Chadds Ford Township *Open Space Update 2018*

Open Space Update 2018

Chadds Ford Township – 10 Ring Road, Chadds Ford, PA 19317

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Table of Contents

Chapter 1 Introduction 5
1.1 Background 5
1.2 Mission Statement 8
1.3 Regional Context 9
1.4 Planning Process and Timeline 15
1.5 Stakeholder and Public Involvement 17

Chapter 2 Evaluation 21
2.1 Background Document Review 21
2.2 Existing Conditions 29
2.3 Community Survey 44
2.4 Key Person Interviews 47
2.5 Open Space Tour and Survey 51
2.6 Open Space Prioritization Review 53
2.7 Analysis of Parks, Recreation, and Open Space Needs 54

Chapter 3 Recommendations 58
3.1 Open Space Preservation 58
3.2 Bicycle and Pedestrian Trails 62
3.3 Parks and Recreation Facilities 84

Chapter 4 Action Plan 92
Open Space Preservation 97
Bicycle/Pedestrian Network 99
Parks and Recreation 106
Projected Costs 106
Other Action Items 109
Municipal Roles and Responsibilities 109
Potential Funding Sources 110

Appendices 112
Appendix A - Applicable Sections of the Municipalities Planning Code 113
Appendix B - Public Participation Documents 120
Appendix C - Natural Heritage Areas 158
Appendix D - Delaware County Community Trails Planner's Portfolio 185

Tables and Charts

Figure 1-1 Planning Process and Timeline..... 16
Figure 3-1 Off-Road Trail Surfaces..... 65
Figure 3-2 Trail User Types..... 72
Figure 3-3 Generalized Trail Easement Costs..... 79
Figure 3-4 Bridge and Road Crossing Cost Assumptions..... 79
Figure 3-5 Estimated Construction Costs by Terrain Type..... 80
Figure 3-6 Other Trail Facilities Costs..... 80
Figure 3-7 Annual Maintenance Costs- Stone Dust Trails..... 81
Figure 3-8 Annual Maintenance Costs- Mowed and Mineral Soil Trails..... 81
Figure 3-9 Annual Maintenance Costs- Paved Trails..... 81
Figure 4-1 Implementation Matrix..... 93
Figure 4-2 Preliminary Opinion of Probable Costs..... 107

Maps

Map 1-1 Regional Location..... 7
Map 2-1 Regional Recreation..... 26
Map 2-2 Existing Public Parks, Open Space, and HOA Open Space..... 28
Map 2-3 Existing Land Use..... 30
Map 2-4 Water Resources..... 32
Map 2-5 Natural Features..... 34
Map 2-6 Agricultural Resources..... 36
Map 2-7 Historic and Cultural Resources..... 38
Map 2-8 Protected Lands..... 40
Map 2-9 Roadway and Utility Infrastructure..... 42
Map 2-10 Open Space Tour and Survey..... 50
Map 2-11 Open Space Protection Priority Areas..... 52
Map 2-12 Regional Context and Service Area Analysis..... 57
Map 3-1 Conceptual Pedestrian Trail Corridors..... 68
Map 3-2 Conceptual Bicycle Trail Corridors..... 70
Map 3-3 Chadds Ford Township Park Conceptual Master Plan..... 85
Map 3-4 Heyburn Road Conceptual Master Plan..... 87
Map 4-1 Open Space Protection Priority Areas..... 96
Map 4-2 Trailhead Improvements..... 98
Map 4-3 Multi-Use Trails..... 100
Map 4-4 Hiking Trails..... 102
Map 4-5 On-Road Bicycle Routes..... 104

Chapter 1 | Introduction

Summer camp at Brandywine Battlefield Park

1.1 Background

The Chadds Ford Township Open Space Plan of 2007 serves as a 20-year strategy for the protection, management, and use of Chadds Ford's most important natural and cultural resources. The Plan outlines specific action steps to achieve the Township's goals for open space protection, and its recommendations for open space preservation priorities continue to be relevant in 2018.

The primary purpose of this Open Space Update 2018 (Update 2018) is to provide a 10-year blueprint for parks, recreation, and trails in Chadds Ford. Update 2018 focuses on the parks and recreational needs of Chadds Ford Township and is consistent with the requirements of Pennsylvania Act 247, the Municipalities Planning Code (MPC), regarding a plan for land use which includes provisions for the amount, intensity, character, and timing of land use proposed for community facilities, public grounds, parks, and recreation (Article III, Section 301 (a)(2)). The other subsections of MPC Article III, Section 301 are addressed in the Chadds Ford Open Space Plan (2007) and the Chadds Ford Comprehensive Plan (2017). Applicable sections of the MPC are provided in Appendix A.

Chadds Ford is a Pennsylvania township of the second class, with a population of 3,640 persons (US Census, 2010). The Delaware Valley Regional Planning Commission projects that the population will increase to 3,848 by 2020, 4,064 by 2030, and 4,237 by 2040. The Chadds Ford Township Board of Supervisors recognizes the importance of planning ahead for recreational needs of its growing population. Chadds Ford is situated in western Delaware County, 28 miles from Philadelphia, PA and 12 miles from both Wilmington, DE and the Delaware County seat of Media, PA (all distances are approximate). As shown on the Regional Location map (Map 1-1), the Township shares municipal boundaries with Thornbury and Concord Townships in Delaware County as well as Pennsbury, Birmingham, and Thornbury Townships in Chester County. Chadds Ford also abuts the Brandywine Hundred

An old stone wall in Chadds Ford

and Christiana Hundred areas of New Castle County, Delaware. Chadds Ford is the sole Delaware County member of the Unionville-Chadds Ford School District, which also includes six Chester County Townships: Birmingham, East Marlborough, Newlin, Pennsbury, Pocopson, and West Marlborough.

Chadds Ford is fortunate to have a number of volunteers who serve on the Township's many boards, commissions, and committees. The Chadds Ford Township Open Space Committee (OSC) consists of eight volunteer members who are appointed every two years by the Board of Supervisors to oversee the Township's open space preservation efforts and provide recommendations to the Board. Since its formation in 1997, the OSC has worked on various projects to advance open space preservation and community trails. For example, it led efforts to hold an Open Space Referendum in 2005, prepare the 2007 Open Space Plan, adopt the 2008 Fee-in-Lieu Ordinance, support the Brandywine Creek Greenway regional planning initiative, support the Brandywine Valley Scenic Byway Commission, and complete construction of the Harvey Run Trail in 2017. A number of OSC members served on the Task Force for Update 2018. The Open Space and Open SpaceTask Force committees are advisory committees that make recommendations for ultimate consideration by the sitting Board of Supervisors.

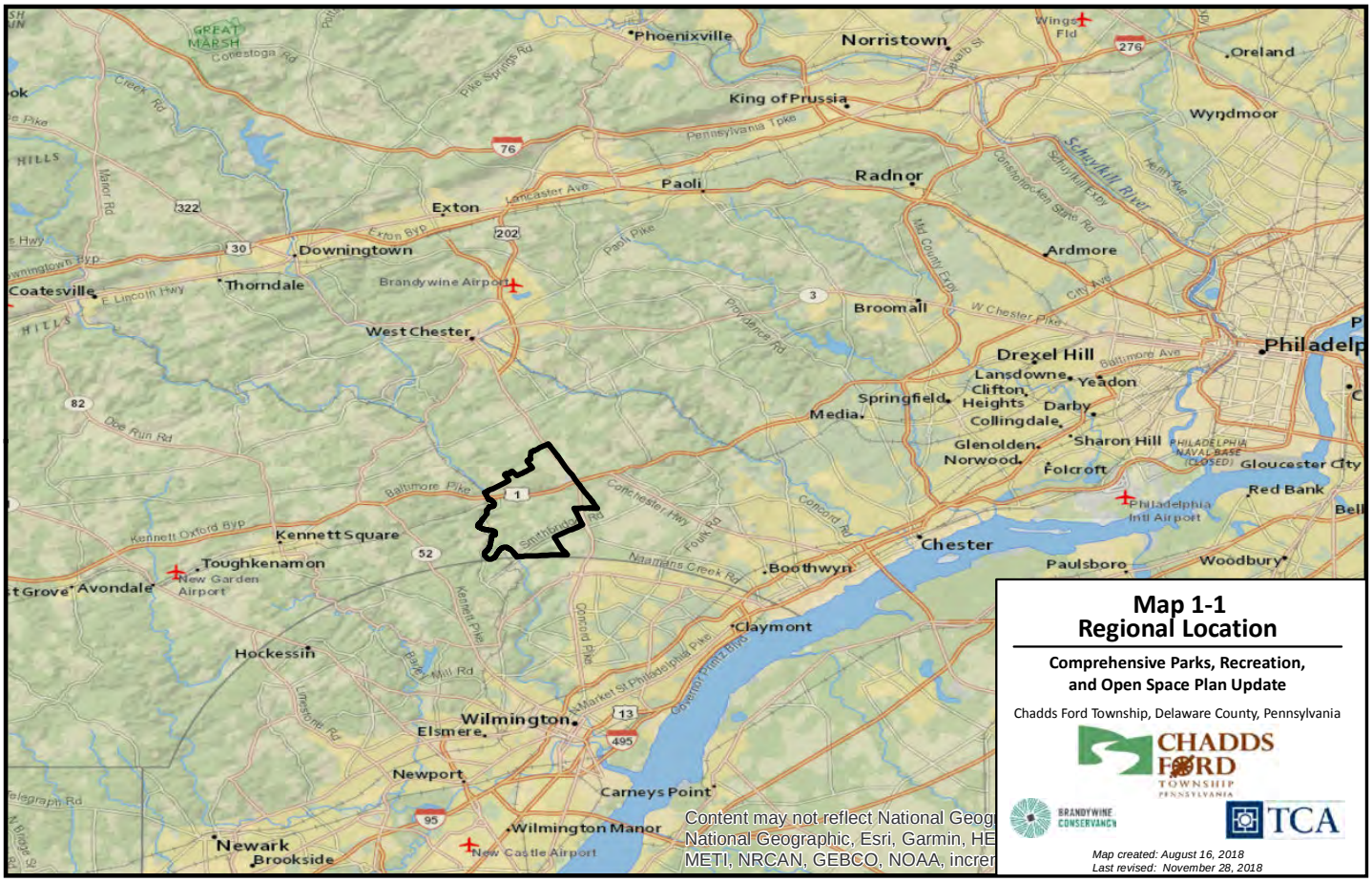
During the preparation of the 2007 Open Space Plan, a public survey was conducted to collect the thoughts, opinions, and preferences of the community with regards to open space preservation and recreation. The survey showed that the community placed greatest value on protection of natural (water, habitat), scenic, and cultural/historic resources that would preserve the rural character of Chadds Ford, while a lesser priority was placed on providing new opportunities for recreation. The survey showed that hiking trails, walking/jogging trails, and bicycle trails ranked the highest in terms of desired recreational facilities. The recreational facilities that ranked lowest included equestrian trails, athletic fields/courts, and dog parks. A new public survey was conducted during Update 2018, and the results are detailed in Chapter 2. However, it is relevant to note in this introduction that the 2007 and 2018 surveys show very similar results and verify that the desires of the municipality have remained consistent over the last ten years:

Chadds Ford constituents place the highest priority on land preservation and conservation to preserve the rural character

and

Chadds Ford constituents place a high priority on passive recreational facilities such as hiking trails, walking/jogging trails, and bicycle trails

The OSC considers the 2007 Open Space Plan to be a relevant tool that continues to guide decisions regarding land preservation priorities. Update 2018 provides the OSC with an additional tool that identifies and prioritizes the parks, recreation and trail needs in the municipality. The OSC will actively utilize this document as a tool to enhance recreation and trail facilities and opportunities in Chadds Ford Township. This document is intended to be adopted as an amendment to the Chadds Ford Township Comprehensive Plan Update 2017.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Oreland
King of Prussia
Wyndmoor
Radnor
Paoli
Exton
Downingtown
Thorndale
Brandywine Airport
Coatesville
West Chester
Broomall
Ardmore
Drexel Hill
Lansdowne
Yeadon
Springfield
Media
Clifton Heights
Darby
Collingdale
Glenolden
Sharon Hill
Norwood
Folcroft
Gloucester City
Red Bank
Philadelphia Intl Airport
Kennett Square
Toughkenamon
Avondale
New Garden Airport
Chester
Boothwyn
Paulsboro
Woodbury
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Map 1-1
Regional Location
Comprehensive Parks, Recreation, and Open Space Plan Update
Chadds Ford Township, Delaware County, Pennsylvania
CHADDS FORD TOWNSHIP PENNSYLVANIA
BRANDYWINE CONSERVANCY
TCA
Map created: August 16, 2018
Last revised: November 28, 2018

Paddling the Brandywine at the Brandywine River Museum of Art

1.2 Mission Statement

As mentioned on the previous page, Update 2018 has a primary focus on parks, recreation, and trails facilities. However, it also includes a brief review of the 2007 Open Space Plan and provides updated recommendations for open space preservation based upon currently available data. The following Mission Statement, Goal, and Objectives were prepared by the OSP Update 2018 Task Force.

Mission Statement

To prepare a comprehensive update to the Township-wide Parks, Recreation, Trails, and Open Space Plan that addresses the current and future recreational needs/desires of residents, property owners, and other stakeholders in Chadds Ford.

Goal

To focus on connectivity and comprehensively address the current and future recreational needs of Chadds Ford Township.

Objectives

1. Engage the community to identify potential park, recreation, and trail needs.
2. Identify expanded and improved opportunities for parks, recreation, and trails.
3. Identify issues and costs associated with implementation of the Plan.
4. Recommend actions and responsibilities for implementation of the Plan.

Twin Bridges Historic District

1.3 Regional Context

Chadds Ford Township is situated near the heart of the Brandywine Valley, which is a region that places great importance on open space and natural resource protection, history, culture, and outdoor recreation. This region sets a national standard for rich and diverse natural resources, historic and cultural resources, recreation, and open space preservation. Below is a brief summary of the many unique regional and local factors that influence parks, recreation, and trails planning in this region.

Natural Resources

Regional Influences

Most of Chadds Ford Township falls within the southern reaches of the Brandywine Creek watershed. This means that a drop of water that falls in Chadds Ford will drain west into the Brandywine Creek, which drains into the Christina River, which drains into the Delaware River, and eventually drains into the Delaware Bay. The Brandywine Creek is a popular recreational destination for residents and visitors, though recreational access is limited to a few access points.

The Natural Heritage Inventory identifies and characterizes the rare, threatened, and endangered species and habitats that comprise the biodiversity found within the state of Pennsylvania. Chadds Ford Township includes core habitats for rare, threatened, and endangered species and landscapes that contribute to, or buffer, important habitat areas. Detailed data for the Natural Heritage Inventory sites is provided in Chapter 2 and in Appendix C. It is important to be aware of where these natural heritage sites are in order to avoid impacting them with new parks, recreation, and trails facilities. The First State National Historical Park was formed in 2013 and consists of 1,100 acres

of natural areas of historic significance. It is the first national park based in the state of Delaware and includes 210 acres of open space in Chadds Ford Township.

Local Influences

The Brandywine Conservancy is a private, non-profit land trust (Internal Revenue Code Sec. 501(c)(3)) located in Chadds Ford Township. The Conservancy's mission is to conserve and protect the land, water, and natural and cultural resources of the Brandywine-Christina watershed. The Conservancy holds over 300 acres of land that border the Brandywine Creek in Chadds Ford Township and is actively restoring forested stream buffers along Harvey Run and throughout the Brandywine Creek watershed.

Other nearby land trusts that are actively preserving land in the Brandywine Creek watershed include Natural Lands, The Land Conservancy for Southern Chester County, Beaver Valley Conservancy, and The Nature Conservancy in Delaware. Several land trusts were important partners in the preservation of lands for the First State National Historical Park in Chadds Ford Township and in New Castle County, Delaware.

First State National Historical Park at Beaver Valley in Chadds Ford Township, PA

Historic and Cultural Resources

Regional Influences

The Brandywine Battlefield National Historic Landmark is an area of approximately 50 square miles covering 15 municipalities in Chester and Delaware Counties. As of the year 2017, 2,950 acres within the Landmark were permanently preserved through conservation easements, land purchase/ownership by public or non-profit entities, or by private homeowners associations. Not all of the privately-protected lands are open to the public or accessible for recreational use.

The Brandywine Battlefield Park, located on Route 1 in Chadds Ford consists of 52 acres. Owned by the Pennsylvania Historical and Museum Commission (PHMC), it is open to the public for recreational and interpretational activities about the

Battle of Brandywine. Brandywine Battlefield Park is administered by the PHMC in partnership with the Brandywine Battlefield Park Associates which takes the lead role in interpreting the battlefield to visitors and also participate in efforts to preserve lands within the entire National Historic Landmark. The Brandywine Battlefield Park Associates, Inc., is a non-profit volunteer group (Internal Revenue Code Sec. 501(c)(3)).

The Brandywine Valley is famous for its history of the DuPont family dynasty and includes many public attractions that celebrate the DuPont legacy including the Winterthur Museum, Garden, and Library, Hagley Museum and Library, and Longwood Gardens.

The Brandywine Valley Scenic Byway is designated as a state byway in Pennsylvania. The Byway follows PA 52, Creek Road (former PA 100), and PA 162 for over 25.01 miles in Chester and Delaware Counties. It runs through scenic landscapes along the Brandywine Creek and provides access to cultural attractions such as Longwood Gardens and the Brandywine River Museum of Art. The Byway passes through six municipalities, five of which are represented on the Byway Commission including Chadds Ford, Pennsbury, Kennett, Pocopson, and East Bradford Townships. The Commission is exploring wayfinding signage for the Byway, including locations in Chadds Ford. Promotion of the Byway could potentially increase the number of visitors to Chadds Ford Township's parks and recreational facilities.

Local Influences

There are many other local historic/cultural attractions that could serve as popular destinations within a community trail network. Newlin Grist Mill, in Concord Township, was a former grain mill that was founded in 1704 by a family that emigrated from Ireland and operated until 1941. The Mill is now managed by the Nicholas Newlin Foundation which conserves the property for history and for open space and offers eight miles of public trails and twelve historic structures.

There are two historic places in Birmingham Township that are likely to be popular destinations for Chadds Ford residents. The Birmingham Friends Meeting House was built in 1763 and was added to the National Register of Historic Places in 1971. The building and the adjacent Lafayette Cemetery were near the center of fighting on the afternoon of September 11, 1777 at the Battle of Brandywine. Sandy Hollow Heritage Park includes 42 acres of preserved open space, much as it was in 1777, and allows public access to a portion of the Brandywine Battlefield National Historic Landmark. Established in 2002, the park has a 1.1-mile asphalt path for pedestrians and an interpretive sign acknowledging the historic event.

The Chadds Ford Historical Society is a private, non-profit, community-based organization that preserves three pre-Revolutionary buildings that are open to the public as museums: the John Chads House, the Chads Springhouse, and the Barns-Brinton House. The Historical Society also hosts several community fundraising events throughout the year, and its park-like setting on Creek Road is considered by many to be the "Central Park" of Chadds Ford.

In 1971, the Brandywine Conservancy opened the Brandywine River Museum of Art

in the renovated Hoffman's Mill, a former gristmill built in 1864 that was part of the Conservancy's first preservation efforts. The museum has an international reputation for its unparalleled collection and its dedication to American art with primary emphasis on the art of the Brandywine region, American illustration, still life and landscape painting, and the work of the Wyeth family. Tens of thousands of visitors come from around the world each year to visit the museum and to walk on five miles of hiking trails in Chadds Ford that are owned and managed by the Conservancy.

Chadds Ford Historical Society

Recreation

Regional Influences

The Circuit Trails is the regional trail network of the Greater Philadelphia region that is facilitated by the Delaware Valley Regional Planning Commission. The Octoraro Rail Trail is envisioned as a component of The Circuit Trails network that extends between Wawa and the Brandywine Creek in Chadds Ford Township along parts of an inactive SEPTA rail corridor. In order for this trail project to move forward, Chadds Ford Township must be willing to actively participate as the host municipality. Further planning, discussions, and negotiations would be required, as there are private residential property owners who own the SEPTA rail line property in the corridor.

The Brandywine Creek Greenway is a regional planning initiative of the Brandywine Conservancy in partnership with 24 municipalities in Chester County, Chadds Ford Township in Delaware County, and New Castle County, Delaware. The vision shared by the partnership is a 40-mile long conservation corridor, with a recreational component, that extends from Honey Brook Borough to the City of Wilmington. The Greenway includes the western-most boundary of the Circuit Trail network along the regional Brandywine Trail. The Village of Chadds Ford is identified as a cultural hub and popular destination within the Greenway.

Concord Township has prepared plans to construct the regional PECO ROW

(right-of-way) Trail. The PECO ROW Trail would connect into Concord Township and become part of the Circuit Trail network. The PECO corridor extends west into Chadds Ford Township and is adjacent to an inactive SEPTA rail corridor on the south side known as the Octoraro line.

Although Chadds Ford is not directly in the path of the East Coast Greenway, this is a trail of statewide significance that will pass through nearby New Castle County, Delaware and municipalities that border the Delaware River. The East Coast Greenway trail is part of the Circuit Trail network.

Local Influences

The Brandywine Youth Club (BYC) has served the youth of Chester Heights Borough and Bethel, Concord, Chadds Ford, and Thornbury Townships in Delaware County since 1955. BYC's sports programs exist to help children in the development of positive life skills and self-concepts. Its mission is to provide safe, enjoyable recreational opportunities and to teach the basic skills and fundamentals of the sport where all children will have the opportunity to play regardless of skill level. The BYC field house is located in Glen Mills, Concord Township, and the club provides recreational opportunities for baseball, softball, football, soccer, wrestling, lacrosse, field hockey, ice hockey, and gymnastics.

Unionville Recreation Association (URA) is based in Kennett Square and offers a variety of sports programs throughout the entire calendar year. Its programs satisfy the recreational appetite of the most competitive, highly skilled players to the child that just wants to be a part of something. URA touches families primarily residing in the Unionville-Chadds Ford School district (Chadds Ford, Newlin, Pennsbury, Pocopson, Birmingham, East Marlborough, and West Marlborough Townships) as well as outlying areas including West Chester, Kennett, and Avon Grove. Current URA Program offerings include baseball, softball, lacrosse (boys and girls), field hockey, basketball (boys and girls), and volleyball.

Left: Chadds Ford Village Final Report Cover

Right: Walkable Chadds Ford Logo

Walkable Chadds Ford began with a Master Plan (2015) for pedestrian and bicycle facilities that would connect historic and cultural places in the Village of Chadds Ford. The Township completed the first phase of design and engineering in early 2018 and later that year was awarded a $1M Transportation Set-Aside grant from the PA Department of Transportation to construct the first phase of the Master Plan. Currently, funding provides for a one-mile long, paved, multi-use trail that will connect

the Township offices to the Village of Chadds Ford, the Brandywine River Museum of Art, and the Brandywine Creek.

Box Turtle near Harvey Run Trail

Open Space Protection

Regional Influences

The Brandywine Conservancy has been a major force in land preservation in the Brandywine Creek watershed since 1967 and continues to promote land preservation and conservation through the Brandywine Creek Greenway regional planning initiative. The Brandywine Battlefield National Historic Landmark has been a catalyst for hundreds of acres of protected open space in the Chadds Ford area. Other entities active in open space preservation in the immediate area include Natural Lands, Delaware Nature Society, and The Nature Conservancy in Delaware. There are approximately 1,660 acres of preserved lands in Chadds Ford Township, and there remain several large parcels of unprotected open space that can be considered for future open space preservation, parks, recreational facilities, and/or local trails (see Chapter 2).

The First State National Historical Park was formed in 2013 on lands formerly owned by the Woodlawn Trustees. The 1,100-acre park borders the Brandywine Creek State Park in Delaware and includes 210 acres in Chadds Ford Township. There are 18 miles of natural surface hiking and mountain biking trails throughout the park including 1.6 miles within Chadds Ford Township. The National Park Service is interested in collaborations with neighboring municipalities to ensure that the park meets the needs and expectations of local residents and businesses.

Local Influences

In 2005, Chadds Ford citizens voted in favor of an Open Space Referendum to enact a property tax increase of $28/$100,000 of assessed value (0.28 mills). The Board of Supervisors enacted an Open Space Tax in 2006, and revenue from the tax totals

approximately $150,000 annually that is dedicated to open space stewardship and preservation through land purchases or purchases of conservation easements. Neighboring Concord Township, Pennsbury Township, and Birmingham Township have enacted also an open space tax for the purpose of preserving open space within their municipal boundaries.

Signage commemorating the Battle of Brandywine

1.4 Planning Process and Timeline

Chadds Ford Township received a grant from the PA DCNR C2P2 program in 2016 to fund Update 2018. The Township issued a request for proposals, interviewed consultants, and selected the consultant team of Brandywine Conservancy with Thomas Comitta & Associates in the summer of 2017. Major milestones in the planning process included completion of the inventory/data collection (March 2018 public meeting), recreational needs analysis, draft pedestrian and bicycle trails map, and draft report with phased recommendations (August 2018 public meeting), and final report presentation (November 2018). An overview of the project tasks and timeline are shown in Figure 1-1.

Figure 1-1- Planning Process and Timeline

Chadds Ford Township

Parks, Recreation and Open Space Plan Update

Timeline

Tasks	Aug. 17	Oct. 17	Nov. 17	Dec. 17	Jan. 18	Feb. 18	Mar. 18	Apr. 18	18-May	Jun. 18	18-Jul	Aug. 18	Sep. 18	Oct. 18	Nov. 18	Dec. 18
1 Project Tasks																
1.1 Project Management																
1.2 Key Person Interviews																
1.3 Community Survey																
1.4 Data Collection, inventory, mapping																
1.5 Open Space and Recreation Tour					1/19/2018											
1.6 Mission Statement, Goals and Objectives																
1.7 Analysis																
1.8 Recommendations																
1.9 Phased Implementation Plan																
2 Public Participation																
2.1 Study Committee Meetings	8/10/2017			12/19/2017			3/27/2018			6/19/2018		8/21/2018				
2.2 Public Meetings							3/28/2018					8/29/2018			11/8/2018	12/5/2018
2.3 Website Updates																
3 Deliverables																
3.1 Draft Report																
3.2 Final Report																
Formal Plan Adoption																

1.5 Stakeholder And Public Involvement

The Chadds Ford Township Board of Supervisors identified ten Chadds Ford residents and invited them to serve on the Open Space Update 2018 Task Force. Task Force members were selected to represent a wide range of neighborhoods, backgrounds, experiences, and age ranges within the community.

Task Force

Ken Collins – Painter's Crossing Resident and Homeowners Association Member
John Coyle – The Henderson Group
Carolyn Daniels – Unionville-Chadds Ford School Board Member
Kathleen Goodier – Webb Rd. Resident, Open Space Committee Member, Brandywine Valley Scenic Byway Commission, Commissioner
Holly Harper – Ringfield Resident, Natural Lands Employee
Craig Huffman – Chadds Ford Township Planning Commission Member
Jon Mastriana – Estates at Chadds Ford Resident and Homeowners Association Member
Peter Mattes – Longview Rd. Resident
Frank Murphy – liaison to the Board of Supervisors
Michael Pessagno – Chadds Ford Open Space Committee Member
David Poston – ad hoc, Open Space Committee Member
Lois Saunders – Open Space Committee Member (ad hoc), Brandywine Valley Scenic Byway Commission, Advisor

The Task Force met five times at the Chadds Ford Township building. Agendas from the Task Force meetings can be found in Appendix B.
Task Force Meeting #1 – Thursday, August 10, 2017, 7pm
Task Force Meeting #2 – Tuesday, December 19, 2017, 7pm
Task Force Meeting #3 – Tuesday, March 27, 2018, 7pm
Task Force Meeting #4 – Tuesday, June 19, 2018, 7pm
Task Force Meeting #5 – Tuesday, August 21, 2018, 7pm

The Open Space Committee met with the consultant four times at the Chadds Ford Township Building.
Open Space Committee Meeting #1 – Thursday, May 10, 2018, 6:30pm
Open Space Committee Meeting #2 – Thursday, June 14, 2018, 7:00pm
Open Space Committee Meeting #3 – Thursday, July 12, 2018, 7:00pm
Open Space Committee Meeting #4 – Thursday, September 13, 2018, 7:00pm

Task Force Tour

A half-day Open Space and Recreation Tour was arranged to highlight the remaining unprotected lands in the Township and to provide a first-hand view of opportunities and constraints to be considered for parks, recreation, and trails. The Task Force tour took place the afternoon of Friday, January 19th, 2018 from 1-4pm. A summary of the open space tour comments can be found in Appendix B.

Task Force on tour, February 2018

Public Meetings

Four public meetings were scheduled when key phases of the project were presented and discussed in a public forum.

Public Meeting #1- Wednesday, March 28, 2018, 6-7 p.m.

- Project overview, public survey results, key person interview results, inventory mapping, Task Force tour results
- Public review and comment

Public Meeting #2- Wednesday, August 29, 2018, 6-8 p.m.

- Presentation of a Draft Plan including parks and recreational needs analysis, draft recommendations for phased implementation, and draft pedestrian and bicycle facilities plan
- Public review and comment

Public Meeting #3- Thursday, November 8, 2018, 7-9 p.m.

- Presentation of the Final Plan
- Public review and comment

Public Meeting #4- Wednesday, December 5, 2018, 6-8 p.m.

- Recommendation to BOS to circulate for county and adjacent municipalities' review.
- Public review and comment

Historic barn at Brandywine Battlefield Park

Online Survey

All Chadds Ford residents and landowners were invited to participate in a public survey (Appendix B) that was designed to collect the thoughts, preferences, and priorities of the community for open space, parks, recreation, and trails. The survey was available online on the Township's website, and paper copies were also available at the municipal building. A link to the online survey was promoted in a cover letter that was mailed to all landowners along with the Township's annual tax bill mailing.

Key Person Interviews

The Task Force identified several individuals to be interviewed for the Update 2018. Ten people were interviewed, and the interviews are documented in Chapter 2 and Appendix B.

Website Updates

Throughout the planning process the municipal staff kept the Township website updated with new documents and maps as they became available. The public was provided access to draft documents and was encouraged to submit comments and questions.

A butterfly sits on an echinacea plant in Chadds Ford

Chapter 2 | Evaluation

Twin Bridges over the Brandywine

2.1 Background Document Review

There are various existing plans and documents that provide important background information and context for parks, recreation, and trail planning in Chadds Ford. Many of the documents have been adopted at the state, county, regional, or municipal levels, while other documents have been published by private non-profit organizations or government agencies as policy/guidance. Below is a summary of the most relevant documents as they relate to Open Space Plan Update 2018.

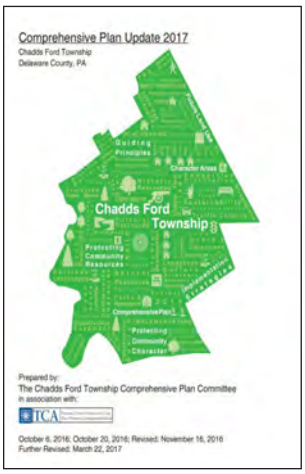
Chadds Ford Open Space Plan 2007

The Chadds Ford Township Open Space Plan (2007) lists recreational access priorities in Chapter 9, page 9-1. Although conceptual trail routes are not included, it is noted that some trails and recreational facilities may be introduced when priority open spaces are protected as shown on the Open Space Protection Priorities Map (8-1). Chadds Ford's highest priorities for recreation include:

- Linear open spaces are potentially important for pedestrian, bicycle, equestrian, cross-country skiing, and snowshoeing uses and could interconnect protected lands (e.g., by state, county, municipality) and residential neighborhoods. Trails may be sited and administered to maximize users' appreciation of natural and cultural resources.
- While many passive and active recreational opportunities exist for Township residents, few are situated in Chadds Ford. Prospects exist to formalize or use

existing Township lands, institutional lands, or other protected open spaces to accommodate facilities such as picnic areas, nature study sites, and/or practice play fields. Similar to trails, such passive and active recreational uses and facilities may be part of open spaces protected for conservation.

The Plan identifies a very broad range of high priority lands to be protected: cropland, hayfields, pasture, and meadows; water and/or related land resources; woodlands; greenways; historic and archaeological resources; scenic resources; and other resources (steep slopes, significant biological areas). The open space protection recommendations in the 2007 Open Space Plan continue to be relevant to this day with minor updates resulting from newly available data. Update 2018 examines the recreational and trail needs of Chadds Ford Township which was not the focus of the 2007 Plan.

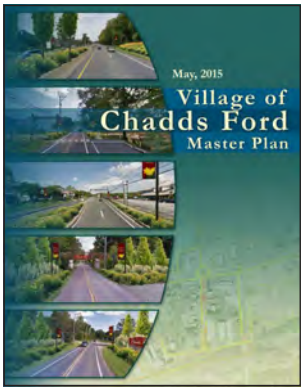


Chadds Ford Comprehensive Plan 2017

The Chadds Ford Township Comprehensive Plan does not directly address parks and recreational needs of the community. However, it does provide the following high level guiding principle:

- Expand and improve opportunities for parks and recreation, and promote interconnected pedestrian circulation systems- create a balanced passive park system, in conjunction with a viable active recreation network, and advocate a network of trails, walkways, sidewalks, crosswalks, pathways, and boardwalks.

Other guiding principles for protecting community character and promoting the protection of community resources may also apply to park and recreational planning: protect community character, limit the sprawling effects of development, expand protected and designated open spaces, conserve heritage landscapes, maintain Chadds Ford Village as a distinctive place, protect historic and cultural resources, protect natural resources, minimize disruption of scenic resources, promote place making, calm vehicular traffic, mitigate adverse effects of incongruous development, and advocate for compatible development along our borders with adjoining municipalities.



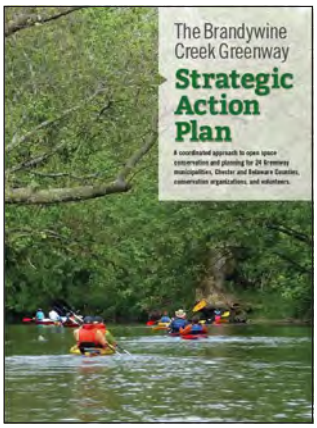
Chadds Ford Village Master Plan

Completed in 2015, the Village Master Plan provides recommendations for a multi-modal network in Chadds Ford Village from Ring Road in the east to the municipal boundary at the Brandywine Creek in the west. Several new pedestrian and bicycle facilities are recommended in the vision:

- Paved, multi-use trail along the south side of Route 1 from the Brandywine Battlefield Park to the Brandywine River Museum of Art, including a pedestrian promenade on the Route 1 bridge over the Brandywine Creek
- Pedestrian pathways and boardwalks on the north side of Route 1 from Hanks Place west to the Brandywine Creek
- Pedestrian pathways and boardwalks on the western side of Creek Road from Hanks Place north to the Chadds Ford Historical Society property
- Paved multi-use trail on the eastern side of Creek Road south of Route 1 to

connect the Route 1 multi-use trail to the Harvey Run Trail and future High Trail
- Sidewalk or side path on the eastern and northern sides of Hoffman's Mill Road
- Sidewalks or side paths within the village historic district, north of Route 1.

Funding is secured for the first phase of implementation of the Route 1 multi-use trail from the Chadds Ford municipal building to the Brandywine River Museum of Art campus. Construction is expected to begin as early as 2020.

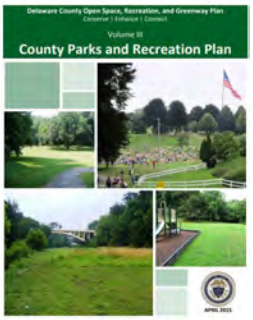


Brandywine Creek Greenway Strategic Action Plan 2014

The Brandywine Conservancy is the lead organization in a regional planning initiative called the Brandywine Creek Greenway. The study area includes 24 municipalities in Chester County, Chadds Ford Township in Delaware County, New Castle County in Delaware, and the City of Wilmington in Delaware. The Strategic Action Plan provides a project portfolio for Chadds Ford Township which is identified as a "hub" along the Greenway. A hub is a primary origination and destination point and is often a large center of activity. Hubs provide existing infrastructure that can be visited and enjoyed today such as parking, public restrooms, and access to drinking water. While there is no immediate need for improvements in any hub, projects to improve the visitor experience should be considered. Chadds Ford was identified as a hub because of its collection of cultural attractions such as the Brandywine Battlefield Park, Brandywine River Museum of Art, Sanderson Museum, Chadds Ford Historical Society, and various specialty shops and restaurants. The highlights of the Chadds Ford project portfolio are listed below.

- Chadds Ford Gateway Enhancements are recommended as a short-term need to enhance the visitor experience at the Brandywine Battlefield Park (a gateway to the Greenway) and to promote safe pedestrian access to the Chadds Ford Township Building through directional signage, historic/interpretive signage for the Pyle Studio/Municipal Building and Harvey Run Trail, trailhead kiosk, and orientation maps to the Battle of Brandywine and the Greenway.
- The Walkable Chadds Ford study was recommended to plan for a network of trails and sidewalks that would connect people to destinations within the Chadds Ford Historic District. Seen as an intermediate need, the project should include a study of traffic calming along Route 1, a village design guide, and an historic resource walking tour guide.
- Improvements to municipal land were recommended to create a community center/village green suitable for community events. Examples of suggested improvements include a community green south of Harvey Run off Ring Road, parking and trails along Harvey Run, trails that connect to the Township Building, and a picnic area.
- Harvey Run Green Corridor is a recommendation to create a community center/village green for community events south of Harvey Run Trail off Ring Road. The Harvey Run green would connect visitors and residents with trails, parking, and picnic areas.

Many of the recommendations in the Strategic Action Plan have been accomplished or are being actively pursued by Chadds Ford Township. For example, the Harvey Run Trail is complete, and the Village Master Plan is complete with construction of the first phase anticipated in 2020.



Delaware County Open Space, Recreation and Greenway Plan 2015

The Delaware County Planning Department defines potential recreational greenways as primary trail networks that provide access to, on, and between natural features and other destinations. They serve as the spines of a network that connects other recreational greenways, parks, open spaces, places, and points of interest throughout the County. The Octoraro Trail and the Brandywine Creek Greenway (Brandywine Trail) are identified as recreation greenways/primary trails in Chadds Ford Township. In order for regional greenway and trail projects to move forward, Chadds Ford Township must be willing to actively participate as the host municipality. Further discussions and negotiations would be required, as there are private residential property owners who own the SEPTA rail line property in the corridor.

Primary trails are identified at a large scale; as such, they show potential segments at a conceptual level, but not specific alignments, and can be considered "planning corridors" for more detailed trail studies in the future. Alternate routes may need to be considered. The purpose behind creating the primary trail network is to direct the energies of the County, municipalities, and trail proponents into developing a coordinated and interconnected county trail system. There are 25 primary trails identified in Delware County that form a network of interconnected travel and recreational corridors near and between all corners of the County.

Delaware County Bicycle Plan 2009

The vision of the Delaware County Bicycle Plan is improved acceptance of, access to, facilities for, and use of bicycling for the purpose of transportation in Delaware County. Although not envisioned as recreational facilities, they are important to consider as part of a parks and recreational network in Chadds Ford. Two on-road bicycle routes are planned in Chadds Ford Township including the Route 1 Bicycle Route and the Harvey Road Bicycle Route. Both planned routes are considered to be tertiary routes that link into connecting routes (PA Bike Route L along Brandywine Creek in the west and Oakland Road in the north).

Brandywine Battlefield Park

The Brandywine Battlefield Park Associates, a non-profit community-based organization, supports and assists the Pennsylvania Historical and Museum Commission by conducting the daily operations of the park. Facilities include parking areas and an interpretive museum that is open to the public during summer months.

The mission of the Brandywine Battlefield Park is to serve the educational needs of the public through the preservation of the cultural landscape and the interpretation of the largest single day battle of the American Revolution. Goals of the Park are:

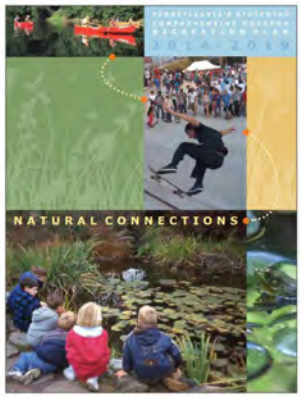
- To present educational programs, exhibits, tours, events, and publications that broaden public understanding and appreciation of the significance of the Battle of Brandywine within the larger social, political, economic, technological, and military context of the American Revolution period.
- To take lead responsibility for interpretation of preservation of the entire

Battlefield National Historic Landmark of which Brandywine Battlefield Park is only a small part, and to recognize the significance of these ten square miles where approximately 30,000 men fought.

- To sustain a strong partnership among PHMC, the Brandywine Battlefield Park Associates, and other groups whose valued guidance and support enhance the mission and goals of the Pennsylvania Historical and Museum Commission.

Circuit Trails

Greater Philadelphia is the home of the Circuit Trails, a vast regional network of hundreds of miles of multi-use trails that connects local communities and provides multiple opportunities for multi-modal recreation and commuting. The Octoraro Trail in Chadds Ford Township is viewed as the western extent of the Circuit Trails network and is envisioned to follow an abandoned rail line owned by SEPTA between Wawa (Chester Creek Trail) and the Brandywine Creek in Chadds Ford (also known as the High Trail). Concord Township and Chester Heights Borough have completed a feasibility study for the trail in those municipalities and are currently pursuing funding for construction. In order for regional trail projects to move forward, Chadds Ford Township must be willing to actively participate as the host municipality. Further discussions and negotiations would be required, as there are private residential property owners abutting the SEPTA corridor.



2014-2019 Pennsylvania Outdoor Recreation Plan (SCORP)

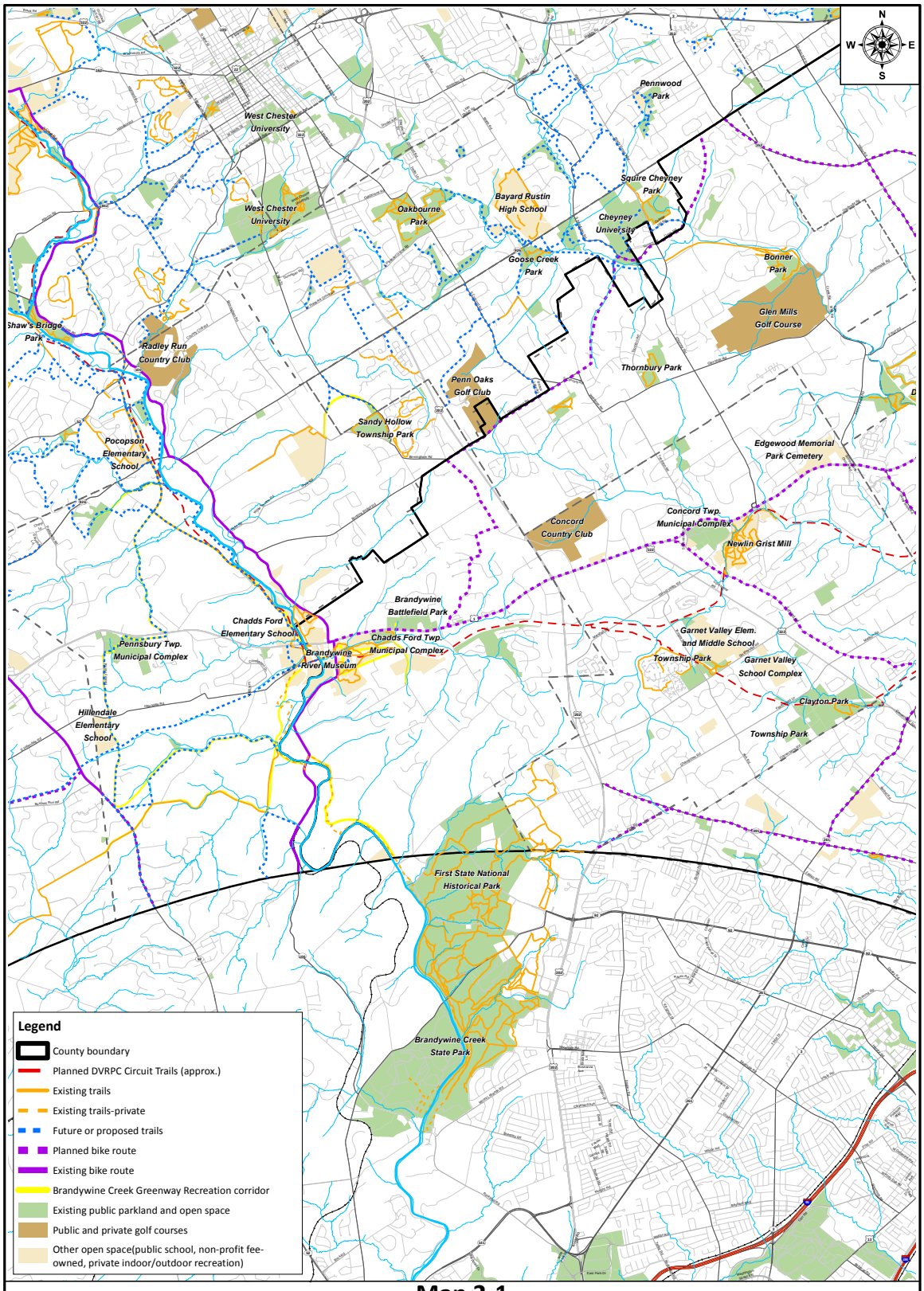
In its recommendations for local parks and recreation, the SCORP reports that with more than 5,600 locations across the state, our local parks and recreation areas are perhaps our most valuable recreational resources. More than 90 percent of Pennsylvanians who participated in outdoor recreation visited a local park last year. Local parks are as diverse as the populations they serve, but most face similar challenges — limited funding, aging infrastructure, maintenance, and capacity to carry out programs and services.

Recommendations for state action include:

- Connect citizens to close-to-home recreational opportunities and green space.
- Position local park facilities and recreational programs as essential services.
- Create and leverage partnerships that expand outdoor recreational opportunities.
- Coordinate strategic investment in local priorities and respond to emerging trends.
- Provide expanded parks and recreation technical assistance to communities.

National Park Service/First State National Historical Park

The National Park Service is currently undertaking the preparation of a Management Plan to clearly define a vision and phased implementation for the First State National Historical Park. The Beaver Valley site is made up of roughly 1,100 acres of rolling agricultural fields and pastures, forested hills, and stream valleys in northern Delaware and Chadds Ford Township in southern Pennsylvania. The Park includes over 18 miles of existing trails for hiking, mountain biking, and equestrian use that are open from sunrise to sunset.



0 0.25 0.5 1 1.5 2
Miles

BRANDYWINE CONSERVANCY TCA

Data source: Base data from Delaware County GIS Department, 12/2016
Protected Lands data from Delaware County GIS Department, 12/2015

Map created: March 23, 2018
Last revised: February 19, 2019

Map 2-1
Regional Existing and Planned Recreation Facilities and Trails

Comprehensive Parks, Recreation, and Open Space Plan Update

Chadds Ford Township, Delaware County, Pennsylvania

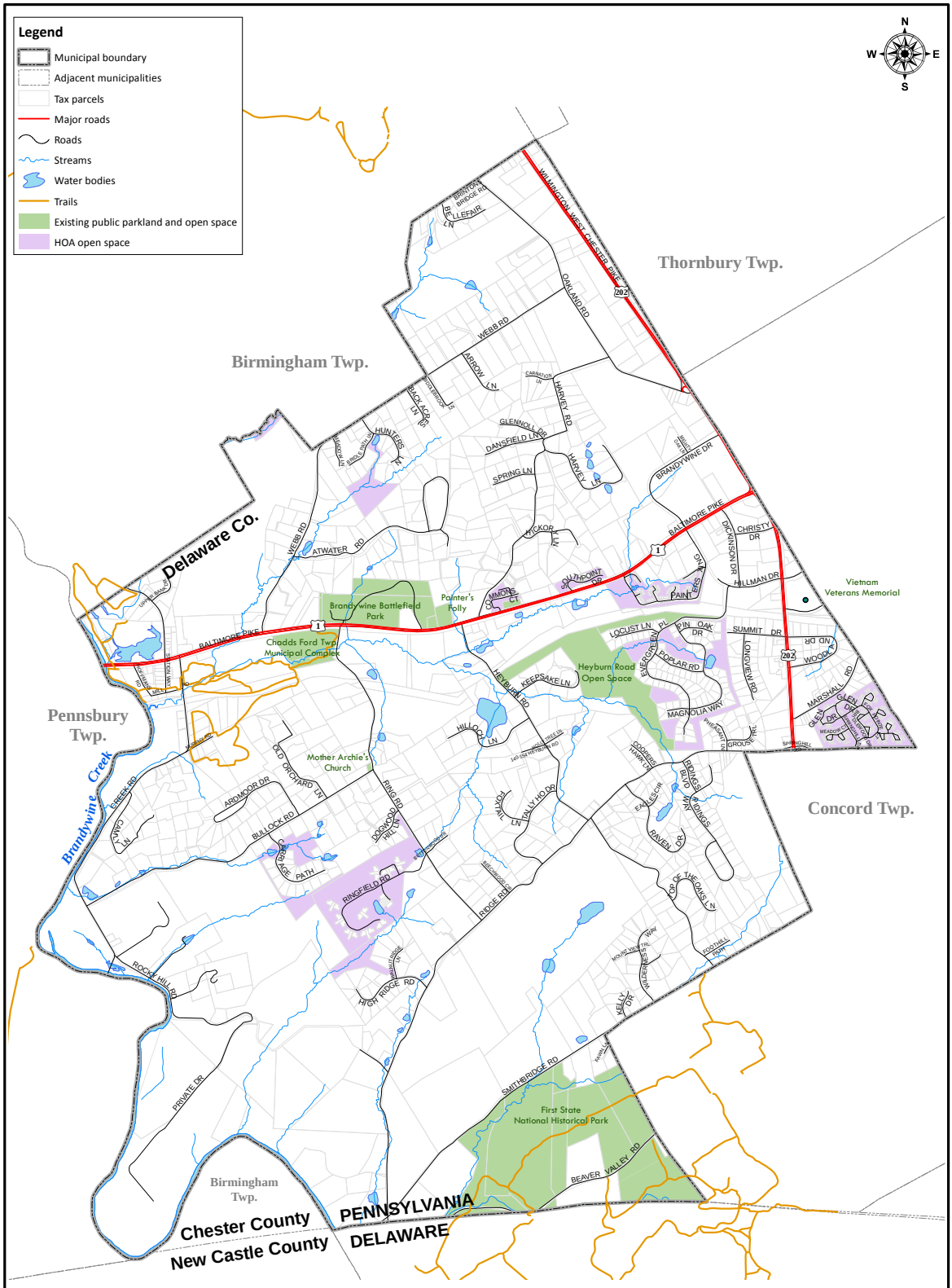
CHADDS FORD TOWNSHIP PENNSYLVANIA

Regional Recreation (Map 2-1)

The Regional Recreation map identifies existing and planned recreational facilities in the areas within Chadds Ford Township and in adjacent municipalities of Pennsbury, Birmingham, and Concord Townships. Facilities include existing public parkland and open space, public and private golf courses, existing PA Bicycle Route L, existing private trails open for public use, existing public trails, existing private trails, existing bike routes, Brandywine Creek Greenway Recreation corridor, planned Circuit Trails (conceptual), and other planned trails and bicycle routes. Other open space and trails available for public use include public schools, non-profit fee owned, private indoor/outdoor recreation, Brandywine Conservancy lands, and Chadds Ford Historical Society.

