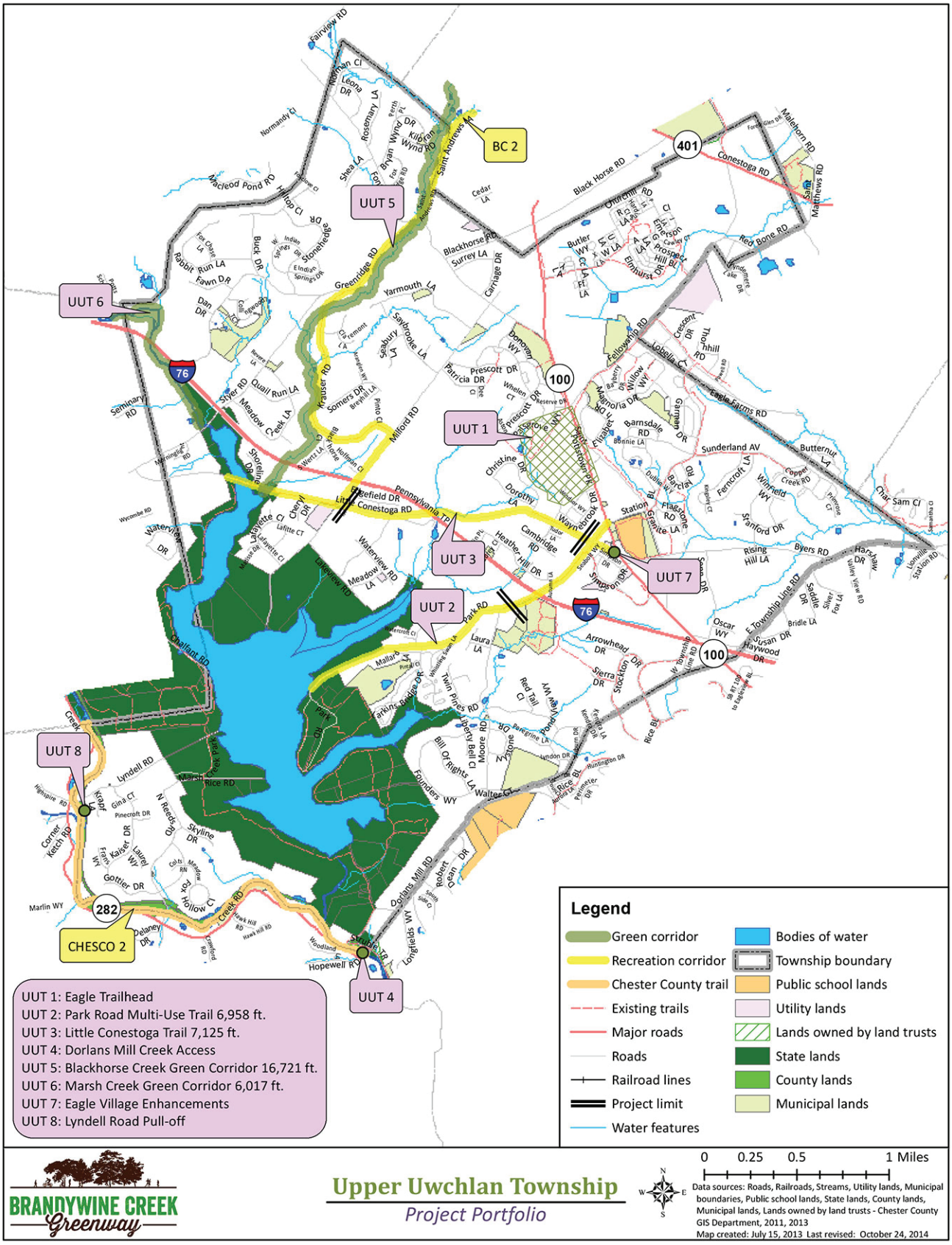
- SLDO 162.5: Riparian buffer extends 75 feet from a stream bank and includes wetlands, a 25 feet wetland buffer, and all hydric soils.
- SLDO 162-55.D: No disturbance permitted within the riparian buffer.

5. Floodplain: Rigorously Protected

- ZO 200-53.A: Defines "Flood Hazard District" as the floodway area, the flood fringe area, and the general floodplain area.
- ZO 200-53.B: Limits land uses to agriculture, recreation, and yards, with specific exceptions.

RECOMMENDED IMPROVEMENTS TO RESOURCE PROTECTION STANDARDS

- None: All evaluated standards provide rigorous resource protection.



BRANDYWINE CREEK Greenway

Upper Uwchlan Township

Project Portfolio

UPPER UWCHLAN TOWNSHIP

UUT 1

Project Name

Eagle Trailhead

Key Partners

Chester County, DCNR, PA DEP, local businesses

Project Focus and Location

To provide a destination trailhead at the Village of Eagle at its Upland Farms Park.

- Parking, bike racks, public restrooms, drinking water
- Orientation signage
- Outdoor recreation center with multi-use trail access to Marsh Creek State Park and the Struble Trail, hiking gateway to the Brandywine Trail
- Sidewalk connections into shops and businesses in Village of Eagle
- Short term need

Accomplishments to Date

– Property owned by the municipality includes house and meeting space

– Conceptual master plan completed and trail construction is scheduled to begin in fall 2014.

– Village Transportation Plan/Trail Connections – design and engineering of trails along Route 100 and Little Conestoga Road to be constructed in 2015.

– Park Road Trail Phase IV (Hickory Park to Marsh Creek State Park) plans approved by PennDOT and submitted for environmental review as of September 2014.

Next Steps

– Assemble partners and secure funding

– Prepare design and engineering plans—2 years

– Implementation—3 years

UPPER UWCHLAN TOWNSHIP

UUT 2

Project Name

Park Road Multi-Use Trail

Key Partners

DCNR, PennDOT, Chester County

Project Focus and Location

To extend the Park Road Trail from its terminus at Hickory Park to Marsh Creek State Park.

- Off-road, multi-use trail
- Pedestrian and bicycle use
- Short term need

Accomplishments to Date

– Engineering and design nearing completion

– Construction scheduled for 2015

– Funding secured

Next Steps

– Implementation—2 years

UPPER UWCHLAN TOWNSHIP

UUT 3

Project Name

Little Conestoga Trail

Key Partners

PennDOT, landowners, Chester County, DVRPC, local businesses

Project Focus and Location

To provide a hiking trail connection from the Village of Eagle and the Eagle Trailhead to the Brandywine Trail along a route that parallels Little Conestoga Road.

- Portions off-road
- Portions sidewalks
- Long term need after the Frame Tract is built out

Accomplishments to Date

– Frame Tract granted preliminary plan approval

– Consistent with Comprehensive Plan and with the Trails Master Plan

Next Steps

– Amend Comprehensive Plan and/or Official Map to show desired trail connection

– Discuss with developers of lands along Little Conestoga Road and Milford Road to provide a trail connection as part of a subdivision and land development plan application

UPPER UWCHLAN TOWNSHIP

UUT 4

Project Name

Dorlans Mill Creek Access

Key Partners

Marsh Creek State Park, DCNR, Chester County

Project Focus and Location

To enhance access to the Brandywine Creek for anglers, wading, and informal canoe launch

- Promote access to the creek for recreation and viewing along the Struble Trail
- Additional parking
- Signage
- Seating
- Portable restroom facilities
- Short term need

Accomplishments to Date

– Chester County has submitted preliminary plans to UUT for expansion of a parking facility and pedestrian crossings at Dorlans Mill

– Lands owned by Chester County and Pa DCNR/Marsh Creek State Park

Next Steps

– Assemble partners and prepare concept plan

– Secure funding

– Perform design, engineering—2 years

– Construction—2 years

Brandywine Creek Greenway
Functions Checklist

VALLEY TOWNSHIP

GREENWAY THEME MAPS	POSSIBLE GREENWAY FUNCTIONS	CHECK ☑ TOP 6
NATURAL FEATURES	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	✓
OPEN SPACE AND RECREATION	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, bicycle, and equestrian	
CULTURAL FEATURES	**Buffer** the Brandywine valley from new development	
	Preserve productive **agricultural** lands	
	Protect state- and municipally-designated **scenic** resources	✓
	Preserve nationally and municipally-designated **historic** structures and districts	

NOTE: ✓ Top six functions prioritized by this municipality during a regional workshop.

VALLEY TOWNSHIP

Natural Resource Protection Ordinance Review

Date Reviewed: 8/6/13

Zoning Adopted: 1/2/01 BEING UPDATED Zoning Last Amended: 4/16/13	SLDO Adopted: 6/20/89 SLDO Last Amended: 4/16/13

RESOURCE AND PROTECTION STANDARDS

1. Steep Slopes (15-25%, 25%+): Rigorously Protected

- ZO 318.2: For lots with 50% or more of 15-20% slopes, no disturbance, with specific exceptions.
- ZO 318.3: For lots with 20-25% slopes, no disturbance, with specific exceptions.
- ZO 318.4: For lots with 25%+ slopes, no disturbance, with specific exceptions.

2. Woodlands Protection: Somewhat Protected

- SLDO 611.02: Limits disturbing healthy trees of 6 in. DBH or more, unless they are within 15 feet of any planned improvement. Sets criteria for replacement trees.

3. Wetlands: Not Protected

- None.

4. Riparian Buffers: Not Protected

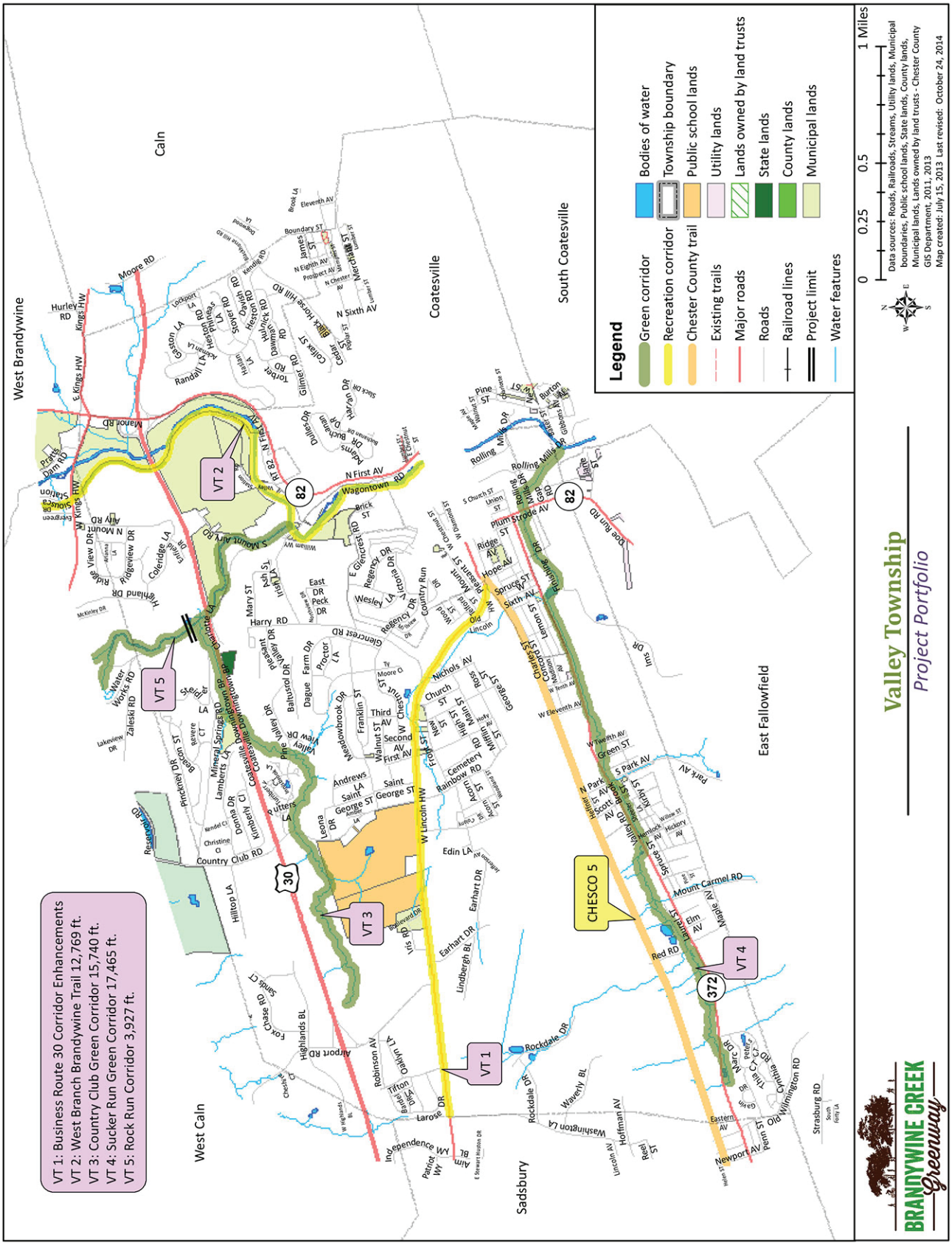
- None.

5. Floodplain: NA

- SLDO 610: References the Official Floodplain Ordinance of Valley Township.

RECOMMENDED IMPROVEMENTS TO RESOURCE PROTECTION STANDARDS

- **Woodlands:** Include regulations that limit disturbance of a woodlands to a maximum of 50%. Such regulations would establish a definition for "woodland" that is defined in a measurable way, such as a definition that is based on the number of trees within a wooded area that have grown to a specific diameter at breast height (dbh). Also, consider adding forestry regulations that: 1.) include exceptions for forestry or timber harvesting, as set forth in the MPC, and 2.) require a timber harvesting plan. Lastly, consider adding tree protection regulations that: 1.) include measures that protect the trees remaining on a construction site from construction activities that could be damaging to trees; 2.) prohibit disturbing specimen trees and PNDI sites unless there is no feasible alternative; and 3.) call for tree replacement if more than a specified area or number of trees are removed.
- **Wetlands:** Include regulations which establish specific wetlands identification and delineation criteria. Add regulations which prohibit the disturbance of a wetland except with state and federal permits. Lastly, consider adding regulations that establish a 50-foot wide margin around all wetlands. Within this 50-foot margin, land disturbance would be limited or prohibited.
- **Riparian Buffers:** Include regulations that establish a riparian buffer which extends 75 to 100 feet from both sides of the stream bank. Also, consider adding requirements that 1.) call for the re-vegetation of un-forested riparian buffers, and 2.) establish a two-tiered riparian buffer with stricter standards applied adjacent to streams. This two-tiered buffer would include a 25-35 foot-wide inner buffer in which disturbance is prohibited, and a 50 to 65 foot-wide outer buffer in which a maximum disturbance limit of 20% is allowed.
- **Floodplains:** Include regulations that prohibit both land disturbance and the construction of new structures within a floodplain (which includes both the floodway and the flood fringe.)


Valley Township
Project Portfolio
Legend
Green corridor
Recreation corridor
Chester County trail
Existing trails
Major roads
Roads
Railroad lines
Project limit
Water features
Bodies of water
Township boundary
Public school lands
Utility lands
Lands owned by land trusts
State lands
County lands
Municipal lands
0 0.25 0.5 1 Miles
Data sources: Roads, Railroads, Streams, Utility lands, Municipal boundaries, Public school lands, State lands, County lands, Municipal lands, Lands owned by land trusts - Chester County GIS Department, 2011, 2013
Map created: July 15, 2013 Last revised: October 24, 2014
VT 1: Business Route 30 Corridor Enhancements
VT 2: West Branch Brandywine Trail 12,769 ft.
VT 3: Country Club Green Corridor 15,740 ft.
VT 4: Sucker Run Green Corridor 17,465 ft.
VT 5: Rock Run Corridor 3,927 ft.
VT 1
VT 2
VT 3
VT 4
VT 5
CHESCO 5
West Brandywine
Caln
Coatesville
South Coatesville
East Fallowfield
West Caln
Sadsbury
BRANDYWINE CREEK Greenway

VALLEY TOWNSHIP

VT 1

Project Name

Business Route 30 Corridor Enhancements

Key Partners

Chester County, DCNR, DVRPC, PennDOT

Project Focus and Location

To design and construct streetscape improvements along Business Route 30 from Mount Alto Rd to Washington Ave.

- Sidewalks
- Street trees
- Bicycle lanes and parking
- Seating
- Lighting
- Signage
- Long term need

Accomplishments to Date

– Informal discussions with the Executive Director

Next Steps

– Assemble partners and secure funding

– Feasibility Study and Master Plan – 3 years

– Implementation - 3 years

VALLEY TOWNSHIP

VT 2

Project Name

West Branch Brandywine Trail

Key Partners

Chester County Parks and Recreation, DCNR, Coatesville, landowners, Arcelor Mittal, Courtyard by Marriott, West Brandywine Township

Project Focus and Location

To design, engineer and implement a multi-use trail from the River Walk Trail in Coatesville to Hibernia County Park via West Brandywine Township.

- Portions follow abandoned railroad
- Portions follow low volume roadways/share the road
- Portions through trail easements
- Short term need

Accomplishments to Date

– Consistent with Comprehensive Plan (TBC)

Next Steps

– Assemble partners and secure funding

– Feasibility Study and Master Plan – 3 years

– Implementation – 3 to 6 years

VALLEY TOWNSHIP

VT 3

Project Name

Country Club Green Corridor

Key Partners

Landowners, Brandywine Conservancy, Brandywine Valley Association,

Project Focus and Location

To protect water quality along the headwater streams to Rock Run south of Business Route 30 from Airport Road to the Brandywine.

- Promote riparian buffer restoration and reforestation of steep slopes where feasible
- Promote agricultural best management practices including stream fencing and controlled stream crossings for livestock
- Facilitate and promote the use of conservation easements, agricultural easements and TDR
- Reforestation
- Natural area restoration
- Short term need

Accomplishments to Date

– Consistent with Comprehensive Plan (TBC)

Next Steps

– Detailed mapping and analysis of opportunities

– Meet with partnering organizations

– Ongoing efforts required

VALLEY TOWNSHIP

VT 4

Project Name

Sucker Run Green Corridor

Key Partners

Chester County Parks and Recreation, DCNR, Coatesville

Project Focus and Location

To enhance impaired water quality along Sucker Run from Old Wilmington Road to Strode Ave.

- Promote riparian buffer restoration and reforestation of steep slopes where feasible
- Promote agricultural best management practices including stream fencing and controlled stream crossings for livestock
- Facilitate and promote the use of conservation easements, agricultural easements and TDR
- Reforestation
- Natural area restoration
- Short term need

Accomplishments to Date

– Consistent with Comprehensive Plan (TBC)

Next Steps

– Detailed mapping and analysis of opportunities

– Meet with partnering organizations

– Ongoing efforts required

VALLEY TOWNSHIP

VT 5

Project Name

Rock Run Green Corridor

Key Partners

West Caln Township, Chester County, DEP, land trusts, landowners

Project Focus and Location

To promote the conservation and preservation of water quality along both branches of Rock Run.

- Conservation easements
- Riparian buffer restoration
- Invasive vegetation management
- Land and water stewardship BMPs
- Stormwater BMPs
- Agricultural BMPs
- Fish habitat restoration
- Stream bank stabilization
- Ongoing need
- Short term need

Accomplishments to Date

– Portions in Coatesville Country Club

– Portions privately owned or eased by land trusts

– Portions owned or eased by land trust

Next Steps

– Inventory existing resources

– Identify opportunities for conservation and preservation

Brandywine Creek Greenway
Functions Checklist

WALLACE TOWNSHIP

GREENWAY THEME MAPS	POSSIBLE GREENWAY FUNCTIONS	CHECK ☑ TOP 6
NATURAL FEATURES	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	✓
OPEN SPACE AND RECREATION	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, bicycle, and equestrian	✓
CULTURAL FEATURES	**Buffer** the Brandywine valley from new development	
	Preserve productive **agricultural** lands	
	Protect state- and municipally-designated **scenic** resources	
	Preserve nationally and municipally-designated **historic** structures and districts	✓

NOTE: ✓ Top six functions prioritized by this municipality during a regional workshop.

WALLACE TOWNSHIP

Natural Resource Protection Ordinance Review

Date Reviewed: 8/7/13

Zoning Adopted: 5/05 Zoning Last Amended: 5/2/13	SLDO Adopted: 7/22/12 SLDO Last Amended: None

RESOURCE AND PROTECTION STANDARDS

1. Steep Slopes (15-25%, 25%+): Rigorously Protected

- ZO 1213.B: For 15-20% slopes, up to 10% disturbance and up to 5% impervious coverage is permitted.
- ZO 1213.C: For 20% slopes, no structures, and up to 5% impervious coverage is permitted.

2. Woodlands protection: Rigorously Protected

- SLDO 501.D.5: Limits Disturbance to no more than 10% of Class 1 forests, 15% of Class 2 forests, and 25% of Class 3 forest.

3. Wetlands: Somewhat Protected

- ZO 802.A: Defines "Flood Hazard and Wet Soils District" as including land within 50 feet of a waterbody or wetlands, and other features.
- ZO 807.A: Restricts uses to agriculture and forestry, with specific exceptions.

4. Riparian Buffers: Rigorously Protected

- SLDO 626.D: Establishes a buffer of at least 50 feet from streams and swales that "shall be maintained in a natural state."

5. Floodplain: Rigorously Protected

- ZO 802.A: Defines "Flood Hazard and Wet Soils District" as including 100-year floodplain, and other features.
- ZO 807.A: Restricts uses to agriculture and forestry, with specific exceptions.

RECOMMENDED IMPROVEMENTS TO RESOURCE PROTECTION STANDARDS

- **Wetlands:** Include regulations which establish specific wetlands identification and delineation criteria. Add regulations which prohibit the disturbance of a wetland except with state and federal permits. Lastly, consider adding regulations that establish a 50-foot wide margin around all wetlands. Within this 50-foot margin, land disturbance would be limited or prohibited.

WT 1: Valhalla Loop Trail 13,772 ft.
WT 2: Burgess Park Water Access
WT 3: Glenmoore Gateway Enhancements
WT 4: North Branch Indian Run Green Corridor 13,850 ft.
WT 5: West Branch Indian Run Green Corridor 11,192 ft
WT 6: Rose Pointe Green Corridor 8,564 ft.
WT 7: Marsh Creek Green Corridor 15,132 ft.
Legend
Green corridor
Recreation Corridor
Chester County trail
Existing trails
Major roads
Roads
Railroad lines
Project limit
Water features
Bodies of water
Township boundary
Public school lands
Utility lands
Lands owned by land trusts
State lands
County lands
Municipal lands
East Nantmeal
West Nantmeal
Upper Uwchlan
East Brandywine
West Brandywine
WT 1
WT 2
WT 3
WT 4
WT 5
WT 6
WT 7
CHESCO 2
0 0.25 0.5 1 Miles
Data sources: Roads, Railroads, Streams, Utility lands, Municipal boundaries, Public school lands, State lands, County lands, Municipal lands, Lands owned by land trusts - Chester County GIS Department, 2011, 2013
Map created: July 15, 2013 Last revised: October 24, 2014
Wallace Township
Project Portfolio
BRANDYWINE CREEK Greenway

WALLACE TOWNSHIP

WT 1

Project Name

Valhalla Loop Trail

Key Partners

Valhalla Brandywine Landowner/developer, adjacent landowners, PennDOT, Chester County

Project Focus and Location

To provide for a multi-use trail through the Valhalla Brandywine community that links into the future Struble Trail.

- Portions in future protected open space
- Portions follow existing roadways
- Constructed as part of the land development
- Long term need to be completed as a component of future land development, if it happens

Accomplishments to Date

– Recent land development proposal includes a multi-use trail network throughout the project

Next Steps

– Monitor land development applications

– Review plans for required pedestrian and trail connections

– Multi-year effort contingent upon the land development process

WALLACE TOWNSHIP

WT 2

Project Name

Burgess Park Water Access

Key Partners

Natural Lands Trust, DCNR, Chester County

Project Focus and Location

To provide access to the Brandywine Creek at Burgess Park.

- Parking facilities
- Recreational tail loop
- Canoe/kayak launch site
- Signage
- Picnic facilities
- Long term need

Accomplishments to Date

– Consistent with Comprehensive Plan

– Located along the future Northern Struble Trail

Next Steps

– Coordinate with key partners to secure funding

– Feasibility Study and Master Plan

– Design, engineering and cost estimate—3 years

– Implementation—3 years

WALLACE TOWNSHIP

WT 3

Project Name

Glenmoore Gateway Enhancements

Key Partners

Natural Lands Trust, PennDOT, landowners, Chester County, DVRPC, local businesses

Project Focus and Location

To provide pedestrian facilities in the village of Glenmoore that will allow safe routes for walking among neighborhoods, parks, trails and businesses.

- Portions sidewalks
- Portions Struble Trail
- Portions paved shoulder
- Streetscape enhancements
- Traffic calming
- Gateway kiosk
- Short term need

Accomplishments to Date

– Struble Trail Feasibility Study underway

– Consistent with Comprehensive Plan

Next Steps

– Assemble key partners and secure funding

– Feasibility Study and Conceptual Master Plan—2 years

– Design and engineering, cost estimates—2 years

– Implementation in phases contingent upon funding—3-6 years

WALLACE TOWNSHIP

WT 4

Project Name

North Branch Indian Run Green Corridor

Key Partners

Natural Lands Trust, Brandywine Conservancy, Brandywine Valley Association, landowners

Project Focus and Location

To preserve and enhance water quality along the North Branch Indian Run from Route 82 to the Brandywine.

- Promote riparian buffer restoration and reforestation of steep slopes where feasible
- Promote agricultural best management practices including stream fencing and controlled stream crossings for livestock
- Facilitate and promote the use of conservation easements, agricultural easements and TDR
- Short term need

Accomplishments to Date

– Currently not an impaired stream

– Majority of the creek has a forested buffer

Next Steps

– Promote conservation easements and agricultural easements

– Multi-year effort to cultivate landowners

WALLACE TOWNSHIP

WT 5

Project Name

West Branch Indian Run Green Corridor

Key Partners

Natural Lands Trust, Brandywine Conservancy, Brandywine Valley Association, landowners

Project Focus and Location

To preserve and enhance water quality along the West Branch Indian Run from the western municipal boundary to the Brandywine.

- Promote riparian buffer restoration and reforestation of steep slopes where feasible
- Promote agricultural best management practices including stream fencing and controlled stream crossings for livestock
- Facilitate and promote the use of conservation easements, agricultural easements and TDR
- Short term need

Accomplishments to Date

– Currently not an impaired stream

– Majority of the creek has a forested buffer

Next Steps

– Promote conservation easements and agricultural easements

– Multi-year effort to cultivate landowners

WALLACE TOWNSHIP

WT 6

Project Name

Rose Pointe Green Corridor

Key Partners

Natural Lands Trust, Brandywine Conservancy, Brandywine Valley Association, landowners

Project Focus and Location

To preserve and enhance water quality along an unnamed tributary to the Brandywine Creek from Rose Pointe Road to the Brandywine.

- Promote riparian buffer restoration and reforestation of steep slopes where feasible
- Promote agricultural best management practices including stream fencing and controlled stream crossings for livestock
- Facilitate and promote the use of conservation easements, agricultural easements and TDR
- Short term need

Accomplishments to Date

– Currently not an impaired stream

– Majority of the creek has a forested buffer

Next Steps

– Promote conservation easements and agricultural easements

– Multi-year effort to cultivate landowners

WALLACE TOWNSHIP

WT 7

Project Name

Marsh Creek Green Corridor

Key Partners

Natural Lands Trust, Brandywine Conservancy, Brandywine Valley Association, DCNR, Chester County, landowners

Project Focus and Location

To preserve and enhance water quality along Marsh Creek along the boundary of Wallace Township.

- Promote riparian buffer restoration and reforestation of steep slopes where feasible
- Promote agricultural best management practices including stream fencing and controlled stream crossings for livestock
- Facilitate and promote the use of conservation easements, agricultural easements and TDR
- Short term need

Accomplishments to Date

– Currently not an impaired stream

– Majority of the creek has a forested buffer

Next Steps

– Promote conservation easements and agricultural easements

– Multi-year effort to cultivate landowners

Brandywine Creek Greenway
Functions Checklist

WEST BRADFORD TOWNSHIP

GREENWAY THEME MAPS	POSSIBLE GREENWAY FUNCTIONS	CHECK ☑ TOP 6
NATURAL FEATURES	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	✓
OPEN SPACE AND RECREATION	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, bicycle, and equestrian	✓
CULTURAL FEATURES	**Buffer** the Brandywine valley from new development	
	Preserve productive **agricultural** lands	✓
	Protect state- and municipally-designated **scenic** resources	
	Preserve nationally and municipally-designated **historic** structures and districts	

NOTE: ✓ Top six functions prioritized by this municipality during a regional workshop.

WEST BRADFORD TOWNSHIP

Natural Resource Protection Ordinance Review

Date Reviewed: 7/22/13

Zoning Adopted: 5/27/2008 Zoning Last Amended: 5/14/13	SLDO Adopted: 8/8/2006 SLDO Last Amended: 8/9/11

RESOURCE AND PROTECTION STANDARDS

1. Steep Slopes, (15-25%, 25%+): Rigorously Protected

- ZO 810: Defines steep slopes as 20%+.7/22/13
- ZO 810.A: Limits uses to recreation, forestry, single-family dwellings (subject to requirements), and roads (subject to requirements).

2. Woodlands Protection: Somewhat Protected

- SLDO 529.B.:Existing vegetation, such as wood lots, hedgerows, and trees with a caliper of 2 in.+ at 3 feet, should be preserved wherever possible. Existing plants and trees with a caliper of 6 in.+ shall be preserved wherever possible during construction. 7/22/13
- ZO 811.A: Requires permit to remove 30+ trees with 3 in. DBH on any tract of land >1 acre

3. Wetlands: Not Protected

- None. 7/22/13

4. Riparian Buffers: Rigorously Protected

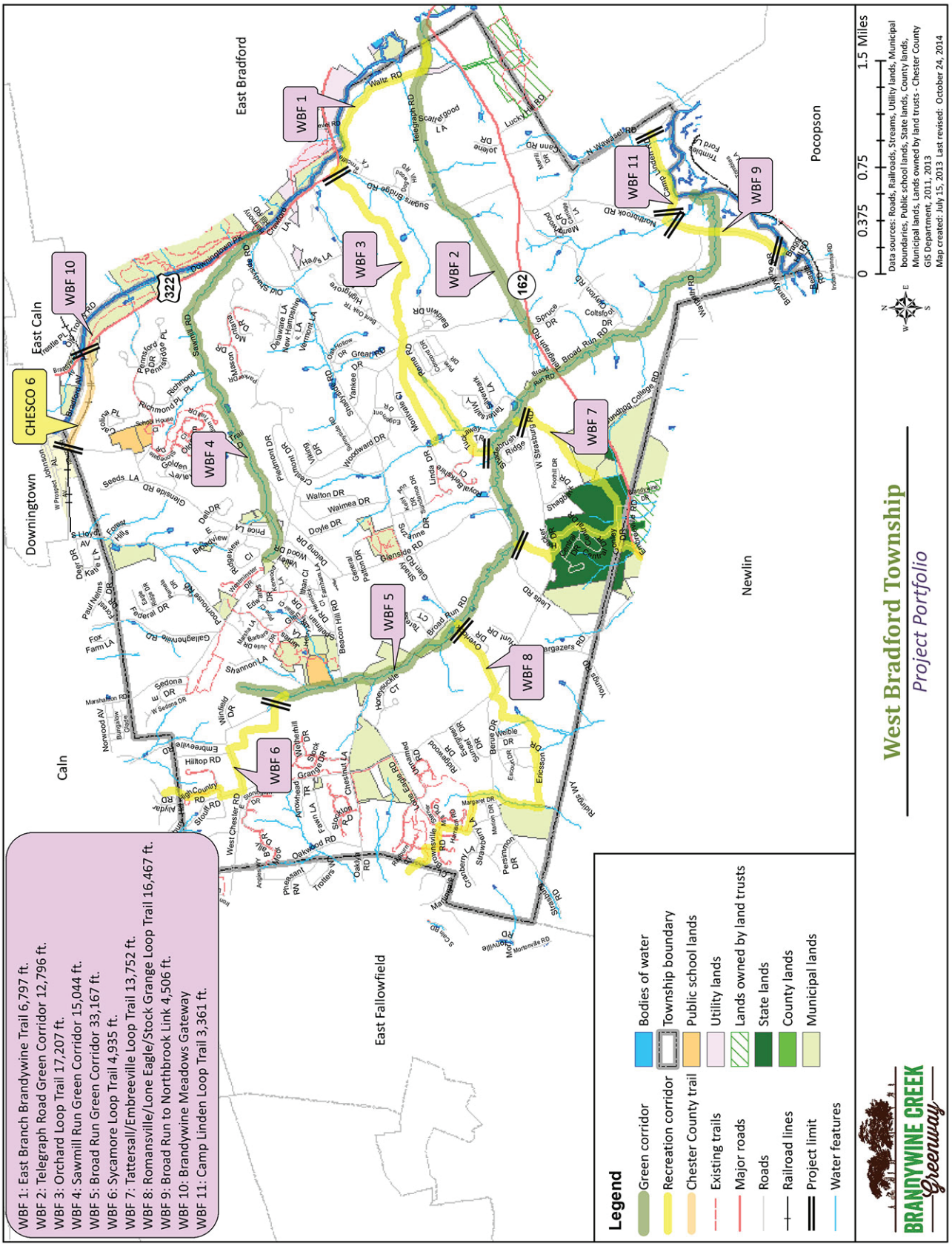
- SLDO 592.C.1: Establishes two Riparian Buffer Zones: Zone 1/ Inner Buffer extends al least 35 feet from water body. Zone 2/Outer Buffer extends from Zone 1 out to 70 feet 7/22/13
- SLDO 592.C.2: No disturbance in Zone 1, with specific exceptions. No more than 10% of Zone 2 shall be disturbed, with specific exceptions. For development on land with no vegetated riparian buffer, vegetation shall be established. 7/22/13

5. Floodplain: Rigorously Protected

- ZO 703.D: Establishes Flood Hazard Overlay District consisting of Floodway, Flood Fringe and "Approximate Floodplain.
- ZO 705.A: Uses limited to agriculture, pasture, orchards, forestry, recreation, game farm and nature preserves.

RECOMMENDED IMPROVEMENTS TO RESOURCE PROTECTION STANDARDS

- **Woodlands:** Include regulations that limit disturbance of a woodlands to a maximum of 50%. Such regulations would establish a definition for "woodland" that is defined in a measurable way, such as a definition that is based on the number of trees within a wooded area that have grown to a specific diameter at breast height (dbh). Also, consider adding forestry regulations that: 1.) include exceptions for forestry or timber harvesting, as set forth in the MPC, and 2.) require a timber harvesting plan. Lastly, consider adding tree protection regulations that: 1.) include measures that protect the trees remaining on a construction site from construction activities that could be damaging to trees; 2.) prohibit disturbing specimen trees and PNDI sites unless there is no feasible alternative; and 3.) call for tree replacement if more than a specified area or number of trees are removed.
- **Wetlands:** Include regulations which establish specific wetlands identification and delineation criteria. Add regulations which prohibit the disturbance of a wetland except with state and federal permits. Lastly, consider adding regulations that establish a 50-foot wide margin around all wetlands. Within this 50-foot margin, land disturbance would be limited or prohibited.


WBF 1: East Branch Brandywine Trail 6,797 ft.
WBF 2: Telegraph Road Green Corridor 12,796 ft.
WBF 3: Orchard Loop Trail 17,207 ft.
WBF 4: Sawmill Run Green Corridor 15,044 ft.
WBF 5: Broad Run Green Corridor 33,167 ft.
WBF 6: Sycamore Loop Trail 4,935 ft.
WBF 7: Tattersall/Embreeville Loop Trail 13,752 ft.
WBF 8: Romansville/Lone Eagle/Stock Grange Loop Trail 16,467 ft.
WBF 9: Broad Run to Northbrook Link 4,506 ft.
WBF 10: Brandywine Meadows Gateway
WBF 11: Camp Linden Loop Trail 3,361 ft.
Legend
Green corridor
Recreation corridor
Chester County trail
Existing trails
Major roads
Roads
Railroad lines
Project limit
Water features
Bodies of water
Township boundary
Public school lands
Utility lands
Lands owned by land trusts
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West Bradford Township
Project Portfolio
BRANDYWINE CREEK Greenway
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Map created: July 15, 2013 Last revised: October 24, 2014
CHESCO 6
WBF 1
WBF 2
WBF 3
WBF 4
WBF 5
WBF 6
WBF 7
WBF 8
WBF 9
WBF 10
WBF 11
East Caln
Downingtown
Caln
East Bradford
East Fallowfield
Newlin
Pocopson

WEST BRADFORD TOWNSHIP

WBFT 1

Project Name

East Branch Brandywine Trail

Key Partners

Chester County Planning Commission, Brandywine Conservancy, DCNR, Martin Foundation, private landowners

Project Focus and Location

To permanently protect the Brandywine Trail as a historic public footpath from Stroud Preserve to Route 322.

- Negotiate and record trail easements with landowners
- Implement improvements such as fencing, bridges, signage as required
- Promote the trail for public use
- Short term need

Accomplishments to Date

– The trail is already in existence on private property and along public roads

– Portions along private property are not open to the public

– Shown as proposed trail or sidewalk on Map 5-2 of Comprehensive Plan

– Shown in the West Bradford Township Greenways, Trails and Gateways Plan

Next Steps

– Feasibility Study to determine alignment options and costs

– Work with landowners to dedicate trail easements to West Bradford Township

– 3 years to complete feasibility study

– 6 years to implement

WEST BRADFORD TOWNSHIP

WBFT 2

Project Name

Telegraph Road Green Corridor

Key Partners

Chester County Planning Commission, Brandywine Conservancy, DCNR, private landowners, PennDOT

Project Focus and Location

To promote conservation and recreation for pedestrians and cyclists along Telegraph Road and to provide a connection to the Brandywine Trail.

- Encourage reforestation of open areas not used for agriculture
- Promote best land management practices
- Implement a share the road trail for pedestrians and cyclists
- Provide directional and interpretive signage for users
- Long term need

Accomplishments to Date

– Shown as proposed trail or sidewalk on Map 5-2 of Comprehensive Plan

– Shown in the West Bradford Township Greenways, Trails and Gateways Plan

Next Steps

– Mobility study to determine signage and safety needs

– Secure funding

– 3 years to complete study and implement improvements

WEST BRADFORD TOWNSHIP

WBFT 3

Project Name

Orchard Loop Trail

Key Partners

Chester County Planning Commission, Brandywine Conservancy, DCNR, private landowners, PennDOT

Project Focus and Location

To provide a pedestrian connection to the Brandywine Trail from residential areas located in the center of the Township.

- Prepare a feasibility study for a pedestrian footpath
- Negotiate trail easements with landowners, HOAs and developers
- Provide directional and interpretive signage for users
- Provide public parking facilities and signage at a trailhead
- Long term need

Accomplishments to Date

– Shown as proposed trail or sidewalk on Map 5-2 of Comprehensive Plan

Next Steps

– Secure funding

– Conduct a feasibility study

– Design and engineering

– 6 years to complete

WEST BRADFORD TOWNSHIP

WBFT 4

Project Name

Sawmill Run Green Corridor

Key Partners

Chester County Planning Commission, Brandywine Conservancy, DCNR, private landowners, PennDOT

Project Focus and Location

To promote conservation and recreation for pedestrians and cyclists along Sawmill Road/Sawmill Run. Provide a connection from the Township preserve at Price Lane to the Harmony Hill Gateway on Shadyside Road.

- Implement a share the road trail for pedestrians and cyclists
- Connect residential areas in the north-central region of the Township to the Brandywine Trail
- Promote preservation of woodlands and best management practices
- Provide directional and interpretive signage for users
- Provide public parking facilities and signage at trailhead
- Long term need

Accomplishments to Date

– Shown as proposed trail or sidewalk on Map 5-2 of Comprehensive Plan

– Much of the surrounding land is owned by HOA—trail easements in place

Next Steps

– Secure funding

– Conduct a mobility study

– Design and engineering

– 3 years to complete

WEST BRADFORD TOWNSHIP

WBFT 5

Project Name

Broad Run Green Corridor

Key Partners

Chester County Planning Commission, land trusts, DCNR, private landowners

Project Focus and Location

To promote conservation and provide recreation for pedestrians and cyclists along Broad Run Road. Create a greenway that will provide recreational opportunities for residential areas in the west of the Township.

- Portions to be share the road trail and portions off-road easements for pedestrians and cyclists
- Promote conservation easements, reforestation and riparian buffers
- Provide directional and interpretive signage for users
- Provide public parking facilities and signage at various trailheads
- Provide viewing areas and fishing access in the township park
- Short term need

Accomplishments to Date

– Shown as proposed trail or sidewalk on Map 5-2 of Comprehensive Plan

– Shown in the West Bradford Township Greenways, Trails and Gateways Plan

Next Steps

– Secure funding

– Conduct a feasibility study

– Design and engineering

– 6 years to complete

WEST BRADFORD TOWNSHIP

WBFT 6

Project Name

Sycamore Loop Trail

Key Partners

Chester County Planning Commission, Brandywine Conservancy, DCNR, private landowners, PennDOT

Project Focus and Location

To provide a pedestrian and bicycle connection to the Broad Run Minor Corridor from residential areas located in northwest corner of the Township and Caln Township.

- Portions to be off-road multi-use tails and portions to be sidewalks along public roads
- Future connection to the Chester Valley Trail
- Long term need

Accomplishments to Date

– Shown as proposed trail or sidewalk on Map 5-2 of Comprehensive Plan

– Shown in the West Bradford Township Greenways, Trails and Gateways Plan

Next Steps

– Secure funding

– Conduct a feasibility study

– Negotiate trail easements if applicable

– Design and engineering

– 6 years to complete

WEST BRADFORD TOWNSHIP

WBFT 7

Project Name

Tattersall/Embreeville Loop Trail

Key Partners

Chester County Planning Commission, Brandywine Conservancy, DCNR, private landowners, PennDOT (road crossings)

Project Focus and Location

To provide a pedestrian and bicycle connection between the Broad Run Minor Corridor, residential areas located near the Tattersall area, and Cheslen Preserve in Newlin Township.

- Off-road multi-use paved trails
- Long term need

Accomplishments to Date

– Shown as proposed trail or sidewalk on Map 5-2 of Comprehensive Plan

– Shown in the West Bradford Township Greenways, Trails and Gateways Plan

– Off-road segment completed through Tattersall HOA open space

– Portions of land owned by West Bradford Township

– Embreeville land development proposal is currently in sketch plan phase and the Township will require that trail connections be constructed

Next Steps

– Secure funding

– Conduct a feasibility study

– Negotiate trail easements if applicable

– Design and engineering

– 6 years to complete or as development occurs

WEST BRADFORD TOWNSHIP

WBFT 8

Project Name

Romansville/Lone Eagle/Stock Grange Loop Trail

Key Partners

Chester County Planning Commission, Brandywine Conservancy, DCNR, private landowners, PennDOT (road crossings)

Project Focus and Location

To provide a pedestrian and bicycle connection to the Broad Run Minor Corridor from Romansville and neighborhoods west of Lone Eagle Road.

- Portions to be off-road multi-use tails, portions to be sidewalks, and portions to occur along trail easements on privately-owned land
- Long term need

Accomplishments to Date

– Shown as proposed trail or sidewalk on Map 5-2 of Comprehensive Plan

– Shown in the West Bradford Township Greenways, Trails and Gateways Plan

– Portions completed at western end near Lone Eagle Road

– Portions along sidewalks to be completed in proposed subdivisions

Next Steps

– Secure funding

– Conduct a feasibility study

– Negotiate trail easements if applicable

– Design and engineering

– 6 years to complete or as development occurs

WEST BRADFORD TOWNSHIP

WBFT 9

Project Name

Broad Run to Northbrook Link

Key Partners

Chester County Planning Commission, DCNR, PennDOT

Project Focus and Location

To provide a pedestrian and bicycle connection to the Broad Run Minor Corridor from Camp Linden Loop Trail and Northbrook in Pocopson Township.

- Envisioned as a share the road trail
- Signage
- Line striping, signage
- Long term need

Accomplishments to Date

– Shown as proposed trail or sidewalk on Map 5-2 of Comprehensive Plan

– Shown in the West Bradford Township Greenways, Trails and Gateways Plan

Next Steps

– Secure funding

– Enter into discussions with PennDOT

– Design of signage and striping

– 3 years to complete

WEST BRADFORD TOWNSHIP

WBFT 10

Project Name

Brandywine Meadows Gateway

Key Partners

Chester County, DCNR, corporate sponsors, Eagle Scouts

Project Focus and Location

To provide trailhead facility improvements at the existing Brandywine Meadows Park.

- Gateway kiosk
- Interpretive signage
- Creek access and canoe launch site
- Short term need

Accomplishments to Date

– Greenway guide completed by Eagle Scout

– West Bradford Township owns the park which currently provides parking and trail facilities along the Brandywine

Next Steps

– Secure corporate or other funding

– 1 year to design and implement signage

– 3 years to design and construct canoe launch

WEST BRADFORD TOWNSHIP

WBFT 11

Project Name

Camp Linden Trail

Key Partners

Chester County Planning Commission, DCNR, PennDOT

Project Focus and Location

To provide a pedestrian and bicycle connection to the Broad Run Minor Corridor along Camp Linden Road (Wawaset Road to Northbrook Road).

- Envisioned as a share the road trail on an unpaved road
- Signage
- Long term need

Accomplishments to Date

– Shown as proposed trail or sidewalk on Map 5-2 of Comprehensive Plan

– Shown in the West Bradford Township Greenways, Trails and Gateways Plan

Next Steps

– Enter into discussions with PennDOT

– Secure corporate or other funding

– 1 year to design and implement signage

Brandywine Creek Greenway
Functions Checklist

WEST BRANDYWINE TOWNSHIP

GREENWAY THEME MAPS	POSSIBLE GREENWAY FUNCTIONS	CHECK ☑ TOP 6
NATURAL FEATURES	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	
OPEN SPACE AND RECREATION	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, bicycle, and equestrian	✓
CULTURAL FEATURES	**Buffer** the Brandywine valley from new development	
	Preserve productive **agricultural** lands	
	Protect state- and municipally-designated **scenic** resources	
	Preserve nationally and municipally-designated **historic** structures and districts	✓

NOTE: ✓ Top six functions prioritized by this municipality during a regional workshop.

WEST BRANDYWINE TOWNSHIP

Natural Resource Protection Ordinance Review

Date Reviewed: 8/14/13

Zoning Adopted: 8/15/07 Zoning Last Amended: 1/3/11	SLDO Adopted: 10/00 SLDO Last Amended: 10/15/09

RESOURCE AND PROTECTION STANDARDS

1. Steep Slopes (15-25%, 25%+): Rigorously Protected

- ZO 200-72: Establishes a "Steep Slope Conservation District" consisting of "Moderate Slope Districts" at 15 to 25%, and "Severe Slope Districts" at 25%+. For moderate slopes limits land uses to preserves, forestry, agriculture, yards and residential development, with specific exceptions. For severe slopes, limits land uses to residential yards, and up to 25% of common open space in a cluster design.

2. Woodlands Protection: Rigorously Protected

- SLDO 167-65: Requires woodland disturbance be minimized. Forbids removal of up to 8-in. DBH tree masses, unless "clearly necessary." Establishes a formula for when woodland replacement is required.

3. Wetlands: Rigorously Protected

- ZO 1-20: Defines Riparian Buffer as including areas within wetlands, areas extending out 25 feet from wetlands in headwaters, and areas extending out 15 feet, from all other wetlands.
- SLDO 167-64: For Riparian Buffers, allows no disturbance, except for forestry, vegetation management, agriculture and activities with a state permit, with specific exceptions.

4. Riparian Buffers: Rigorously Protected

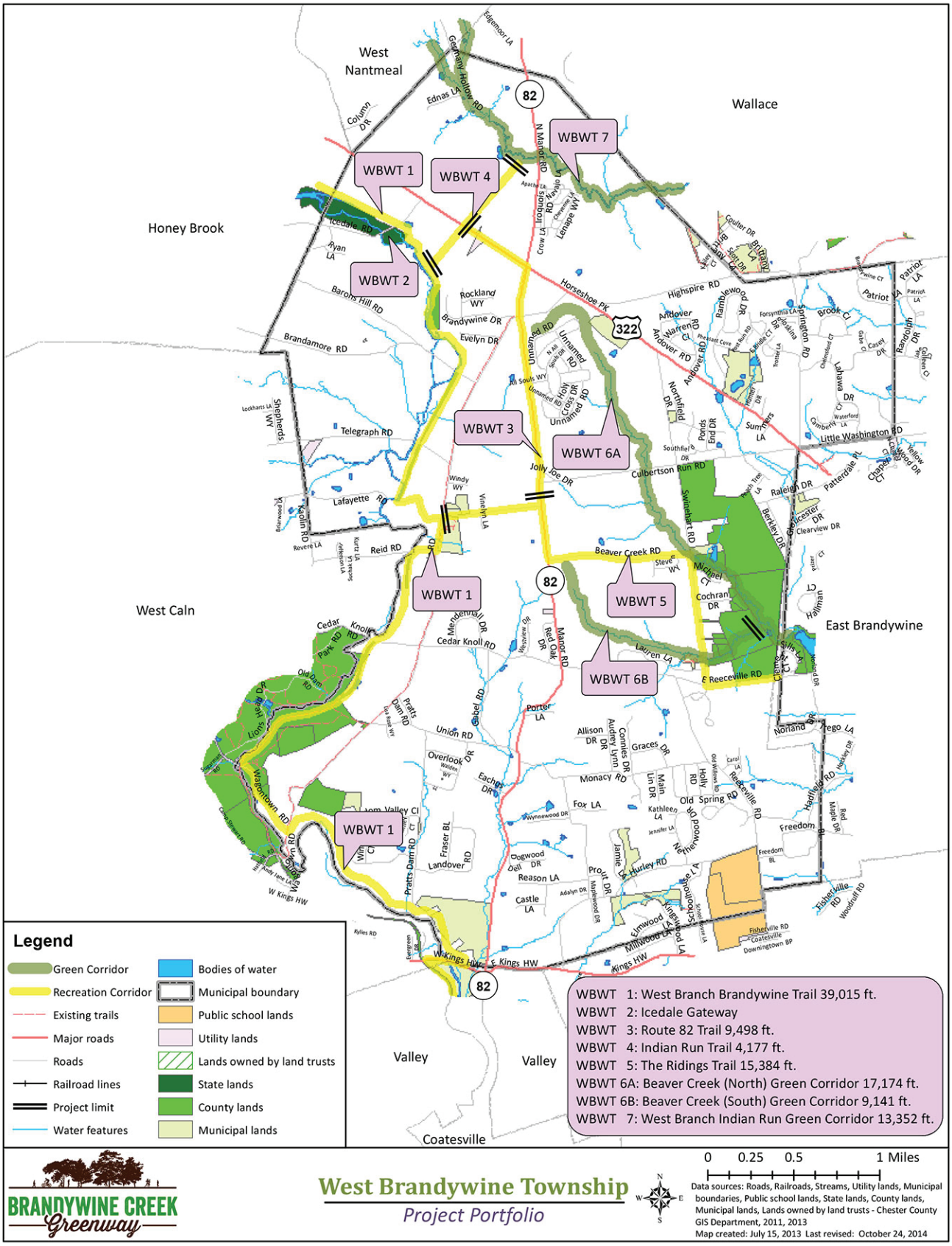
- ZO 1-20: Defines Riparian Buffer as extending out 100 feet from all headwaters waterways, and 75 ft, out from all other waterways; and areas within wetlands, areas extending out 25 feet from wetlands in headwaters, and areas extending out 15 feet, from all other wetlands.
- SLDO 167-64: For Riparian Buffers, allows no disturbance, except for forestry, vegetation management, agriculture and activities with a state permit, with specific exceptions.

5. Floodplain: Somewhat Protected

- ZO 200-54: Defines "Flood Plain District" as areas that experience 100-year flood, Floodway Areas, Flood Fringe Areas, and "General Flood Plain Areas."
- ZO 200-61: Limits use in "Flood Plain District" to agriculture, recreation, common open space, yards, outdoor events, public facilities and other uses, with specific exceptions.

RECOMMENDED IMPROVEMENTS TO RESOURCE PROTECTION STANDARDS

- **Floodplains:** Include regulations that prohibit both land disturbance and the construction of new structures within a floodplain (which includes both the floodway and the flood fringe.)



BRANDYWINE CREEK Greenway

West Brandywine Township

Project Portfolio

WEST BRANDYWINE TOWNSHIP

WBWT 1

Project Name

West Branch Brandywine Trail

Key Partners

Chester County, Hibernia County Park, DCNR, private landowners

Project Focus and Location

To study the feasibility of a multi-use trail along the West Branch of the Brandywine.

- Explore opportunities for a stone dust trail that would connect to Valley Township/Coatesville trails to the south and to Honey Brook Township trails to the north
- Portions abandoned rail line as a potential route
- Portions rural share the road trail
- Trail easements with private landowners, voluntary
- For pedestrians, cyclists, and equestrians
- Gateway kiosk at municipal campus
- Short term need

Accomplishments to Date

– Portions owned by Chester County

– Portions used informally by residents

– Shown on Map 8-1 in the municipal Comprehensive Plan

Next Steps

– Pursue partners and funding for a feasibility study

– 5 years for trail feasibility study, design, and implementation

WEST BRANDYWINE TOWNSHIP

WBWT 2

Project Name

Icedale Gateway

Key Partners

Chester County, PA DCNR, PA DEP,

Project Focus and Location

To provide site improvements for visitors and boaters at the Icedale Gateway.

- Trailhead kiosk
- Expanded public parking area
- Interpretive signage
- Orientation maps
- Bicycle parking
- Picnic facilities
- Seating
- Enhanced creek access for boating or fishing
- Dam removal
- Short term need

Accomplishments to Date

– Gravel parking area already in place

– Bridge condemned and road closed, suitable for trail and/or parking

Next Steps

– Begin landowner outreach regarding conservation easements

– Pursue partners and funding

– 5 years for trail feasibility study, design, and implementation

– 10 years to achieve permanent protection

WEST BRANDYWINE TOWNSHIP

WBWT 3

Project Name

Route 82 Trail

Key Partners

Archdiocese of Philadelphia, developers, PennDOT, Chester County, PECO, landowners, businesses

Project Focus and Location

To design and construct a multi-use trail along Route 82 from Route 322 to Lafayette Road.

- Project to be initiated by West Brandywine Township and implemented by the Archdiocese of Philadelpha Cemetery
- Grass trail/footpath
- Signage, fencing, landscaping, crosswalks
- Short term need

Accomplishments to Date

– Land development plans and approval includes a trail easement along Route 82

– The Archdiocese has agreed to underwrite and implement the trail along its property frontage

Next Steps

– Research land development plans and agreements

– Municipal officials to meet with Archdiocese representatives

– Meet with other partners to discuss gaps and connections

– 1 year to implement Archdiocese trails

– 5 years for trail feasibility study, design, and implementation of trail gaps

WEST BRANDYWINE TOWNSHIP

WBWT 4

Project Name

Indian Run Trail

Key Partners

PECO, PennDOT, Chester County, DCNR, landowners, businesses

Project Focus and Location

To design and implement a trail along the PECO corridor from the West Branch Brandywine Trail to Indian Run Village.

- Natural surface
- Mowed trail for walkers and mountain bikes
- Route 322 crossing
- Fencing
- Landscaping
- Signage
- Long term need once the West Branch Brandywine Trail is implemented

Accomplishments to Date

– Portions of land on south side of Route 322 owned by the municipality

– PECO corridor is owned by PECO

Next Steps

– Begin discussions with PECO representatives

– Transportation study for a trail crossing at Route 322

– Pursue partners and funding

– 3 years for trail study, design, and implementation

WEST BRANDYWINE TOWNSHIP

WBWT 5

Project Name

The Ridings Trail

Key Partners

Chester County, DCNR, PennDOT, PECO, Archdiocese of Philadelphia, Applecross Country Club

Project Focus and Location

To provide an east-west trail connection to link the West Branch Brandywine Trail with open space at Applecross Country Club.

- Off road trail or sidewalks
- Portions share the road
- Portions follow Lafayette Road, Route 82, Beaver Creek Road, Swinehart Road and Reeceville Road.
- Connection to Guthriesville Village in East Brandywine Township
- Signage
- Long term need once the West Branch Brandywine Trail is implemented

Accomplishments to Date

– Connections recommended in the comprehensive plan Map 8-1.

Next Steps

– Begin dialogue with East Brandywine Township re. inter-municipal trail

– Pursue partners and funding

– Prepare a feasibility study

– 5 years for trail feasibility study, design, and implementation

WEST BRANDYWINE TOWNSHIP

WBWT 6A

Project Name

Beaver Creek North Green Corridor

Key Partners

Chester County, DCNR, land trusts, landowners, businesses

Project Focus and Location

To conserve and enhance natural resources along Beaver Creek from Sills Lane to PA Route 322.

- Restoration of degraded areas
- Habitat enhancement
- BMPs for water quality
- Signage
- Footpath connection to trails in Applecross Country Club
- Long term need

Accomplishments to Date

– Connections recommended in the comprehensive plan Map 8-1.

Next Steps

– Begin landowner outreach

– Cultivate trail easements

– Pursue partners and funding

– Ongoing conservation opportunities

WEST BRANDYWINE TOWNSHIP

WBWT 6B

Project Name

Beaver Creek South Green Corridor

Key Partners

Chester County, DCNR, land trusts, landowners, businesses

Project Focus and Location

To conserve and enhance natural resources along Beaver Creek from Beaver Creek Road to Swinehart Road.

- Restoration of degraded areas
- Habitat enhancement
- BMPs for water quality
- Signage
- Footpath connection to trails in Applecross Country Club
- Long term need

Accomplishments to Date

– Connections recommended in the comprehensive plan Map 8-1.

Next Steps

– Begin landowner outreach

– Cultivate trail easements

– Pursue partners and funding

– Ongoing conservation opportunities

WEST BRANDYWINE TOWNSHIP

WBWT 7

Project Name

West Branch Indian Run Green Corridor

Key Partners

DCNR, DEP, Chester County, landowners, PECO, West Nantmeal Township, Wallace Township, Brandywine Conservancy, land trusts, watershed associations

Project Focus and Location

To conserve and enhance the natural resources along West Branch Indian Run

- Conservation easements with private landowners, voluntary
- Restoration of degraded areas
- Habitat enhancement
- Restore woodland cover and increase woodland interior habitat
- Restoration of riparian buffers
- BMPs for water quality
- Stream bank stabilization
- Short term need

Accomplishments to Date

– Informal discussion among Modena Borough Council members

Next Steps

– Identify high priorities for reforestation of riparian buffers

– Begin landowner outreach regarding conservation easements

– Pursue partnerships and funding

– Ongoing

Brandywine Creek Greenway
Functions Checklist

WEST CALN TOWNSHIP

GREENWAY THEME MAPS	POSSIBLE GREENWAY FUNCTIONS	CHECK ☑ TOP 6
NATURAL FEATURES	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	
OPEN SPACE AND RECREATION	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, bicycle, and equestrian	
CULTURAL FEATURES	**Buffer** the Brandywine valley from new development	✓
	Preserve productive **agricultural** lands	
	Protect state- and municipally-designated **scenic** resources	
	Preserve nationally and municipally-designated **historic** structures and districts	✓

NOTE: ✓ Top six functions prioritized by this municipality during a regional workshop.

WEST CALN TOWNSHIP

Natural Resource Protection Ordinance Review

Date Reviewed: 8/12/13

Zoning Adopted: 2/27/06 Zoning Last Amended: None	SLDO Adopted: 9/13/10 SLDO Last Amended: None

RESOURCE AND PROTECTION STANDARDS

1. Steep Slopes (15-25%, 25%+): Rigorously Protected

- ZO: 201: Defines "moderately steep slopes" as 15-25%, and very steep slopes" as 25%+.
- ZO 1002.B: Up to 30% of moderately steep slopes may be disturbed, and up to 15% of very steep slopes.

2. Woodlands Protection: Rigorously Protected

- ZO 1002.D: Up to 35% of woodlands may be disturbed for residential uses, and up to 50% for non-residential uses.

3. Wetlands: Rigorously Protected

- ZO 201: "Wetland margin" extends out 100 feet from any wetlands and includes adjacent hydric soils.
- ZO 1002.E : Wetlands may only be disturbed as set forth in state and federal permits. Up to 20% of a wetland margin may be disturbed.

4. Riparian Buffers: Rigorously Protected, 1/14/10

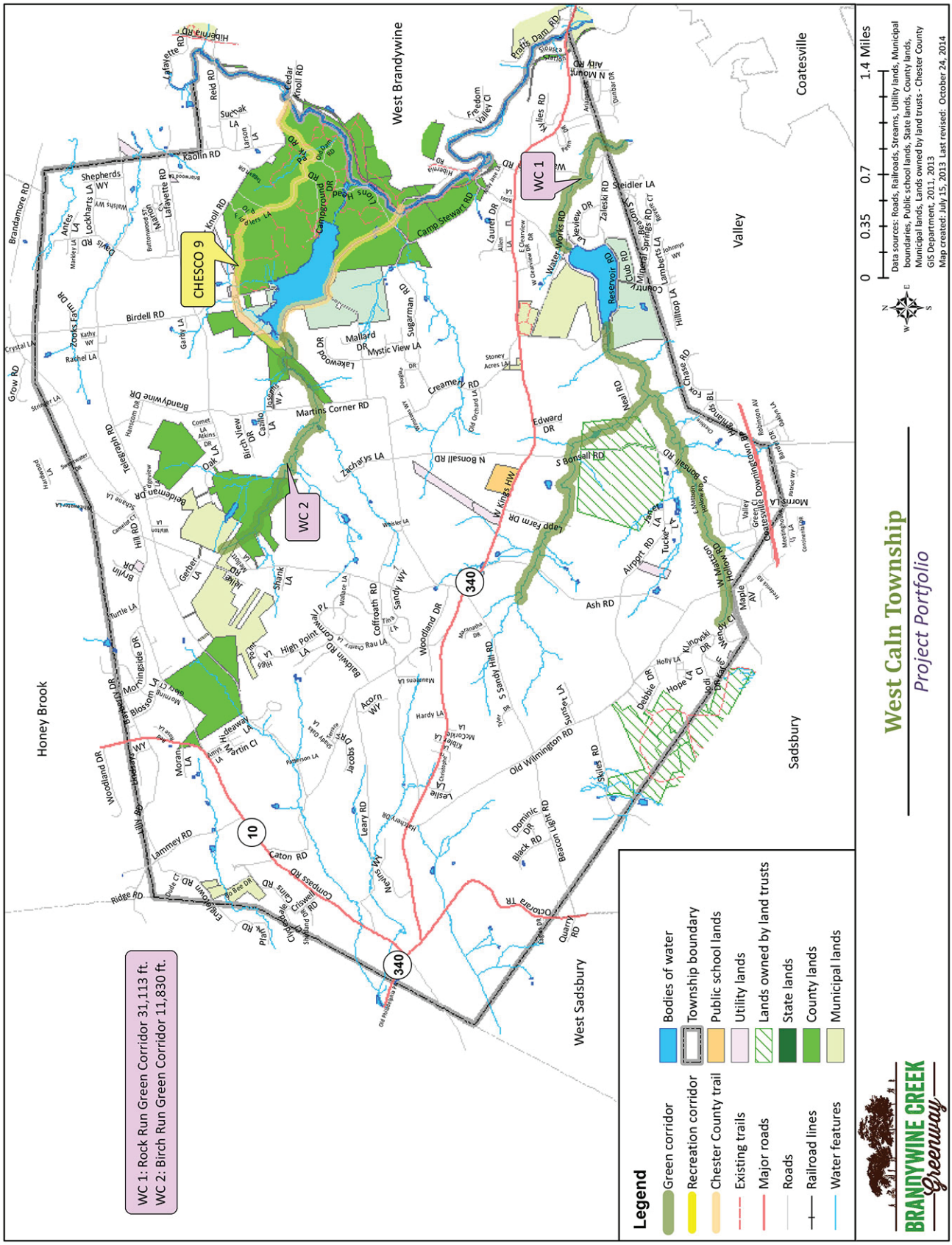
- ZO 1002.C: Establishes a Zone 1 Riparian Buffer, extending out 35 ft, from any waterway, and a Zone 2 Riparian Buffer extending out 65 feet from any waterway. No disturbance allowed in Zone 1, with specific exceptions. Up to 20% of Zone 2 Riparian Buffers may be disturbed, with specific exceptions.

5. Floodplain: Rigorously Protected, 1/14/10

- ZO 1002.A: Establishes a "Floodplain Overlay District" that includes areas subject to 100-year floods, Floodway Area, Flood Fringe Area, Special Floodplain Area, and "Approximate or General Floodplain Area." No disturbance is permitted in any Floodway Area. For the Floodplain Overlay District, land uses are limited to agriculture, recreation, municipal impervious use or impervious yards, driveways and parking.

RECOMMENDED IMPROVEMENTS TO RESOURCE PROTECTION STANDARDS

- None: All evaluated standards provide rigorous resource protection.


West Caln Township
Project Portfolio
Data sources: Roads, Railroads, Streams, Utility lands, Municipal boundaries, Public school lands, State lands, County lands, Municipal lands, Lands owned by land trusts - Chester County GIS Department, 2011, 2013
Map created: July 15, 2013 Last revised: October 24, 2014
0 0.35 0.7 1.4 Miles
Legend
Green corridor
Recreation corridor
Chester County trail
Existing trails
Major roads
Roads
Railroad lines
Water features
Bodies of water
Township boundary
Public school lands
Utility lands
Lands owned by land trusts
State lands
County lands
Municipal lands
WC 1: Rock Run Green Corridor 31,113 ft.
WC 2: Birch Run Green Corridor 11,830 ft.
CHESCO 9
WC 1
WC 2
Honey Brook
West Brandywine
Coatesville
Valley
Sadsbury
West Sadsbury
BRANDYWINE CREEK Greenway

WEST CALN TOWNSHIP

WCT 1

Project Name

Rock Run Green Corridor

Key Partners

Valley Township, Chester County, DEP, land trusts, landowners

Project Focus and Location

To promote the conservation and preservation of water quality along both branches of Rock Run.

- Conservation easements
- Riparian buffer restoration
- Invasive vegetation management
- Land and water stewardship BMPs
- Stormwater BMPs
- Agricultural BMPs
- Fish habitat restoration
- Stream bank stabilization
- Ongoing need
- Short term need

Accomplishments to Date

– Portions in Coatesville Country Club

– Portions privately owned or eased by land trusts

– Portions owned or eased by land trust

Next Steps

– Inventory existing resources

– Identify opportunities for conservation and preservation

WEST CALN TOWNSHIP

WCT 2

Project Name

Birch Run Green Corridor

Key Partners

Valley Township, Chester County, DEP, land trusts, landowners

Project Focus and Location

To promote the conservation and preservation of water quality along both branches of Birch Run from Hibernia County Park to County-owned lands at Route 10.

- Conservation easements
- Riparian buffer restoration
- Invasive vegetation management
- Land and water stewardship BMPs
- Stormwater BMPs
- Agricultural BMPs
- Fish habitat restoration
- Stream bank stabilization
- Ongoing need
- Short term need

Accomplishments to Date

– Portions owned by Chester County

– Portions owned by West Caln Township

– Portions of other protected lands

Next Steps

– Inventory existing resources

– Identify opportunities for conservation and preservation

Brandywine Creek Greenway
Functions Checklist

WEST NANTMEAL TOWNSHIP

GREENWAY THEME MAPS	POSSIBLE GREENWAY FUNCTIONS	CHECK ☑ TOP 6
NATURAL FEATURES	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	✓
OPEN SPACE AND RECREATION	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, bicycle, and equestrian	✓
CULTURAL FEATURES	**Buffer** the Brandywine valley from new development	
	Preserve productive **agricultural** lands	✓
	Protect state- and municipally-designated **scenic** resources	
	Preserve nationally and municipally-designated **historic** structures and districts	

NOTE: ✓ Top six functions prioritized by this municipality during a regional workshop.

WEST NANTMEAL TOWNSHIP

Natural Resource Protection Ordinance Review

Date Reviewed: 8/7/13

Zoning Adopted: 8/17/10 Zoning Last Amended: 10/10/11	SLDO Adopted: 7/94 SLDO Last Amended: 4/14/08

RESOURCE AND PROTECTION STANDARDS

1. Steep Slopes (15-25%, 25%+): Rigorously Protected

- ZO 502.B: Establishes Category 1 slopes as 15-25% slopes, and Category 2 as 25%+.
- ZO 504.D: For Category 1, limits disturbance to up to 50%, with specific exceptions.
- ZO 504 D: For Category 2, limits disturbance to up to 10%, with specific exceptions.

2. Woodlands Protection: Somewhat Protected

- ZO 505. C and D: Requires a permit for removing 10% or more of a woodland.
- ZO 505 F: Establishes a 50 feet buffer from any street, road, or watercourse or wetland, within which timbering shall not occur.

3. Wetlands: Rigorously Protected

- ZO 503.D: Forbids disturbance of wetlands or a 50 feet buffer around wetlands, except with permits.

4. Riparian Buffers: Not Protected

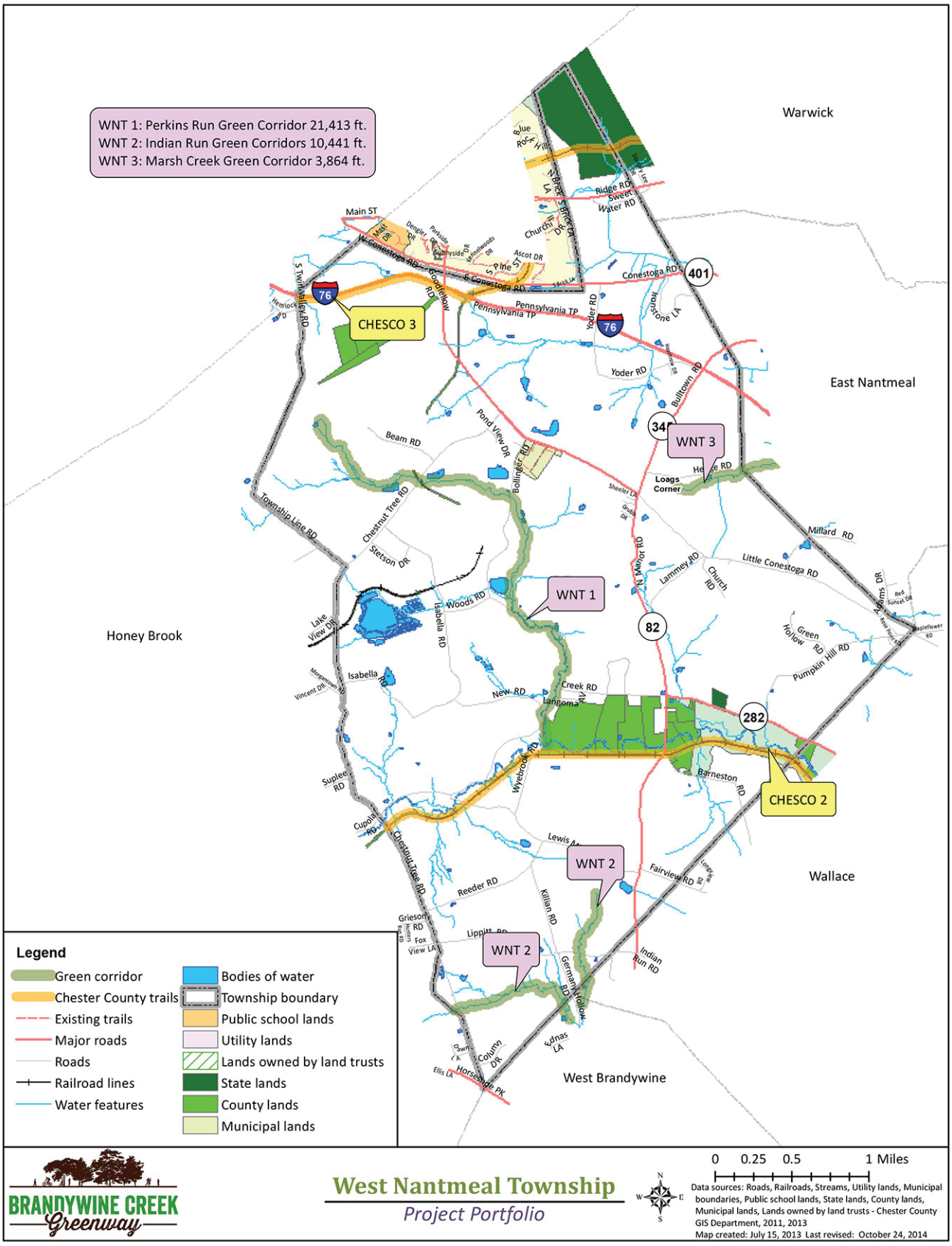
- None.

5. Floodplain: Rigorously Protected

- ZO 502.B: Defines "Flood Hazard District" as a floodway, flood fringe, and general flood hazard district.
- ZO 502. H: Limits disturbance to agriculture, forestry, recreation, and nature preserves.

RECOMMENDED IMPROVEMENTS TO RESOURCE PROTECTION STANDARDS

- **Woodlands:** Include regulations that limit disturbance of a woodlands to a maximum of 50%. Such regulations would establish a definition for "woodland" that is defined in a measurable way, such as a definition that is based on the number of trees within a wooded area that have grown to a specific diameter at breast height (dbh). Also, consider adding forestry regulations that: 1.) include exceptions for forestry or timber harvesting, as set forth in the MPC, and 2.) require a timber harvesting plan. Lastly, consider adding tree protection regulations that: 1.) include measures that protect the trees remaining on a construction site from construction activities that could be damaging to trees; 2.) prohibit disturbing specimen trees and PNDI sites unless there is no feasible alternative; and 3.) call for tree replacement if more than a specified area or number of trees are removed.
- **Riparian Buffers:** Include regulations that establish a riparian buffer which extends 75 to 100 feet from both sides of the stream bank. Also, consider adding requirements that 1.) call for the re-vegetation of un-forested riparian buffers, and 2.) establish a two-tiered riparian buffer with stricter standards applied adjacent to streams. This two-tiered buffer would include a 25-35 foot-wide inner buffer in which disturbance is prohibited, and a 50 to 65 foot-wide outer buffer in which a maximum disturbance limit of 20% is allowed.


WNT 1: Perkins Run Green Corridor 21,413 ft.
WNT 2: Indian Run Green Corridors 10,441 ft.
WNT 3: Marsh Creek Green Corridor 3,864 ft.
Warwick
East Nantmeal
Honey Brook
Wallace
West Brandywine
CHESCO 3
CHESCO 2
WNT 1
WNT 2
WNT 3
Legend
Green corridor
Chester County trails
Existing trails
Major roads
Roads
Railroad lines
Water features
Bodies of water
Township boundary
Public school lands
Utility lands
Lands owned by land trusts
State lands
County lands
Municipal lands
BRANDYWINE CREEK Greenway
West Nantmeal Township
Project Portfolio
0 0.25 0.5 1 Miles
Data sources: Roads, Railroads, Streams, Utility lands, Municipal boundaries, Public school lands, State lands, County lands, Municipal lands, Lands owned by land trusts - Chester County GIS Department, 2011, 2013
Map created: July 15, 2013 Last revised: October 24, 2014

WEST NANTMEAL TOWNSHIP

WNT 1

Project Name

Perkins Run Green Corridor

Key Partners

Private landowners, DCNR, land trusts, Chester County, West Nantmeal Township.

Project Focus and Location

To implement conservation efforts that could include conservation easements, agricultural easements, agricultural BMPs, stream restoration, reforestation of riparian buffers, habitat restoration, and other efforts.

- Ongoing need

Accomplishments to Date

– Much of the surrounding land is under Chester County agricultural easements or conservation easement

– Shown as a green corridor on the Brandywine Creek Greenway Concept Map

Next Steps

– Land trusts and Chester County continue to cultivate landowners for agricultural easements, conservation easements, and agricultural BMPs

– Ongoing efforts required

– Long term priority

WEST NANTMEAL TOWNSHIP

WNT 2

Project Name

Indian Run Green Corridors

Key Partners

Private landowners, DCNR, land trusts, Chester County, West Nantmeal Township.

Project Focus and Location

To implement conservation efforts that could include conservation easements, agricultural easements, agricultural BMPs, stream restoration, reforestation of riparian buffers, habitat restoration, and other efforts.

- Ongoing need

Accomplishments to Date

– Shown as a green corridor on the Brandywine Creek Greenway Concept Map

Next Steps

– Land trusts and Chester County continue to cultivate landowners for agricultural easements, conservation easements, and agricultural BMPs

– Ongoing efforts required

– Ongoing conservation opportunities

WEST NANTMEAL TOWNSHIP

WNT 3

Project Name

Marsh Creek Green Corridor

Key Partners

Private landowners, DCNR, land trusts, Chester County, West Nantmeal Township

Project Focus and Location

To focus conservation efforts that could include conservation easements, agricultural easements, agricultural BMPs, stream restoration, reforestation of riparian buffers, habitat restoration, and other efforts.

- Ongoing need

Accomplishments to Date

– Shown as a green corridor on the Brandywine Creek Greenway Concept Map

Next Steps

– Land trusts and Chester County continue to cultivate landowners for agricultural easements, conservation easements, and agricultural BMPs

– Ongoing efforts required

– Long term priority

Project Portfolio Summary

The following table lists all agency and municipal projects described in the Greenway Project Portfolio. Each project is identified with a letter code that reflects the name of the lead municipality or agency.

The projects are arranged alphabetically below in Table 2 according to their project code number. They are also given a priority rating as:

- Short-term (1-5 years)
- Intermediate (5-10 years)
- Long-term (10+ years)
- Ongoing—ongoing projects require continual effort and/or are undertaken on an as-needed basis.

Table 2: Project Codes

PROJECT CODE	MUNICIPALITY/AGENCY
BC	Brandywine Conservancy
BT	Birmingham Township
CC	City of Coatesville
CHESCO	Chester County
CFT	Chadds Ford Township
CT	Caln Township
DB	Downingtown Borough
DCNR	PA Department of Conservation and Natural Resources
DELCO	Delaware County
EBFT	East Bradford Township
EBWT	East Brandywine Township
ECT	East Caln Township
EFT	East Fallowfield Township
HBB	Honey Brook Borough
HBT	Honey Brook Township
MB	Modena Borough
NT	Newlin Township (none at this time)
PENT	Pennsbury Township
POCT	Pocopson Township
SCB	South Coatesville Borough
UW	Uwchlan Township
UUT	Upper Uwchlan Township
VT	Valley Township
WBFT	West Bradford Township
WBWT	West Brandywine Township
WCT	West Caln Township
WNT	West Nantmeal Township
WT	Wallace Township

The projects are arranged alphabetically according to their project code number. They are also categorized as short-term (1-5 years), intermediate (5-10 years), long-term (10+ years), and ongoing. Ongoing projects require continual effort or are undertaken on an as-needed basis. Individual municipalities should refer to its Project Portfolio for more detailed information about specific projects, key partners, project focus and location, accomplishments to date, and recommended next steps.

PROJECTS	SHORT-TERM	INTER-MEDIATE	LONG-TERM	ONGOING
BC 1 Historic Brandywine Trail*	X			
BC 2 North Brandywine Trail			X	
BT 1 Sandy Hollow to Birmingham Hill Trail	X			
BT 2 Brinton Run Green Corridor				X
BT 3 Wylie Run Green Corridor				X
BT 4 Renwick Run Green Corridor				X
BT 5 Radley run Green Corridor				X
CC 1 Downtown Revitalization	X			
CC 2 Gateway Park Improvements*		X		
CC 3 West Branch Brandywine Trail		X		
CC 4 South First Avenue Improvements	X			
CFT 1 Chadds Ford Gateway Enhancements*	X			
CFT 2 Walkable Chadds Ford		X		
CFT 3 Municipal Lands		X		
CFT 4 Harvey Run Green Corridor				X
CHESCO 1 Bike Route L Safety Enhancements	X			
CHESCO 2 Northern Struble Trail	X			
CHESCO 3 Elverson Trail			X	
CHESCO 4 Welsh Mountain Trail			X	
CHESCO 5 Chester Valley Trail			X	
CHESCO 6 Brandywine Trail to Struble Trail Link	X			
CHESCO 7 Barneston Creek Access Enhancements	X			
CHESCO 8 Reeds Road Creek Access			X	
CHESCO 9 Chambers Lake Trail*			X	
CT 1 Lincoln Highway Business District Enhancements	X			
CT 2 Valley Run Green Corridor	X			
CT 3 Lloyd Park to Downingtown Trail Connector		X		

PROJECTS	SHORT-TERM	INTER-MEDIATE	LONG-TERM	ONGOING
CT 4 GO Carlson Trail Connections	X			
CT 5 North Bailey Road Trail			X	
CT 6 Valley Run Municipal Park Enhancements	X			
CT 7 South Bailey Road Trail			X	
CT 8 Beaver Creek Green Corridor				X
DB 1 Parke Run Green Corridor				X
DB 2 Beaver Creek Green Corridor	X			
DB 3 Kerr Park Enhancements*	X			
DB 4 Downingtown Gateway Enhancements	X			
DB 5 Pennsylvania Avenue Bike Route	X			
DCNR 1 Marsh Creek Lake Trail			X	
DELCO 1 Route 1 Bike Safety Enhancements	X			
EBFT 1 County Seat Corridor Trail			X	
EBFT 2 Taylor Run Trail			X	
EBFT 3 Ingrams Mill to Stroud Connector	X			
EBFT 4 Shaws Bridge park Improvements	X			
EBFT 5 Plum Run Green Corridor				X
EBFT 6 Stroud Preserve Gateway*		X		
EBFT 7 Gibsons Bridge Gateway*		X		
EBFT 8 Ingrams Mill Park Enhancements	X			
EBFT 9 Paradise Farm Camps Improvements			X	
EBFT 10 Historic Brandywine Trail	X			
EBFT 11 Valley Creek Green Corridor				X
EBFT 12 M. John Johnson Nature Center to Ingrams Mill	X			
EBFT 13 Sugars Bridge Master Plan			X	
EBWT 1 Lyndell Gateway-fee interest			X	
EBWT 2 Lyndell Gateway- site design and development*			X	
EBWT 3 Wissahickon Spring Water Co. Access	X			
EBWT 4 Dowlin Forge Road Creek Access	X			
EBWT 5 Shady Acres Campground Fee Interest	X			
EBWT 6 Shady Acres Campground Creek Access	X			

PROJECTS	SHORT-TERM	INTER-MEDIATE	LONG-TERM	ONGOING
EBWT 7 Shady Acres Bridge			X	
EBWT 8 Beaver Creek Green Corridor				X
EBWT 9 Dowlin Forge Road Trail	X			
EBWT 10 Whittaker Memorial Park Bridge			X	
EBWT 11 Culbertson Run Trail			X	
EBWT 12 Beaver Creek Headwaters Trail			X	
ECT 1 East Branch Brandywine Stewardship Plan	X			X
ECT 2 Valley Creek Corridor Trail			X	
ECT 3 Ebeneezer Corridor Trail	X			
ECT 4 Ludwig's Run Green Corridor				X
EFT 1 Dennis Run Green Corridor*			X	
EFT 2 Misty Patch Loop Trail	X			
EFT 3 Lauria Brothers- Public Access	X			
EFT 4 Mortonville Creek Access Enhancements	X			
EFT 5 Buck Run Trail			X	
EFT 6 Hayes-Clark Bridge Creek Access Enhancements	X			
EFT 7 Buck Run Green Corridor	X			
EFT 8 Sucker Run Green Corridor	X			
EFT 9 West Branch Brandywine Trail			X	
EFT 10 Buck Run to West Branch Trail			X	
HBB 1 Headwaters Green Corridor*	X			
HBB 2 Umble Park Connector	X			
HBB 3 Downtown and Streetscape Revitalization	X			
HBB 4 Borough Park Improvements			X	
HBT 1 Welsh Mountains Conservation	X			
HBT 2 Two Log Run Green Corridor	X			
HBT 3 Honey Brook Branch Green Corridor	X			
HBT 4 West Branch Headwaters Green Corridor	X			
HBT 5 West Branch Brandywine Trail	X			
HBT 6 Indian Run Green Corridor				X
MB 1 Lauria Brothers Public Access	X			
MB 2 Lauria Brothers Gateway Improvements*			X	

PROJECTS	SHORT-TERM	INTER-MEDIATE	LONG-TERM	ONGOING
MB 3 Dennis Run Green Corridor				X
MB 4 Mortonville Road Trail	X			
PENT 1 Mason Dixon Trail	X			
PENT 2 Share the Road Trails			X	
PENT 3 Johnson Woods to Brandywine Trail	X			
PENT 4 Bennetts Run Green Corridor			X	
PENT 5 Ring Run Green Corridor			X	
PENT 6 Fairville Road Green Corridor			X	
POCT 1 Pocopson Park Gateway*	X			
POCT 2 Pocopson Park Gateway-West Creek Road Trail	X			
POCT 3 BVA to West Creek Road Trail			X	
POCT 4 Northbrook Trail			X	
POCT 5 West Creek Road Trail	X			
POCT 6 Lenape Forge Road and Canoe Launch	X			
POCT 7 Pocopson Creek Green Corridor			X	
SCB 1 Overhill Road Trail			X	
SCB 2 Mill Trail Section 2	X			
SCB 3 Mill Trail Section 3*	X			
SCB 4 Mill Trail Section 4	X			
SCB 5 Mill Trail Section 5		X		
SCB 6 Mill Trail Section 6		X		
SCB 7 Mill Trail Section 7		X		
SCB 8 Birch Street to Upper Gap Road			X	
SCB 9 Upper Gap Road Recreation Center			X	
SCB 10 Dennis Run Green Corridor				X
SCB 11 Upper Gap Trail			X	
UW 1 Ludwig's Run Green Corridor				X
UW 2 Shamona Creek Green Corridor*				X
UUT 1 Eagle Trailhead	X			
UUT 2 Park Road Multi-Use Trail	X			
UUT 3 Little Conestoga Trail			X	
UUT 4 Dorlans Mill Creek Access	X			

PROJECTS	SHORT-TERM	INTER-MEDIATE	LONG-TERM	ONGOING
UUT 5 Blackhorse Creek Green Corridor	X			
UUT 6 Marsh Creek Green Corridor	X			
UUT 7 Eagle Village Enhancements	X			
UUT 8 Lyndell Road Pull-off			X	
VT 1 Business Route 30 Corridor Enhancements			X	
VT 2 West Branch Brandywine Trail	X			
VT 3 Country Club Green Corridor	X			
VT 4 Sucker Run Green Corridor	X			
VT 5 Rock Run Green Corridor	X			
WBFT 1 East Branch Brandywine Trail	X			
WBFT 2 Telegraph Road Green Corridor			X	
WBFT 3 Orchard Loop Trail			X	
WBFT 4 Sawmill Run Green Corridor			X	
WBFT 5 Broad Run Green Corridor	X			
WBFT 6 Sycamore Loop Trail			X	
WBFT 7 Tattersall/Embreeville Loop Trail			X	
WBFT 8 Romansville/Lone Eagle/Stock Grange Loop Trail			X	
WBFT 9 Broad Run to Northbrook Link			X	
WBFT 10 Brandywine Meadows Gateway*	X			
WBFT 11 Camp Linden Trail			X	
WBWT 1 West Branch Brandywine Trail*	X			
WBWT 2 Icedale Gateway*	X			
WBWT 3 Route 82 Trail	X			
WBWT 4 Indian Run Trail			X	
WBWT 5 The Ridings Trail			X	
WBWT 6A Beaver Creek North Green Corridor			X	
WBWT 6B Beaver Creek South Green Corridor			X	
WBWT 7 West Branch Indian Creek Run Green Corridor	X			
WCT 1 Rock Run Green Corridor	X			
WCT 2 Birch Run Green Corridor	X			
WNT 1 Perkins Run Green Corridor				X
WNT 2 Indian Run Green Corridors				X

PROJECTS	SHORT-TERM	INTER-MEDIATE	LONG-TERM	ONGOING
WNT 3 Marsh Creek Green Corridor				X
WT 1 Valhalla Loop Trail			X	
WT 2 Burgess Park Water Access			X	
WT 3 Glenmoore Gateway Enhancements*	X			
WT 4 North Branch Indian Run Green Corridor	X			
WT 5 West Branch Indian Run Green Corridor	X			
WT 6 Rose Pointe Green Corridor	X			
WT 7 Marsh Creek Green Corridor	X			

** Denotes a Gateway project. See Concept Map Figure 1 for Gateway locations.*

Cost Estimates

It is challenging to establish anticipated short term and long term costs associated with the Project Portfolios because of several factors:

1. Many of the projects are in the conceptual phase and exact locations and details of proposed facilities are not known.
2. The cost of protecting open space, whether by conservation easement, agricultural easement, trail easement, fee acquisition, or other methods, will be determined by a real estate appraisal for each property, and market conditions fluctuate.
3. Projects will be implemented over time and the cost of materials, labor and real estate is likely to be highly variable over time.

Notwithstanding these factors, the following basic cost assumptions are presented to provide a rough guideline for potential costs associated with Greenway projects in today's dollars. These are based upon a relatively recent Trail Feasibility Study completed by the Brandywine Conservancy and Regester Associates for Pocopson Township.