There are a variety of parks and recreational facilities in neighboring municipalities that are known to attract residents of Chadds Ford including the Concord Township municipal complex and park, Sandy Hollow Park in Birmingham Township, and Pennsbury Township municipal complex and park. The Octoraro Trail is envisioned by Delaware County as an opportunity to link into two regional trail networks, including the Circuit trails to the east, and Bike Route L and the Brandywine Creek Greenway/Brandywine Trail to the west. The PECO Right-of-Way trail extends southeast to the East Coast Greenway Trail. Concord Township is pursuing funding to study trail feasibility to make connections to the First State National Historical Park in the State of Delaware. Chadds Ford Village is located in the vicinity of multiple existing and planned regional trails and recreational corridors.

Informal Brandywine access on Creek Road



Map 2-2
Existing Public Parks, Open Space & HOA Open Space

Comprehensive Parks, Recreation, and Open Space Plan Update

Chadds Ford Township, Delaware County, Pennsylvania

Data source: Base data from Delaware County GIS Department, 12/2016
Protected Lands data from Delaware County GIS Department, 12/2015

Map created: March 23, 2018
Last revised: February 19, 2019

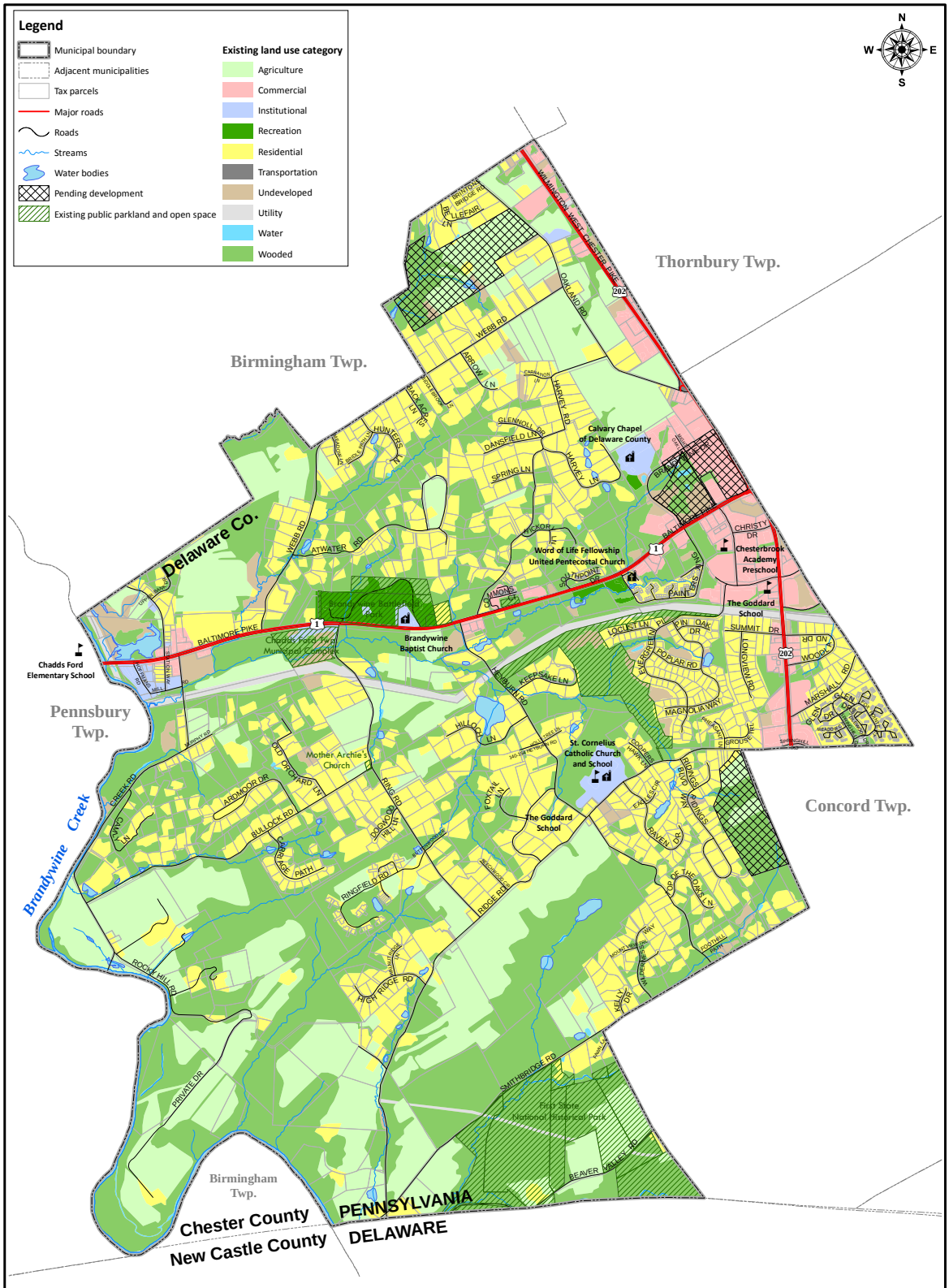
2.2 Existing Conditions

As the Township plans for new park, recreation, and trail facilities it is important to consider the natural, cultural, and existing recreational features found in Chadds Ford Township. Existing features will identify opportunities and constraints and help to shape the recommendations. There have been updates to GIS data since the 2007 Open Space Plan was completed, and those updates are reflected in the following inventory of existing conditions.

Existing Public Parks, Open Space, and HOA Open Space (Map 2-2)

Map 2-2 features existing public parks and HOA open space in Chadds Ford Township. Highlights include the Chadds Ford municipal building and campus – 19 acres, Heyburn Road municipal open space– 67 acres, Painter's Folly – 3.4 acres, Mother Archie's Church – 0.5 acre, the Brandywine Battlefield Park – 44 acres, First State National Historical Park – 210 acres in Chadds Ford, and privately-owned Homeowners Association open space – 194 acres. There is also a Chadds Ford Vietnam War Monument located near the Chadds Ford Township entrance to Wegmans that is not owned by the Township.

There is a pattern of existing municipal parks, municipal open space, and state parks clustered along the Route 1/SEPTA/PECO corridor that runs east-west across the center of the Township. Also of note is an absence of public parks or open space in the northern region of the Township except for the Brandywine Battlefield Park and Painter's Folly on the north side of Route 1. The First State National Historical Park represents the largest public park acreage in the Township with 210 acres in Chadds Ford Township (and 890 acres in New Castle County, Delaware).



Map 2-3
Existing Land Use

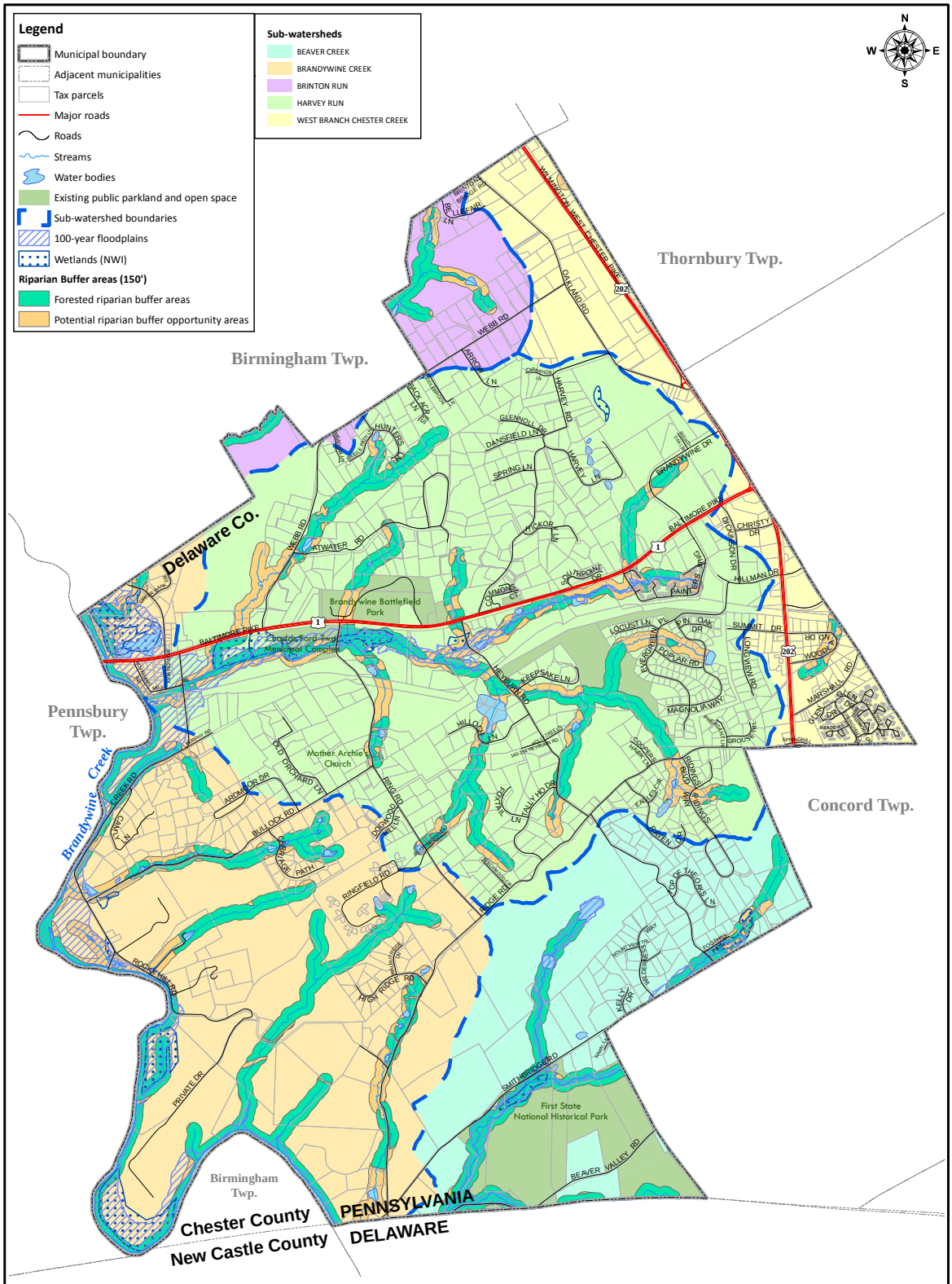
Comprehensive Parks, Recreation, and Open Space Plan Update

Chadds Ford Township, Delaware County, Pennsylvania

Existing Land Use (Map 2-3)

Map 2-3 illustrates existing land uses throughout Chadds Ford Township. Current land use categories include existing public parkland and open space, agriculture, commercial, institutional, recreational, residential, transportation, undeveloped, utility, and wooded.

Some institutional uses could be considered to be "quasi-public" such as churches, schools, Brandywine Conservancy owned lands, and the Chadds Ford Historical Society since they are frequently open and free for passive recreational use. Commercial areas are clustered in two locations including in Chadds Ford Village in the west and along the Route 202 corridor in the east. A PECO utility corridor that runs parallel to Route 1 on the south side connects many residential neighborhoods with commercial areas and potentially the Chadds Ford Elementary School in the west and the Goddard School in the east. Residential neighborhoods are distributed across the Township on the north and south sides of Route 1. It appears that there may be opportunities for open space preservation and/or new recreational facilities where the existing use is agriculture (unless constrained by natural features or by restrictive covenants) on both sides of Route 1.



Map 2-4

Water Resources

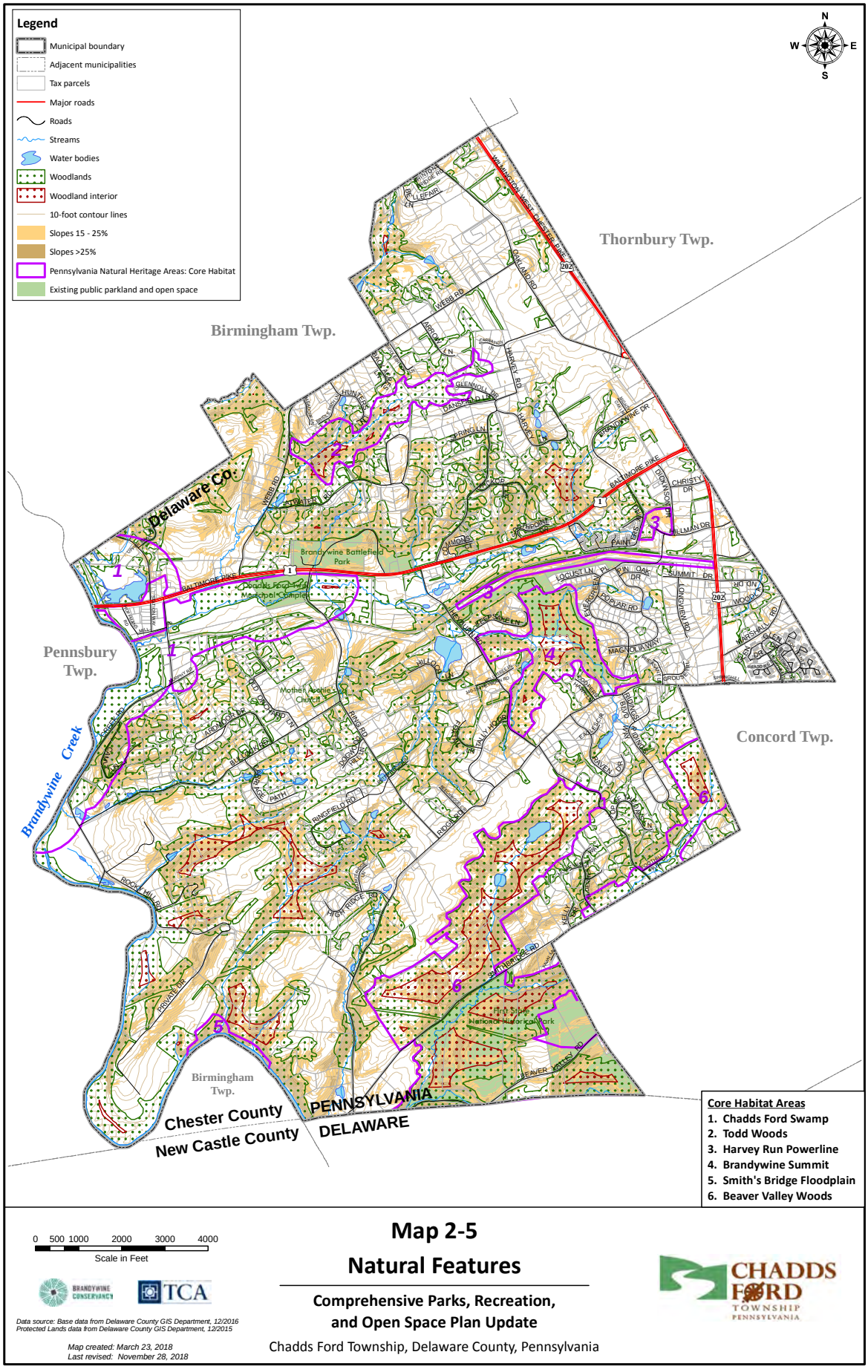
Comprehensive Parks, Recreation, and Open Space Plan Update

Chadds Ford Township, Delaware County, Pennsylvania

Water Resources (Map 2-4)

Map 2-4 highlights water-based resources and features in Chadds Ford Township including sub-watershed boundaries, 100-year floodplains, wetlands (National Wetland Inventory), riparian buffer areas (150'), forested riparian buffer areas, and potential riparian buffer restoration opportunity areas.

The vast majority of the Township drains into the Brandywine Creek, with small areas in the east draining to the West Branch Chester Creek. The Brandywine Creek has potential to provide water-based recreation such as fishing, wading, and boating/tubing. Wetland areas and riparian buffers should be avoided for recreational use and protected from disturbance and/or enhanced through tree plantings to improve water quality and mitigate flood conditions. Parks and trails can occur within 100-year floodplains. However, disturbance from new recreational facilities and associated infrastructure should be limited to the greatest extent practicable.

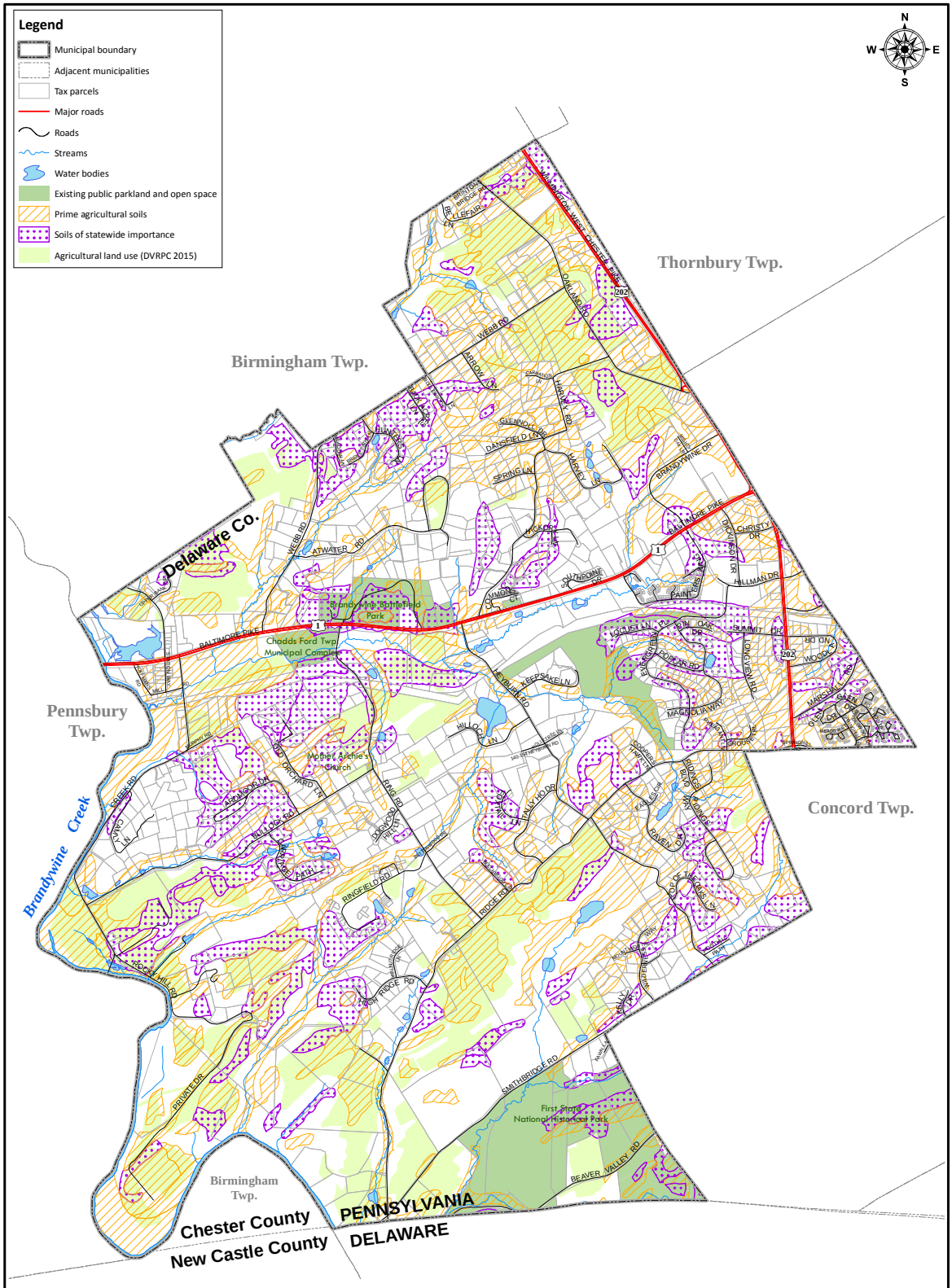

Legend
Municipal boundary
Adjacent municipalities
Tax parcels
Major roads
Roads
Streams
Water bodies
Woodlands
Woodland interior
10-foot contour lines
Slopes 15 - 25%
Slopes >25%
Pennsylvania Natural Heritage Areas: Core Habitat
Existing public parkland and open space
N
W
E
S
Thornbury Twp.
Birmingham Twp.
Delaware Co.
Pennsbury Twp.
Concord Twp.
Brandywine Creek
Brandywine Battlefield Park
Mother Antioch Church
First Shots National Historical Park
Birmingham Twp.
Chester County
New Castle County
PENNSYLVANIA
DELAWARE
Core Habitat Areas
1. Chadds Ford Swamp
2. Todd Woods
3. Harvey Run Powerline
4. Brandywine Summit
5. Smith's Bridge Floodplain
6. Beaver Valley Woods
0 500 1000 2000 3000 4000
Scale in Feet
BRANDYWINE CONSERVANCY
TCA
Data source: Base data from Delaware County GIS Department, 12/2016
Protected Lands data from Delaware County GIS Department, 12/2015
Map created: March 23, 2018
Last revised: November 28, 2018
Map 2-5
Natural Features
Comprehensive Parks, Recreation, and Open Space Plan Update
Chadds Ford Township, Delaware County, Pennsylvania
CHADDS FORD TOWNSHIP PENNSYLVANIA

Natural Features (Map 2-5)

Map 2-5 identifies the significant natural areas and features located within Chadds Ford Township including streams, water bodies, woodlands, woodland interior, and steep slopes. Many of the forested areas occur on steep slopes or in wet areas that historically have been too marginal or unproductive to clear for agriculture. The Pennsylvania Natural Heritage Areas (NHA) inventory was completed by the Western Pennsylvania Conservancy in 2011 with funding from the Pennsylvania Department of Conservation and Natural Resources. The inventory includes Core Habitats for endangered and/or threatened species. The majority of the areas found in Chadds Ford Township occur in woodlands that follow creeks or streams. See Appendix C for full NHA descriptions and maps:

- Chadds Ford Swamp
- Todd Woods
- Smith's Bridge Floodplain
- Harvey Run Powerline Right-of-Way
- Brandywine Summit
- Beaver Valley Woods

Chadds Ford Township is rich in natural features, and as indicated in the 2007 Open Space Plan, preservation of natural resources and rural character are top priorities with residents. Although habitat areas present opportunities for interpretive programs, the Township must carefully consider the impact of new recreational facilities on sensitive habitat areas. Trails should be located in a variety of natural areas to diversify the trail experience but should avoid NHAs wherever possible. The NHA data that was collected in 2011 was used to update the Open Space Protection Priority Areas map (see Map 2-11).



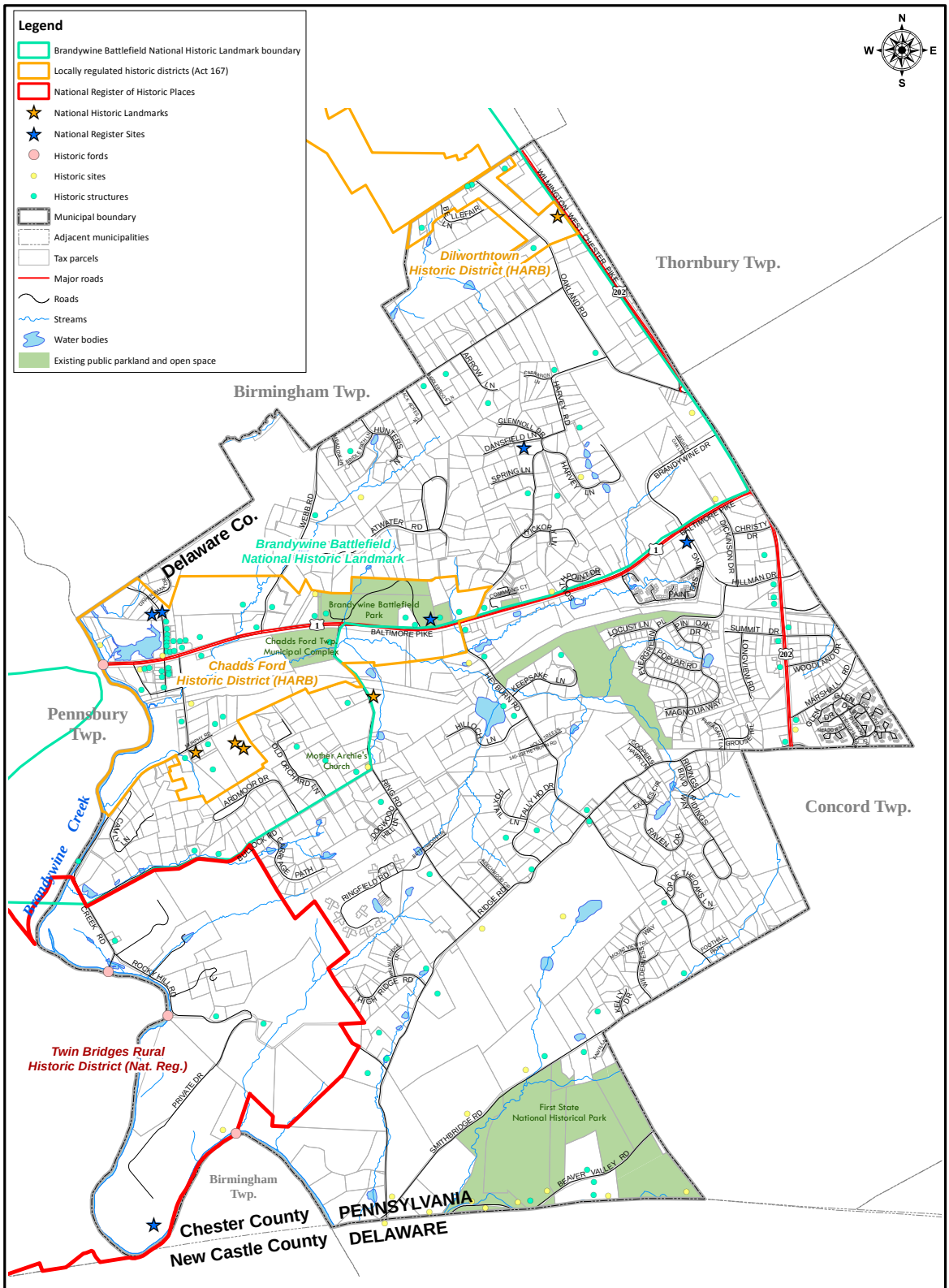
Map 2-6
Agricultural Resources

Comprehensive Parks, Recreation, and Open Space Plan Update

Chadds Ford Township, Delaware County, Pennsylvania

Agricultural Resources (Map 2-6)

The Brandywine region is fortunate to have world-class agricultural soils including soils of statewide importance which are only found in select regions of Pennsylvania. Prime agricultural soils are a valuable non-renewable resource. Many of the Township's prime agricultural soils remain in agricultural use today and are economically beneficial for the community. Many properties are suitable for intensive agricultural cultivation with high productivity and minimal management. Perhaps just as importantly, agriculture is what helps to define the rural character of Chadds Ford Township. Once soil is altered or paved over, it can never be returned to its original condition. Prime agricultural soil conservation and preservation of the agricultural heritage should be considered as part of a comprehensive parks, recreation, and trail vision.

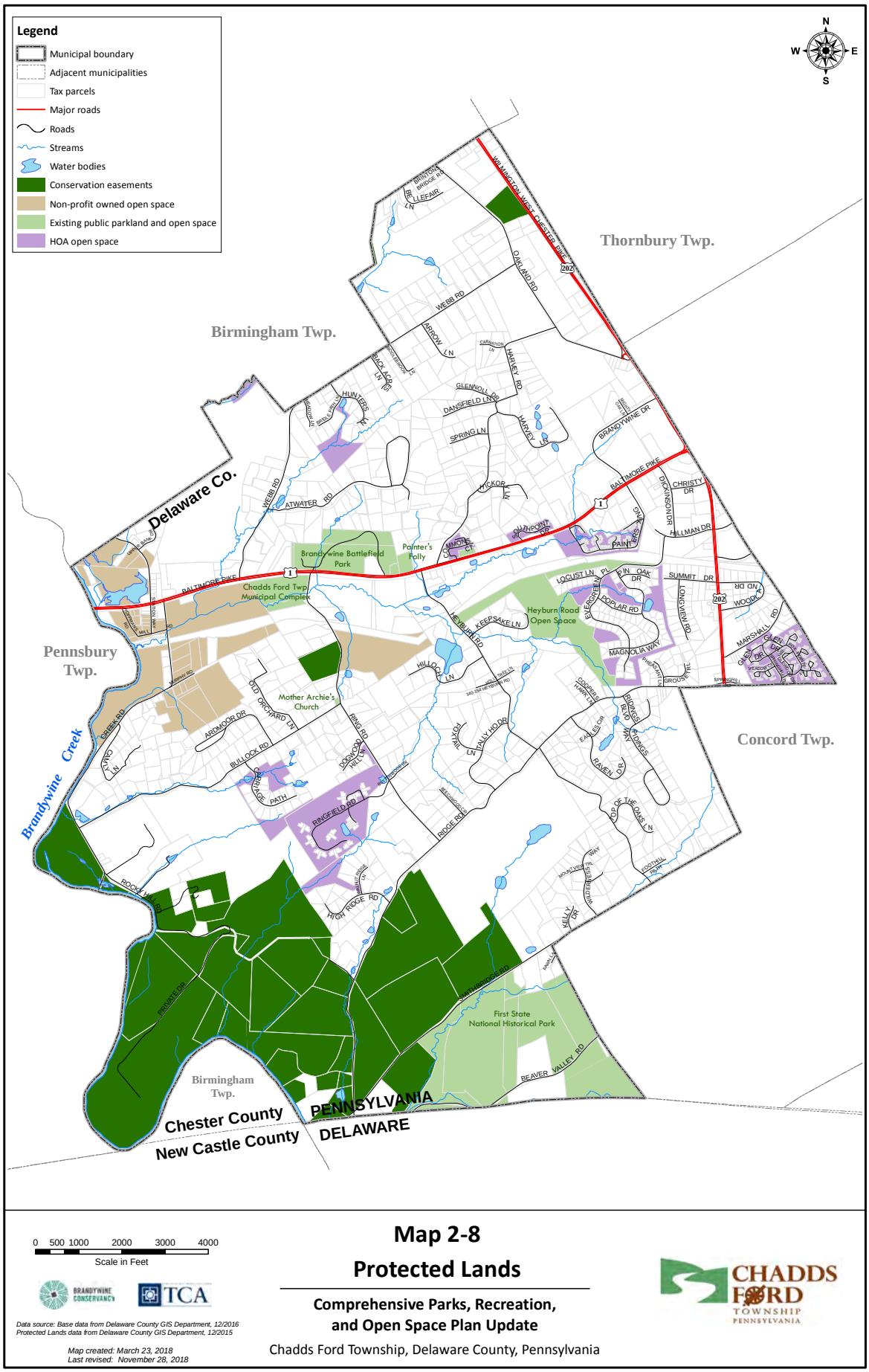

Legend
Brandywine Battlefield National Historic Landmark boundary
Locally regulated historic districts (Act 167)
National Register of Historic Places
National Historic Landmarks
National Register Sites
Historic fords
Historic sites
Historic structures
Municipal boundary
Adjacent municipalities
Tax parcels
Major roads
Roads
Streams
Water bodies
Existing public parkland and open space
N
W
E
S
Thornbury Twp.
Birmingham Twp.
Dilworthtown Historic District (HARB)
Delaware Co.
Brandywine Battlefield National Historic Landmark
Brandywine Battlefield Park
Chadds Ford Twp. Municipal Complex
Chadds Ford Historic District (HARB)
Pennsbury Twp.
Mother Archie's Church
Brandywine Creek
Concord Twp.
Twin Bridges Rural Historic District (Nat. Reg.)
First State National Historical Park
Birmingham Twp.
Chester County
New Castle County
PENNSYLVANIA
DELAWARE
0 500 1000 2000 3000 4000
Scale in Feet
Data source: Base data from Delaware County GIS Department, 12/2016
Protected Lands data from Delaware County GIS Department, 12/2015
Map created: March 23, 2018
Last revised: February 19, 2019
Map 2-7
Historic and Cultural Features
Comprehensive Parks, Recreation, and Open Space Plan Update
Chadds Ford Township, Delaware County, Pennsylvania
CHADDS FORD TOWNSHIP PENNSYLVANIA

Historic and Cultural Resources (Map 2-7)

Chadds Ford Township is also known for its rich inventory of historic and cultural resources and districts, shown on Map 2-7. These include the Brandywine Battlefield National Historic Landmark, National Historic Landmark individual sites, Twin Bridges Rural Historic District (National Register of Historic Places), numerous National Register of Historic Places individual sites, locally regulated Dilworthtown Historic District and Chadds Ford Historic District, historic fords, and historic structures.

The Battle of Brandywine, the Lenni Lenape Indians, Mother Archie's church and black history- all of these legacies influence and define the unique character of Chadds Ford Township. In recent years, the Chadds Ford Township Open Space Committee has been interested in creating a bike/ped network that connects and highlights popular public historic and cultural destinations in Chadds Ford such as Hoffman's Mill (now Brandywine River Museum of Art), the John Chads House, Mother Archie's Church, Pyle's Studio (current municipal building), NC and Andrew Wyeth studios, Kuerner Farm, and Lafayette's headquarters in the Brandywine Battlefield Park.

Based upon the 2007 Open Space Plan recommendations, land preservation efforts of the Open Space Committee focus on parcels within the Brandywine Battlefield National Historic Landmark and the Twin Bridges Rural Historic District. Future lands purchased for historic preservation could also include future recreational facilities or feature educational and interpretive information about the historic resources.



Map 2-8

Protected Lands

Comprehensive Parks, Recreation, and Open Space Plan Update

Chadds Ford Township, Delaware County, Pennsylvania

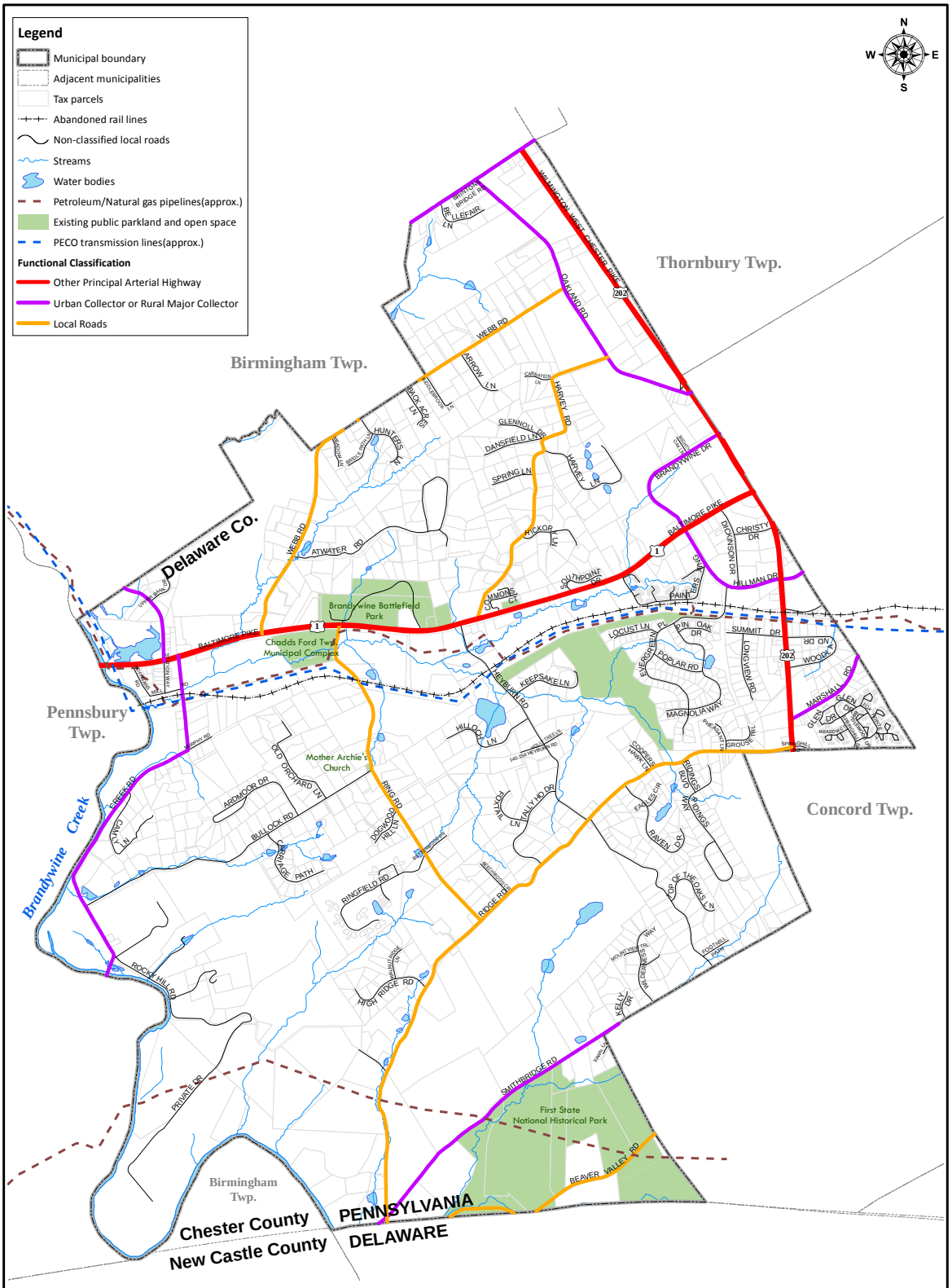
Data source: Base data from Delaware County GIS Department, 12/2016
Protected Lands data from Delaware County GIS Department, 12/2015

Map created: March 23, 2018
Last revised: November 28, 2018

Protected Lands (Map 2-8)

The Protected Lands Map 2-8 identifies Brandywine Conservancy easements (privately owned lands with no public access), Brandywine Conservancy lands (with some public access including 5 miles of natural surface hiking trails that connect the BRMA to the NC and Andrew Wyeth Studios and the Township's Harvey Run Trail), existing public parks and open space, and Homeowners Association lands (privately-owned lands with no public access).

The vast majority of protected lands are found south of Route 1. Opportunities for land preservation are available throughout the Township. However, only a few undeveloped parcels greater than 10 acres remain. The 2007 Open Space Plan recommends that land preservation efforts focus on natural resources, historic/cultural resources, water resources, scenic resources, and areas suitable for recreation and trails. Land trusts often consider 10 acres to be the minimum size for a conservation easement although the merits of land preservation projects are considered carefully on a case by case basis.



Map 2-9

Roadway and Utility Infrastructure

Comprehensive Parks, Recreation, and Open Space Plan Update

Chadds Ford Township, Delaware County, Pennsylvania

Roadway and Utility Infrastructure (Map 2-9)

Map 2-9 illustrates the various road classifications in Chadds Ford Township and the existing utility infrastructure. The petroleum/natural gas pipeline locations are approximate and typically occur on utility easements across private property. A public trail along pipeline easements would involve negotiations with the landowners as well as negotiations with the pipeline utility. The PECO transmission lines locations are also approximate. In Chadds Ford, the majority of the PECO corridor is owned in fee by PECO, with the exception of where PECO holds easements across 3 privately-owned residential parcels west of Heyburn Road. The SEPTA Octoraro rail line is an inactive corridor, where some sections are located within a right-of-way/ easement on lands owned by SEPTA and other sections are owned by PECO. The SEPTA corridor generally follows the edge of the PECO transmission lines. There may be opportunities to negotiate multi-use trails along PECO and pipeline corridors.

There are three functional classifications of state-owned (PennDOT) roads in Chadds Ford Township.

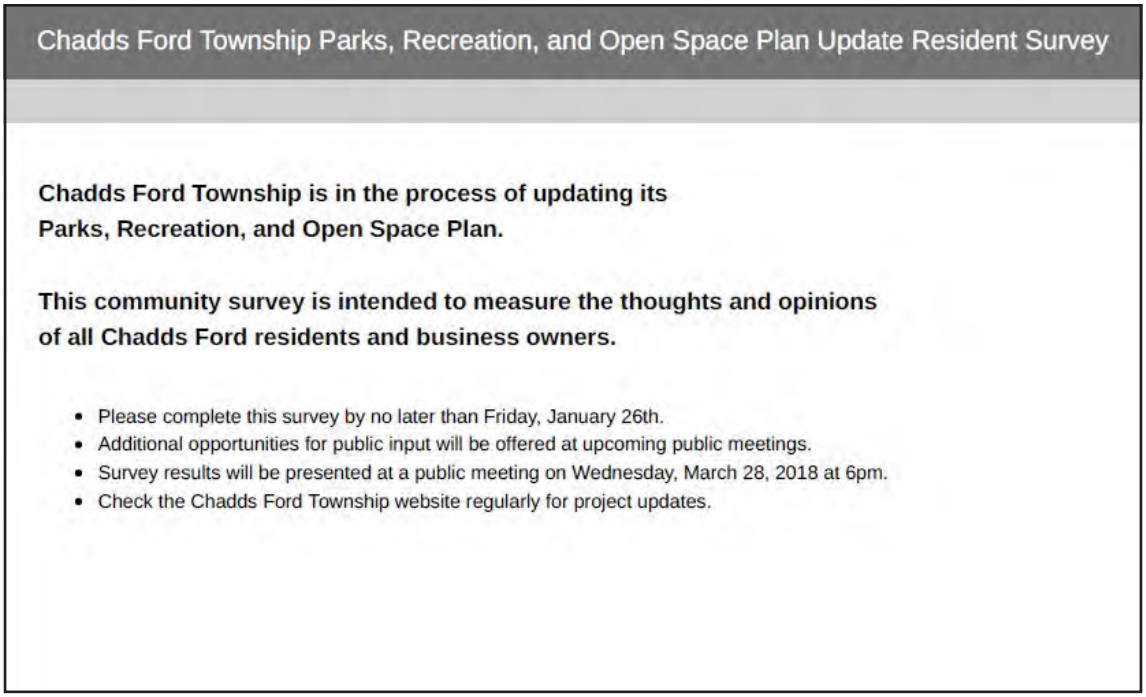
1. Principal arterial highway (Route 1 and Route 202)
2. Urban collectors or rural major collectors (Creek Road, Oakland Road, Smithbridge Road, Marshall Road, Brinton's Bridge Road, and Brandywine/ Hillman Drives)
3. Local roads (Webb Road, Harvey Road, Ring Road, Ridge Road, and Beaver Valley Road). The local road system serves primarily to provide direct access to abutting land and access to roads with a higher functional classification (listed above). There are 17.67 miles of PennDOT owned/maintained local roads in the Township and 13.35 miles of municipal roads. Local roads offer the lowest level of mobility for automobiles, contain no bus routes, and through traffic movement is deliberately discouraged.

Municipal roads and their rights-of-way are owned and maintained by Chadds Ford Township (including Heyburn Road, Bullock Road, and many other residential roads). They serve local neighborhoods and are designed for low volumes and speeds of traffic. These roads are generally safe for limited shared use with pedestrians and bicycles. PennDOT's local roads and Chadds Ford Township's municipal roads may be suitable as share-the-road bicycle routes for active transportation.

2.3 Community Survey

A survey was created to gather input from the Chadds Ford Township community on topics related to open space, trails, and recreation. The survey was available from March 1, 2018 to March 30, 2018 and could be accessed online through a Survey Monkey link posted on the Chadds Ford Township website. For those who wished to complete a hard copy of the survey, paper versions were also provided at the Chadds Ford Township municipal building. The survey was advertised through an email notification, through the mail with a letter that accompanied residents' 2018 tax bills, and with a general announcement on the Chadds Ford Township website.

The survey format consisted of seven questions. Six were multiple choice and one was open-ended, allowing participants to write in comments that were not addressed elsewhere in the survey. Responses varied by question with the highest response rate totaling 143. The following summarizes the responses for each survey question. To see a complete tabulation of the results, see Appendix B.



Chadds Ford Township Parks, Recreation, and Open Space Plan Update Resident Survey

Chadds Ford Township is in the process of updating its Parks, Recreation, and Open Space Plan.

This community survey is intended to measure the thoughts and opinions of all Chadds Ford residents and business owners.

- Please complete this survey by no later than Friday, January 26th.
- Additional opportunities for public input will be offered at upcoming public meetings.
- Survey results will be presented at a public meeting on Wednesday, March 28, 2018 at 6pm.
- Check the Chadds Ford Township website regularly for project updates.

Questions and Results

Question 1: How important is it for Chadds Ford Township to provide the following parks and recreation facilities and services?

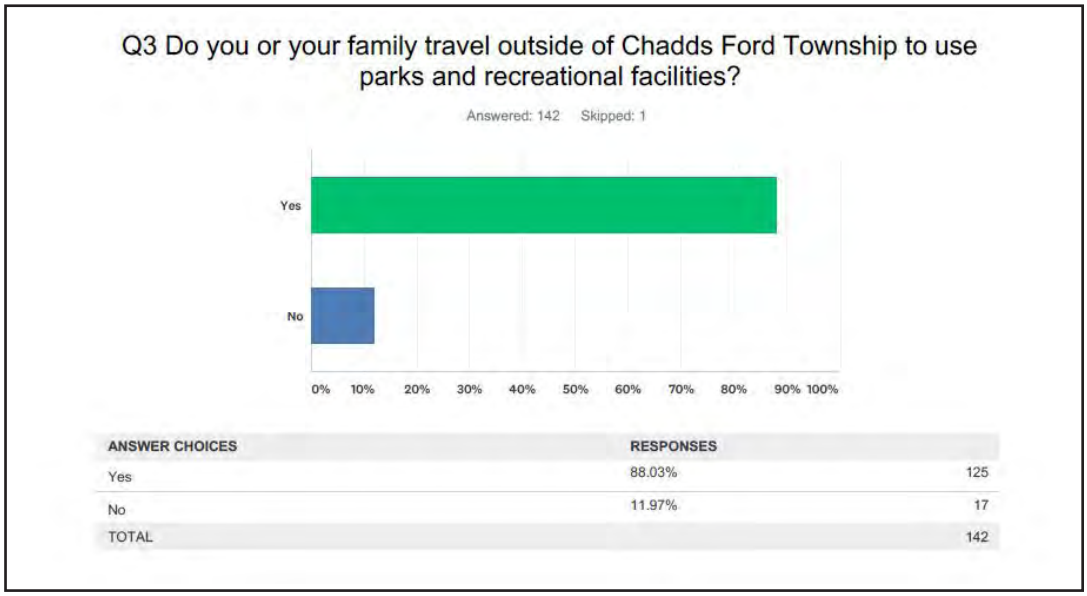
The responses for Question 1 primarily favored trails for pedestrian and bicycle use, while indicating that trails for horseback riding, athletic courts, and dog parks were not a priority. The top three items, which were indicated as "Extremely Important," were Walking/Jogging – 73.24%, Hiking – 67%, and Biking – 45.32%. The bottom three items, which were indicated as "Not Important" were Horse Trails – 48.91%, Athletic Courts - 39.42%, and Dog Park – 36.43%.

Question 2: How important is it to provide parks and recreational facilities for the following age groups in Chadds Ford?

The top three age groups, listed as "Extremely Important," were Adults 21–65 – 58.99%, Adults 65 and over - 53.96%, and Kindergarten through Middle School- 49.29%. The bottom three age groups, listed as "Not Important," were High School and College- 27.21%, Pre-school and Younger- 23.19%, and Kindergarten through Middle School - 22.14%.

Question 3: Do you or your family travel outside of Chadds Ford Township to use parks and recreational facilities?

When asked if the respondents and their families traveled outside of the Township's boundaries to access parks and recreational amenities in the region, there was a strongly affirmative response. The majority of respondents indicated that they do go outside the Township to access those amenities. 88.03% indicated "Yes" while 11.97% indicated "No."



ANSWER CHOICES	RESPONSES	
Yes	88.03%	125
No	11.97%	17
TOTAL		142

Question 4: Identify places where you or your family currently go to use parks and recreational facilities: (Please check all that apply)

It is evident from the responses for Question 4 that parks within the region are attractive for a whole host of activities, including biking, picnic areas, and playgrounds. Of the various park locations in the region, whether they were township, county, state, or national parks, opportunities for hiking or walking and jogging were the greatest draw. The top three destinations for hiking, and the items that received some of the largest number of responses, were State Parks, Chester County Parks, and National Parks. The top three destinations for walking or jogging, which also received a high number of responses, were State Parks, Concord Township Parks, and Delaware County Parks.

Question 5: How important is it for Chadds Ford Township to provide the following parks and recreational facilities and services?

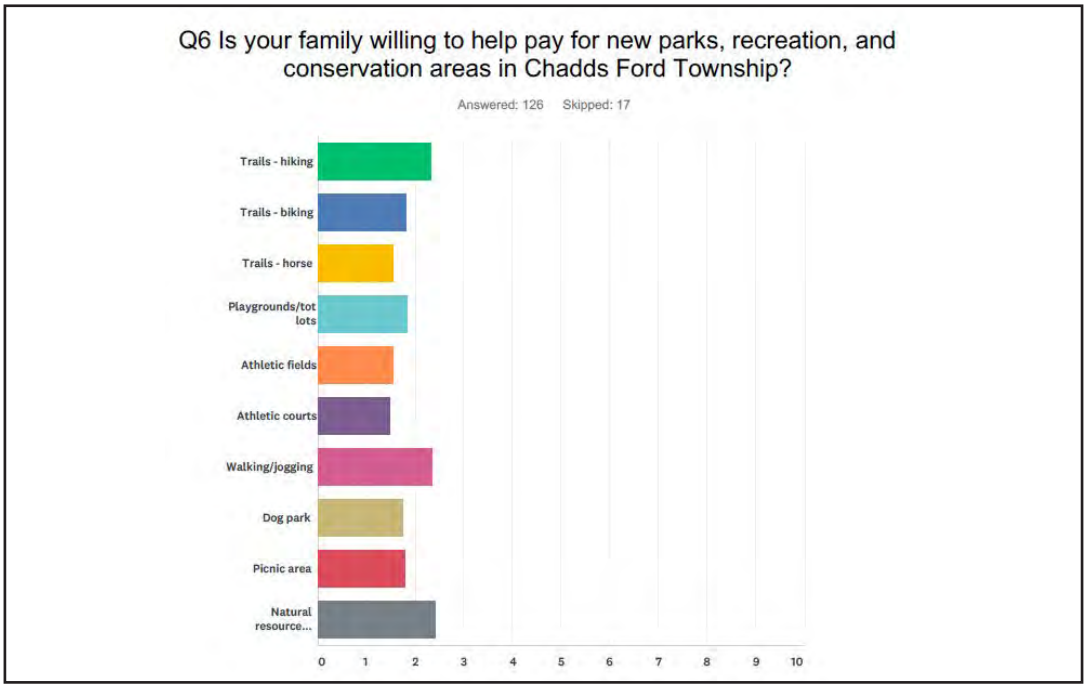
When asked to rank the importance of the Township providing parks and recreational facilities and services, two of the three categories were identified as extremely important while one response was identified as not important. 76.19% of respondents indicated that acquiring land for natural resource conservation was "Extremely Important," and 65.08% of respondents indicated that acquiring land for passive parks was also "Extremely Important." Acquiring land for athletic fields/courts was indicated as "Not Important" by 46.28% of the respondents.

Question 6: Is your family willing to help pay for new parks, recreation, and conservation areas in Chadds Ford Township?

The responses for Question 6 primarily favored natural resource conservation – 60.17%, walking/jogging – 54.55%, and hiking – 52.80% as the top three new items for which families would be willing to help pay. New facilities that families were not interested in helping fund included athletic courts – 62.73%, horse trails – 59.09%, and athletic fields – 57.80%.