Trail Easements

There are many factors that affect the value of a trail easement project. For example, existing site conditions, zoning/land uses, and current property values in the immediate vicinity will all affect the value of an easement. In some cases, the Township may be able to negotiate with a landowner to lower the price for the easement. In each case, the Township will engage a real estate appraiser with experience in easements to determine the real estate value of each individual trail easement based upon its unique conditions. For the purposes of estimating the cost of purchasing trail easements, it is assumed that trail easements will have a value of $22,000 per acre or $7.58 per linear foot of trail easement. This is based upon an estimate by Regester Associates, Pocopson Trails Feasibility Study, 2010. See Table 3 Easement Cost Factor.

Table 3: Trail Easement Cost Factor

Average Easement	**$/Acre**	**$ 22,000**
	$/sq ft	$ 0.5057
Easement Width in feet		15
Average Easement	$ per linear ft	$ 7.5862

Construction of Trails and Related Facilities

The estimated trail construction costs and the costs of trail-related facilities are outlined in Table 4 Estimated Construction Costs by Terrain Type and Table 5 Bridge and Crossing Cost Assumptions. The unit costs were determined by Regester Associates, Inc., registered professional engineers. These costs do not include the cost of purchasing the trail easement which is detailed in Table 3 Easement Cost Factor. Other associated costs are outlined in Table 6 Other Trail Facilities Costs.

Table 4: Estimated Trail Costs Per Foot by Terrain

Terrain Adders $/ft *1	Basic Overland Cost	Flood Plain (add $3)	Flood Plain with Slopes	Flood Plain with Woods	Flood Plain with Wetlands	Slopes (add $15)	Slopes with Woods	Wetlands (add $5)	Wetlands with Woods	Woods (add $15)
Share-The-Road (Signs&Lines) $/ft *2	**$0.48**									
Gravel Trail $/ft	**$10.00**	$13.00	$28.00	$33.00	N/A	**$25.00**	$45.00	**N/A**	N/A	**$30.00**
Mowed Trail $/ft	**$3.50**	$6.50	$21.50	$26.5	$11.50	**$18.50**	$18.50	**$8.50**	$28.50	**$8.50**
Paved Trail $/ft	**$17.00**	$20.00	$35.00	$40.00	N/A	**$32.00**	$62.00	**N/A**	N/A	**$22.00**

NOTES: **1.** To determine to cost per linear foot for any given stretch of trail, add the terrain type cost(s) to the basic overland cost. As an example, a gravel trail constructed within Floodplain with Woods would be 10.00 + 3.00 + 20.00 = $33.00 per linear foot.

2. Share-the-Road (STR) costs include a sign costing $140 every quarter mile ($0.11/Ft), and $0.37/Linear Foot for a 4 inch white line. No other costs were considered for STR's.

Table 5: Bridge and Crossing Cost Assumptions

	Crossing <5ft	Crossing >5ft <10ft	Crossing >10ft	
Bridge Cost	$7,500	$15,000	$35,000	
	Driveway Crossing	**Railroad Crossing**	**State RD Crossing**	**Town RD Crossing**
Surface Crossing Cost	$500	$3,600	$3,600	$2,500

Table 6: Other Trail Facilities Costs

Trail Feature	Cost per foot	Cost per unit
Landscaping	$4.73	
Fencing	$20	
Restrooms		$40,000
Parking lot: 10 cars		$7,500
Information sign		$1,000
Direction/warning signs		$200
Bike racks		$500
Bench		$500
Drinking Fountain		$2,000

Trail Maintenance

An estimated trail maintenance cost was prepared to outline anticipated expenditures associated with the trail network. Tables 7, 8 and 9 identify estimated unit costs associated with maintenance of stone dust trails, mowed trails, and paved trails.

Table 7: Annual Maintenance Costs—Stone Dust Trails
Source: *Trails for the Twenty-First Century, Rails to Trails Conservancy, 2001*

Task	Times per Year	Cost/Mile	Cost/Ft
Drainage and storm channel maintenance	2	$500	$0.09
Sweep/blow debris from trailhead	4	$1,200	$0.23
Pick up/removal of trash	8	$1,200	$0.23
Weed control and vegetation management	2	$1,000	$0.19
Mow 2ft grass shoulder	4	$1,200	$0.23
Minor repairs to trail furniture/safety features	2	$500	$0.09
Maintenance supplies for Public Works crew	N/A	$500	$0.09
Equipment fuel and repairs	N/A	$1,000	$0.19
Total Annual Costs		**$7,100**	**$1.34**

Table 8: Annual Maintenance Costs—Mowed Trails
Source: Trails for the Twenty-First Century, Rails to Trails Conservancy, 2001

Task	Times per Year	Cost/Mile	Cost/Ft
Drainage and storm channel maintenance	1	$500	$0.09
Pick up/removal of trash	4	$1,200	$0.23
Weed control and vegetation management	2	$1,000	$0.19
Mow 8ft grass trail	10	$2,400	$0.45
Maintenance supplies for Public Works crew	N/A	$500	$0.09
Equipment fuel and repairs		$1,000	$0.19
Total Annual Costs		**$6,600**	**$1.25**

Table 9: Annual Maintenance Costs—Paved Trails

Task	Times per Year	Cost/Mile	Cost/Ft
Drainage and storm channel maintenance	2	$500	$0.09
Sweep/blow debris from trailhead	4	$1,200	$0.23
Pick up/removal of trash	8	$1,200	$0.23
Weed control and vegetation management	2	$1,000	$0.19
Mow 2ft grass shoulder	4	$1,200	$0.23
Minor repairs to trail furniture/safety features	2	$500	$0.09
Maintenance supplies for Public Works crew	N/A	$500	$0.09
Equipment fuel and repairs	N/A	$1,000	$0.19
Total Annual Costs		**$7,100**	**$1.34**

While cash is the most obvious resource for implementing trails and other Greenway projects, there are many other tools that municipalities can utilize to supplement their budgets. The Implementation Tool Kit that follows includes descriptions of regulatory and non-regulatory tools available to municipalities to implement Greenway projects. It also provides a comprehensive list of funding opportunities for all municipalities, non-profits, and other Greenway advocates.

IMPLEMENTATION TOOL KIT

Introduction

This Implementation Tool Kit is to be used by municipalities and other greenway advocates as a means to explore potentially new approaches to natural and cultural resource conservation. It also provides vital information for those interested in protecting open space as it identifies unprotected parcels of land that have varying levels of conservation value. The Tool Kit is organized according to the following:

1. **Regulatory and non-regulatory tools** provide a brief introduction to the issues that each tool addresses, a description of how the tool can be implemented, its applicability in the Brandywine Creek Greenway, and a list of other resources that are available to learn more about the tool.
2. Four **resource summary maps** highlight parcels of land with important water, agricultural, cultural, and natural resources (habitat) to be considered for conservation or protection. The maps will help municipalities to identify parcels of land that have important resources that could be considered by landowners for conservation and should be considered by municipalities during the land development process if private land conservation is not an option. The summary maps are derived from more detailed inventory maps which are provided in the Appendix.
3. Two maps highlight opportunities for **restoration of woodlands and water resources**.
4. **Model natural resource protection ordinances** are included that can be modified to suit each municipality and adopted by Board resolution. The ordinances include provisions for conservation of steep slopes, woodlands, wetlands, riparian buffers, and floodplains. Municipalities that wish to further enhance their natural resource protection regulations can consider a more proactive riparian buffer ordinance (prepared by the Brandywine Conservancy and promoted by the Pennsylvania Land Trust Alliance) provided in the Appendix.
5. **A comprehensive list of funding sources** is provided that is relevant for a range of planning and implementation projects.
6. Included in the **appendix** is a model Riparian Buffer Protection Overlay District offered by the Pennsylvania Land Trust Alliance and written by the Brandywine Conservancy. A series of inventory maps can be used as a baseline reference for new conservation projects—the data from these maps was used as a basis for the resource summary maps. Also included are detailed maps of Coatesville and Downingtown, Chester County Cultural Heritage Interpretive Regions Map (2011), and Chester County Historic Resources Map.

Fishing in Kardon Pond

1. Regulatory and Non-regulatory Tools

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Regulatory Tools

Sketch Plan

Introduction

What issues does this tool address?

In many instances, when a preliminary plan is submitted for a land development application, the site engineering is substantially complete and the applicant has a considerable investment in the preliminary plan. The applicant is often reluctant to make dramatic (or even modest) changes in the final plan. The Sketch Plan option provides an incentive for the applicant to meet with municipal officials in order that both may discuss the land development project at the conceptual level before preliminary engineering begins.

Hand-drawn conceptual sketch plan, Kennett Township

What does this tool accomplish?

Discussion allows the municipality and the developer to articulate their goals for the project and to discuss site layout and design alternatives. It benefits both parties; by facilitating the approval process for the developer (a financial savings), the municipality can achieve its community development objectives.

Implementation

How is this tool implemented?

1. By updating the Comprehensive Plan, and Official Map to articulate community development objectives.
2. Through an amendment to the "Plan Process and Content" provisions in the SALDO Procedure: Sketch Plan and Site Visit; Preliminary Plan; Final Plan.
3. The sketch plan option can be bundled with ERSAP, Conservation Design Option, Natural Features Protection Ordinance, Historic Resource Protection Ordinance, or an EAC (optional).

Applicability

How can this tool be used in the BCG?

- Relevant for municipalities that are in the path of new development or potentially subject to future development pressures.
- Effective in municipalities with scenic roads or byways, scenic rivers, historic resources, prime agricultural soils, community trail plans, transportation improvement plans, open space preservation plans, and/or greenway plans.
- To help balance new development with resource protection.
- Requires municipal representatives to be willing to accommodate an additional step in the land development application process.
- Developers should not expect to achieve maximum density under the zoning.

More information

Where can one learn more about this tool?

- Examples to review include: Kennett Township SALDO Subsection 206-305; and Thornbury Township, Delaware County SALDO Subsection 22-402.

Natural Resource Protection Ordinance preparation assistance

- The Brandywine Conservancy.
- Natural Lands Trust.
- Chester County Planning Commission.

A sketch plan for Ponds of Woodward was crafted to preserve the orchards and farm buildings in open space.

Conservation Design

Introduction

What does this tool accomplish?

- Avoids many of the negative aspects of sprawl.
- Fits new development into the character and landscape of the community.
- Enhances resource protection initiatives.
- Implements specific planning objectives.

Implementation

How is this tool implemented?

- Through local land use regulation.
- Usually offered as a zoning option to conventional lot-out development.
- Permitted "by right" or via conditional approval.
- "Four-step design process."
- Zoning provisions provide for overall density, use types & lot sizes, and open space.
- Design standards may be provided in Zoning or in the SALDO.

Keys to Ultimate Effectiveness of Conservation Design

- Adoption of flexible regulatory provisions.
- Careful plan review.
- Deliberate crafting of conditions of approval.
- Education regarding landowner options.

At Ponds of Woodward the conservation design clustered homes around scenic water features and preserved orchards and pastures in open space.

Success

Where has this tool been used successfully?

Upper Uwchlan Township, Kennett Township, and South Coventry Township.

Applicability

How can this tool be used in the BCG?

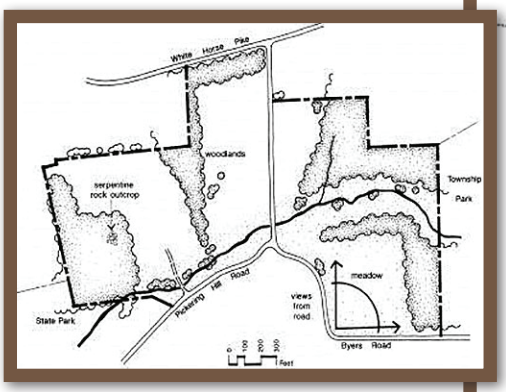
- The Conservation Design tool is already used broadly and variably in the Brandywine Creek Greenway region.
- The tool is applicable in every township, less so in the boroughs due simply to lack of larger-scale developable land.
- Successful use of Conservation Design, whether termed "Open Space Design" or "Flexible Development" or "Cluster Development," depends on both the design standards for development and open space AND the degree to which more conventional development options are more or less favorable for developers.

More information

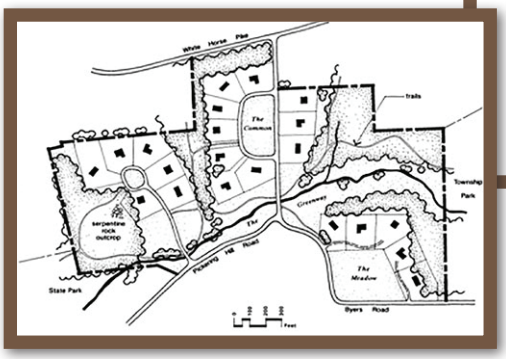
Where can one learn more about this tool?

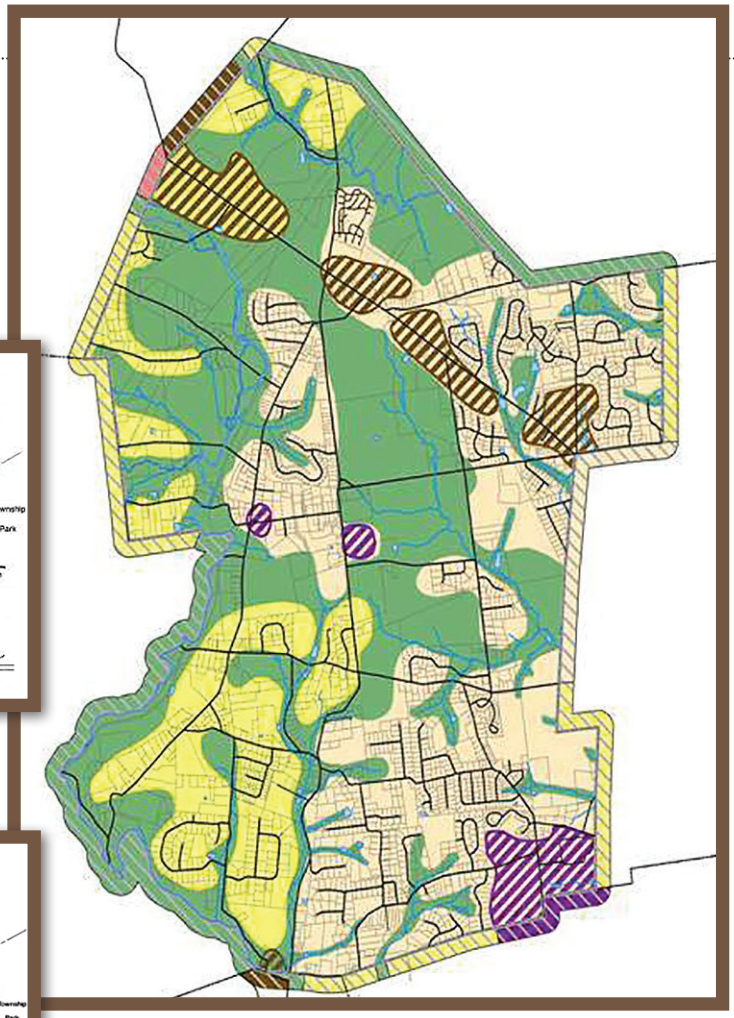
Contact:

- Chester County Planning Commission.
- The Brandywine Conservancy.
- Natural Lands Trust.



Natural features are identified first (above) then development is clustered within areas with the least disturbance to natural areas (below).





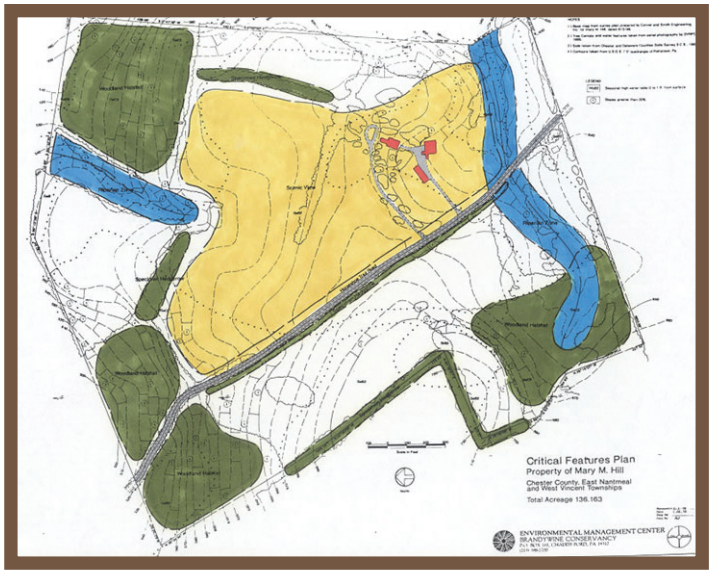
Development Clusters and Greenways, West Brandywine Township.

Existing Resources and Site Analysis Plan (ERSAP)

Introduction

What issues does this tool address?

A typical land development application is required to provide site information regarding contours, wetlands, floodplains, and steep slopes. However, there are often no provisions in the municipal ordinance for the applicant to identify important natural features such as: sensitive habitat; specimen trees; high quality woodlands; woodland interior; hydric soils; site hydrology; prime agricultural soils. Municipal ordinances also typically do not require the applicant to consider site context for: a regional complex of natural areas; connections among habitat areas; habitat corridors; woodland complexes; existing or planned greenways or trails; or alternative transportation.



Early in the land development process, the applicant can be required to provide information regarding sensitive and significant natural and cultural features such as mature woodlands (green) prime agricultural soils (yellow) and hydric soils (blue).

What does this tool accomplish?

The ERSAP provision in a municipal SALDO helps municipal officials to understand which areas on a proposed land development site have the least sensitive natural features and are most suitable for development. An ERSAP empowers municipal officials to require that the most sensitive natural features are left undisturbed. This approach to site design is often referred to as Conservation Design or Low Impact Development, and it is consistent with stormwater best management practices.

Implementation

How is this tool implemented?

1. Prepare a Botanical Survey, Woodland Classification Study, and Exceptional Natural Areas Inventory for the municipality.
2. Draft a Natural Resource Protection Ordinance update to the SALDO.
3. Bundle the ordinance update with a Conservation Design option, stormwater ordinance, and/or sketch plan review option.

Applicability

How can this tool be used in the BCG?

- Relevant for municipalities that are in the path of new development or potentially subject to future development pressures.
- Effective in municipalities with woodland interior habitat, wetlands, Pennsylvania Natural Diversity Inventory sites, Important Bird Areas, confirmed populations of state-endangered or threatened plants or animals.
- Suitable in municipalities with sensitive natural features that are not protected by state and/or federal regulation (such as floodplains, surface waters, wetlands).

More information

Where can one learn more about this tool?

Examples to review include:

- Pocopson Township SALDO Subsection 190-23.
- Upper Uwchlan Township SALDO Subsection 162-9.D.

Natural Resource Protection Ordinance preparation assistance:

- The Brandywine Conservancy.

Floodplain Regulations

Introduction

Floodplain along a small tributary stream to the Brandywine Creek

What issues does this tool address?

Flooding occurs even under natural conditions. Flooding is known to worsen as the result of the changes in land surfaces resulting from land development. Flooding directly destroys valuable property and impacts human health. Pennsylvania suffers from one of the nation's greatest losses in terms of flood-linked damage to property as well as loss of life, injury, flood-related human health impacts, etc. Indirectly, flooding and related changes to natural watershed hydrology (e.g., increased stream "flashiness") translate into reduced groundwater recharge, reduced stream base flow, increased streambank erosion, and a general reduction in aquatic richness and diversity in stream systems. It is important to note that as watersheds develop, the nature and extent of flooding worsens—flood events become more frequent and cresting of flood events grows ever higher such that floodplains grow ever broader.

What does this tool accomplish?

A municipality can enact floodplain regulations to limit flooding damage directly to both property and human health as well as to reduce flooding itself. Reducing flooding also results in indirect environmental benefits including reduced streambank erosion and scouring of streambeds, reduced sedimentation, and improved water quality. The net benefits lead to an improved benthic and overall aquatic habitat.

Implementation

How is this tool implemented?

Historically, municipal floodplain regulations in Pennsylvania municipalities have been driven by national Federal Emergency Management Act (FEMA) Flood Insurance Administration (FIA) insurance requirements which are at the core of the national Flood Insurance Program (FIP). In short, if property owners are to be able to purchase heavily subsidized flood insurance (typically very important), municipalities must be members in good standing in the FEMA program and enact minimum FEMA floodplain regulations. These minimum FEMA regulations have a major focus on potential flooding damage to property, as well as human health, requiring that structures be constructed in ways to elevate primary living spaces above 100-year flood elevations. Also, major flooding pathways, or floodways, cannot be constricted as the result of new structures which impede flood flows. It should be noted that with the increase in coastal and non-coastal flood damage across the country in recent years, FEMA is making changes to minimum requirements and making program standards more rigorous.

Central to the FIP are FEMA's floodplain maps with their calculated floodplain elevations linked to historical flooding and flood protection/risk zones. These flood maps may be somewhat outdated and do not reflect overall changes to upstream watershed land use and hydrology, coupled with more recent changes in precipitation/climate data. Typically, flooding resulting from a 1-year storm (2.4 inches of rainfall in a 24-hour period in SE PA) appears to be

causing worsened flooding in many downstream municipalities; furthermore, 1-year storms appear to be happening more and more frequently—for whatever reason. In sum, many municipalities are learning that their existing floodplain regulations (typically located in their zoning ordinances) are outdated and not responsive to emerging floodplain management issues and needs. Even setting aside issues of protecting environmental functions and eco-services, conventional floodplain management doesn't seem to be effectively protecting property and safeguarding human life.

From an environmental perspective, minimum FEMA standards have their shortcomings. Minimum standards typically do not limit or manage the extent of clearing, grading, and removal of existing floodplain vegetation, all of which have significant water quantity, flow attenuation, and water quality impacts. Naturally vegetated riparian and floodplain areas slow flood flows, absorb flood waters, and filter sediment and other pollutants. Some municipalities have added additional environmental floodplain management standards to their ordinances, though few are as restrictive as they should be (the Conservancy has model environmental provisions which it recommends that Greenway municipalities adopt).

Applicability

How can this tool be used in the BCG?

Rigorous floodplain regulations should be adopted by all municipalities in the Greenway. These floodplain regulations should be coordinated with watershed and urbanization context (i.e., location in the watershed in terms of stream order, and extent of development occurring upstream and downstream. Floodplain regulations should be integrated with forested riparian regulations as well to avoid duplication and promote clarity and simplicity of application.

More Information

Where can one learn more about this tool?

- Virtually all municipalities within the Greenway have adopted floodplain regulations, typically residing in their respective zoning ordinances. Substantial information is available regarding floodplain regulations at www.fema.gov and www.fema.gov/national-flood-insurance-program.
- Contact the Municipal Assistance Program at the Brandywine Conservancy for additional help.
- Chester County Planning Commission.
- Chester County Water Resources Authority.

Public Land Dedication & Fee-in-Lieu

Introduction

What issues does this tool address?

Communities need open space for passive and active recreation and natural areas where wildlife can flourish.

What does this tool accomplish?

Municipalities can require developers to provide land for this purpose, while also permitting several voluntary alternatives, including a fee-in-lieu. Public dedication is sometimes called "mandatory dedication" by land-use planners.

Implementation

How is this tool implemented?

- A municipality must first adopt a Parks and Recreation Plan as an element of their comprehensive plan.
- Then, it amends an existing, or adopts a new, subdivision and land development ordinance that provides for public dedication. This ordinance must contain definite standards (such as number of acres per person).

Voluntary alternatives to public dedication can be offered but not mandated

- Developers may pay a "fee-in-lieu" to be used for parks and rec facilities accessible to the new development.
- Developers may construct recreational facilities.
- Developers may reserve private land within the development for parks and rec use.

If fees-in-lieu funds are collected:

- **Time:** They must be used within 3 years.
- **Used for:** They can be used to buy parkland, trails, provide infrastructure, buy new equipment, or improve existing parkland that is accessible to the new development.
- **Not used for:** They cannot be used to maintain existing parkland or buy maintenance equipment.

Success

Where has this tool been used successfully?

This tool has been used with great success in hundreds of municipalities statewide, concentrated in high-growth areas such as Chester County. Local examples include Pocopson, East Brandywine, East Bradford, and Upper Uwchlan townships.

Applicability

How can this tool be used in the BCG?

This tool helps to achieve a number of the goals of the Greenway, including: non-motorized transportation, conservation, recreation, and aesthetics. Specific functions that public land dedication can fulfill include the preservation of open space and the provision of recreational trails and facilities for residents.

More Information

Where can one learn more about this tool?

- The Brandywine Conservancy.
- Chester County Planning Commission.

Public Dedication of Land and Fees-in-Lieu for Parks and Recreation:

1. **http://conservationtools.org/guides/show/17**
2. **http://conservationtools.org/libraries/1/library_items/253-Public-Dedication-of-Land-and-Fees-in-Lieu-for-Parks-and-Recreation**

Covered bridge along Buck Run

Resource Protection Regulations

Introduction

What does this tool accomplish?

Promoting the conservation of a broad array of resources while providing for on-going community development. Regulations can protect:

- Flood Plains, Wetlands, and Steep Slopes.
- Riparian Buffers.
- Woodlands.
- Unique Natural Areas.
- Greenway Corridors.
- Scenic Landscapes.
- Historic Resources.

A boardwalk meanders through mature woodlands

Implementation

How is this tool implemented?

- Most resource protection regulation is accomplished via the Zoning Ordinance, which applies all the time and not just to development scenarios.
- Some municipalities regulate certain resources within the SALDO only, so as not to apply rigorous resource protection standards to the average homeowner.
- Resource protection regulations that may stipulate use limitations or outright prohibitions, or may more liberally apply disturbance limitations and/or performance standards.
- Historic resource protection requires provision for viable economic re-use or adaptation.
- A clear and accurate inventory of all subject resources serves as an import qualifier to resource protection regulation.
- All resource regulation should take into account the unique character of individual properties and the need for landowners to undertake lawful land use.

Success

Where has this tool been used successfully and what were the outcomes?

- Every municipality is subject to Flood Plain regulation and Wetland regulation which have minimized disturbance of these resources in recent decades.
- Most municipalities regulate the disturbance of steep slopes with relative success.
- Few municipalities regulate unique natural areas or riparian buffers beyond regulation imposed by the state.
- Limited regulation has successfully been imposed at the municipal level for woodlands, greenways, scenic landscapes and historic resources. Examples in the Greenway region include Pennsbury, Pocopson, Honey Brook, Upper Uwchlan, and East Bradford Townships, to name a few.

Applicability

How can this tool be used in the BCG and in which municipalities might it be suitable?

- Local regulation of natural and cultural resources can be enacted or enhanced in every municipality within the Brandywine Creek Greenway region.
- Suitability of specific forms and applicability of regulations are dependent upon both the unique characteristics of each municipality (e.g., what resources are present?) and the community conservation and development objectives.

More Information

Where can someone learn more about this tool?

- Chester County Planning Commission.
- The Brandywine Conservancy.

Transferable Development Rights

Introduction

What does this tool address?

- Loss of farms and forests.
- Development impacts to watersheds.
- Suburban sprawl.

What does this tool accomplish?

- Saves land and manages growth.
- Pays landowners for development rights.
- Balances property values.

The landscape using TDR to protect farms and forests from suburban sprawl

Implementation

How is this tool implemented?

Established in zoning by:

- Creating the sending areas—resources to be protected permanently.
- Creating the receiving areas—development to be accommodated through planning.
- Administering the program—simple tracking of the TDR exchanges.

Success

Where has this tool been used successfully?

Chester County–Honey Brook Township; West Vincent Township. Lancaster County–Warwick Township; Penn Township; Caernarvon Township.

Applicability

How can this tool be used in the BCG?

- Can be applied to remaining areas of farms and forests.
- Could help limit public infrastructure encroachment.
- Discourage subdivisions outside of growth areas.
- Utilize urban areas for intended development.
- Partner with land trusts to encourage tool use.

More Information

Where can one learn more about this tool?

- The Brandywine Conservancy's publication—*Transfer of Development Rights, A Flexible Option for Redirecting Growth in Pennsylvania.*
- Chester County Planning Commission.
- **http://pa-lancastercountyplanning.civicplus.com/documentcenter/view/162**
- **http://conservationtools.org/guides/show/12-Transfer-of-Development-Rights**
- **http://www.beyondtakingsandgivings.com/tdr.htm** (An up-to-date TDR website)

Stormwater Management and Best Management Practices (BMPs)

Introduction

What issues does this tool address?

Rapid development has caused issues with flooding and water quality in many of our streams—especially in urbanized areas. These problems are caused by a reduction in forest cover and an increase in impervious surfaces in our urban and suburban areas. Impervious surfaces such as roads, driveways, and rooftops prevent stormwater runoff from naturally soaking into the ground. Stormwater management and BMPs focuses on mitigating the negative impacts of stormwater to our properties and natural resources.

What does this tool accomplish?

The Stormwater Management tool provides resources for municipalities to address stormwater-related water resources issues within their communities. Stormwater Best Management Practices (BMPs) are innovative approaches, including activities, facilities, designs, measures, or procedures, used to manage stormwater impacts from new development or redevelopment. Quantitatively, stormwater management is intended to reduce runoff volumes and slow peak runoff rates, to minimize downstream flooding, protect groundwater and surface water resources, and reduce property damage and loss of real estate. Qualitatively, BMPs have been proven to reduce the levels of sediment, nutrients, toxics, and other pollutants in streams. They protect water quality for habitat of aquatic species, minimize the cost of water treatment for our drinking water supply, and improve the overall quality of life in the watershed. BMPs can be used to satisfy increasing regulatory requirements of the PA Department of Environmental Protection and the US Environmental Protection Agency, such as Total Maximum Daily Loads (TMDLs) and National Pollutant Discharge Elimination System (NPDES) permits.

Implementation

How is this tool implemented?

Stormwater BMPs are commonly grouped into two categories “structural” or “nonstructural” BMPs. Structural BMPs consist of permanent physical devices or practices that are installed to capture and treat stormwater runoff. Structural BMPs include, but are not limited to, a wide variety of practices and devices from large-scale retention ponds and constructed wetlands to small-scale underground treatment systems, infiltration facilities, filter strips, bioretention, wet ponds, permeable paving, vegetated swales, riparian or forested buffers, and detention basins. Generally, nonstructural BMPs refer to operational, behavior-related, planning, or design strategies that attempt to minimize the generation of stormwater runoff and pollutants in stormwater runoff. For example, municipal ordinances provide primary means of locally regulating stormwater and balancing development activities with water resource needs and values. Local ordinances are often guided by standards required by county, state, and federal agencies.

Success

Where has this tool been used successfully?

All Chester County municipalities have adopted Act 167 Stormwater Ordinances. In addition, when stormwater BMPs are utilized and maintained properly, there is proven success in reducing flooding and improving water quality in our streams.

What were the outcomes of using the tool?

When BMPs are properly matched to site and proposed development, installed, and maintained, there is proven protection and restoration of our waterways before, during, and after development activities.

Applicability

How can this tool be used in the greenway?

Where there is existing stormwater runoff in urban or suburban areas, municipalities are governed by state and federal Municipal Storm Sewer System (MS4) and Total Maximum Daily Load (TMDL) regulations. Most municipalities within urbanized areas must satisfy the requirements of MS4 permits and must meet any TMDL goals.

Chester County municipalities NOT currently under NPDES Phase II (MS$) Regulations shown in blue

In which municipalities might this tool be suitable?

All greenway municipalities can benefit from this Stormwater tool to provide maximum environmental and quality of life enhancements within their communities. PA DEP has adopted statewide stormwater regulations for erosion and sediment control under Chapter 102. In addition, several documents relevant to planning and engineering for better stormwater management have been published including the Pennsylvania Stormwater BMP Manual and other guidance documents for Low Impact Development, Green Infrastructure, and Smart Growth. This toolkit includes several strategies that are relevant to stormwater management including Conservation Design, Natural Resource Protection Standards, Agricultural BMPs, and Conservation Easements.

More Information

Where can someone learn more about this tool?

- Brandywine Conservancy.org
- Chester County Water Resources Authority
- PA DEP website
- EPA website
- Center for Watershed Protection website

Rural Conservation Zoning

Introduction

The rural aesthetic that is part of the Greenway

What does this tool address?

- Loss of farms and forests.
- Loss of rural character.
- Suburban sprawl.

What does this tool accomplish?

- Protects prime farm lands.
- Retains viable mass of agriculture.
- Protects rural resources while providing landowners with rural housing options.

Implementation

How is this tool implemented?

Typically establishes zoning districts that:

- Favor continued agriculture over non-farm residential uses (effective agricultural zoning) or allow for farming, forestry, and low-density residential uses (rural conservation zoning).
- Include incentives for conservation.
- Complement the uses of conservation easements and transferable development rights.

Rural conservation protects natural/cultural resources through choosing the residential subdivision options.

Success

Where has this tool been used successfully?

Used in various forms within the upper reaches of the Greenway, including Honey Brook, West Caln, West Nantmeal and West Brandywine Townships.

Applicability

Chester County contains some of the most productive agricultural soils in the country

How can this tool be used in the Brandywine Creek Greenway?

- It can apply to remaining areas of farms and forests.
- It can limit public infrastructure encroachment.
- It combines with woodland, riparian buffer, floodplain, wetland, steep slope, and historic resource protection regulations.
- It discourages cookie-cutter subdivisions in favor of preserving productive agricultural land and sensitive natural areas.
- It can be used to promote use of conservation design/open space developments.

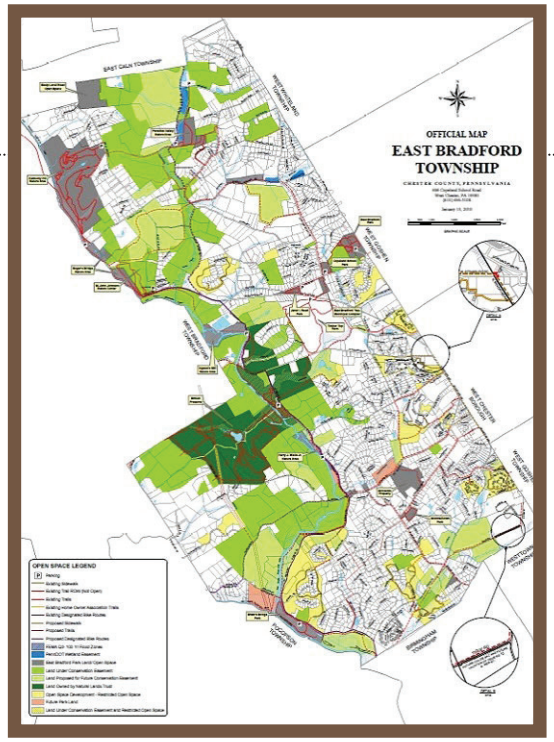
More Information

Where can someone learn more about this tool?

- **www.co.lancaster.pa.us.** *Greenscapes Element of the Lancaster County Comprehensive Plan—Balance.*
- **http://conservationtools.org/guides/show/67-Agricultural-Protection-Zoning**,
- The Center for Rural Pennsylvania, Zoning for Farming, *A Guidebook for Pennsylvania Municipalities on How to Protect Valuable Agricultural Lands*, 1995.

The Official Map

Introduction



East Bradford Township Official Map shows goals for open space, trails, and other public improvements

- The Official Map identifies public improvements (transportation, open space, and recreation) goals of a municipality and is used to help implement those goals.
- Provides the right of first refusal to municipalities.
- Helps focus limited financial resources on projects to meet community goals.
- Helps municipalities make improvements such as improving the local street network; protecting important natural areas; and providing more green space, recreation facilities, trails, and sidewalks.
- Saves time and money by informing property owners and developers of municipal goals and intentions ahead of development plans.
- Helps to ensure that development is compatible with and supportive of public goals.
- Supports zoning and subdivision and land development ordinances by helping provide infrastructure and acquire public spaces.
- Helps secure grants.

Implementation

How is this tool implemented?

- Through a Comprehensive Plan and possibly other plans and studies, such as traffic studies, open space & recreation plans, etc.
- Public education.
- The map itself is the ordinance.
- The Zoning and Subdivision ordinances should be amended to reference the Official Map.

Success

Where has this tool been used successfully?

64 municipalities in the state have an Official Map (as of 6/2011) including: 16 in Chester County and 6 in the Brandywine Creek Greenway (Birmingham, East Bradford, East Caln, Honey Brook, Uwchlan, and West Bradford Townships).

What were the outcomes of using the tool?

- Open space preservation and multi-use trails in East Bradford Township.
- Development of an extensive, interconnected trail network in Uwchlan Township.
- Preservation of important natural areas in Bushkill Township, Northampton County.

Applicability

How can this tool be used in the BCG?

The top four goals for the entire Greenway have been identified as

1. **Recreation:** The Official Map can be used to prioritize land for acquisition and use as public parks and trails.
2. **Conservation:** It can also be used to identify land as a conservation priority.
3. **Water quality:** If that land includes riparian areas, conserving it can protect and improve water quality.
4. **Transportation:** The Official Map can be used to identify multi-use trail corridors, as well as to improve the street network.

In which municipalities might this tool be suitable?

- Any municipality!

More Information

Where can someone learn more about this tool?

- *The Official Map: A Handbook for Preserving and Providing Public Lands & Facilities.* **http://conservationtools.org/libraries/1/library_items/931**
- The Brandywine Conservancy.

Non-regulatory Tools

Agricultural Best Management Practices (BMPs)

Introduction

What does this tool accomplish?

Agricultural Best Management Practices (BMPs) are farming methods designed to mitigate the potential adverse environmental effects farming can have while maintaining the agricultural business' vitality of the farm.

Cattle in the creek negatively impact water quality. A controlled cattle crossing/creek access is an agricultural BMP.

Implementation

How is this tool implemented?

The first step is to have a Conservation Plan and possibly a Nutrient Management Plan completed for the farm. These plans will analyze the physical properties of the farm in conjunction with the type of Agri-business being conducted. The analysis will then dictate the types of BMPs for the specific cropping situation in combination with the land type (for example: soil, slope, or proximity to open water).

Applicability

How can this tool be used in the BCG?

All farms should meet with an agricultural consultant to ensure that the current stewardship of the farm is capitalizing on all the up to date opportunities to mitigate the impact of their activities on the environment.

More information

Where can one learn more about this tool?

Chester County Conservation District

- Dan Miloser 610-925-4920.

Natural Resources Conservation Service (NRCS)

- Beth Sassaman 610-696-0398 ext 114.

The Brandywine Conservancy

- John Goodall 610-383-9515
- Grant DeCosta 610-388-8117

Agricultural Easements

Introduction

What does this tool accomplish?

- Enables landowners to separate and **sell their development rights** from other property rights.
- **Landowners retain all other rights** of ownership, including the right to farm, prevent trespass, sell, bequeath or otherwise transfer the land.
- County pays the difference between value of the land for agriculture and the value of the land for its "highest and best use," generally residential or commercial development.

Implementation

How is this tool implemented?

Farm selection gives 40% consideration to land evaluation (how productive soils are) and 60% consideration to site evaluation. The 60% consideration to site evaluation breaks down into 25% for Farmland Productivity and Conservation practices, 10% for development risks, and 25% for farmland clustering.

Applicability

How can this tool be used in the BCG?

To apply to the County/State Agricultural Preservation Program, a farm must have:

- At least 50 acres (challenge grant 25 acres), or at least 10 acres producing a crop unique to the area, or at least 10 acres contiguous to a property with a perpetual conservation easement.
- At least 50% of the soils must be available for agricultural production and in Class I through IV soils.
- Contain the greatest option of either 50% or 10 acres of harvested cropland, pasture or grazing land.

More information

Where can one learn more about this tool?

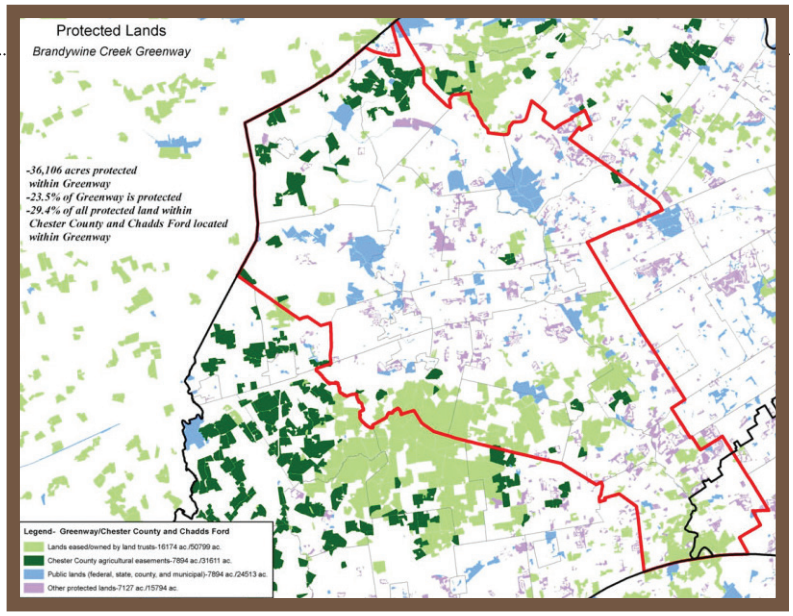
Chester County Agricultural Preservation Program

- Geoff Shellington 610-344-5656.

Brandywine Conservancy

- John Goodall 610-383-9515.

Application Deadline is typically in late summer.



Existing agricultural easements shown in dark green

Agricultural Security Areas (ASAs)

Introduction

What issues does this tool address?

The Agricultural Security Area (ASA) program began in 1981 as a tool for strengthening agriculture as part of the "Right-to-farm". An ASA is an area where agriculture is the primary activity as set forth in PA Act 43. Farms within an ASA are entitled to special review prior to condemnation.

Farms enrolled in an ASA are protected from nuisance lawsuits that target normal agricultural activities such as noises or unpleasant odors produced by livestock. A farm enrolled in an ASA is also eligible to participate in County/State Farmland Preservation Programs.

Implementation

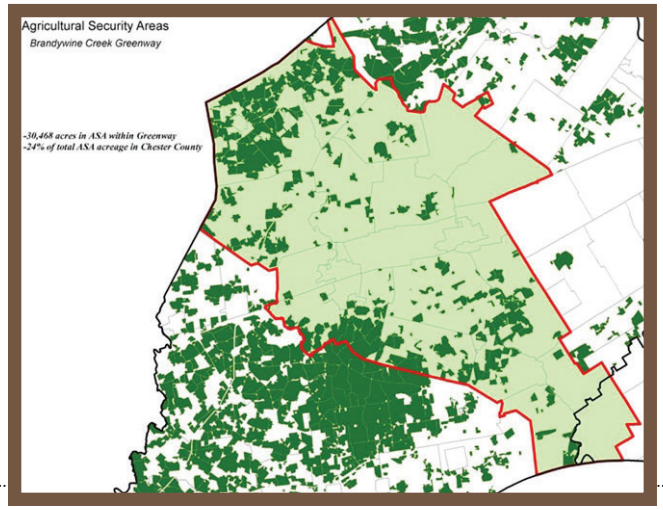
How is this tool implemented?

ASAs are created by local municipalities with individual farmers that agree to collectively place at least 250 acres in an ASA. An eligible farm must be at least 10 acres in size and have viable farmland. Every seven years the municipality reviews their ASA.

Participants receive special consideration regarding:

- Local ordinances affecting farming activities.
- Nuisance complaints.
- And review of farmland condemnation by state and local government agencies.

An ASA qualifies land for consideration under Chester County's Easement Purchase Program at the landowner's request, if the ASA has at least 500 acres enrolled.



Existing agricultural easements shown in dark green

Applicability

Where can this tool be used within the BCG?

An ASA is a productive tool to alleviate potential unforeseen municipal/Agra-community ordinance conflicts while also creating opportunities for municipalities to engage the farming community in other dialogues (i.e. farmland preservation).

More Information

Where can someone learn more about this tool?

- Your Municipal Office.
- Brandywine Conservancy Western Area Manager; John Goodall 610-383-9515.
- Chester County Planning Commission.
- Chester County Department of Open Space Preservation

Conservation Easements

Introduction

What issues does this tool address?

A conservation easement allows land to be permanently preserved at a potentially lower cost than the cost of purchasing and holding a fee interest. The land remains in private hands. A land trust or government entity can hold the easement and be responsible for monitoring and enforcing it. There is no obligation to require public access.

What does this tool accomplish?

A conservation easement is a voluntary restriction of private property rights. An easement permanently restricts the uses and activities on the land to protect its conservation values. Restrictions are tailored to the particular property and the mutual goals of the holder and the landowner.

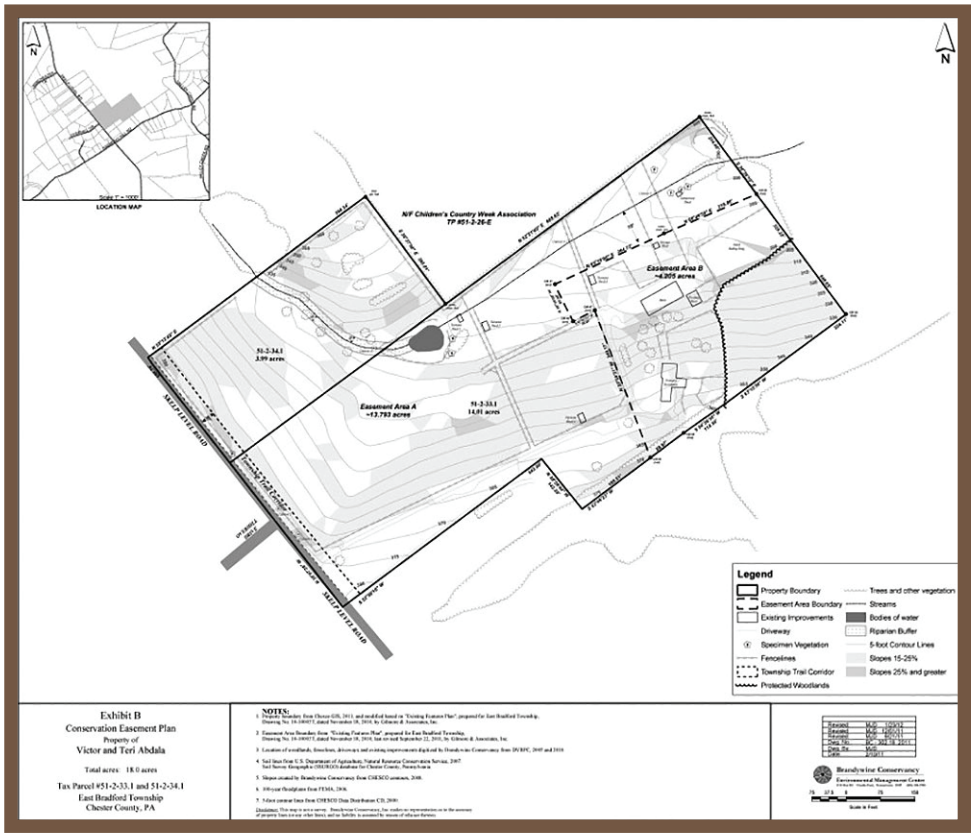
Implementation

How is this tool implemented?

A conservation easement is a legal agreement between landowner and an eligible organization. Eligible organizations (under the tax code) include land trusts, municipalities, and other government entities. An easement is recorded as a deed restriction in the county office of the Recorder of Deeds and applies to all future owners.

Easement Preparation Process

A land trust can work with a municipality to help it preserve land by means of conservation easements. After initial meetings with an interested landowner to explain the easement preparation process and confirm their interest in placing an easement on their property, deeds should be checked for any encumbrances and a title report is ordered. The land trust sends a proposal letter to the landowner and the township, outlining the terms of the easement and the project costs. These costs include the time to write the easement and the baseline documentation report and to create an



An easement plan (map) is prepared after the land trust proposal has been accepted.

easement plan (map); an endowment to perpetually monitor and enforce the easement; and the cost of any needed surveying. Once the proposal is approved and signed by the landowner and the township, the land trust drafts the easement. If the easement is being purchased, an appraisal is ordered.

An easement purchase agreement is prepared with an offer price based on the appraisal and is presented to the landowner. The township board of supervisors passes a resolution authorizing the easement purchase. A survey of the property boundary or designated building areas is ordered if needed. The easement is finalized and the baseline documentation report is prepared. Title insurance is ordered, and settlement occurs. (This, of course, would be slightly different
if the project does not involve a township.)

Holding and Stewarding Easements

- The grantee or primary holder of an easement is often a land trust, and the municipality and other grant providers may be named as co-grantees, co-holders or beneficiaries. Any of these entities are considered qualified conservation organizations under the Internal Revenue Code and can serve as the primary grantee/holder.
- The advantages of having a land trust serve as the as primary easement holder and steward include experience, staff capacity, technical capabilities and tools such as GIS mapping, and dedicated endowment funds for stewardship and enforcement. On the other hand, the municipality is closest to the property and has local contact with the landowners.

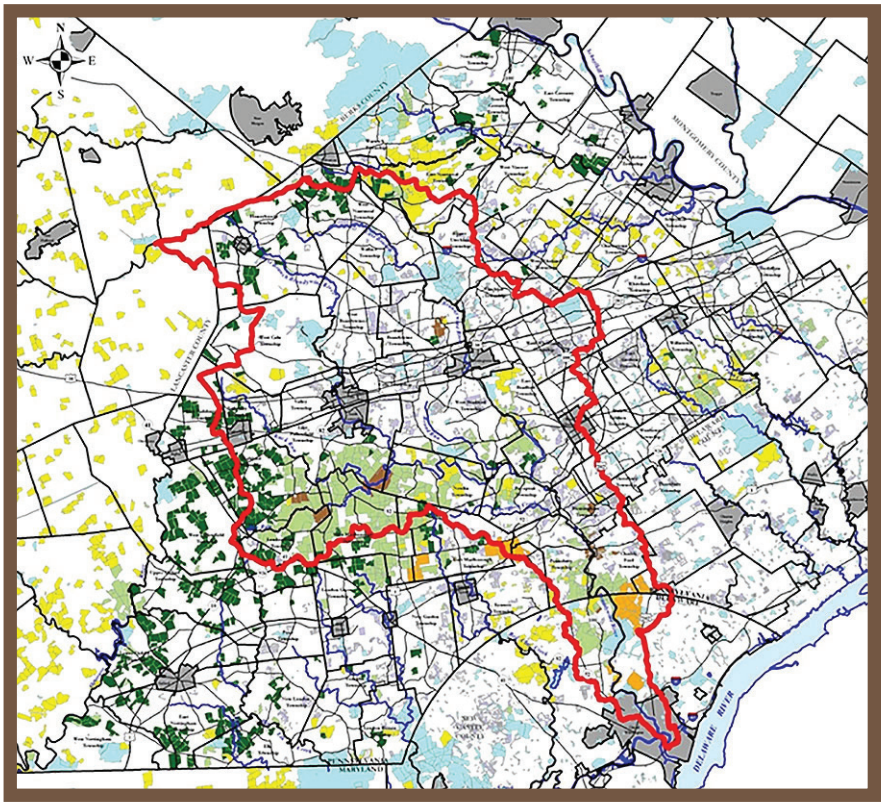
Success

Where has this tool been used successfully?

Throughout Chester County and the United States.

What were the outcomes of using the tool?

As of March 2013, in the Brandywine Creek watershed (shown outlined in red) 8,823 acres (4% of the watershed) were preserved with agricultural conservation easements (shown in dark green); and 23,047 acres (11% of the watershed) were preserved with easements held by the Brandywine Conservancy (shown in light green).



Applicability

How can this tool be used in the BCG?

Conservation easements can be donated by willing landowners, purchased with various grant and municipal funds, or partially purchased and partially donated. Municipal outreach to landowners can include public meetings and individual visits. A land trust can create mapping and analysis of particular parcels and can provide materials on conservation easements and the easement process. Staff can then follow-up with discussions regarding landowner goals, easement terms, and funding opportunities.

More Information

Where can someone learn more about this tool?

- The Brandywine Conservancy's materials include a Conservation Easement brochure and General Guidelines for Conservation Easements.
- A good source of more information regarding conservation easements in Pennsylvania is the Pennsylvania Land Trust Association (PALTA) website **www.conserveland.org**.
- Information regarding Chester County's Open Space Preservation Program can be found on their website **www.chesco.org**.

Fee Simple Interest

Introduction

What issues does this tool address?

A fee simple interest is a form of freehold ownership of land and is the highest ownership interest possible that can be had in real estate. Fee simple ownership in real property is limited by government powers of taxation, eminent domain police power, and other encumbrances or conditions in the deed.

Municipalities may choose to pursue fee interest in a property, or take title to a property, in order to assume full ownership. This is considered an option when land with significant natural, cultural, or recreational resources is threatened by development or when the township's Comprehensive Plan has identified a parcel of land for future public use. A muncipality can acquire full ownership of open space, historic buildings, or high priority real estate through purchase or donation as a charitable gift.

What does this tool accomplish?

- Public parks and preserves allow active and passive recreation for residents.
- Purchase or donation of land can be used to preserve important natural, agricultural, and historic resources.
- Public parks and open spaces often provide opportunities for environment education.
- Open space can be used to mitigate flooding.

The Brandywine Trail in East Bradford Township

Implementation

How is this tool implemented?

When a municipality is considering the purchase of land it should consider the following.

- Priority lands should be identified on an Official Map, Comprehensive Plan, Trail Plan, or other planning document. However, municipal governments can be opportunistic and may have flexibility to acquire other lands that are voluntarily offered by willing landowners.
- The municipality should pay to have an appraisal completed by a licensed real estate appraisor. The Municipal Planning Code specifies that a municipality is not permitted to pay more than fair market value for real estate. If the seller wishes, they may pay to have a second appraisal completed and the municipality and seller can negotiate a fair market price that splits the difference between the two appraisals.

- The governing body (Board of Supervisors, City Council) should consult with their solicitor, and perform due diligence research on the property to determine if there are any liens or environmental issues.
- Pass a resolution to authrize the expenditure of funds for the purpose of purchasing land.
- Land may be purchased by a municipality with a combination of grant and municipal funds. Funding sources may vary by municipality and may include fee in lieu funds, open space funds, interest from bonds, or other municipal funds. If Open Space funding is used, comply with legal provisions under PA Act 153.
- Once a municipality has sole control of the property it also has an obligation to maintain it. A stewardship plan should be prepared that outlines the projected uses and maintenance tasks.
- Land may be donated to a government entity or non-profit organization by private landowners. The value of the donation may be eligible as a charitable tax deduction for the seller.
- Municipal ordinances can include provisions for land/open space to be dedicated to the municipality as part of a private subdivision and land development project.

Applicability

How can this tool be used in the BCG?

- Interested municipalities can partner with county agencies, state agencies, other municipalities, local non-profit organizations, and private foundations to purse grants and matching funds.
- Public open space may be used for the conservation of natural habitats, historic preservation, agricultural preservation, flood mitigation, or recreation.

More Information

Where can one learn more about the tool?

- Chester County Planning Commission.
- Chester County Department of Open Space Preservation
- Visit the PALTA website at conserveland.org.
- Visit the Pennsylvania DCNR website for grant programs at **http://www.dcnr.state.pa.us/brc/grants/c2p2programguidance/index.htm**

Joint Ventures and Leveraging Funds

Introduction

What issues does this tool address?

Many municipalities and their staff lack the expertise, experience or resources to successfully complete a special project. For example, the expertise needed for a conservation easement includes the ability to negotiate with landowners and to prepare and record easement documents. Municipalities often have limited staff whose time is consumed dealing with a range of important municipal tasks. Limited availability of municipal funding for special projects can also present an obstacle.

What does this tool accomplish?

Partnerships among municipalities, land trusts, government agencies, corporations, landowners, and other stakeholders bring a dynamic mix of expertise, experience, and resources to the table. A team of partners can be carefully selected to maximize project success. Joint ventures have the potential to:

- Bring supporting talents.
- Build a broader funding base.
- Improve scores on grant applications.
- Reduce cash outlays by providing matching funds.

Implementation

How is this tool implemented?

Joint ventures demand creativity, flexibility and, most of all, time and patience. Each project will require a unique cast of players depending upon the goals of the project, and will play out unlike any other venture.

1. Define the scope of the project—whether it is a conservation easement, fee-simple purchase, lease agreement, environmental restoration, site mitigation, etc. This phase should include a preliminary estimate of probable costs.
2. Engage potential partners and stakeholders with mutual interests and obtain their commitment to provide expertise or funding for the project.
3. Agree on goals and division of responsibilities.
4. Identify private and public sources of funding and make initial contact with funding sources.
5. Secure landowner agreement to preserve property.
6. Obtain detailed appraisals, bids or estimates from qualified professionals.
7. Submit proposals or grant applications accompanied with letters of support from the partners and from local and regional political representatives.

Horse pasture along the Brandywine

Applicability

How can this tool be used in the BCG?

- Park Acquisition.
- Land Preservation.
- Tail Easements.
- Suitable in all municipalities.

More Information

Contact:

PA DCNR

- Community Conservation Partnership Grant Program (C2P2).

DVRPC

- Regional Trails Program.

Chester County

- Open Space Preservation Programs.
- Farmland preservation.
- Conservancy grants.
- Municipal grants.
- Community Revitalization Program.

Non-Profit Land Trust Assistance

What is a Land Trust?

A land trust, also known as a land conservancy, is a private, nonprofit organization that, actively works to conserve land by undertaking or assisting in land or conservation easement acquisitions or by its stewardship of such land or easements. Land trusts have memberships and a Board of Directors that is made up of community representatives. Some land trusts may own nature preserves or sanctuaries, help municipalities to acquire open space or parkland, or educate the public regarding the value of the natural environment.

Land Trusts can offer:

- Expertise with landowner outreach/easement cultivation, easement document preparation, education and outreach
- Possible sources of matching funds for easement purchases,
- Staff with up-to-date knowledge of relevant conservation regulations, laws and best practices.

Services Include:

- Property Stewardship Plans.
- Municipal Prioritization Planning.
- Grant Application Assistance.
- Marketing Assistance & Outreach.
- Legal Document Development.
- Project Management & Implementation.
- Mapping Services thru GIS.

Productive agricultural land and easements in the headwaters of the Brandywine

Finding a Land Trust

- Go to Chester County Open Space Preservation Program website for links to local land trusts and non-profits.

Caution:

- Land trusts have their own priorities and may charge for their services.

Examples:

- Brandywine Conservancy
- Natural Lands Trust
- North American Land Trust
- Pennsbury Land Trust
- The Land Conservancy for Southern Chester County

More Information

- Pennsylvania Land Trust Association—**www.ConserveLand.org**.

Local Municipal Land Trusts

What is a Municipal Land Trust?

It is a public (or quasi-public) corporation formed by a municipality. Its mission could include urban renewal, redevelopment, conversions of state or federal lands for conservation or redevelopment, and acquisition of open space for conservation or recreation. There is no membership. A Board of Directors is composed of political appointees and/or elected officials. Non-profit land trusts can provide assistance to municipalities who wish to form a local municipal land trust.

Municipal Land Trusts can:

- Purchase land on the open market
- Accept receipt of surplus public property from federal, state, or county agencies
- Work in partnership with private non-profit land trusts

Services Include:

- Grant Application Assistance.
- Legal Document Development.
- Project Management & Implementation.
- Mapping through municipal GIS services.

Examples of Municipal Land Trusts:

Pennsbury Land Trust

- Offers educational programs on environmental topics
- Identifies and promotes protection of land
- Helps landowners assess stream quality, control invasive plants, and protect natural resources
- Assists landowners with the process of conveying conservation easements
- Monitors and enforces the protection of lands within the Trust

More Information

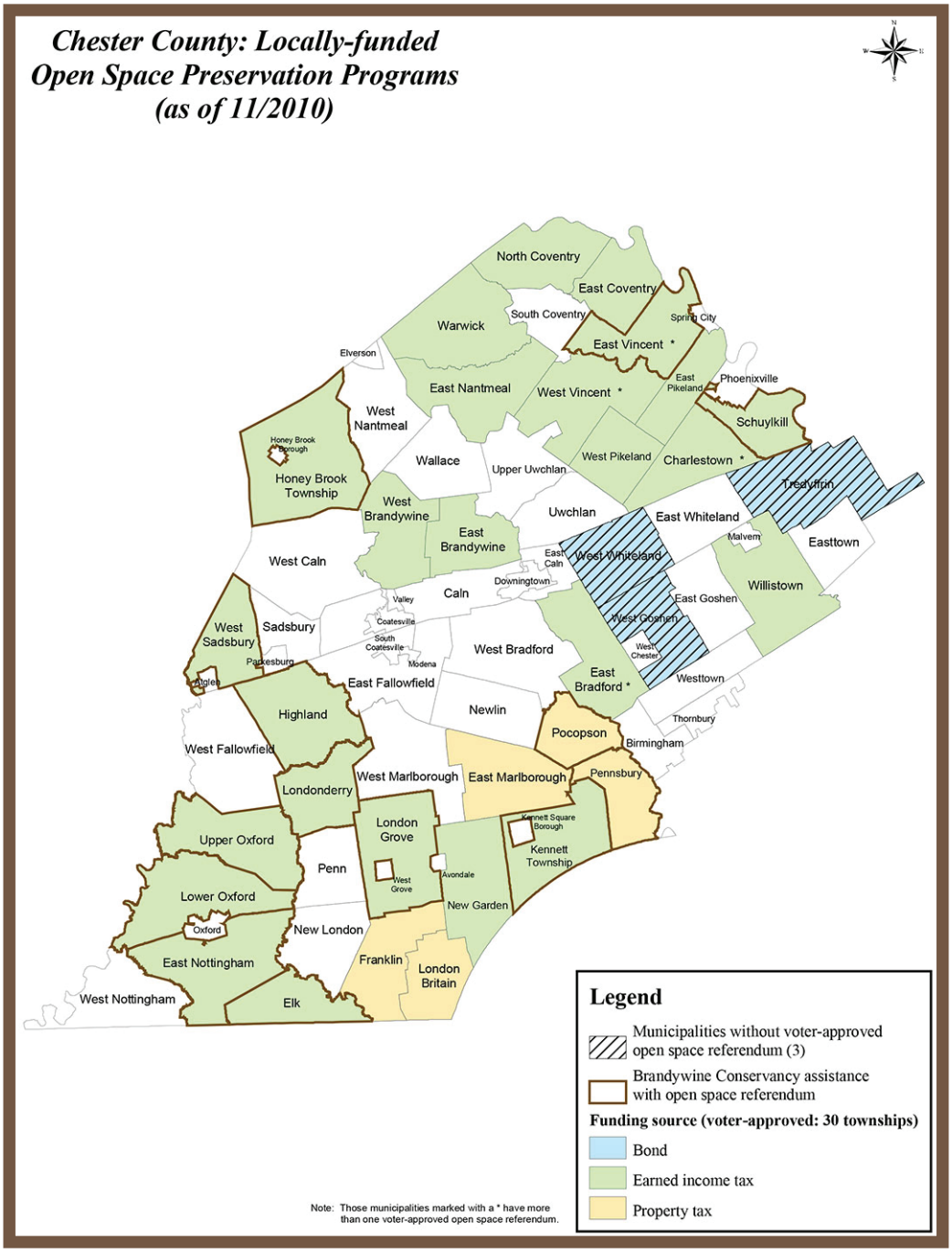
- The Brandywine Conservancy.
- Pennsylvania Land Trust Association—**ConserveLand.org**.
- Pennsbury Land Trust—**http://pennsburylandtrust.org**.

Open Space Referenda and Bonds

Introduction

What issues does this tool address?

One of the greatest challenges municipalities may have for open space preservation is a lack of funding to purchase land or easements. PA Act 153 authorizes local governments throughout the Commonwealth to preserve, acquire or hold land for open space uses.



What does this tool accomplish?

Cities, boroughs and townships in Pennsylvania are permitted to levy dedicated property, earned income and real estate transfer taxes for land conservation with the approval of a simple majority of voters through a ballot measure. Municipalities may also issue bonds with the proceeds dedicated to conservation projects with the approval of a simple majority of voters.

This tool has enormous impact. Voter approved tax revenues or bond proceeds can be used for conservation purposes described in the ballot questions. Examples of how the revenues can be used include: purchase of conservation easements; purchase of agricultural easements; purchase of land in fee; and purchase of trail easements. Act 153 also permits a percentage of revenue received to be used for stewardship, maintenance and recreational development on properties where conservation interests have been acquired through this funding tool. The bottom line is that this tool helps a municipality create a funding source that can be leveraged with other sources of funding to more effectively conserve land.

Implementation

How is this tool implemented?

A conservation referendum enables citizens of a local municipality to vote to establish a dedicated tax for open space protection. It also enables citizens to approve borrowing beyond normal debt limits by local municipalities for conservation projects.

Solid preparation is critical for success. Funding to underwrite the ballot initiative campaign is recommended. Advocates for an open space tax should consider preparation of:

- A solid case statement.
- A public opinion survey.
- Carefully drafted ballot language
- Campaigning to raise awareness and support/votes
- Political coordination.
- The municipality must prepare a plan designating open space priorities where funds may be utilized. Some municipalities use the Official Map for this purpose. See Official Map regulatory tool.

Tax and Borrowing Options for Referenda

- All cities, boroughs and townships in Pennsylvania are permitted to levy dedicated property, earned income and real estate transfer taxes for the purchase of open space lands or development rights with the approval of a simple majority of voters through a ballot measure. No limits on voter authorized property and earned income tax rates exist. However, state law limits the real estate transfer tax to 1.0%; if a community has already reached this level of taxation, it cannot be exceeded. The state law (Act 153 of 1996) authorizes cities, boroughs and townships to levy these taxes, but does not provide this authority to counties.

- All county and local government units in Pennsylvania may issue non-voted debt if they are within the statutory debt limits permitted under the Local Government Unit Debt Act. The amount of non-voted debt that can be issued by a county is limited to 300 percent of its borrowing base; for other local governments, the limit is 250 percent of its borrowing base. The Act defines the borrowing base as the average annual revenue taken over the last three years. If a bond issue would exceed the debt limit or hamper the jurisdiction's financial flexibility by using too much of its non-voted debt issuing capacity, a voter-approved (electoral) bond measure can be sought. There are no statutory debt limits on the amount of voter-approved (electoral) debt, or self-sustaining debt.

Applicability

How can this tool be used in the BCG?

Seven of the twenty-four greenway municipalities have already established dedicated open space preservation funding sources and rely on county, state, federal, and other funds to leverage their limited resources to meet local and regional open space preservation goals. Examples include:

- Acquisition of open space, park lands, and trail rights-of-way.
- Acquisition of agricultural and conservation easements.
- Stewardship Planning.
- Recreational Development.

More Information

Where can someone learn more about this tool?

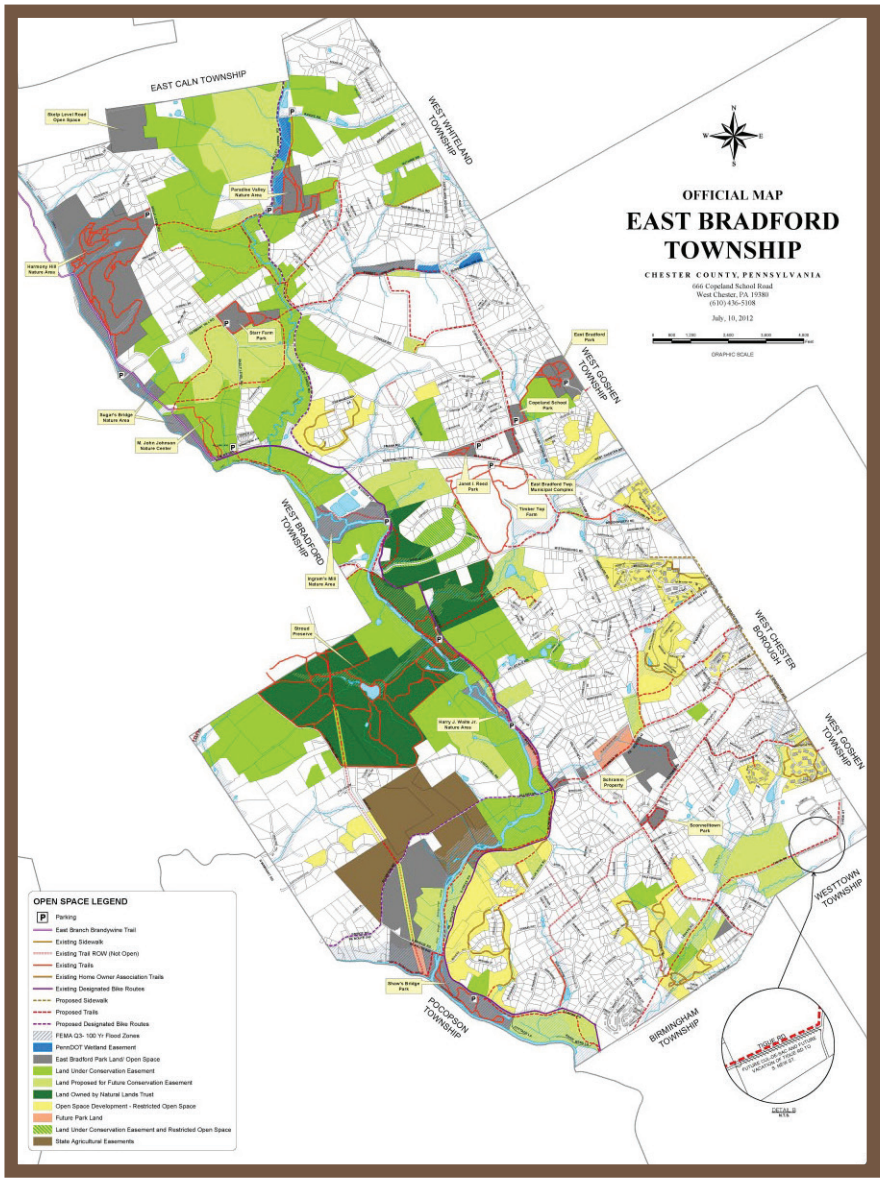
- For more information, visit **http://conservationtools.org/guides/show/16-Conservation-Referendum#ixzz3AIBRaosk.**
- DCNR.
- Chester County Planning Commission.
- Municipal Bond Council.
- The Brandywine Conservancy.
- Natural Lands Trust.

Open Space Planning and Prioritization

Introduction

What issues does this tool address?

- When a property becomes available on the open market, it can take municipal leaders weeks or months to research the property and decide whether it has natural, cultural or recreational features that could benefit the public. Or the municipality may not even be aware that a property is on the market until it has been sold. When there is a political will to conserve open space at the municipal level, an open space preservation plan is needed to help identify goals and priorities. A plan allows the municipality to better focus staff time and financial resources on projects that have merit.



Protected and Developed Lands, East Bradford Township.

What does this tool accomplish?

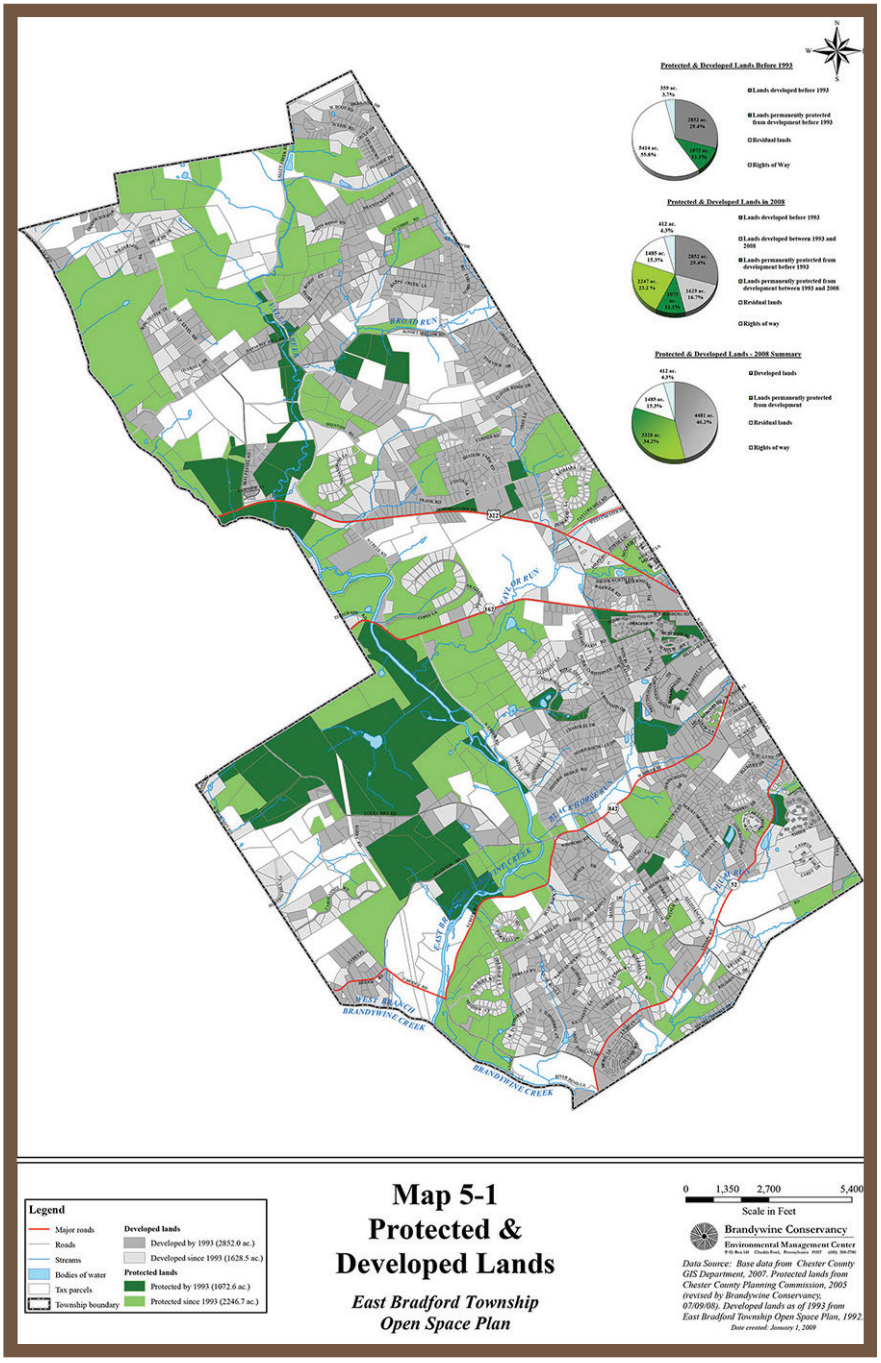
- An Open Space Plan is required for Act 153 funding. (see Open Space Referenda and Bonds). The Plan should define open space conservation objectives. For example, the objectives may include:
- Natural Resource Protection.
- Agricultural Preservation.
- Cultural Resource Preservation.
- Planned Recreation/Trails.

An Open Space Plan must identify priorities for acquisition of conservation interests or lands in fee and the plan also may establish/develop a rationale to support grant funding.

Implementation

How is this tool implemented?

- Many municipalities include an open space planning component as part of their Comprehensive Plan update, which is updated on average every 10 years. When a Comprehensive Plan is relatively current but considered by the municipality to be somewhat deficient under Act 153 in its analysis of open space preservation goals, an Open Space Plan can be completed and adopted as an amendment or addendum to the Comprehensive Plan. The Official Map can be used as a supplementary tool to identify priority lands that are identified in the Open Space Plan. Act 153 puts no limitations on means or approaches to negotiation with landowners, except that funds obtained pursuant to Act 153 may not be used in tandem with eminent domain proceedings. Nor can funds paid exceed a fair market appraisal. Where the Official Map is used to identify open space priorities, that complementary tool effectively creates a "right of first refusal" for the municipality to negotiate acquisition.



East Bradford Township map shows protected open space over time

Applicability

How can this tool be used in the BCG?

- BCG Municipalities can use Open Space Planning to varying degrees to promote preservation of culturally significant open space, recreational opportunities and scenic views, and to plan implementation of a network of recreational trails.
- In order to respond to the municipality's changing goals, needs, challenges and opportunities, Open Space Plans should be updated regularly (e.g., every ten years).
- When translated onto an Official Map, the open space and recreation priorities of the municipality can be easily communicated to municipal constituents and potential developers. More importantly, designation on the Official Map sets up a one year period within which the municipality may initiate acquisition of interest(s) in the property prior to the landowner undertaking any activity subject to permit which may undermine the municipality's conservation purposes

More Information

Where can someone learn more about this tool?

- Chester County Planning Commission.
- Brandywine Conservancy.
- Natural Lands Trust.

Preferential Tax Incentives (319)

Introduction

What is 319 Clean and Green? What issues does this tool address? What does the tool accomplish?

Clean and Green—Pennsylvania Farmland and Forest Land Assessment Act, Act 319 (amended by Act 156 of 1998 and Act 235 of 2004) is a state law, authorized by the state constitution, that allows qualifying land which is devoted to agricultural and forest land use, to be assessed at a value for that use rather than Fair Market Value. The intent of Act 319 is to encourage property owners to retain their land in agricultural, open space, or forest land use, by providing some real estate tax relief.

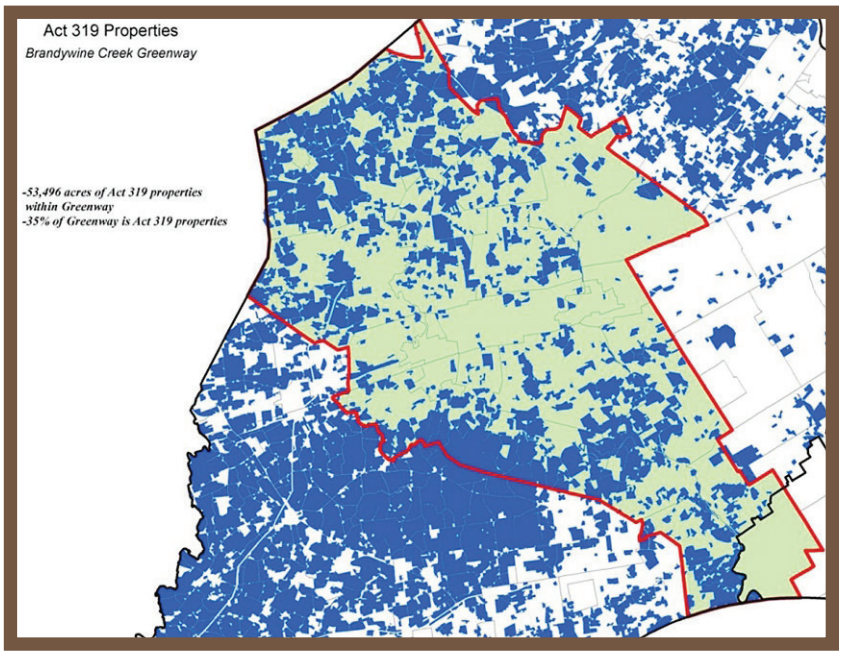
When a county implements a Clean and Green program, it places two values on each parcel of land that qualifies. These values are known as the Fair Market Value and the Use Value, better known as the Clean and Green Value. After these new values have been certified by the county, tax bills are calculated for each taxing district, using either the Fair Market Value assessment or the Use Value assessment, depending upon whether or not the property owner has enrolled his property in the Clean and Green program.

- A preferential assessment for parcels of land 10 acres or larger.
- Value derived from agricultural use potential instead of market approach.
- Land value is typically lowered by 30% or more.
- Owner agrees to not subdivide or develop and must pay 7 years of rollback taxes plus 6% interest if agreement is 'breached.'

Implementation

Who qualifies and how do they enroll?

- Any parcel(s) over 10 acres may qualify.
- Yearly enrollment period runs from March 1 to June 1 of each year and values take affect the following tax year.
- Enrollment is by notarized application only and, as of 2014, there is a $65.50 fee + $5.00 per application.
- Rejected applicants fees are refunded.



Map of properties (dark blue) enrolled in Act 319.

Applicability

How the Agricultural Value is Calculated?

- Each class of soil has an 'AgUse' value which is multiplied by the acreage to derive the preferential land assessment.
- Wooded portions are valued at a different rate than the 'tillable' portion (Chester County uses the same rate for different classes of woodlands).

More Information

Who to contact for more information?

Chester County Planning Commission.

The Chester County Assessment Office.

- Cheryl Pringle, 610-344-6105

Brandywine Conservancy.

- John Goodall, 610-383-9515

Deadline June 1

Trail Easements

Introduction

What is a trail easement?

A trail easement is a voluntary, legally enforceable agreement between a landowner and a trail organization or local or state agency where the landowner promises to preserve a linear corridor of land, keep it substantially free of future development, and make it available for public use. Such an agreement would include restrictions on the type and extent of public access permitted (i.e. hiking, horseback riding, etc.). A trail easement runs with the land in perpetuity and is binding on future owners. The trail corridor remains the property of the owner and may be conveyed to other owners, though the trail easement remains in place.

An easement may be donated or sold to a trail group, town, or public agency based on its appraised fair market value. Donations of land or development rights are tax deductible in most instances, with the amount of the deduction depending on the value of the easement and the financial circumstances of the owner.

What issue does this tool address?

A municipality plans to implement a trail network using the Open Space Plan and Official Map tools that define open space and recreation priorities, including trails. However, the municipality may not have sufficient funds to pay the appraised market value for properties that become available for sale or properties that are subject to subdivision and land development. The municipality needs a tool that will help to stretch the open space funding budget so that as many open space and recreation goals as possible can be achieved for the investment.

What does this tool accomplish?

A trail easement costs a fraction of the purchase price for the entire parcel of land and allows public access to private lands at a reduced cost. By voluntarily donating or selling a trail easement to a nonprofit or government, a landowner may allow public use to a specified area without having to subdivide the land or lose ownership and control of the land.

Why would a landowner wish to grant a trail easement to the Township?

- Provide a legacy for future generations, while continuing to own and enjoy the land.
- Improvements to the trail easement area such as clearing of invasive plants, repair of erosion-prone areas, and environmental restoration at no cost to landowner.
- Financial benefits: retain property value; use the value of the easement donation as a tax deduction; or, sell the easement at bargain or full value.

What is the landowner's liability?

- Pennsylvania's Recreational Use of Land and Water Act (RULWA), PA Act 586 of 1965, shields landowners from the liability which arises from permitting the public to use their land for outdoor recreational purposes, as long as the land is largely unimproved and an access fee is not charged.
- If the Township is the easement holder (or tenant under a lease) and has management responsibilities for the trail, the landowner would generally still be protected by RULWA regardless of its applicability to the Township.

- Although RULWA may afford immunity to the landowner in the long run, it does not cover the legal costs of defending against a frivolous suit, even if you ultimately prevail. Most homeowner policies cover usage comparable to that of sidewalks.
- The Township should maintain adequate insurance for trail usage.
- The Township should help landowners avoid liability problems on adjacent lands by providing barrier fencing and/or landscaping where required and by carefully marking the trail and posting appropriate signage.

What are the risks to the landowner?

- The property will be accessible to a greater number of users, both local and non-local.
- As with any private property or public facility there is some risk of vandalism, off-trail use (trespassing), illegal vehicular access, uncontrolled pets (dogs off the leash), and litter.
- To avoid risk, the trail should be located in areas that do not pass in the vicinity of obvious hazards on adjoining private land, and will be located at least 100 feet away from existing residences.
- The Township should help landowners avoid trespassing on adjacent lands by providing barrier fencing and/or landscaping where required and by carefully marking the trail and posting appropriate signage.
- Some landowners may be particularly sensitive about potential conflicts with their agricultural operations/horses. Smart layout and signage can adequately mitigate this risk.

What are the costs to the landowner?

- The landowner should retain legal counsel to review the easement or lease or sale documents on their behalf.
- The landowner should consult their insurance company to evaluate whether their insurance policy/rate would be adjusted.

What are the benefits for the residents of the Township?

- Implement recommendations in the Strategic Action Plan for the Brandywine Creek Greenway and municipal planning documents.
- Ensure that access to an important ecological resource is preserved for future generations.
- Facilitate the health benefits of walking, promoting healthier lifestyle for residents, and enhancing the livability of our community.
- Provide access to scenic, pristine, and ecologically significant areas.
- Provide residents with opportunity for outdoor education, nature appreciation, bird watching.
- Allow connections between the Brandywine Creek and other corridors within and beyond Township boundaries.

Implementation

How is this tool implemented?

A trail easement program should include municipal outreach and education to provide answers to basic questions landowners typically have.

If an Official Map or Trails Plan has been adopted, a municipality may require that a trail easement be provided when a subdivision or land development application involves a future trail. Trail easements can also be granted as a condition of conservation easement purchase by a municipality or can be granted separately.

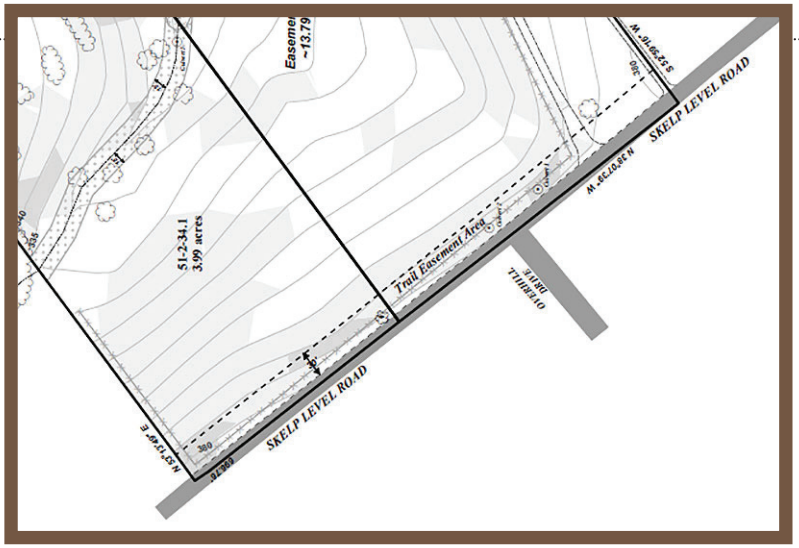
The most basic scenario may be when a landowner grants a trail easement to a nonprofit organization or government to allow the nonprofit or government to construct or maintain a public trail on private property. Once a trail easement project is identified, the landowner and the municipality should negotiate a variety of matters:

- The width of the trail and width of the easement
- Types of facilities allowed
- Permitted uses i.e. hiking, bicycling, horseback riding
- Liability in case of an accident
- Maintenance and emergency access
- The trail easement must be surveyed, mapped and a legal description prepared.
- An appraisal is performed by a licensed real estate appraiser.
- A trail easement agreement is prepared ideally with the municipality or the county as the Holder or Grantee, and the landowner as the Grantor. In most cases, a municipality is the best holder of the easement since it is closest to the location and is able to regularly monitor the trail.

Applicability

How can this tool be used in the BCG?

- Trail easements can be utilized for any planned trail as illustrated on the Recreation and Alternative Transportation Priorities Map.
- The tool is especially useful for the Brandywine Trail—an existing footpath that extends from the Mason-Dixon Trail in Pennsbury Township to the Horse-Shoe Trail in west Vincent Township. It is considered an endangered trail as much of the length occurs on private property with verbal permission from the landowners. Trail easements would formalize the use of the trail and ensure that it will be open to the public in perpetuity.



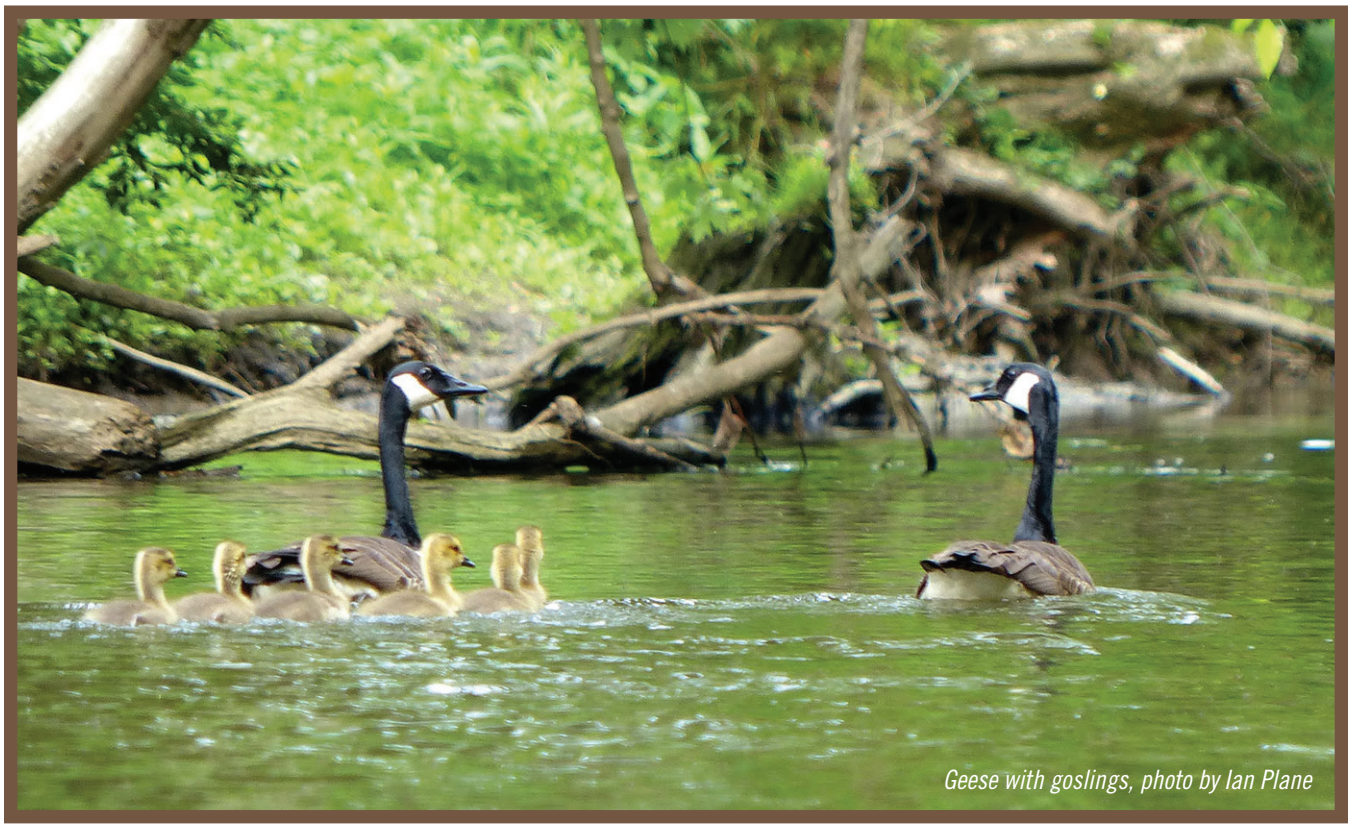
Example of how a trail easement is shown on a property map.