Question 7: Please add any other comments or suggestions you may have regarding parks and recreational facilities in Chadds Ford Township.

A range of themes emerged from the comments submitted in Question 7. Those themes ranged in nature from concerns about maintaining Chadds Ford Township's community character, to zoning and development, to comments about the correlation between the housing market and conservation. There were comments about being strategic and efficient with existing resources and funds and comments about trails, access, and visibility. For a complete list of responses, please see Appendix B.



Survey Summary

Overall, the themes that emerged from the community survey were relatively consistent across the questions. The responses were also consistent with an earlier survey conducted for the previous Open Space Plan.

Respondents indicated a strong desire for trails that benefit those who walk, hike, jog, and bike. They felt that it is important for the Township to acquire land for natural resource conservation as well as for passive park creation. In order to access these types of amenities, especially to hike, walk, or jog, a significant portion indicated that they travel elsewhere in the region, rather than staying within the Township.

Sign at Chadds Ford Historical Society open space

2.4 Key Person Interviews

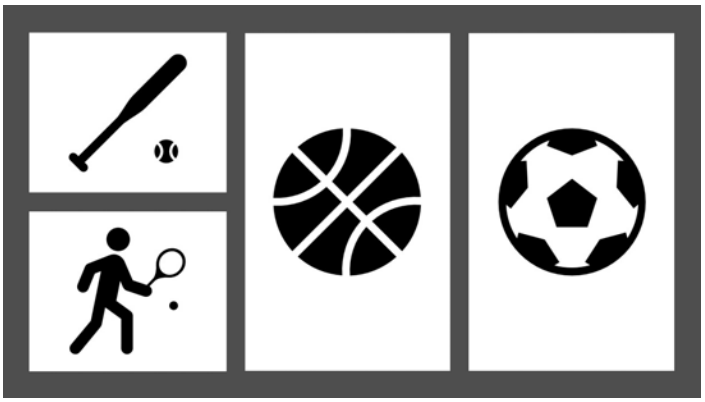
The Open Space Task Force identified fourteen individuals in the Township to be interviewed for Update 2018. The individuals were selected based upon the location of their home or business, their interest in recreation and trails, and their stature in the Chadds Ford community. A survey instrument was developed for the interviews, and a total of ten one-hour interviews were conducted in person. The survey instruments and notes from the interviews are included in Appendix B. The key thoughts and comments obtained during the interviews are summarized below.

Open Space

- Chadds Ford Township (CFT) is noted for its rural, historic, scenic, cultural, and agricultural attributes. Therefore, these attributes should be conserved and protected in the future.
- Additional lands to be considered for open space preservation through conservation easements might be focused on expanding preserved lands in the southwestern portion of the Township and in the northern portion of the Township within the Brandywine Battlefield National Historic Landmark. The Township should coordinate with the Pennsylvania Historical and Museum Commission and the Brandywine Battlefield Park Associates to determine if passive recreational activities are possible within its open space. Although it would be great to have additional preserved open space, the Township should consider how the land will be utilized.
- CFT should provide more passive open space that promotes community interaction and engagement.
- CFT should better promote existing park and recreational opportunities that currently exist throughout the Township including at Brandywine Battlefield Park and at First State National Historical Park.
- CFT should partner with privately-owned semi-public passive recreational open space such as the Chadds Ford Historical Society and the Brandywine Conservancy & Museum of Art.
- The Township could make better use of 19 acres of existing open space at the municipal campus on Route 1.

Trails

- An overall loop trail system would be good.
- The Township should coordinate trail use with the First State National Historical Park so that trail resources are shared.
- The Township should specifically coordinate with the Wilmington Trail Club and the West Chester Trail Club, relative to their trail programs.
- In considering trails, we should think about connections to other trails and opportunities along trails. For example, a trail leading to Chadds Ford Village would provide opportunities for trail users to rest, dine, shop, etc.



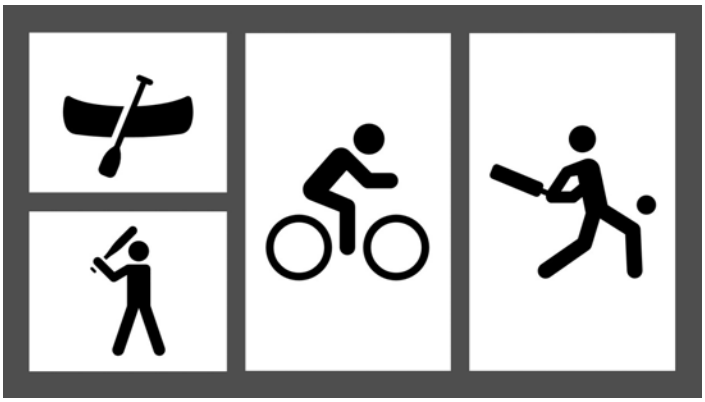
Task Force committee walks near the Heyburn Road Municipal Open Space

Trails (continued)

- Given the steepness of the topography in CFT, one of the persons interviewed suggested that trails be located on terrain that would enable most trail users to more easily walk on level ground.
- There is support for trails but only in appropriate locations that will not have a negative impact on residential areas.
- There is support for the Octoraro Trail as long as it does not negatively impact adjacent residential areas and private landowners.
- The Township should explore opportunities to provide more low maintenance trails along the Brandywine and enhance access to the Brandywine for recreation.
- Residents want to connect to the Village of Chadds Ford and be able to navigate through the village shops, services, and attractions safely.

Active Recreation

- One person felt that there is no doubt that active recreational facilities are needed.
- One person suggested that we create a community park on the northern end of Chadds Ford Village in the field currently used for overflow parking at Chadds Ford Days. In so doing, that person felt that such a community park would be well located (away from residential neighborhoods that might otherwise be annoyed to have a park in their backyard).
- Certain active recreational facilities provided by the School District should continue to be used, such as tennis courts.
- Certain active recreational facilities available in adjoining municipalities should continue to be used.
- Certain active recreational facilities, especially playfields, might be provided in conjunction with adjoining municipalities, such as Birmingham Township – Chester County.
- Relative to the former Camp Sunshine/Girl Scouts Camp, one person felt that it would not be appropriate to have active recreational facilities on this ground,



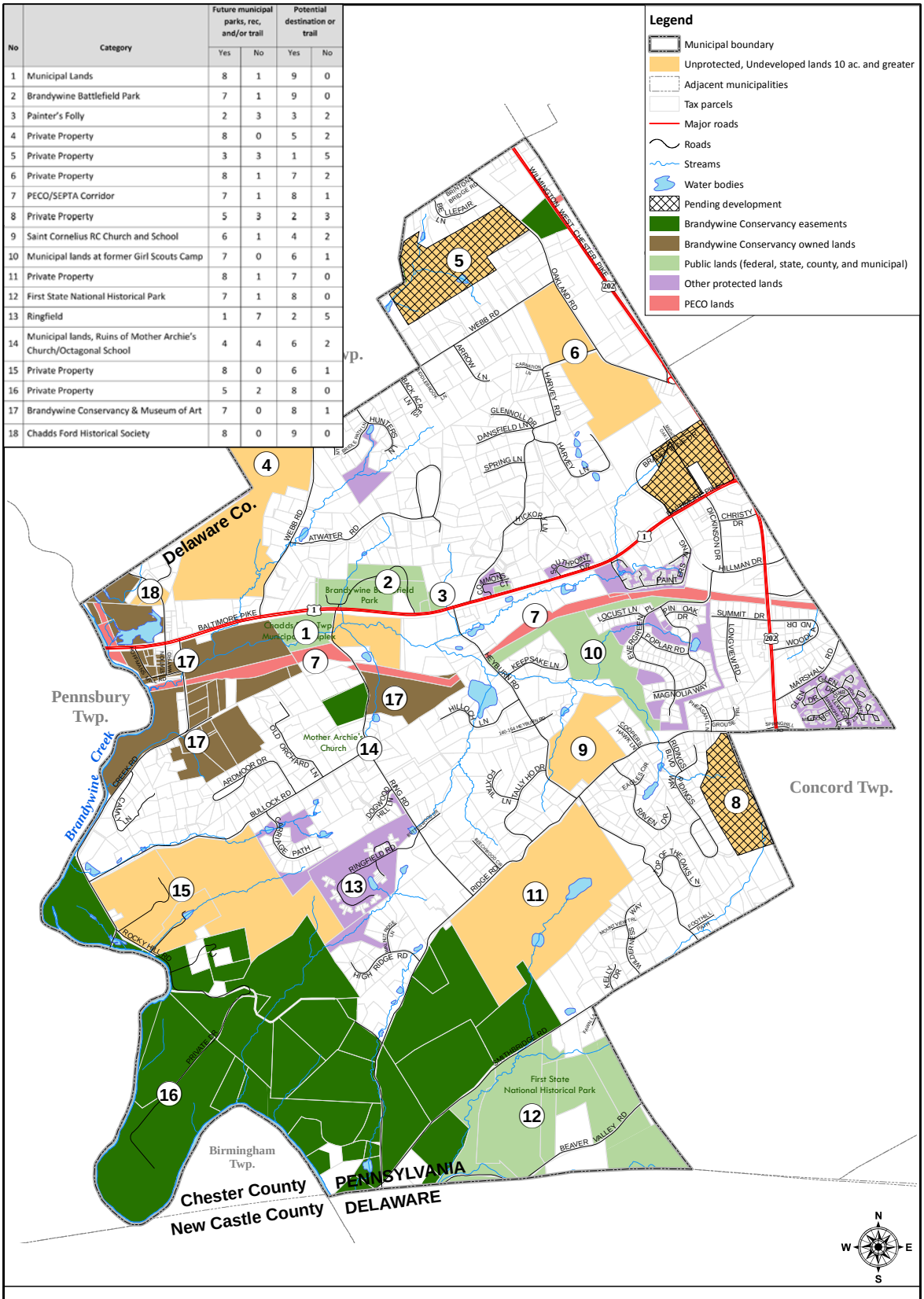
Enjoying open space with furry companions

Active Recreation (continued)

due to the steepness of the ground and proximity to the neighbors at the Heyburn Road municipal open space.

- Several comments were made to minimize active recreation.
- Small recreational gathering areas should be built at shopping centers in the Route 202 corridor.
- One person suggested pickleball as a needed facility. (Pickleball is a sport that combines many elements of tennis, badminton, and ping-pong. It can be played indoors or outdoors on a badminton-sized court with a slightly modified tennis net, paddles, and a plastic ball with holes.)
- If CFT will be developing active recreational facilities, it would be good to focus on a small playground and activities for children in the range of 6 to 12 years old (consistent with Community Survey responses for Question 2).
- One person's opinion was that generally residents are not interested in new active recreational facilities - such facilities are expensive to construct and maintain and are already available in nearby municipalities.
- If there is a deemed need for active recreation, it should occur only in appropriate locations that will not have a negative impact on residential areas.
- Make better use of the Brandywine Battlefield Park, and coordinate with park representatives to implement new facilities and special events.
- If there is a deemed need, focus active recreation along the Route 1 corridor where access is easy and residential areas will not be impacted.
- Consider a "pay to play" annual parking pass to generate revenue for new parks and trails.
- Consider a dog park.
- If there is a deemed need, the Township should develop recreational facilities without having to purchase more land for those facilities.

No	Category	Future municipal parks, rec, and/or trail		Potential destination or trail	
		Yes	No	Yes	No
1	Municipal Lands	8	1	9	0
2	Brandywine Battlefield Park	7	1	9	0
3	Painter's Folly	2	3	3	2
4	Private Property	8	0	5	2
5	Private Property	3	3	1	5
6	Private Property	8	1	7	2
7	PECO/SEPTA Corridor	7	1	8	1
8	Private Property	5	3	2	3
9	Saint Cornelius RC Church and School	6	1	4	2
10	Municipal lands at former Girl Scouts Camp	7	0	6	1
11	Private Property	8	1	7	0
12	First State National Historical Park	7	1	8	0
13	Ringfield	1	7	2	5
14	Municipal lands, Ruins of Mother Archie's Church/Octagonal School	4	4	6	2
15	Private Property	8	0	6	1
16	Private Property	5	2	8	0
17	Brandywine Conservancy & Museum of Art	7	0	8	1
18	Chadds Ford Historical Society	8	0	9	0



0 500 1000 2000 3000 4000
Scale in Feet

Data source: Base data from Delaware County GIS Department, 12/2016
Protected Lands data from Delaware County GIS Department, 12/2015

Map created: March 23, 2018
Last revised: November 28, 2018

Map 2-10

Open Space Tour and Survey

Comprehensive Parks, Recreation, and Open Space Plan Update

Chadds Ford Township, Delaware County, Pennsylvania

2.5 Open Space Tour and Survey

The Open Space Task Force participated in a 3-hour tour of existing parks and open spaces in the Township. Map 2-10 illustrates the eighteen stops along the tour route that feature undeveloped parcels of land that are 10 acres or greater and have potential for future recreation and/or trails. For each numbered stop Task Force members responded to the following two questions:

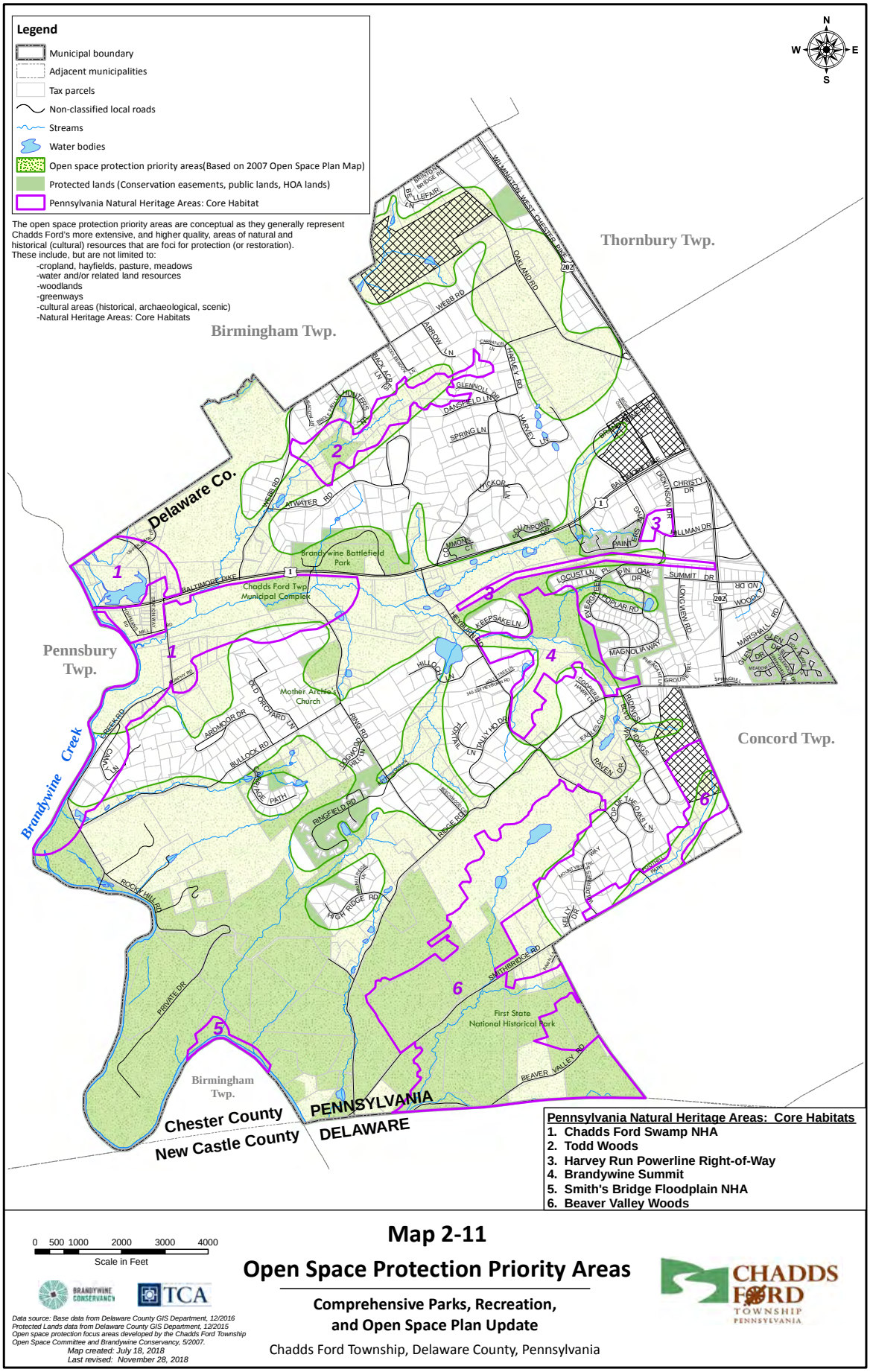
1. Which sites are suitable/unsuitable for future municipal parks, recreation, and/or trails?
2. What are potential destinations/routes for a Township-wide trail system?

Below is a summary of comments from Task Force members who participated in the open space tour. Task Force member comments from the Open Space Tour can also be found in Appendix B.

Summary- Open Space Tour Task Force Feedback

No.	Category	Future municipal parks, rec, and/or trail		Potential destination TWP trail	
		Yes	No	Yes	No
1	*Municipal Lands*	8	1	9	0
2	*Brandywine Battlefield Park*	7	1	9	0
3	*Painter's Folly*	2	3	3	2
4	*Private Property*	8	0	5	2
5	*Private Property*	3	3	1	5
6	*Private Property*	8	1	7	2
7	*PECO Corridor*	7	1	8	1
8	*Private Property*	5	3	2	3
9	*Saint Cornelius RC Church and School*	6	1	4	2
10	*Municipal lands at former Girl Scouts Camp*	7	0	6	1
11	*Private Property*	8	1	7	0
12	*First State National Historical Park*	7	1	8	0
13	*Ringfield*	1	7	2	5
14	*Municipal lands, Ruins of Mother Archie's Church/Octagonal School*	4	4	6	2
15	*Private Property*	8	0	6	1
16	*Private Property*	5	2	8	0
17	*Brandywine Conservancy & Museum of Art*	7	0	8	1
18	*Chadds Ford Historical Society*	8	0	9	0

The results above indicate that there may be potential park, recreation, and/or trail opportunities on several undeveloped properties, and several locations are viewed as important destinations along a municipal trail network. Those lands that received the strongest indication from the Task Force as potential sites for parks, recreation, and trails included existing municipal lands at the municipal building, private property located north of Chadds Ford Village on Webb Road, private properties in the northeastern tier, several private properties in the southern tier, and the property owned by the Chadds Ford Historical Society in Chadds Ford Village. The properties that were identified as key trail destinations by all nine Task Force members in attendance included municipal lands and offices on Route 1, Brandywine Battlefield Park, and the Chadds Ford Historical Society. Destinations that were chosen by eight of the nine Task Force members included the PECO corridor, First State National Historical Park, and the Brandywine Conservancy & Museum of Art campus.


Legend
Municipal boundary
Adjacent municipalities
Tax parcels
Non-classified local roads
Streams
Water bodies
Open space protection priority areas(Based on 2007 Open Space Plan Map)
Protected lands (Conservation easements, public lands, HOA lands)
Pennsylvania Natural Heritage Areas: Core Habitat
The open space protection priority areas are conceptual as they generally represent Chadds Ford's more extensive, and higher quality, areas of natural and historical (cultural) resources that are foci for protection (or restoration). These include, but are not limited to:
-cropland, hayfields, pasture, meadows
-water and/or related land resources
-woodlands
-greenways
-cultural areas (historical, archaeological, scenic)
-Natural Heritage Areas: Core Habitats
N
W
E
S
Thornbury Twp.
Birmingham Twp.
Delaware Co.
Pennsbury Twp.
Concord Twp.
Brandywine Creek
Brandywine Battlefield Park
Chadds Ford Twp. Municipal Complex
Mother Archie's Church
First State National Historical Park
Birmingham Twp.
Chester County
New Castle County
PENNSYLVANIA
DELAWARE
Pennsylvania Natural Heritage Areas: Core Habitats
1. Chadds Ford Swamp NHA
2. Todd Woods
3. Harvey Run Powerline Right-of-Way
4. Brandywine Summit
5. Smith's Bridge Floodplain NHA
6. Beaver Valley Woods
0 500 1000 2000 3000 4000
Scale in Feet
Data source: Base data from Delaware County GIS Department, 12/2016
Protected Lands data from Delaware County GIS Department, 12/2015
Open space protection focus areas developed by the Chadds Ford Township Open Space Committee and Brandywine Conservancy, 5/2007.
Map created: July 18, 2018
Last revised: November 28, 2018
Map 2-11
Open Space Protection Priority Areas
Comprehensive Parks, Recreation, and Open Space Plan Update
Chadds Ford Township, Delaware County, Pennsylvania
CHADDS FORD TOWNSHIP PENNSYLVANIA

2.6 Open Space Prioritization Review

Open Space Protection Priorities Map (8-1) from the Chadds Ford Township Open Space Plan (2007) has been updated to reflect newly compiled data shown on inventory Maps 2-1 through 2-9 in the 2018 Update. Map 2-11 shows revised priority areas for preservation that reflect new GIS data for Pennsylvania Natural Heritage Inventory sites, First State National Historical Park, and other protected lands updates. The map was also updated to include new areas of development and pending development.

As described in Chapter 1, in 2006 Chadds Ford Township enacted an Open Space Tax that generates approximately $150,000 in revenue for open space preservation each year. There are several tools that the Township should consider for the acquisition of land for public open space. The Pennsylvania Land Trust Association (PALTA) provides a thorough summary of land conservation options on its website at https://conserveland.org/conservation-101/. The most commonly-used land preservation tools are listed below and are extracts from the PALTA website.

Donation of Land or an Easement

A preferred method of acquisition is voluntary donation by a landowner with philanthropic interests. Donations can generate substantial benefits for the landowner. The donor's federal income and estate taxes often can be significantly reduced with a properly structured donation. Some form of conservation donation can be critical in cases where the landowners have an emotional attachment to the land and wish it to stay in the family. Although many donors have a strong philanthropic motive, the tax benefits certainly give an appealing additional impetus for conservation donations. Landowners may donate almost any property right or interest in their land, including the entire parcel in fee, a conservation easement, or other property rights such as an option or lease.

Purchase of Land or an Easement

Purchasing land or easements at fair market value is an expensive acquisition method. However, there may be no other option if the land in question is deemed to be a high priority and the landowner has no philanthropic interest. In addition to the use of Open Space Tax revenue, there are a number of other potential approaches to funding a land purchase such as private donations, government grants, bank loans, and land trades (land that has no specific conservation value is donated to the Township and the Township sells the property to finance other land protection projects).

Bargain Sale

In a bargain sale the landowner and the Township or a land trust negotiate a purchase price below fair market value. Bargain sales can be an attractive option for landowners who wish to preserve their land but who also need income from the transaction. Although a landowner will receive more from a sale at fair market value than from a bargain sale, certain tax benefits can substantially reduce or eliminate the disparity.

Conservation Buyer

The Township or a local land trust may be able to link a conservation buyer with a landowner who wants to sell a property having high conservation values. The conservation buyer is someone who wishes to own a property but who also wishes to preserve the property's natural values. To be effective in the long term, the transaction should involve a conservation easement being transferred to the land trust. This method requires little or no financing by the land trust; obviously the trick is identifying interested conservation buyers.

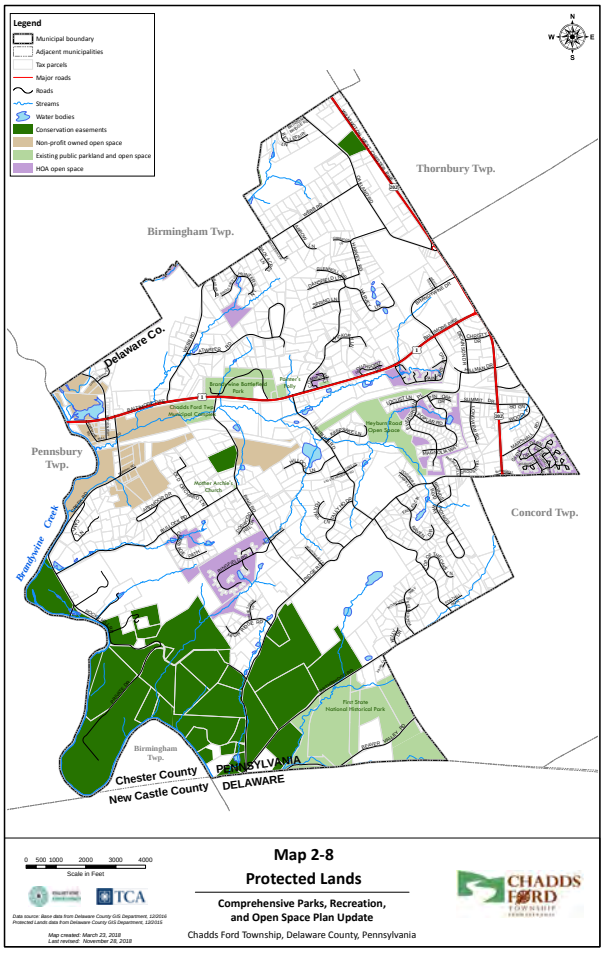
Overview

This initial recreational needs analysis focuses on 5 components.

1. An inventory of existing parkland owned and maintained by Chadds Ford Township;
2. A projection of the population and housing through 2030 and 2040;
3. A determination of the demand for Township-owned and maintained parkland, using NRPA (National Recreation & Park Association) standards of 8.5 acres per 1,000 persons;
4. A regional context and service areas analysis for Township-owned and maintained parkland, private recreational areas within the Township, and regional public recreational areas in nearby municipalities; and
5. A draft of conceptual park master plans for Township-owned and maintained parkland.

An Inventory of Township Owned and Maintained Parkland

Chadds Ford Township has two properties that could be used for recreational purposes as shown on the map below. Mother Archie's Church and Painter's Folly are two additional parcels within Chadds Ford Township that could potentially serve as areas for future recreational opportunities.



1. The Chadds Ford Township municipal complex, comprising approximately 19 acres, includes the Chadds Ford Township building, the Harvey Run Trail, wooded and grassland areas, and a small level area on the south side of the Township building. This area is approximately 2 acres, adjoins the parking lot, and could accommodate primarily passive recreational uses with walkways, picnic tables, benches, and a small pavilion or gazebo. This parklet also adjoins the existing Harvey Run Trail at the municipal complex.

2. The 58-acre former Girl Scout property west of Chadds Ford Estates, known as Heyburn Road municipal open space, is accessible from Heyburn Road and Evergreen Drive. The site is predominantly wooded with steep slopes. It includes natural habitat areas for wildlife, and a creek runs through a portion of the site. It could accommodate a primarily passive recreational use program. Trails, footbridges, and nature study areas could be accessed from small trailhead parking areas.

A runner enjoys a natural surrounding

A Projection of Population and Housing Units through 2030 and 2040

According to the 2010 Census, Chadds Ford Township had the following population and housing figures:

- 2010 Population: 3,640 persons; and
- 2010 Housing Units: 1,513 housing units.

In 2010, the number of persons per household was 2.53.

The Delaware Valley Regional Planning Commission (DVRPC) has made the population projections below. Thomas Comitta Associates, Inc., (TCA) Town Planners & Landscape Architects, converted population to housing units, utilizing 2.53 persons per household.

	2020	2030	2040
Population Projections	3,848	4,064	4,237
Housing Unit Forecast	1,520	1,606	1,675

If we assume that the DVRPC population projections are correct, the potential demand for additional housing units could be as listed below.

2010: 1,513 dwelling units
2020: 1,520 (7 additional dwelling units above 2010)
2030: 1,606 (93 additional dwelling units above 2010)
2040: 1,675 (162 additional dwelling units above 2010)

A Determination of the Demand for Future Parkland

The National Recreation and Park Association (NRPA) began developing standards for park types and park facilities in the 1970's. The NRPA followed the lead of the then US Department of the Interior, Bureau of Outdoor Recreation, which began developing standards in the 1960's. The NRPA first published "Recreation, Park and Open Standards and Guidelines" in 1983. Then, the NRPA updated its standards in 1995, with the publication titled: "Park, Recreation, Open Space and Greenway Guidelines."

Over the years, both the State of Pennsylvania and the DVRPC have utilized the NRPA Standards and Guidelines. DVRPC has synthesized previous standards and utilizes a rule of thumb of 8.5 to 10 acres per 1,000 persons for active recreational space, depending upon the character of the municipality. The State of Pennsylvania also utilizes the NRPA Standards and Guidelines, most recently in its publications titled: "Natural Connections: Pennsylvania's Statewide Comprehensive Outdoor Recreation Plan 2014-2019."

The 8.5 acres per 1,000 persons standard for the demand for future parkland was utilized because Chadds Ford Township has a more rural character. In contrast, more developed communities utilize 10 acres per 1,000 persons due to increased parkland demand. Utilizing the NRPA standards of 8.5 acres of municipally-owned and maintained parkland per 1,000 persons, Chadds Ford Township theoretically has enough land through 2040. Simple calculations yield a 36 acre demand:

4,237 persons ÷ 1,000 = 4.237 x 8.5 = 36 acres

With approximately 19 acres at the municipal complex and approximately 58 acres at the Heyburn Road municipal open space, it would appear that more parkland will not be needed until after 2040. However, the 77 acres of existing parkland is not conducive to active recreation due to site constraints and accessibility.

Therefore, the Township will need to rely on other active recreational opportunities in and around the Township for the next several years for facilities such as soccer fields and playgrounds, or begin to explore options within the Township for lands more conducive to active recreational facilities.

Service Analysis for Township Owned and Maintained Parkland and Public Recreational Areas in Adjoining Municipalities

Of the 19 acres at the Chadds Ford Township Building, only 2 acres are suitable for a small neighborhood park. Such parks have a ½ to 1-mile service area.

The 58 acres at the Heyburn Road municipal open space would serve as a community park. Such parks have a 2 to 3-mile service area.

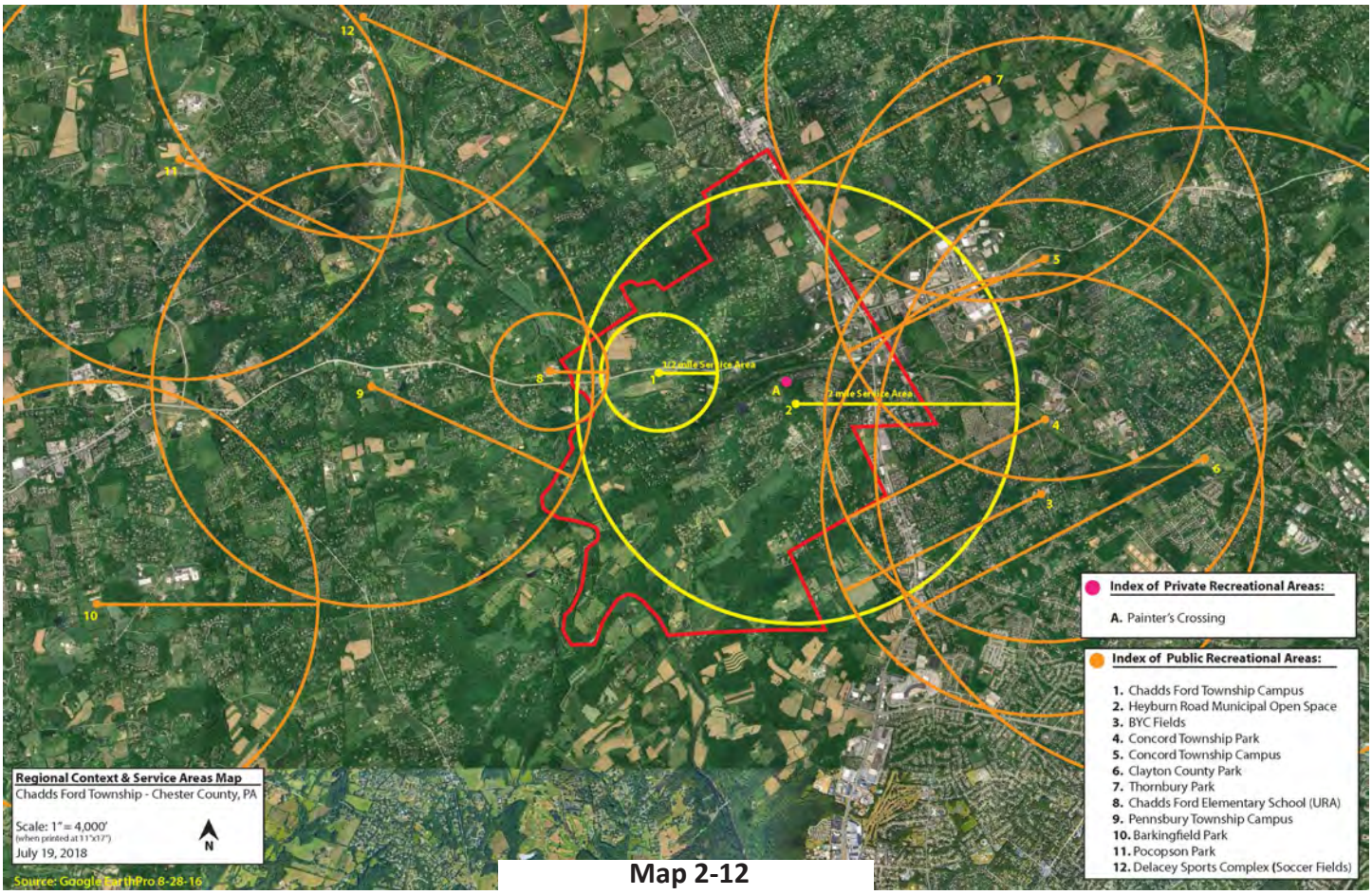
Chadds Ford Township is well-served geographically by the 2-mile service area radius at the Heyburn Road municipal open space. However, the site is not suitable for new recreational facilities such as a soccer field or playground facility. In addition, this property is not easily accessed.

Refer to the Regional Context & Service Area Analysis Map (Map 2-12) to see the portions of Chadds Ford Township that are theoretically served by the two parks. (Both sites have physical constraints and have very limited opportunities for a diversified recreational program.) The ½ mile service area radius would apply to the 2-acre park at the municipal building, and the 2-mile service area radius would apply to the Heyburn Road municipal open space.

In the short term, other recreational facilities in and near Chadds Ford Township will continue to serve residents. Public recreational areas in nearby municipalities are also identified on the Regional Context & Service Area Analysis Map. The eastern side of Chadds Ford Township is fairly well served by these facilities outside of the Township. The facilities serving the eastern side of Chadds Ford Township include: the Brandywine Youth Club (BYC) Fields; the Concord Township Park; the Concord Township Campus; Clayton County Park; and Thornbury Park. However, the western portion of the Township is not located within the service radii of recreational areas in adjoining municipalities. Therefore, Chadds Ford residents currently have to travel to other municipalities and greater distances in order to utilize active recreational facilities.
Additional sites conducive to new active recreational facilities may need to be explored. However, considering

that the cost per acre for land acquisition could range from $150,000 per acre to $175,000 per acre (outside of the Route 202 corridor and outside of the Route 1 corridor), it would be better for the Township to create smaller neighborhood parks as new residential developments are proposed. As neighborhood parks are built, the Township could begin to create a network of smaller recreational facilities. Another solution would be to continue to collaborate with other municipalities, the Brandywine Youth Club, and the Unionville Recreation Association, and utilize active recreational facilities outside of Chadds Ford Township. If certain other facilities are determined to be in demand, Chadds Ford Township may need to explore options for leasing lands for playfields and/or play courts.

Further, since Chadds Ford Township does not yet have a Recreation Committee and is not yet equipped to develop and manage a community park at the Heyburn Road municipal open space, various options will need to be discussed. A Recreation Committee can be appointed by the Board of Superviors as deemed necessary to review options and make recommendations for new recreational facilities.



Map 2-12

Chapter 3 | Recommendations

A bee on Goldenrod, a native plant

3.1 Open Space Preservation

Chadds Ford Township is located on the outskirts of a highly developed region that includes Philadelphia and its ever-expanding suburban landscapes in Delaware County. Many significant natural and cultural attributes define the visual character of Chadds Ford Township and create a community environment that is unique among municipalities in Delaware County. Many who move to this Township are attracted by the passive open spaces, natural features such as the Brandywine, and historic places. However, development pressures continue to expand, and Chadds Ford Township is experiencing new development pressures that come from the advancing path of growth.

Although the purpose of Update 2018 is not to prioritize lands for open space preservation, the community survey (Chapter 2) made it clear that residents consider the preservation of the rural character of the Township to be their highest priority. The formation of an Open Space Committee, the adoption of an open space tax in 2006, and the adoption of the 2007 Open Space Plan were necessary steps but are only the beginning of a long process to preserve significant and meaningful open space in Chadds Ford. Several actions can be taken to advance the Township's open space preservation program based upon information gathered through the community survey, key person interviews, input from the Open Space Committee, and input from the Update 2018 Task Force.

Adopt an Official Map (OS 1)

A boardwalk across a wetland in Chadds Ford

The Official Map identifies public improvement goals of a municipality and is used to help implement those goals. The Official Map can be used for:

1. Recreation: Prioritize land for acquisition for use as public parks and trails.
2. Conservation: Identify land as a conservation priority.
3. Water quality: Identify riparian areas to conserve to protect and enhance water quality.
4. Transportation: Identify multi-use trail corridors and improvements to municipal roads.

The Official Map can provide the right of first refusal to municipalities if/when a property becomes available for sale within one year after the owner of the property has submitted a written notice to the governing body announcing his intentions to build, subdivide, or otherwise develop the land. The Official Map can save time and money by proactively informing property owners and developers of municipal goals and intentions ahead of land development plan submissions and helps to ensure that new development is compatible with, and supportive of, public goals. An Official Map identifies priority parcels for preservation and can help the Township to secure grants to help fund the purchase of a conservation easement or land.

At least 64 municipalities in Pennsylvania have an Official Map (as of 6/2017) including 16 in neighboring Chester County. For example, East Bradford Township advanced its open space preservation program and implemented multi-use trails, Uwchlan Township developed an extensive, interconnected trail network, and Bushkill Township in Northampton County preserved important natural areas using the Official Map as a tool for preservation. For more information read The Official Map: A Handbook for Preserving and Providing Public Lands & Facilities at http://conservationtools.org/libraries/1/library_items/931.

Focus on Preservation (OS 2)

The Gilpin House at the Brandywine Battlefield Park

Map 2-10 was used as a guide for the Task Force on its open space tour to highlight unprotected, undeveloped parcels of land 10 acres or greater. In general, most land trusts consider 10 acres to be the minimum acreage desired for a conservation easement. However, properties of any size should be considered on a case by case basis according to their individual resource merits. The Open Space Committee can take the following steps to ensure the success of the open space preservation program.

- Pursue conservation easements on all municipally-owned and state-owned open space (Brandywine Battlefield Park) in the Township.
- Prepare a targeted landowner outreach plan that includes identification of key properties and its landowners and contacts, development of education/ outreach materials, hosting key property landowner outreach events, partnering with conservation organizations, and funding strategies.
- Set preservation goals (for example, the number of landowners to meet or properties to preserve by a specified date or year).
- Pursue active partnerships with local land trusts who can assist the Open Space Committee with landowner outreach and preparation of legal documents at a reasonable cost. Land trusts can also assist with a variety of land preservation tools such as donation of land or easement, purchase of land or easement, bargain sale, and conservation buyer.
- Pursue grant funding to leverage municipal open space funds for the purchase of lands in fee or for the purchase of conservation easements. There are multiple sources of funding available for land preservation, and the Township should never have to pay 100% of the cost to purchase land or a conservation easement. More detailed information on grant opportunities is provided in Chapter 4.

Engage in Land Development Review (OS 3)

Agricultural open space alongside development

The Township's zoning ordinance provides for an Open Space Conservation Option for new development (Article XXIV: Open Space Conservation Option). The purpose of this article is to provide for the design of single-family detached residential developments that foster the protection of critical natural resources and conserve open space. The provisions of this article are intended to protect streams, floodplains, wet soils, steep slopes, woodlands, and wildlife habitat areas and to permanently preserve open space to be used for passive and/or active recreation. The Open Space Conservation Option can also be utilized to minimize adverse impacts on properties devoted to agriculture. A property can be developed under the Open Space Conservation Option only if the land is in the R-1 District, in single ownership, and if the land (or tract of land) contains a minimum of 10 acres.

The Open Space Committee can take the lead to ensure that the Open Space Conservation Option is utilized to its greatest potential to benefit the Township's open space preservation program.

- Conduct a review of all preliminary and final land development applications and submit written review letters to the Board of Supervisors with the Committee's comments regarding the proposed configuration and use of open space.
- Land development applications that do not utilize the Open Space Conservation Option (and do not include an open space component) should also be reviewed for opportunities to implement the planned pedestrian and bicycle trail network (described on the next page).
- Consider whether open space created through the land development process should be dedicated and maintained by the Township for public use (active or passive) or remain in the ownership of the Homeowners Association for private use and/or other creative ownership and maintenance scenarios.
- Consider whether open space created through the Open Space Conservation Option should be placed under conservation easement to be held and enforced by a third party such as a local land trust.

People enjoy running outdoors on a natural surface footpath

3.2 Bicycle and Pedestrian Trails

Chadds Ford Township is situated at the crossroads of several planned trails including the regional Circuit Trails network of the greater Philadelphia region, Delaware County's Recreation Greenways, and the Brandywine Creek Greenway. The Township has the potential of becoming an important partner in the overall vision for trails in western Delaware County as it is the gateway to the Brandywine Trail, the Brandywine Creek Greenway, and popular trails in the First State National Historical Park.

During the open space tour, the Task Force considered whether undeveloped parcels of land 10 acres or greater would (or would not) be suitable for future recreational use and/or trails. The Task Force also identified other popular places within Chadds Ford Township that should be considered as destinations within a community trail system. Each Task Force member provided his or her thoughts regarding how residents may wish to access those popular places by foot or by bicycle. The input from the Task Force was mapped to show a long-term vision of pedestrian routes and bicycle routes in Chadds Ford Township.

A bicycle left to rest along the Struble Trail

A sharrow indicating shared road use

Conceptual Trail Routes

The Conceptual Pedestrian Trail Corridors Map 3-1 and Conceptual Bicycle Trail Corridors Map 3-2 illustrate a long-term vision for an integrated network of community and regional trails in Chadds Ford Township at a very conceptual level. These conceptual maps highlight what are anticipated to be popular destinations within the Township and how residents and visitors could access those destinations by foot or by bicycle in the future. Popular destinations include shops, restaurants, and museums in Chadds Ford Village, shops and restaurants at Dilworthtown, shops and businesses along the Route 202 corridor near Route 1, Brandywine Battlefield Park, First State National Historical Park, the municipal campus at Ring Road, and residential neighborhoods. Map 3-1 and Map 3-2 are not intended to show the actual alignment of each trail – their purpose is to illustrate conceptual connections among key destinations. The exact alignment of each planned off-road trail would be determined through future feasibility studies conducted for each trail segment, detailed design and engineering, and would involve substantial public participation, review, and comment.

There are several tools available to the Township to implement a community trail network including the purchase of land at appraised value, the purchase of conservation and/or trail easements at appraised value, the voluntary donation of land, dedication of land and implementation of trails through the land development process, and implementation of trails by other partners such as Delaware County, Concord Township, the Brandywine Conservancy, and others. The Township does not consider condemnation to be a tool for the implementation of the community trail network but does intend to work cooperatively with landowners that voluntarily agree to participate in trail implementation efforts.

There are seven types of bicycle and pedestrian facilities proposed including off-road and on-road facilities.

The River Trail at the Brandywine River Museum of Art

Off-Road Facilities

A Natural Surface Footpath is intended for use by pedestrians only. Trail surface can be mowed grass, compacted earth/mineral soil, or crushed stone depending upon the site conditions. The width is typically 4'-6' but can be as wide as 8'-10' depending upon the anticipated volume of use. Examples of a natural surface footpath include Harvey Run Trail (mowed), First State National Historical Park (mowed and mineral soil), Darlington Trails in Middletown Township (mowed and mineral soil), the Brandywine Trail (mineral soil), and John Heinz National Wildlife Refuge (mowed).

An Improved Surface Sidepath is intended for use by pedestrians and bicycles. The trail surface may be crushed stone or asphalt depending upon the context of the trail and the anticipated volume and type of users. The width can be between 6'-8', but 7' width is suggested for Chadds Ford Township. Examples of an improved surface sidepath include Sandy Hollow Park in Birmingham Township (asphalt), at Pocopson Township's municipal open space on Wawaset Road (asphalt), and at Kennett Township's Anson B. Nixon Park (crushed stone).

Sidewalks are intended for pedestrian use only and are constructed of cast in place concrete. A 5' wide concrete sidewalk is planned along Station Way in the heart of Chadds Ford Village as recommended in the Chadds Ford Village Master Plan and also along Brandywine Drive and Hillman Drive in the eastern end of the Township. Typical sidewalk widths are 5'-6'; however, a 4' width is permissible.

A Multi-Use Trail is a regional arterial trail that is intended for use by pedestrians and cyclists for recreation and active transportation. The trail surface can be crushed stone or asphalt, but asphalt is recommended for the PECO Corridor Trail - Phase 1, to be consistent with what is currently proposed for this trail in Concord Township. The width can be 8'-12', but a 10' width is consistent with multi-use trail design standards already planned in Concord Township and in Chadds Ford Village. Examples of multi-use trails include the Chester Creek Trail in Middletown Township, the Struble Trail north of Downingtown, the Brandywine Trail in East and West Bradford Townships, and the

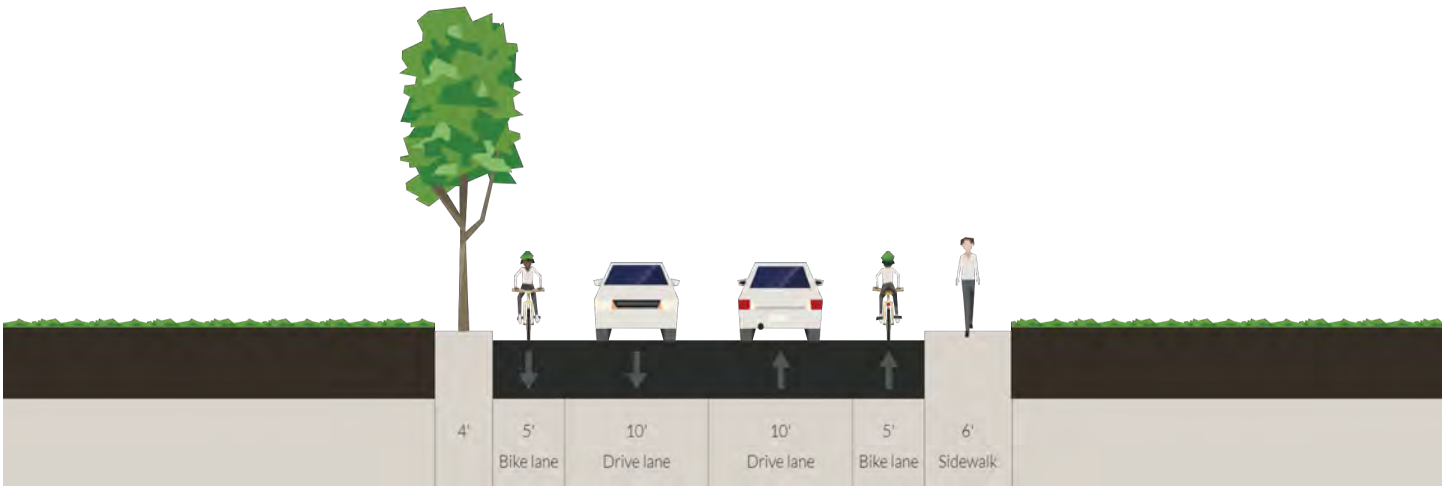
Chester Valley Trail in Chester County.

Each type of off-road trail envisioned within the Chadds Ford Township trail network has its own advantages and disadvantages. The following table, Figure 3-1 Off-Road Trail Surfaces, provides a summary of the various proposed off-road trail surface types described in this chapter.