More Information

Where can one learn more about the tool?

- Chester County Planning Commission.
- Visit the PALTA website at **http://conservationtools.org/guides/show/56-Trail-Easements**
- The Brandywine Conservancy.

2. Resource Summary Maps



Geese with goslings, photo by Ian Plane

The following Resource Summary Maps depict tax parcels of 10 acres or greater that are likely to contain important natural and cultural resources. The Resource Summary Maps are to be used as a basis for municipalities to explore potentially important parcels for natural and cultural resource conservation. The data for the maps was obtained from: Chester County GIS Department, 2012; Delaware County GIS Department, 2012; and Chester County Planning Commission, 2013. The Resource Summary Maps provide synopsis's of data that are detailed in the Resource Inventory Maps (see Water Resources Inventory Map, Agricultural Resources Inventory Map, Cultural Resources Inventory Map, and Natural Resources Inventory Map) provided in Appendix A.

Each municipality has its own unique set of priorities for conservation; therefore the maps are presented according to four themes: Natural Resources (wildlife habitats); Water Resources; Agricultural Resources; and Cultural Resources. This suite of maps provides a basis for municipalities and landowners as they consider parcels of land for natural, cultural, agricultural, and water resources conservation. There are many possible techniques that can be used to evaluate resources. The ones used to generate the following four maps are well suited for the Brandywine Watershed, but may not be applicable to other locations.

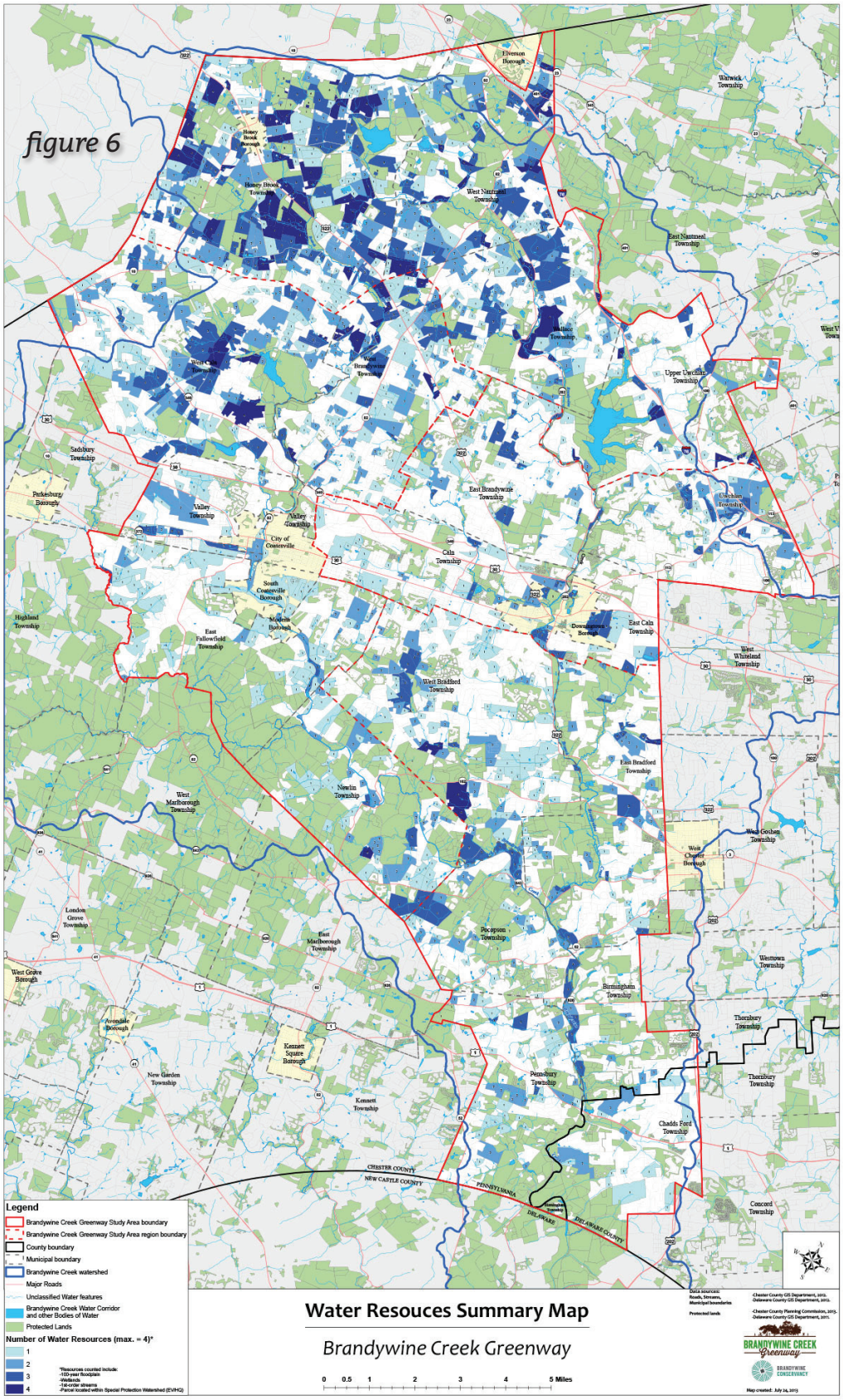
Generally, only parcels of 10 acres or greater were analyzed for the presence of resources. The darker colors indicate parcels with a presence of the greatest number of resources and the lighter colors show parcels with the least number of resources. No minimum acreages of resources were taken into account in the analysis—so parcels with 20 acres of woodlands received the same credit as parcels with .01 acres of woodlands. No prioritization is implied by this mapping. The Resource Summary Maps are to be used as a primitive indicator of what is located on each parcel. A detailed site inventory and analysis is required in each case to determine the true extent of any resources.

The resources data on the Resource Inventory Maps (Appendix A) were rated according to the presence of the following values:

Water Resources—maximum possible score=5 (Figure 6)

Received a point for each of the following:

- Located within Special Protection Watershed (EV/HQ)
- Presence of forested riparian buffer
- Presence of 100-year floodplain
- Presence of NWI wetlands
- Presence of 1st order streams

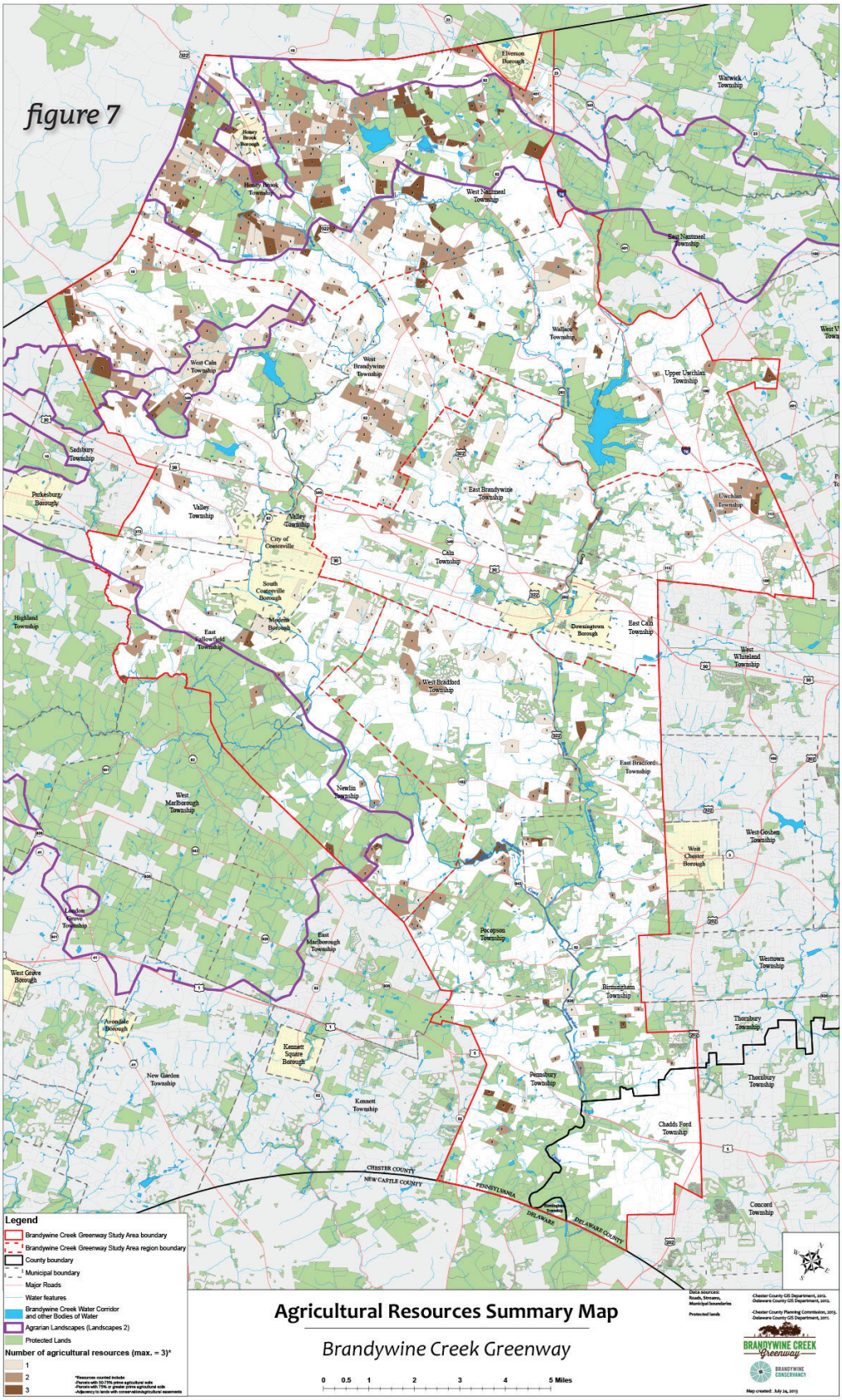


Agricultural Resources—maximum possible score=3 (Figure 7)

Received a point for each of the following:

- 50% prime ag. soils
- 75% prime ag. soils
- Adjacent to conserved land

Also shown but not counted are Agrarian Landscapes from Chester County's Landscapes 2 Comprehensive Plan. See **http://chescopagreen.org/intro/landscapes2.cfm** for a complete description of this future land use category applied to prime agricultural lands within the County.

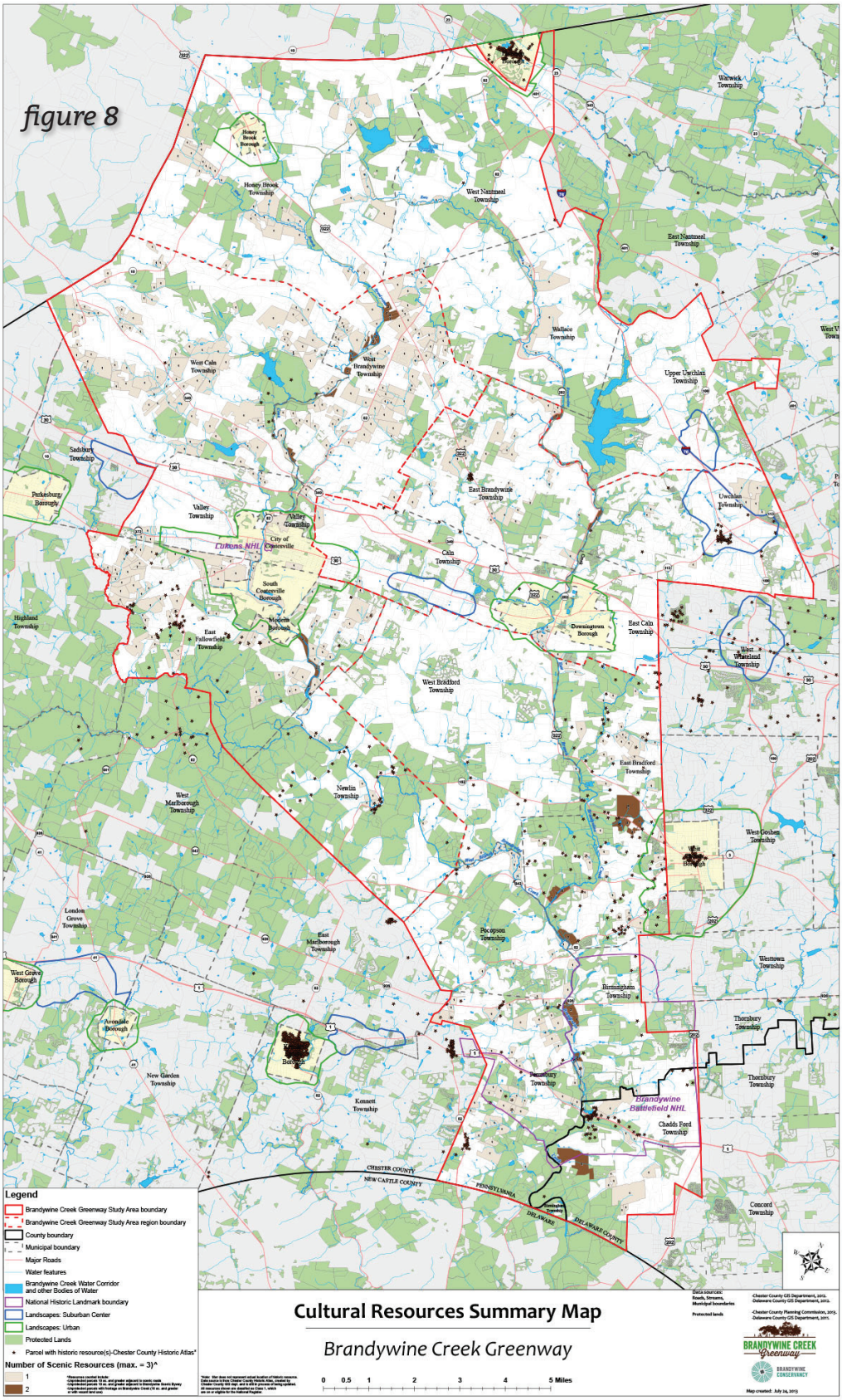


Cultural Resources—maximum possible score=3 (Figure 8)

Received a point for each of the following:

- Frontage along Brandywine Creek-Main Branches only, not tributaries
- Frontage along Brandywine Valley Scenic Byway
- Frontage along designated township scenic roads, along with route 82 and route 282

Also shown are stars which represent the center point of National Register or National Register eligible parcels, but are not counted. A star does not imply resource location, and there may be more than one historic structure located at that location. This data is derived from the Chester County Historic Atlas which is in the process of being updated.

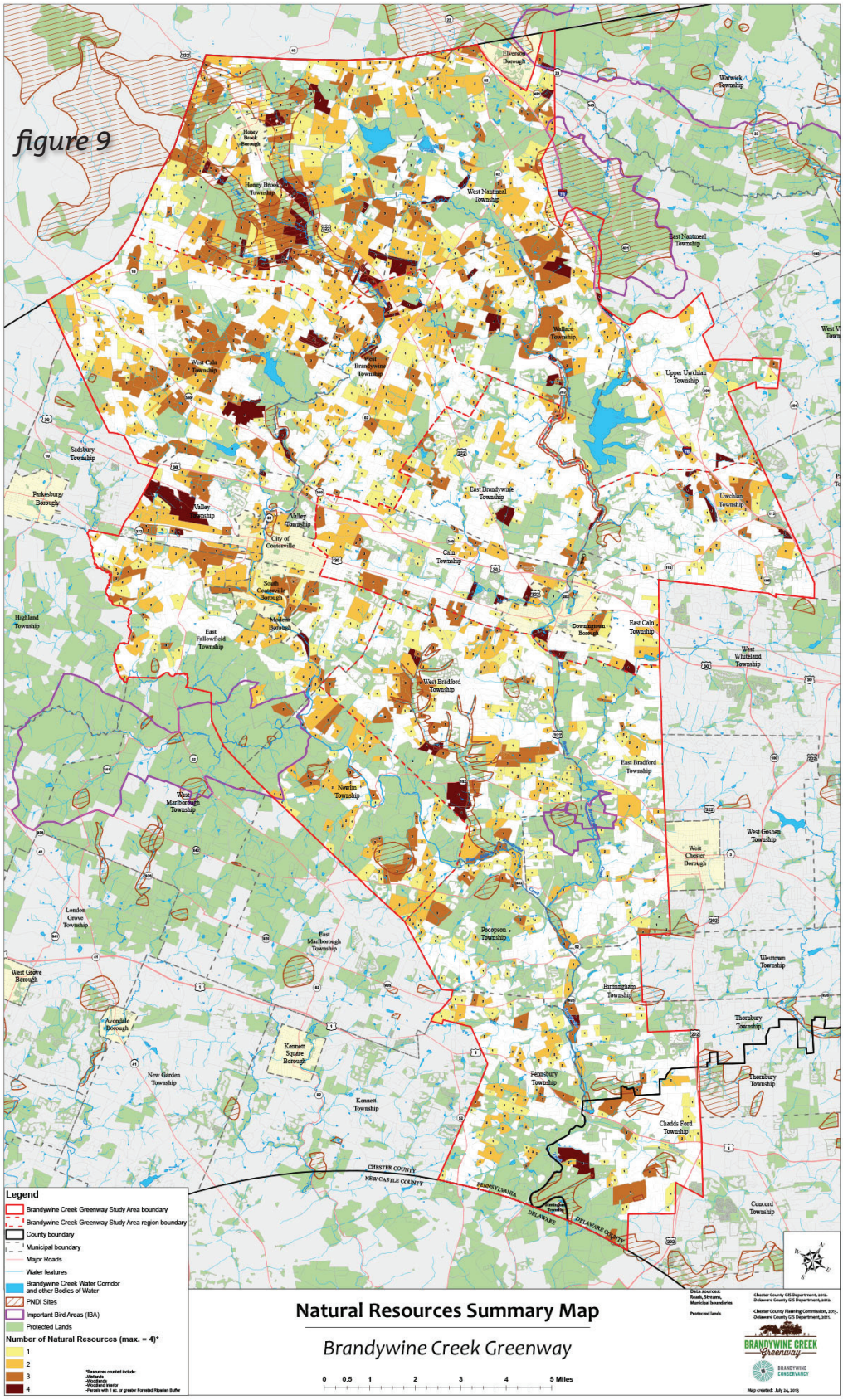


Natural Resources—maximum possible score=4 (Figure 9)

Received a point for each of the following:

- Presence of Woodlands
- Presence of Woodland Interior
- Presence of NWI Wetlands
- Parcels with at least 1 acre of Forested Riparian Buffer

Also shown on the map are the location of PNDI sites and Important Bird Area-IBAs, but they are not counted.



3. Restoration Opportunities

The Restoration Opportunities maps are to be used to identify projects that focus on enhancing water quality in the Brandywine Creek and its tributaries, and improving woodland habitat for wildlife. Continual efforts to restore degraded streams and woodlands on private and public lands should be undertaken on an as-needed basis as opportunities and funding arise.

A detailed site inventory and analysis is required in every project to determine the true extent of any opportunities to restore or enhance woodlands or water resources. A variety of non-regulatory tools for resource conservation are available to landowners and municipalities and can be found at the beginning of this document. In many cases, reforestation projects will be an effective tool to improve water quality, reduce storm water volume, and provide new woodland habitat for wildlife. General watershed and woodland restoration opportunities are:

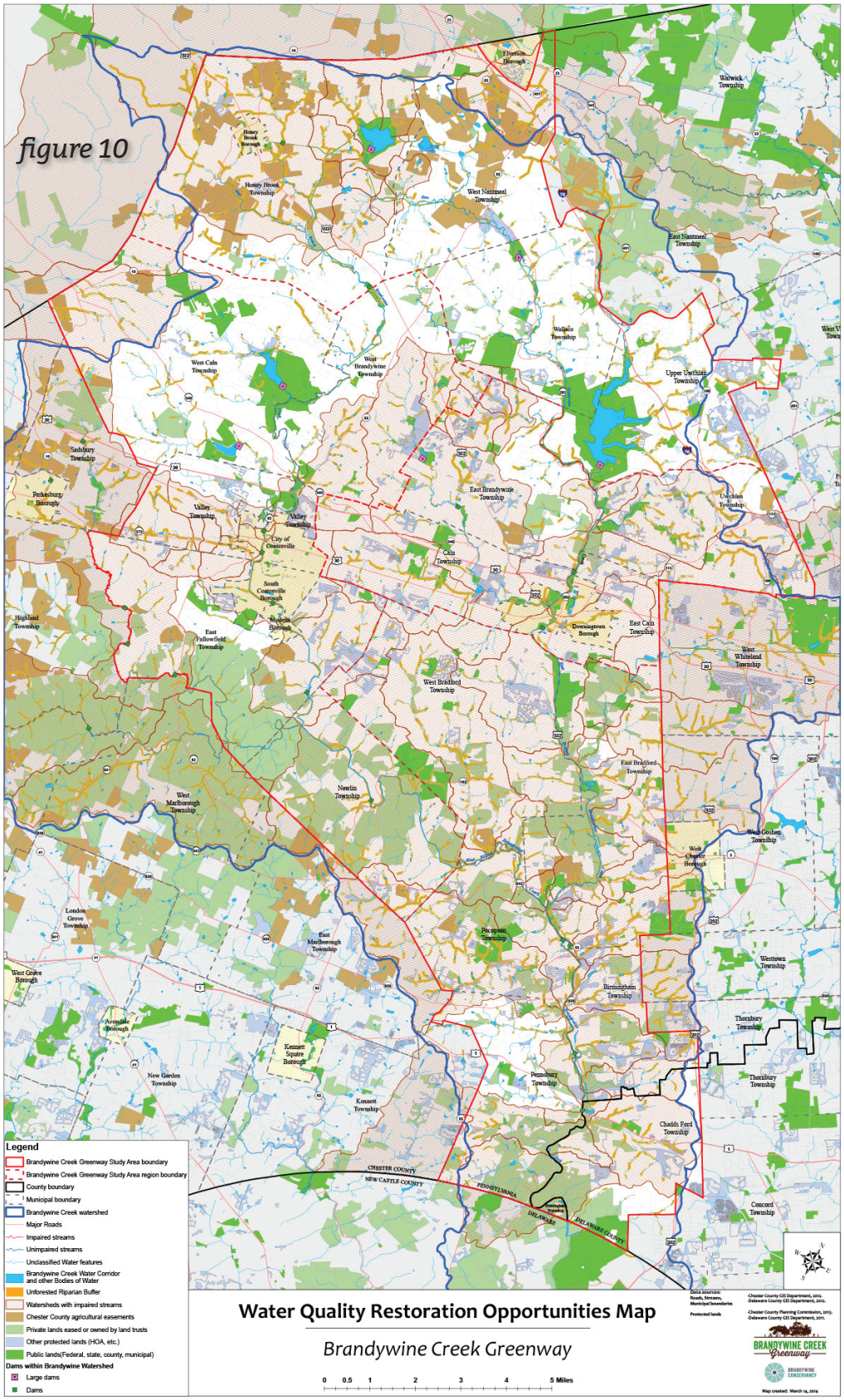
Clover in June, photo by Chuck Bowers

Unforested headwater stream

Hawk at Stroud Preserve, photo by Richard Beck

Water Restoration Opportunities (Figure 10)

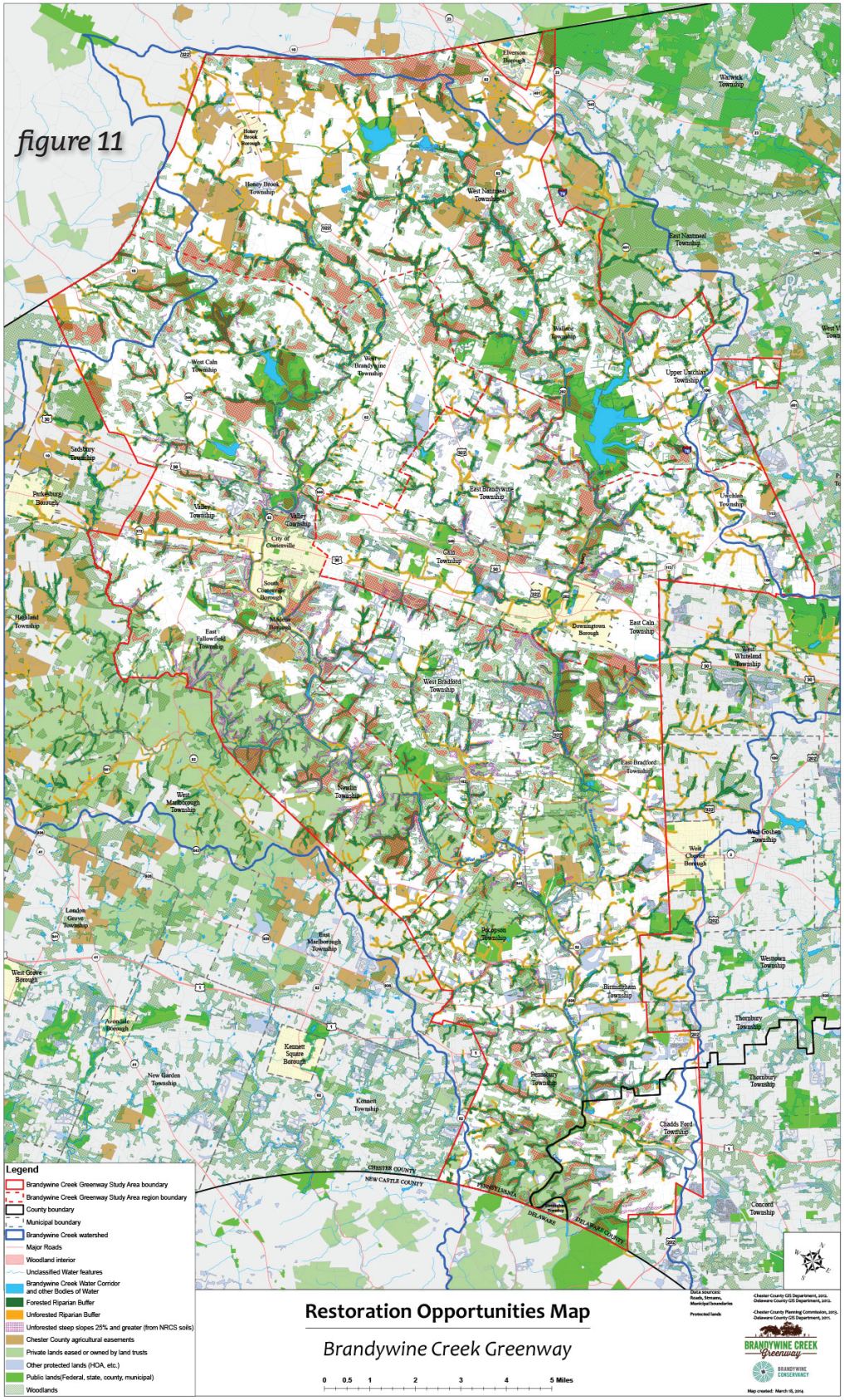
- **Dams**—removal of small dams where appropriate and feasible to reduce sedimentation and lower water temperature, to be addressed by municipalities in partnership with appropriate owners and state agencies
- **Impaired Streams** stream bank stabilization through reforestation, stormwater best management practices and green infrastructure on private and public lands
- **Watersheds with Impaired Streams**—stream bank stabilization through reforestation, stormwater best management practices and green infrastructure on private and public lands
- **Unforested riparian buffer**—reforestation of stream banks, minimum 100' width (recommended as a municipal regulation)



Habitat Restoration Opportunities (Figure 11)

- **Unforested steep slopes 25% and greater (data based upon slopes derived from the NRCS soils data)**—reforestation not only helps to stabilize soils, prevent erosion and sedimentation of streams, it also provides future habitat for a number of insects and mammals
- **Unforested riparian buffers**—reforestation of riparian buffers creates safe travel corridors where wildlife can find shelter as they move from one island refuge to another, minimum 100' width

Woodland Interiors are woodlands with a minimum distance of 300' to the nearest edge. They are minimum of 1 acre, depending upon shape, and are critical for providing special breeding conditions for a number of species of birds and other small mammals. Reforestation of gaps between woodland fragments in upland areas should be implemented in order to augment woodlands and ensure in the long term availability of woodland interior habitat.



4. Natural Resource Protection Standards

How to Use these Model Standards

The following natural resource protection (NRP) standards were initially developed based on zoning ordinances that were adopted within several of the Brandywine Greenway municipalities, most notably Pennsbury and Kennett Townships. Additional standards, modifications, and notes were then added so the standards could be adapted for use by other municipalities. The model standards presented below provide the minimum requirements recommended. Additional woodland and forested riparian buffer standards that provide a higher level of protection are also mentioned at the end of their respective sections.

The NRP standards present a template for addressing the minimum protection needed under ideal conditions. These model standards should be modified to reflect the conditions existing within a specific municipality. For the sake of simplicity, these standards refer to a "Township." For Boroughs or cities, the terms "Borough" or "City" can be substituted for "Township." Some zoning ordinances are divided into "Chapters" while others are divided into "Articles." The template below uses the term "Article" but it can be replaced with "Chapter."

The template is organized into the following sections:

- **Section 1.0:** Purpose (Page 330)
- **Section 2.0:** General Provisions (Page 331)
- **Section 3.0:** Natural Resource Protection Standards (Page 331)
  - **Section 3.1:** Floodplain Protection Standards (Page 332)
  - **Section 3.2:** Steep Slope Protection Standards (Page 333)
  - **Section 3.3:** Woodland and Specimen Tree Protection Standards (Page 336)
  - **Section 3.4:** Timber Harvesting Regulations (Page 340)
  - **Section 3.5:** Riparian Buffer Protection Standards (Page 343)
  - **Section 3.6:** Wetland and Wetland Margin Protection Standards (Page 347)
- **Section 4.0:** Application of Natural Resource Protection Standards (Page 350)

The Legal Basis for Natural Resource Protection

Article I, Section 27 of the Pennsylvania Constitution is known as the "Environmental Amendment." It states that, "The people have a right to clean air, pure water, and to the preservation of the natural, scenic, historic, and aesthetic values of the environment. Pennsylvania's natural resources are the common property of all the people, including generations yet to come. As trustees of these resources, the Commonwealth shall conserve and maintain them for the benefit of all people."

The Municipalities Planning Code (MPC) is the legislation that empowers municipalities to plan their development through the use of comprehensive planning, ordinances, and official maps. While the comprehensive plan provides the policy basis for protecting resources, the zoning ordinance and subdivision and land development ordinance (SLDO) are the two primary means of regulating and protecting natural resources at the municipal level. A municipality is authorized to address natural resources protection in its zoning ordinance by the following sections of the MPC:

- ***Section 603(b)*** states that, except as preempted by specific acts, zoning ordinances may "permit, prohibit, regulate, restrict, and determine...protection and preservation of natural and historic resources and prime agricultural land and activities."
- ***Section 604(1)*** states, in part, that zoning ordinance provisions "shall be designed to promote, protect, and facilitate...[the] preservation of the natural, scenic, and historic values in the environment and preservation of forests, wetlands, aquifers, and floodplains."
- ***Section 605*** allows additional zoning classifications to be created specifically for "the regulation, restriction, or prohibition of uses and structures at, along, or near: (ii) natural or artificial bodies of water, boat docks, and related facilities; (iii) places of relatively steep slope or grade, or other areas of hazardous geological or topographic features;...(vii) floodplain areas, agricultural areas, sanitary landfills, and other places having a special character or use affecting and affected by their surroundings."

A municipality is authorized to address natural resources protection in its SLDO by the following Sections of the MPC:

- ***Section 503(2)(v)*** allows for provisions that ensure that "land which is subject to flooding, subsidence, or underground fires shall be made safe for the purpose for which such land is proposed to be used, or that such land shall be set aside for uses which shall not endanger life or property or further aggravate or increase the existing menace."
- ***Section 503(10)*** allows "provisions and standards for insuring that new developments incorporate adequate provisions for a reliable, safe, and adequate water supply to support intended uses within the capacity of available resources."

The MPC also supports the municipal protection of natural resources through the following sections:

- ***Sections 609.1(c)(3) and (4)*** require the governing body, in the consideration of curative amendments, to consider "the suitability of the site for the intensity of the use proposed by the site's soils, slopes, woodlands, wetlands, flood plains, aquifers, natural resources, and other natural features;" and "the impact of the proposed use on the site's soils, slopes, woodlands, wetlands, flood plains, natural resources and natural features, the degree to which these are protected or destroyed, the tolerance of the resources to development and any adverse environmental impacts."
- ***Section 916.1*** requires the zoning hearing board decision to consider the same environmental issues as outlined above when deliberating on a challenge to the validity of an ordinance.

Other state legislation that supports for the protection of natural resources include:

- ***The Clean Streams Act of 1937*** regulates discharges to the state's waters and was intended to preserve and improve the purity of the waters of the Commonwealth.
- ***The Flood Plain Management Act of 1978*** is intended to limit the loss of life and property damage due to flooding. In order to qualify for national flood insurance, municipalities must enact floodplain management regulations to control development in the 100-year floodplain.
- ***Dam Safety and Waterway Encroachment Act of 1978*** regulates the construction, operation, modification, and maintenance of dams, reservoirs, and structures that encroach and alter a waterbody.

Where to Include the Technical Definitions in NRP Standards

NRP standards often include technical terms used in the natural sciences that are not commonly used in day to day conversation. These terms need to be defined within a zoning ordinance. While most municipal zoning ordinances define terms within a "Terminology" or "Definitions of Terms" article, technical terms and their definitions could also be presented at the beginning of each zoning ordinance section that addresses a given set of natural resources. Such an approach allows the user of the document to scan the definitions and then immediately see how they relate to the regulations presented on the following pages.

A term that is defined in the body of a zoning ordinance should also be listed without its definition in the "Terminology" or "Definitions of Terms" article, which is usually the second article of the zoning ordinance, along with a reference to the appropriate section. For example, if the term Wetland Margin is fully defined in the section addressing wetlands protection, then the term Wetland Margin should also be listed in Article 2 as:

"WETLAND MARGIN—For definition, see Section _____, "Wetlands and Wetland Margins Protection Standards."

By using this approach, there will be only one definition for Wetland Margin. If in the future, the scientific community provides an improved definition for Wetland Margin, the definition can be updated in just one section of the zoning ordinance, thus ensuring that this definition is consistent through the entire document.

The Laurels Preserve, photo by Chuck Bowers

Section 1.0: Purpose

NRP standards should begin with a "Purpose Section," as presented below. This section is needed to demonstrate that the ordinance reflects municipal policies set forth in the municipal comprehensive plan, or other documents that set municipal policy. This approach helps to protect the municipality if their NRP zoning provisions are challenged in court. Zoning provisions are easier to defend if they directly relate to municipal policies that were formulated based on mapping, technical studies, and public surveys documented within a comprehensive plan.

In the text below, the NRP standards are designated as Article 10, although they can be given any number appropriate to a specific ordinance. NRP standards are typically located after the zoning district articles. What is of key importance is that all NPR standards be located together in one article (with a separate floodplain ordinance sometimes being the exception to the rule). Locating all NRP standards in one article makes for a more user-friendly document and helps to ensure that conflicting standards are not inadvertently created.

The text box below presents model purpose language.

ARTICLE X
Natural Resource Protection Standards

SECTION 1.0—PURPOSE

The purpose of this Article is to promote public health, safety, and general welfare by minimizing adverse impacts to the environment, and the plants, animals, and humans who live within it. This Article is intended to meet the following objectives:

1.1 Evaluate the potential environmental impacts on valuable natural resources and protect them through the implementation and enforcement of these natural resource protection standards.

1.2 Identify and conserve environmentally sensitive lands including floodplains, steep slopes, woodlands, water bodies (such as ponds and lakes), watercourses (such as streams and rivers), riparian buffer areas, wetlands, and wetland margins.

1.3 Minimize the disturbance of steep slope areas to limit soil erosion, to prevent damage to property, to protect natural vegetative cover, and to prevent siltation of streams and the degradation of water quality.

1.4 Implement the recommendations for natural resource protection as presented in Chapter ___ of the *NAME* Comprehensive Plan.

NOTES:

- **Regarding Section 1.0: Municipalities Underlain by Carbonate Geology**—In municipalities that are underlain by carbonate geology, a fifth subsection can be added to this section which reads:

  "**1.5** Protect areas of carbonate geologic formations and associated water resources from land use and development patterns which would threaten soil stability, slopes, and water quality and quantity as a result of pollution and the alteration of natural drainage patterns."

- **Regarding Section 1.2: Municipalities with Hedgerows**—In municipalities which have existing hedgerows that are part of the local community character the word hedgerows can be added to the list of "environmentally sensitive lands." Such an addition would be appropriate in more rural or lower density communities. Established hedgerows often contain many non-native plants like multiflora rose, and so there is a need to balance the preservation of hedgerows with the desire to promote the use of native plants.

Section 2.0: General Provisions

The "General Provisions Section" documents those municipal-level activities (such as applications for subdivision or zoning permits) which must follow the NRP standards. The General Provisions Section lists those activities that are regulated by the municipality, and not those activities that may be regulated at the state or national level. This section makes it clear to the reader how and when the standards apply, as well as what to do in the case of overlapping resources.

The text box below presents model general provisions.

SECTION 2.0 GENERAL PROVISIONS.

2.1 It shall be a violation of this Article for an individual or entity to regrade, fill, pipe, divert, channel, build upon, or otherwise alter or disturb a natural resource protected by this Article prior to the submission, review, nd approval by the municipality of:

- **2.1.1** Applications for zoning or building permits;
- **2.1.2** Subdivision or land development plans;
- **2.1.3** Conditional use or special exception applications;
- **2.1.4** Zoning variances;
- **2.1.5** Timber harvesting plans (if applicable); or
- **2.1.6** Any other applicable permit or approval required by the Township that would involve disturbance of natural resources protected in this Article.

2.2 In the event that two or more natural resources overlap, the resource with the greatest protection standard (the least amount of alteration, regrading, clearing, or building) shall apply to the area of overlap.

2.3 Where disturbance of a natural resource is permitted, it shall not take place until the municipal engineer or another professional as designated by the Township has provided a determination that such disturbance is consistent with the provisions of this Article and other applicable ordinance provisions.

2.4 Restrictions to the disturbance of resources shall apply before, during, and after construction on a site.

2.5 Plan information that is required by this Article shall be verified as correct by the municipal engineer or another qualified professional as determined by the municipal engineer.

Section 3.0: Specific Natural Resource Protection Standards

In this model ordinance, all the specific NRP stands are located in one section, divided up into a number of subsections each addressing unique topics as presented below.

Section 3.1: Floodplain Protection Standards

As noted previously, municipalities are empowered to address floodplains in their zoning and SLDO by the MPC (Act 247), specifically Sections 604(1), 605, 503(2)(v), and 609.1(c)(3) and (4). All municipal floodplain standards must meet current Federal Emergency Management Agency (FEMA) guidelines to ensure that the municipality is eligible for Federal flood insurance.

Floodplains absorb and store large amounts of water that are then absorbed into the soil and eventually recharge the aquifer. Naturally vegetated floodplains can catch and filter sediments from floodwaters and also reduce the velocity of sediment laden water. Furthermore, the natural vegetation of floodplains filters water runoff by collecting and holding nutrients, chemicals, and pollutants. Vegetated floodplains also provide valuable wildlife habitat, since most animals prefer to live near the open water which they drink.

Floodplains benefit humans by providing recreation, scenic, and open space opportunities, all of which improve real estate values and quality-of-life. While floodplain land is usually narrow, it provides a valuable source of open space, especially in highly developed communities. Floodplains can also link existing parks and open space areas by using floodplain corridors that commonly fringe creeks, streams, and wetlands.

In many municipalities, technically detailed floodplain standards are located in their own separate article within a zoning ordinance commonly called the "Flood Hazard Overlay District." A model flood plain overlay district is not included here since it already is likely to exist in a zoning ordinance pursuant to FEMA regulations. However, not all floodplain ordinances approved by FEMA are alike; some allow more disturbance or uses in the floodplain than others. In the sample section presented below, a full set of floodplain standards have not been included. Regardless of where floodplain standards are included, such standards must meet FEMA guidelines and, in general, ensure that no new structures are built within the 100-year floodplain.

SECTION 3.0 SPECIFIC NATURAL RESOURCE PROTECTION STANDARDS.

3.1 Floodplain Protection Standards.

3.1.1 Floodplain Definitions. Unless otherwise expressly stated, the words and phrases in this and all other Articles of this ordinance, shall have the meaning presented in Article 2 or in Article ___ "Flood Hazard Overlay District."

3.1.2 Floodplain Disturbance. Areas identified as within the Flood Hazard District of the one-hundred (100) year recurrence interval flood shall not be altered, regraded, filled, or built upon except in conformance with Article ___ and in accordance with Section _____.

Section 3.2: Steep Slope Protection Standards

As noted previously, municipalities are empowered to address steep slopes in their zoning and SLDO by the MPC (Act 427), specifically Sections 605, and 609.1(c)(3) and (4). Section 605(2)(iii) is more specific, stating that zoning ordinances may regulate, restrict, or prohibit "uses and structures at, along, or near...places of relatively steep slope or grade, or other areas of hazardous geological or topographical features."

Steep slopes typically have shallow soils that make them highly vulnerable to erosion, particularly when natural vegetation has been disturbed. This vulnerability to erosion is of particular concern since steep slopes border many stream valleys. Once erosion has begun, it is often difficult and expensive to control. If left unchecked, erosion can spread upslope or down slope and into adjacent properties. Because many steep slopes are wooded, there is often a natural system of erosion protection already in place.

Limiting development on steep slopes, whether natural or manmade, is important for preventing soil erosion, minimizing pollution of surface waters, preserving stream banks, and reducing flooding, as well as other hazards. Improper development of steep slopes can lead to higher construction costs, and increased rates of septic system failures. According to PA DEP Chapter 73, septic systems are not permitted on slopes of greater than 25 percent, while engineered systems are required at the upper end of the permitted range. Ideally, steep slopes should be maintained under a dense forest or meadow cover to prevent erosion, stream sedimentation, and other problems associated with their development.

The text box below presents model standards for steep slope protection.

3.2 Steep Slope Protection Standards.

3.2.1 Steep Slope Definitions. Unless otherwise expressly stated, the following words and phrases shall, for the purposes of this and all other articles of this ordinance, have the meaning presented below:

SLOPE—The ratio of the change in elevation over the horizontal distance as measured between consecutive contour lines, expressed as a percent.

STEEP SLOPES—Those areas of land, whether natural or man-made, which are characterized by a change in elevation of fifteen (15) feet or more within a one-hundred (100) foot horizontal distance and which, because of this slope, are subject to high rates of stormwater runoff and susceptible to erosion. Steep slopes include:

MODERATELY STEEP SLOPES—Those areas of land where the grade is fifteen (15) percent to twenty-five (25) percent.

VERY STEEP SLOPES—Those areas of land where the grade is greater than twenty-five (25) percent.

STEEP SLOPE MARGIN—any area not otherwise regulated as Steep Slope and located within twenty-five (25) feet upslope of any area regulated as Steep Slope, measured perpendicularly to the contour of the land. Areas measured laterally or downslope of Steep Slope areas shall not be regulated as Steep Slope Margin.

3.2.2 Minimizing Impacts to Steep Slopes. Steep slope areas, whether natural or man-made, shall be preserved in their original state whenever possible. Where construction of roads, buildings, driveways, or infrastructure cannot be avoided, disturbance shall be kept to the minimum necessary. In no case shall disturbance exceed the following permitted limits for any lot, tract, or access way:

a. No more than thirty (30) percent of moderately steep slopes shall be regraded, removed, built upon, or otherwise altered or disturbed.

b. No more than fifteen (15) percent of very steep slopes shall be regraded, removed, built upon, or otherwise altered or disturbed. In addition, the disturbance permitted on very steep slopes shall be limited to the following activities:

1) Grading for the minimum portion of a road or driveway necessary to access the principal use of the property, or to access sewer, water, and other utility lines when it can be demonstrated that no other routing is feasible.