Figure 3-1 Off-Road Trail Surfaces

Trail Surface	Advantages	Disadvantages
Crushed Stone	Accommodates a variety of users, can be compacted into a firm surface, compatible with the natural environment, moderately priced	Stone varies by source, will retain moisture thus vegetation will grow, can rut or erode with heavy rainfall, not suitable for flood-prone areas or steep slopes
Asphalt	Provides a hard, smooth surface, works well for bicycles, all weather, good for sloped sections, complies with ADA guidelines, provides access for emergency vehicles	High installation cost, costly to repair, construction vehicles need access
Mowed grass **Mineral soil**	Requires less preparation of the trail bed, costs substantially less, natural look, can be improved in the future, easy for volunteers to build and maintain	Maintenance requires fixing drainage problems, repairing eroded areas, removing unwanted vegetation, limited use, not ADA accessible in all situations
Wood Chips	Soft spongy surface, moderate cost, natural material	Decomposes, requires constant replenishment, not typically accessible, not appropriate for flood-prone areas

Source: Trails for the Twenty-First Century, Rails to Trails Conservancy, pp. 69-74



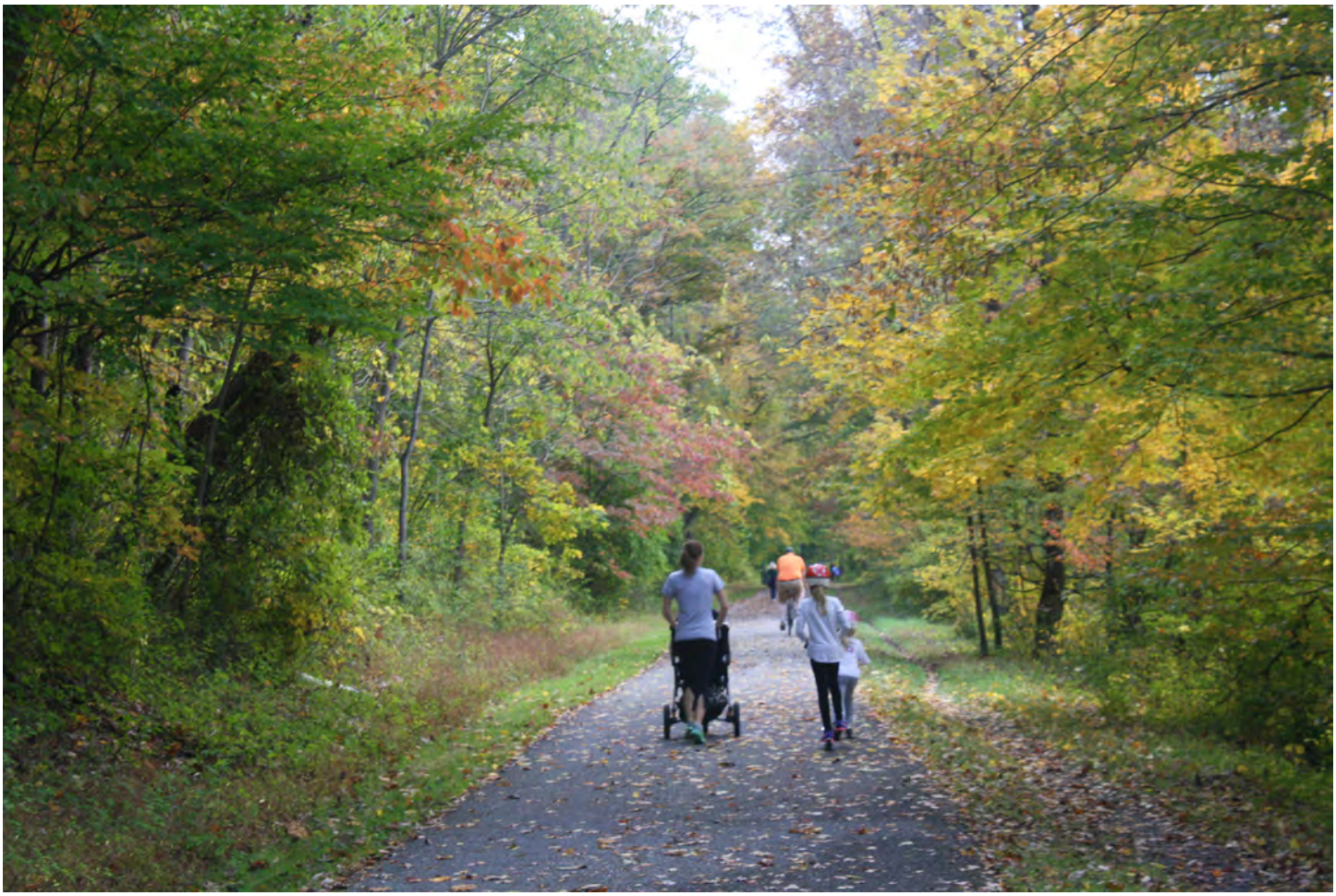
An example of a roadway with standard bike lanes and a sidewalk

On-Road Facilities

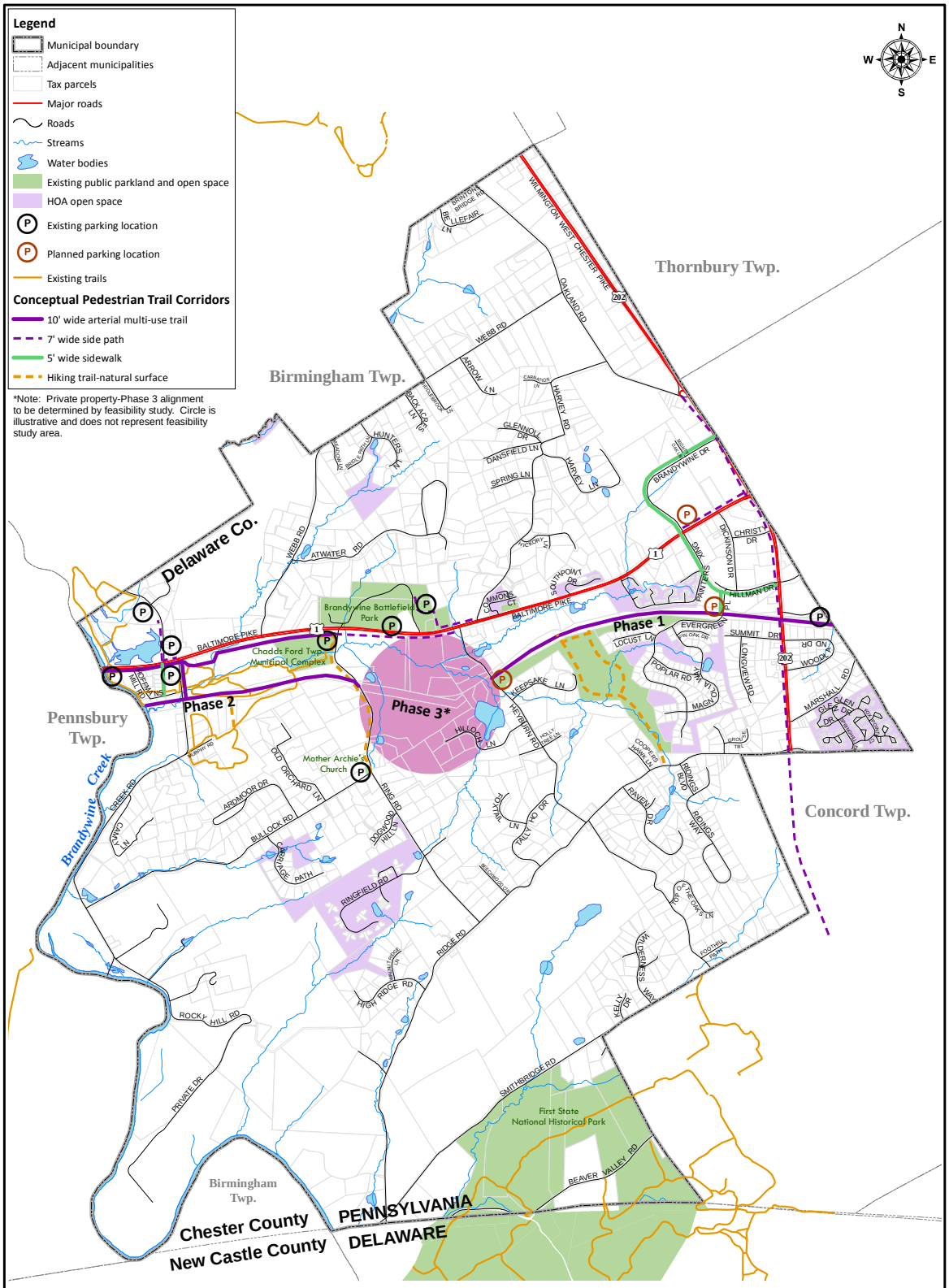
A Shared Use Lane is a signed bicycle route along existing low volume local PennDOT roads (Webb Road and Harvey Road), low volume rural major collector PennDOT roads (Oakland Road and Smithbridge Road), and municipal roads that are attractive to bicycles and currently being used by cyclists (Heyburn Road and Bullock Road). The existing asphalt roadways would be shared by vehicles and bicycles, and bicycle routes would be identified using signage and road striping (known as sharrows) to designate the shared use. While signage and striping do not improve safety for bicycles, they serve to alert motorists to be aware of bicycle traffic. They also serve as way-finding to help cyclists navigate through designated routes. The American Association of State Highway and Transportation Officials (AASHTO) recommends that bike route signs be placed every ¼ mile, at every turn, and at all signalized intersections. Examples of share the road signage can be found on Creek Road in Chadds Ford Township (BicyclePA Route L). Sharrows can be viewed on Lincoln Way in Swarthmore.

A Standard Bike Lane is separated from the travel lane with line striping at a minimum, is one-way, and flows in the direction of the adjacent vehicle travel lane. Cars are not allowed to drive here except when avoiding obstacles or merging to make a turn. Cars and trucks' ability to stop or stand in these lanes varies depending on the location. Bike lanes can be designed along Brandywine Drive and Hillman Drive. Bike lanes are commonly used in urbanized areas and suburban centers such as Philadelphia and West Chester.

A Cycle Track is a two-directional bicycle facility that is separated from the travel lane with a physical barrier. A cycle track is envisioned on the north side of Route 1 between Webb Road and Creek Road as part of the Walkable Chadds Ford planned improvements.



A family enjoys a paved multi-use trail



Map 3-1

Conceptual Pedestrian Trail Corridors

Comprehensive Parks, Recreation, and Open Space Plan Update

Chadds Ford Township, Delaware County, Pennsylvania

Conceptual Pedestrian Trail Corridors (Map 3-1)

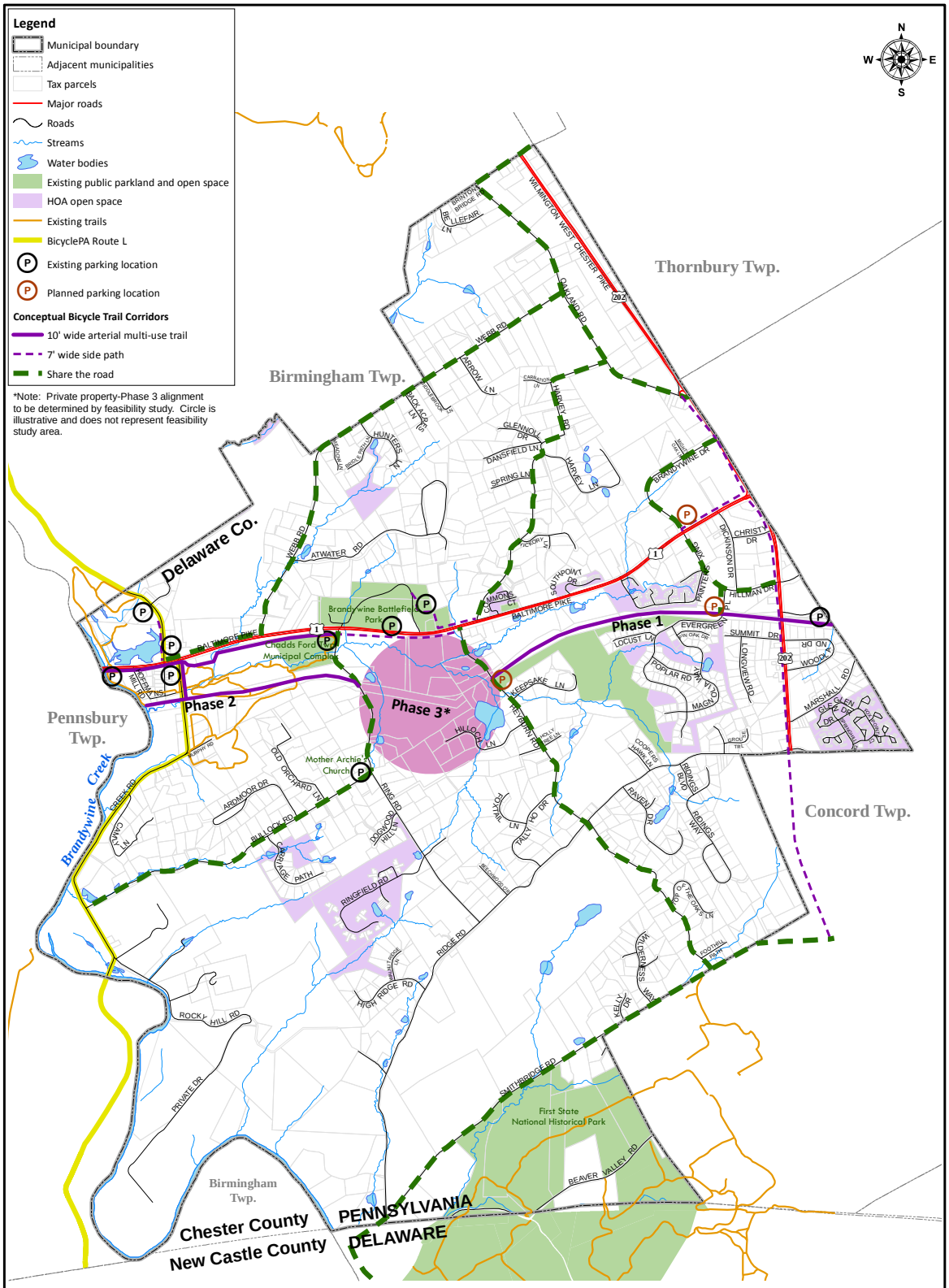
Pedestrian trail corridors were identified by members of the Task Force and were reviewed in the context of a variety of factors including topography, patterns of residential land development, field surveys, existing rights-of-way, open space and parks, and utility corridors. Information was also gathered from the key person interviews (see Appendix B). The PECO corridor is envisioned as a major pedestrian route that crosses from the eastern border of the Township to the western border at the Brandywine Creek. Most proposed pedestrian facilities link into the PECO corridor.

Existing Pedestrian Routes

Brandywine Conservancy & Museum of Art lands and the First State National Historical Park already include over 23 miles of natural surface trails that are open to the public free of charge. Chadds Ford residents already take advantage of these nearby recreational opportunities. Approximately 5 miles of natural surface footpaths currently exist on the Brandywine Conservancy & Museum of Art campus. A boardwalk with observation platform crosses a wetland north of Route 1 and connects the Brandywine Conservancy & Museum of Art campus to the Chadds Ford Historical Society. The Harvey Run Trail connects the Chadds Ford municipal campus at Ring Road to the Brandywine River Museum of Art and is approximately 1 mile long.

Conceptual and/or Proposed Pedestrian Routes (BP 3- BP 19)

- 10’ wide paved multi-use trail along the PECO Corridor Trail from Route 202 to the Heyburn Road municipal open space (Phase 1, 1.4 miles)
- 10’ wide paved multi-use trail, from the Brandywine Creek to the Kuerner Farm (Phase 2, 0.8 mile)
- 10’ wide paved multi-use trail, location to be determined, from the Heyburn Road municipal open space to the Kuerner Farm (Phase 3, Mid-Connector Trail, 0.5 mile). This portion of the route will involve crossing private property and will require a feasibility study to determine the extent of the study area and the trail route. See Map 3-1.
- 10’ wide multi-use trail along the south side of Route 1 from Ring Road to the Brandywine Creek (funded through Walkable Chadds Ford initiative)
- 7’ wide paved side paths
  - » West side of Route 202 from Oakland Road to Smithbridge Road (partnership with Concord Township)
  - » Along the north side of Baltimore Pike between Brandywine Drive and Route 202
  - » Along the south side of Baltimore Pike from Ring Road to Heyburn Road
  - » From the Chadds Ford Historical Society to Route 1
  - » From the Brandywine Battlefield Park and Painter’s Folly to Harvey Road
- 5’ wide paved sidewalk
  - » Along Station Way from Route 1 to Hoffmans Mill Road
  - » Along Brandywine Drive
  - » Along Hillman Drive
  - » Along Evergreen Place
- 6’ wide natural surface footpaths
  - » From Chadds Ford municipal campus to Mother Archie’s Church
  - » Loop trail at Heyburn Road municipal lands
- Trailhead facilities/parking areas
  - » Wegmans (existing)
  - » Municipal open space at Evergreen Place (proposed)
  - » Heyburn Road municipal open space (proposed)
  - » Brandywine Drive at Route 1 (proposed)
  - » Battlefield Park, two lots (existing)
  - » Chadds Ford municipal building (existing)
  - » Mother Archie’s Church (existing)
  - » Shops at Chadds Ford (existing)
  - » Chadds Ford Historical Society (existing)
  - » Brandywine River Museum of Art (existing)
  - » Chadds Ford Post Office (existing)



Map 3-2
Conceptual Bicycle Trail Corridors

Comprehensive Parks, Recreation, and Open Space Plan Update

Chadds Ford Township, Delaware County, Pennsylvania

Conceptual Bicycle Trail Corridors (Map 3-2)

Bicycle routes include paved multi-use trails and share-the-road routes. Currently there is one designated bicycle route in Chadds Ford that is BicyclePA Route L on Creek Road. Planned bicycle routes were identified by the Task Force, with input from experienced local cyclists, as the safest and most frequently used routes for bicycles in Chadds Ford. As with the pedestrian trails, the bicycle trails and routes are designed to link destinations and residential neighborhoods into the major PECO east-west corridor trail.

Existing Bicycle Routes

Bicycle PA Route L follows Creek Road from Chadds Ford Historical Society to the Brandywine Creek at Twin Bridges. It is a signed share the road bicycle route and currently the only existing bicycle route in Chadds Ford Township.

Conceptual and/or Proposed Bicycle Routes (BP 20- BP 28)

- 10’ wide paved multi-use trail along the PECO Corridor Trail from Route 202 to the Heyburn Road municipal open space (Phase 1, 1.4 miles)
- 10’ wide paved multi-use trail, from the Brandywine Creek to the Kuerner Farm (Phase 2, 0.8 mile)
- 10’ wide paved multi-use trail, location to be determined, from the Heyburn Road municipal open space to the Kuerner Farm (Phase 3, Mid-Connector Trail, 0.5 mile). This portion of the route will involve crossing private property and will require a feasibility study to determine the extent of the study area and the trail route. See Map 3-1.
- Walkable Chadds Ford multi-use trail from Ring Road to the Brandywine Creek
- 7’ wide paved side paths: (CFT lead, partner with businesses and Delco)
  - » West side of Route 202 from Oakland Road to Smithbridge Road (partnership with Concord Township)
  - » Along the north side of Baltimore Pike between Brandywine Drive and Route 202
  - » Along the south side of Baltimore Pike from Ring Road to Heyburn Road
  - » From the Chadds Ford Historical Society to Route 1
  - » From the Brandywine Battlefield Park and Painter’s Folly to Harvey Road
- On-road signed bicycle routes
  - » Webb Road from Route 1 to Oakland Road
  - » Harvey Road from Route 1 to Oakland Road
  - » Oakland Road/Brinton Bridge Road to Route 202
  - » Ring Road from Route 1 to Bullock Road
  - » Bullock Road from Ring Road to Creek Road and BicyclePA Route L
  - » Heyburn Road from Route 1 to Smithbridge Road
  - » Route 1, southbound, from Webb Road to Creek Road, cycle track
  - » Brandywine Drive from Route 202 to Route 1
  - » Hillman Drive from Route 1 to Route 202
  - » Evergreen Place from Hillman Drive to the PECO corridor
  - » Smithbridge Road from Brandywine Creek to Route 202 (partner with Concord Township)
- Trailhead facilities/parking areas (same as pedestrian trailheads)
  - » Wegmans (existing)
  - » Municipal open space at Evergreen Place (proposed)
  - » Heyburn Road municipal open space (proposed)
  - » Brandywine Drive at Route 1 (proposed)
  - » Battlefield Park, two lots (existing)
  - » Chadds Ford municipal building (existing)
  - » Mother Archie’s Church (existing)
  - » Shops at Chadds Ford (existing)
  - » Chadds Ford Historical Society (existing)
  - » Brandywine River Museum of Art (existing)
  - » Chadds Ford Post Office (existing)

Site Feasibility

Each of the inventory maps provided in Chapter 2 was used as a reference to determine where it may be feasible to construct new trails. The Task Force toured the Township to review the potential of undeveloped parcels of land for recreation and/or trails, and several opportunities were identified. Constraints for new trails are likely to include private property, driveway crossings, railroad crossings, road crossings, existing easements, stream crossings, woodland vegetation, steep slopes, floodplain, wetlands, proximity to roads, and proximity to residential areas. Careful design and engineering will be required if trails are to be located in physically constrained areas. As a general rule, disturbance to wetlands will be avoided. The Township's consulting botanist should conduct a field investigation to identify sensitive plant communities as well as significant woodlands. Trails which run in close proximity to Natural Heritage Areas and other sensitive landscapes should include fencing or landscape barriers to discourage access to sensitive natural areas.

Trail Use and Users

The Chadds Ford Township community trails will be used primarily by Chadds Ford residents for exercise, recreation, and travel within the Township. Users from outside the Township will use the multi-use trail and shared use lanes as they connect from Concord Township, Birmingham Township, Pennsbury Township, and New Castle County, Delaware. The paved off-road trail facilities will accommodate only non-motorized users including pedestrians and bicycles and will accommodate several types of bicycle travel including commuting, recreation, and touring. All paved off-road trails will be designed to meet the standards outlined in the Americans with Disabilities Act (ADA). Natural surface footpaths and improved surface side paths will accommodate pedestrians and possibly bicycles depending upon site conditions and terrain. It is anticipated that portions of the natural surface footpaths and improved surface side paths will be designed to meet ADA standards. Figure 3-2 Trail User Types describes the users and basic design standards for each type of trail.

Figure 3-2 Trail User Types

	Pedestrians	**Bicyclists**
Types	Includes walkers, joggers, runners, those with baby strollers, bird watchers, mobility- assisted, etc.	Includes commuters, recreational, touring, mountain bikers
Travel/Design Speeds	3 to 7 mph	10-30 mph
Tread Width	High Use: 6'-8'	Multi-Use Trails: 12'-14'
Vertical Clearance	7' minimum	8' minimum

Source: Trails for the Twenty-First Century, Rails to Trails Conservancy, pp. 69-74

General Trail Guidelines

The Delaware County Planning Department published the Community Trails Planner's Portfolio in March 2017 which provides a narrative on the planning and design of pedestrian paths and multi-use trails in Delaware County. It is a good resource to learn basic information regarding Delaware County's vision for multi-use trails, earthen trails, on-road bicycle facilities, road crossings, and trail amenities in Delaware County. The publication is included in Appendix D.

Various other public agencies have published design recommendations for trails. Each examines general design guidelines and criteria such as safety, screening, landscaping, and accessibility. The descriptions and design parameters described in this Chapter are based on best practices, design standards, and guidelines from the following publications.

- Design Manual Part 2 (DM-2): Highway Design, Publication 13M, PennDOT, 2015
- Smart Transportation Guidebook, PennDOT and NJDOT, 2008
- A Policy on Geometric Design of Highways and Streets, 6th Edition, American Association of State Highway and Transportation Officials (AASHTO), 2011
- Guide for the Development of Bicycle Facilities, 4th Edition, American Association of State Highway Officials (AASHTO), 2012
- Guide for the Planning, Design, and Operation of Pedestrian Facilities, American Association of State Highway Officials (AASHTO), 2004
- Manual on Uniform Traffic Control Devices, Federal Highway Administration, 2009

Trail Safety

The most important element of trail design is safety. The primary safety issues within the trail network include lighting and visibility. Off-road bicycle trails and pedestrian paths that parallel local roadways are highly visible and are considered to be the safest type of trails. Their high visibility facilitates the enforcement of trail rules and increases user safety. Security concerns tend to increase where trails cross less visible lands. However, the majority of security problems reported along established trail networks occur in parking areas and trailheads where vehicular access is provided. In its Community Trails Handbook (1997) the Brandywine Conservancy recommends the following trail design features for safety and security.

- To the greatest extent feasible, trails should be visible from public roads, public parks, and buildings.
- Parking facilities and trailheads should be located where there is a high degree of visibility and human activity.
- Trail use should be limited to daylight hours to reduce problems associated with visibility.
- To the greatest extent feasible, the number of locations where a trail crosses a public roadway should be minimized.
- Where trails cross a public road, adequate signage, adequate sight distances, clear views at the trail crossing, and crosswalk striping should be provided.

Chadds Ford Township is patrolled by the Pennsylvania State Police, Troop K, out of Media, PA. During daylight hours when the trails are open for public use, particularly on the weekends when visitation will likely be highest, periodic patrols of the trail by Township staff or resident volunteers should be routine. The Township could consider recruiting and training volunteer stewards to help patrol the trails during peak use periods. Many of these stewards could be recruited from adjacent neighborhoods.

Landscaping

Landscaping is an important design consideration for trails, especially in areas where trails are in close proximity to existing residential development. Vegetation along a trail makes it more scenic and interesting and can also be used to enhance privacy, reduce the effects of wind, create oases of shade, and frame scenic views. In its Community Trails Handbook (1997) the Brandywine Conservancy recommends the following.

- Leave a five-foot groomed area adjacent to a trail to enhance visibility. The cleared shoulder also provides an area where users may step off the trail and rest without obstructing other trail users.
- Shade trees should be planted to provide shelter from the sun and the heat in the summer.
- Evergreens may be used to provide a wind break from winter winds or to enhance privacy for adjacent landowners.
- Landscaping along the trail can be used to create an identity for the trail with signature features such as fencing, boulders, or specimen trees.
- Vegetation with thorns or prickly leaves can be used to discourage trail users from leaving the trail corridor and trespassing on adjacent property.
- Fences and earthen berms can be used to keep trail users on the trail.
- Trails should provide for access by safety patrols, either vehicular or bicycle.

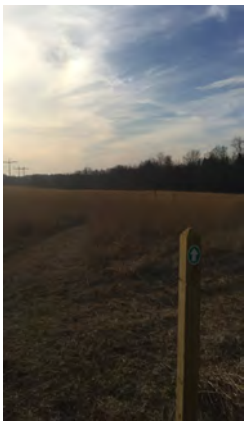
Accessibility

The Township's goal is to provide trail facilities and experiences for all ages and abilities including the physically handicapped. In order to facilitate trail usage by physically handicapped individuals, the following design standards should be considered (from the Community Trails Handbook, Brandywine Conservancy, 1997).

- Wheelchair users prefer hard surface trails such as asphalt or compacted stone.
- Limit trail grades (slopes) to 5% or less (only 1-foot grade change over 20 feet).
- In order for two wheelchairs to pass, a ten-foot wide trail is required.
- Provide ramps and designated handicapped parking areas at trailheads.

All trails that are intended to provide access to the physically handicapped must be designed in accordance with American with Disabilities Act (ADA) standards and requirements.

Signage



There are three types of signage that can be used along the trail.

Regulatory signs are used for providing operational instructions and for traffic control. They include stop and yield signs, right-of-way signs, and speed limit signs. Stop signs should be installed for trail users where the trail intersects a roadway.

Cautionary signs should be placed along roadways where there are trail crossings to warn motorists of pedestrian and bicycle traffic. These signs identify potentially hazardous conditions along the trail so that trail users can reduce their speed and be more aware of their surroundings. Such signs are typically near intersections, tunnels, and bridges. They may also indicate grade changes, steep slopes, or changes in surface conditions. The U.S. Department of Transportation's Federal Highway Administration (FHWA) Manual on Uniform Traffic Control Devices details standardized shapes and colors for trail signs. For more information go to www.mutcd.fhwa.dot.gov.

Informational signage is non-regulatory and is used to provide trail users with trail-related information. It can be used to orient users to the surrounding areas, identify important support facilities such as water and restrooms, or highlight local points of interest along the trail. Distance markers can be used to orient trail users, and informational kiosks along the route help to make users more familiar with their surroundings. Trail maps can be provided in kiosks to show trail connections, pedestrian trails, bicycle trails, and connections to parks, schools, and local attractions. Signs can be used to describe natural, historic, and cultural attractions along the route.

Guidelines for Good Trail Alignment

Sections of pedestrian trails are envisioned along creeks and stream corridors. These corridors perform important open space, greenway, and habitat functions and may have site constraints that impact trail design. Floodplains are conducive to trails development because of their relatively flat and linear nature but require special design, planning, and maintenance. The following basic rules should be applied to trail design in general (from Lightly on the Land, Student Conservation Association, 2nd edition, 2005).

- Take advantage of south-facing slopes
- Stay on ground that drains well
- Bypass large trees or rocks
- Contour the route into and out of drainages
- Incorporate grade dips
- Route the trail to incorporate scenic overviews and natural features
- Avoid sensitive natural areas such as wetlands and areas critical for wildlife feeding and breeding
- Be sensitive to fragile plant communities, and limit disturbance to fragile or endangered species
- Locate trails to avoid bridges which can be costly and high maintenance
- If the trail must cross wet areas, use bridges or boardwalks that minimize obstruction to flood waters
- Do not add fill. If gravel or asphalt is required to construct the trail, remove an equal amount of soil and sub-grade material to maintain an unimpeded flood pathway

Trailheads

Trailheads are locations where the trail network can be easily accessed. They vary in their design and complexity based upon their location and the number and type of potential trail users. A simple trailhead would service the Chadds Ford community and would provide access to a single trail with minimal facilities. A more developed trailhead would serve a minimum of two trails or a regional trail and would provide a variety of facilities such as parking, informational signage, drinking water, or public washrooms.

In its publication Trails for the Twenty-First Century, the Rails-to-Trails Conservancy recommends trailhead facilities for trail access points.

- Parking areas
- Trash and recycling receptacles
- Directional signage and trail maps
- Connector trails to the main trail
- Gated entries to the trail to prevent unauthorized vehicular access, while still

allowing bicycles and pedestrians to access the trail
- Handicapped access including a gate to accommodate a wheelchair, appropriate surface treatment, and handicapped parking facilities within 100 feet of the trail
- Sitting areas
- Shade/shelters

More developed trailheads should provide a greater number of facilities. The following additional facilities can be considered for major trailheads.

- Interpretive signage
- Picnic areas
- Bicycle racks
- Information booth or kiosk
- Drinking fountain
- Landscaping, such as shade trees or wind breaks
- Security fencing
- Lighting
- Bike tire air pump

Potential Benefits of Trails

The many benefits of greenways and trails are documented in Benefits of Greenways: A Pennsylvania Study which was published by the Pennsylvania Greenways Partnership in 2002.

Health and Fitness

According to the 2014-2019 Pennsylvania Outdoor Recreation Plan published by the Department of Conservation and Natural Resources (DCNR), walking was identified as the top most popular outdoor activity in Pennsylvania as over 70% of the population participated in walking activities. Creating new opportunities for walking and biking can encourage a more active lifestyle and improve overall health and fitness. In its publication A Step in the Right Direction, the American Hiking Society describes the many physical and mental health benefits of hiking and trails. Such benefits include weight loss, prevention of heart disease, decreasing blood pressure, improved mental health, preventing osteoporosis, controlling diabetes, and relieving arthritis and back pain.

Transportation Options

Trails provide a means of connecting popular destinations that may otherwise be only accessible by car. If planned strategically, trails can provide links to a network of open spaces, parks, shopping areas, schools, churches, and other semi-public facilities. People are more likely to use an alternative means of transportation, such as walking or biking, if a trail is easily accessible and safe to use.

Educational Advantage

Trails are often located in natural areas such as along creeks or hedgerows. They can be designed to bring users closer to the flora and fauna that are unique to that place or to places of historic interest. Education is enhanced with placement of interpretive signage along the trail routes. Trails can become outdoor education centers for history, science, and biology and facilitate the connection between people and our natural environment.

Environmental Protection

The green corridors that are associated with trails, or greenways, are beneficial to the environment. They provide linear networks of natural habitat that many species of wildlife depend on for food and shelter. Green corridors promote biodiversity as they provide avenues for separate populations to inter-breed and maintain genetic diversity. Greenways and trails also promote walking and biking as alternative means of transportation, thereby reducing automobile emissions.

Social and Cultural Implications

Where trails connect neighborhoods, schools, churches, parks, and other popular destinations there is a greater sense of community. Trails become places in themselves where people gather, meet, and engage in conversations or share the latest news. Trails encourage healthy interaction among neighbors and strengthen sense of community.

Economic Impact

Communities and businesses prosper in areas where recreational trails provide health, recreation, and fitness features. Outdoor adventure and tourism is a rapidly growing industry in Pennsylvania and throughout the country. As trails become more popular, recreation-related industries will grow.

Feasibility of Community Trails

Local Support

Since completion of the 2007 Open Space Plan, the Chadds Ford Township Open Space Committee has been actively engaged in community trail planning with the Harvey Run Trail and Walkable Chadds Ford efforts. Both projects have received tremendous public support and have been very successful. The Harvey Run Trail is used daily by Chadds Ford residents and visitors, and the Walkable Chadds Ford initiative is well underway with $1 million in funding pledged by the Pennsylvania Department of Community and Economic Development. These two successful efforts demonstrate the Township's commitment to trails. As described in Chapter 2, of those residents who responded to the community survey, 73% indicated that walking/jogging trails were extremely important, 67% indicated that hiking was important, and 45% thought that biking was important.

Future Opportunities

Township Open Space

Chadds Ford Township owns four properties that can be incorporated into the community trail network. Those properties include the municipal building and campus with 19 acres, the Heyburn Road municipal open space with 58 acres, Mother Archie's Church with 0.5 acre, and Painter's Folly with 3.4 acres. Each of these municipally-owned properties will become a destination in the trail network and may provide opportunities to expand or introduce new parking facilities.

Semi-Public Open Space

The Brandywine Conservancy & Museum of Art owns over 300 acres of land at its Chadds Ford campus next to the Brandywine Creek. Although portions are extensively developed with the museum and its supporting facilities, there remain opportunities for new trails where connections are desired. For example, trails could be expanded to provide more direct access to the Wyeth Studios from the Brandywine River Museum of Art and to introduce access to the Kuerner Farm.

Owned and Eased Lands

There are several utility corridors that transect Chadds Ford Township on the south side of Route 1. The Philadelphia Electric Company (PECO) (an Exelon Company) owns a corridor of land that runs from the Brandywine Creek to Route 202. Although much of the land is owned by PECO, portions are privately-owned with easements granted to PECO for its utility lines. Since these corridors are kept largely cleared of vegetation and other obstructions, they offer opportunities for new trails. PECO is known to be extremely cooperative with granting trail lease agreements on PECO property, and a lease agreement can be negotiated in a short time for a relatively modest annual fee.

An inactive rail line owned by SEPTA (Southeastern Pennsylvania Transportation Authority), also known as the Octoraro line, runs adjacent to the PECO corridor. Much of the SEPTA corridor in Chadds Ford Township occurs on lands owned by PECO.

A Columbia Gas pipeline runs in very close proximity to the PECO and SEPTA corridors. The pipeline crosses private property with easements granted by landowners including PECO. Pipeline entities are open to collaboration on trail projects, provided the landowner grants a trail easement and the trail is not located directly above the underground pipeline. All utilities require design drawings and specifications for a proposed trail before they will engage with the Township in lease agreement negotiations.

Conservation Easements

Several privately-owned parcels are subject to a conservation easement which restricts development. Although development is restricted, there may be opportunities for the Township to negotiate with the landowners to acquire a trail easement for public access to the property. Eased properties are found throughout the Township, most notably on several parcels that border the Brandywine Creek.

HOA-Owned Open Space

Several subdivisions in the Township were developed under the Open Space Conservation Option. This has resulted in 194 acres of permanently protected open space throughout the Township in subdivisions such as Ringfield, Painters Crossing, and the Estates at Chadds Ford. Open space owned by a Homeowners Association provides opportunities for trail expansion into neighborhoods which may become key destinations within the trail network. The Township can negotiate with Homeowners Associations to acquire a new trail easement in commonly-owned open space.

Roads/Public Rights-of-Way

In Chadds Ford Township most of the roadways do not have sufficient right-of-way width (33 feet) to accommodate an off-road trail. In the more contemporary residential subdivisions, road rights-of-way are designed at 50 feet wide and in many cases have sufficient room to include an off-road trail. On Township roads where the right-of-way is narrow, traffic counts are low, speeds are low, and sight lines are favorable, it is possible to designate those roads as “shared” bicycle routes. This would require signage to alert motorists to a “share the road” condition. A “share the road” scenario typically refers to an on-road bicycle/wide travel lane, not a hiking lane. Wherever possible, off-road trails are preferred.

Estimated Costs

Implementation Costs

While it may seem a daunting proposition to implement each of the pedestrian and bicycle facilities shown on Map 3-1 and Map 3-2, there are many partners that will be involved in various projects over time and will take the lead with fundraising, planning, design, engineering, construction, and maintenance. The Township anticipates that the following trail segments will be implemented by others.

- PECO corridor – Delaware County Planning Department, Brandywine Conservancy & Museum of Art (High Trail Bridge to Creek Road)
- Paved side paths – several sections can be constructed through the land development process
- Natural surface hiking trails – several sections could be constructed through the land development process or by current landowners such as the Brandywine Conservancy & Museum of Art

There are many costs associated with the planning, design, engineering, construction, and maintenance of a new trail. Perhaps the first cost to be considered is the cost to purchase land in fee, a trail easement, or lease agreement from a willing landowner. Figure 3-3, Figure 3-4, and Figure 3-5 provide a summary of the typical costs at a very high level including generalized trail easement costs per linear or square foot, bridge and road crossing assumptions, estimated construction cost by terrain type, and other trail facilities costs. More detailed cost estimates are typically prepared during the feasibility study phase of a trail project. The estimated construction costs can be increased by more than $15 per square foot where the trail crosses woodlands, steep slopes, or floodplains. The basic overland cost includes the cost of design, engineering, construction, and stormwater management.

Figure 3-3 Generalized Trail Easement Costs

Average Easement $/Acre	$31,240
Average Easement $/SF	$ 0.71
Average Easement $ per linear ft (assume 20' width)	$ 14.34

Figure 3-4 Bridge and Road Crossing Cost Assumptions

	Crossing <5ft	**Crossing >5ft <10ft**	**Crossing >10ft**	**Roadway Overpass**
Bridge	$ 10,650	$ 21,300	$ 35,000	$200,000- $1,000,000
	Driveway Crossing	**Railroad Crossing**	**State Road Crossing**	**Township RD Crossing**
Surface Crossing	$ 2,550	$ 6,900	$ 6,900	$ 5,500

Figure 3-5 Estimated Construction Costs by Terrain Type

	Basic Overland Cost	Steep Slopes (additional cost)	Through Woodlands (additional cost)
On-Road Bicycle Route (Signs & Lines)	$0.48/LF		
Stone Dust Trail	$10/SF	$10/SF	$10/SF
Mowed Trail	$5/SF	$10/SF	N/A
Paved Trail	$15/SF	$10/SF	$10/SF

Figure 3-6 Other Trail Facilities Costs

Trail Feature	Cost per foot	Cost per unit
Landscaping	$4.73	
Fencing	$20	
Restrooms		$40,000
Parking lot: 10 cars		$10,000
Information sign		$1,000
Direction/warning signs		$200
Bike racks		$500
Bench		$500
Drinking fountain		$2,000

General Trail Maintenance Costs

As the Township pedestrian and bicycle trail network is completed it will be maintained by various partners including Chadds Ford Township, Delaware County, PennDOT, the Brandywine Conservancy, Homeowners Associations, and potentially other new partners. Effective management is critical for the ultimate acceptance and success of the trail system.

The tables on the next page identify estimated costs per unit associated with maintenance of stone dust trails, mowed trails, and paved trails. The following maintenance costs were obtained from Trails for the Twenty-First Century, Rails to Trails Conservancy, 2001 (with adjustments up 42% to reflect an average inflation rate of 2.08%/year).

Figure 3-7 Annual Maintenance Costs - Stone Dust Trails

Task	Times per Year	Cost/Mile	Cost/Ft
Drainage and storm channel maintenance	2	$710	$0.13
Sweep/blow debris from trailhead	4	$1,700	$0.32
Pick up/removal of trash	8	$1,700	$0.32
Weed control and vegetation management	2	$1,420	$0.27
Mow 2ft grass shoulder	4	$1,700	$0.32
Minor repairs to trail furniture/safety features	2	$710	$0.13
Maintenance supplies for Public Works crew	N/A	$710	$0.13
Equipment fuel and repairs	N/A	$1,420	$0.27
Total Annual Costs		**$10,070**	**$1.89**

Figure 3-8 Annual Maintenance Costs - Mowed and Mineral Soil Trails

Task	Times per Year	Cost/Mile	Cost/Ft
Drainage and storm channel maintenance	1	$710	$0.13
Pick up/removal of trash	4	$1,700	$0.32
Weed control and vegetation management	2	$1,420	$0.27
Mow 8ft grass trail	10	$3,408	$0.65
Maintenance supplies for Public Works crew	N/A	$710	$0.13
Equipment fuel and repairs		$1,420	$0.27
Total Annual Costs		**$9,368**	**$1.77**

A paved neighborhood trail

Figure 3-9 Annual Maintenance Costs - Paved Trails

Task	Times per Year	Cost/Mile	Cost/Ft
Drainage and storm channel maintenance	2	$710	$0.13
Sweep/blow debris from trailhead	4	$1,700	$0.32
Pick up/removal of trash	8	$1,700	$0.32
Weed control and vegetation management	2	$1,420	$0.27
Mow 2ft grass shoulder	4	$1,704	$0.32
Minor repairs to trail furniture/safety features	2	$710	$0.13
Maintenance supplies for Public Works crew	N/A	$710	$0.13
Equipment fuel and repairs		$1,420	$0.32
Total Annual Costs		**$10,074**	**$1.94**
Trail resurfacing (asphalt) (every 7-15 years resurface and replace)	Not Included	$ 74,900	$14.18

Recommendations for Bicycle/Pedestrian Network

Adopt an Official Map (BP 1)

The Official Map identifies public improvements goals of a municipality and is used to help implement those goals. The Official Map can be used to prioritize land for purchase, donation, easement, or lease agreement for use as public trails.

Cultivate Partnerships (BP 2)

The Township places the highest priority on land preservation and will endeavor to work closely and discretely with landowners to preserve private lands of 10 acres or greater. When large parcels are not preserved and are proposed for new development, certain optional provisions of the zoning ordinance (Article XXIV: Open Space Conservation Option) can be utilized to protect sensitive natural areas and permanently preserve open space for recreation and trails. Whether privately-owned land is preserved through donation, purchase, or through the Open Space Conservation Option, the future recreational use of that land will be determined through negotiations with the landowner (or developer), conceptual design, detailed design, and engineering. Each of the planning phases for the open space will involve several opportunities for public participation, review, and comment.

Improve Trailheads (BP 3- BP 7)

Enhance existing trailheads on municipal lands.

- Chadds Ford municipal building
- Mother Archie's Church

Pursue construction of new trailheads as opportunities arise with partners and through the land development process.

- PECO and municipal lands at Evergreen Place(at entrance to the Estates at Chadds Ford)
- Brandywine Drive at Route 1
- Heyburn Road municipal open space

Implement Pedestrian and Bicycle Facilities (BP 8- BP 27)

Trail users enjoy bicycling along a multi-use trail

Delaware County will be an important partner for the feasibility study, design, engineering, and construction of the PECO Corridor Trail. Chadds Ford Township will take the lead for the feasibility study, design, engineering, and construction of the following local/community bicycle and pedestrian facilities, as deemed appropriate.

- 10' wide multi-use trail along the south side of Route 1 from Ring Road to the Brandywine Creek (funded through Walkable Chadds Ford initiative)
- 5' wide paved sidewalk
  - » Along Brandywine Drive/Hillman Drive
  - » Along Station Way from Route 1 to Hoffmans Mill Road (funded through Walkable Chadds Ford Initiative)
- 7' wide paved side paths
  - » West side of Route 202 from Oakland Road to Smithbridge Road (partnership with Concord Township)
  - » Along the north side of Baltimore Pike between Brandywine Drive and Route 202
  - » Along the south side of Baltimore Pike from Ring Road to Heyburn Road
  - » From the Chadds Ford Historical Society to Route 1
  - » From the Brandywine Battlefield Park to Harvey Road
- 6' wide natural surface footpaths
  - » From Chadds Ford municipal campus to Mother Archie's Church
  - » Loop trail at Heyburn Road municipal lands
- On-road signed bicycle routes
  - » Webb Road from Route 1 to Oakland Road
  - » Harvey Road from Route 1 to Oakland Road
  - » Oakland Road from Brinton Bridge Road to Route 202
  - » Ring Road from Route 1 to Bullock Road
  - » Bullock Road from Ring Road to Creek Road and BicyclePA Route L
  - » Heyburn Road from Route 1 to Smithbridge Road
  - » Smithbridge Road from Brandywine Creek to Route 202 (partner with Concord Township)
  - » Route 1/Baltimore Pike, from Creek Road to Webb Road
  - » Brandywine Drive and Hillman Drive to Route 202 and Evergreen Place

A song sparrow enjoys a park setting in a park owned by a nearby municipality

3.3 Parks and Recreation Facilities

Recreational Needs Summary

Chadds Ford residents currently travel to other municipalities to utilize active recreational facilities. In the short term, Chadds Ford Township will continue to use facilities outside of the Township at the BYC Fields, Concord Township Park, the Concord Township Campus, Clayton County Park, Thornbury Park, and other facilities.

Additional sites conducive to new active recreational facilities may need to be explored. Considering the cost per acre for land acquisition, the Township should consider working through the land development process to create smaller neighborhood parks as new residential developments are proposed and begin to create a network of smaller recreational facilities throughout the Township. The Township can also utilize existing municipal lands at Ring Road and Heyburn Road to introduce new recreational facilities for residents.

Chadds Ford Township Park Conceptual Master Plan

As shown on the Chadds Ford Township Park Conceptual Master Plan, the key features include: a gazebo/pavilion, play equipment, walking path, picnic tables, and pollinator garden. The walking path connects to the existing Harvey Run Trail on the property and will provide a link from the parking area on the south side of the municipal building to the trailhead on the eastern side of the municipal building. In addition, the Chadds Ford Township Park will be located adjacent to the existing parking area and will provide visitors with easy access.

The general costs for park facility enhancement could range from $115,000 per acre to $145,000 per acre, depending upon the number, type, and manufacturer of the proposed amenities. For future budgeting purposes, a rule of thumb of at least 4% should be used, relative to the capital costs for park improvements. (For example, if a gazebo is installed at a cost of $35,000, it could cost at least $1,400 per year to maintain it.) Therefore, once the total capital cost for park improvements is established, a 4% maintenance line item would be reasonable.

Map 3-3 Chadds Ford Township Park Conceptual Master Plan

Image Board: Chadds Ford Township Park

7-19-2018

Pathway

Amenities

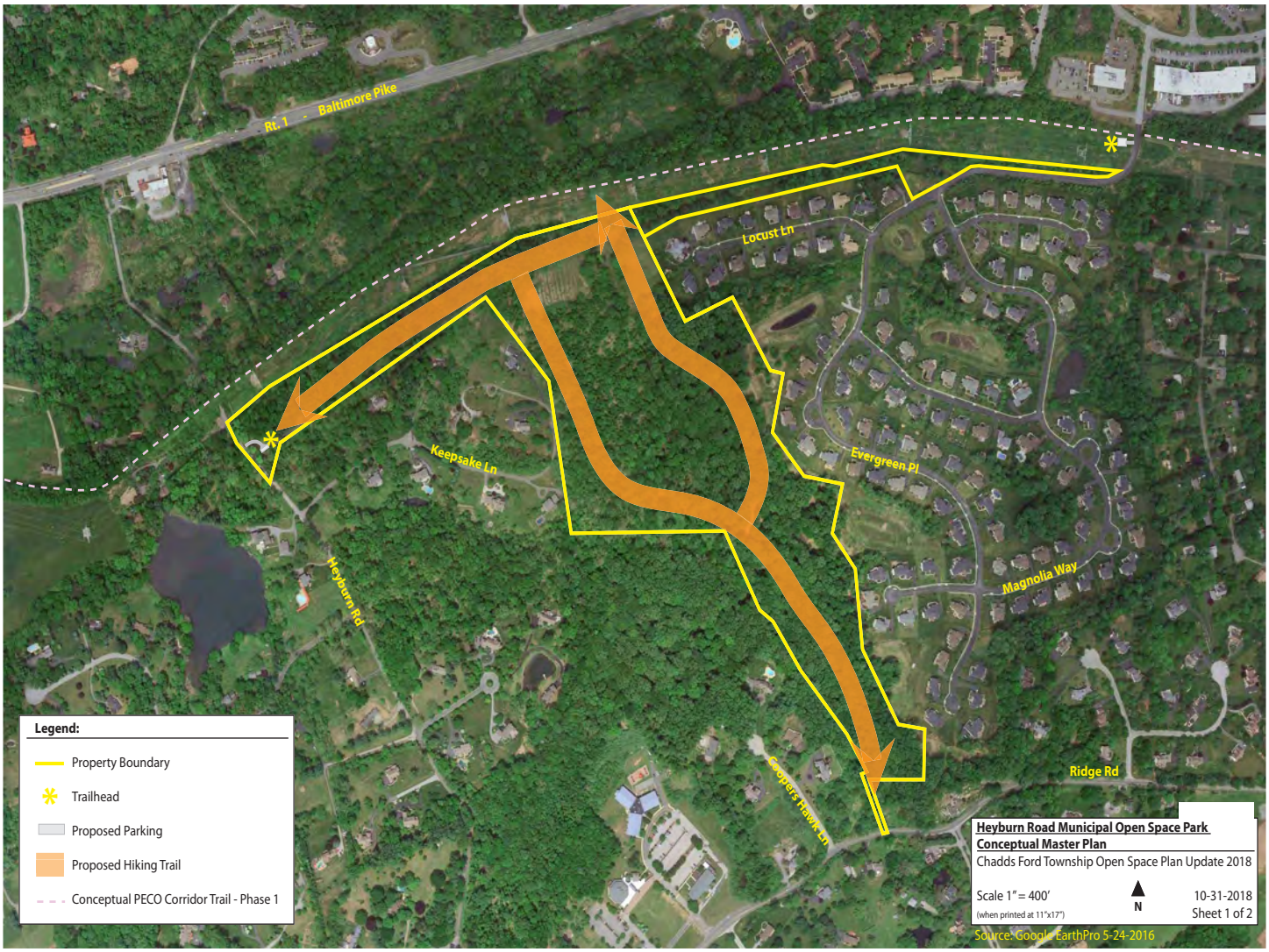
Play Equipment

Open Space

Heyburn Road Conceptual Master Plan

As shown on the Heyburn Road Conceptual Master Plan, the key features include a looped trail network, sheltered picnic tables, footbridges, and trailhead parking. The trail network at the Heyburn Road municipal open space has the potential to connect to the proposed multi-use trail from the Brandywine Creek to the Kuerner Farm and extend south to Ridge Road. The exact nature of these enhancements would be determined only after close consultation with the Homeowners Association at Chadds Ford Estates.

The general costs for park facility enhancement could range from $115,000 per acre to $145,000 per acre, depending upon the number, type, and manufacturer of the proposed amenities. For future budgeting purposes, a rule of thumb of at least 4% should be used, relative to the capital costs for park improvements. (For example, if trails are installed at a cost of $10/SF, it could cost at least $0.40/SF per year to maintain it.) Therefore, once the total capital cost for the improvements are established, a 4% maintenance line item would be reasonable.



Map 3-4 Heyburn Road Conceptual Master Plan

Image Board: Heyburn Road Municipal Open Space

7-19-2018

Trail

Amenities

Footbridge

Parking & Connections

A cow grazing on open agricultural land

Recommendations for Parks and Recreation

Adopt an Official Map (PR 1)

The Official Map identifies public improvements goals of a municipality and is used to help implement those goals. The Official Map can be used to prioritize land for acquisition for use as public parks and trails.

Maximize Use (PR 2 - PR3)

Utilize existing open space to introduce new passive recreational facilities and trails at the municipal campus at Ring Road and at the Heyburn Road open space. The Township can seek grant funding (see Figure 4-3) to implement the Chadds Ford Township Municipal Park Conceptual Master Plan and the Heyburn Road Conceptual Master Plan. Grants can be used to help fund future phases including detailed design, engineering, permitting, and construction of new recreational facilities.

- Secure funding
- Prepare design drawings
- Complete engineering and permitting
- Construction
- Maintenance plan

Cultivate Partnerships (PR 4)

Cultivate partnerships and opportunities that would enhance public access to the Brandywine Creek for water-based recreation. Key partners that could potentially provide public access points to the Brandywine include the Chadds Ford Historical Society, the Brandywine Conservancy & Museum or Art, and PECO. Two efforts are currently underway to enhance public access to the Brandywine: High Trail (a project of the Brandywine Conservancy & Museum of Art); and the Chadds Ford Village Master Plan that proposes a paved, multi-use trail over the Brandywine Creek at the Route 1 bridge (a project of Chadds Ford Township). However, these efforts do not specifically address enhanced public access to the Brandywine for recreational activities such as hiking or boating. Possible partners include:

- Chadds Ford Historical Society
- Brandywine Conservancy & Museum of Art
- Brandywine Battlefield Park Associates
- PA Historical and Museum Commission
- Homeowners Associations
- Brandywine Youth Club
- Unionville Recreation Association
- Concord Township
- Birmingham Township
- Unionvillle-Chadds Ford School District
- Pennsbury Township

Land Development Plan Review (PR 5)

The Open Space Committee can take the lead to ensure that developments using the Open Space Conservation Option offer recreational facilities that address the Township's recreational needs for neighborhood parks.

- Conduct a review of all preliminary and final land development applications and submit written review letters to the Board of Supervisors with the Committee's comments regarding the proposed configuration and use of open space.

- Consider whether open space created through the land development process should be dedicated to the Township to be maintained by the Township for public use (active or passive), remain in the ownership of the Homeowners Association for private use, and other creative ownership and maintenance scenarios.

Park and Recreation Committee (PR 6)

Establish a Parks and Recreation Committee to oversee park stewardship, activities, and events and to conduct review of new opportunities for recreation that arise through the land development process.

Recreational Fee-in-Lieu (PR 7)

Adjust the Resolution No. 2018-6 for the recreational fee-in-lieu amount of recreational land for residential and nonresidential development utilizing the cost figures in Figure 4-2: "Preliminary Opinion of Probable Costs." In other words, based on the proposed Improvements identified in this Open Space Plan Update 2018, determine to what extent the recreational fee-in-lieu amount should be adjusted. Also, the projected number of dwelling units and non-residential square footage for the years 2020 and 2030 should be factored into this calculation.

Chapter 4 | Action Plan

The "Lafayette Sycamore" tree at the Brandywine Battlefield Park that has been around since the signing of the Constitution

The Chadds Ford Township recreation and trail network is already well established with ownership of four parcels of land including the municipal campus at Ring Road, Mother Archie's Church, the Heyburn Road municipal open space, and Painter's Folly. A feasibility study for a trail connection between Painter's Folly and the Brandywine Battlefield Park is being studied and discussed with the park in the hopes of receiving grant funds. A PECO Green Region grant application was made in 2018 for an access trail feasibility study between the Brandywine Battlefield Park and Painter's Folly. The Harvey Run Trail is enjoyed by residents each day, and negotiations are underway for several new trail easements associated with the Walkable Chadds Ford initiative.

Figure 4-1 Implementation Matrix with short, medium, and long-term action items provides a list of suggested new initiatives based upon recommendations set forth in Chapter 3. New projects can be implemented by Chadds Ford Township and/or other key partners. The Township's Open Space Committee will review and update the implementation actions within Figure 4-1 every five years. The Open Space Committee will then present its findings to the Township Supervisors for their review and formal adoption.

Figure 4-1 Implementation Matrix

Chadds Ford Open Space Plan Update 2018						
Figure 4-1 Implementation matrix with short, medium and long term action items						
			Action Priority			
Item	Description	Lead Agency	Short 1-3 years	Medum 4-7 years	Long 8+ years	Partners
1. OPEN SPACE PRESERVATION						
OS 1	Official Map	OSC	X			CFT Planning Commission, DelCo
OS 2	Land Preservation	OSC	X	X	X	Land Trusts, DCNR
OS 3	Development Review	OSC	X	X	X	All CFT Boards and Commissions
2. BICYCLE/PEDESTRIAN NETWORK						
BP 1	Official Map	OSC	X			CFT Planning Commission, DelCo
BP 2	Cultivate Partners	OSC	X			Landowners, CFT Boards and Commissions
Trailhead Improvements						
BP 3	Chadds Ford municipal building	P&R	X			OSC, DCNR
BP 4	Mother Archie's Church	P&R		X		OSC, DCNR
BP 5	Heyburn Road municipal open space	P&R		X		OSC, DCNR
BP 6	Municipal open space at Evergreen Place	P&R		X		OSC, DCNR
BP 7	Brandywine Drive at Route 1	P&R			X	OSC, DCNR, landowners
Multi-Use Trails						
BP 8	10' wide PECO Corridor	DelCo		X		Brandywine Conservancy, landowners
BP 9	10' wide Walkable Chadds Ford	OSC	X			Brandywine Conservancy, landowners
BP 10	5' wide Station Way	OSC	X			Brandywine Conservancy, landowners
BP 11	7' wide side path at 202	OSC		X		Concord Township, DelCo, landowners
BP 12	5' sidewalk at Brandywine/Hillman Drives and Evergreen Place	OSC	X			Delaware County, landowners
BP 13	7' wide side path Brandywine Dr. to 202	OSC			X	Delaware County, landowners
BP 14	7' wide side path Rt. 1 at Ring/Heyburn	DelCo			X	PennDOT, landowners
BP 15	7' wide side path from CFHS to Route 1	OSC	X			CFHS, Brandywine Conservancy
BP 16	7' wide side path Painter's Folly to Harvey	OSC			X	landowners, Battlefield Park Associates
Hiking Trails						
BP 17	Mother Archie's Church	OSC	X			landowners
BP 18	Heyburn Rd open space	P&R		X		DCNR, DCED, PECO Green Region
On-Road Bike Routes						
BP 19	Webb Road	P&R		X		PennDOT, Delaware County
BP 20	Oakland Road	P&R			X	PennDOT, Delaware County
BP 21	Harvey Road	P&R		X		PennDOT, Delaware County
BP 22	Ring Road	P&R	X			PennDOT, Delaware County
BP 23	Bullock Road	P&R	X			PennDOT, Delaware County
BP 24	Heyburn Road	P&R		X		PennDOT, Delaware County
BP 25	Smithbridge Road	P&R			X	PennDOT, Delaware County
BP 26	Route 1/Baltimore Pike	P&R		X		PennDOT, Delaware County
BP 27	Brandywine/Hillman Drives, Evergreen Pl.	P&R			X	PennDOT, Delaware County, landowners
3. PARKS AND RECREATION						
Maximize Use of Existing Open Space						
PR 1	Official Map	OSC	X			CFT Planning Commission, DelCo
PR 2	Municipal campus facilities	P&R	X			OSC, DCNR, DCED, PECO Green Region
PR 3	Heyburn Road facilities	P&R		X	X	OSC, DCNR, DCED, PECO Green Region
PR 4	Cultivate Partners	OSC	X			Landowners, CFT Boards and Commissions
PR 5	Development Review	P&R	X	X	X	All CFT Boards and Commissions
PR 6	Appoint Parks and Recreation Committee	BOS	X	X	X	CFT, DelCo, Brandywine Conservancy
PR 7	Recreational Fee In Lieu	P&R	X			OSC, P&R, BOS

OSC = Open Space Committee, P&R = Parks and Recreation Committee, DelCo = Delaware County, BOS = Board of Supervisors,
CFHS = Chadds Ford Historical Society, DCNR = PA Department of Conservation and Natural Resources,
DCED = PA Department of Community and Economic Development, PennDOT = PA Department of Transportation
CFT = Chadds Ford Township

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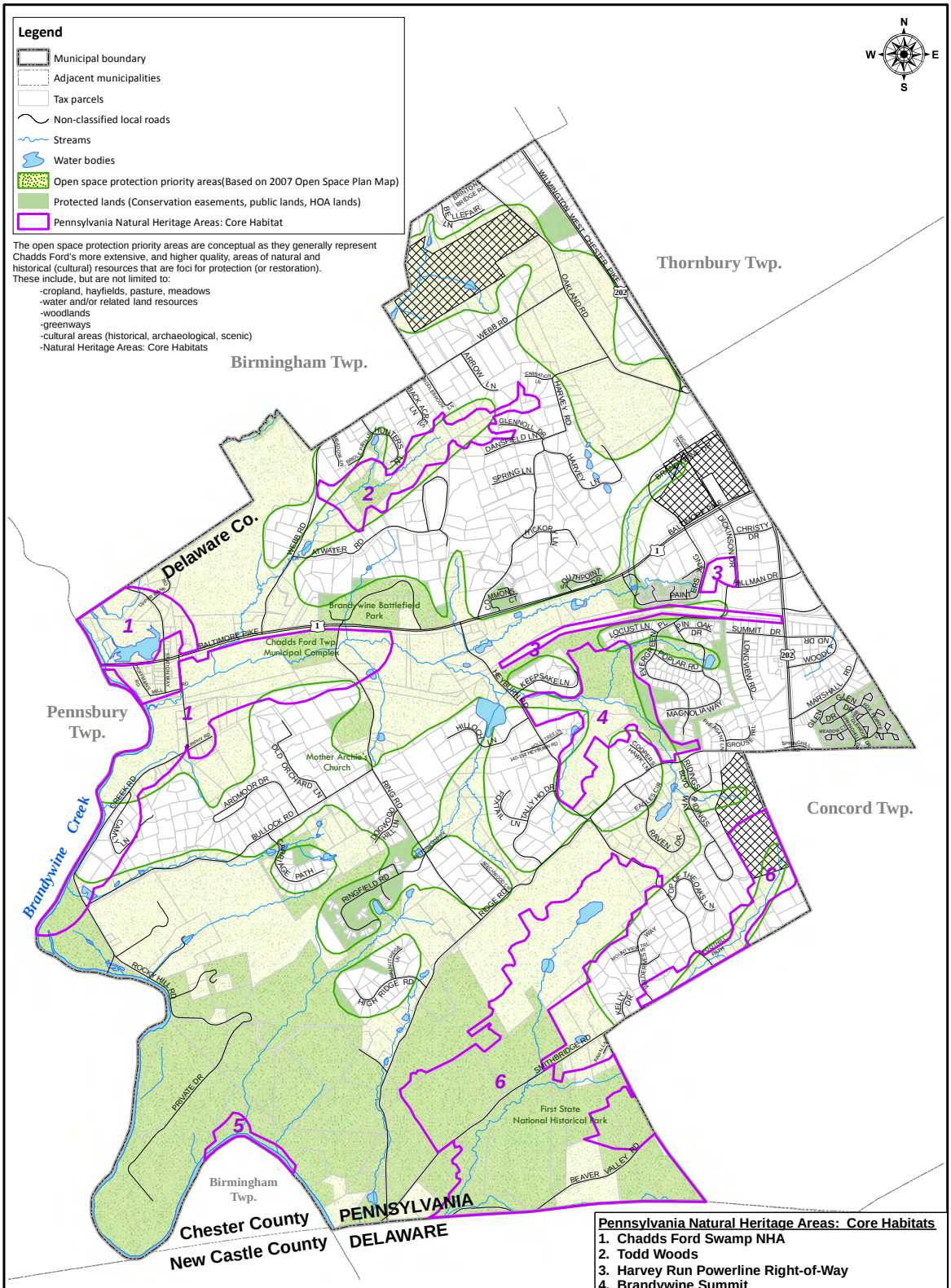
A trail on private property in Chadds Ford



Map 4-1

Open Space Protection Priority Areas

Comprehensive Parks, Recreation, and Open Space Plan Update

Chadds Ford Township, Delaware County, Pennsylvania

Open Space Preservation

At the top of the priority list are short-term initiatives intended to advance open space preservation. Chadds Ford residents feel passionately about the preservation of the rural landscape that is characterized by farmlands, natural areas, historic places, and scenic views. The Township is committed to the preservation of priority open space areas as depicted on Map 4-1 to the greatest extent feasible. Three new tools can be utilized to maximize the success of the open space preservation program. See Appendix C for detailed maps of the Natural Heritage Areas shown on Map 4-1.

Official Map (OS 1)

Among the first priorities is adoption of an Official Map and ordinance. The Official Map tool will help Chadds Ford Township be more proactive for the preservation of open space (by purchase in fee or by conservation easement) and can also be used to identify key trail corridors.

Land Preservation (OS 2)

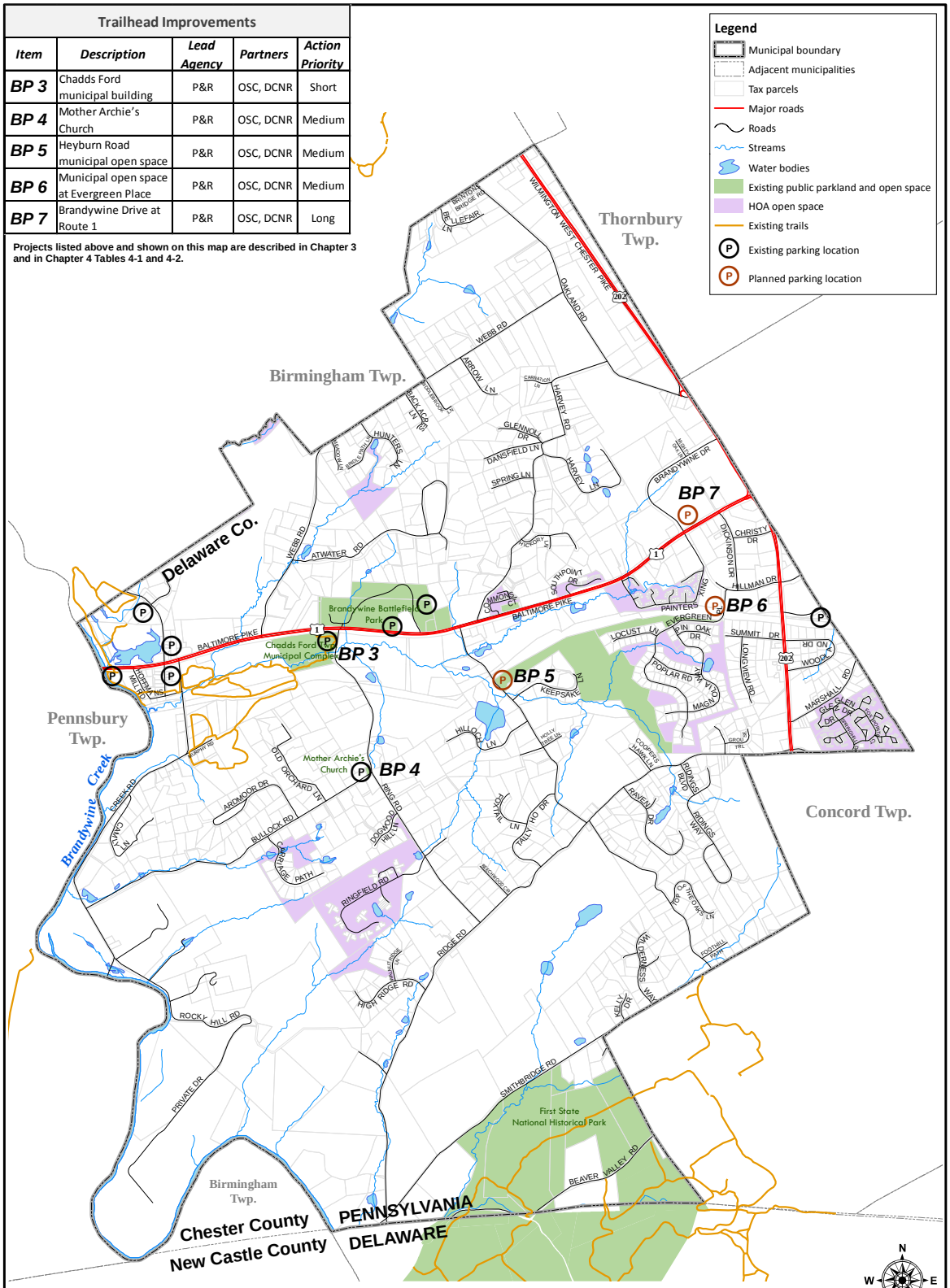
A second tool is to develop a statement for land preservation goals, objectives, and strategies that empowers the Open Space Committee. For example, the Open Space Committee can set a goal of preserving a certain number of acres or properties within a certain timeframe. An objective might be to identify the most threatened parcels to preserve. A strategy might be to engage with key landowners each year in education/ outreach activities or to recruit and train additional volunteers who can help with landowner outreach.

Development Review (OS 3)

The Open Space Committee will continue to participate in land development plan reviews to comment on issues pertaining to open space preservation. This is especially relevant when a new land development proposes creation of privately-owned (by a Homeowners Association) open space. The OSC can provide comments with regards to the configuration of the open space, ownership, and stewardship. Land development plan review is most powerful when coupled with the Official Map tool discussed above.

Trailhead Improvements				
Item	*Description*	*Lead Agency*	*Partners*	*Action Priority*
BP 3	Chadds Ford municipal building	P&R	OSC, DCNR	Short
BP 4	Mother Archie's Church	P&R	OSC, DCNR	Medium
BP 5	Heyburn Road municipal open space	P&R	OSC, DCNR	Medium
BP 6	Municipal open space at Evergreen Place	P&R	OSC, DCNR	Medium
BP 7	Brandywine Drive at Route 1	P&R	OSC, DCNR	Long

Projects listed above and shown on this map are described in Chapter 3 and in Chapter 4 Tables 4-1 and 4-2.



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Scale in Feet

Data source: Base data from Delaware County GIS Department, 12/2016
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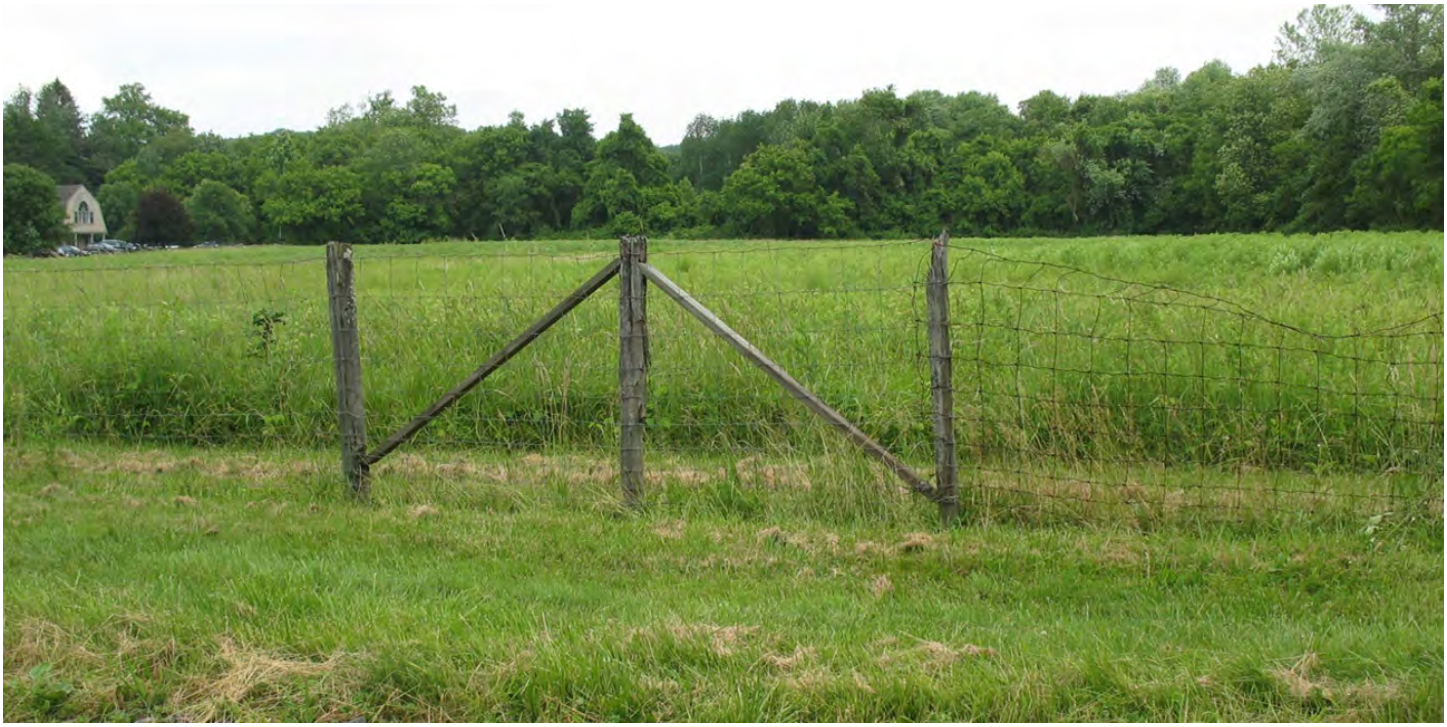
Map 4-2
Trailhead Improvements

Comprehensive Parks, Recreation, and Open Space Plan Update

Chadds Ford Township, Delaware County, Pennsylvania



The Harvey Run Trail on the Brandywine Conservancy & Museum of Art's campus

Bicycle/Pedestrian Network

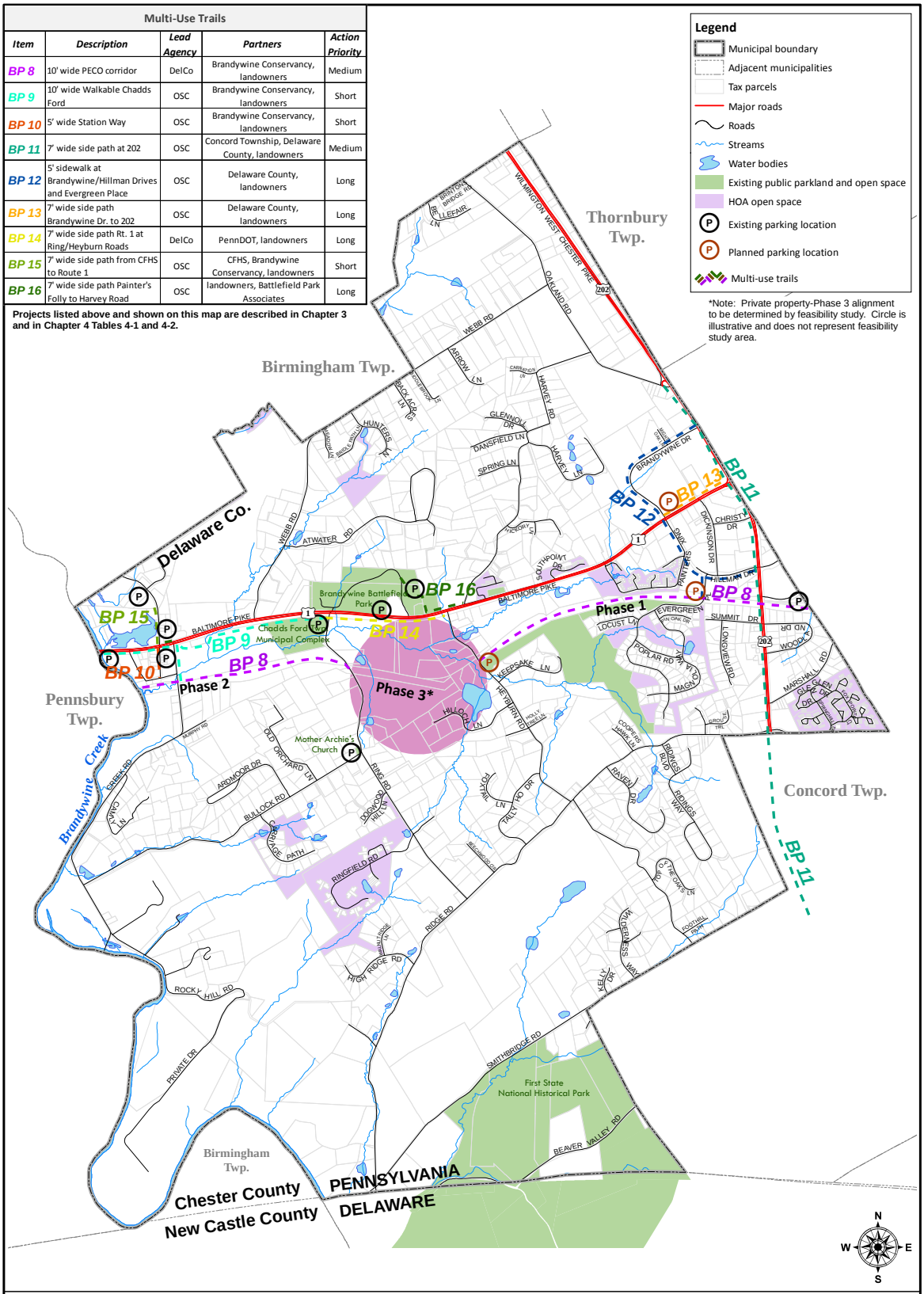
The introduction of new recreational opportunities and trails will occur over time – beginning with the most critical elements of the network. Table 4-1 provides a list of short, medium, and long-term trail projects that include trailhead improvements, multi-use trails, hiking trails, and on-road bicycle routes. The order of priority will vary over time depending upon changes in priority, need, funding, or other unique opportunities. However, the projects are listed as short, medium, and long-term priority projects according to needs and opportunities in 2018.

Trailhead Improvements (BP 3 - BP 7)

There are 5 trailhead improvements illustrated on Map 4-2 to be implemented by a newly-appointed Parks and Recreation (P&R) volunteer committee. Each trailhead improvement will require careful coordination and partnership with the Open Space Committee. The most important source of funding for trailhead improvements is DCNR's Community Conservation Partnerships Program (C2P2) described below, so DCNR is listed as a partner for future trailhead improvements. The first trailhead priority is to enhance facilities at the Chadds Ford municipal building (BP 3) where a paved multi-use trail is proposed on the south side of Route 1 as part of the Walkable Chadds Ford project. Medium-term improvements can occur on other lands that are owned by Chadds Ford Township. Interpretive signage upgrades can be implemented at Mother Archie's Church (BP 4). At Heyburn Road municipal open space (BP 5) and the trailhead at Heyburn Road and Evergreen Place (BP 6) parking facilities, informational signage, directional signage, bicycle racks, and benches can be provided. At Brandywine Drive (BP 7) trailhead improvements could occur through future land development projects where they would be funded by others. If the Township were to take ownership of the land through its open space preservation program, the Township could leverage municipal funds to secure a grant. While the Official Map can be an important tool for guiding future development to meet community open space, parks, and recreational objectives, it can also demonstrate to potential funders that there is a documented community need.

Multi-Use Trails				
Item	*Description*	*Lead Agency*	*Partners*	*Action Priority*
BP 8	10' wide PECO corridor	DelCo	Brandywine Conservancy, landowners	Medium
BP 9	10' wide Walkable Chadds Ford	OSC	Brandywine Conservancy, landowners	Short
BP 10	5' wide Station Way	OSC	Brandywine Conservancy, landowners	Short
BP 11	7' wide side path at 202	OSC	Concord Township, Delaware County, landowners	Medium
BP 12	5' sidewalk at Brandywine/Hillman Drives and Evergreen Place	OSC	Delaware County, landowners	Long
BP 13	7' wide side path Brandywine Dr. to 202	OSC	Delaware County, landowners	Long
BP 14	7' wide side path Rt. 1 at Ring/Heyburn Roads	DelCo	PennDOT, landowners	Long
BP 15	7' wide side path from CFHS to Route 1	OSC	CFHS, Brandywine Conservancy, landowners	Short
BP 16	7' wide side path Painter's Folly to Harvey Road	OSC	landowners, Battlefield Park Associates	Long

Projects listed above and shown on this map are described in Chapter 3 and in Chapter 4 Tables 4-1 and 4-2.



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Scale in Feet

Data source: Base data from Delaware County GIS Department, 12/2016
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Map created: August 16, 2018
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Map 4-3
Multi-Use Trails and Sidewalks

Comprehensive Parks, Recreation, and Open Space Plan Update

Chadds Ford Township, Delaware County, Pennsylvania

Multi-Use Trails (BP 8 – BP 16)

There are eight multi-use trails illustrated on Map 4-3 to be implemented by the Chadds Ford Township Open Space Committee and/or Delaware County. Delaware County has identified the PECO corridor (BP 8) as a future multi-use trail extension of the Circuit regional trail network. Accordingly, it is anticipated that over the medium-term the Delaware County Planning Department will play a lead role in its planning, design, construction, and maintenance. In order for the County to advance multi-use trails, Chadds Ford Township must be willing to actively participate as the host municipality. Further discussions and negotiations would be required, as there are private residential property owners abutting the PECO corridor. PECO will be a key partner in this effort as with other landowners.

The trails proposed under the Walkable Chadds Ford initiative are shown as short-term priorities since design and engineering is well underway, much of the funding for construction is in place, and additional grant funding is being actively pursued. A 10' wide multi-use trail (BP 9) is proposed on the south side of Route 1 from the Chadds Ford municipal building to South Creek Road. A 5' wide sidewalk along Station Way (BP 10) and a 7' wide side path (BP 15) from the Chadds Ford Historical Society to Route 1 are also planned as part of Walkable Chadds Ford.

Longer term multi-use trail projects are those where the Township will be required to secure future trail easements from private landowners and businesses. The 5' wide sidewalk (BP 12) that follows Brandywine Drive and Hillman Drive (west of Route 202) is a shorter term trail project intended to provide pedestrian access to shops and businesses in the area with a safe crossing at the traffic signals on Route 1. A trail connection would also be provided at the Heyburn Road municipal open space at Evergreen Place. Another 7' wide side path (BP 13) will provide a connection along the north side of Route 1 from the traffic signal at Brandywine Drive to a side path on the west side of Route 202 (BP 11). The Route 202 side path from Oakland Road to Smithbridge Road (Concord Township) would be completed in partnership with businesses along the Route 202 corridor, Concord Township, and Delaware County. Unless these properties are acquired through the open space program, these trails can be implemented through the land development process with support from the Official Map tool.

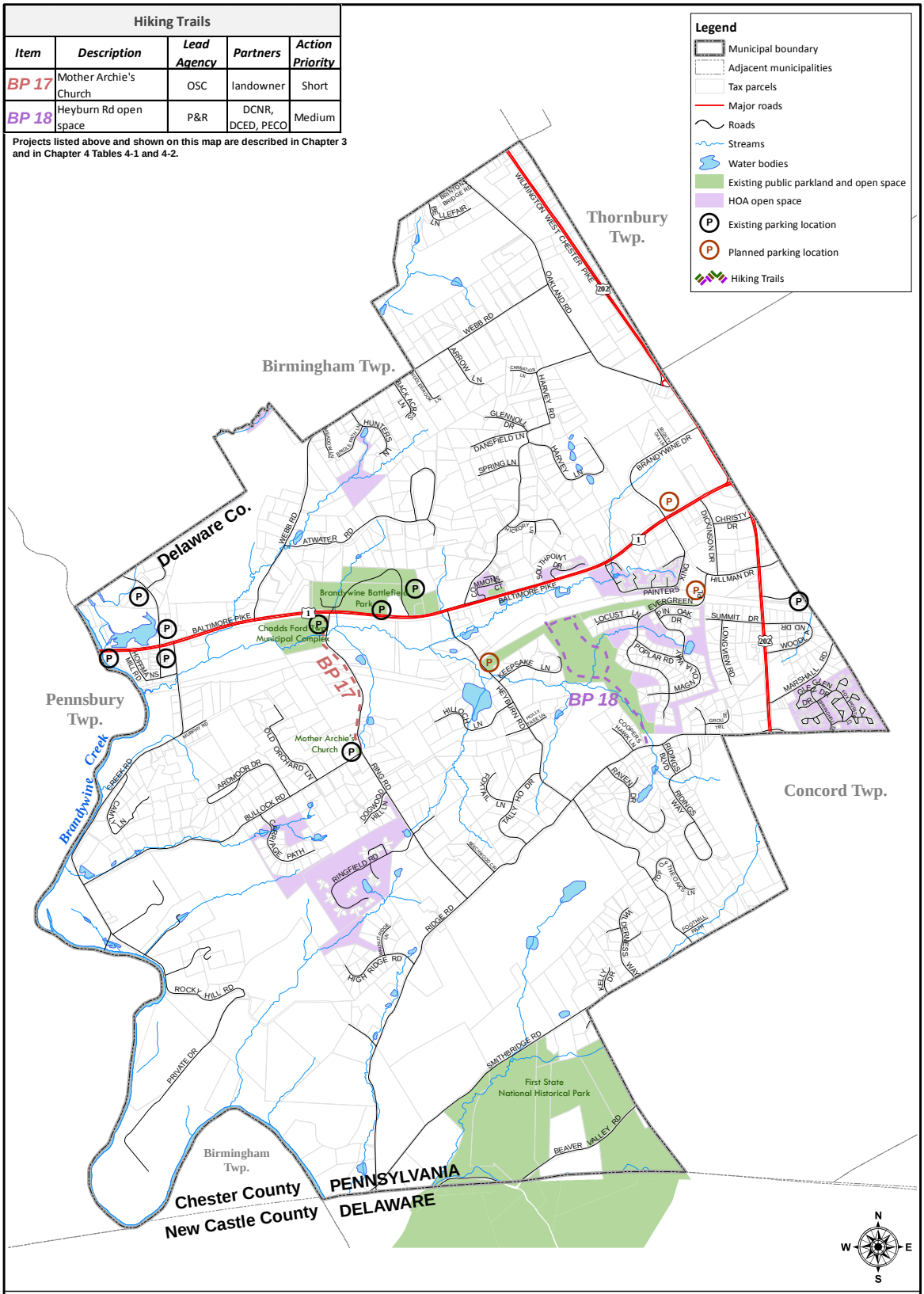
Closer to Chadds Ford Village, a 7' wide side path is shown on the south side of Route 1 from Heyburn Road to Ring Road (BP 14). This trail can provide an alternate route to the PECO trail in the event that it is not feasible to obtain trail easements or lease agreements to cross private property along the former SEPTA line.

A 7' wide side path is shown to connect the Harvey Road bicycle route connection along the north side of Route 1 to Painter's Folly and the Brandywine Battlefield Park (BP 16). Once in the park cyclists can follow the park driveway down to the traffic signal at Route 1 and Ring Road to access the trail network.

Trail planning is often done in phases with logical starting/ending points (or trailheads). Planning begins with an overall feasibility study to determine the trail alignment. Once the preferred alignment is finalized, easements or lease agreements are negotiated/secured, and preliminary design and engineering can begin. A common rule of thumb is that it can take up to 10 years for the average trail project to proceed from concept to completion.

Hiking Trails				
Item	*Description*	*Lead Agency*	*Partners*	*Action Priority*
BP 17	Mother Archie's Church	OSC	landowner	Short
BP 18	Heyburn Rd open space	P&R	DCNR, DCED, PECO	Medium

Projects listed above and shown on this map are described in Chapter 3 and in Chapter 4 Tables 4-1 and 4-2.



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Map created: August 16, 2018
Last revised: November 28, 2018

Map 4-4
Hiking Trails

Comprehensive Parks, Recreation, and Open Space Plan Update

Chadds Ford Township, Delaware County, Pennsylvania

Hiking Trails (BP 17- BP 18)

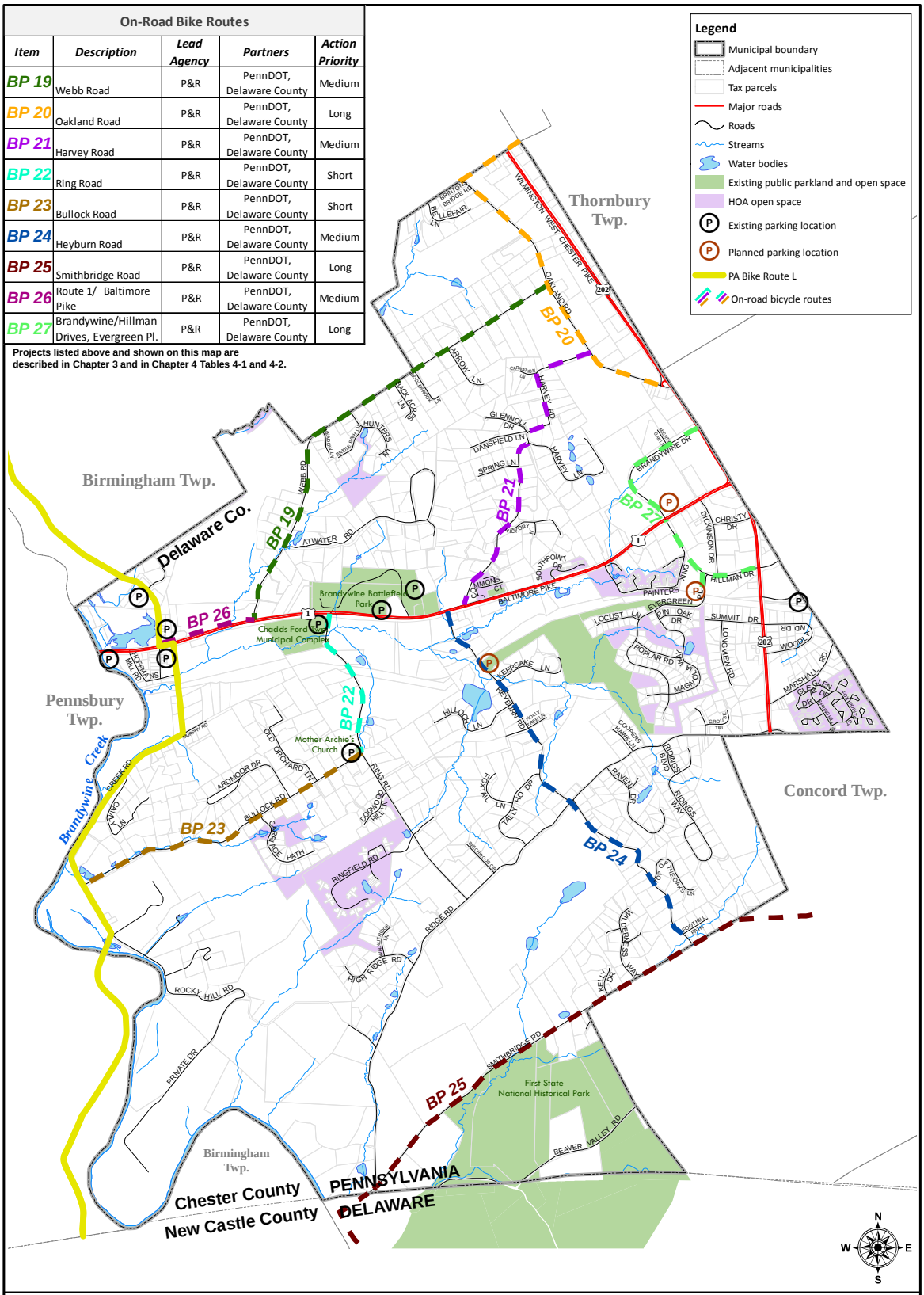
There are two planned hiking trails illustrated on Map 4-4. Hiking trails can be implemented by one of two scenarios. If they are located on a parcel to be developed, the developer will be required to construct the trail and offer it for dedication to the Township. Alternatively, if the parcel is purchased by Chadds Ford Township to preserve as open space, the Township will be responsible to construct the trail.

A hiking trail from the municipal building at Route 1 and Ring Road to Mother Archie's Church (BP 17) provides a link to the history and culture of Chadds Ford and is listed as a short-term priority. It will be critical to consult with several landowners along the west side of Ring Road and negotiate trail easements or lease agreements. The trail in the Heyburn Road open space (BP 18) is listed as a medium-term priority. While the Township owns the property, it will be important to engage the community in trail alignment, design, and other recreational facilities to be provided. The first step will be to prepare a detailed master plan and cost estimate for the property that can be used to apply for grant funds for design, engineering, and construction.

While no current access to the First State National Historical Park is proposed, the Township should plan to work with the National Park Service to maximize access to the park, including considering a trailhead within the Township. This could be a long-term planning effort beginning with opening a dialogue with the Park Superintendent and staff.

On-Road Bike Routes				
Item	*Description*	*Lead Agency*	*Partners*	*Action Priority*
BP 19	Webb Road	P&R	PennDOT, Delaware County	Medium
BP 20	Oakland Road	P&R	PennDOT, Delaware County	Long
BP 21	Harvey Road	P&R	PennDOT, Delaware County	Medium
BP 22	Ring Road	P&R	PennDOT, Delaware County	Short
BP 23	Bullock Road	P&R	PennDOT, Delaware County	Short
BP 24	Heyburn Road	P&R	PennDOT, Delaware County	Medium
BP 25	Smithbridge Road	P&R	PennDOT, Delaware County	Long
BP 26	Route 1/ Baltimore Pike	P&R	PennDOT, Delaware County	Medium
BP 27	Brandywine/Hillman Drives, Evergreen Pl.	P&R	PennDOT, Delaware County	Long

Projects listed above and shown on this map are described in Chapter 3 and in Chapter 4 Tables 4-1 and 4-2.



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Scale in Feet

Data source: Base data from Delaware County GIS Department, 12/2016
Protected Lands data from Delaware County GIS Department, 12/2015

Map created: August 16, 2018
Last revised: November 28, 2018

Map 4-5
On-Road Bicycle Routes

Comprehensive Parks, Recreation, and Open Space Plan Update

Chadds Ford Township, Delaware County, Pennsylvania

On-Road Bicycle Routes (BP 19- BP 27)

Nine planned on-road bicycle routes are shown on Map 4-5. The intent is to connect residential neighborhoods within Chadds Ford Township into regional trail networks and Chadds Ford Village. The Bullock Road (BP 23) bicycle route is on a road that is owned and maintained by Chadds Ford Township and is shown as a short-term priority. The Ring Road (BP 22) bicycle route is also shown as a short-term priority because it completes a bicycle route around Chadds Ford Village (along with Bullock Road, Creek Road, and Walkable Chadds Ford multi-use trail).

The Webb Road (BP 19), Harvey Road (BP 20), Heyburn Road (BP 24), and Route 1/Baltimore Pike (BP 26) bicycle routes are envisioned on or along roads owned and maintained by PennDOT and are shown as medium-term priorities. Coordination with PennDOT District 6-0 will be required for the design and permits of on-road bicycle facilities on state-owned roads. Flashing warning devices and other improvements at signalized intersections (such as Route 1 and Ring Road) will require PennDOT approval. The purpose of the Route 1/ Baltimore Pike route (BP 26) cycle track is to connect the Webb Road bicycle route to PA Bicycle Route L at Creek Road in Chadds Ford Village.

Long-term priority on-road bicycle routes envisioned on PennDOT-owned and maintained roads include Oakland Road (BP 21), Smithbridge Road (BP 25), Brandywine/Hillman Drives, and Evergreen Place (BP 27). The Brandywine/Hillman Drives and Evergreen Place route is envisioned as a separate bicycle lane that would be implemented if/when Chadds Ford Township takes dedication of those roads.

Chadds Ford Township will be required to coordinate closely with PennDOT to determine the feasibility of on-road bicycle routes and to complete design, engineering, and implementation of new facilities.

Parks and Recreation

The introduction of new park and recreational facilities is likely to occur over the short- and medium-priority timeframe. Table 4-1 provides a list of projects that are intended to maximize the potential of lands currently owned by Chadds Ford Township.

Parks and Recreation Committee (PR 6)

A short-term priority is to establish a Parks and Recreation Committee of volunteers from the community. The Committee can be appointed by the Board of Supervisors as an advisory committee on matters regarding parks and recreation. The P&R committee would be the lead entity for implementation of new park facilities and trailhead improvements. It would also lead new hiking trail implementation projects located on lands owned by Chadds Ford Township (potentially HK 4, HK 5, and HK 6) and on-road bicycle routes. The P&R Committee's responsibilities will continue on a long-term basis as long as the Township requires its service.

Municipal Campus (PR 2)

One of the top priorities for parks, recreation, and trails is to improve the recreational facilities at the Chadds Ford Township municipal campus on Ring Road (PR 2). Plans are underway (and funding is secured) to construct a paved multi-use trail on the south side of Route 1 from the municipal building to Chadds Ford Village. The Conceptual Master Plan provided in Chapter 3 is an important step in the planning process. The next step is to prepare a detailed master plan and cost estimate that can be used as a tool to apply for design and construction grant funding.

Heyburn Road (PR 3)

The Heyburn Road municipal open space is listed as a medium-term priority to be completed after the recreational improvements at the Ring Road municipal campus. The Conceptual Master Plan provided in Chapter 3 needs to be vetted with the adjacent landowners and other Chadds Ford residents and a detailed master plan and cost estimate prepared. Once a master plan is complete, the Township will be more successful in raising grant funds for engineering and construction.

Recreational Fee-in-Lieu (PR 7)

Adjust Resolution No. 2018-6 for the recreational fee-in-lieu amount of recreational land for residential and nonresidential development utilizing the cost figures in Figure 4-2: "Preliminary Opinion of Probable Costs." In other words, based on the proposed Improvements identified in this Open Space Plan Update 2018, determine to what extent the recreational fee-in-lieu amount should be adjusted. Also, the projected number of dwelling units and non-residential square footage for the years 2020 and 2030 should be factored into this calculation.

Projected Costs

Figure 4-2 provides a preliminary estimate of probable costs for new park, recreation, and trail facilities that are planned/proposed. This is a very high-level cost estimate that is likely to change depending upon the outcome of future planning and design. More detailed cost estimates will be prepared as projects move through the feasibility study and/or master planning process, design, and engineering. It is not possible to accurately estimate the cost of land preservation (OS 2) due to a vast number of variables (cost of land, acres of land, leveraging funds, donations of land, etc.). There is also no cost assigned to development review (OS 3) or appointing a Parks and Recreation Committee (PR 1). The cost assumptions for all other categories in this table are provided in Figure 3-4, Figure 3-5, and Figure 3-6 in Chapter 3.

Figure 4-2 Preliminary Opinion of Probable Costs

Chadds Ford Open Space Plan Update 2018				
Figure 4-2 Preliminary Opinion of Probable Costs				
Item	**Description**	**Length (miles)**	**Estimated Cost**	**Assumptions***
1. OPEN SPACE PRESERVATION (Map 4-1)				
OS 1	Official Map	N/A	$10,000	Map and ordinance adoption, consultant
OS 2	Land Preservation	N/A		50% funded by grants, no cost assumptions
OS 3	Development Review	N/A	$0	no cost for volunteer committee review
	SUBTOTAL OPEN SPACE PRESERVATION		**$10,000**	
2. BICYCLE/PEDESTRIAN NETWORK				
BP 1	Official Map	N/A	Listed above	Map and ordinance adoption, consultant
BP 2	Cultivate Partners	N/A	$0	no cost
Trailhead Improvements (Map 4-2)				
BP 3	Chadds Ford municipal building	N/A	$2,400	directional signs ($400), bike racks (2@$500), benches (2@$500)
BP 4	Mother Archie's Church	N/A	$1,000	update interpretive signage ($1000) by staff and volunteers
BP 5	Heyburn Road municipal open space	N/A	$12,400	parking lot ($10,000), information sign ($1000), directional signs (2@$200), bike rack ($500), benches (2@$500)
BP 6	Municipal open space at Evergreen Place	N/A	$12,400	parking lot ($10,000), information sign ($1000), directional signs (2@$200), bike rack ($500), benches (2@$500)
BP 7	Brandywine Drive at Route 1	N/A	$12,400	parking lot ($10,000), information sign ($1000), directional signs (2@$200), bike rack ($500), benches (2@$500)
	SUBTOTAL TRAILHEAD IMPROVEMENTS		**$40,600**	
Multi-Use Trails (Map 4-3)				
BP 8	10' wide PECO Corridor	2.7	$3,435,625	paving (@$150/ft), bridge (@$200,000), railroad crossing (@$6,900), township road crossings (2@$5,500), state road crossing (@$6,900), roadway overpass (@$1,000,000), landscaping ($72,425)
BP 9	10’ wide Walkable Chadds Ford	1.1	$781,253	Funded through TA Set Aside, Creek Road to Ring Road, consultant estimate ($646,798 + $134,455)
BP 10	5’ wide Station Way	0.2	$27,088	Funded through TA Set Aside, Creek Road to Ring Road, consultant estimate
BP 11	7’ wide side path at 202	1.5	$903,561	paving ($831,600), surface crossings (5@$6,900), landscaping (37,461)
BP 12	5' sidewalk at Brandywine/Hillman Roads and Evergreen Place	1.2	$703,949	paving ($653,280), surface crossings (3@$6,900), landscaping ($37,461)
BP 13	7' wide side path Brandywine Dr. to 202	0.3	$173,812	paving ($166,320), landscaping ($7,492)
BP 14	7' wide side path Rt. 1 at Ring/Heyburn	0.5	$296,587	paving ($277,200), surface crossings (1@$6,900), landscaping ($12,487))
BP 15	7' wide side path from CFHS to Route 1	0.2	$253,593	per Chadds Ford Master Plan estimate
BP 16	7' wide side path Painter's Folly to Harvey	0.4	$266,749	paving ($221,760), crossing > 10' (35,000), landscaping ($9,989)
	SUBTOTAL MULTI-USE TRAILS	**8.1**	**$6,842,217**	
Hiking Trails (Map 4-4)				
BP 17	Mother Archie's Church	0.6	$110,024	mowed ($95,040), landscaping ($14,984)
BP 18	Heyburn Rd open space	1.2	$230,549	mowed/natural surface ($190,080), crossings (3@3,500), landscaping (29,969)
	SUBTOTAL HIKING TRAILS	**1.8**	**$340,573**	
On-Road Bicycle Routes (Map 4-5)				
BP 19	Webb Road	2	$5,070	$0.48/linear foot ($2,535/linear mile), (share the road)
BP 20	Harvey Road	1.6	$4,056	$0.48/linear foot ($2,535/linear mile), (share the road)
BP 21	Oakland Road	1.4	$3,549	$0.48/linear foot ($2,535/linear mile), (share the road)
BP 22	Ring Road	0.6	$1,521	$0.48/linear foot ($2,535/linear mile), (share the road)
BP 23	Bullock Road	1.3	$3,295	$0.48/linear foot ($2,535/linear mile), (share the road)
BP 24	Heyburn Road	1.8	$4,563	$0.48/linear foot ($2,535/linear mile), (share the road)
BP 25	Smithbridge Road	1.9	$4,816	$0.48/linear foot ($2,535/linear mile), (share the road)
BP 26	Route 1/Baltimore Pike	0.4	$1,014	$0.48/linear foot ($2,535/linear mile), (bike lane)
BP 27	Brandywine/Hillman/Evergreen Pl.	1.2	$3,042	$0.48/linear foot ($2,535/linear mile), (share the road)
	SUBTOTAL ON-ROAD BICYCLE ROUTES	**12.2**	**$30,926**	
3. PARKS AND RECREATION				
Maximize Use of Existing Open Space (Map 3-3 and Map 3-4)				
PR 1	Official Map	N/A	Listed above	Map and ordinance adoption, consultant
PR 2	Municipal campus facilities	N/A	$290,000	assume developing 2 acres @ $145,000/acre
PR 3	Heyburn Road facilities	N/A	$580,000	assume developing 4 acres @ $145,000/acre
PR 4	Cultivate Partners	N/A	$0	no cost
PR 5	Development Review	N/A	$0	no cost for volunteer committee review
PR 6	Appoint Parks and Recreation Committee	N/A	$0	no cost for volunteer committee
PR 7	Recreational Fee In Lieu	N/A	$10,000	ordinance adoption, consultant
	SUBTOTAL PARKS AND RECREATION		**$880,000**	
TOTAL			**$8,144,316**	

* based upon cost assumptions provided in Chapter 3, does not include an assumption for cost of easement acquisition

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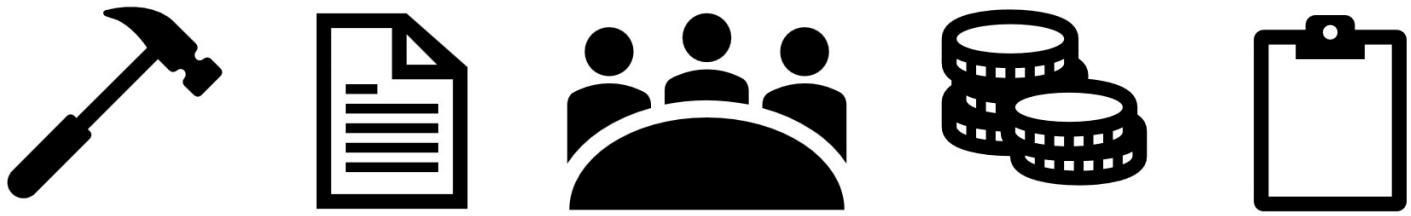
Other Action Items

The following actions were briefly introduced in Chapter 3 and do not fall under the category of new projects for implementation. They are primarily suggestions that can be pursued to enhance cultivation of key partners.