2) Timber harvesting, when conducted in compliance with the required timber harvesting plan (see Section ____, Woodlands and Specimen Vegetation Protection Standards). Clearcutting or grubbing of trees is prohibited on very steep slopes.

3.2.3 Measuring Steep Slopes. Slopes shall be measured as the change in elevation over the horizontal distance between consecutive contour lines and expressed as a percent. For the purpose of application of these regulations, slope shall be measured over three (3) or more two (2) foot contour intervals, which is six (6) cumulative vertical feet of slope. All slope measurements shall be determined by a topographic survey signed and sealed by a registered surveyor or engineer licensed to practice in the Commonwealth of Pennsylvania.

3.2.4 Construction on Steep Slopes. In steep slope areas, each building or structure shall be constructed in such a manner as to provide the least necessary alteration of the existing grade, vegetation, and existing soils. Excessive cut-and-fill shall be avoided. New roads and improvements to existing roads should be designed to conform to the existing contours of the land to the greatest extent possible, and where applicable, strive for compatibility with the character of existing rural roads.

3.2.5 Cut-and-fill Slopes. The finished slopes of permitted cut-and-fill areas shall not exceed thirty-three (33) percent slope unless the applicant can demonstrate the method by which steeper slopes can be adequately stabilized and maintained.

3.2.6 Disturbing Steep Slopes. Any disturbed area of very steep slopes, or any cut-and-fill resulting in slopes of greater than twenty-five (25) percent, shall be protected with an erosion control blanket. All stockpiles of earth intended to be stored for more than twenty-one (21) days shall be seeded or otherwise stabilized to the satisfaction of the municipal engineer.

3.2.7 Erosion and Sedimentation Control. Any disturbance of land shall be in compliance with Pennsylvania Department of Environmental Protection, Title 25, Chapter 102 and the erosion and sedimentation control standards presented within the stormwater management regulations of article ___ of the Township Subdivision and Land Development Ordinance. An erosion and sedimentation control plan and soil stabilization plan shall be submitted to demonstrate how soil will be protected from erosion during construction, and how soil will be stabilized upon the completion of construction.

3.2.8 Submission of Plans. If the plans listed below have not been previously submitted as part of the subdivision or land development plan application, the plans listed below shall be submitted to the Township with a building or zoning permit, or a conditional use, special exception, or other application, when applicable:

a. The erosion and sedimentation control and soil stabilization plan described in Subsection 3.2.7 above.

b. A grading plan that shall identify the existing contours of the site, proposed finished grades, and the proposed location of all buildings and structures.

NOTES:

- **Regarding Section 3.2: Additional Regulation of Steep Slope Margins**—This Section can also require that STEEP SLOPE MARGINS—defined as the upslope area within twenty five (25) feet of any regulated steep slope—shall be regulated in the same manner as Moderate Steep Slopes.
- **Regarding Section 3.2.2 (a) and (b): More Restrictive Moderate Steep Slope Regulations**—In municipalities that desire more rigorous steep slope protection, this section can require no more than twenty five (25) percent of moderately steep slopes, and no more than ten (10) percent of very steep slopes shall be regraded, removed, built upon, or otherwise altered or disturbed.
- **Regarding Section 3.2.6: Protecting Steep Slopes with an Erosion Protection Blanket**—In some municipalities, any disturbed area of very steep slopes, or any cut-and-fill resulting in slopes of greater than twenty (20) percent, shall be protected with an erosion control blanket
- **Regarding Section 3.2.7: Municipalities with a Stormwater Management Ordinance**—Some municipalities may have a Stormwater Management Ordinance (such as an Act 167 Ordinance) that is separate from their Subdivision and Land Development Ordinance. In these municipalities, the erosion and sedimentation control standards may presented within the Stormwater Management Ordinance and not within the Subdivision and Land Development Ordinance. If this is the case, Section 3.2.7 should provide a reference to direct the reader to the Stormwater Management Ordinance.

Section 3.3: Woodland and Specimen Vegetation Protection Standards

Photo by Chuck Bowers

As noted previously, municipalities are empowered to address woodlands and vegetation in their zoning and SLDO by the MPC (Act 247), specifically Sections 604(1), and 609.1(c)(3) and (4). Furthermore, Section 603(f) requires that timber harvesting be permitted "by right in all zoning districts in every municipality." Therefore it is recommended that municipalities include some provisions for timber harvesting as a land use, as well as definitions that clearly differentiate timber harvesting ***as a use*** from other woodland removal activities.

Woodlands play a critical role in sustaining natural diversity by supporting a variety of species which would not occur in other habitats. Certain species of forest plants and wildlife depend on the unique conditions of a healthy forest ecosystem. Many songbird species need interior forest conditions and will not nest elsewhere. Numerous wildflower species only bloom in the rich soils of a forest floor.

Photo by Chuck Bowers

Two serious problems that affect the long term health and quality of woodlands are infestations of invasive, non-native plant species and the overpopulation of white tail deer. Because of their rapid growth and propensity to reproduce, plant species such as Norway Maple, Multiflora Rose, and Japanese Honeysuckle, often outcompete native species and become the dominant species of the area. Such aggressive non-native species impair forest regeneration by creating such dense masses that tree species will not grow, and in some cases will die off and be replaced by non-native species.

Some municipalities possess hedgerows which may warrant protection. Hedgerows can have a natural resource benefit, such as proving a wind break for nearby open fields. In some less-developed communities, there are hedgerows that have been in place for centuries and so can be viewed as historical or cultural resources. Some municipalities may choose to include hedgerows as a feature to be protected in this section along with woodlands and specimen vegetation. However, hedgerows commonly contain invasive species such as Multiflora Rose, and so should not be regarded as ideal natural habitats. The template presented below ***does not include*** hedgerows.

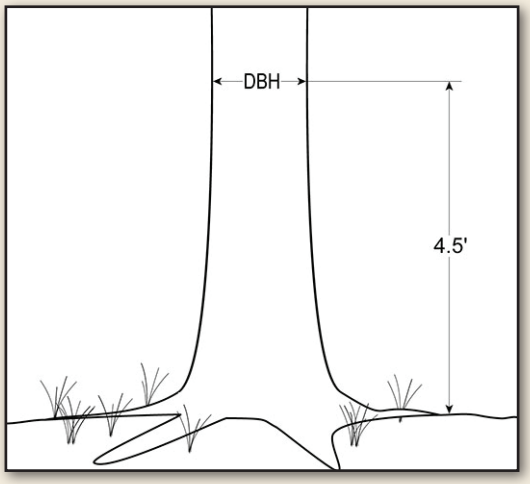
The text box below presents model standards for woodland and specimen vegetation protection.

3.3 Woodland and Specimen Vegetation Protection Standards.

3.3.1 Woodland Definitions. Unless otherwise expressly stated, the following words and phrases shall, for the purposes of this and all other articles of this ordinance, have the meaning presented below:

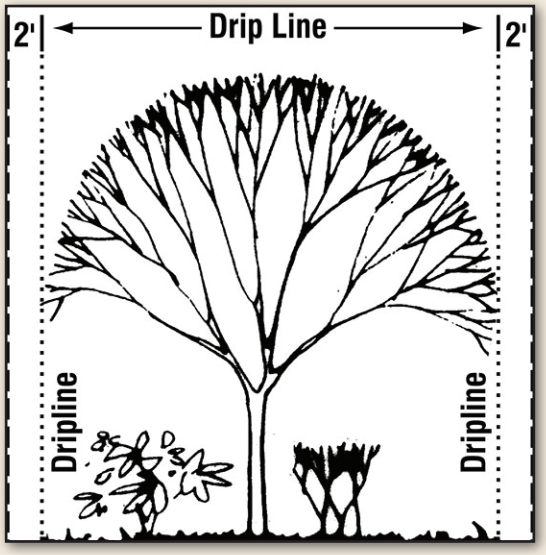
DIAMETER AT BREAST HEIGHT (DBH)—The diameter of a tree trunk, measured at four and one-half (4.5) feet from the ground surface at the point of the highest elevation in contact with the trunk of such tree. (See Figure 3.1)

Figure 3.1: Diameter at Breast Height



DRIP LINE—A generally circular line, the circumference of which is determined by the outer reaches of a tree's widest branching points. (See Figure 3.2)

Figure 3.2: Drip Line



FORESTRY—The management of forests and timberlands when practiced in accordance with accepted silvicultural principals, through developing, cultivating, harvesting, transporting and selling trees for commercial purposes, which does not involve any land development. Forestry shall include timber harvesting operations, as defined in this Article. (See also Timber Harvesting Operation.)

OLDFIELD—An area undergoing natural succession characterized by the presence of herbs, shrubs, and small trees (seedlings) whose branches do not from a complete or nearly complete aerial canopy.

SPECIMEN TREE—Any tree meeting the definition of specimen vegetation.

SPECIMEN VEGETATION—Any tree or other vegetation determined to be of specimen quality as determined by a registered landscape architect, registered arborist, or horticulturist, or which generally falls within the parameters of Figure 3.3. The examples of specimen trees included in Figure 3.3 are intended to provide general guidelines and examples of what constitutes a specimen tree and are not considered all inclusive for the purpose of defining specimen vegetation.

Figure 3.3: Examples of Potential Specimen Trees

Species	Min. Size	Species	Min. Size	Species	Min. Size
Apple	24” DBH	Locust	30” DBH	Spruce	30” DBH
Ash	32” DBH	Maple	32” DBH	Sycamore	36” DBH
Beech	32” DBH	Oak	32” DBH	Tulip Poplar	36” DBH
Cherry	24” DBH	Osage Orange	20” DBH	Walnut	30” DBH
Elm	30” DBH	Pine	30” DBH	Hickory	32” DBH
Hemlock	30” DBH	Sassafras	20” DBH		

Source: Brandywine Conservancy, Environmental Management Center

TIMBER HARVESTING OPERATION—The disturbance for commercial purposes, and in compliance with an approved timber harvesting plan, of more than one-half (1/2) acre of woodland on any lot, whether during a single timber harvesting operation or cumulatively in successive operations within a three (3) year period. The removal of dead or diseased trees or non-native invasive species, the cutting of trees for personal firewood use or as a part of a Christmas tree farming operation, or the clearing of an area in accordance with an approved subdivision or land development plan or building permit shall not be considered a timber harvesting operation. Timber harvesting operation is a practice which falls within the definition of forestry. (See also FORESTRY.)

TIMBER HARVESTING PLAN—A description, by means of text and maps, of proposed actions involving the removal of trees from a tract of land. Such plan shall have been prepared by a forester with demonstrable expertise and experience (such as a degree in forestry, natural resource management, environmental sciences, or a related discipline) in forest management and shall be in accordance with the requirements of Section 3.3 of this Article. (Note: Pennsylvania does not have a certification requirement for foresters; however a forester can choose to be certified through the Society of American Foresters.)

WOODLANDS—A tree mass or plant community covering an area of one-quarter (1/4) acre or more, in which tree species are dominant or co-dominant and the branches of the trees form a complete, or nearly complete aerial canopy. The extent of any woodland plant community or any part thereof shall be measured from the outermost drip line of all the trees in such plant community. Woodlands shall include any area where timber has been harvested within the previous three (3) years and/or woodland disturbance has occurred within the previous three (3) years that would have met the definition of woodland prior to timbering or disturbance. Woodlands do not include orchards or oldfields. Oldfields are now defined as former cropland.

WOODLAND DISTURBANCE—Any activity which constitutes a land disturbance within a woodland, or any activity that alters the existing structure of a woodland. Alterations include the cutting or removal of canopy trees, sub-canopy trees, under-story shrubs and vines and herbaceous woodland floor species. Woodland disturbance does not include the selective cutting or removal of invasive plant species or the removal of vegetation which constitutes a hazardous condition.

3.3.2 Specimen vegetation. Where permitted, removal of specimen vegetation shall be minimized. Specimen vegetation shall not be removed from any lot or tract except where the applicant demonstrates to the satisfaction of the Board of Supervisors that such removal is essential to eliminate a hazardous condition(s) or otherwise permit lawful use of the lot or tract. Specimen trees to be retained may be credited toward tree replacement required by Section ____ (SEE NOTE "A" BELOW) of the Township Subdivision and Land Development Ordinance.

3.3.3 Woodlands.

a. Unless undertaken as an approved timber harvesting operation conducted in compliance with the requirements of Article X, Section 3.0, the following disturbance limitations shall apply:

   1) For residential uses, no more than thirty-five (35) percent of woodlands shall be regraded, removed, built upon, or otherwise altered or disturbed; and

   2) For non-residential uses, no more than fifty (50) percent of woodlands shall be regraded, removed, built upon or otherwise altered or disturbed.

b. When determining where permitted woodland disturbance will occur, the following factors shall be considered by the applicant and the Township:

   1) The location(s) and benefit of conservation of healthy mature woodland stands.

   2) Each building or structure shall be constructed in such a manner as to provide the least alteration or disturbance necessary of the existing woodland. Where possible, clearcutting shall be minimized and trees shall be selectively removed.

   3) Where possible, the remaining undisturbed woodlands and other vegetation shall interconnect with woodlands or wooded areas of adjacent properties to preserve continuous woodland corridors and allow for the normal movement, dispersion, and migration of wildlife. The applicant shall consider the impacts, in terms of functions and values to wildlife, of separating, dividing, or encroaching on wildlife travel corridors or extensive habitat areas, especially woodlands exceeding ten (10) acres in area.

4) In each situation where the standards of this Section are applied, consideration shall be given to balancing the benefits of woodland preservation with other valuable resources on the site, including scenic views. The Township shall not unreasonably restrict woodland disturbance where limited disturbance may permit siting of buildings in less visually obtrusive areas of the tract.

c. Woodland removal for purposes of development pursuant to the requirements of this Section shall not be regulated as timber harvesting, except that the management practices set forth in Section 3.4.5 shall apply.

3.3.4 **Protection of woodlands and specimen vegetation to remain on site.** Woodlands, individual trees, and other vegetation that are to remain on the site shall be identified on the plan and protected from land disturbance and construction activities in accordance with the following tree protection provisions to protect vegetation from mechanical injury and grading change.

a. Where existing trees are to remain, no change in existing grade shall be permitted within the drip line of the trees. Prior to any land disturbance, appropriate fencing four feet in height shall be placed at the drip line of trees to remain, wherever adjacent to proposed construction. Such fencing shall be maintained in place throughout the duration of construction activity and shall be inspected by the Township prior to initial land disturbance. Roots shall not be cut within the drip line of any trees to remain.

b. Trees within twenty-five (25) feet of a building, or bordering entrances or exits to building sites, shall be protected by a temporary barrier to be maintained in place throughout the duration of construction activity.

c. No boards or other material shall be nailed or otherwise attached to trees during construction.

d. Construction materials, equipment, soil and/or debris shall not be stored nor disposed of within the drip lines of trees to remain, except for mulched vegetative matter used to prevent soil compaction.

e. Tree trunks, limbs, and exposed roots damaged during construction shall be protected from further damage by being treated immediately in accordance with accepted professional landscape procedures.

3.3.5 **Tree Replacement.** Tree replacement shall be required in accordance with the standards of Section ___ (SEE NOTE “A” BELOW) of the Subdivision and Land Development Ordinance.

Section 3.4: Timber Harvesting Regulations

3.4.1 Timber harvesting operation shall only be undertaken in accordance with a timber harvesting plan approved by the Township.

a. All timber harvesting plans shall be submitted to the Township for review for compliance with

the standards set forth herein not less than twenty-one (21) days prior to commencement of the timber harvesting operation. Within fourteen (14) days of submission of a timber harvesting plan to the Township, and based on review for compliance with the standards set forth herein, the Zoning Officer shall indicate to the applicant approval or denial of the submitted plan or approval subject to reasonable conditions.

b. The Township may retain a forester (such as one certified by the American Society of Foresters) to review the timber harvesting plan and comment on its adequacy in meeting the intent of these regulations.

3.4.2 Timber harvesting plans submitted to the Township for review and approval shall include the following information:

a. Site location and boundaries of both the entirety of the property upon which the timber harvesting operation shall occur and the specific area proposed for timber harvesting;

b. Significant natural features on the property including steep slopes, wetlands, and riparian buffer zones;

c. Identification of specimen vegetation as defined by this Article;

d. Description of how long-term sustainability of the timber harvesting operation and regeneration of the woodlands will be achieved;

e. The general location of the proposed operation in relation to municipal and state highways and any proposed accesses to those highways;

f. Design, construction, maintenance, and retirement of the access system, including haul roads, skid roads, skid trails, and landings;

g. Design, construction, maintenance, and retirement of water control measures and structures such as culverts, broad-based dips, filter strips, and water bars; and

h. Design, construction, maintenance, and retirement of proposed stream and wetland crossings.

3.4.3 Any permits required by any other agency under any applicable regulation shall be the responsibility of the landowner or timber harvesting operator as applicable. Copies of all required permits shall be submitted to the Township prior to commencement of the timber harvesting operation.

3.4.4 The municipal engineer, Zoning Officer, and/or municipal Forester shall be permitted access to the site of any timber harvesting operation before, during, or after active timber harvesting to review, inspect, and ascertain compliance with the provisions set forth herein.

3.4.5 The following management practices shall apply to all timber harvesting operations:

a. Felling or skidding across any public thoroughfare is prohibited without the express written consent of the Township or Penn DOT; whichever is responsible for the maintenance of said thoroughfare.

b. No tops or slash shall be left within twenty-five (25) feet of any public thoroughfare or private roadway.

c. Litter resulting from a timber harvesting operation shall be removed from the site before it is vacated by the operator.

d. The operation shall not cause harm to the environment or any other property.

3.4.6 Timber harvesting operations shall not be permitted within any Zone One riparian buffer. Clearcutting or grubbing shall not be permitted within any Zone One or Two riparian buffer, the Flood Hazard District, or on very steep slopes.

3.4.7 Upon determination that a timber harvesting operation is in violation of these regulations, each day where any violation occurs shall constitute a separate violation subject to the provisions of this Article.

NOTES:

- **Regarding Section 3.3.1: Municipalities with Hedgerows**—For those municipalities that wish to address hedgerows, the following definition can be added to Section 3.3.1:

  "HEDGEROW—A hedgerow is a linear plant community dominated by trees and/or shrubs. Hedgerows often occur along roads, fence lines, property lines, or between fields, and may occur naturally or be specially planted (e.g. as a windbreak). For the purposes of this Chapter, hedgerows are considered woodlands and regulated as such."

- **Regarding Section 3.3.1: Municipalities with Hedgerows**—In this definition the term "woodland" may be replaced by "woodland and hedgerow".

- **Regarding Section 3.3.3: Municipalities with Hedgerows**—In the heading of this section, the term "woodland" may be replaced by "woodland and hedgerow".

- **Regarding Section 3.3.3.b.2: Municipalities with Hedgerows**—In this section the term "woodland" may be replaced by "woodland or hedgerow".

- **Regarding Section 3.3.3; Woodlands**—For those municipalities that wish to regulate woodland protection more precisely, woodlands can be mapped and ranked according to their ecological value utilizing GIS. Pocopson Township developed a woodland classification system with three woodland types (I, II, III), with Class I being the most valuable. New woodland protection regulations were then linked to these woodland classes. For example, in Pocopson Township, woodland disturbance of Class I woodlands on very steep slopes is limited to 5 percent. Pocopson Township's woodland classification system is also used in regulating timber harvesting within the zoning ordinance.

- **Regarding Section 3.3.4: Municipalities with Hedgerows**—In this section, the term "Woodlands" may be replaced by "Woodlands, hedgerows".

NOTE A: SLDO provisions for "Required Vegetation Replacement" are optional. A good example of such SLDO provision can be found in the Kennett Township SLDO, Section 517, which also includes additional guidance on the preservation of woodlands and vegetation.

Section 3.5: Watercourse and Forested Riparian Buffer Protection Standards

As noted previously, municipalities are empowered to address the lands near watercourses in their zoning and SLDO by the MPC (Act 247), specifically Sections 605 and 503(2)(v).

"Riparian" refers to the vegetated area of land adjacent to a watercourse, pond, lake, or wetland. The use of forested riparian buffers is one of the most effective techniques for the protection of surface water quality. The vegetation in a buffer slows the flow of stormwater running off the land, thus reducing the amount of pollutants and sediments that reaches a water body. Forested buffers along streams also stabilize stream banks and protect the water from direct sunlight, thus cooling it and making better habitat for aquatic species. Furthermore, fallen leaves from trees along streams serve as food and shelter for aquatic species. These forested buffers are most critical in watershed headwater areas.

The text box below presents model standards for watercourse and riparian buffer protection.

3.5 Riparian Buffers Protection Standards.

3.5.1 Riparian Buffer Definitions: Unless otherwise expressly stated, the following words and phrases shall, for the purposes of this and all other articles of this ordinance, have the meaning presented below:

COMMON OPEN SPACE—(For definition see Article 2).

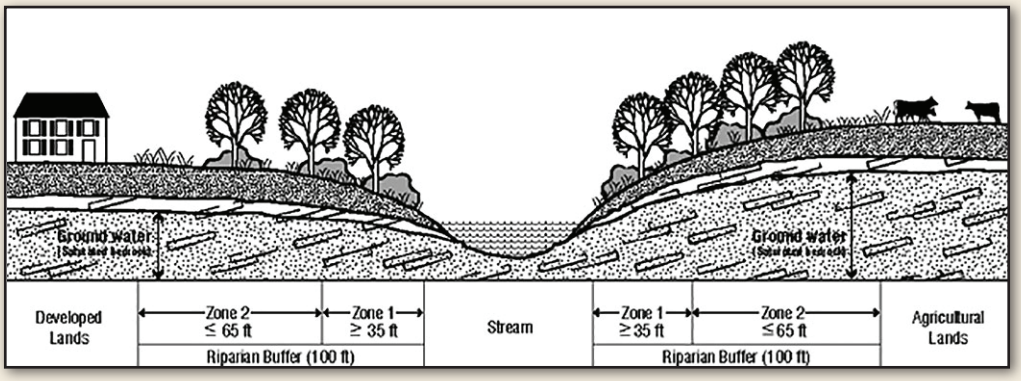
NATIVE PLANT SPECIES—(For definition see Article 2).

FORESTED RIPARIAN BUFFER—An area of primarily native trees and other vegetation adjacent to a watercourse that forms a transition area between the aquatic and terrestrial environment. The riparian buffer is designed to separate more intensive human land uses from sensitive water resources and especially to intercept runoff from upland sources for the purpose of mitigating the effects of nutrients, sediment, organic matter, pesticides or other pollutants prior to entry into surface waters.

WILDLIFE CORRIDOR—(For definition see Article 2).

3.5.2 Two Forested Riparian Buffer Zones. The forested riparian buffer shall consist of two Zones: Zone One, Inner Riparian Buffer and Zone Two, Outer Riparian Buffer. The provisions of Sections 3.5.3 and 3.5.4 below shall determine the specific widths of the individual riparian buffer zones. The total riparian buffer, consisting of Zone One and Zone Two, shall be a minimum of one-hundred (100) feet in width on each side of the watercourse.

Figure 3.1: Typical Riparian Buffer Scenario



3.5.3 Zone One—Inner Riparian Buffer. This zone shall begin at each edge of any identified watercourse and shall occupy a margin of land on each side, each with a minimum width of thirty-five (35) feet. The width of such margin shall be measured horizontally on a line perpendicular to the nearest edge of the watercourse at bankfull flow, as reviewed and approved by the municipal engineer.

Where very steep slopes (+25%) are located within or extend beyond the thirty-five (35) foot margin, the Zone One buffer shall be extended to include the entirety of the very steep slopes up to the total buffer width of one-hundred (100) feet on either side of the subject watercourse. Under such circumstances, the Zone One buffer may constitute the total riparian buffer and the restrictions of the Zone One buffer shall apply. No woodland disturbance, land disturbance, or timber harvesting shall be permitted within the Zone One Riparian Buffer, except for those uses or activities listed below:

a. Regulated activities (such as permitted stream or wetland crossing) that are permitted by the Commonwealth, Army Corps of Engineers or other Federal agency;

b. Provision for unpaved trail and trail access;

c. Selective removal of hazardous or invasive alien vegetative species;

d. Vegetation management in accordance with an approved landscape plan or open space management plan;

e. A soil conservation project approved by the Chester County Conservation District; or,

f. Removal of hazardous material or septic system, junk material, overhanging tree or diseased tree.

3.5.4 Zone Two—Outer Riparian Buffer. This zone begins at the outer edge of the Zone One riparian buffer and extends to a distance of sixty-five (65) feet from Zone One. However, where Zone One is greater than thirty-five (35) feet due to the presence of very steep slopes per Section 3.5.3 above, Zone Two shall cover the remaining distance necessary to achieve a total one–hundred (100) foot riparian buffer. No more than twenty (20) percent of a Zone Two Riparian Buffer on the lot that is affected shall be regraded, filled, built upon, or otherwise altered or disturbed, except for the following activities:

a. Activities permitted in the Zone One Riparian Buffer.

b. Timber harvesting, when conducted in compliance with a timber harvesting plan approved by the Township.

3.5.5 Riparian Buffer Disturbance. The following practices and activities are prohibited within the forested riparian buffer (both Zones One and Two), except with approval by the Township and, if required, the Pennsylvania Department of Environmental Protection:

a. Clearing of existing vegetation except as specifically permitted in Sections 3.5.3 and 3.5.4 above.

b. Soil disturbance by grading, stripping, or other practices.

c. Filling or dumping.

d. The use, storage, or application of pesticides, except for the spot spraying of noxious weeds or non-native species.

e. Housing, grazing, or other maintenance of livestock.

f. Storage or operation of motorized vehicles, except for maintenance of emergency use approved by the Township.

g. Clearcutting or grubbing of timber.

3.5.6 **Maintaining Riparian Buffer Vegetation.** If currently wooded, the riparian buffer shall be maintained as woodlands. In places where the riparian buffer is not wooded, and until such buffers have become wooded, the buffer shall be maintained as a filter strip of dense grass and forbs no less than one (1) foot high or other methods to provide sediment filtering, and nutrient uptake, as well as to convert concentrated flow to uniform, shallow sheet flow.

3.5.7 **Restoring Riparian Buffer Vegetation.** When a subdivision or land development is proposed where there is no existing vegetated or wooded buffer (such as in agricultural areas), a one-hundred (100) foot forested riparian buffer shall be required in accordance with the following guidelines:

a. Forest or other suitable vegetation shall be promoted through natural succession. Selective planting shall also be incorporated on sites devoid of vegetation to stimulate native species and discourage invasive species.

b. Plant selection, planting, and on-going maintenance shall be planned by a landscape architect under the guidance of a licensed ecologist, the USDA, the Chester County Conservation District, the Pennsylvania Department of Environmental Protection, or the Pennsylvania Department of Conservation and Natural Resources.

c. The following land uses and or activities are designated as potential water pollution hazards and shall be set back from any watercourse or, lake or pond by the distance indicated in Figure 3.2. Where more restrictive, the requirements of the Flood Hazard Overlay District shall apply:

Figure 3.2: Setbacks for Potential Water Pollution Hazards

Potential Water Pollution Hazards	Setback
Storage of hazardous substances	150 feet
Above or below ground petroleum storage facilities	150 feet
Drainfields from on-site sewage disposal and treatment system	100 feet
Solid waste landfills or junkyards	300 feet
Confined animal feedlot operations	250 feet
Subsurface discharges from a wastewater treatment plant	100 feet

3.5.8 Protective Covenants for Riparian Buffers. All riparian buffers created by a new subdivision shall be maintained through a declaration of protective covenant, which is required to be submitted for approval by the Township. The covenant shall be recorded in the land records and shall run with the land and continue in perpetuity. Management and maintenance requirement information shall be included in the covenant.

NOTES:

- **General Note: Avoiding Conflicting Standards**—Some municipalities include riparian buffer standards in their stormwater management ordinance. Such municipalities should be careful not to create duplicate or conflicting standards in their stormwater management ordinance and their zoning ordinance.
- **General Note: Extending the Riparian Buffer Width**—An additional section can be added after Section 3.5.5 that will address the option for extending the width of the riparian buffer under unique circumstances. The text box below present model standards for this option.

3.5.__ Extending the Riparian Buffer Width. The Township may require the buffer to be extended beyond the minimum one-hundred (100) foot width if there are steep slopes within close proximity to the watercourse that also drain into the watercourse system. In such cases, the riparian buffer width may be adjusted as follows:

a. Where the buffer is adjacent to slopes between fifteen (15) percent and twenty-five (25) percent, a total of twenty-five (25) feet may be added to the outer limit of the one-hundred (100) foot buffer, creating a one-hundred twenty-five (125) foot wide buffer.

b. Where the buffer is adjacent to slopes greater than twenty-five (25) percent, a total of fifty (50) feet may be added to the outer limit of the one-hundred (100) foot buffer, creating a one-hundred fifty (150) foot wide buffer.

General Note: Enhanced Riparian Buffer Standards—Each municipality may consider modifying the above sample riparian buffer standards and widths based on a desire for increased protection, and based on the existing level of land development in which streams or other watercourses are located. A wide forested buffer that is effective in a rural municipality may simply not be feasible in a densely developed suburban or urban community.

Found on **www.conservationtools.org**, the Pennsylvania Land Trust Association (PALTA) has published a *Guide and Model Ordinance for Pennsylvania Municipalities, Riparian Buffer Protection via Local Government Regulation.* This model ordinance also uses a two-zone forested buffer of 100 feet for non-impaired streams, but increases the minimum required width to 150 feet for impaired streams and streams designated as Special Protection (Exceptional Value and High Quality) waters. PALTA's model ordinance also includes a riparian buffer restoration requirement for impacted buffers, and a modification provision that permits limited exceptions to the width and restoration requirements in unique circumstances (see further explanation in Section 5.0). A copy of the model ordinance is also included in the Appendix for this Strategic Action Plan.

Section 3.6: Wetlands and Wetland Margin Protection Standards

As noted previously, municipalities are empowered to address woodlands and vegetation in their zoning and SLDO by the MPC (Act 247), specifically Sections 604(1), and 609.1(c)(3) and (4). Under Section 404 of the Federal Clean Water Act of 1977, as amended, wetlands are protected by the Army Corps of Engineers. Wetlands are also protected by the Pennsylvania Department of Environmental Protection as set forth in the provisions of the Dam Safety and Waterway Encroachment Act of 1978. Although wetlands are regulated by state and federal laws, municipalities should also address them on their ordinances. This approach permits a municipality the option of requiring wetland buffers or applying riparian buffers to wetlands.

Wetlands are one of nature's most productive ecosystems, and are often found within important headwater areas. They offer critical wildlife habitat and provide important storage areas for runoff while providing for the filtration of groundwater. From a regulatory standpoint, the presence of wetland areas is determined based on the site's soil, hydrology, and vegetation. Areas lacking any one of these three parameters are generally not considered wetlands. In general, any area with periodic standing water and wetland vegetation such as cattails, skunk cabbage, and black willow, is likely to be a wetland. However, only an on-site delineation by a qualified professional can identify the presence or absence of wetlands.

The blue text box below presents model standards for wetlands and wetland margin protection.

3.6 Wetland Protection Standards.

3.6.1 **Wetland Definitions.** Unless otherwise expressly stated, the following words and phrases shall, for the purposes of this and all other chapters of this ordinance, have the meaning presented below:

LAKES AND PONDS—(For definition see Article 2).

LAND DISTURBANCE—(For definition see Article 2).

WATERCOURSE—(For definition, see Article 2).

WETLAND—Those areas (including swamps, marshes, and bogs) that are inundated and saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands include all lands regulated as wetlands by the Pennsylvania Department of Environmental Protection or the U.S. Army Corps of Engineers. In the event there is a conflict between the definitions or regulations of these agencies, the more restrictive definition shall apply.

WETLAND DELINEATION REPORT—A document that describes the investigation procedures and findings of a wetland delineation.

3.6.2 **Coordination with State and Federal Agencies.** Any applicant proposing a use, activity, or improvement which would entail the regrading or placement of fill in wetlands shall provide the Township with proof that the Pennsylvania Department of Environmental Protection (Bureau of Dams and Waterway Safety and Bureau of Water Quality Management) and the U.S. Army Corps of Engineers have been contacted to determine the applicability of state and federal wetland regulations. Any applicant who is contacted by the Pennsylvania Department of Environmental Protection or the U.S. Army Corps of Engineers shall provide to the Township a copy of such correspondence within five (5) working days of receipt.

3.6.3 **Wetland Disturbance.** Wetlands shall not be regraded, filled, piped, diverted, channeled, built upon, or otherwise altered or disturbed except where state or federal permits have been obtained.

3.6.4 **Lake and Ponds.** Wetland protection standards shall apply to lakes and ponds.

3.6.5 **The Delineation of Wetlands.** The applicant shall provide to the Township a wetlands delineation report (or a letter verifying that no wetlands are presented based on a field view) that that meets the following requirements:

a. The report shall be conducted by a qualified wetland biologist, soil scientist, or an environmental professional with demonstrated qualifications, who shall certify that the methods used adhere to the currently accepted technical concepts, including identification and analysis of wetland vegetation, hydric soils, and hydrologic indicators. Methods used in the report shall be acceptable to the municipal engineer or other qualified consultant hired by the Township.

b. The report shall include a determination of whether wetlands are present on the site and a full delineation, area measurement (in square feet), and description of any wetlands determined to be present. If there is a question as to the accuracy of the wetland delineation report, the Township may hire a qualified consultant to review the delineation and recommend revisions at the applicant's expense.

c. If no wetlands are found on the site, a note shall be added to the preliminary and final plans stating that "This site has been examined by (name and address with a statement of submitted qualifications), and no wetlands as defined by the U.S. Army Corps of Engineers Wetlands Delineation Manual, Technical Report Y-87-1, January 1987, were found to exist."

3.7 Wetland Margin Protection Standards.

3.7.1 **Wetland Margin Definitions.** Unless otherwise expressly stated, the following words and phrases shall, for the purposes of this and all other chapters of this ordinance, have the meaning presented below:

LAKES AND PONDS—(For definition see Article 2).

LAKE AND POND SHORELINES—(For definition see Article 2).

WATERCOURSE—(For definition see Article 2).

WETLAND—(For definition see Section 3.6.1).

WETLAND DELINEATION REPORT—(For definition see Section 3.6.1).

WETLAND MARGIN—The transitional area extending a specified distance from the outer limit of the wetland which serves as a buffer to protect the wetland from more intensive land uses.

3.7.2 **Width of the Wetland Margin.** The wetland margin shall extend a minimum of fifty (50) feet from the outer limits of the wetland boundary.

3.7.3 **Wetland Margin Disturbance.** With the exception of those uses or activities listed below, no more than twenty (20) percent of a wetland margin shall be altered, regraded, filled, built upon, or otherwise altered or disturbed.

a. Regulated activities permitted by the Commonwealth, Army Corps of Engineers, or other Federal agency (such as a permitted stream or wetland crossing);

b. Provision for unpaved trail and trail access;

c. Selective removal of hazardous or invasive alien vegetative species;

d. Vegetation management in accordance with an approved landscape plan or open space management plan;

e. A soil conservation project approved by the Chester County Conservation District; or,

f. Removal of hazardous material or septic system, junk material, or a diseased tree.

3.7.4 **Lake and Pond Shorelines.** Wetland margin protection standards shall apply to lake and pond shorelines.

3.7.5 **State Regulations.** All Department of Environmental Protection's regulations under Chapter 105 concerning activities in wetlands margins shall be met.

Swimming near Barneston Dam

Snowdrops, photo by Chuck Bowers

Section 4.0: Application of Natural Resource Protection Standards

NRP standards should conclude with section that details what sort of information must be presented when land owners or developers submit plans the Township to alter their property. This section is helpful to land owners and developers because it provides them with essential information about the process they must follow to be consistent with municipal land use ordinances.

The text box below presents model language for the application of Natural Resource Protection Standards.

SECTION 4.0 APPLICATION OF NATURAL RESOURCE PROTECTION STANDARDS.

4.1 Plan Information. To ensure compliance with the natural resource protection standards of Section 3.0 of this Article, the following information shall be provided with the submittal of applications or plans listed under Section 2.1, when land disturbance is contemplated. In those cases where a limited portion of the site will be subject to disturbance, the zoning officer may determine the area of land to be shown on the submitted plan along with the information that will adequately demonstrate compliance with the natural resource protection standards of this Article.

4.1.1 A site analysis plan as required by Section ___ "Site Analysis Plan" of the Subdivision, Development and Land Use Ordinance (SLDO) including all encroachments and disturbances necessary to establish the proposed use of the site.

4.1.2 Any additional documentation as may be required by Section 3.0 to ensure compliance with the stated resource protection standards.

4.1.3 The table in Figure 4.1 below shall be used to determine the area of a site with natural resources that would be disturbed or encroached upon, and shall be required with the submittal of applications or plans listed under Section 2.1. The figures within Column D (Proposed Disturbance) shall be less than or equal to the corresponding figures within Column C (Maximum Disturbance Allowance).

Chadds Ford Days, photo by Sheila Fleming

Figure 4.1: Blank Maximum Disturbance Table

PROTECTED RESOURCE (Where resources overlap, the ***overlapping area*** shall be included in the more restrictive resource category.)	**A** Maximum Disturbance Allowance	**B** Area of Land in Protected Resources (in acres)	**C** Maximum Area of Permitted Disturbance (A. Disturbance Allowance x B. Area)	**D** Proposed Area of Disturbance (D must be not more than C)
Floodplains/Flood Hazard District	0%	*	*	*
Steep slopes (15 to 25%)	30%	*	*	*
Very steep slopes (> 25%)	15%	*	*	*
Riparian Buffer Zone One	0%	*	*	*
Riparian Buffer Zone Two	20%	*	*	*
Woodlands (Residential)	35%	*	*	*
Woodlands (Non-residential)	50%	*	*	*
Watercourses or streams	0%	*	*	*
Wetlands	0%	*	*	*
Wetlands Margin	20%	*	*	*
TOTAL	N/A	*	*	*
**These cells need to be filled in by the applicant.*				

Example of a Filled-in Maximum Disturbance Table. The table below is an example of how the Maximum Disturbance Table would be filled in for a proposed subdivision of a theoretical 100-acre tract with 67 acres of constrained lands. Column C shows the maximum area of disturbance permitted within each resource. Column D shows the actual area of each resource to be disturbed under the proposed development. All numbers in Column D must be equal to or less than the corresponding number in Column C.

Example Maximum Disturbance Table

PROTECTED RESOURCE (Where resources overlap, the ***overlapping area*** shall be included in the more restrictive resource category.)	**A** Maximum Disturbance Allowance	**B** Area of Land in Protected Resources (in acres)	**C** Maximum Area of Permitted Disturbance (A. Disturbance Allowance x B. Area)	**D** Proposed Area of Disturbance (D must be not more than C)
Floodplains/Flood Hazard District	0%	5	0	0
Steep slopes (15 to 25%)	30%	8	2.4	1.2
Very steep slopes (> 25%)	15%	12	1.8	1
Riparian Buffer Zone One	0%	3	0	0
Riparian Buffer Zone Two	20%	7	1.4	0.5
Woodlands (Residential)	35%	20	7	5
Woodlands (Non-residential)	50%	0	0	0
Watercourses or streams	0%	2	0	0
Wetlands	0%	6	0	0
Wetlands Margin	20%	4	0.8	0
TOTAL	N/A	67	19.8	7.7

4.2 Minimum Buildable Area for Lots within Subdivisions.

4.2.1 At the time of any Subdivision or Land Development application, a minimum buildable area shall be identified on each lot to ensure sufficient area is provided for the general location of the building, driveway, patio, other improvements and site alterations while meeting the natural resource protection standards and minimum setback requirements of this Article.

4.2.2 Within any proposed subdivision, all single-family detached residential lots shall have a contiguous minimum buildable area as indicated in Figure 4.2, except for mobile home parks and subdivisions utilizing the open space or lot averaging design options of Article _____ "Open Space /Cluster Provisions," if applicable.

Figure 4.2: Minimum Building Areas
(NOTE: THIS TABLE WILL HAVE TO BE MODIFIED FOR EACH MUNICIPALITY)

Zoning District	Minimum Lot Size	Minimum Contiguous Buildable Area
R-1	4.0 acres	9,000 sq. ft.
R-2	2.5 acres	8,000 sq. ft.
R-3	1.0 acres	5,000 sq. ft.
R-4	1 ac. (on-lot sewer/water); 20,000 sq. ft. (public sewer/water)	3,500 sq. ft.
R-5	1 ac. (on-lot sewer/water); 17,500 sq. ft. (public sewer/water)	3,000 sq. ft.
VR (Village Residential)	1 ac. (on-lot sewer/water); 17,500 sq. ft. (public sewer/water)	2,500 sq. ft.

4.2.3 Where the option of lot averaging is chosen, all lots which are less than or equal to one (1) acre in size shall have a contiguous minimum buildable area of at least twenty (20) percent of the lot area. All lots which are greater than one (1) acre in size shall have a contiguous buildable area of at least ten (10) percent of the lot area.

4.3 On-Lot Sewage Systems. For proposed subdivisions with individual on-lot sewage systems, a 2,000 square foot or larger area, in addition to the minimum buildable area specified in Figure 4.2, shall be identified for the location of the sewage system. This area shall have an approved percolation test from the Chester County Health Department. Where applicable, a reserve or replacement area of two-thousand (2,000) square feet shall also be identified. Such area(s) shall not include:

4.3.1. Natural features protected by a one-hundred (100) percent protection standard.

4.3.2. The portion of those natural features that may not be developed or intruded upon as specified in Figure 4.1.

4.4 Continued Protection of Identified Natural Resources. To ensure the continued protection of identified natural resources, the following requirements shall apply:

4.4.1 Protected Resource Areas Held in Common or in Designated Open Space. For natural resources protection areas held in common, or otherwise in designated protected open space, the provisions of Article _____ "Open Space /Cluster Provisions," shall apply. Furthermore, specific deed restrictions, or conservation easements satisfactory to the Township shall be placed on the natural area to be held in common. The party or organization responsible for the maintenance of the natural area shall be clearly identified in the deed. The conservation restrictions shall provide for the continuance of the resource protection areas in accordance with the provisions of this Article. In addition, conservation restrictions on protected areas shall be included in the development's declaration of covenants, easements, restrictions, or similar documents regulating the use of property and setting forth methods for maintaining open space. A copy of such documents shall be provided to the Township.

4.4.2 Changes to Approved Plans. All applicable plans and deeds shall include the following wording: "Any structures, infrastructure, utilities, sewage disposal systems or other proposed land disturbance indicated on the approved final plan shall only occur at the locations shown on the plan. Changes to such locations shall be subjected to additional review and re-approval and shall be consistent with the natural resource protection standards of Article X of the NAME Township Zoning Ordinance."

NOTES:

- **General Note: Modifying Minimum Buildable Area Standards**—The above standards are presented as a template for addressing minimum building areas under ideal conditions within a municipality. These model standards should be modified to reflect the conditions existing within a specific municipality.
- **General Note: Carbonate Geological Formations**—Some municipalities are underlain by sensitive carbonate geological formations that warrant protections standards. An example of such standard can be found in the Pennsbury Township Zoning Ordinances, Section 162-1505.
- **General Note: Protecting Resources with a Deed Restriction on Individual Lots where Disturbance is Proposed**—An additional section may be added after Section 4.2.2 requiring a rigorous form of protection of natural resources on individual lots. This section will require that, when a lot is proposed for disturbance or development, a restriction must be added to the deed of a property which will ensure that resources are both protected and maintained over the long term. This sort of protection is most appropriate for resources like floodplains and wetlands which are 100% protected by municipal regulations and that can only be disturbed after obtaining required federal and state permits. The text box below presents model standards for this option.

4.2.__ Protected Resources on Individual Lots where Disturbance is Proposed

a. For natural resource protection areas on individual lots where new disturbance is proposed, specific deed restrictions that meet Township specifications shall be placed in the deeds for each site or lot that has natural resources protection areas designated by this ordinance within its boundaries. Language in the individual deeds shall clearly state that the maintenance responsibility lies with the individual property owner and that the Township shall have the right to enter the property for the purpose of correcting violations, and that the Township may charge the homeowner for costs associated with bringing such violations into compliance. The restrictions shall provide for the continuance of the resource protection areas in accordance with the provisions of this Article.

b. Other mechanisms for ensuring the continued protection of identified resources, such as conservation easements, may also be considered and used if approved by the Township.

Section 5.0: Optional Modification of Natural Resource Protection Standards

Natural resource protection standards placed in a zoning ordinance can include a section that enables applicants to seek limited relief from natural resource restrictions without having to seek a variance. The needed relief is in the form of a modification, which can be granted by a Zoning Hearing Board simultaneous with a special exception or variance request, or by the elected body (Board of Supervisors or City or Borough Council) during a conditional use or subdivision plan approval request. Land uses subject only to a zoning permit or building permit request would be eligible for a modification through submittal of a special exception request of the Zoning Hearing Board. Approvals of modifications should be limited to highly unique circumstances, such as when literal application of one or more ordinance standards may leave a landowner without a reasonable or economic use of his or her property. Modifications granted should permit the minimum relief necessary for the intended use.