- Coordinate with Delaware County and Concord Township to implement trail connections. Delaware County is a key partner that can provide trail planning and grant writing assistance.
- Cultivate partnerships with the Brandywine Battlefield Park Associates and the PA Historical and Museum Commission regarding shared use of park facilities and promoting park use for Chadds Ford residents.
- Cultivate partnerships with the Brandywine Conservancy & Museum of Art regarding shared use and promotion of hiking trails on private lands.
- Cultivate partnership with the Chadds Ford Historical Society regarding recreational use of private lands for Chadds Ford residents.
- Engage Homeowners Associations and facilitate connections among community trails and neighborhood trails.
- Cultivate a relationship with the Wilmington Trail Club and collaborate on efforts to preserve the Brandywine Trail.
- Recruit and engage volunteers to assist with trail maintenance and patrol.
- Collaborate with the Unionville-Chadds Ford School District, Brandywine Youth Club, and the Unionville Recreation Association to recognize shared use of recreational facilities by Chadds Ford residents.
- Engage a consultant to prepare a stewardship plan for each property owned and maintained by Chadds Ford Township.



Municipal Roles and Responsibilities

Staffing/ Administration

The Township does not anticipate a need to increase staff capacity to administer a parks, recreation, and trails program. A volunteer Parks & Recreation Committee can be appointed by the Board of Supervisors to provide recommendations to the Board. The Open Space Committee will continue to be actively involved in trail planning and open space preservation. Day to day trail maintenance can be coordinated by Township staff with work performed by volunteers or third party contractors.

Maintenance

Some maintenance tasks can be performed by contractors and some by volunteers. Third party contractors can be used for large tasks such as trash removal, snow removal from parking areas, removal of debris and obstructions on the trail, and mowing/vegetation management, asphalt repair, and large tree removal. Trash collection can become a major

task when waste receptacles are provided at the trailhead parking areas. The Township can use a trash collection agency to collect the park trash receptacles. Volunteers can play an important role in the construction and maintenance of a trail system. The Township may choose to recruit residents, trail clubs, and other interest groups to participate in trail maintenance and repair activities. Maintenance cost assumptions are provided in Chapter 3, Figure 3-7, Figure 3-8, and Figure 3-9.

Equipment

Contractors can provide their own equipment for mowing, trash collection, and snow removal. The Township can supply trail stewardship volunteers with common trail clearing tools such as long handled loppers, weed whip, hand clippers, bow saw, pole saw, and rakes. Trail maintenance/construction tools include a Pulaski, McLeod, fire rake, grub hoe, shovel, pick, and pick mattock. Tools can be stored in a locked shed near the municipal building that can be unlocked by municipal staff during scheduled trail volunteer work days. The Township may choose to invest in trail counters to determine usage on the trails. Trail counter data can be used to enhance new trail grant proposals.

Budgets

High level project cost estimates are provided in Table 4-2. Maintenance cost assumptions are provided in Chapter 3 Figure 3-7, Figure 3-8, and Figure 3-9. The financial resources that are required to design, construct, and maintain the trail network will be derived from various sources.

1. The Township's annual operating budget will include a line item for the management of parks and trails within a park and recreation budget. Budget amounts will vary by year depending upon the number and size of active projects.

2. Funding for special projects, such as park facilities or trails, will be partially provided by Chadds Ford Township and partially by State and other grants with a local match.

3. Volunteer workers and donations of goods are a vital source of support for the park and trail network. Volunteer groups such as the Boy Scouts, Wilmington Trail Club, HOAs, and service clubs can be important sources of volunteers for specific management initiatives such as trail maintenance, tree plantings, and minor construction. Establish a Friends of Chadds Ford Parks and Trails volunteer group to assist with special projects.

Potential Funding Sources

Figure 4-3 lists potential sources of funding for trails and a brief description of the grant program details. Because of their regional nature and potential for alternative transportation, paved and multi-use trails are eligible for a wide variety of grants from private foundations and state agencies. Delaware County can assist with grant writing and securing matching funds for design and construction. Hiking trails that do not offer ADA accessibility and service small residential areas are less likely to receive state funding from PennDOT or DCNR but may be eligible for private or corporate funding. Trail design and engineering costs are typically the responsibility of the grantee. Grantors cover a portion of the construction costs and require a local match that varies by grant program. The TCDI grant is one exception where the grant can cover planning, design, engineering, and construction costs. As with open space preservation, Chadds Ford Township can leverage municipal funds to secure partial or complete grant funding for trail construction projects.

Figure 4-3 Potential Funding Sources for Trails

Program	Program Details
Greenways, Trails and Recreation Program (GTRP) Commonwealth Financing Authority (CFA) with Department of Community and Economic Development (DCED) & Department of Conservation and Natural Resources (DCNR)	• Annual competitive grant program for state funds (Act 13) • 15% match: $250,000 maximum • 2-3 year timeframe to complete the grant
Community Conservation Partnership Program (C2P2) Department of Conservation and Natural Resources (DCNR)	• Annual competitive grant program • Various federal and state funds • 50% match
PECO Green Region Program Natural Lands	• Annual competitive grant program for private funds • 50% match: $10,000 maximum • 18 month timeframe to complete the grant
Transportation Alternatives Set Aside Pennsylvania Department of Transportation (PennDOT) Delaware Valley Regional Planning Commission (DVRPC)	• Federal transportation funds • Match requires funding all pre-construction activities • $50,000 minimum and $1,000,000 maximum • 2 year timeframe to complete design, right-of-way, and utility clearance
Congestion Mitigation and Air Quality (CMAQ) Delaware Valley Regional Planning Commission (DVRPC)	• Federal transportation funds • Match requires funding all pre-construction activities
CFA/DCED – Multimodal Transportation Fund (MTF) Commonwealth Financing Authority (CFA)	• Annual competitive grant program for state funds (Act 89) • 30% match; $100,000 minimum; $3,000,000 maximum • 2-3 year timeframe to complete the grant
PennDOT- Multimodal Transportation Fund (MTF) Pennsylvania Department of Transportation (PennDOT)	• Annual competitive grant program for state funds (Act 89) • 30% match; $100,000 minimum; $3,000,000 maximum • 3 year timeframe to complete the grant
Transportation and Community Development Initiative (TCDI) Delaware Valley Regional Planning Commission (DVRPC)	• Competitive grant program for federal transportation funds • 20% match; $25,000 minimum; $100,000 maximum • 2 year timeframe to complete the grant

List of Appendices

Appendices 112

Appendix A - Applicable Sections of the Municipalities Planning Code..... 113

Appendix B - Public Participation Documents..... 120

Appendix C - Natural Heritage Areas..... 158

Appendix D - Delaware County Community Trails Planner's Portfolio..... 185

Appendix A - Applicable Sections of the Municipalities Planning Code

Article III - Comprehensive Plan

Section 301. Preparation of Comprehensive Plan.

(a) The municipal, multimunicipal or county comprehensive plan, consisting of maps, charts and textual matter, shall include, but need not be limited to, the following related basic elements:

(1) A statement of objectives of the municipality concerning its future development, including, but not limited to, the location, character and timing of future development, that may also serve as a statement of community development objectives as provided in section 606.

(2) A plan for land use, which may include provisions for the amount, intensity, character and timing of land use proposed for residence, industry, business, agriculture, major traffic and transit facilities, utilities, community facilities, public grounds, parks and recreation, preservation of prime agricultural lands, flood plains and other areas of special hazards and other similar uses.

(2.1) A plan to meet the housing needs of present residents and of those individuals and families anticipated to reside in the municipality, which may include conservation of presently sound housing, rehabilitation of housing in declining neighborhoods and the accommodation of expected new housing in different dwelling types and at appropriate densities for households of all income levels.

(3) A plan for movement of people and goods, which may include expressways, highways, local street systems, parking facilities, pedestrian and bikeway systems, public transit routes, terminals, airfields, port facilities, railroad facilities and other similar facilities or uses.

(4) A plan for community facilities and utilities, which may include public and private education, recreation, municipal buildings, fire and police stations, libraries, hospitals, water supply and distribution, sewerage and waste treatment, solid waste management, storm drainage, and flood plain management, utility corridors and associated facilities, and other similar facilities or uses.

(4.1) A statement of the interrelationships among the various plan components, which may include an estimate of the environmental, energy conservation, fiscal, economic development and social consequences on the municipality.

(4.2) A discussion of short- and long-range plan implementation strategies, which may include implications for capital improvements programming, new or updated development regulations, and identification of public funds potentially available.

(5) A statement indicating that the existing and proposed development of the municipality is compatible with the existing and proposed development and plans in contiguous portions of neighboring municipalities, or a statement indicating measures which have been taken to provide buffers or other transitional devices between disparate uses, and a statement indicating that the existing and proposed development of the municipality is generally consistent with the objectives and plans of the county comprehensive plan.

(6) A plan for the protection of natural and historic resources to the extent not preempted by federal or state law. This clause includes, but is not limited to, wetlands and aquifer recharge zones, woodlands, steep slopes, prime agricultural land, flood plains, unique natural areas and historic sites. The plan shall be consistent with and may not exceed those requirements imposed under the following:

(i) Act of June 22, 1937 (P.L.1987, No.394), known as "The Clean Streams Law".

(ii) Act of May 31, 1945 (P.L.1198, No.418), known as the "Surface Mining Conservation and Reclamation Act".

(iii) Act of April 27, 1966 (1st SP.SESS., P.L.31, No.1), known as "The Bituminous Mine Subsidence and Land Conservation Act".

(iv) Act of September 24, 1968 (P.L.1040, No.318), known as the "Coal Refuse Disposal Control Act".

(v) Act of December 19, 1984 (P.L.1140, No.223), known as the "Oil and Gas Act".

(vi) Act of December 19, 1984 (P.L.1093, No.219), known as the "Noncoal Surface Mining Conservation and Reclamation Act".

(vii) Act of June 30, 1981 (P.L.128, No.43), known as the "Agricultural Area Security Law".

(viii) Act of June 10, 1982 (P.L.454, No.133), entitled "An Act Protecting Agricultural Operations from Nuisance Suits and Ordinances Under Certain Circumstances".

(ix) Act of May 20, 1993 (P.L.12, No.6), known as the "Nutrient Management Act," regardless of whether any agricultural operation within the area to be affected by the plan is a concentrated animal operation as defined under the act.

(7) In addition to any other requirements of this act, a county comprehensive plan shall:

(i) Identify land uses as they relate to important natural resources and appropriate utilization of existing minerals.

(ii) Identify current and proposed land uses which have a regional impact and significance, such as large shopping centers, major industrial parks, mines and related activities, office parks, storage facilities, large residential developments, regional entertainment and recreational complexes, hospitals, airports and port facilities.

(iii) Identify a plan for the preservation and enhancement of prime agricultural land and encourage the compatibility of land use regulation with existing agricultural operations.

(iv) Identify a plan for historic preservation.

(b) The comprehensive plan shall include a plan for the reliable supply of water, considering current and future water resources availability, uses and limitations, including provisions adequate to protect water supply sources. Any such plan shall be generally consistent with the State Water Plan and any applicable water resources plan adopted by a river basin commission. It shall also contain a statement recognizing that:

(1) Lawful activities such as extraction of minerals impact water supply sources and such activities are governed by statutes regulating mineral extraction that specify replacement and restoration of water supplies affected by such activities.

(2) Commercial agriculture production impact water supply sources.

(c) The municipal or multimunicipal comprehensive plan shall be reviewed at least every ten years. The municipal or multimunicipal comprehensive plan shall be sent to the governing bodies of contiguous municipalities for review and comment and shall also be sent to the Center for Local Government Services for informational purposes. The municipal or multimunicipal comprehensive plan shall also be sent to the county planning commissions or, upon request of a county planning commission, a regional planning commission when the comprehensive plan is updated or at ten-year intervals, whichever comes first, for review and comment on whether the municipal or multimunicipal comprehensive plan remains generally consistent with the county comprehensive plan and to indicate where the local plan may deviate from the county comprehensive plan.

(d) The municipal, multimunicipal or county comprehensive plan may identify those areas where growth and development will occur so that a full range of public infrastructure services, including sewer, water, highways, police and fire protection, public schools, parks, open space and other services can be adequately planned and provided as needed to accommodate growth.

Section 301.1. Energy Conservation Plan Element. To promote energy conservation and the effective utilization of renewable energy sources, the comprehensive plan may include an energy conservation plan element which systematically analyzes the impact of each other component and element of the comprehensive plan on the present and future use of energy in the municipality, details specific measures contained in the other plan elements designed to reduce energy consumption and proposes other measures that the municipality may take to reduce energy consumption and to promote the effective utilization of renewable energy sources.

Section 301.2. Surveys by Planning Agency. In preparing the comprehensive plan, the planning agency shall make careful surveys, studies and analyses of housing, demographic, and economic characteristics and trends; amount, type and general location and interrelationships of different categories of land use; general location and extent of transportation and community facilities; natural features affecting development; natural, historic and cultural resources; and the prospects for future growth in the municipality.

Section 301.3. Submission of Plan to County Planning Agency. If a county planning agency has been created for the county in which the municipality is located, then at least 45 days prior to the public hearing required in section 302 on the comprehensive plan or amendment thereof, the municipality shall forward a copy of that plan or amendment to the county planning agency for its comments. At the same time, the municipality shall also forward copies of the proposed plan or amendment to all contiguous municipalities and to the local school district for their review and comments.

Section 301.4. Compliance by Counties.

(a) If a county does not have a comprehensive plan, then that county shall, within three years of the effective date of this act, and with the opportunity for the review, comment and participation of the municipalities and school districts within the respective county and contiguous counties school districts and municipalities, prepare and adopt a comprehensive plan in accordance with the requirements of section 301. Municipal comprehensive plans which are adopted shall be generally consistent with the adopted county comprehensive plan.

(b) County planning commissions shall publish advisory guidelines to promote general consistency with the adopted county comprehensive plan. These guidelines shall promote uniformity with respect to local planning and zoning terminology and common types of municipal land use regulations.

Section 301.5 Funding of Municipal Planning. Priority for state grants to develop or revise comprehensive plans shall be given to those municipalities which agree to adopt comprehensive plans generally consistent with the county comprehensive plan and which agree to enact a new zoning ordinance or amendment which would fully implement the municipal comprehensive plan. No more than 25% of the total funds available for these grants shall be disbursed under priority status pursuant to this provision. Municipalities and counties shall comply with these agreements within three years. Failure to comply with the agreements shall be taken into consideration for future state funding.

Section 302. Adoption of Municipal, Multimunicipal and County Comprehensive Plans and Plan Amendments.

(a) The governing body may adopt and amend the comprehensive plan as a whole or in part. Before adopting or amending a comprehensive plan, or any part thereof, the planning agency shall hold at least one public meeting before forwarding the proposed comprehensive plan or amendment thereof to the governing body. In reviewing the proposed comprehensive plan, the governing body shall consider the comments of the county, contiguous municipalities and the school district within the county and contiguous school districts as well as the public meeting comments and the recommendations of the municipal planning agency. The comments of the county, contiguous municipalities and the local school district shall be made to the governing body within

45 days of receipt, by the governing body, and the proposed plan or amendment thereto shall not be acted upon until such comment is received. If, however, the contiguous municipalities and the local school district fail to respond within 45 days, the governing body may proceed without their comments.

(a.1) The governing body of the county may adopt and amend the county comprehensive plan in whole or in part. Before adopting or amending a comprehensive plan, or any part thereof, the county planning agency shall hold at least one public meeting before forwarding the proposed comprehensive plan or amendment thereof to the governing body. In reviewing the proposed comprehensive plan, the governing body shall consider the comments of municipalities and school districts within the county and contiguous school districts, municipalities and counties as well as the public meeting comments and the recommendations of the county planning agency. The comments of the counties, municipalities and school districts shall be made to the governing body within 45 days of receipt by the governing body, and the proposed comprehensive plan or amendment thereto shall not be acted upon until such comment is received. If, however, the counties, municipalities and school districts fail to respond within 45 days, the governing body may proceed without their comments.

(b) The governing body shall hold at least one public hearing pursuant to public notice. If, after the public hearing held upon the proposed plan or amendment to the plan, the proposed plan or proposed amendment thereto is substantially revised, the governing body shall hold another public hearing, pursuant to public notice, before proceeding to vote on the plan or amendment thereto.

(c) The adoption of the comprehensive plan, or any part thereof, or any amendment thereto, shall be by resolution carried by the affirmative votes of not less than a majority of all the members of the governing body. The resolution shall refer expressly to the maps, charts, textual matter, and other matters intended to form the whole or part of the plan, and the action shall be recorded on the adopted plan or part.

(d) Counties shall in accordance with subsection (a.1) consider amendments to their comprehensive plan proposed by municipalities which are considering adoption or revision of their municipal comprehensive plans so as to achieve general consistency between the respective plans. County comprehensive plans shall be updated at least every ten years. Where two or more contiguous municipalities request amendments to a county comprehensive plan for the purpose of achieving general consistency between the municipal plans or multimunicipal plan and the county comprehensive plan, the county must accept the amendments unless good cause for their refusal is established.

Section 303. Legal Status of Comprehensive Plan Within the Jurisdiction that Adopted the Plan.

(a) Whenever the governing body, pursuant to the procedures provided in section 302, has adopted a comprehensive plan or any part thereof, any subsequent proposed action of the governing body, its departments, agencies and appointed authorities shall be submitted to the planning agency for its recommendations when the proposed action relates to:

(1) the location, opening, vacation, extension, widening, narrowing or enlargement of any street, public ground, pierhead or watercourse;

(2) the location, erection, demolition, removal or sale of any public structure located within the municipality; adoption, amendment or repeal of an official map, subdivision and land development ordinance, zoning ordinance or provisions for planned residential development, or capital improvements program; or

(3) the adoption, amendment or repeal of an official map, subdivision and land development ordinance, zoning ordinance or provisions for planned residential development, or capital improvements program: or

(4) the construction, extension or abandonment of any water line, sewer line or sewage treatment facility.

(b) The recommendations of the planning agency including a specific statement as to whether or not the proposed action is in accordance with the objectives of the formally adopted comprehensive plan shall be made in writing to the governing body within 45 days.

(c) Notwithstanding any other provision of this act, no action by the governing body of a municipality shall be invalid nor shall the same be subject to challenge or appeal on the basis that such action is inconsistent with, or fails to comply with, the provision of a comprehensive plan.

(d) Municipal zoning, subdivision and land development regulations and capital improvement programs shall generally implement the municipal and multimunicipal comprehensive plan or, where none exists, the municipal statement of community development objectives.

Section 304. Legal Status of County Comprehensive Plans Within Municipalities.

(a) Following the adoption of a comprehensive plan or any part thereof by a county, pursuant to the procedures in section 302, any proposed action of the governing body of a municipality, its departments, agencies and appointed authorities within the county shall be submitted to the county planning agency for its recommendations if the proposed action relates to:

(1) the location, opening, vacation, extension, widening, narrowing or enlargement of any street, public ground, pierhead or watercourse;

(2) the location, erection, demolition, removal or sale of any public structures located within the municipality;

(3) the adoption, amendment or repeal of any comprehensive plan, official map, subdivision or land ordinance, zoning ordinance or provisions for planned residential development; or

(4) the construction, extension or abandonment of any water line, sewer line or sewage treatment facility.

(b) The recommendation of the planning agency shall be made to the governing body of the municipality within 45 days and the proposed action shall not be taken until such recommendation is made. If, however, the planning agency fails to act within 45 days, the governing body shall proceed without its recommendation.

Section 305. The Legal Status of Comprehensive Plans Within School Districts. Following the adoption of a comprehensive plan or any part thereof by any municipality or county governing body, pursuant to the procedures in section 302, any proposed action of the governing body of any public school district located within the municipality or county relating to the location, demolition, removal, sale or lease of any school district structure or land shall be submitted to the municipal and county planning agencies for their recommendations at least 45 days prior to the execution of such proposed action by the governing body of the school district.

Section 306. Municipal and County Comprehensive Plans.

(a) When a municipality having a comprehensive plan is located in a county which has adopted a comprehensive plan, both the county and the municipality shall each give the plan of the other consideration in order that the objectives of each plan can be protected to the greatest extent possible.

(b) Within 30 days after adoption, the governing body of a municipality, other than a county, shall forward a certified copy of the comprehensive plan, or part thereof or amendment thereto, to the county planning agency or, in counties where no planning agency exists, to the governing body of the county in which the municipality is located.

(c) Counties shall consult with municipalities and solicit comment from school districts, municipal authorities, the Center for Local Government Services, for information purposes, and public utilities during the process of preparing or upgrading a county comprehensive plan in order to determine future growth needs.

Section 307. State Land Use and Growth Management Report. The Center for Local Government Services shall issue a land use and growth management report by the year 2005 and shall review and update the report at five-year intervals.

Appendix B - Public Participation Documents

Chadds Ford Township is in the process of updating its Parks, Recreation, and Open Space Plan.

This community survey is intended to measure the thoughts and opinions of all Chadds Ford residents and business owners.

- Please complete this survey by no later than Friday, January 26th.
- Additional opportunities for public input will be offered at upcoming public meetings.
- Survey results will be presented at a public meeting on Wednesday, March 28, 2018 at 6pm.
- Check the Chadds Ford Township website regularly for project updates.

Chadds Ford Township Parks, Recreation, and Open Space Plan Update Resident Survey

1. How important is it for Chadds Ford Township to provide the following parks and recreation facilities and services?

	Extremely Important	Somewhat Important	Not Important
Trails - hiking	○	○	○
Trails – biking	○	○	○
Trails – horse	○	○	○
Playgrounds/tot lots	○	○	○
Athletic Fields	○	○	○
Athletic Courts	○	○	○
Walking/jogging	○	○	○
Dog park	○	○	○
Picnic area	○	○	○
Recreational programming	○	○	○

Other (please specify)

2. How important is it to provide parks and recreational facilities for the following age groups in Chadds Ford?

	Extremely Important	Somewhat Important	Not Important
Pre-school and younger	○	○	○
Kindergarten through middle school	○	○	○
High school and college	○	○	○
Adults 21–65	○	○	○
Adults 65 and over	○	○	○

3. Do you or your family travel outside of Chadds Ford Township to use parks and recreational facilities?

- ○ Yes
- ○ No

4. Identify places where you or your family currently go to use parks and recreational facilities:
(Please check all that apply)

	Hiking	Biking	Horseback Riding	Playground/Tot Lot	Athletic Fields	Athletic Courts	Walking/Jogging	Dog Park	Picnic Area
Concord Township parks	☐	☐	☐	☐	☐	☐	☐	☐	☐
Birmingham Township parks	☐	☐	☐	☐	☐	☐	☐	☐	☐
Pennsbury Township parks	☐	☐	☐	☐	☐	☐	☐	☐	☐
Chester County parks	☐	☐	☐	☐	☐	☐	☐	☐	☐
Delaware County parks	☐	☐	☐	☐	☐	☐	☐	☐	☐
Thornbury Township parks	☐	☐	☐	☐	☐	☐	☐	☐	☐
East Marlborough Township parks	☐	☐	☐	☐	☐	☐	☐	☐	☐
Kennett Township parks	☐	☐	☐	☐	☐	☐	☐	☐	☐
New Castle County DE parks	☐	☐	☐	☐	☐	☐	☐	☐	☐
State parks	☐	☐	☐	☐	☐	☐	☐	☐	☐
National park	☐	☐	☐	☐	☐	☐	☐	☐	☐
Private preserves	☐	☐	☐	☐	☐	☐	☐	☐	☐

Other (please specify)

5. How important is it for Chadds Ford Township to provide the following parks and recreation facilities and services?

	Extremely Important	Somewhat Important	Not Important
Acquire land for passive parks	○	○	○
Acquire land for athletic fields/courts	○	○	○
Acquire land for natural resource conservation	○	○	○

6. Is your family willing to help pay for new parks, recreation, and conservation areas in Chadds Ford Township?

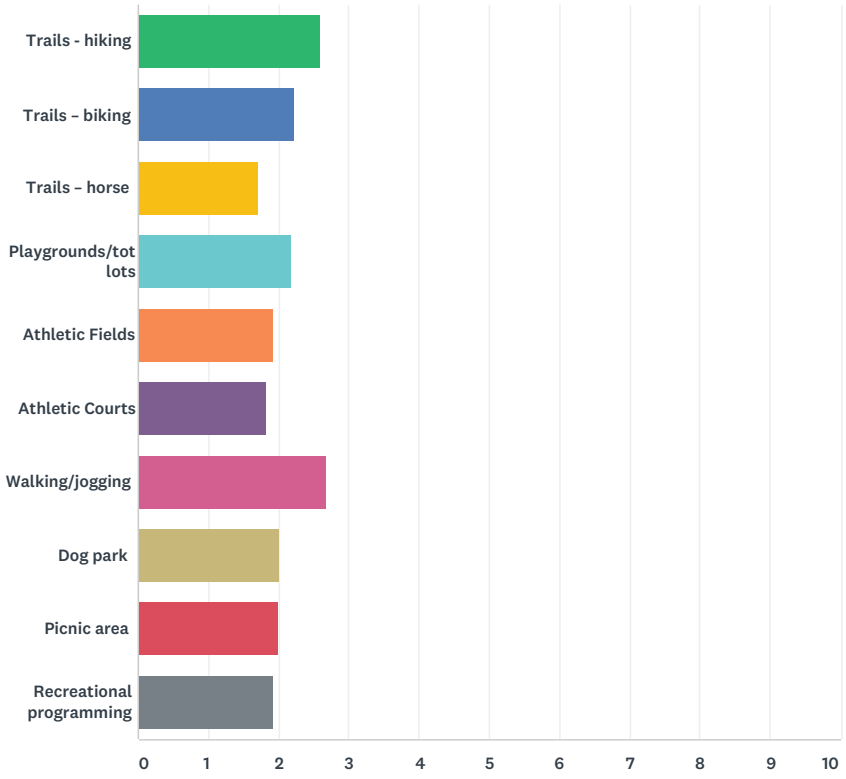
	Yes	Maybe	No
Trails - hiking	○	○	○
Trails - biking	○	○	○
Trails - horse	○	○	○
Playgrounds/tot lots	○	○	○
Athletic fields	○	○	○
Athletic courts	○	○	○
Walking/jogging	○	○	○
Dog park	○	○	○
Picnic area	○	○	○
Natural resource conservation	○	○	○

Other (please specify)

7. Please add any other comments or suggestions you may have regarding parks and recreation facilities in Chadds Ford Township.

Q1 How important is it for Chadds Ford Township to provide the following parks and recreation facilities and services?

Answered: 143 Skipped: 0



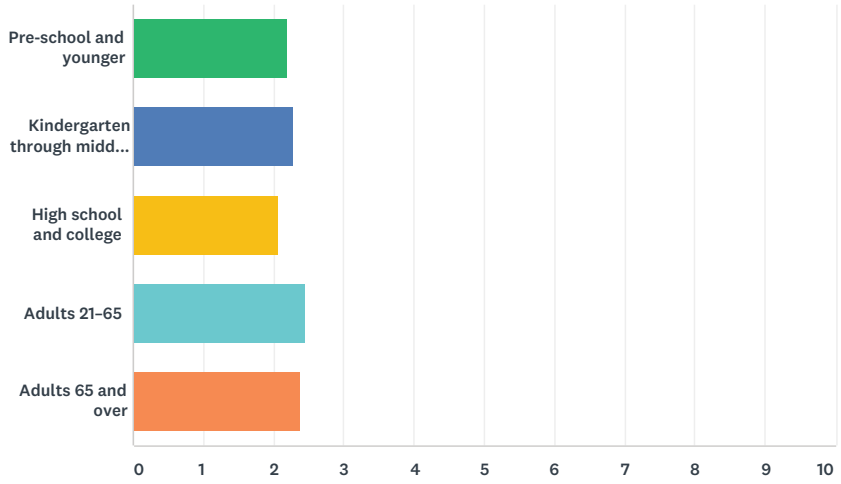
	EXTREMELY IMPORTANT	SOMEWHAT IMPORTANT	NOT IMPORTANT	TOTAL	WEIGHTED AVERAGE
Trails - hiking	67.83% 97	23.78% 34	8.39% 12	143	2.59
Trails – biking	45.32% 63	30.94% 43	23.74% 33	139	2.22
Trails – horse	20.44% 28	30.66% 42	48.91% 67	137	1.72
Playgrounds/tot lots	42.34% 58	33.58% 46	24.09% 33	137	2.18
Athletic Fields	25.55% 35	40.88% 56	33.58% 46	137	1.92
Athletic Courts	21.90% 30	38.69% 53	39.42% 54	137	1.82
Walking/jogging	73.24% 104	21.13% 30	5.63% 8	142	2.68
Dog park	37.14% 52	26.43% 37	36.43% 51	140	2.01
Picnic area	32.12% 44	34.31% 47	33.58% 46	137	1.99
Recreational programming	27.91% 36	37.21% 48	34.88% 45	129	1.93

#	OTHER (PLEASE SPECIFY)	DATE
1	Biking trail and running trail would be amazing!	2/12/2018 12:54 PM
2	I wanted to be a part of this survey and I would like to keep taxes down. I am sorry these items are just not that important to me. I work all of the time and come home to rest my head in Chadds Ford at night.	2/12/2018 12:04 PM

3	keeping as much space open and unused is more important	2/9/2018 12:29 PM
4	Brandywine Battlefield State Park is greatly underutilized.	1/26/2018 10:56 AM
5	Open space should be preserved at all costs!	1/26/2018 9:44 AM
6	Community swimming pool	1/25/2018 8:31 PM
7	Connectivity is important and should be included in a plan for these services.	12/29/2017 1:00 PM
8	It's great the way it is ,	12/27/2017 9:11 PM
9	Natural Open Space, well Maintained	12/27/2017 5:26 PM
10	Trails & connectivity are important	11/30/2017 4:40 PM

Q2 How important is it to provide parks and recreational facilities for the following age groups in Chadds Ford?

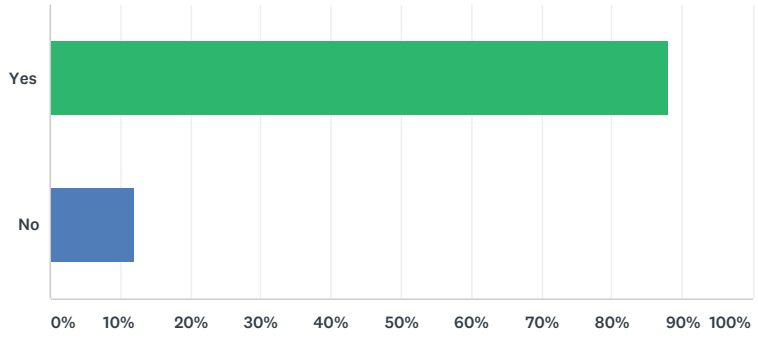
Answered: 143 Skipped: 0



	EXTREMELY IMPORTANT	SOMEWHAT IMPORTANT	NOT IMPORTANT	TOTAL	WEIGHTED AVERAGE
Pre-school and younger	42.03% 58	34.78% 48	23.19% 32	138	2.19
Kindergarten through middle school	49.29% 69	28.57% 40	22.14% 31	140	2.27
High school and college	34.56% 47	38.24% 52	27.21% 37	136	2.07
Adults 21–65	58.99% 82	27.34% 38	13.67% 19	139	2.45
Adults 65 and over	53.96% 75	30.94% 43	15.11% 21	139	2.39

Q3 Do you or your family travel outside of Chadds Ford Township to use parks and recreational facilities?

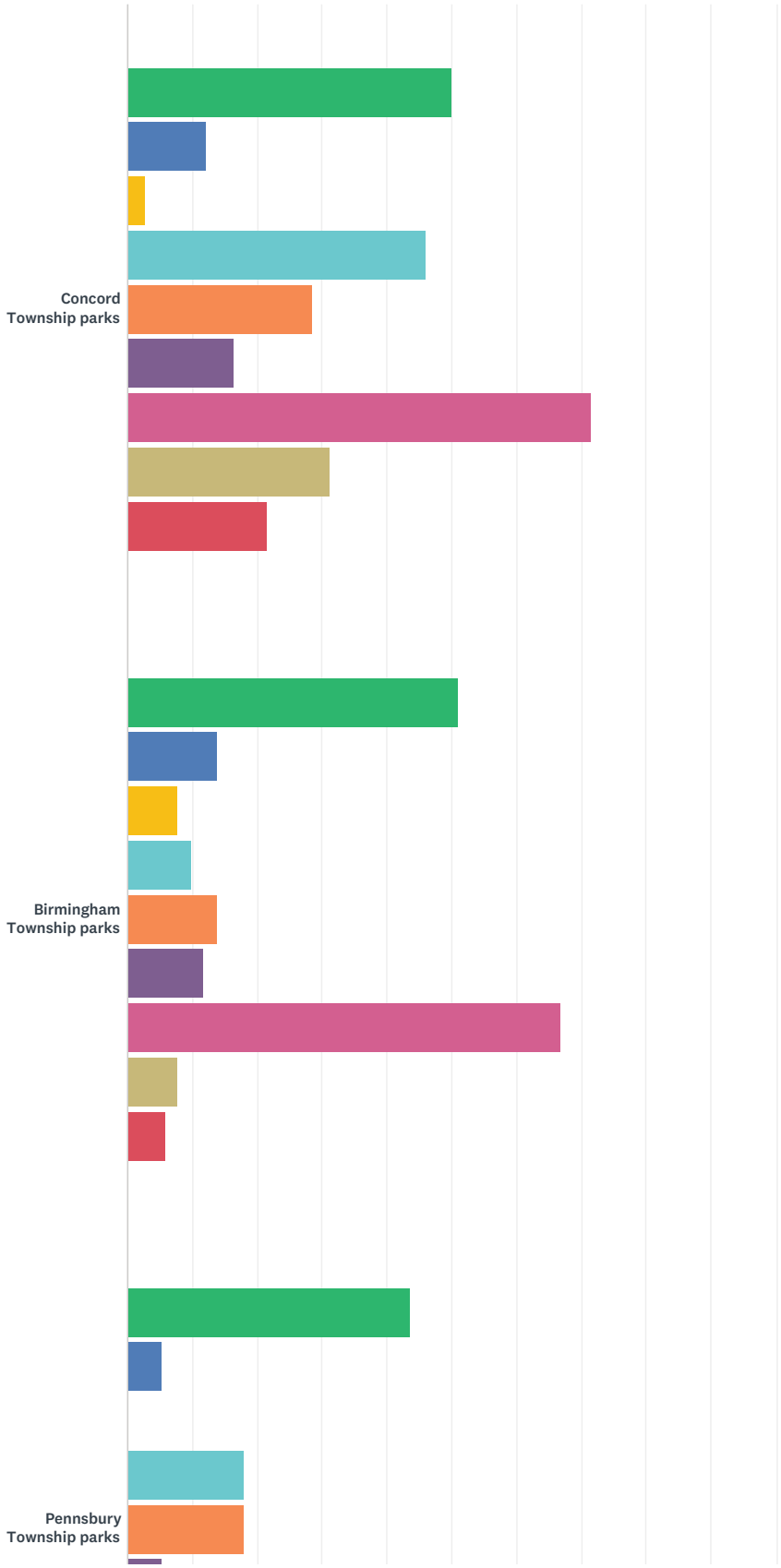
Answered: 142 Skipped: 1

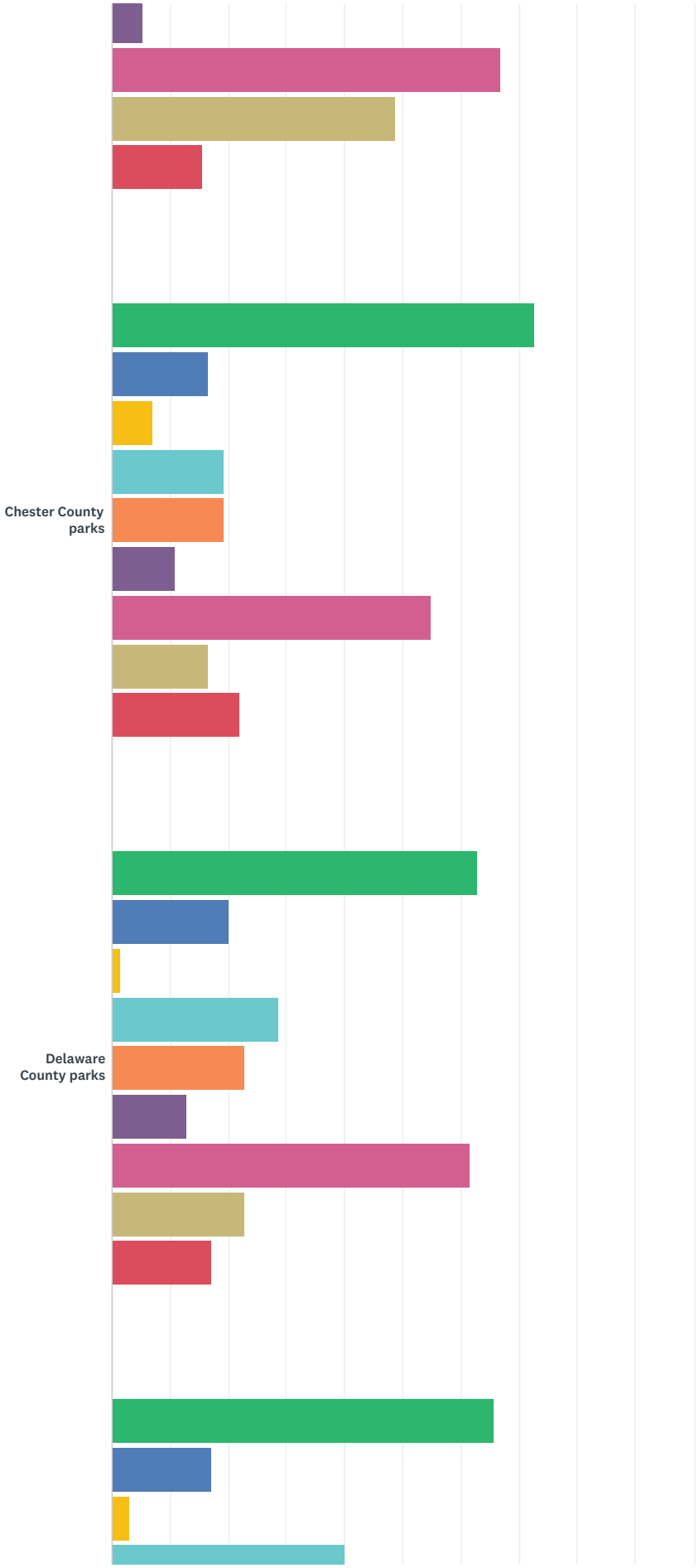


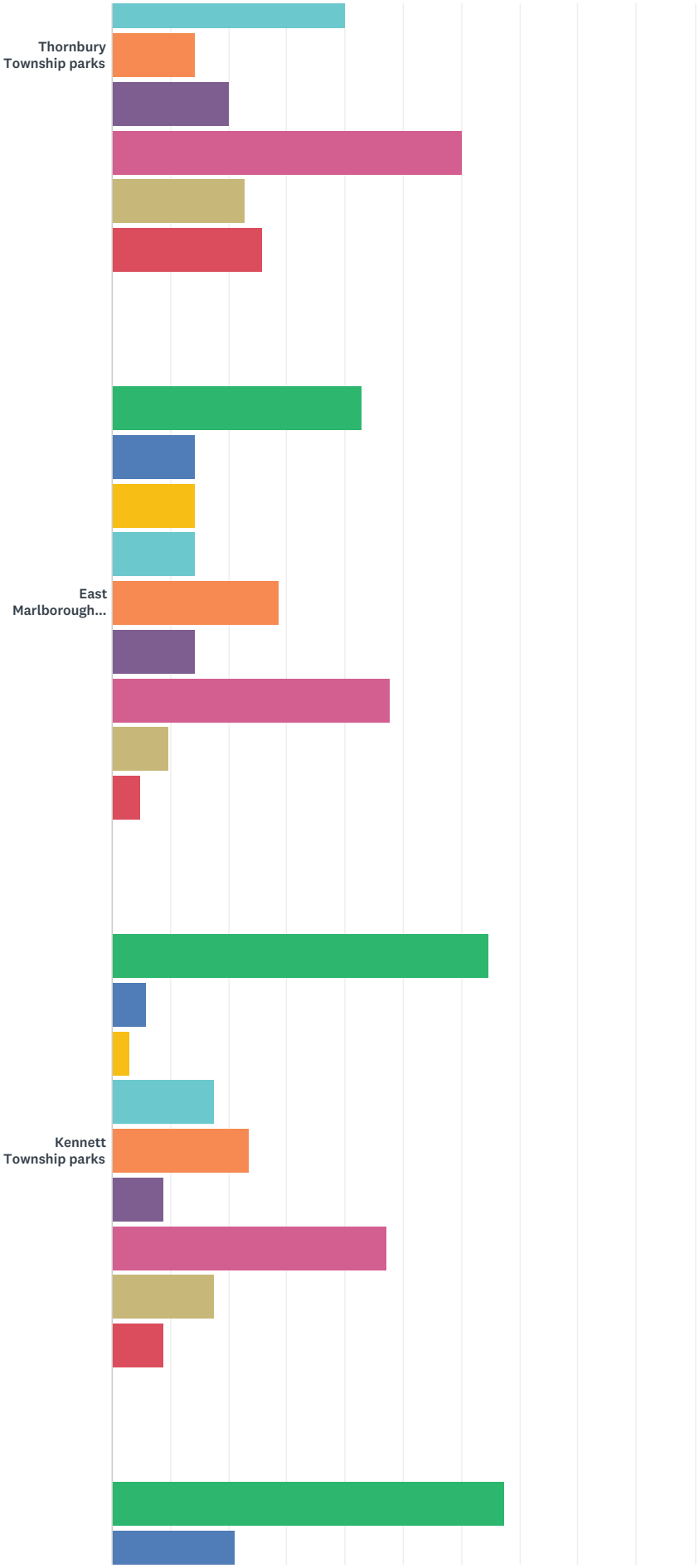
ANSWER CHOICES	RESPONSES	
Yes	88.03%	125
No	11.97%	17
TOTAL		142

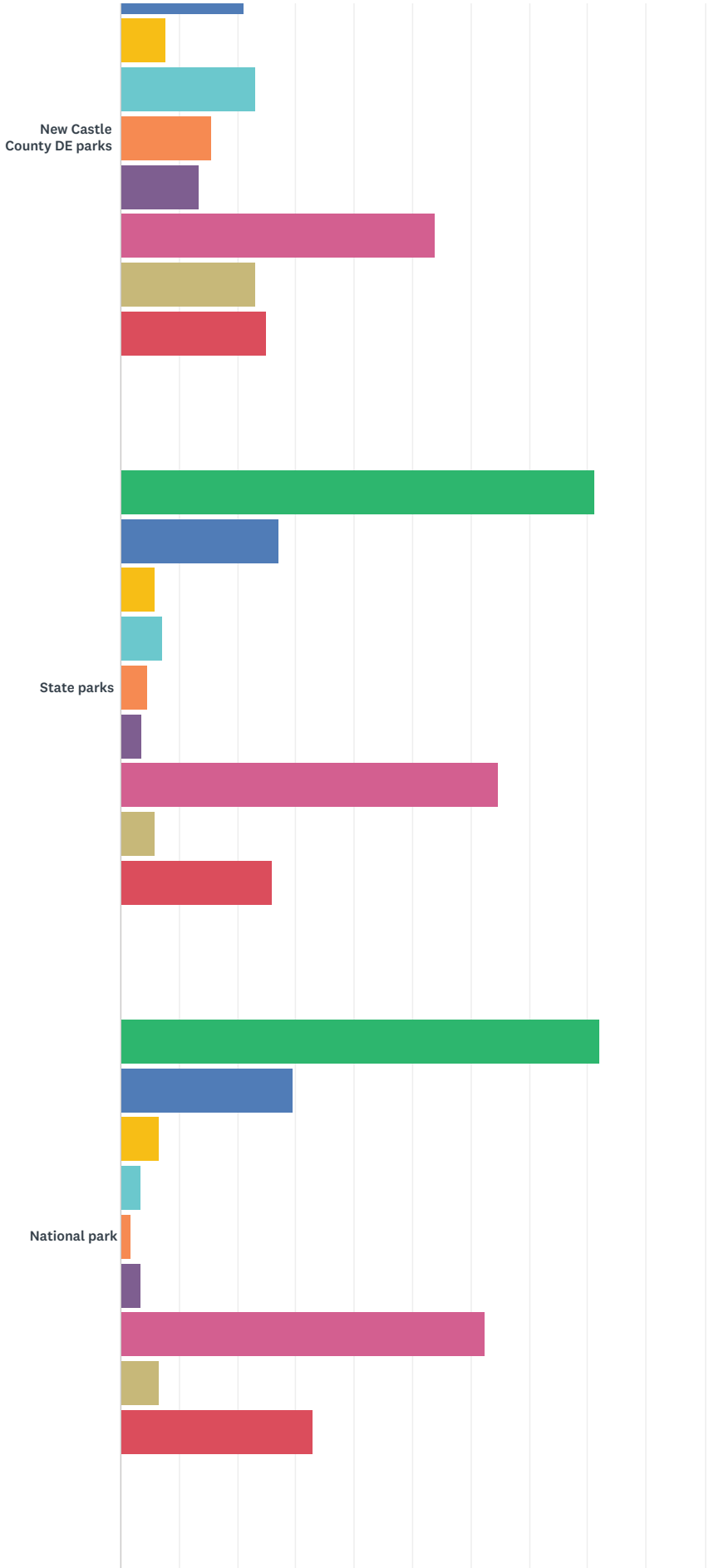
Q4 Identify places where you or your family currently go to use parks and recreational facilities: (Please check all that apply)

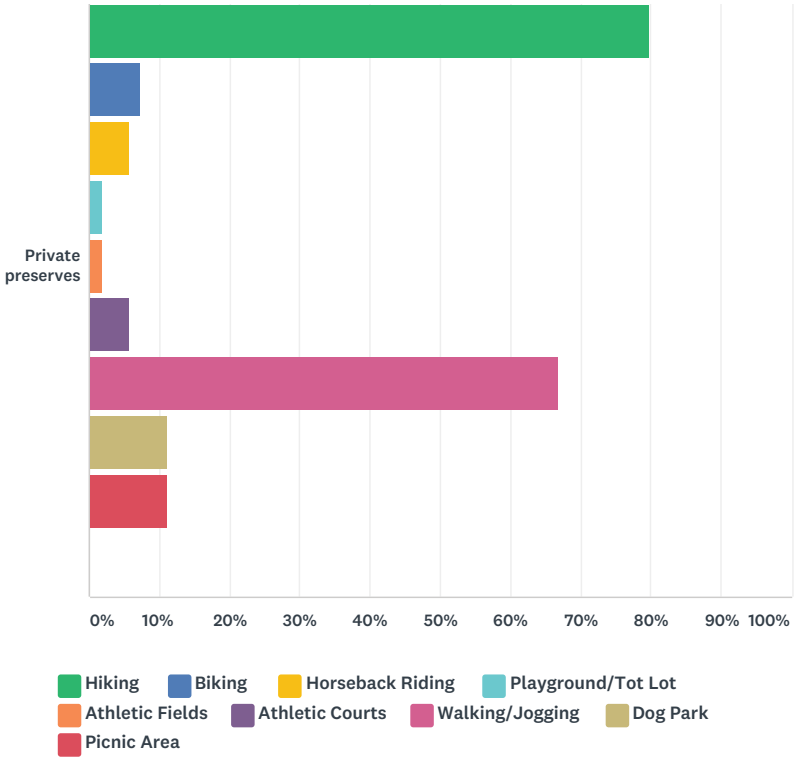
Answered: 119 Skipped: 24




Chester County parks
Delaware County parks


Thornbury Township parks
East Marlborough...
Kennett Township parks


New Castle County DE parks
State parks
National park



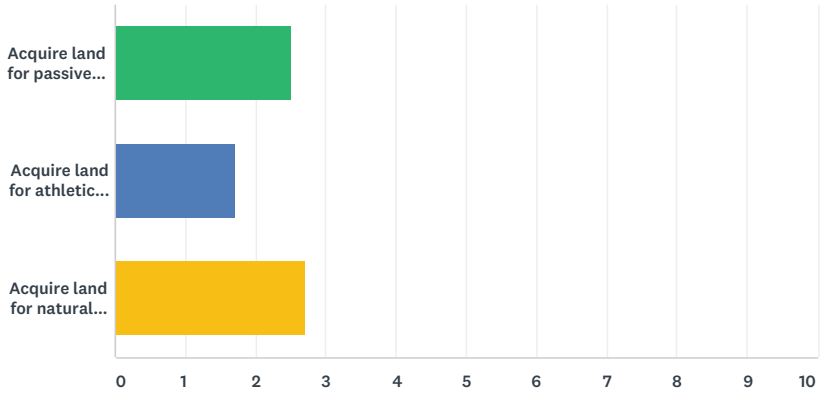
	HIKING	BIKING	HORSEBACK RIDING	PLAYGROUND/TOT LOT	ATHLETIC FIELDS	ATHLETIC COURTS	WALKING/JOGGING	DOG PARK	PICNIC AREA	T R
Concord Township parks	50.00% 37	12.16% 9	2.70% 2	45.95% 34	28.38% 21	16.22% 12	71.62% 53	31.08% 23	21.62% 16	
Birmingham Township parks	50.98% 26	13.73% 7	7.84% 4	9.80% 5	13.73% 7	11.76% 6	66.67% 34	7.84% 4	5.88% 3	
Pennsbury Township parks	43.59% 17	5.13% 2	0.00% 0	17.95% 7	17.95% 7	5.13% 2	66.67% 26	48.72% 19	15.38% 6	
Chester County parks	72.60% 53	16.44% 12	6.85% 5	19.18% 14	19.18% 14	10.96% 8	54.79% 40	16.44% 12	21.92% 16	
Delaware County parks	62.86% 44	20.00% 14	1.43% 1	28.57% 20	22.86% 16	12.86% 9	61.43% 43	22.86% 16	17.14% 12	
Thornbury Township parks	65.71% 23	17.14% 6	2.86% 1	40.00% 14	14.29% 5	20.00% 7	60.00% 21	22.86% 8	25.71% 9	
East Marlborough Township parks	42.86% 9	14.29% 3	14.29% 3	14.29% 3	28.57% 6	14.29% 3	47.62% 10	9.52% 2	4.76% 1	
Kennett Township parks	64.71% 22	5.88% 2	2.94% 1	17.65% 6	23.53% 8	8.82% 3	47.06% 16	17.65% 6	8.82% 3	
New Castle County DE parks	67.31% 35	21.15% 11	7.69% 4	23.08% 12	15.38% 8	13.46% 7	53.85% 28	23.08% 12	25.00% 13	
State parks	81.18% 69	27.06% 23	5.88% 5	7.06% 6	4.71% 4	3.53% 3	64.71% 55	5.88% 5	25.88% 22	
National park	81.97% 50	29.51% 18	6.56% 4	3.28% 2	1.64% 1	3.28% 2	62.30% 38	6.56% 4	32.79% 20	
Private preserves	79.63% 43	7.41% 4	5.56% 3	1.85% 1	1.85% 1	5.56% 3	66.67% 36	11.11% 6	11.11% 6	

#	OTHER (PLEASE SPECIFY)	DATE

1	Chadds Ford Twp is not bike friendly as most back roads have no shoulder at all which is a major safety issue. I travel to Schuylkill River Trail that is linked to a proper network of trails. Exton even has created bike/walk paths and has linked to adjoining trails. It would be great if CF had this!	2/12/2018 12:23 PM
2	Natural Lands preserves are beautiful and a good model for the township.	1/26/2018 9:45 AM
3	Longwood Gardens (membership to get in to walk the grounds)	1/25/2018 8:33 PM
4	Concord Township children's play park	1/25/2018 7:51 PM
5	kayak at Marsh Creek and on Brandywine	1/16/2018 12:35 PM
6	Newtown Twp., Radnor Twp., Valley Forge Nat'l Park, Paoli, Ridley Creek Park	12/27/2017 5:34 PM
7	Camping State & National Parks	11/30/2017 4:42 PM

Q5 How important is it for Chadds Ford Township to provide the following parks and recreation facilities and services?

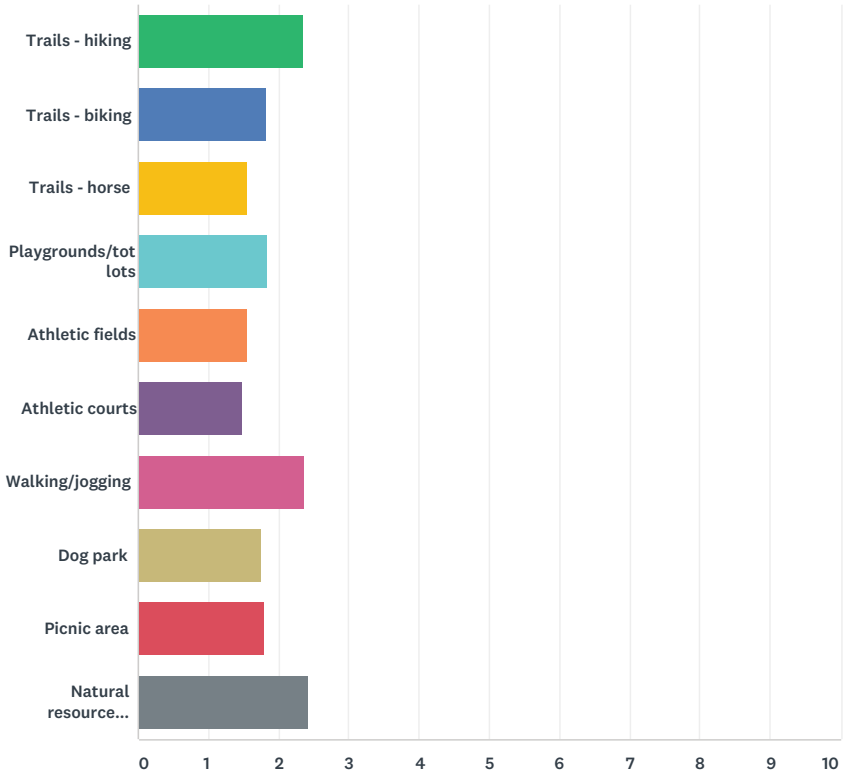
Answered: 126 Skipped: 17



	EXTREMELY IMPORTANT	SOMEWHAT IMPORTANT	NOT IMPORTANT	TOTAL	WEIGHTED AVERAGE
Acquire land for passive parks	65.08% 82	22.22% 28	12.70% 16	126	2.52
Acquire land for athletic fields/courts	17.36% 21	36.36% 44	46.28% 56	121	1.71
Acquire land for natural resource conservation	76.19% 96	17.46% 22	6.35% 8	126	2.70

Q6 Is your family willing to help pay for new parks, recreation, and conservation areas in Chadds Ford Township?

Answered: 126 Skipped: 17



	YES	MAYBE	NO	TOTAL	WEIGHTED AVERAGE
Trails - hiking	52.80% 66	28.00% 35	19.20% 24	125	2.34
Trails - biking	26.32% 30	28.07% 32	45.61% 52	114	1.81
Trails - horse	13.64% 15	27.27% 30	59.09% 65	110	1.55
Playgrounds/tot lots	26.50% 31	31.62% 37	41.88% 49	117	1.85
Athletic fields	12.84% 14	29.36% 32	57.80% 63	109	1.55
Athletic courts	10.91% 12	26.36% 29	62.73% 69	110	1.48
Walking/jogging	54.55% 66	28.10% 34	17.36% 21	121	2.37
Dog park	22.22% 26	30.77% 36	47.01% 55	117	1.75
Picnic area	22.32% 25	34.82% 39	42.86% 48	112	1.79
Natural resource conservation	60.17% 71	22.03% 26	17.80% 21	118	2.42

#	OTHER (PLEASE SPECIFY)	DATE
1	I already pay taxes, thank you for	2/13/2018 8:29 AM
2	Hhj	2/12/2018 11:56 PM
3	Any effort to keep fields open and undeveloped is worth paying for	2/9/2018 12:42 PM
4	Sand Volleyball courts- please add	1/9/2018 3:03 PM

5	Already pay for conservation through O.S. property tax provision	12/26/2017 5:54 PM
6	Any technique for preserving open space.	11/30/2017 1:42 PM

Q7 Please add any other comments or suggestions you may have regarding parks and recreation facilities in Chadds Ford Township.

Answered: 27 Skipped: 116

#	RESPONSES	DATE
1	Please do not turn us into Concord Township which has destroyed any (and maybe all) open space. There idea of open space is an ugly walking path under high power wires off of Smithbridge Rd. Sad and pathetic they did that to their community.	2/13/2018 9:18 PM
2	We should be spending our funds to acquire open space and land, not squandering a million dollars for Painters Folly.	2/13/2018 12:08 PM
3	Builders and buyers of new construction need to be the major source of funds for conserving open lands	2/13/2018 11:26 AM
4	Chadds Ford township has enough walking trails along the Brandywine and the Brandywine Battle Field has enough open space for our small community.	2/12/2018 11:50 PM
5	Aquire Low cost trails with little maintenance required it the way to go. Enjoyment for all and all ages.	2/12/2018 7:48 PM
6	Solar powered illuminated walk/run trails should be considered for all new walk/run trails.	2/12/2018 2:34 PM
7	more is better. Keep the township open spaces available for outdoor activities	2/12/2018 12:18 PM
8	I feel bad about completely the survey the way I did but we downsized and moved to Chadds Ford Twp because the taxes were low. My husband is retired and we were hit hard financially in 2008. We plan to live in Chadds Ford forever and hope that the taxes increase with cost of living increases only. Chadds Ford Twp has been managed conservatively and we hope it stays this way. Thank you for putting the survey out there.	2/12/2018 12:11 PM
9	I am willing to support the maintenance of Chadds Ford as a highly desirable area for families to live. Maintaining some open space for wildlife and hiking is important to me. If there are not enough athletic fields for our young people available at schools, then we should provide places to play. I don't own a dog, so dog park is not important to me, but many of my neighbors own dogs and it may be important to them. The same can be said for horses, but I would guess there are far fewer horse owners.	2/12/2018 11:52 AM
10	Please keep the open quality of Chadds Ford with its beautiful fields etc. and no development. The more we develop, even with something like Athletic Fields, the more we will end up looking like Springfield or Media.	2/9/2018 12:36 PM
11	Chadds Ford was know for its vistas, open farm fields and rolling countryside. The more we keep that model, the better. Turning fields into athletic fields or playgrounds defeats that purpose. Thank you	2/9/2018 12:31 PM
12	Because the school district is very good, you have young families moving into Chadds Ford who need a safe playground for young children to play	2/9/2018 12:31 PM
13	Work to stop development of open spaces. Tighten the zoning laws. Advise people when development is being considered.	1/26/2018 4:00 PM
14	so glad you are buying Painters Folly	1/26/2018 1:05 PM
15	Picnic, tot lots, trails and perhaps a playground could be developed at the Brandywine Battlefield, many acres in the heart of CF. The Township should work with the state and other entities (Museum of American Revolution? Private history groups?) to make that happen. Perhaps partnerships with CF Elementary and Hillendale Elementary could be started to open up those athletic fields for limited weekend use. Let's first use the facilities we have -- and see how popular they might become -- before spending big money on facilities and continuing operations that township residents may or may not use in leisure time. Trails in commercial areas are ok -- such as from the River Museum to the Historical Society, but trails backing up to private homes are problematic. Witness my sister-in-law, from her rear deck, asking a man on a Conservancy trail to please not urinate -- and he did so anyway while looking at her. Yuck. Residents here greatly value the the sanctity, privacy and quietude of their homes, owned or rented. Isn't that an important reason we don't want to become Concord Township?	1/26/2018 11:14 AM
16	Why on earth is the Township buying Painter's Folly with open space funds???? That is NOT open space! And will cost the Township dearly to renovate and keep up. It's irresponsible to use our open space funds to buy a building. What a waste!	1/26/2018 9:47 AM
17	CFT has many areas for residents to enjoy the outdoors. Along with the Brandywine Conservancy, preservation of open/natural resources has been-and should continue to be- a priority over paved athletic areas.	1/25/2018 9:17 PM
18	Chadds Ford is badly lacking in any type of recreational park facilities. The new walking trail behind the Township building is a start. We don't have any children at home, but hopefully we will have grandchildren someday and there will be a small park with kids play equipment. A dog park would be nice.	1/25/2018 8:37 PM

19	There is a beautiful meadow, including a boardwalk at the site of the CF Historical Society. We have lived in the heart of Chadds Ford Village for 30 years and have taken many walks there, yet rarely come in contact with another human being. We do not support taking away land to make way for walk/bike paths behind and/or through private property along Creek Road. Moreover, we would much prefer to gaze upon the wetlands and trees across the street from our home than a raised boardwalk or asphalt walkway intruding on our view, especially if that view includes people and swarms of bicycles. Any funding would be more well spent on preserving and conserving open space, not "enhancing" it. We plan to address more of our concerns at a public meeting.	1/14/2018 8:19 PM
20	I	12/28/2017 7:59 AM
21	It’s pretty unusual to have a township with not a single playground. Our kids deserve better.	12/27/2017 9:33 PM
22	Government is not responsible for providing recreational facilities!!!	12/27/2017 6:50 PM
23	Preserve natural open space, a feature that defines the Township presently.	12/27/2017 5:31 PM
24	Only substantial distance from existing residential property lines. Not on any properties which are on National Historical Register.	12/26/2017 5:54 PM
25	The Township needs to attract younger families to keep the housing market strong. People expect a level of convenience to their recreation and paying for it in taxes is not unheard of. Our taxes continue to be lower than other Townships which is great and can be used to explain our lack of facilities. But we do pay an open space tax and large parcels continue to elude conservation. Without conserving the remaining large scenic areas out housing market will fall. If we look like Concord our house prices will reflect that.	12/4/2017 7:59 PM
26	Trails for walking, jogging, stream access, etc provide for healthy activities, and bring community members together	11/30/2017 4:44 PM
27	My interest is in preserving open space and natural resources.Passive recreation and, in particular, walking, is what I care about..	11/30/2017 1:42 PM

Chadds Ford Township
Open Space Plan Update
2017-2018

Key Person Interview

Name of interviewer:

Name of interviewee:

Date of interview:

Question #1:
In your view, what are the current conditions for active and passive recreation in Chadds Ford Township?

a) What is particularly positive, contributes to your interests/objectives, and should continue?
b) What is troubling, an obstacle, should be addressed?

Question #2:
Is Chadds Ford Township's role in providing opportunities for outdoor recreation appropriate, too much, too little?

Question #3:
What is your sense of community needs for active and passive outdoor recreation in Chadds Ford?

Chadds Ford Open Space Plan Update 2017-2018

Key persons:

BRANDYWINE CONSERVANCY

1. Debbie Reardon – OSC Chair

   dreardoncfos@aol.com

   (610) 358-3354 (home)

   (302) 530-5037 (mobile)

2. Mike Connolly – Exec. Dir. Chadds Ford Historical Society

   mconnolly@chaddsfordhistory.org

   610-388-7376

3. Mac Weymouth – landowner

   macweymouth@gmail.com

4. Ford Draper – landowner

   Ford@KalmarInvestments.com

   1-302-373-2430

5. John Mastriana – HOA Estates at Chadds Ford

   mastrianapromgt@aol.com

   302-354-1062

6. Kevin Crossman – URA president

   lawhoops4@verizon.net

7. Marie Wickersham – Dir. Of Transportation, UCF School District

   132 East Doe Run Road, Kennett Square, PA 19348
   mwickersham@ucfsd.net

   610-347-0804

TOM COMITTA AND ERIN GROSS

8. Whit Gardner – landowner

   Partner, Gardner Lewis

   1690 Smithbridge Rd.

   610-558-2800 (office)

9. Dr. Robert Craig – landowner

   Oakland Road

   610-420-1934

10. Hineman - landowner (also in Birmingham Township)

    Clifford and Kathleen Hineman

    7 Buttonwood Drive

    610-388-1372

11. Clark Hoffman - HOA Painters Crossing

    810 Painters Crossing

    610-459-3213

12. Kevin Buente - Springhill Farm HOA

    44 Marshall Road

    Glen Mills, PA 19342

    610-909-1198

    kmbuente@aol.com

13. Cynthia Tobias – landowner

    490 Ridge Road

    610-388-1201

    610-388-7218

THOMAS COMITTA ASSOCIATES, INC.
Town Planners & Landscape Architects

M E M O

TO: Sheila

FROM: Tom
Erin

DATE: March 2, 2018

SUBJECT: **CHADDS FORD TOWNSHIP OPEN SPACE PLAN UPDATE 2018: KEY PERSON INTERVIEWS**

We are coming down the home stretch, with only 1 remaining Interview. To date we have interviewed:

1. Dr. Robert Craig
2. Kevin Buente
3. Whit Gardner
4. Clark Hoffman
5. Cynthia and TerrenceTobias

After several unsuccessful attempts to reach Clifford and Kathleen Hineman, we are now wondering if we should interview Ethan McKinley of the National Park Service to discuss programs and activities at the First State Monument.

Attached are 3 pages summarizing the main sentiments from the Key Person Interviews, relative to:

1. Open Space
2. Trails
3. Active Recreation

Please let us know if you have any questions.

18 West Chestnut Street · West Chester, PA 19382 · PHONE: 610-696-3896 · FAX: 610-430-3804
www.comitta.com

THOMAS COMITTA ASSOCIATES, INC.
Town Planners & Landscape Architects

CHADDS FORD TOWNSHIP OPEN SPACE PLAN UPDATE 2018:
KEY PERSON INTERVIEWS

March 2, 2018

1. Open Space

The main "take-aways" regarding comments made relative to Open Space are listed below.

1.1. Chadds Ford Township is noted for its rural, historic, scenic, cultural, and agricultural attributes. Therefore, these attributes should be conserved and protected in the future.

1.2. Additional lands for Open Space, through Conservation Easements, might be focused on expanding those in the southwest portion of the Township, as well as the northern portion of the Township in areas associated with the Battle of the Brandywine.

1.3. The Township should coordinate with the State at the Brandywine Battlefield State Park, to determine if passive recreational activities are possible within their Open Space.

1.4. Although it would be great to have additional preserved Open Space, the Township should consider how the land will be utilized.

THOMAS COMITTA ASSOCIATES, INC.
Town Planners & Landscape Architects

CHADDS FORD TOWNSHIP OPEN SPACE PLAN UPDATE 2018:
KEY PERSON INTERVIEWS

March 2, 2018

2. Trails

The main "take-aways" regarding comments made relative to Trails are listed below.

2.1. An overall loop trail system would be good.

2.2. The Township should coordinate Trail use with the First State Monument, so that their Trail resources are shared.

2.3. The Township should specifically coordinate with the Wilmington Trail Club and the West Chester Trail Club, relative to their Trail programs.

2.4. In considering Trails, we should think about connections to other Trails, and opportunities along Trails. For example, a Trail leading to Chadds Ford Village would provide opportunities for Trail users to rest, dine, shop, etc.

2.5. Given the steepness of the topography in Chadds Ford Township, one of the Persons Interviewed suggested that Trails be located on terrain that would enable most trail users to more easily walk on level ground.

THOMAS COMITTA ASSOCIATES, INC.
Town Planners & Landscape Architects

CHADDS FORD TOWNSHIP OPEN SPACE PLAN UPDATE 2018:
KEY PERSON INTERVIEWS

March 2, 2018

3. Active Recreation

The main "take-aways" regarding comments made relative to Active Recreation are listed below.

3.1. There is no doubt that Active Recreational Facilities are needed.

3.2. One of the Persons Interviewed suggested that we create a community park on the northern end of Chadds Ford Village in the field currently used for overflow parking at Chadds Ford Days. In so doing, that person felt that such a community park would be well located (away from Residential Neighborhoods that might otherwise be annoyed to have a park in their backyard).

3.3. Certain Active Recreational Facilities provided by the School District should continue to be used, such as Tennis Courts.

3.4. Certain Active Recreational Facilities available in adjoining Municipalities should continue to be used.

3.5. Certain Active Recreational Facilities, especially playfields, might be provided in conjunction with adjoining Municipalities, such as Birmingham Township – Chester County.

3.6. Relative to the former Camp Sunshine/Girl Scouts Camp, one of the Persons Interviewed felt that it would not be appropriate to have Active Recreational Facilities on this ground, due to the steepness of the ground, and proximity to the neighbors at Chadds Ford Estates.

3.7. An interpretation of several comments made to minimize Active Recreation, could be interpreted to mean that small recreational gathering areas should be built at shopping centers in the Route 202 corridor.

3.8. One of the Persons Interviewed suggested Pickleball as a needed facility.

3.9. If Chadds Ford Township will be developing Active Recreational Facilities, it would be good to focus on a small playground and activities for children in the range of 6 to 12 years old.

Brandywine Conservancy

Chadds Ford Township Open Space Plan Update 2018

Memo to File

March 21, 2018

Re: Key Person Interviews

The Brandywine Conservancy completed 3 key person interviews with:

1. Mike Connolly, Executive Director, Chadds Ford Historical Society (12/13/17)
2. Jon Mastriana, resident, Estates of Chadds Ford (2/6/18)
3. Mac Weymouth, resident, easement landowner

Several attemps were made to reach the following with no success:

1. Debbie Reardon
2. Kevin Crossman
3. Marie Wickersham

We plan to interview Ford Draper and Ethan McKinley (FSNHP) in the coming weeks.

Below is a summary of the main take-aways received during the interviews with regards to Open Space, Trails, and Active Recreation.

Open Space

1. It is most important to preserve open space and the unique rural and historic character of Chadds Ford.
2. CFT should provide more passive open space that promotes community interaction and engagement.
3. CFT should better promote existing park and recreation opportunities throughout the township and especially at BCSP, FSNHP, and access to the Brandywine at CFHS and BRMA.
4. The Township could make better use of existing open space at the municipal campus on Route 1.

Trails

1. There is support for trails but only in appropriate locations that will not have a negative impact on residential areas.

2. There is support for the Octoraro Trail as long as it does not negatively impact adjacent residential areas and private landowners.

3. The Township should explore opportunities to provide more low maintenance trails along the Brandwine, and enhance access to the Brandywine for recreation.

4. Residents want to connect to the Village of Chadds Ford, and be able to navigate through the village shops, services and attractions safely.

Active Recreation

1. Generally, residents are not interested in new active recreation facilities - such facilities are expensive to construct and maintain and are already available in nearby municipalities.

2. If there is a deemed need for active recreation, it should occur only in appropriate locations that will not have a negative impact on residential areas.

3. Make better use of the BCSP, and coordinate with park representatives to implement new facilities and special events.

4. If there is a deemed need, focus active recreation along the Route 1 corridor where access is easy and residential areas will not be impacted.

5. Cconsider a "pay to play" annual parking pass to generate revenue for new parks and trails.

6. Consider a dog park.

7. If there is a deemed need, the Township should develop recreational facilities without having to purchase more land for those facilities.

Chadds Ford Township
Open Space Plan Update

Task Force Meeting #1
Thursday, October 5, 2017
7:00pm

AGENDA

1. Introductions
2. Overview of project scope, timeline and acceptance
3. Future meeting schedule
4. Survey instruments
5. Key Person Interviews
6. Open Space and Recreation Tour
7. Preferred Outcomes
8. Next Steps

HANDOUTS

- Task Force appointees, affiliation and contact information
- BC Team project methods and procedures, timeline
- Current OSP document and summary
- Background documentation list
- Draft future meeting schedule
- Draft online survey instrument
- Draft key person interview instrument
- Draft list of key persons for interviews

Chadds Ford Township
Open Space Plan Update

Task Force Meeting #2
Tuesday, December 19th 2017
7:00pm

AGENDA

1. Walkable Chadds Ford update
2. Data Collection, Inventory Mapping update
    a. Regional Recreation
    b. Existing and Future Parks and Trails
    c. Protected Lands
    d. Aerial Photograph
3. Background Document Review
4. Online Survey
5. Key Person Interviews update
6. Open Space and Recreation Tour January 19th 1-4pm
    a. Logistics
    b. Route
7. Next Steps

HANDOUTS

- 4 inventory maps

Chadds Ford Township
Open Space Plan Update

Task Force Meeting #3
Tuesday, March 27 2018
7:00pm

AGENDA

1. Project Overview and Scope of Work
    a. Update of the Open Space component of the 2007 Plan
    b. Focus on Trails
    c. New attention to Recreation and its relevance re. Recreation Fee-in-Lieu Ordinance

2. Tasks and Timeline
    a. Recreation Needs Analysis
    b. Mission Statement and Goals discussion

3. Open Space Tour – recap.

4. Key Person Interviews – status reports

5. Community Survey Results – status report

6. March 28th Public Meeting
    a. Inventory Maps
    b. Powerpoint Presentation
    c. Mapping Exercise

HANDOUTS

- Agenda
- Draft Mission Statement and Goals
- Open Space Tour Summary
- Key Person Interview Summaries
- Community Survey Report

Chadds Ford Township
Open Space Plan Update

Task Force Meeting #4
Tuesday, June 19 2018
7:00pm

AGENDA

1. Project Overview and Scope of Work
    a. Timeline
    b. Draft report outline
    c. First draft Chapter 1 Background
    d. First draft Chapter 2 Evaluation

2. Draft trail concepts
    a. Bicycle and pedestrian facilities toolbox
    b. Draft bicycle routes
    c. Draft pedestrian routes

3. Recreational needs analysis
    a. NRPA standards
    b. Service area analysis
    c. Municipal park conceptual master plan
    d. Camp Sunset Hill Park conceptual master plan

HANDOUTS

- Draft report outline
- Draft Chapter 1 Background
- Draft Chapter 2 Evaluation
- Task Force trail map mark-up summary
- Bicycle and pedestrian facilities toolbox
- Draft bicycle routes
- Draft pedestrian routes
- Recreational needs analysis

Chadds Ford Township Open Space Driving Tour

January 19th, 2018 from 1 p.m. to 4 p.m.

Start location: Chadds Ford Township Building- 10 Ring Road, Chadds Ford, PA 19317

Directions (from Township building parking lot) and Highlights:

Municipal Lands

1. Turn LEFT out of Township building parking lot onto Ring Rd. Continue STRAIGHT across intersection into Brandywine Battlefield Park and make a SLIGHT RIGHT up driveway into parking lot.

Brandywine Battlefield Park

Painter's Folly

2. Turn around in parking lot, go back down driveway and turn RIGHT on Route 1.

3. Turn RIGHT on Webb Rd.

Sugarloaf Farm

4. Turn LEFT on Oakland Rd. Proceed through the 5-way intersection at Brintons Bridge Rd.

Baldino

5. Turn around in the Dilworthtown Inn Parking Lot.

6. Continue on Oakland Rd.

Rosenfield

7. Make a RIGHT on 202.

8. Turn LEFT on Applied Bank Boulevard.

9. Turn RIGHT into the SECOND DRIVEWAY towards WEGMANS. Pull into the furthest parking lot in the back, facing towards the woods.

PECO

PECO/SEPTA Corridor

10. Proceed out of the Wegmans parking lot towards 202.

11. Make a LEFT onto 202.

12. Make a RIGHT onto Ridge Rd.

Ridge Road Residential LP

Saint Cornelius RC Church and School

13. Make a RIGHT onto Heyburn Rd.

14. Continue on Heyburn Rd until just after KEEPSAKE LANE. Be prepared to pull over into a slightly rough pull off.

Municipal lands at former Girl Scouts Camp

15. Reverse direction when possible and continue in the direction you came on Heyburn Rd.

16. Make a RIGHT onto Ridge Rd.

17. Turn RIGHT onto Smithbridge Rd

18. Turn LEFT onto Brandywine Creek Rd

19. Turn LEFT onto Beaver Dam Rd

20. Turn LEFT onto Beaver Valley Rd. Continue on Beaver Valley Rd by the First State National Historical Park Property and REVERSE direction where safe and possible.

First State National Historical Park

21. Turn RIGHT onto Beaver Dam Rd.

22. Turn RIGHT onto Brandywine Creek Rd.

23. Turn LEFT onto Smithbridge Rd.

24. Turn LEFT onto Ridge Rd.

25. Make a LEFT onto Ring Rd.

26. Make a LEFT onto Ringfield Rd. Turn around in Ringfield Rd.

Ringfield

27. Make a LEFT onto Ring Rd.

28. Make a LEFT onto Bullock Rd.

Municipal lands, Mother Archie's Church

Twin Bridges Ltd Partnership

29. Make a LEFT onto Creek Rd.

30. Make a LEFT onto Rocky Hill Rd.

31. Continue down Frolic's driveway, and turn around.

Weymouth

32. Make a RIGHT onto Creek Rd.

Brandywine Conservancy & Museum of Art

Chadds Ford Historical Society

33. Turn RIGHT onto Route 1.

34. Turn RIGHT onto Ring Rd.

35. Turn RIGHT into Municipal Driveway.

SUMMARY – OPEN SPACE TOUR RESULTS & COMMENTS

No	Category	Future municipal parks, rec, and/or trail		Potential destination TWP trail	
		Yes	No	Yes	No
1	Municipal Lands	8	1	9	0
2	Brandywine Battlefield Park	7	1	9	0
3	Painter's Folly	2	3	3	2
4	Private Property	8	0	5	2
5	Private Property	3	3	1	5
6	Private Property	8	1	7	2
7	PECO/SEPTA Corridor	7	1	8	1
8	Private Property	5	3	2	3
9	Saint Cornelius RC Church and School	6	1	4	2
10	Municipal lands at former Girl Scouts Camp	7	0	6	1
11	Private Property	8	1	7	0
12	First State National Historical Park	7	1	8	0
13	Ringfield	1	7	2	5
14	Municipal lands, Ruins of Mother Archie's Church/Octagonal School	4	4	6	2
15	Private Property	8	0	6	1
16	Private Property	5	2	8	0
17	Brandywine Conservancy & Museum of Art	7	0	8	1
18	Chadds Ford Historical Society	8	0	9	0

No	Category	Comments
1	Municipal Lands	• Question 2 – as the Harvey Run Trail • Category starred
2	Brandywine Battlefield Park	• Category starred • Q 1 – Parks and recreation crossed out, trail circled ("no" response) • No current trails, only road opportunity
3	Painter's Folly	• Question 1 – Don't know • Question 2 – Would depend on the use of the building (? On yes, ? on no) • ? • Q 1 – Parks and recreation crossed out, trail circled ("no" response)
4	Private Property	• Trail circled in question 1

		• "No" starred with ? • ?
5	Private Property	• Wonderland Farms • "No" starred • Future development? • Crossed out – Joe Grace development
6	Private Property	• Ideally, I think connectivity should be considered with <u>every</u> trail. Some spots seem to be too difficult to connect at this time, but should have a <u>plan</u>.
7	PECO/SEPTA Corridor	NONE
8	Private Property	• Q 1 & Q 2 "YESES" – trail, only from the Girl Scouts Property. Arrow to St. Cornelius question. • Would be great to have to mitigate impact of Concord development on the Ridings • Future shopping center
9	Saint Cornelius RC Church and School	• Question 1 – trail circle, with maybe written next to it • Q 1 & Q 2 – trail circled • Undecided
10	Municipal lands at former Girl Scouts Camp	• Undecided • Q 1 – Parks and recreation crossed out, trail circled ("no" response)
11	Private Proeprty	NONE
12	First State National Historical Park	Q 1 – Parks and recreation crossed out, trail circled ("no" response)
13	Ringfield	Question 2 – Private HOA trails. If they agree to connect, then YES.
14	Municipal lands, Ruins of Mother Archie's Church/Octagonal School	Question 1 – Great as is.
15	Private Property	• Question 1 – recreation crossed out • Kept scenic • Dangerous for pedestrians on Creek Road. Maybe if Big Bend becomes public…
16	Private Property	• Whatever they are willing to do. • Q 1 – Parks and recreation crossed out, trail circled ("no" response)
17	Brandywine Conservancy & Museum of Art	• Also – whatever they are willing to do. • Q 1 – Parks and recreation crossed out, trail circled ("no" response)
18	Chadds Ford Historical Society	Q 1 – Parks and recreation crossed out, trail circled ("no" response)

Appendix C - Natural Heritage Areas

Beaver Valley Woods

Delaware County, PA

Natural Heritage Inventory

Legend

- Core Habitat (focus NHI site)
- Core Habitat (other NHI sites)
- Supporting Landscape
- 100 meter Riparian Buffer
- 100 foot Riparian buffer
- Township Boundary
- County Boundary
- Interior Forest
- Forested habitat

OpenSpace & Recreation

- Public Park
- Homeowner's Association
- Privately Eased Land

0 0.25 0.5 1 Kilometers

0 0.25 0.5 1 Miles

PNHP

Beaver Valley Woods – *High significance*

Species of Concern:	Taxa[1]	PNDI Rank[2] Global	PNDI Rank[2] State	Legal Status[2] State (Proposed)	Last Seen	Quality[2]
Velvety panic-grass (*Dichanthelium scoparium*)	P	G5	S1	PE (PE)	2010	C
Soapwort gentian (*Gentiana saponaria*)	P	G5	S1S2	TU (PE)	2010	C
Grass-leaved rush (*Juncus biflorus*)	P	G5	S2	TU (PT)	1995	B
Downy lobelia (*Lobelia puberula*)	P	G5	S1	PE (PE)	2010	C
Tawny ironweed (*Vernonia glauca*)	P	G5	S1	PE (PE)	2010	C
Sensitive species of concern[3]	---	---	---	---	2010	C
Sensitive species of concern[3]	---	---	---	---	2010	E

[1] A = Amphibian; B = Bird; C = Community; F = Fish; L = Lepidopteran; O = Odonate; P = Plant; M = Mammal; R= Reptile, U = Unionoid (Mussel)
[2] Please refer to Appendix III for an explanation of PNHP ranks and legal status
[3] This species is not named by request of the jurisdictional agency overseeing its protection

Location: This large area includes adjoining habitats along Beaver Creek and its tributaries roughly bounded on the east by Route 202, on the south by the Delaware State Line, and on the west and north by Ridge Road.

- Municipalities:
  - Chadds Ford Township
  - Concord Township
  - New Castle County, State of Delaware
- USGS Quadrangles:
  - Wilmington North Quadrangle
- Watersheds:
  - Brandywine Creek
- 1992 Delaware County Natural Areas Inventory reference:
  - "SP525" (Wilmington North Quadrangle)
  - "Quarry Woods" (Wilmington North Quadrangle)
- 1998 Delaware County Natural Areas Inventory Update reference:
  - "SP535, SP536, SP537, SP539, SP540 - Beaver Valley Road Pipeline Site"- (West Chester Quadrangle)

Description: A mosaic of upland forest, forested wetlands, open wetlands, spring seeps, successional old fields and pipeline rights-of-way are set within an agricultural and residential context. Forested habitats include several significant patches of interior forest, which is forested habitat at least 100 meters away from any canopy fragmenting feature such as roads, powerlines, residences or open fields. Interior forest is critical nesting habitat for many of Pennsylvania's neotropical migrant songbirds. This area combines two sites from the original 1992 CNHI report "SP525" and "Quarry Woods" and the subsequent 1998 update: "Beaver Valley Road Pipeline Site" into this enlarged area that hosts a wide variety of habitats and scattered populations of several species of concern.

Species of Concern Considerations:

- Five plant species of concern, velvety panic-grass, soapwort gentian, grass-leaved rush, downy lobelia and tawny ironweed are plants that typically grow in damp to seasonally wet clearings, abandoned fields, woods borders, thickets, marshes, and disturbed ground. Active management, such as periodic mowing or prescribed fire, may be needed to create the proper successional stage and ecological conditions for these species to thrive. Vegetation maintenance along agricultural field edges and the pipeline at this location helps to reduce competition from woody and aggressive species and keep the habitat in a state of early succession. Habitat loss, deer browse and the indiscriminate spraying of herbicides are threats to these species in some locations.
- A sensitive species of concern, which is not named at the request of the jurisdictional agency overseeing its protection, occurs in several locations within this forested area. Its preferred habitat is moist deciduous forests and stream banks. These high quality woodlands may be altered by encroachment of invasive species, over-browsing by deer, and fragmentation. Fragmentation can have a drying effect on the habitat and promote invasive species growth. Creating buffers around fragmented habitat and removal of invasive species will help to maintain populations and encourage new population growth.
- An additional sensitive species of concern, which is not named at the request of the jurisdictional agency overseeing its protection, occurs in several locations within this forested area. Its preferred habitat is moist deciduous forests requires specific plant communities within a matrix of open canopied habitats. Restoration of the marshy habitats historically associated with the Beaver Creek floodplain will help to provide expanded habitat opportunities for this species of concern.

Forest Cover / Natural Communities: The plant community types depicted are approximations delineated from 2005 aerial photography interpretation and were followed up with minimal selective ground-truthing. Community types follow "Terrestrial & Palustrine Plant Communities of Pennsylvania" (Fike 1999) where appropriate, and otherwise describe general land cover types (*).

- Terrestrial (upland) communities:
  - Red oak – mixed hardwood forest
  - Tuliptree – beech-maple forest
  - modified successional forest*
- Palustrine (wetland) communities:
  - Silver maple floodplain forest

- Some of the forest patches are in the long process of reverting from past agricultural uses, while other patches exhibit a much more undisturbed and pristine quality. Though the forest was likely selectively cut for fuel wood and timber several times since colonial times, much of the existing forest has apparently been standing for well over 100 years. Some of the trees were in the past likely considered less desirable for lumber and fuel or were less accessible due to steep slopes and were left in place. While this tract of forest can't be considered virgin timber, some individual trees in the area may be 200-300 years old or older. Although there is invasion of exotic plant species into the woods the overall quality of the woods is remarkably natural and aesthetically pleasing.
- The forest canopy is dominated by a mix of large tuliptrees (*Liriodendron tulipifera*), American beeches (*Fagus grandifolia*) and mixed oaks (*Quercus alba, Q. rubra, Q. palustris, Q. montana*). The shrub layer is dominated by invasive species in much of the area, though some areas have a relatively good representation of native shrub species. In other areas, the shrub layer is missing altogether, giving the forest an open, park-like look. This openness is likely due to excessive deer pressure on the reproductive success of understory vegetation including tree seedlings. The herbaceous layer is variable within the diversity of habitat types present.

Ownership:

- This large area is owned by two primary owners, but also includes several secondary property owners. The reduced number of landowners of this large piece of the green infrastructure of Delaware County can be tremendously helpful towards implementation of consistent conservation action across this significant piece of the landscape.

Habitat Disturbances:

- Historic:
  - Most of the original forest cover of the area had been removed and converted to agricultural or other uses over the past several centuries, leaving little of the original vegetation in place. Aerial photographs from 1937 show scattered forested woodlots within a landscape dominated by active agriculture. Though the forest was likely cut for fuel wood and timber several times since colonial times, the existing forest has likely been standing for over 100 years.
  - The gas pipeline right-of-way was cut east to west through the lower portion of the area. Though this was a disturbance to the integrity of the forested habitats, it established a narrow strip of vegetation that was maintained as early successional habitat up to the present day.
- Current:
  - Much of the area remains as it was at the time of the 1937 aerial photos, with scattered forested areas surrounded by open pastures and agricultural fields.
  - Rapid development has occurred outside of and on the periphery of the core habitat area, fragmenting the landscape with additional buildings, roads and infrastructure and increasing the amount of impervious surface and edge habitat in the immediate watershed.
  - Stormwater runoff from the highly developed surrounding communities flows into the creek system with little opportunity to be slowed or filtered. This results in increased downstream flooding and erosion and is a potentially significant non-point source of pollution. Runoff from these sources has significantly higher levels of sediment, nutrients, pesticides, herbicides and other pollutants than runoff filtered through natural vegetation.
  - Exotic Species – The edge habitat provided by reverting agricultural fields and residential development creates conditions favorable for many introduced species of plants. Some of the primary invasive species occurring in this location include:
    - Norway maple *(Acer platanoides)*
    - garlic-mustard *(Alliaria petiolata)*
    - Japanese barberry (*Berberis thunbergii*)
    - Asiatic bittersweet (*Celastrus orbiculatus*)
    - autumn olive (*Elaeagnus umbellata*)
    - wintercreeper (*Euonymus fortunei)*
    - Japanese honeysuckle *(Lonicera japonica)*
    - amur honeysuckle *(Lonicera maackii)*
    - Japanese stiltgrass *(Microstegium vimineum)*
    - mile-a-minute weed *(Persicaria perfoliata)*
    - common reed *(Phragmites australis)*
    - multiflora rose *(Rosa multiflora)*
    - wineberry (*Rubus phoenicolasius*)
    - linden viburnum (*Viburnum dilatatum*)
  - Control options for invasive plants range from mechanical to chemical. However, indiscriminate use of herbicides as rights-of-way defoliants is not acceptable. A smarter, more selective use of chemical controls is required in these areas that contain both invasive species and species of concern.
  - Invasive species management needs to be coordinated by individuals familiar with the rare species as well as the invasive species present.
  - High priority for invasive species control at this site should be targeted towards removing small populations of newly established invasive plants in the most weed-free portions of the Natural Heritage Area. Invasive species control efforts should try to maintain weed-free areas first, and then concentrate on removing invasive species in lightly infested areas, continually pushing back the line of invasion. Invasive species removal should be conducted in coordination with native species replacement to avoid

denuding the understory vegetation. This needs to be a continual and sustained process of monitoring and control efforts.

- The relatively low volume of understory herbs and shrubs noted in this forest may be attributable to an oversized deer herd. Over-browsing by white-tailed deer is a serious threat to the overall understory plant diversity. An overabundance of deer can create the effect of park-like forests in which the understory and vertical stratification is greatly reduced. Removal of understory species eliminates habitat for some nesting songbirds as well as increasing competition between deer and other wildlife due to reduced food sources. Deer have strong, species-specific feeding preferences. The most highly preferred species are the first to decline or disappear when deer numbers are high. Furthermore, deer have been shown to be prolific seed dispersers for many of the most invasive nonnative species. The result is greatly impoverished native species diversity, failure of native tree regeneration, and the rapid proliferation of invasive species. It is likely their selective feeding habits and effective seed dispersal make the spread of invasives much faster than would be the case without deer, even where herds are only moderately oversized.

Conservation Actions:

- Overall:
  - Allow the forested habitats to achieve and maintain old growth conditions.
  - Prevent the conversion of the surrounding agricultural lands to residential or industrial development.
  - Conserve and expand the forested riparian buffers of Beaver Creek and its tributaries. Establish at least a 100 meter (328 feet) buffer of woody vegetation along the creek to help reduce erosion, sedimentation, and pollution. Additionally, best management practices (BMPs) that focus on limiting the introduction of non-point sources of pollution into surface and groundwater should be applied to the surrounding area.
  - Beaver Creek, as indicated by its name, was likely heavily influenced by beaver activity in the historical past. Habitat modification by beavers could help to improve the integrity of this Natural Heritage Area, by reestablishing the matrix of open and canopied wetland complexes. Beaver numbers are on the rise in Pennsylvania, and it is very possible that they could be documented here in the future. If beavers expand into this system, they should be left to modify and restore some of the open habitats that previously existed at this site.
- Within the Core Habitat:
  - The Core Habitat for this location was drawn to exclude the most unnatural portions of the adjacent habitat, which are primarily active agricultural fields and residential areas.
  - Avoid fragmenting the existing forested areas with additional buildings or infrastructure. Avoid logging in this area except as it relates to invasive species removal. The forest cover should be allowed to achieve and maintain old-growth characteristics. Leave fallen trees in place to help provide habitat, soil nutrients, humus and tilth. Trees that have fallen over approved trails can be cut through as necessary.
  - Restore and protect the hydrology of the landscape. Avoid altering the hydrology of Beaver Creek, its tributaries, springs and wetlands. This may require that road crossings involve bridge systems that would preserve the wide sluggish waters associated with marshes and slow flowing waterways.
  - Forested and open wetlands each require special consideration to maintain their unique attributes. Existing wet meadows should not be modified (i.e. dammed, planted in trees or farmed), as this will deprive the open wetlands adapted species of suitable habitat. Light grazing with pastoral animals can be an effective tool to maintain these soggy meadows in their preferred condition. Once the open habitat within the historic floodplain has been restored, light grazing, often considered compatible with high financial yield organic meat and dairy production, could be an effective tool to maintaining the habitat for all wet meadow species.

- As existing farm ponds deteriorate and are in need of maintenance, the removal of such ponds should be explored, in order to recreate the natural hydrologic flows of the landscape.
- Because several of the species of concern noted from this site rely upon open canopied habitats, programs that support establishment of riparian buffers with trees, such as CREP, should be avoided in areas along the pipeline rights-of-way. In addition, removal of woody shrubs appears to be necessary to restore habitat for several of the open habitat adapted plant species as formerly open fallow fields have become dominated by the invasive woody shrub autumn olive (*Elaeagnus umbellata*). Autumn olive should be cut, stump treated with herbicide to avoid resprouting and the area mowed every other year in early spring to help maintain the early successional conditions favorable for these plant species of concern.
- The stormwater runoff from development and agriculture should be considered a potential source of significant contamination for the creek and its floodplain habitat. Runoff from these sources have significantly higher levels of sediment, nutrients, pesticides, herbicides and other pollutants than runoff filtered through a natural habitat. Stormwater management measures such as the creation of detention basins or vegetated swales should be implemented to decrease the unfiltered flow into the creek.
- Remove invasive species of plants (see below).
- Reduce the deer density in the area. Uncommon species of native plants are particularly susceptible to deer herbivory.

- Potential Restoration Activities:
  - Streams through forested areas should be considered high priority for conservation. The forested riparian corridor helps to regulate the temperature of the stream and creates streamside conditions that contribute to improved water quality and aquatic habitat. Streams through non-forested areas should be restored with native trees and shrubs appropriate to the habitat.
    - Careful determination is needed to avoid planting trees in floodplains that contain herbaceous wetland habitats. These habitats should be maintained in their current open condition, with tree plantings to occur at the periphery of natural wetland openings.
    - Riparian Buffers:
      - An ideal vegetated stream buffer should be at least 100 meters (328 feet) in width from the edge of the 100-year floodplain.
      - An intermediate vegetated stream buffer should be at least 100 feet in width from the edge of the 100-year floodplain.
      - A minimum vegetated buffer should be at least 35 feet in width from the edge of the 100-year floodplain.
  - Remove invasive species of plants. Invasive species management needs to be coordinated by individuals familiar with the rare species as well as the invasive species present.
  - Control options for invasive plants range from mechanical to chemical. However, indiscriminate use of herbicides as rights-of-way defoliants is not acceptable. A smarter, more selective use of chemical controls is required in these areas that contain both invasive species and species of concern.
  - High priority for invasive species control at this site should be targeted towards removing woody shrubs, especially autumn olive, from the successional old fields adjacent to the pipeline rights-of-way.
  - Invasive species control efforts should try to maintain weed-free areas first, and then concentrate on removing invasive species in lightly infested areas, continually pushing back the line of invasion. Invasive species removal should be conducted in coordination with native species replacement to avoid denuding the understory

vegetation. Control of invasive species in the area will require extensive and continual effort.

- Target pioneer populations of invasive plants for immediate and continued removal. It is much easier and more effective to keep a place invasive-free than to try and repair a heavily infested habitat.

Photo Source: Rocky Gleason (PNHP)

Large, older trees contribute to the canopy of the forested habitats in Beaver Valley.

Brandywine Summit
Delaware County, PA
Natural Heritage Inventory
N
Painters Crossroads
Hickory Ln
Christy Dr
Painters Crsg
Dickinson Dr
Hillman Dr
South Point Dr
Painters Xing
Summit Dr
Longview Rd
Woodland Dr
N Glen Dr
Hilloch Ln
Hewson Rd
Pheasant Ln
Ridings Blvd
Raven Dr
Spring Hill Rd
Glen Eagle Square
Tally Ho Dr
Ring Rd
Ridge Rd
High Ridge Rd
Kelley Dr
Wildflower Way
Foothill Path
Robins Way
Molly Ln
Ruby Rd
Chevers Ct
202
Legend
Core Habitat (focus NHI site)
Core Habitat (other NHI sites)
Supporting Landscape
100 meter Riparian Buffer
100 foot Riparian buffer
Township Boundary
County Boundary
Interior Forest
Forested habitat
OpenSpace & Recreation
Public Park
Homeowner's Association
Privately Eased Land
0 0.125 0.25 0.5 Kilometers
0 0.125 0.25 0.5 Miles
PNHP

Brandywine Summit – *Notable significance*

Species of Concern:	Taxa[1]	PNDI Rank[2] Global	PNDI Rank[2] State	Legal Status[2] State (Proposed)	Last Seen	Quality[2]
Sensitive species of concern[3]	---	---	---	---	1990	C

[1] A = Amphibian; B = Bird; C = Community; F = Fish; L = Lepidopteran; O = Odonate; P = Plant; M = Mammal; R= Reptile, U = Unionoid (Mussel)
[2] Please refer to Appendix III for an explanation of PNHP ranks and legal status
[3] This species is not named by request of the jurisdictional agency overseeing its protection

Location: Wooded riparian corridor along a tributary to Harvey Run is roughly bounded by Ridge Road on the south, Heyburn Road on the west, Route 1 on the north and Evergreen Place on the east.

- Municipalities:
  - Chadds Ford Township
- USGS Quadrangles:
  - Wilmington North Quadrangle
- Watersheds:
  - Brandywine Creek
- 1992 Delaware County Natural Areas Inventory reference:
  - "SP524"- (Wilmington North Quadrangle)
- 1998 Delaware County Natural Areas Inventory Update reference:
  - None

Description: A small patch of relatively mature second or third-growth forest occurs in a small valley hosting the headwaters of a tributary to Harvey Run. The upper part of the valley where the stream is most deeply incised is in very good shape and should be maintained in an undisturbed condition. Moving further downstream and onto the surrounding uplands, the woods becomes younger and very weedy. Although these areas are less desirable, they are still important to maintain in a wooded condition to act as buffer for the central mature section. In addition to the species of concern present, the forest is significant for its maturity, lack of exotic species, representation of the native forest, educational and recreational value, and wildlife habitat. This habitat has not been ground surveyed since the original CNHI report, so this description is based on observations from that period. There has been a significant reduction in the overall size of the wooded area since the original surveys, through the residential development of part of the forest. Negative changes to the understory from deer pressure and invasive species of plants are also likely to have occurred.

Species of Concern Considerations:

- A sensitive species of concern, which is not named at the request of the jurisdictional agency overseeing its protection, occurs in several locations within this mature forested area. Its preferred habitat is moist deciduous forests and stream banks. These high quality woodlands may be altered by encroachment of invasive species, over-browsing by deer, and fragmentation. Fragmentation can have a drying effect on the habitat and promote invasive species growth. Creating buffers around fragmented habitat and removal of invasive species will help to maintain populations and encourage new population growth.

Forest Cover / Natural Communities: The plant community types depicted are approximations delineated from 2005 aerial photography interpretation and were followed up with minimal selective ground-truthing. Community types follow "Terrestrial & Palustrine Plant Communities of Pennsylvania" (Fike 1999) where appropriate, and otherwise describe general land cover types (*).

    - Terrestrial (upland) communities:
        - Dry oak – mixed hardwood forest
        - Tuliptree – beech – maple forest
        - modified successional forest*
- A tall closed canopy (90-to 100-feet) of American beech (*Fagus grandifolia*), tuliptree (*Liriodendron tulipifera*), and northern red oak (*Quercus rubra*) shades the understory in which the shrub layer is dominated by maple-leaved viburnum (*Viburnum acerifolium*), witch hazel (*Hamamelis virginiana*), and arrowwood (*Viburnum dentatum*). Mayapple (*Podophyllum peltatum*), Christmas fern (*Polystichum acrostichoides*), jack-in-the-pulpit (*Arisaema triphyllum*), and additional species comprise the herb layer. Skunk cabbage (*Symplocarpus foetidus*), violets (*Viola* spp.), and jewelweed (*Impatiens* sp.) grow in scattered seeps emanating from the valley walls.

Ownership:

- The forested habitat is owned by numerous landowners, each of which may have a different view on the future use or role of their portion of the ravine. A significant patch is owned by a Homeowners Association. An additional large part of the habitat is owned by Saint Cornelius Catholic Church. Fragmentation of ownership of larger landscapes can make consistent conservation action more difficult, but not impossible to achieve.

Habitat Disturbances:

- Historic:
    - Most of the original forest cover of the area had been removed and converted to agricultural or other uses over the past several centuries, leaving little of the original vegetation in place. Aerial photographs from 1937 however, show two small mature forest patches on either side of the tributary to Harveys Run surrounded by active agricultural fields. Though the forest was likely cut for fuel wood and timber several times since colonial times, the existing forest has been standing for over 100 years. Most of this area was in active agricultural production interspersed with small woodlots in 1937 and some of the cleared land has been allowed to revert to woody vegetation since that time, while other portions were planted in conifer tree farms.
- Current :
    - The large farms have mostly been converted to smaller residential lots within this area, fragmenting the landscape with additional buildings, roads and infrastructure.
    - A housing development was constructed on the eastern portion of the woodlot, an area that had been planted in conifer trees. This loss of buffer to the main portion of the forest diminishes the long term viability of this habitat.
    - Stormwater runoff from the highly developed surrounding communities flows into the creek system with little opportunity to be slowed or filtered. This results in increased downstream flooding and erosion and is a potentially significant non-point source of pollution. Runoff from these sources has significantly higher levels of sediment, nutrients, pesticides, herbicides and other pollutants than runoff filtered through natural vegetation.
    - The relatively low volume of understory herbs and shrubs noted in this forest may be attributable to an oversized deer herd.
    - Dumping of garden refuse or construction debris into the ravine or at the forest edge can spread invasive species of plants and diminish the overall quality of the habitat.
    - Over browsing by white-tailed deer is a serious threat to the overall understory plant diversity. An overabundance of deer can create the effect of park-like forests in which the understory and vertical stratification is greatly reduced resulting in aging forest that is not actively regenerating with native species.
- Exotic Species:
    - The edge habitat provided by reverting agricultural fields and residential development creates conditions favorable for many introduced species of plants. A list of invasive species

was not noted at the time of the previous survey, but there are widespread invasive plants in the county that are likely present in the habitat.