The text box below presents model standards for this option.

SECTION 5.0 MODIFICATION OF NATURAL RESOURCE PROTECTION STANDARDS

5.1 **Requesting Modifications.** For any use or activity subject to Subdivision or Land Development review, as part of applicable Plan submission, modification(s) may be requested to the provisions of Sections ___ of this Article. Requested modification(s) may be granted at the discretion of the Board of Supervisors pursuant to the provisions of the Subdivision and Land Development Ordinance.

5.1.1 For any use or activity not subject to Subdivision or Land Development review, but subject to application for approval of a Conditional Use, Special Exception, or Zoning Variance under the provisions of this Ordinance, the applicant may request modification(s) to the provisions of Sections _____ of this Article.

5.1.2 For any use or activity not falling within the scope of subsection 5.1.1, the applicant may request modification(s) to the provisions of Sections _____ of this Article in the form of an application for grant of a Special Exception by the Zoning Hearing Board.

5.1.3 Applicants shall provide appropriate documentation in support of their modification request, and the Board of Supervisors or Zoning Hearing Board (as applicable) may request additional documentation of an applicant, or of its municipal consultants, to help reach its decision.

5.1.4 In consideration of approval of any applicant request for modification(s) under this Article, the following standards shall serve as the basis for a decision:

a. That there are unique physical circumstances or conditions, including but not limited to irregularity, narrowness, or shallowness of lot size or shape, excessive frontage along a water body, presence of existing buildings or structures, or exceptional topographical or other physical conditions peculiar to the particular property. That because of such physical circumstances or conditions, it is impracticable for the property to be developed in strict conformity with the standards of this Article, and that the approval of the modification is therefore necessary to enable the reasonable use of the property under base zoning provisions.

b. That the modification, if approved, will result in the minimum reduction in performance of the natural feature, pursuant to the purposes set forth in Section _____, as needed to provide for the lawful intended use.

NOTES:

- General Notes: Modification applications can also be required to be submitted to the Planning Commission for review and comment prior to formal Special Exception application to the Zoning Hearing Board.

Monarch butterfly, photo by Brian Burns

Goats graze at Springton Manor Farm county park

5. Sources of Funding

Federal Programs

Federal programs are complex and generally require Metropolitan Planning Organization (MPO) support, such as the Delaware Valley Planning Commission (DVRPC). Contact DVRPC for more information and for grant application guidance.

NATIONAL HIGHWAY PERFORMANCE PROGRAM (NHPP)

http://www.fhwa.dot.gov/map21/guidance/guidenhpp.cfm

Who is eligible to apply?

States and MPOs.

What types of projects are funded?

Projects must be part of the National Highway System and be on the Transportation Improvement Program (TIP) of our local MPO, the Delaware Valley Regional Planning Commission.

CONGESTION MITIGATION AND AIR QUALITY (CMAQ)

http://www.fhwa.dot.gov/map21/guidance/guidecmaq.cfm

Who is eligible to apply?

States and MPOs.

What types of projects are funded?

Projects must be part of the MPO's transportation plan and be on the TIP. Specific project types such as: non-recreational bicycle transportation and pedestrian improvements that provide a reduction in single-occupant vehicle travel.

SURFACE TRANSPORTATION PROGRAM (STP)

http://www.fhwa.dot.gov/map21/guidance/guidestp.cfm

Who is eligible to apply?

States and MPOs.

What types of projects are funded?

- Environmental Restoration and Pollution Abatement in accordance with Title 23 of the United States Code § 328.
- Control of noxious weeds and aquatic noxious weeds and establishment of native species in accordance with 23 U.S.C. 329.
- Recreational trails projects eligible for funding under 23 U.S.C. 206. Not subject to Location of Project requirement in section 133(c).

TRANSPORTATION ALTERNATIVES PROGRAM (TAP)

http://www.fhwa.dot.gov/map21/guidance/guidetap.cfm

Who is eligible to apply?

States and MPOs.

What types of projects are funded?

The TAP provides funding for programs and projects defined as transportation alternatives, including on- and off-road pedestrian and bicycle facilities, infrastructure projects for improving non-driver access to public transportation and enhanced mobility, community improvement activities, and environmental mitigation; recreational trail program projects; safe routes to school projects; and projects for planning, designing, or constructing boulevards and other roadways largely in the right-of-way of former Interstate System routes or other divided highways.

State Programs

The Pennsylvania Growing Greener Coalition's *Guide to Finding the Green* was first published in March 2014 and is available online at **http://pagrowinggreener.org/wp-content/uploads/2014/03/Finding-the-Green-LR.pdf**. Its current version is included in the Appendix. The Guide contains a thorough listing of state funding programs for conservation, preservation and recreation projects, including the more recent funding made available from Act 13 of 2012. In addition to a list of specific grant opportunities, you'll find tips on how to apply and where to go for more information.

The following are two examples of successful state programs in this region that are also described in the *Guide to Finding the Green*.

COMMUNITY RECREATION AND CONSERVATION PROGRAM—COMMUNITY CONSERVATION PARTNERSHIP PROGRAM (C2P2)

http://www.dcnr.state.pa.us/brc/grants/c2p2programguidance/index.htm

Who is eligible to apply?

Municipalities; COGs; Conservation Districts; land trusts; school districts; colleges and universities; non-profit organizations working on rivers, conservation, trails, etc.; for profit entities; housing and redevelopment authorities; and designated heritage areas.

What types of projects are funded?

Development, land acquisition, planning, partnerships, and trail maintenance.

Is there a maximum amount?

The maximum amount varies by project type.

Is a match required?

Match amount varies between 10 and 50%, depending on project type and ultimate funding source.

How to apply

Through the DCNR website: **http://www.dcnr.state.pa.us/brc/grants/c2p2programguidance/index.htm**

When is the application period?

The current cycle's deadline is April 16, 2014.

ACT 13 (MARCELLUS SHALE IMPACT FEE)—GREENWAYS, TRAILS, AND RECREATION PROGRAM (GTRP)

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

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

Who is eligible to apply?

Municipalities, Councils of Governments, authorized organizations, colleges and universities, watershed organizations, and for-profit businesses.

What types of projects are funded?

Projects which involve development, rehabilitation and improvements to public parks, recreation areas, greenways, trails and river conservation.

Is there a maximum amount?

Grants shall be awarded to eligible applicants for projects that do not exceed $250,000.

Is a match required?

A 15% local match of the total project cost is required.

How to apply

Using DCED's Single Application for Assistance: h**ttp://www.newpa.com/find-and-apply-for-funding/apply-for-programs-funding**

When is the application period?

The most recent application deadline was July 21, 2014.

Regional Programs

DELAWARE VALLEY REGIONAL PLANNING COMMISSION (DVRPC)—TRANSPORTATION AND COMMUNITY DEVELOPMENT INITIATIVE (TCDI)

Who is eligible to apply?

TCDI grants are available to all municipal and county governments within the DVRPC region. TCDI applications must be made by the local government or county.

What types of projects are funded?

TCDI grants support planning, ordinances, design, preliminary engineering, market analyses, feasibility studies or capacity building activities that lead to public or private sector investment for smart growth. TCDI is an opportunity to undertake the preliminary planning or analyses needed to support specific transportation system improvements or enhancements, new ordinance language, and/or new or different programmatic efforts that will spur local revitalization and smart development.

Is there a maximum amount?

Municipalities may apply for a maximum of $100,000 in TCDI funds for any single project. County governments may also apply for individual projects or on behalf of several communities in the case of a multi-municipal effort. Projects involving two or more municipalities may apply for a maximum of $175,000 in TCDI funds.

Is a match required?

20% (of total project cost) in-kind, cash or some combination

How to apply

Visit this page for guidance: **http://www.dvrpc.org/TCDI/**

When is the application period?

Applications and attachments electronically due to DVRPC in May of each calendar year.

CHESTER COUNTY DEPARTMENT OF OPEN SPACE PRESERVATION—MUNICIPAL GRANTS PROGRAM

Who is eligible to apply?

All 73 municipalities in Chester County.

What types of projects are funded?

- Acquisition Grants reimburse a maximum of 50% of the approved cost to buy land, conservation or trail easements. In the event that an extraordinary conservation opportunity presents itself, the County will consider requests in excess of $500,000 on a case-by-case basis for acquisition grants. Requests for grants of $500,000 or more must provide a compelling justification for the request, along with a map and brief property description; an outline of the proposed project; and an extensive discussion of the public benefit.
- Development Grants reimburse park facility and trail construction up to a maximum of 50% of a project's cost to a maximum of $250,000 if outlined criteria are met (see Project Finances in Section II-before completing application). Maximum cumulative County construction funds for any one facility over the life of the facility are $250,000, for parks less than 20 acres. Projects to develop parks that do not preserve land may not be funded.

Is a match required?

Generally 50%.

How to apply

Visit this page for guidance: **http://www.chesco.org/index.aspx?NID=1505**

When is the application period?

The most recent application deadline was February 28, 2014.

CHESTER COUNTY AGRICULTURAL PRESERVATION PROGRAM

http://www.chesco.org/index.aspx?NID=1368

Who is eligible to apply?

Landowners.

What types of projects are funded?

Easements on high-quality farmland located in an Agricultural Security Area at least 50 acres in size, or 10 acres in size and adjacent to a preserved property; have at least 50% of the soils that are available for agricultural production and are of capability classes I-IV; contain the greater of 50% or 10 acres of harvested cropland, pasture, or grazing land.

Is there a maximum amount?

The funding limit is $12,000 per acre.

Is a match required?

There is a local match minimum of 50%.

How to apply

Information on applying to sell an agricultural conservation easement can be obtained by contacting the office via phone, email, regular mail, or by visiting.

When is the application period?

Applications usually must be received by August 1st of each year. Check the website for updates.

CHESTER COUNTY VISION PARTNERSHIP PROGRAM

http://pa-chestercounty.civicplus.com/DocumentCenter/View/15085

The Vision Partnership Program is a planning grant available to local municipalities and multi-municipal regions seeking to improve their planning programs and achieve consistency with the goals, objectives, and policies of Landscapes2.

Who is eligible to apply?

The VPP grant is open to all Chester County municipalities. Eligible applicants include a single municipality, a group of two (2) or more contiguous municipalities, or a group of two (2) or more municipalities when located in the same school district. The application shall be submitted by a municipality or a designated lead municipality in the case of a multi-municipal application.

What types of projects are funded?

- Revisions to municipal plans, ordinances, and planning studies to achieve consistency with the principles of Landscapes2 and the County's Strategic Plan
- Innovative municipal planning to effectively manage growth in a manner consistent with Landscapes2
- Multi-municipal planning efforts that effectively address planning issues facing Chester County municipalities
- The use of professional planning expertise to address growth management and other planning issues at the municipal and multi-municipal level
- Funding to supplement the Chester County Planning Commission staff's ability to directly assist municipalities in the implementation of Landscapes2.

Is there a maximum amount?

Up to $50,000 for comprehensive plans, revitalization plans, open space plans, and ordinances which are adopted under the provisions of the MPC.

Is a match required?

There is a local match minimum of 25%.

How to apply

Information on applying to sell an agricultural conservation easement can be obtained by contacting the Chester County Planning Commission via phone, email, regular mail, or by visiting.

When is the application period?

Application period is open.

Private Foundation Programs

WILLIAM PENN FOUNDATION

Who is eligible to apply?

Non-profit organizations. Governments are not generally funded, except in certain cases where there is no suitable tax-exempt organization to carry out a program or project.

What types of projects are funded?

- These grants are usually large scale and multi-year initiatives.
- The geographic area of focus may vary with each grant round. The most recent area of focus included the Brandywine Watershed.
- Develop and implement conservation and restoration models.
- Provide capital for land acquisition to promote conservation and protect water quality.
- Provide capital for stream restoration to restore water quality.
- Secure funds to complete "The Circuit," Greater Philadelphia's regional trail network.

CHESTER COUNTY COMMUNITY FOUNDATION

http://www.chescocf.org/grants/grants%20home.htm

Who is eligible to apply?

Non-profits in Chester County.

What types of projects are funded?

- Program and operating funds.
- Capital and endowment campaigns.
- Capacity-building proposals.

Is there a maximum amount?

Grant awards typically range from $500–$7,500.

Is a match required?

No.

How to apply

Read the guidelines and complete the application available here: **http://www.chescocf.org/grants/grants%20home.htm**

When is the application period?

Proposals may be submitted any time throughout the year.

GEORGE AND MIRIAM MARTIN FOUNDATION

The focus of this foundation is river and watershed conservation. Visit **http://themartinfoundation.org/**

Who is eligible to apply?

Non-profits in Chester County.

What types of projects are funded?

There are no formal grant guidelines.

Is there a maximum amount?

Grant awards typically range from $1,000–$150,000.

Is a match required?

No.

How to apply

If you are interested in a grant, please send a brief letter describing how a grant will help your organization preserve streams and wetlands.

When is the application period?

There are no deadlines.

Corporate Programs

PECO GREEN REGION GRANT

http://www.natlands.org/services/for-municipalities/peco-green-region-program/

Who is eligible to apply?

Any municipality within PECO's five-county service territory, including those in Chester County.

What types of projects are funded?

Developing or updating open space plans; improving municipal, organization, or authority-owned open paces, including planning costs; acquisition of parcels to be used for open space; and acquisition of conservation easements.

Is there a maximum amount?

$10,000.

Is a match required?

50% match.

How to apply

Visit the website for more details: **http://www.natlands.org/services/for-municipalities/peco-green-region-program/**

When is the application period?

The latest deadline was December 31, 2013.

6. APPENDIX:
Model Riparian Buffer Protection Overlay District

Proposed Regulations For Use In A Municipal Zoning Ordinance

Brandywine Conservancy and Pennsylvania Land Trust Association
Edition of April 25, 2014

Section 100. Purpose and Intent. The specific purposes and intent of this article are to:

A. Conserve, protect, and restore natural riparian resources through scientifically supported processes.

B. Maintain and improve surface water quality by reducing the entry of detrimental substances, including nutrients, sediment, organic matter, pesticides, and other harmful substances that reach watercourses, wetlands, and surface and subsurface water bodies.

C. Reduce the entry of detrimental substances by restricting development and uses in riparian areas that intercept surface water runoff, wastewater, subsurface flow and deep groundwater flows from upland sources and where the processes of filtration, deposition, absorption, adsorption, plant uptake, sediment and phosphorus attenuation, denitrification and infiltration may occur; encouraging sheet flow and minimizing, mitigating and preventing concentrated flows of storm water runoff across riparian areas, and securing increased channel and bank stabilization that avoids stream bank erosion and associated water quality, quantity and flow harms.

D. Attenuate flooding and reduce soil loss.

E. Reduce adverse aquatic health impacts due to changes in the temperature of receiving waters (both temperature increases and temperature decreases) as a result of storm water runoff, loss of vegetative shading and direct discharges to water bodies.

F. Enhance in-stream processing of nutrients and pollutants such as pesticides and reduce the downstream movement of pollutants.

G. Improve and maintain the safety, reliability and adequacy of the water supply for domestic, agricultural, commercial, industrial and recreational uses along with sustaining diverse populations of aquatic flora and fauna.

H. Provide wildlife habitat, protect native plant species, and provide opportunities for passive recreation.

I. Conserve headwater areas, groundwater recharge zones, floodway, floodplain, springs, seeps, streams, wetlands, woodlands, prime wildlife habitats and other features that provide recreational value or contain natural amenities, whether on developed or undeveloped land.

J. Integrate with floodplain, steep slope, woodland protection and other ordinance requirements contained herein that regulate environmentally sensitive areas to minimize hazards to life, property and riparian features.

K. Conserve scenic and recreation areas within and adjacent to riparian areas.

L. Protect the watercourses and wetlands otherwise not regulated or superseded by Section 102 of the Pennsylvania State Code.

M. Regulate the use, siting, engineering and maintenance of all development to be consistent with the purposes and intent of this article and accepted conservation practices and to work with the carrying capacity of existing natural resources.

N. (When applicable) Further the Chesapeake Bay Tributary Strategy goals and objectives by implementing best management practices (BMPs) to address point and non-point pollution sources.

Section 200. Definitions. *(In addition to other definitions typically found within the zoning ordinance)*

APPLICANT—a landowner or developer who has filed an application for subdivision or land development or for any zoning or building permit that will result in land disturbance, including his heirs, successors and assigns or the equitable owner of property with the owner's permission. Applicants must either be the legal or beneficial owner or owners of land subject to the application, including the holder of an option or contract to purchase (whether or not such option or contract is subject to any condition), a lessee if he is authorized under the lease to exercise the rights of the landowner, or other person having a proprietary interest in land.

BANKFULL FLOW OR LEVEL—The discharge that just fills the water channel to the top of its banks and at a point where the water beings to overflow onto a floodplain.

BEST MANAGEMENT PRACTICE (BMP)— A structural or non-structural device designed to temporarily store or treat stormwater runoff in order to mitigate flooding and pollution, and reduce soil loss and water quality degradation caused by runoff containing nutrients, animal wastes, toxins, and sediments.

FORESTED RIPARIAN BUFFER—A riparian buffer that consists predominantly of native trees, shrubs and/or herbaceous plants that provide a minimum of sixty (60) percent uniform canopy coverage.

IMPACTED RIPARIAN BUFFER—A riparian buffer that, as a result of land use or land development activity, contains impervious cover or landscape use or management activity such that it no longer meets the definition of "forested riparian buffer".

IMPERVIOUS COVER—Those surfaces that do not readily absorb precipitation and surface water. The term includes but is not limited to buildings, parking areas, driveways, roads, sidewalks, swimming pools, and any areas in concrete, asphalt, packed stone, or other equivalent surfaces, including those with a coefficient of runoff of 0.7 or higher. Impervious surfaces also include disturbed soils with a bulk density of ninety-five (95) percent of the value at which plant growth limitation is expected for average plant material.

LAND DISTURBANCE—Any activity that exposes soils, alters topography, and/or alters vegetation.

NORMAL POOL ELEVATION—

A. For water bodies which have no structural measures to regulate the height of water, the height of water at ordinary stages of low water unaffected by drought.

B. For structurally regulated water bodies, the elevation of the spillway, outlet control, or dam crest which maintains the water body at a specified height.

C. The term does not apply to wetlands.

RIPARIAN—Belonging or related to the bank of a water body, river, stream, wetland, lake, pond, or impoundment.

RIPARIAN BUFFER—A vegetated area, including trees, shrubs, and herbaceous vegetation, adjacent to a water body .

TOP OF BANK—The elevation at which rising waters begin to inundate the floodplain. In case of ambiguous, indefinite, or non-existent floodplain or question regarding the location, the Top of Bank shall be the bankfull water elevation as delineated by a person trained in fluvial geomorphology and utilizing the most recent edition of Applied River Morphology by Dave Rosgen, or comparable reference book. "Top of Bank" shall be synonymous with "edge of water."

WATER BODY—Any natural or manmade pond, lake, wetland, impoundment, or watercourse. This shall not include any pond or facility designed and constructed solely to contain stormwater, or a swimming pool.

WATERCOURSE— Any channel of conveyance of surface water having a defined bed and banks, such as a stream, river, brook, or creek, whether natural or artificial, with perennial, intermittent or seasonal flow. This shall not include any channel or ditch designed and constructed solely to carry stormwater.

WETLAND OR WETLANDS—Those areas inundated or saturated by surface water or groundwater at a frequency and duration sufficient to support, and that under normal circumstances, do support, a prevalence of vegetation typically adapted for life in saturated soil conditions, including swamps, marshes, bogs, ponds, lakes, and similar areas. Wetlands shall include any area so delineated by the National Wetlands Inventory of the U.S. Fish and Wildlife Service and all lands regulated as wetlands by the Pennsylvania Department of Environmental Protection (PADEP) or the U.S. Army Corps of Engineers (ACE). In the event there is a conflict between the definitions of these agencies, the more restrictive definition that defines the wetlands most expansively shall apply.

Section 300. Applicability.

A. The provisions of this article shall apply to any water body as defined herein, except as further clarified in subsection D. below.

B. The provisions of this article shall apply in accordance with subsection A. above where any application for special exception, conditional use, variance, subdivision, land development, or building or zoning permit is required, or when a violation of the provisions of this article require an enforcement action.

C. The provisions of this article shall not apply to the footprints of existing primary and accessory uses, including but not limited to all agricultural uses and research related thereto, buildings, transportation facilities, fences, lawns, gardens, utility lines, roads, driveways, sidewalks, bikeways, decks, piers, water, septic and sewage supply facilities and their related appurtenances (well houses, utility pump and lift stations, manholes, etc.).

D. For lands lying within a PADEP-designated Special Protection Watershed, the riparian buffer requirements of Section 102.14 of Chapter 102 (Erosion and Sedimentation Pollution Control Rules and Regulations) of the Commonwealth of Pennsylvania, shall apply when more restrictive than the regulations provided herein. Pursuant to Section 102.14, earth disturbance activities subject to post-construction stormwater management (PCSM) permits cannot be located within one hundred fifty (150) feet of a watercourse in an exceptional value (EV) or high quality (HQ) watershed. At the time of plan and/or permit approval under this Zoning Ordinance, applicants are responsible for demonstrating compliance with Section 102.14 of Chapter 102, when applicable, including providing copies of all related correspondence and relevant PADEP approvals to the Zoning Officer.

Section 400. Riparian Buffer Delineation. The riparian buffer area shall extend a minimum total width of one hundred (100) feet from the edge of a water body, or shall equal the extent of the 100-year floodplain, whichever is greater.

A. The riparian buffer area will consist of two distinct zones designated as:

1. Zone One: Zone One begins at each edge of a water body and shall extend landward a minimum width of fifty (50) feet, measured horizontally on a line perpendicular to the nearest edge of the water body, as reviewed and approved by the municipal engineer.

    a. Where steep slopes (15% to 25% or more) are located within fifty (50) feet of the edge of a water body, Zone One shall extend the entire distance of this steep sloped area, including any steep sloped area that begins within fifty (50) feet and extends beyond one hundred (100) feet. If the sloped area extends beyond one hundred (100) feet, there will be no requirement for the establishment of Zone Two. If the distance is less than one hundred (100) feet, but greater than fifty (50) feet, the width of Zone Two will be adjusted so that the total riparian buffer width (Zone One and Zone Two) is one hundred (100) feet.

2. Zone Two: Zone Two begins at the outer edge and on each side of any area delineated within Zone One and extends further landward to a minimum total width of one hundred (100) feet including Zone One, and where the floodplain extends greater than one hundred (100) feet from the water body, shall extend to the outer edge of the defined 100-year floodplain.

B. Isolated wetlands and water bodies. Wetlands and water bodies not located along a watercourse, where the wetland or water body is greater than 5,000 square feet in area, shall have a minimum buffer width consistent with Zone One, as defined above, from the edge of the wetland or water body around the entire perimeter.

C. Buffer increase for impaired water bodies. In the case of a water body that has been listed by PADEP as impaired (see PADEP's "Integrated Water Quality Report, 2012", or if applicable, a later revision thereof, for a listing of impaired water bodies), Zone Two begins at the outer edge of any area delineated within Zone One and extends further landward to a minimum total width of a one hundred fifty (150) feet including Zone One.

D. Applicant to initially delineate. The applicant shall delineate, for the property as a whole, any riparian buffer areas as specified in subsections 400.A through 400.C above on any plan that is submitted for the following approvals:

1. Conditional use, special exception, or variance.
2. Subdivision or land development.
3. Any other improvements that require a zoning or building permit for the activities within the Riparian Buffer Overlay Zoning District.

Section 500. Uses Permitted.

A. The following uses or activities are permitted by right in Zone One:

1. Wildlife sanctuaries, nature preserves, forest preserves, fishing areas, passive areas of public and private parklands.
2. Temporary stream restoration projects, stream bank restoration projects and vegetation restoration projects to restore the stream or riparian zone to an ecologically healthy stage utilizing natural channel design practices to the greatest degree possible. The project duration and timing shall be subject to Zoning Officer approval.
3. Stream crossings for farm vehicles and/or livestock if part of a federal, state, and/or county conservation district and/or local nonprofit riparian buffer improvement project.
4. Provision for stone-dust or natural trail and related trail access when determined by the Zoning Officer to result in minimum disturbance to existing trees and shrubs.
5. Research and monitoring devices, such as staff gages, water recording, water quality testing, cross vanes, weirs and related demonstration facilities.

B. The following uses or activities are permitted by right in Zone Two:

1. Uses or activities permitted in Zone One.
2. Timber harvesting operations, when conducted in compliance with a timber harvesting plan prepared, submitted, and approved in accordance with Section _____ of the Zoning Ordinance. Clear-cutting of timber, or high-grading of forests, as defined therein, shall not be permitted within the regulated riparian buffer.
3. Any other use or activity permitted in the underlying (base) district, provided that:

a. no more than twenty (20) percent of Zone Two shall be re-graded, filled, or otherwise altered or subject to land disturbance; and

b. with the exception of paved trails approved by the Zoning Officer, no new impervious surfaces shall be created as a result of any permitted uses or activities except as permitted in paragraph 500.D, below.

C. The following uses or activities are permitted by Special Exception *(or Conditional Use, if so desired)* approval in Zone One:

1. Structures that, by their nature, cannot be located anywhere except within the riparian buffer. These structures shall include docks, boat launches, public water supply intake structures, facilities for natural water quality treatment and purification and public wastewater treatment plant sewer lines and outfalls. The structures shall provide for the minimum practicable disturbance of the riparian buffer by minimizing size and location and by taking advantage of collocation, if possible.
2. Road crossings (when perpendicular to the stream or buffer), bridges, culverts, utilities, and impoundments.
3. Provision for paved trail and related trail access when determined by the Zoning Hearing Board to result in minimum disturbance to existing trees and shrubs.

D. The following uses or activities are permitted by Special Exception *(or Conditional Use, if so desired)* approval in Zone Two:

1. Uses permitted by Special Exception in Zone One.
2. Stormwater conveyance structures and outfalls.
3. The grazing of livestock or growing of agricultural crops provided existing forested riparian buffers in either zone are not removed or otherwise impacted.
4. Any other use or activity permitted in the underlying (base) district, provided that no more than twenty (20) percent of Zone Two shall be regraded, filled, altered, subject to land disturbance, or covered with impervious surfaces.

E. The following activities or practices are expressly prohibited in Zone One and Zone Two:

1. Removal or disturbance of vegetation in a manner that is inconsistent with erosion and sedimentation control and riparian buffer protection.
2. Storage or discharge of any hazardous or noxious materials, except those used during emergencies for the treatment and/or maintenance of any public sewer and public water treatment facilities (i.e., generator sets or alternative drive units).
3. Use of fertilizers, pesticides, herbicides, and/or other chemicals, except:

   a. where permitted by a valid conservation plan, forest management plan, or approved planting and maintenance plan (see Section 600.E. below);

   b. for selective herbicide application by a qualified professional to control noxious weeds and invasive species of plants in riparian buffers.
4. Motor or wheeled vehicle traffic in any area not designed to accommodate adequately the type and volume of vehicular movement.

Section 600. Buffer Restoration and Planting Requirements.

A. All riparian buffer areas shall be continually maintained with a dominant mix of native trees, shrubs, and/or herbaceous plants so as to constitute a forested riparian buffer where not otherwise occupied by any existing use excepted in accordance with Section 300.C., or any authorized use permitted in Section 500.

B. Impacted riparian buffer areas shall be restored by an applicant to a forested riparian buffer, as a condition of approval of any final subdivision plan, final land development plan, or building or zoning permit approval, except as provided in subsection G., through invasive removal and planting of a diverse mix of native tree and shrub species as follows:

   1. For water bodies identified as impaired by PADEP, the applicant shall restore the first one hundred (100) feet of the impacted buffer area.
   2. For all other water bodies, the applicant shall only restore Zone One.

C. Restoration of the impacted riparian buffer shall occur as follows:

   1. Zone 1. Undisturbed native trees must occupy Zone 1 in its entirety. Predominant vegetation must be composed of a variety of native tree species planted in accordance with subsection D. below.
   2. Zone 2. For restoration adjacent to impaired water bodies, in addition to the planting requirements for Zone 1, managed native trees and shrubs must occupy at least the first fifty (50) feet of Zone 2, beginning at the outer edge of Zone 1. Predominant vegetation must be composed of a variety of native riparian tree and shrub species planted in accordance with subsection D. below.

D. Restoration plantings shall be planted at a density sufficient to provide three hundred (300) trees per acre at maturity. To achieve this density, no less than three hundred fifty (350) (@ approximately 10 x 10 feet spacing) trees per acre should be planted initially. The following guide is recommended for tree spacing and density based on plant size at installation:

   1. Seedlings—6-10 feet spacing (approx. 700 seedlings/acre)
   2. Bare root stock—14-16 feet spacing (approx. 200 plants/acre)
   3. Larger and container—16-18 feet spacing (approx. 150 plants/acre)

   Additional planting guidance may be obtained from PADEP's Bureau of Watershed Management Document Number 394-5600-001, entitled "Riparian Forest Buffer Guidance, November 27, 2010.

E. Applicants shall submit, and as a condition of approval of any final subdivision plan, final land development plan, or permit, implement a planting and maintenance plan for the impacted riparian buffer. The plan shall be prepared by a registered landscape architect or professional plant ecologist. The plan shall identify the number, density and species of native trees and shrubs appropriate to the geographic location that will achieve a minimum of sixty (60) percent uniform canopy coverage and describe the maintenance program to be conducted by the buffer owner for a minimum of five (5) years, include measures to initially remove, and thereafter control, invasive species, control deer and rodent damage, and require replacement of deceased trees for a minimum of the first three (3) years.

F. Any riparian buffer that is included within a lot created after the effective date of this ordinance shall include as a condition of approval of the subdivision creating the lot, a restrictive covenant approved by the municipal solicitor, and recorded with the final subdivision or land development plan and the deed for the lot. The restrictive covenant shall clearly define the riparian buffer area, shall include binding provisions for the adequate long-term functioning and integrity of the riparian buffer, and shall include a requirement for notification of all subsequent lot owners of its restrictive nature.

G. Restoration to a forested riparian buffer shall not be required for issuance of a building permit for a single-family residence or addition thereto.

Section 700. Modifications to Riparian Buffer Standards.

A. For any use or activity subject to Subdivision or Land Development review, as part of applicable Plan submission, modification(s) may be requested to the provisions of Sections 400 or 600 of this Article. Requested modification(s) may be granted at the discretion of the Board of Supervisors pursuant to the provisions of the Subdivision and Land Development Ordinance.

B. For any use or activity not subject to Subdivision or Land Development review, but subject to application for approval of a Conditional Use, Special Exception, or Zoning Variance under the provisions of this Ordinance, the applicant may request modification(s) to the provisions of Sections 400 or 600 of this Article.

C. For any use or activity not falling within the scope of subsections A or B, the applicant may request modification(s) to the provisions of Sections 400 or 600 of this Article in the form of an application for grant of a Special Exception by the Zoning Hearing Board. (Optional: Such applications shall be submitted to the Planning Commission for review and comment prior to formal Special Exception application to the Zoning Hearing Board.)

D. Applicants shall provide appropriate documentation in support of their modification request, and the Board of Supervisors or Zoning Hearing Board (as applicable) may request additional documentation of an applicant, or of its municipal consultants, to help reach its decision.

E. In consideration of approval of any applicant request for modification(s) under this Article, the following standards shall serve as the basis for a decision:

    1. That there are unique physical circumstances or conditions, including but not limited to irregularity, narrowness, or shallowness of lot size or shape, excessive frontage along a water body, presence of existing buildings or structures, or exceptional topographical or other physical conditions peculiar to the particular property. That because of such physical circumstances or conditions, it is impracticable for the property to be developed in strict conformity with the buffer requirements of this Article and that the approval of the modification is therefore necessary to enable the reasonable use of the property under base zoning provisions.

    2. That the modification, if approved, will result in the minimum reduction in performance of the riparian buffer, pursuant to the purposes set forth in Section 100, as needed to provide for the lawful intended use.

F. No alteration of the Use Regulations set forth in Section 500 shall be authorized as modification pursuant to this Section 700. Any such requested alteration shall constitute an application for a variance, meeting all applicable requirements for same, to be submitted to the Zoning Hearing Board.

Acknowledgements

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Disclaimer

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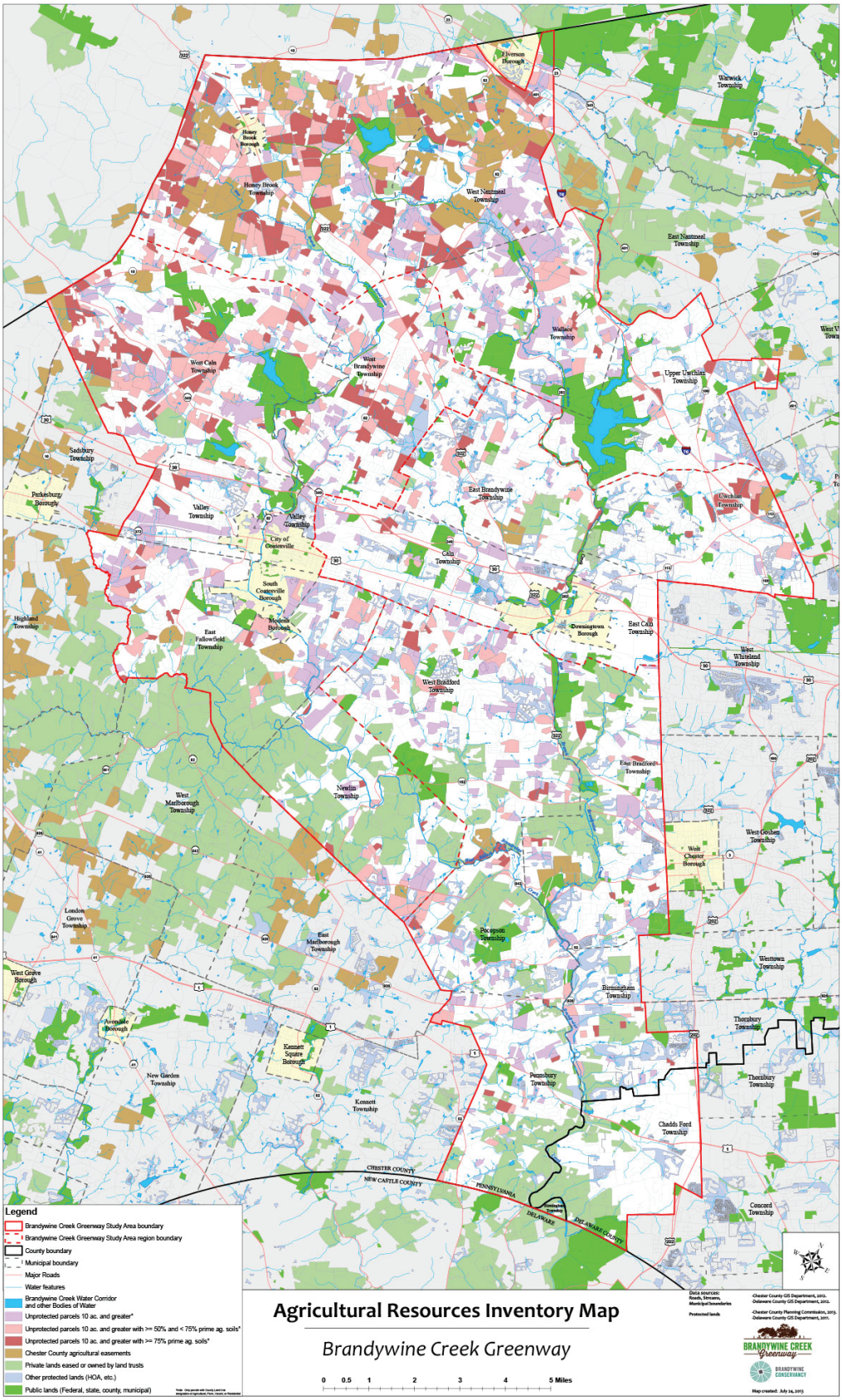
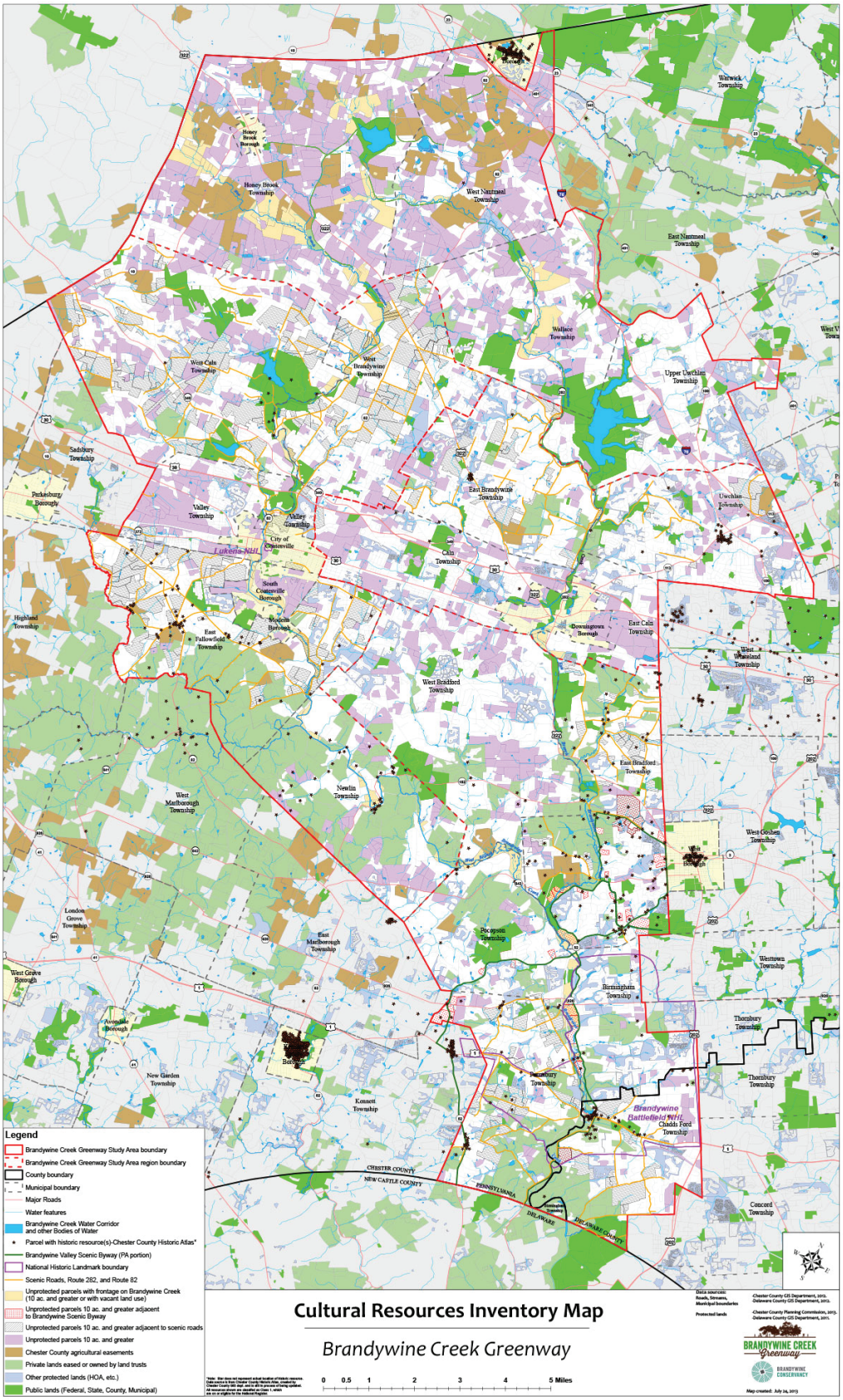

Agricultural Resources Inventory Map
Brandywine Creek Greenway
Legend
Brandywine Creek Greenway Study Area boundary
Brandywine Creek Greenway Study Area region boundary
County boundary
Municipal boundary
Major Roads
Water features
Brandywine Creek Water Corridor and other Bodies of Water
Unprotected parcels 10 ac. and greater*
Unprotected parcels 10 ac. and greater with >= 50% and < 75% prime ag. soils*
Unprotected parcels 10 ac. and greater with >= 75% prime ag. soils*
Chester County agricultural easements
Private lands eased or owned by land trusts
Other protected lands (HOA, etc.)
Public lands (Federal, state, county, municipal)
0 0.5 1 2 3 4 5 Miles
Data sources:
Roads, Streams, Municipal boundaries
-Chester County GIS Department, 2012.
-Delaware County GIS Department, 2012.
Protected lands
-Chester County Planning Commission, 2013.
-Delaware County GIS Department, 2011.
Map created: July 24, 2013
CHESTER COUNTY
NEW CASTLE COUNTY
PENNSYLVANIA
DELAWARE
DELAWARE COUNTY
Honey Brook Borough
Honey Brook Township
West Nantmeal Township
East Nantmeal Township
Warwick Township
Wallace Township
West Caln Township
West Brandywine Township
Upper Uwchlan Township
Sadsbury Township
Parkesburg Borough
Valley Township
City of Coatesville
East Brandywine Township
Uwchlan Township
Caln Township
South Coatesville Borough
Highland Township
East Fallowfield Township
Modena Borough
Downingtown Borough
East Caln Township
West Whiteland Township
West Bradford Township
East Bradford Township
West Marlborough Township
Newlin Township
West Goshen Township
West Chester Borough
London Grove Township
East Marlborough Township
Pocopson Township
Westtown Township
West Grove Borough
Birmingham Township
Thornbury Township
Avondale Borough
Kennett Square Borough
New Garden Township
Pennsbury Township
Kennett Township
Chadds Ford Township
Concord Township


Honey Brook Borough
Honey Brook Township
West Nantmeal Township
East Nantmeal Township
Warwick Township
Wallace Township
West Caln Township
West Brandywine Township
Upper Uwchlan Township
Sadsbury Township
Parkesburg Borough
Valley Township
Valley Township
City of Coatesville
Lukens Mill
East Brandywine Township
Uwchlan Township
Caln Township
South Coatesville Borough
Highland Township
East Fallowfield Township
Modena Borough
Downingtown Borough
East Caln Township
West Bradford Township
West Vincentown Township
East Bradford Township
West Marlborough Township
Newlin Township
West Goshen Township
London Grove Township
East Marlborough Township
Pocopson Township
West Grove Borough
Westtown Township
Birmingham Township
Avondale Borough
Thornbury Township
Thornbury Township
New Garden Township
Kennett Township
Pennsbury Township
Brandywine Battlefield Mill
Chadds Ford Township
CHESTER COUNTY
NEW CASTLE COUNTY
PENNSYLVANIA
DELAWARE
DELAWARE COUNTY
Concord Township
Legend
Brandywine Creek Greenway Study Area boundary
Brandywine Creek Greenway Study Area region boundary
County boundary
Municipal boundary
Major Roads
Water features
Brandywine Creek Water Corridor and other Bodies of Water
Parcel with historic resource(s)-Chester County Historic Atlas*
Brandywine Valley Scenic Byway (PA portion)
National Historic Landmark boundary
Scenic Roads, Route 282, and Route 82
Unprotected parcels with frontage on Brandywine Creek (10 ac. and greater or with vacant land use)
Unprotected parcels 10 ac. and greater adjacent to Brandywine Scenic Byway
Unprotected parcels 10 ac. and greater adjacent to scenic roads
Unprotected parcels 10 ac. and greater
Chester County agricultural easements
Private lands eased or owned by land trusts
Other protected lands (HOA, etc.)
Public lands (Federal, State, County, Municipal)
Cultural Resources Inventory Map
Brandywine Creek Greenway
0 0.5 1 2 3 4 5 Miles
Data sources:
Roads, Streams, Municipal boundaries
-Chester County GIS Department, 2013.
-Delaware County GIS Department, 2013.
Protected lands
-Chester County Planning Commission, 2013.
-Delaware County GIS Department, 2011.
BRANDYWINE CREEK Greenway
BRANDYWINE CONSERVANCY
Map created: July 24, 2013

Elverson Borough
Warwick Township
Honey Brook Borough
Honey Brook Township
West Nantmeal Township
East Nantmeal Township
West Caln Township
West Brandywine Township
Wallace Township
Upper Uwchlan Township
Sadsbury Township
Parkesburg Borough
East Brandywine Township
Uwchlan Township
Valley Township
City of Coatesville
Caln Township
South Coatesville Borough
Highland Township
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Downingtown Borough
East Caln Township
Whiteland Township
West Bradford Township
East Bradford Township
West Marlborough Township
Sadsbury Township
West Goshen Township
West Chester Borough
London Grove Township
East Marlborough Township
Pocopson Township
Westtown Township
West Grove Borough
Birmingham Township
Thornbury Township
Avondale Borough
Kennett Square Borough
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Thornbury Township
Kennett Township
Chadds Ford Township
CHESTER COUNTY
NEW CASTLE COUNTY
PENNSYLVANIA
DELAWARE
Concord Township
Legend
Brandywine Creek Greenway Study Area boundary
Brandywine Creek Greenway Study Area region boundary
County boundary
Municipal boundary
Major Roads
Water features
Brandywine Creek Water Corridor and other Bodies of Water
Unprotected parcels 10 ac. and greater
NWI Wetlands
Woodlands
Woodland interior
Forested Riparian Buffer
Chester County agricultural easements
Private lands eased or owned by land trusts
Other protected lands (HOA, etc.)
Public lands(Federal, state, county, municipal)
Natural Resources Inventory Map
Brandywine Creek Greenway
0 0.5 1 2 3 4 5 Miles
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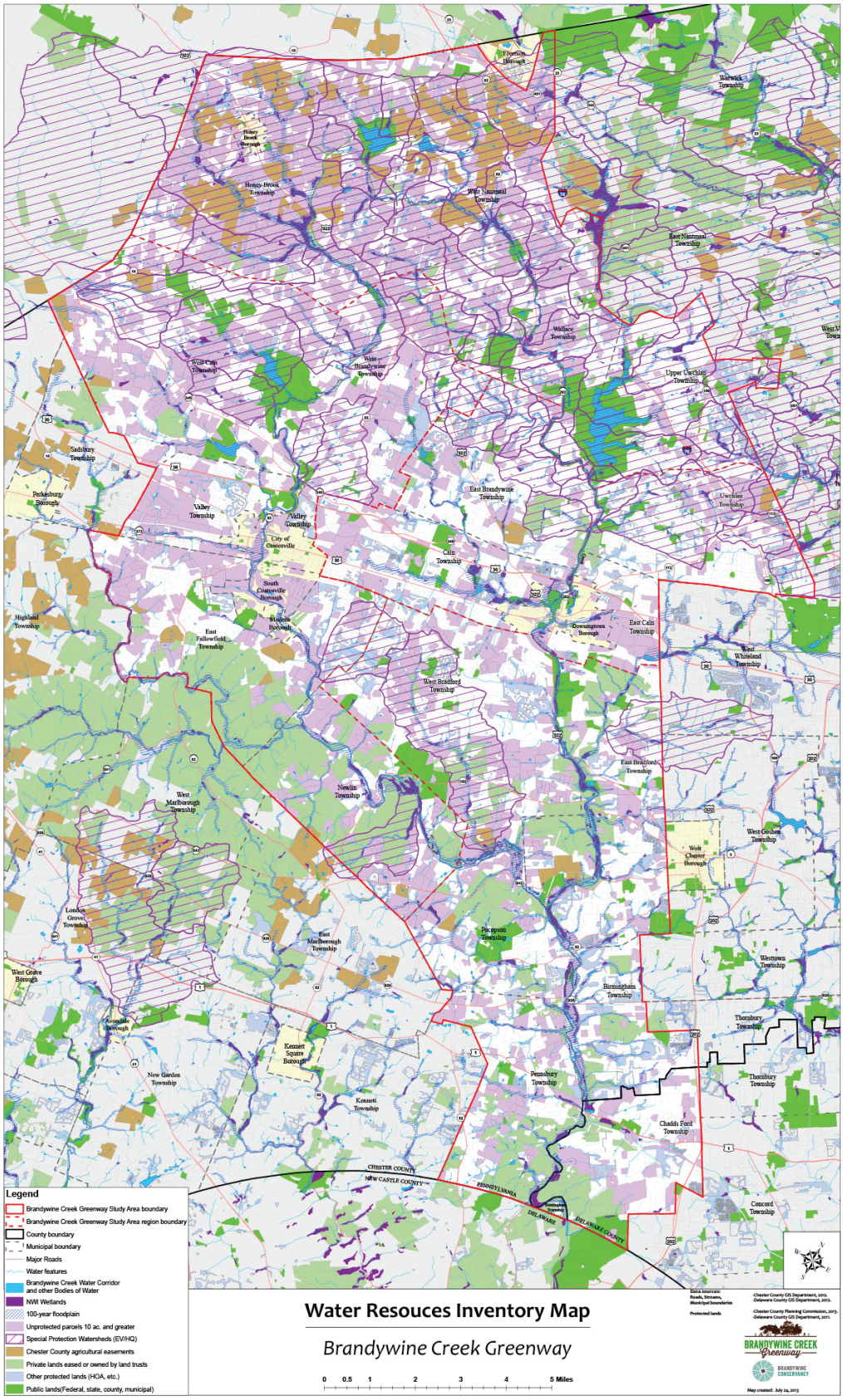
Protected lands
-Chester County Planning Commission, 2013.
-Delaware County GIS Department, 2011.
BRANDYWINE CREEK Greenway
BRANDYWINE CONSERVANCY
Map created: July 24, 2013


Water Resouces Inventory Map
Brandywine Creek Greenway
Legend
Brandywine Creek Greenway Study Area boundary
Brandywine Creek Greenway Study Area region boundary
County boundary
Municipal boundary
Major Roads
Water features
Brandywine Creek Water Corridor and other Bodies of Water
NWI Wetlands
100-year floodplain
Unprotected parcels 10 ac. and greater
Special Protection Watersheds (EV/HQ)
Chester County agricultural easements
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Protected lands
-Chester County Planning Commission, 2013.
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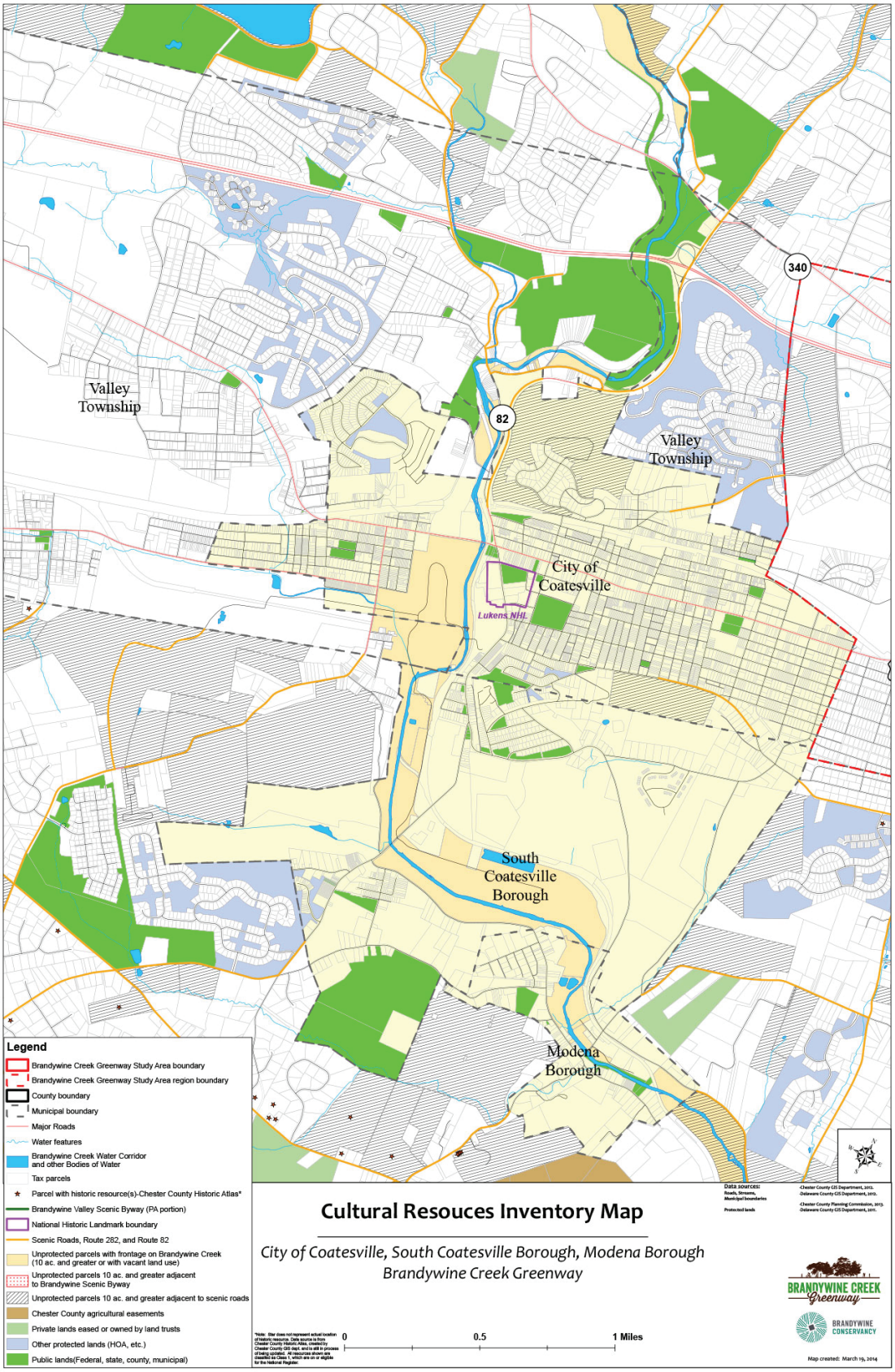
BRANDYWINE CREEK Greenway
BRANDYWINE CONSERVANCY
Map created: July 24, 2013
CHESTER COUNTY
NEW CASTLE COUNTY
PENNSYLVANIA
DELAWARE
DELAWARE COUNTY
Elverson Borough
Warwick Township
Honey Brook Borough
Honey Brook Township
West Nantmeal Township
East Nantmeal Township
Wallace Township
West Vincent Township
West Caln Township
West Brandywine Township
Upper Uwchlan Township
Sadsbury Township
Parkesburg Borough
Valley Township
Valley Township
City of Coatesville
East Brandywine Township
Uwchlan Township
Caln Township
South Coatesville Borough
Highland Township
East Fallowfield Township
Modena Borough
Downingtown Borough
East Caln Township
West Whiteland Township
West Bradford Township
East Bradford Township
West Marlborough Township
Newlin Township
West Goshen Township
West Chester Borough
London Grove Township
East Marlborough Township
Pocopson Township
Westtown Township
West Grove Borough
Birmingham Township
Avondale Borough
Thornbury Township
Kennett Square Borough
New Garden Township
Pennsbury Township
Thornbury Township
Kennett Township
Chadds Ford Township
Concord Township


Valley Township
82
340
Valley Township
City of Coatesville
Lukens NHL
South Coatesville Borough
Modena Borough
Legend
Brandywine Creek Greenway Study Area boundary
Brandywine Creek Greenway Study Area region boundary
County boundary
Municipal boundary
Major Roads
Water features
Brandywine Creek Water Corridor and other Bodies of Water
Tax parcels
Parcel with historic resource(s)-Chester County Historic Atlas*
Brandywine Valley Scenic Byway (PA portion)
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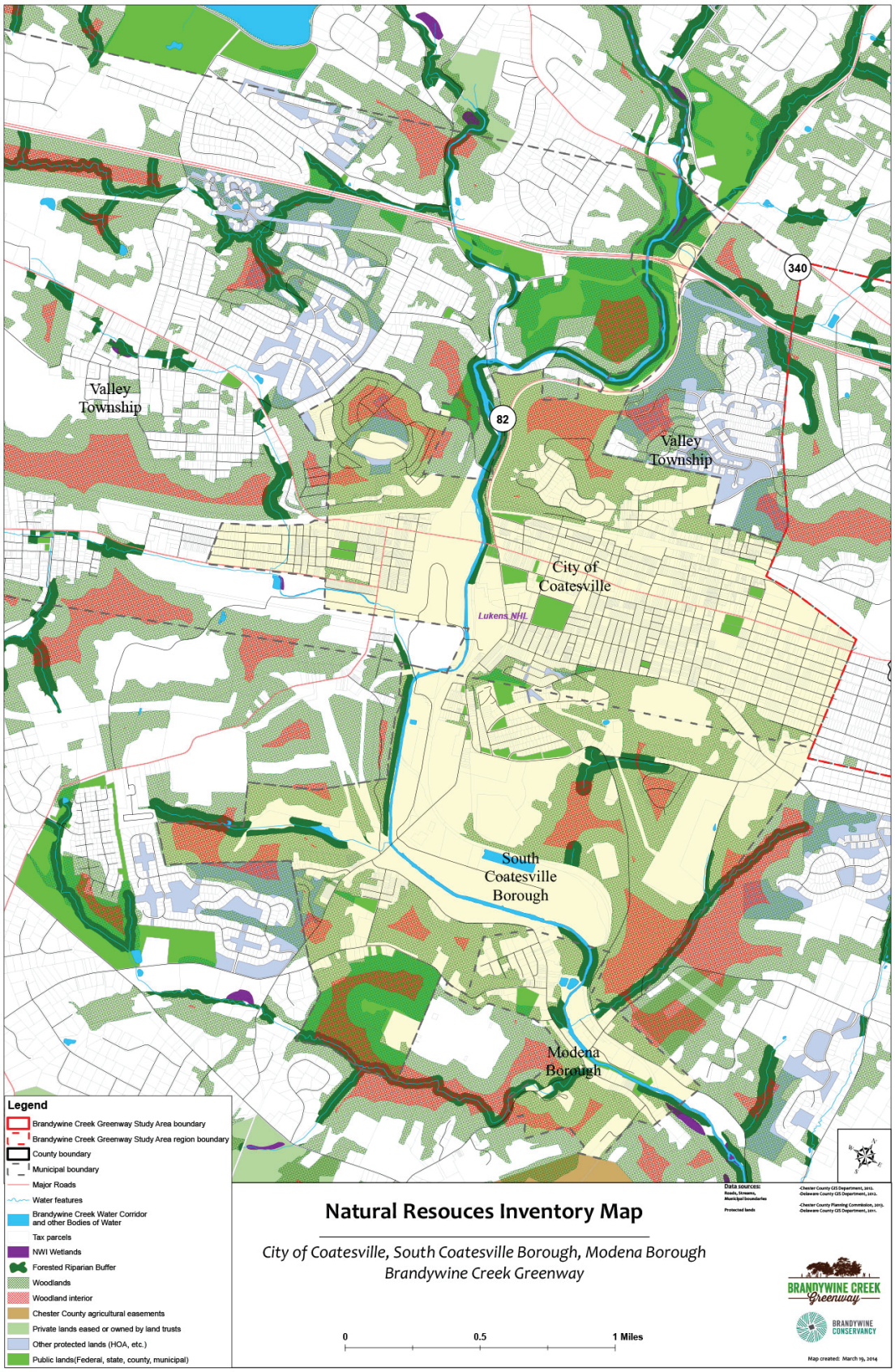
Other protected lands (HOA, etc.)
Public lands(Federal, state, county, municipal)
Data sources:
Roads, Streams, Municipal boundaries
Protected lands
-Chester County GIS Department, 2012.
-Delaware County GIS Department, 2012.
-Chester County Planning Commission, 2013.
-Delaware County GIS Department, 2011.
Cultural Resouces Inventory Map
City of Coatesville, South Coatesville Borough, Modena Borough
Brandywine Creek Greenway
*Note: Star does not represent actual location of historic resource. Data source is from Chester County Historic Atlas, created by Chester County GIS dept. and is still in process of being updated. All resources shown are classified as Class 1, which are on or eligible for the National Register.
0
0.5
1 Miles
BRANDYWINE CREEK Greenway
BRANDYWINE CONSERVANCY
Map created: March 19, 2014


Valley Township
82
340
Valley Township
City of Coatesville
Lukens NHL
South Coatesville Borough
Modena Borough
Legend
Brandywine Creek Greenway Study Area boundary
Brandywine Creek Greenway Study Area region boundary
County boundary
Municipal boundary
Major Roads
Water features
Brandywine Creek Water Corridor and other Bodies of Water
Tax parcels
NWI Wetlands
Forested Riparian Buffer
Woodlands
Woodland interior
Chester County agricultural easements
Private lands eased or owned by land trusts
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Data sources:
Roads, Streams, Municipal boundaries
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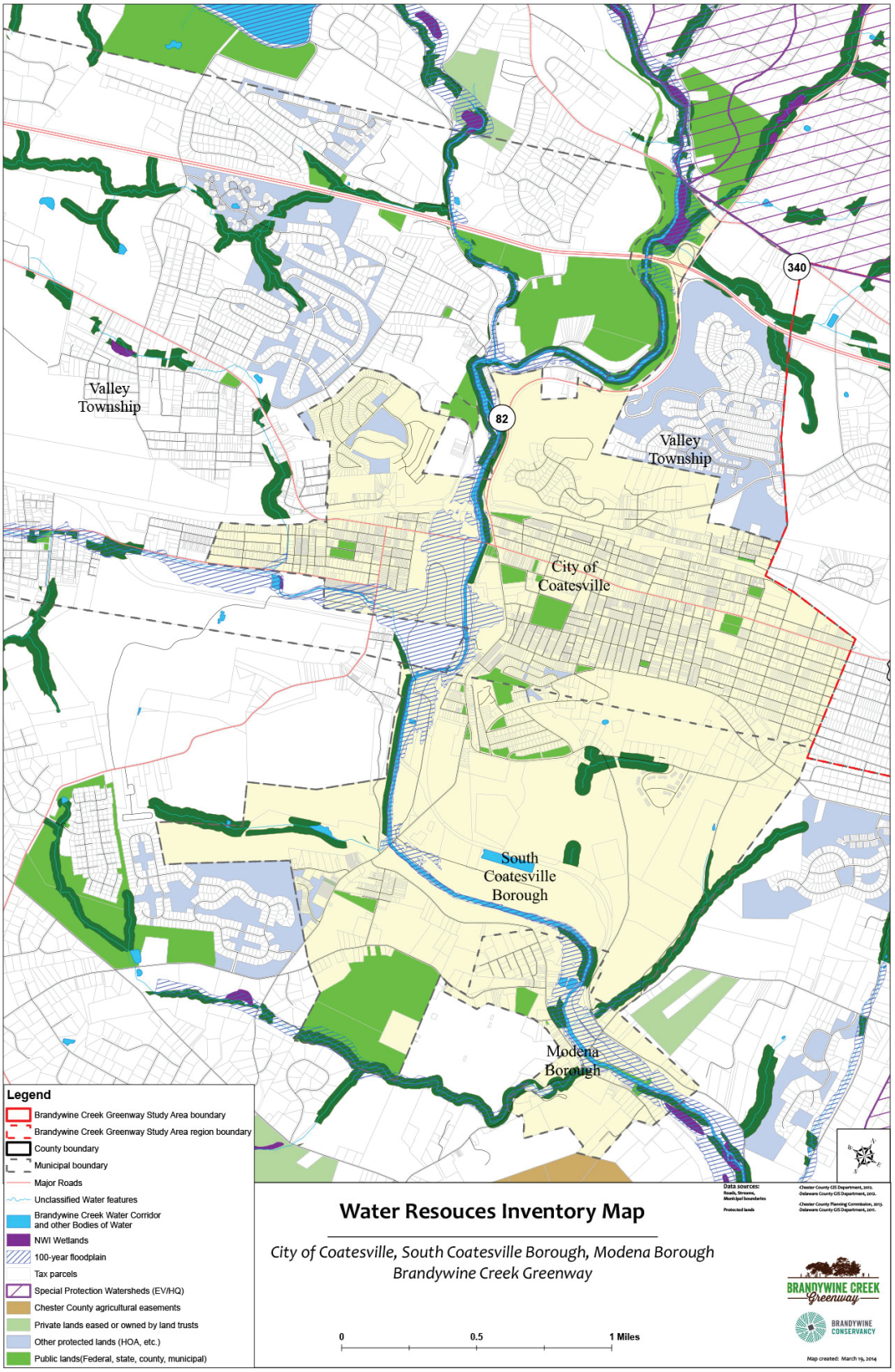
Natural Resouces Inventory Map
City of Coatesville, South Coatesville Borough, Modena Borough
Brandywine Creek Greenway
0
0.5
1 Miles
BRANDYWINE CREEK Greenway
BRANDYWINE CONSERVANCY
Map created: March 19, 2014


Valley Township
82
340
Valley Township
City of Coatesville
South Coatesville Borough
Modena Borough
Legend
Brandywine Creek Greenway Study Area boundary
Brandywine Creek Greenway Study Area region boundary
County boundary
Municipal boundary
Major Roads
Unclassified Water features
Brandywine Creek Water Corridor and other Bodies of Water
NWI Wetlands
100-year floodplain
Tax parcels
Special Protection Watersheds (EV/HQ)
Chester County agricultural easements
Private lands eased or owned by land trusts
Other protected lands (HOA, etc.)
Public lands(Federal, state, county, municipal)
Data sources:
Roads, Streams, Municipal boundaries
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-Chester County GIS Department, 2012.
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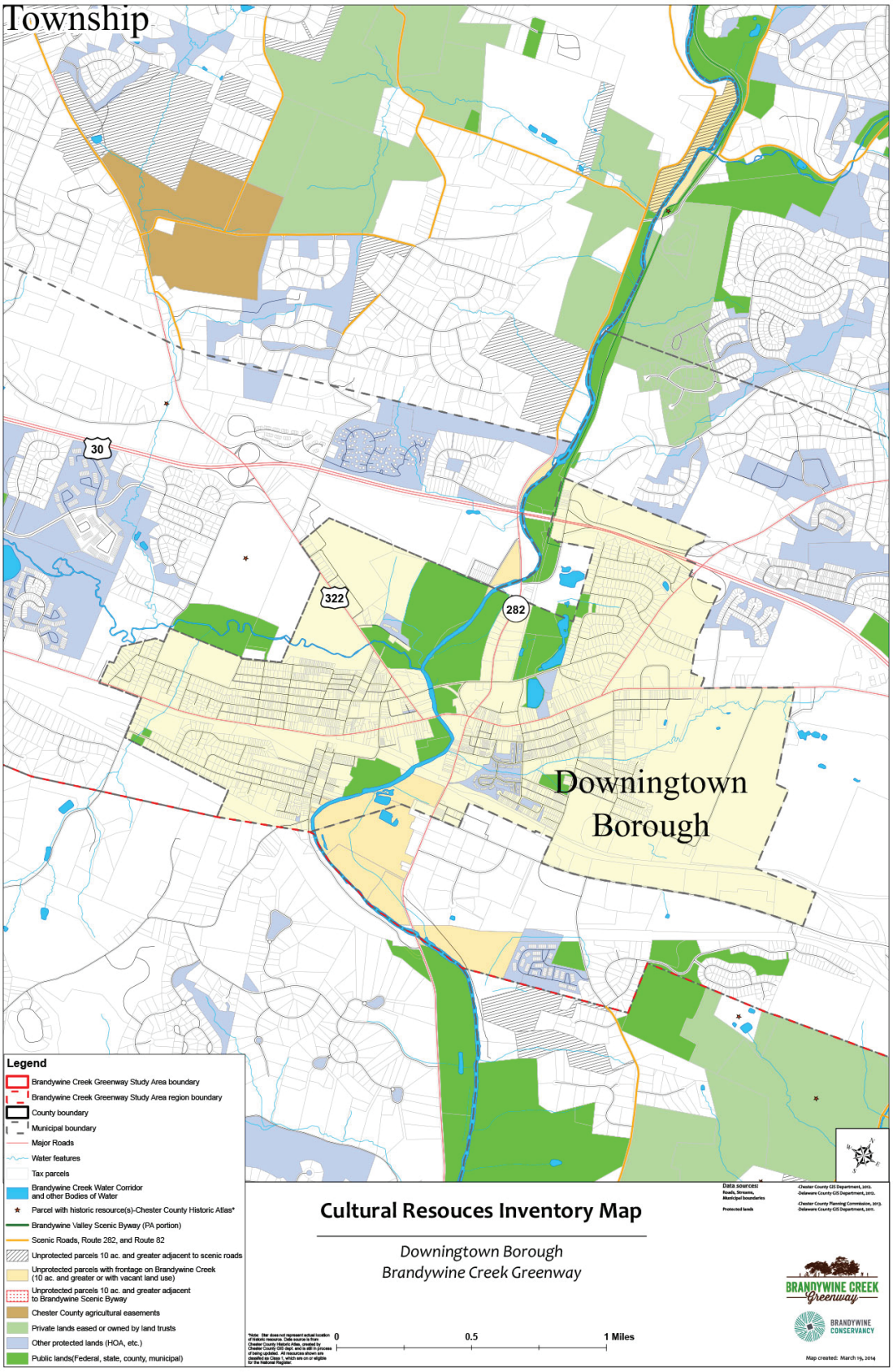
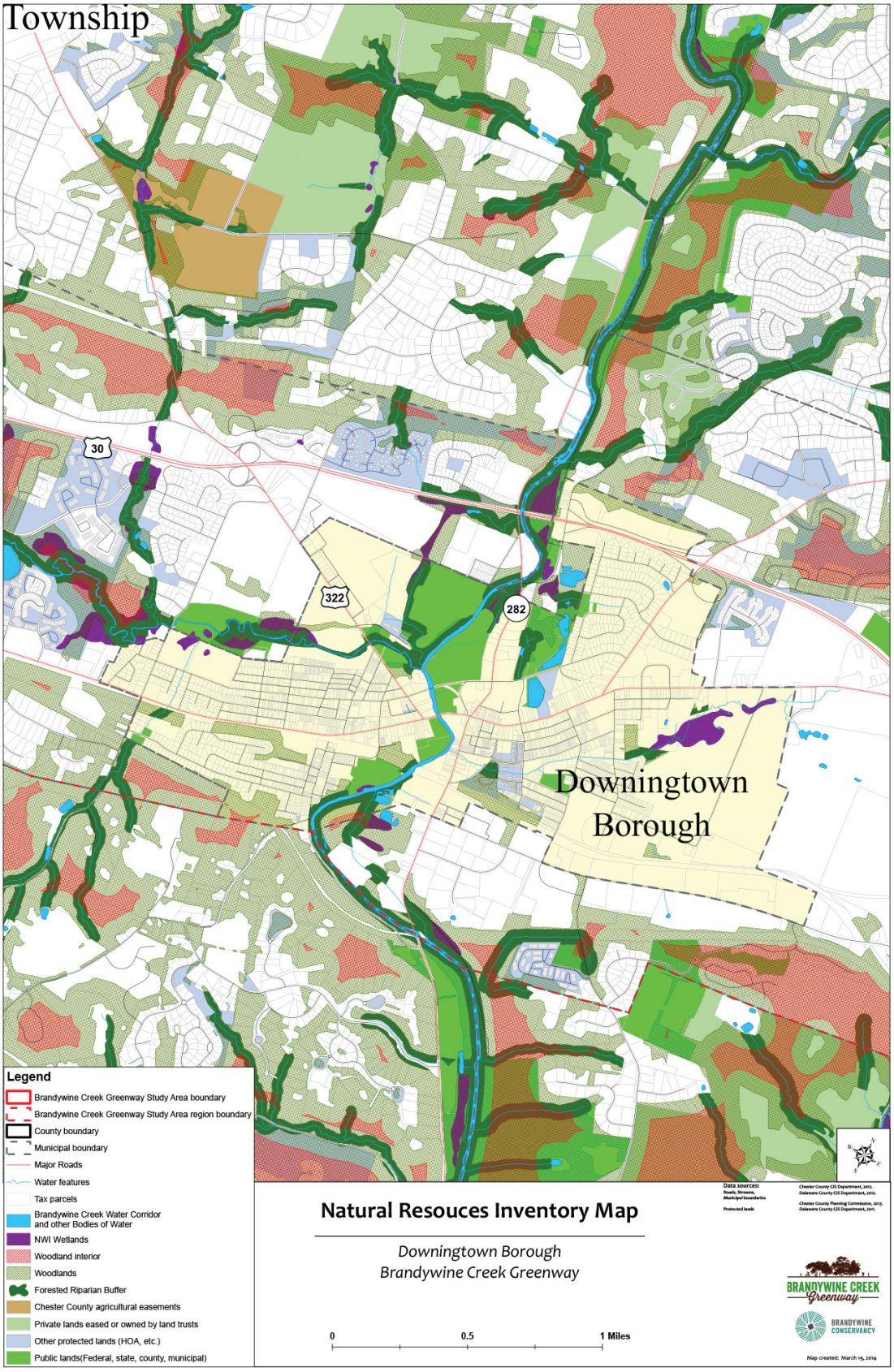
-Chester County Planning Commission, 2013.
-Delaware County GIS Department, 2011.
Water Resouces Inventory Map
City of Coatesville, South Coatesville Borough, Modena Borough
Brandywine Creek Greenway
0
0.5
1 Miles
BRANDYWINE CREEK Greenway
BRANDYWINE CONSERVANCY
Map created: March 19, 2014


Township
30
322
282
Downingtown Borough
Legend
Brandywine Creek Greenway Study Area boundary
Brandywine Creek Greenway Study Area region boundary
County boundary
Municipal boundary
Major Roads
Water features
Tax parcels
Brandywine Creek Water Corridor and other Bodies of Water
Parcel with historic resource(s)-Chester County Historic Atlas*
Brandywine Valley Scenic Byway (PA portion)
Scenic Roads, Route 282, and Route 82
Unprotected parcels 10 ac. and greater adjacent to scenic roads
Unprotected parcels with frontage on Brandywine Creek (10 ac. and greater or with vacant land use)
Unprotected parcels 10 ac. and greater adjacent to Brandywine Scenic Byway
Chester County agricultural easements
Private lands eased or owned by land trusts
Other protected lands (HOA, etc.)
Public lands(Federal, state, county, municipal)
Cultural Resouces Inventory Map
Downingtown Borough
Brandywine Creek Greenway
0
0.5
1 Miles
BRANDYWINE CREEK Greenway
BRANDYWINE CONSERVANCY
Map created: March 19, 2014


Township
30
322
282
Downingtown Borough
Legend
Brandywine Creek Greenway Study Area boundary
Brandywine Creek Greenway Study Area region boundary
County boundary
Municipal boundary
Major Roads
Water features
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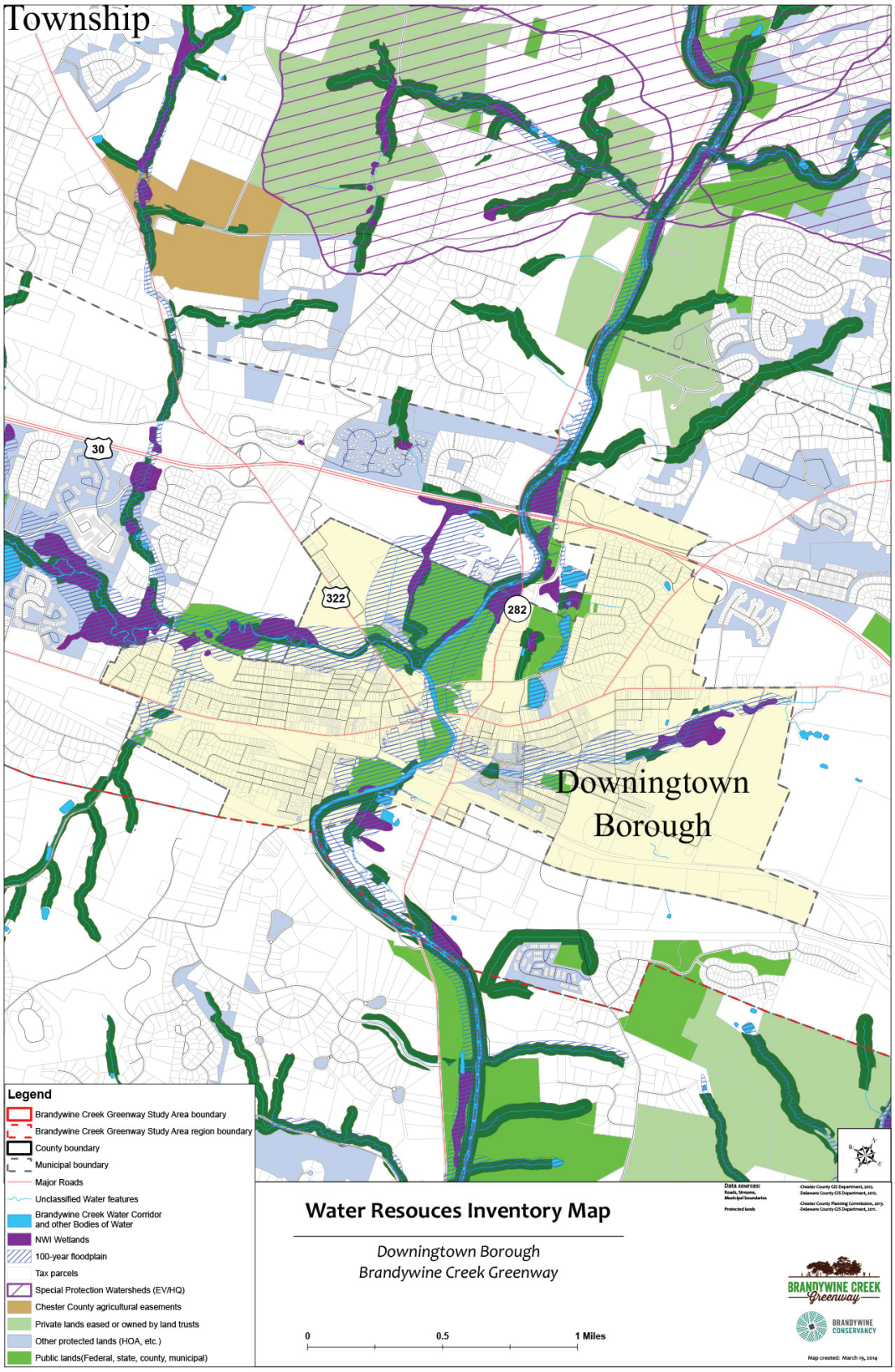
Brandywine Creek Water Corridor and other Bodies of Water
NWI Wetlands
Woodland interior
Woodlands
Forested Riparian Buffer
Chester County agricultural easements
Private lands eased or owned by land trusts
Other protected lands (HOA, etc.)
Public lands(Federal, state, county, municipal)
Natural Resouces Inventory Map
Downingtown Borough
Brandywine Creek Greenway
0
0.5
1 Miles
BRANDYWINE CREEK Greenway
BRANDYWINE CONSERVANCY
Map created: March 19, 2014


Township
30
322
282
Downingtown Borough
Legend
Brandywine Creek Greenway Study Area boundary
Brandywine Creek Greenway Study Area region boundary
County boundary
Municipal boundary
Major Roads
Unclassified Water features
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NWI Wetlands
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Tax parcels
Special Protection Watersheds (EV/HQ)
Chester County agricultural easements
Private lands eased or owned by land trusts
Other protected lands (HOA, etc.)
Public lands(Federal, state, county, municipal)
Water Resouces Inventory Map
Downingtown Borough
Brandywine Creek Greenway
0
0.5
1 Miles
Data sources:
Roads, Streams, Municipal boundaries
Protected lands
-Chester County GIS Department, 2013.
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-Chester County Planning Commission, 2013.
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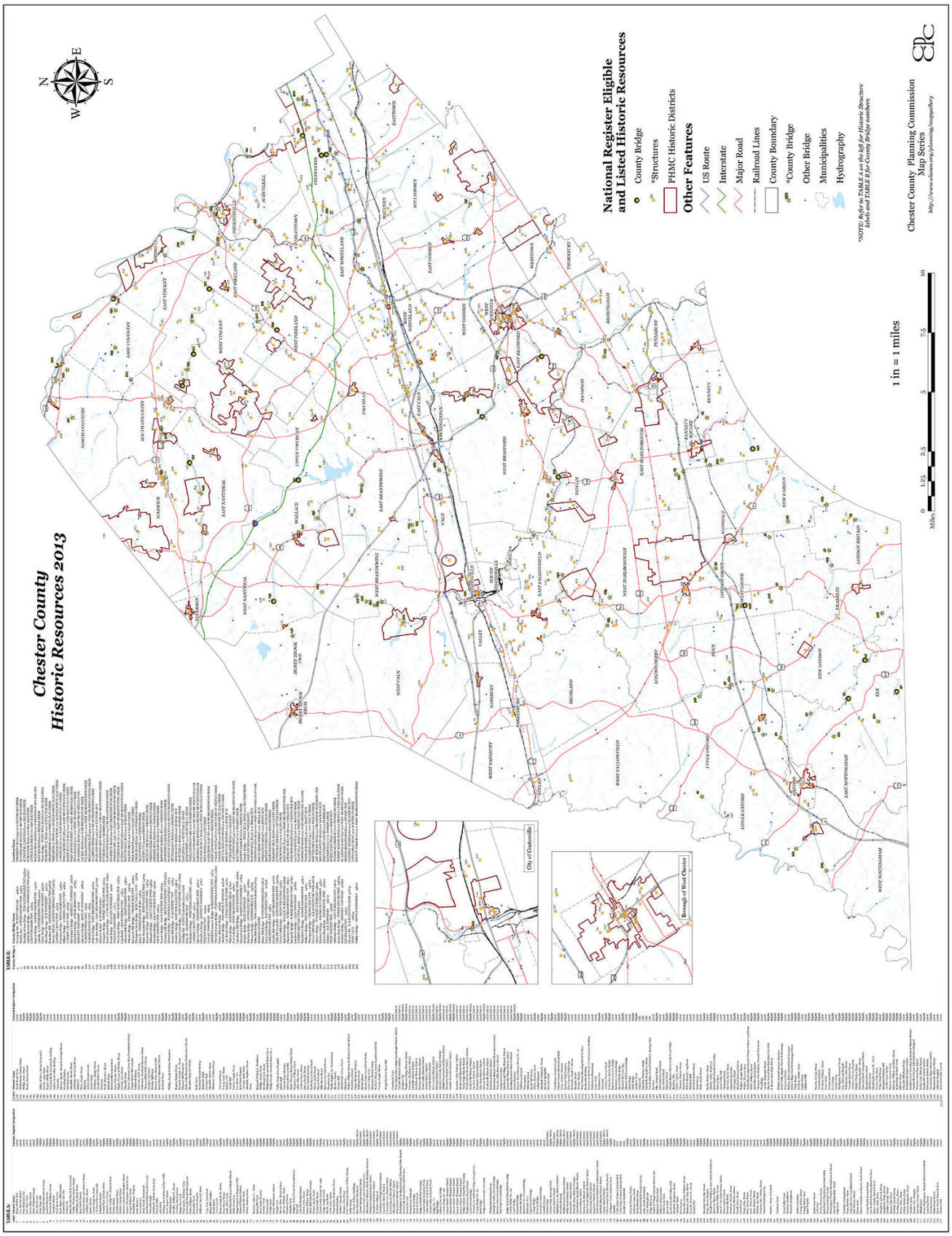
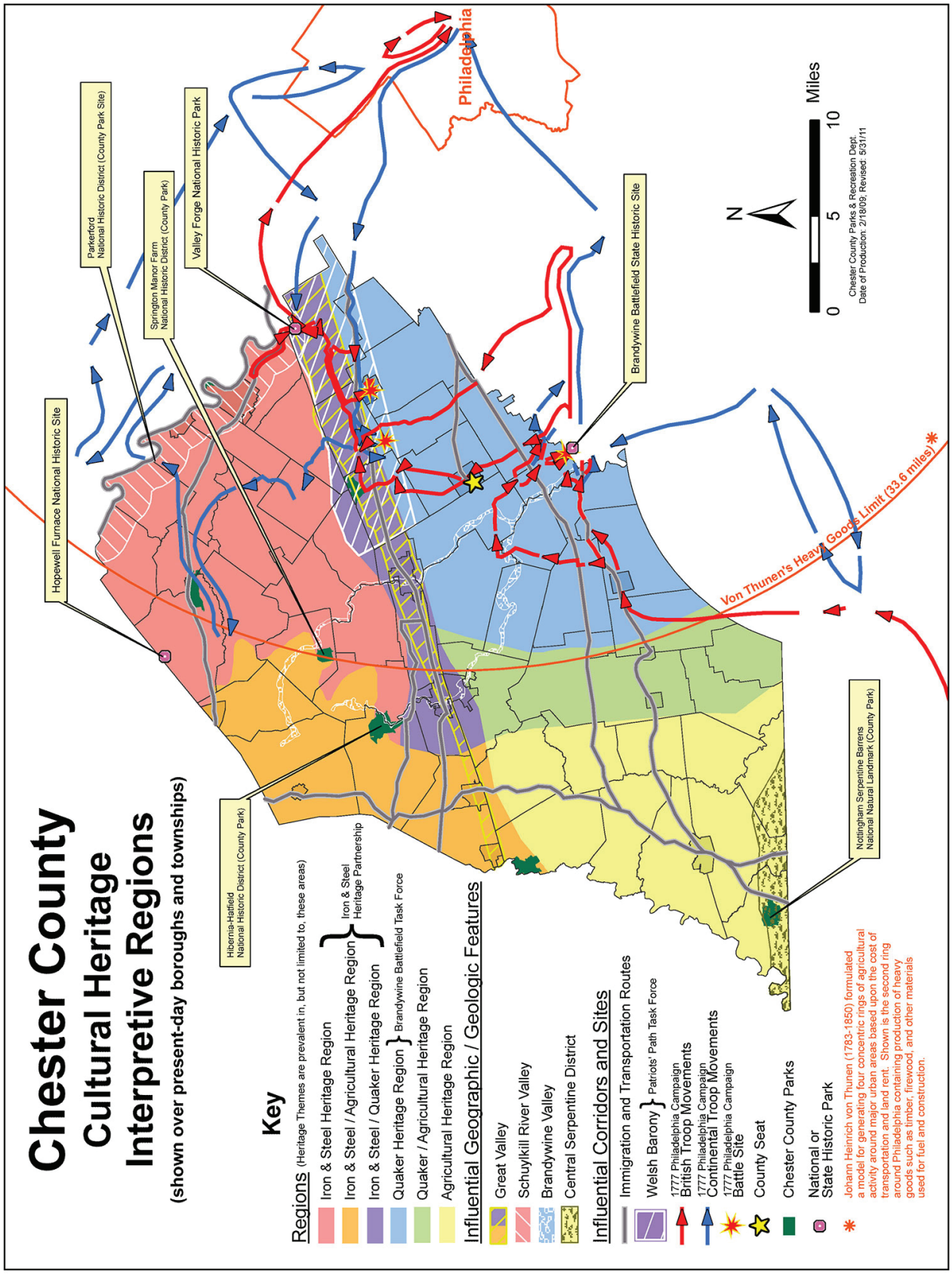
BRANDYWINE CREEK Greenway
BRANDYWINE CONSERVANCY
Map created: March 19, 2014


Chester County
Historic Resources 2013
National Register Eligible
and Listed Historic Resources
County Bridge
*Structures
PHMC Historic Districts
Other Features
US Route
Interstate
Major Road
Railroad Lines
County Boundary
*County Bridge
Other Bridge
Municipalities
Hydrography
*NOTE: Refer to TABLE A on the left for Historic Structure labels and TABLE B for County Bridge numbers.
Chester County Planning Commission
Map Series
http://www.chestercounty.org/planning/mapgallery
1 in = 1 miles
Miles
0 1.25 2.5 5 7.5 10
City of Coatesville
Borough of West Chester
TABLE A:
TABLE B:


Chester County
Cultural Heritage
Interpretive Regions
(shown over present-day boroughs and townships)
Key
Regions (Heritage Themes are prevalent in, but not limited to, these areas)
Iron & Steel Heritage Region
Iron & Steel / Agricultural Heritage Region
Iron & Steel / Quaker Heritage Region
Iron & Steel Heritage Partnership
Quaker Heritage Region
Brandywine Battlefield Task Force
Quaker / Agricultural Heritage Region
Agricultural Heritage Region
Influential Geographic / Geologic Features
Great Valley
Schuylkill River Valley
Brandywine Valley
Central Serpentine District
Influential Corridors and Sites
Immigration and Transportation Routes
Welsh Barony
Patriots' Path Task Force
1777 Philadelphia Campaign British Troop Movements
1777 Philadelphia Campaign Continental Troop Movements
1777 Philadelphia Campaign Battle Site
County Seat
Chester County Parks
National or State Historic Park
Johann Heinrich von Thunen (1783-1850) formulated a model for generating four concentric rings of agricultural activity around major urban areas based upon the cost of transportation and land rent. Shown is the second ring around Philadelphia containing production of heavy goods such as timber, firewood, and other materials used for fuel and construction.
Hopewell Furnace National Historic Site
Parkerford National Historic District (County Park Site)
Springton Manor Farm National Historic District (County Park)
Valley Forge National Historic Park
Hibernia-Hatfield National Historic District (County Park)
Philadelphia
Brandywine Battlefield State Historic Site
Nottingham Serpentine Barrens National Natural Landmark (County Park)
Von Thunen's Heavy Goods Limit (33.6 miles)
N
0 5 10 Miles
Chester County Parks & Recreation Dept.
Date of Production: 2/18/09; Revised: 5/31/11