Conservation Actions:

- Overall:
  - Avoid fragmenting the existing forested areas with additional buildings or infrastructure. The primary conservation concern for this habitat should be to focus on safeguarding the quality and expanse of the forested landscape. While providing the primary habitat for the populations of species of concern, the forested landscape also helps to protect water quality of the small streams that drain through this Natural Heritage Area into the Delaware River and provides refuge and habitat for other forest dependent species.
  - Avoid logging in this area except as it relates to invasive species removal. The forest cover should be allowed to achieve and maintain old-growth characteristics. Leave fallen trees in place to help provide habitat, soil nutrients, humus and tilth. Trees that have fallen over approved trails can be cut through as necessary.
  - Coordinate a management plan among the primary and adjacent landowners to achieve a consensus approach to the conservation of the forested habitat.
  - Conserve and expand the forested riparian buffers of these tributaries to Harvey Run. Establish at least a 100 meter (328 feet) buffer of woody vegetation along the creek to help reduce erosion, sedimentation, and pollution. Additionally, best management practices (BMPs) that focus on limiting the introduction of non-point sources of pollution into surface and groundwater should be applied to the surrounding area.
- Within the Core Habitat:
  - The upper part of the valley where the tributary to Harvey Run is most deeply incised is in very good shape and should be maintained in an undisturbed condition. Work with the numerous adjacent landowners to preserve the remnant wooded ravine in its current intact condition. Limit residential encroachment on the forested ravine and degradation of the habitat by garden refuse dumping.
  - The stormwater runoff from development and agriculture should be considered a potential source of significant contamination for the creek and its floodplain habitat. Runoff from these sources have significantly higher levels of sediment, nutrients, pesticides, herbicides and other pollutants than runoff filtered through a natural habitat. Stormwater management measures such as the creation of detention basins or vegetated swales should be implemented to decrease the unfiltered flow into the creek.
  - Suppress and reverse the establishment and spread of invasive species of plants. Improve the quality of the forest composition by removing aggressive invasive and early successional species of plants in favor of existing native climax species. Enhance the stratification of the canopy by encouraging the establishment of native tree saplings, shrubs, and herbaceous species.
  - Reduce the deer density in the area. Uncommon species of native plants are particularly susceptible to deer herbivory.
- Potential Restoration Activities:
  - Streams through forested areas should be considered high priority for conservation. The forested riparian corridor helps to regulate the temperature of the stream and creates streamside conditions that contribute to improved water quality and aquatic habitat. Streams through non-forested areas should be restored with native trees and shrubs appropriate to the habitat.
  - Careful determination is needed to avoid planting trees in floodplains that contain herbaceous wetland habitats. These habitats should be maintained in their current open condition, with tree plantings to occur at the periphery of natural wetland openings.
    - Riparian Buffers:
      - An ideal vegetated stream buffer should be at least 100 meters (328 feet) in width from the edge of the 100-year floodplain.

    - An intermediate vegetated stream buffer should be at least 100 feet in width from the edge of the 100-year floodplain.
    - A minimum vegetated buffer should be at least 35 feet in width from the edge of the 100-year floodplain.
- Remove invasive species of plants. The creek floodplain and edge habitats associated with agricultural fields and residential lawns are particularly susceptible to weedy plant invasion and will require a sustained and targeted approach to invasive management. Aggressive invasive species along the powerline right-of-way can have a significant impact on the available habitat for the species of concern. Control of invasive species in the area will require extensive and continual effort. Focus non-chemical control efforts on selected areas surrounding species of concern.
    - Target pioneer populations of invasive plants for immediate and continued removal, particularly tree-of-heaven, non-native bush honeysuckles, Japanese honeysuckle, multiflora rose and common privet. It is much easier and more effective to keep a place invasive-free than to try and repair a heavily infested habitat.
    - Invasive species management needs to be coordinated by individuals familiar with the rare species as well as the invasive species present.
    - Continual invasive species monitoring and control will be necessary.

Chadd's Ford Swamp NHA

PNHP Significance Rank: *State*

Site Description

The wetlands that are created where Brandywine Creek crosses Route 1 form the habitat that makes up Chadd's Ford Swamp NHA. Brandywine Creek forms the border with Delaware County near the state line. The surrounding area is a mix of residential development, agricultural fields, and small woodlots. A number of habitats occur within the NHA. The exposed shoreline provides habitat for **ellisia** and **tooth-cup**, two plant species of concern that are found in areas that have fluctuating water level. The riparian area along Brandywine Creek supports populations of several plant species of concern. **Cattail sedge** and **Indian wild rice** are found in wetter areas, while **Yadkin River panic-grass** is located in drier upland habitat. Early successional habitat along roadsides within the NHA provide habitat for **Elliot's beardgrass**, a plant species of concern found in a variety of open areas. An additional **sensitive species of concern**, not named at the request of the jurisdictional agency overseeing its protection, was documented at this site as well. More recent surveys were not able to relocate the species.

Species or natural communities of concern that can be found in this NHA include the following:

Species or Natural Community Name		PNHP Rank[1] Global	PNHP Rank[1] State	PA Legal Status[1]	Last Seen	Quality[2]
Elliott's Beardgrass (*Andropogon gyrans*)		G5	S3	N (PR)	10/31/2008	B
Cattail Sedge (*Carex typhina*)		G5	S2	PE (PT)	6/10/2009	D
Yadkin River Panic-grass (*Dichanthelium yadkinense*)		G4Q	S1	TU (PE)	6/16/2002	C
Ellisia (*Ellisia nyctelea*)		G5	S2	PT (PT)	6/10/2001	C
Tooth-cup (*Rotala ramosior*)		G5	S3	PR (PR)	8/17/2002	BC
Indian Wild Rice (*Zizania aquatica*)		G5	S3	PR (PR)	2010-12	CD
Sensitive species of concern A[3]	S	---	---	---	1987	F

[1]See the PNHP website (http://www.naturalheritage.state.pa.us/RankStatusDef.aspx) for an explanation of PNHP ranks and legal status. A legal status in parentheses is a status change recommended by the Pennsylvania Biological Survey.

[2]See NatureServe website (http://www.natureserve.org/explorer/eorankguide.htm) for an explanation of quality ranks.

[3]This species is not named by request of the jurisdictional agency responsible for its protection.

Cattail sedge is found throughout most of the eastern United States and is scattered throughout Pennsylvania. Cattail sedge grows in areas associated with wetlands. It is often found along the edge of vernal pools but can also be found in swamps and along streams.

Elliot's beardgrass is at the northern edge of its range in Pennsylvania and has only been documented in a few southeastern counties. It spans from New Jersey west to Illinois and south from Texas to Florida. This species needs open, early successional habitat in order to persist.

Ellisia is a state threatened spring flowering herb found along shady stream banks. It is found throughout much of the United States, but has not been documented in New England, the southeast or the West Coast. It is at the northern end of its range in Pennsylvania and is found along major waterways in the southeast, as far west as the Susquehanna River. Habitat loss and invasive species are the major threats to ellisia.

Indian wild rice is a large grass species that can grow up to nine feet tall. It is found throughout much of the United States, but some portions may be due to introduction of the species. Most occurrences in Pennsylvania are found in intertidal marshes along the Delaware River. It can be found in other shallow water habitat, particularly in the southeast. It has been documented in Erie and Huntingdon County as well. Habitat loss and degradation are major threats to Indian wild rice, as well as invasive species.

Tooth-cup grows in exposed, wet habitats. This species has a wide range covering most of the United States and into Canada. In Pennsylvania, it is most commonly seen along the Susquehanna River, and has been documented in southeastern counties as well.

Yadkin River panic-grass is found from Pennsylvania west to Illinois and south to Georgia and Louisiana. In Pennsylvania, this species is found in the southeastern corner of the state. Yadkin River panic-grass is most often found growing in wet, sandy soil along shaded streams. It has been classified as critically imperiled due to the small number of populations documented in Pennsylvania.

Threats and Stresses

Invasive species are abundant throughout this site, especially along the stream edge and are the biggest threat to the site and the native species found within it. Fragmentation of the remaining woods and further alteration of the hydrology may impact habitat conditions found at this site. White-tailed deer density in this area is high, which negatively impacts the native species found within this NHA.

Specific threats and stresses to the elements present at this site include the following:

- Changes in the currently hydrology could significantly alter the habitat for the plant species of concern by making conditions either too wet or too dry to be able to persist at this site.
- Further fragmentation of the small patch of existing woods may alter the structure of the habitat and allow an increase in invasive species.
- Invasive species are present in many areas of this site and may displace native vegetation, including species of concern.
- Herbicides, fertilizers, and sediment from lawns, fields, and roads may wash into the NHA and degrade the habitat conditions.
- Succession of the grassy openings may cause the habitat used by Elliot's beardgrass to become overgrown and shaded by woody species.
- Over-browsing by white-tailed deer impacts all of the native vegetation and structure of the habitat.

Conservation Recommendations

Much of this NHA is covered under a conservation easement held by the Brandywine Conservancy. This should help to prevent large scale disturbances. Maintain the forested buffer along the stream and improve it wherever possible. Control invasive species in order to preserve the native species found in this NHA. Maintain the existing hydrology of the streams and wetlands to preserve the habitat conditions.

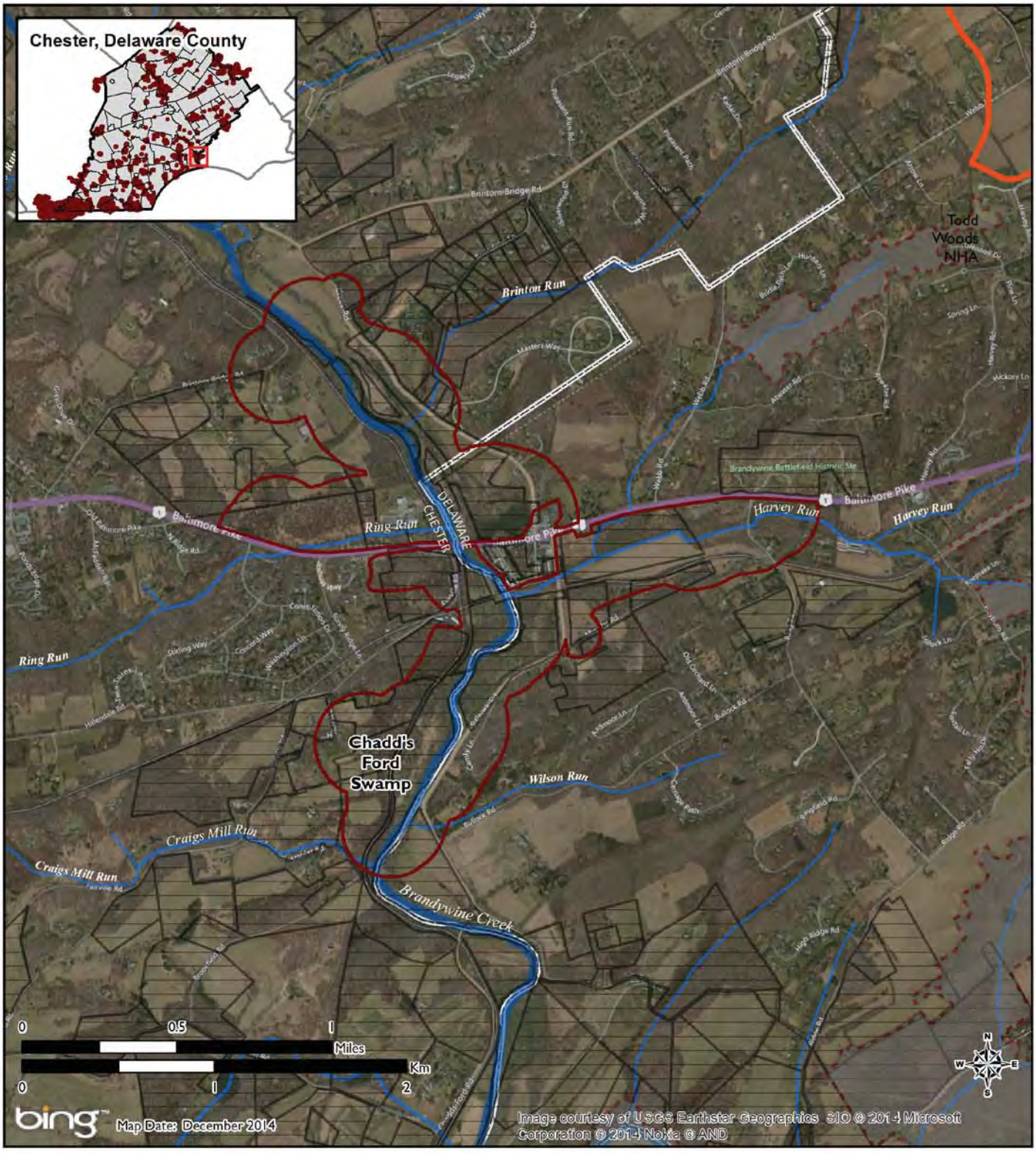
The following steps are recommended to ensure the persistence of these species at this site:

- Maintain the existing hydrology. Any activities that occur near the NHA should be conducted with a consideration for the impact to the flow of water into the wetlands below.
- Protect the existing forested areas from logging and other large scale disturbance. Keep the forest as intact as possible to protect the habitat and species within it. Avoid developing additional areas within the NHA.

- Reduce deer density then continue to monitor and maintain it at a level that is able to be supported by the landscape.
- Attempt to control the introduction and spread of invasive species. Remove invasives when possible, especially species that have not yet established a stronghold, which will be easier and more effective than targeting established populations.
- Limit herbicide use to situations where it is necessary, such as to control invasive species. Avoid the use of fertilizers or chemicals on lawns or along roads to prevent them from washing into the NHA and degrading the habitat.
- Create a sufficient vegetated buffer along the stream in order to filter sediment and chemicals from runoff. A buffer of 100 meter is ideal, but any increase will help to protect the water quality.
- Remove woody species and maintain the grassy habitat openings for Elliot's beardgrass and other early successional species. Perform periodic maintenance, such as mowing, to prevent woody species from taking over the area.

Location

Municipalities: *Chadds Ford Township, Birmingham Township, Pennsbury Township*
USGS quads: *West Chester, Wilmington North*
Previous CNHI reference: *Brinton Run Woods, Chadds Ford Swamp*
Associated NHAs: *None*
Overlapping Protected Lands: *Brandywine Conservancy Property, Brandywine Conservancy Easement*



Chadd's Ford Swamp Natural Heritage Area

Wetlands and riparian habitats support 6 plant species of concern, including Elliott's beardgrass and Yadkin River panic-grass, as well as an additional sensitive species of concern.

Significance Rank:
STATE

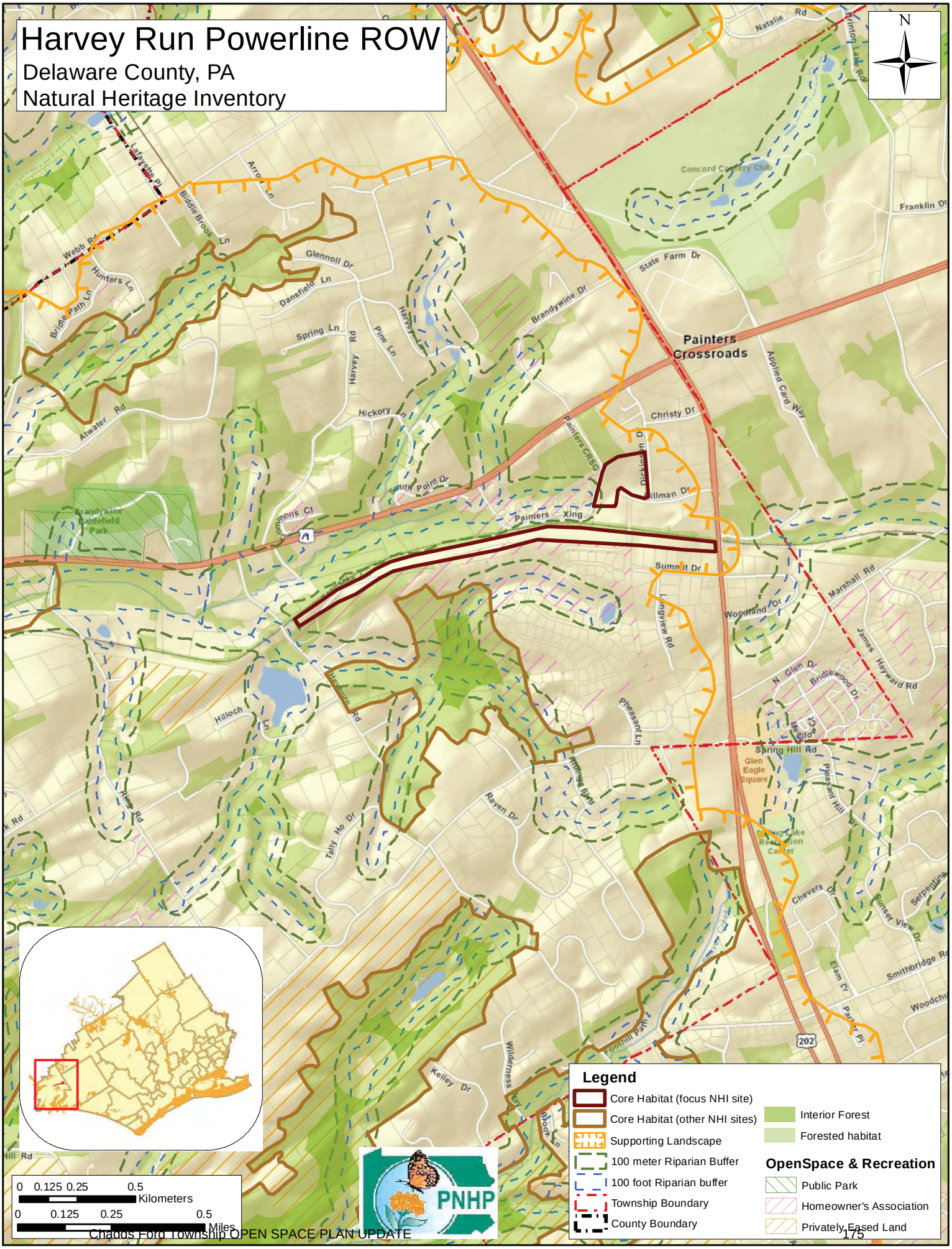
PNHP
Pennsylvania Natural Heritage Program

Pennsylvania Natural Heritage Areas
- *Core Habitat*
- *Supporting Landscape*
- *Other Core Habitat*
- *Other Supporting Landscape*
- *Conservation Lands*

Harvey Run Powerline ROW

Delaware County, PA

Natural Heritage Inventory



Harvey Run Powerline ROW – *Notable significance*

Species of Concern:	Taxa[1]	PNDI Rank[2] Global	PNDI Rank[2] State	Legal Status[2] State (Proposed)	Last Seen	Quality[2]
Elliott's beardgrass (*Andropogon gyrans*)	P	G5	S3	N (PR)	2000	B
Velvety panic-grass (*Dichanthelium scoparium*)	P	G5	S1	PE (PE)	2001	BC

[1] A = Amphibian; B = Bird; C = Community; F = Fish; L = Lepidopteran; O = Odonate; P = Plant; M = Mammal; R= Reptile, U = Unionoid (Mussel)
[2] Please refer to Appendix III for an explanation of PNHP ranks and legal status
[3] This species is not named by request of the jurisdictional agency overseeing its protection

Location: This area is primarily concentrated on the utility rights-of-way south of Route 1 between Route 202 on the east and Heyburn Road on the west.

- Municipalities:
  - Chadds Ford Township
- USGS Quadrangles:
  - West Chester
  - Wilmington North Quadrangle
- Watersheds:
  - Brandywine Creek
  - West Branch Chester Creek
- 1992 Delaware County Natural Areas Inventory reference:
  - None
- 1998 Delaware County Natural Areas Inventory Update reference:
  - None

Description: Successional old fields and utility rights-of-way are set within a residential and commercial context. Utility line maintenance helps to preserve the early successional habitat preferred by the two plant species of concern.

Species of Concern Considerations:

- Velvety panic-grass and Elliot's beardgrass are plants that typically grow in damp to seasonally wet clearings, abandoned fields, woods borders, thickets, marshes, and disturbed ground. Active management, such as periodic mowing or prescribed fire, may be needed to create the proper successional stage and ecological conditions for these species to thrive. Vegetation maintenance along agricultural field edges and the pipeline at this location helps to reduce competition from woody and aggressive species and keep the habitat in a state of early succession. Habitat loss, deer browse and the indiscriminate spraying of herbicides are threats to these species in some locations.

Forest Cover / Natural Communities: The habitat outlined in this Natural Heritage Area is limited to the open, early successional habitat of the utility corridor and an adjacent old field. These habitats are typically dominated by introduced species of plants, but also support many native early successional species.

Ownership:

- This narrow corridor is owned by a utility company and several private property owners.

Habitat Disturbances:

- This habitat is the result of disturbance, the clearing of forests for agriculture and its subsequent periodic mowing to maintain the open aspect of the utility rights-of-way.
- Exotic Species – The edge habitat provided by reverting agricultural fields and residential development creates conditions favorable for many introduced species of plants.

Conservation Actions:

- Most of the species of concern core habitat occurs within the early successional fallow fields of the utility right-of-way.
- Mowing of the area should be limited to every other year or less frequently to allow the plant species of concern to grow, set fruit and establish before the next mowing cycle. Complete elimination of mowing may have a detrimental effect on the species of concern habitat by allowing woody vegetation to dominate the site, closing the canopy for the species of concern. Chemical vegetation management should not be broadcast applied, but spot treatments to target invasive species may be necessary to achieve control of these aggressive plants.
- Remove invasive species of plants. Edge habitats associated with utility corridors and residential development are particularly susceptible to weedy plant invasion and will require a sustained and targeted approach to invasive management. Aggressive invasive species along the powerline rights-of-way can have a significant impact on the available habitat for the species of concern. Control of invasive species in the area will require extensive and continual effort. Focus non-chemical control efforts on selected areas surrounding species of concern.
    - Target pioneer populations of invasive plants for immediate and continued removal. It is much easier and more effective to keep a place invasive-free than to try and repair a heavily infested habitat.
    - Invasive species management needs to be coordinated by individuals familiar with the rare species as well as the invasive species present.
    - Continual invasive species monitoring and control will be necessary.

Smith's Bridge Floodplain NHA

PNHP Significance Rank: *State*

Site Description

A large bend in Brandywine Creek near Cossart is the location of Smith's Bridge Floodplain NHA. This site spans Chester and Delaware Counties near the border with the state of Delaware. The area south of Brandywine Creek is a mowed meadow in the floodplain with a man-made pond. The open, wet habitat provides habitat for **tooth-cup**, a plant species of concern. The northern end of this NHA is a forested slope along a tributary. The forested habitat supports a population of another plant species of concern, **puttyroot**.

Species or natural communities of concern that can be found in this NHA include the following:

Species or Natural Community Name		PNHP Rank[1] Global	PNHP Rank[1] State	PA Legal Status[1]	Last Seen	Quality[2]
Puttyroot (*Aplectrum hyemale*)		G5	S3	PR (PR)	1/2002	D
Elephant's Foot (*Elephantopus carolinianus*)		G5	S4	PE (Watch)	11/3/1985	C
Tooth-cup (*Rotala ramosior*)		G5	S3	PR (PR)	8/11/2001	BC

[1]See the PNHP website (http://www.naturalheritage.state.pa.us/RankStatusDef.aspx) for an explanation of PNHP ranks and legal status. A legal status in parentheses is a status change recommended by the Pennsylvania Biological Survey.
[2]See NatureServe website (http://www.natureserve.org/explorer/eorankguide.htm) for an explanation of quality ranks.

In Pennsylvania, puttyroot is most commonly found in the southeastern counties and grows in moist woodlands and on forested slopes and streambanks. Puttyroot produces leaves that are visible through the fall and winter. The leaves wither in late spring and the plant flowers in May and June.

Tooth-cup grows in exposed, wet habitats. This species has a wide range covering most of the United States and into Canada. In Pennsylvania, it is most commonly seen along the Susquehanna River, and has been documented in southeastern counties as well.

Threats and Stresses

Changes in hydrology in the early successional habitat can alter the current habitat conditions. Succession will change the species composition if not controlled by mowing or some other periodic disturbance. Logging or other fragmentation of the forested habitat can negatively impact this area.

Specific threats and stresses to the elements present at this site include the following:

- Invasive species are a major threat to the native species present at this site. Invasive species can out compete native ones and change the habitat structure.
- Succession that is not controlled by mowing or other methods of disturbance will likely cause the habitat to become unsuitable for many of the species of concern to be able to persist at this site. Logging can further fragment the existing forest and alter the conditions of the habitat needed by the species of concern.
- Modifications to the hydrology, including draining and damming, will likely cause unfavorable changes to the habitat and negatively impact the species of concern.
- Over-browsing by white-tailed deer can significantly impact plant species of concern and other native vegetation, as well as the structure of the habitat.

Conservation Recommendations

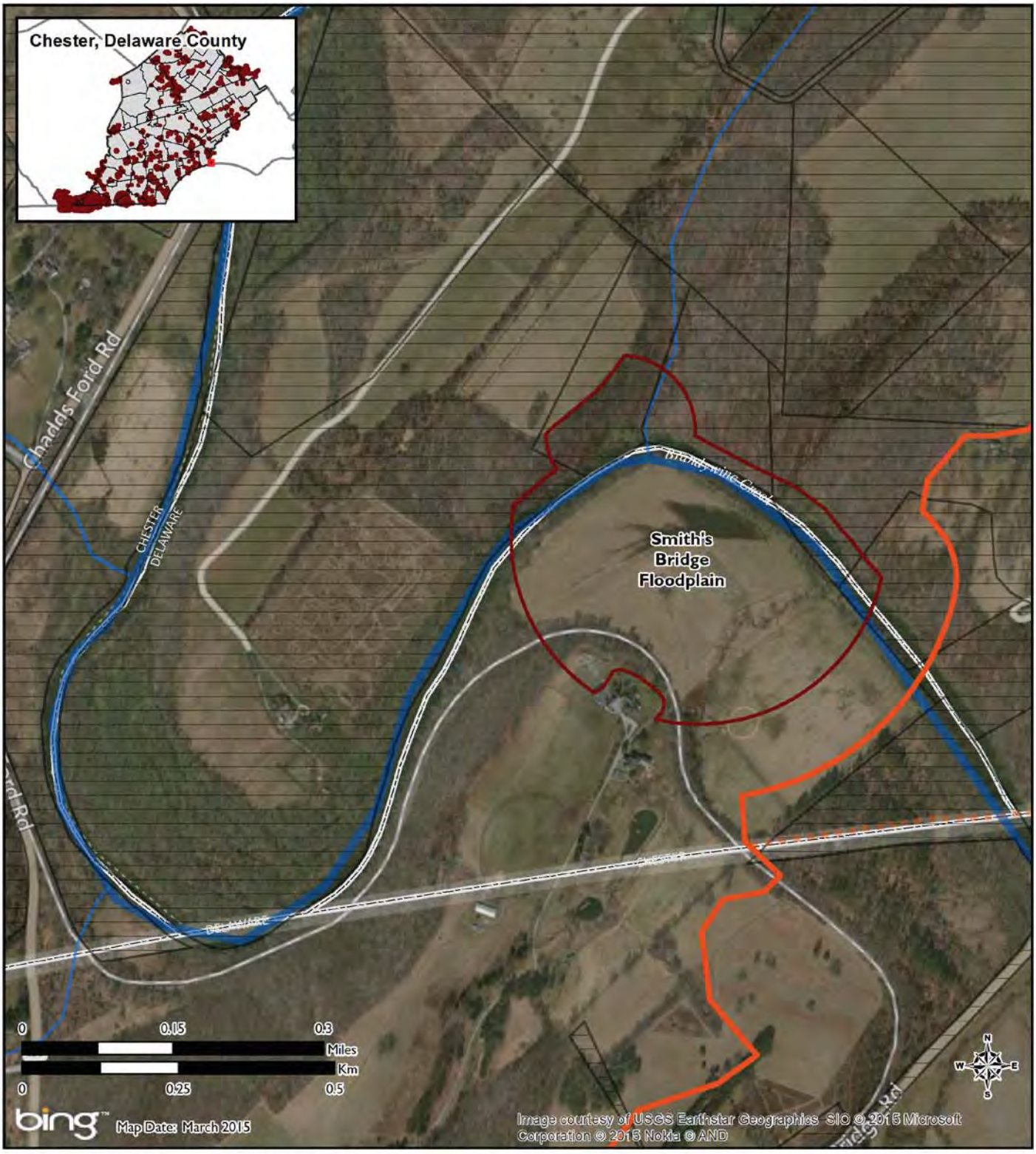
Maintain the existing hydrology of Brandywine Creek and wetlands at this site and protect the existing vegetated buffer. Improve the forested buffer where possible to improve water quality. Maintenance is necessary to prevent succession in the wet meadow habitat. Avoid fragmenting the existing forested habitat.

The following steps are recommended to ensure the persistence of these species at this site:

- Attempt to control the introduction and spread of invasive species. Remove invasives when possible, especially species that have not yet established a stronghold, which will be easier and more effective than targeting established populations. Further disturbance within this habitat will create additional opening for the establishment and spread of invasive species.
- Use disturbance, such as mowing, to slow succession and preserve habitat for species of concern. Consider the needs of tooth-cup when planning the timing of maintenance.
- Protect the existing forested areas from logging and disturbance along the forest edge. Maintaining as many intact habitats as possible will help to preserve the habitat and species found within it.
- Maintain the existing hydrology of Brandywine Creek and the adjacent wetlands. Any activities that occur in nearby areas should be conducted with a consideration for the impact to the flow of water into the nearby wetlands.
- Monitor deer density and maintain it at a level that is able to be supported by the landscape.

Location

Municipalities: *Chadds Ford Township, Pennsbury Township*
USGS quads: *Wilmington North*
Previous CNHI reference: *Smith Bridge Woods*
Associated NHAs: *None*
Overlapping Protected Lands: *Brandywine Conservancy Easement*



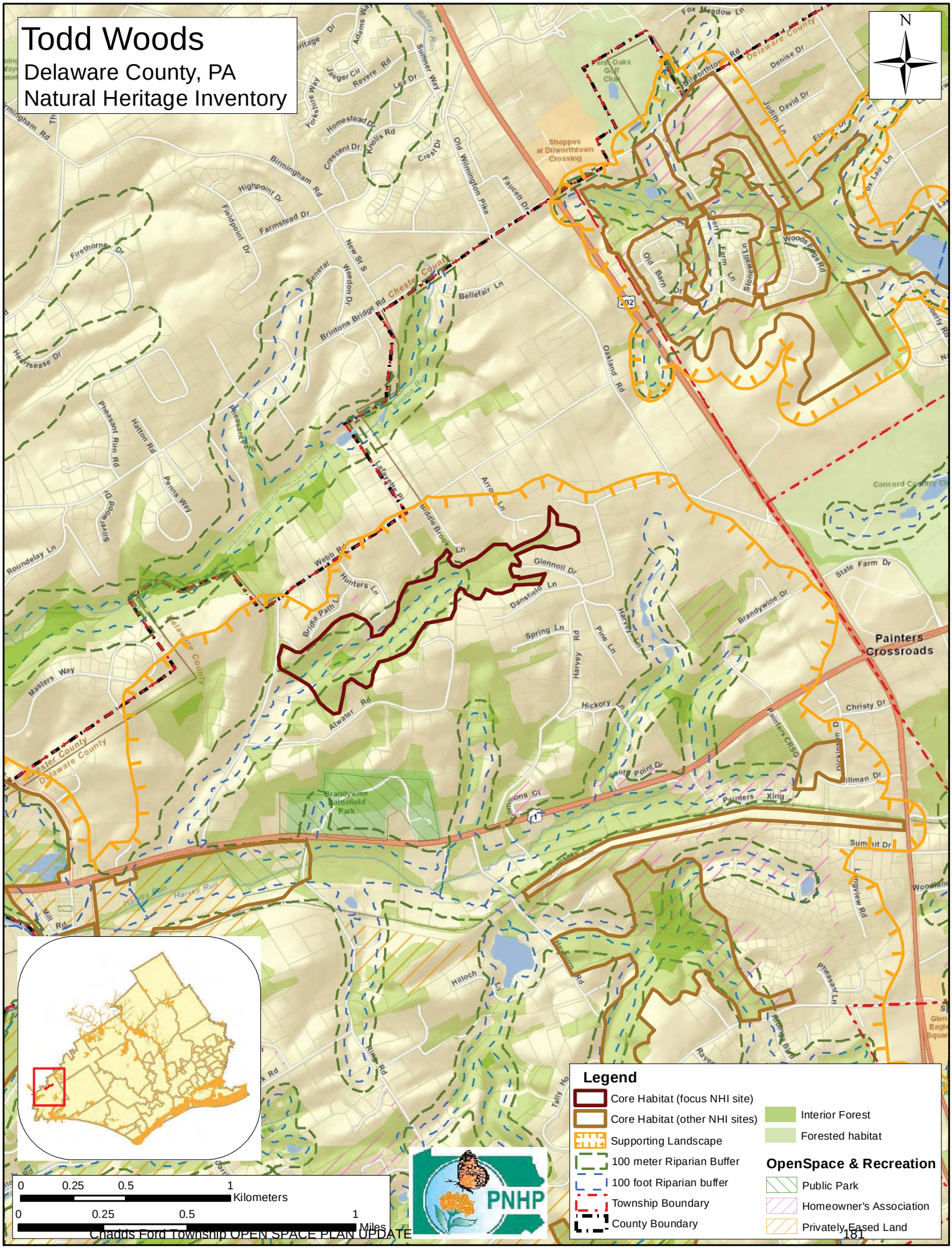
Smith's Bridge Floodplain Natural Heritage Area

Populations of two plant species of concern, tooth-cup and puttyroot, are found at this site.

Significance Rank:
STATE

PNHP
Pennsylvania Natural Heritage Program

Pennsylvania Natural Heritage Areas
- ***Core Habitat***
- **Supporting Landscape**
- ***Other Supporting Landscape***
- ***Conservation Lands***


Todd Woods
Delaware County, PA
Natural Heritage Inventory
N
Legend
Core Habitat (focus NHI site)
Core Habitat (other NHI sites)
Supporting Landscape
100 meter Riparian Buffer
100 foot Riparian buffer
Township Boundary
County Boundary
Interior Forest
Forested habitat
OpenSpace & Recreation
Public Park
Homeowner's Association
Privately Eased Land
0 0.25 0.5 1 Kilometers
0 0.25 0.5 1 Miles
PNHP
Painters Crossroads
Brandywine Battlefield Park
Concord Country Club
Shoppes at Dilworthtown Crossing
Glen Mills Golf Club
Delaware County
Chester County

Todd Woods – *Notable significance*

Species of Concern:	Taxa[1]	PNDI Rank[2] Global	PNDI Rank[2] State	Legal Status[2] State (Proposed)	Last Seen	Quality[2]
Sensitive species of concern[3]	---	---	---	---	1991	C

[1] A = Amphibian; B = Bird; C = Community; F = Fish; L = Lepidopteran; O = Odonate; P = Plant; M = Mammal; R= Reptile, U = Unionoid (Mussel)
[2] Please refer to Appendix III for an explanation of PNHP ranks and legal status
[3] This species is not named by request of the jurisdictional agency overseeing its protection

Location: Wooded riparian corridor along Harvey Run from its headwater seepages to Web Road; between Web Road on the north and Atwater Road on the south.

- Municipalities:
  - Chadds Ford Township
- USGS Quadrangles:
  - West Chester Quadrangle
- Watersheds:
  - Brandywine Creek
- 1992 Delaware County Natural Areas Inventory reference:
  - "SP549"- (West Chester Quadrangle)
- 1998 Delaware County Natural Areas Inventory Update reference:
  - None

Description: Mature forest cloaks a narrow valley along Harvey Run. The headwaters of Harvey Run are dotted by several residences, but as the stream flows southwest towards Web Road the steep, narrow ravine hosts a mature forested canopy that provides habitat for a plant species of concern as well as provides an essential link in the green infrastructure in this part of the county. This habitat has not been ground surveyed since the original CNHI report, so this description is based on observations from that period. Luckily, there appears to have been little change to the overall canopy structure or size of the wooded area, although negative changes to the understory from deer pressure and invasive species of plants are likely to have occurred.

Species of Concern Considerations:

- A sensitive species of concern, which is not named at the request of the jurisdictional agency overseeing its protection, occurs in several locations within this mature forested area. Its preferred habitat is moist deciduous forests and stream banks. These high quality woodlands may be altered by encroachment of invasive species, over-browsing by deer, and fragmentation. Fragmentation can have a drying effect on the habitat and promote invasive species growth. Creating buffers around fragmented habitat and removal of invasive species will help to maintain populations and encourage new population growth.

Forest Cover / Natural Communities: The plant community types depicted are approximations delineated from 2005 aerial photography interpretation and were followed up with minimal selective ground-truthing. Community types follow "Terrestrial & Palustrine Plant Communities of Pennsylvania" (Fike 1999) where appropriate, and otherwise describe general land cover types (*).

- Terrestrial (upland) communities:
  - Red oak – mixed hardwood forest
  - Tuliptree – beech – maple forest
  - modified successional forest*
- The woodland cloaking the steep north-facing slope consists of a 75-foot tall closed canopy of beech (*Fagus grandifolia*), tulip tree (*Liriodendron tulipifera*), and red oak (*Quercus rubra*) with an understory of beech and flowering dogwood (*Cornus florida*). The patchy shrub layer contains witch

hazel (*Hamamelis virginiana*), maple-leaf viburnum (*Viburnum acerifolium*), and spicebush (*Lindera benzoin*). The diverse herb layer includes mayapple (*Podophyllum peltatum*), Virginia spring beauty (*Claytonia virginica*), perfoliate bellwort (*Uvularia perfoliata*), Christmas fern (*Polystichum acrostichoides*), grape fern (*Botrychium* sp.), rue-anemone (*Thalictrum thalictroides*), jack-in-the-pulpit (*Arisaema triphyllum*), smooth yellow violet (*Viola pensylvanica*), cut-leaved toothwort (*Cardamine concatenata*), Indian cucumber root (*Medeola virginiana*), black snakeroot (*Actaea racemosa*), partridgeberry (*Mitchella repens*), yellow trout-lily (*Erythronium americanum*), bloodroot (*Sanguinaria canadensis*), and dwarf ginseng (*Panax trifolius*).

Ownership:

- The forested ravine is owned by numerous landowners, each of which may have a different view on the future use or role of their portion of the ravine. A significant patch is owned by the Fox Hollow Homeowners Association. Fragmentation of ownership of larger landscapes can make consistent conservation action more difficult, but not impossible to achieve.

Habitat Disturbances:

- Historic:
  - Most of the original forest cover of the area had been removed and converted to agricultural or other uses over the past several centuries, leaving little of the original vegetation in place. Aerial photographs from 1937 however, show this forested ravine in a relatively intact condition, surrounded by active agricultural fields. Though the forest was likely cut for fuel wood and timber several times since colonial times, the existing forest has likely been standing for over 100 years. Most of the headwaters area of Harvey Run was in active agricultural production in 1937aerial photos and some of it has been allowed to revert to woody vegetation since that time.
- Current:
  - The large farms have mostly been converted to smaller residential lots within this area, fragmenting the landscape with additional buildings, roads and infrastructure.
  - The headwaters area that had been in agricultural production is now divided among several suburban homeowners.
  - Stormwater runoff from some portions of the surrounding communities flows into the creek system with little opportunity to be filtered, a potentially significant non-point source of pollution.
  - The relatively low volume of understory herbs and shrubs noted in this forest may be attributable to an oversized deer herd.
  - Dumping of garden refuse into the ravine can spread invasive species of plants.
- Exotic Species:
  - The edge habitat provided by reverting agricultural fields and residential development creates conditions favorable for many introduced species of plants. Species observed during previous surveys include:
    - garlic mustard (*Alliaria petiolata*)
    - Asiatic bittersweet (*Celastrus orbiculatus*)
    - wineberry (*Rubus phoenicolasius*)

Conservation Actions:

- Overall:
  - Work with adjacent landowners to achieve a consensus approach to the conservation of the forested ravine.
  - Conserve and expand the forested riparian buffers of Harvey Run. Establish at least a 100 meter (328 feet) buffer of woody vegetation along the creek to help reduce erosion, sedimentation, and pollution. Additionally, best management practices (BMPs) that focus on limiting the introduction of non-point sources of pollution into surface and groundwater should be applied to the surrounding area.

- Within the Core Habitat:
  - The upper part of the valley where Harvey Run is most deeply incised is in very good shape and should be maintained in an undisturbed condition. Work with the numerous adjacent landowners to preserve the wooded ravine in its current intact condition. Limit residential encroachment on the forested ravine and degradation of the habitat by garden refuse dumping.
  - Expand the forested riparian buffer towards the headwaters of Harvey Run. The recharge area of Harvey Run is largely unvegetated and would benefit from additional tree cover.
  - The stormwater runoff from development and agriculture should be considered a potential source of significant contamination for the creek and its floodplain habitat. Runoff from these sources have significantly higher levels of sediment, nutrients, pesticides, herbicides and other pollutants than runoff filtered through a natural habitat. Stormwater management measures such as the creation of detention basins or vegetated swales should be implemented to decrease the unfiltered flow into the creek.
  - Remove invasive species of plants.
  - Reduce the deer density in the area. Uncommon species of native plants are particularly susceptible to deer herbivory.
- Potential Restoration Activities:
    - Streams through forested areas should be considered high priority for conservation. The forested riparian corridor helps to regulate the temperature of the stream and creates streamside conditions that contribute to improved water quality and aquatic habitat. Streams through non-forested areas should be restored with native trees and shrubs appropriate to the habitat.
      - Careful determination is needed to avoid planting trees in floodplains that contain herbaceous wetland habitats. These habitats should be maintained in their current open condition, with tree plantings to occur at the periphery of natural wetland openings.
      - Riparian Buffers:
        - An ideal vegetated stream buffer should be at least 100 meters (328 feet) in width from the edge of the 100-year floodplain.
        - An intermediate vegetated stream buffer should be at least 100 feet in width from the edge of the 100-year floodplain.
        - A minimum vegetated buffer should be at least 35 feet in width from the edge of the 100-year floodplain.
    - Remove invasive species of plants. The creek floodplain and edge habitats associated with agricultural fields are particularly susceptible to weedy plant invasion and will require a sustained and targeted approach to invasive management. Aggressive invasive species along the powerline rights-of-way can have a significant impact on the available habitat for the species of concern. Control of invasive species in the area will require extensive and continual effort. Focus non-chemical control efforts on selected areas surrounding species of concern.
      - Target pioneer populations of invasive plants for immediate and continued removal, particularly tree-of-heaven, non-native bush honeysuckles, Japanese honeysuckle, multiflora rose and common privet. It is much easier and more effective to keep a place invasive-free than to try and repair a heavily infested habitat.
      - Invasive species management needs to be coordinated by individuals familiar with the rare species as well as the invasive species present.
      - Continual invasive species monitoring and control will be necessary.

Appendix D - Delaware County Community Trails Planner's Portfolio

COMMUNITY TRAILS

PLANNER'S PORTFOLIO

ISSUE 09

MARCH 2017

delaware county planning department

PLANNER'S PORTFOLIO
COMMUNITY TRAILS

1 OVERVIEW

2 MULTI-USE TRAILS

4 EARTHEN TRAILS

5 CYCLE TRACK

6 ON-ROAD BICYCLE LANES

8 ROAD CROSSINGS

10 TRAIL AMENITIES

Planner's Portfolio Series

The Planner's Portfolio Series is an outreach effort developed by Delaware County Council in order to explore the planning concepts available for communities to take advantage of the unique opportunities across Delaware County.

The pattern on the cover page, and found throughout this series, represents the importance of each individual component in the larger network. The Planner's Portfolio Series explores several of these components and how they can support community character in Delaware County.

For more information, contact the Delaware County Planning Department at 610-891-5200 or visit www.co.delaware.pa.us/planning to see the complete Planner's Portfolio series.

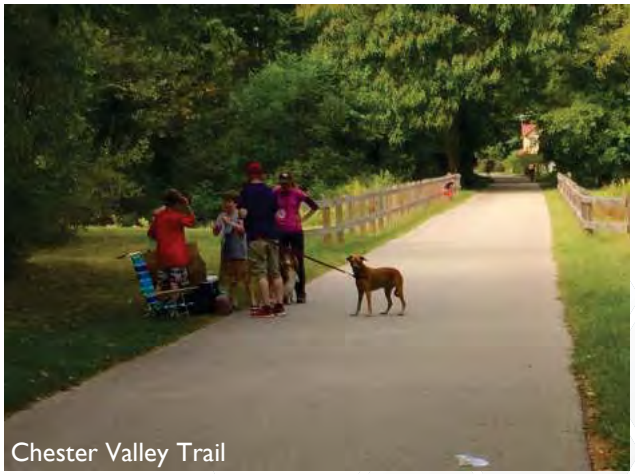
OVERVIEW

Pedestrian paths and multi-use trails have become increasingly popular for satisfying transportation and recreational needs. They provide connections between communities and natural and historic resources, enhance recreational opportunities, and often conserve linear open spaces. In doing so, trails also provide a valuable recreational and fitness opportunity for all users.

Delaware County identified a Primary Trail Network as part of its *Open Space, Recreation, and Greenway Plan* (2015) to help create a cohesive trail system. It represents a countywide network of multi-use trails capable of connecting to both regional and municipal trail systems and destinations, such as parks and commercial centers. Municipalities should consider developing their trails in such a manner that they either construct segments of this network or design their internal trails to connect to Primary Trails.

Paths and trails can take a variety of sizes and styles. This issue of the Planner's Portfolio series focuses on the different styles of connections. It also discusses road crossings and trail amenities.

Chester Creek Trail, Middletown Township (Credit: Friends of Chester Creek Branch)



Chester Valley Trail

Trails are an amenity that helps to bring in visitors that support the local economy. At times, they can even spur small businesses (above)!

MULTI-USE TRAILS

Multi-use trails are paved paths generally ten- to twelve-feet wide that can be used for non-motorized activities such as walking, running, bicycling, etc. They can be found as internal trails within a park but are most common as linear connections between parks and other destinations. Trailheads, which may include parking, are located at various points along the length of the trail to provide access. Multi-use trails serve as both recreational amenities and transportation corridors for the community. While they primarily serve the communities immediately surrounding the trail, they attract visitors and trail users from other communities as well.

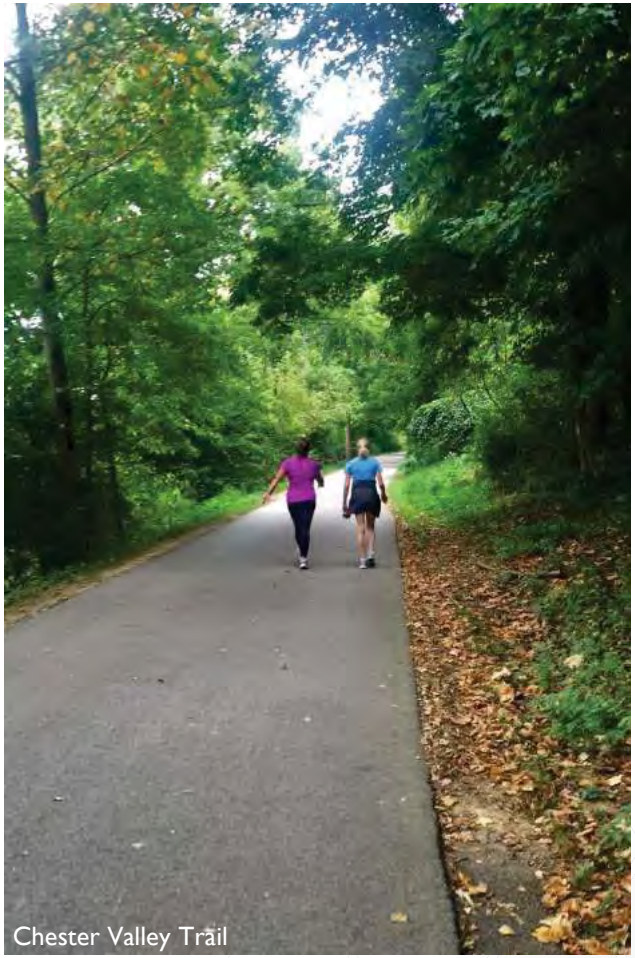
There has been a strong interest in access to trails in recent years. Some communities in the region have worked with developers to build segments of trails as part of the land development process. In other places, developers have installed short trails to provide connections to existing or planned trails.

Chester Creek Trail, Middletown Township

Radnor Trail, Radnor Township

Riverwalk, Wilmington, Delaware

Sleighton Park, Middletown Township


Chester Valley Trail

DuPont Environmental Center, Wilmington, Delaware

Trail facilities can be designed to fit in with the surrounding context. This can include formal plantings similar to the Riverwalk, a park-like setting as seen in Sleighton Park, or a heavily wooded buffer such as that along portions of the Chester Valley Trail.

Some sections of trails may require unique design solutions, such as a wetland crossing. A raised boardwalk can provide a connection through a wetland while limiting environmental impacts. These can also be used as an educational opportunity to inform visitors about the importance of wetlands and waterways.

EARTHEN TRAILS

Earthen trails are generally less formal paths designed mainly for walking and running. Common surface materials include grass, dirt, and mulch. Because these trails are less intensive to build, they are a great option for providing access to and through sensitive environmental features. Earthen trails are generally easier and less costly to implement and maintain than paved trails. Some grass trails can be implemented by simply altering mowing patterns to create a path through taller grasses. Similarly, dirt trails in wooded areas can be created by clearing the understory. As such, earthen trails can provide a great deal of exercise and educational opportunities at relatively low cost. However, earthen trails are not universally accessible to all potential users, which limits usage.

Darlington Trails, Middletown Township

John Heinz National Wildlife Refuge

First State National Park, Chadds Ford Township

John Heinz National Wildlife Refuge

Darlington Trails, Middletown Township

Earthen trails require a less-invasive construction process than paved, multi-use trails. This can help preserve environmental features, such as tree canopy, which are important because they provide habitat for wildlife and can infiltrate stormwater runoff.

COMMUNITY TRAILS

CYCLE TRACK

Due to the density of some communities in Delaware County, connected space for an off-road trail may not be an option. Cycle tracks parallel a roadway but are completely separated from vehicular traffic and most often complement a typical sidewalk. Cycle-tracks integrate a trail-like design into the roadway but still provide significant protection from vehicles. Cycle tracks are beneficial to users of a variety of riding skillsets and comfort levels because they are separate from standard traffic flow. They are often developed as part of larger regreening and streetscape improvement efforts along a corridor. Cycle tracks may be preferable over sidepath trail design along corridors where high pedestrian volume creates a need to maintain separated pedestrian and bicycle movements.

Penn Street Trail, Philadelphia (Credit: philly.curbed.com)

Penn Street Trail, Philadelphia (Credit: greenway.org)

Penn Street Trail, Philadelphia (Credit: uwishunu.com)

ON-ROAD BICYCLE LANES

On-road bicycle lanes are portions of roadways that are delineated specifically for cyclists. This five-foot wide space allows cyclists the opportunity to ride at a safe speed safely separated from faster moving automotive traffic. Special consideration of existing traffic patterns is necessary to determine the appropriateness of a bicycle lane. On-road bicycle lanes can provide important bicycle connections to trails. In some locations, such as where off-road trails are not feasible, bicycle lanes can be used to provide connections between trail segments. Bicycle lanes complement trails by providing safe connections to and from local destinations. Clear signage and road striping is critical along bicycle lanes to create a safe corridor. Informational and wayfinding signage should be used to direct users when bicycle lanes are used to close a gap between trail segments.

26th Street, Minneapolis, MN (Credit: Bill Lindeke)

Cleveland Avenue, St. Paul, MN (Credit: localmile.org)

Lincoln Way, Swarthmore

The most common bicycle lane is a striped section of roadway located to the right of moving traffic (left). When the roadway conditions provide enough space, bicycle lanes should be buffered from moving vehicular traffic (top). "Sharrows," which are markers painted on the roadway to delineate where people should cycle, can be used on narrow roadways or streets that have a low volume of traffic (above).

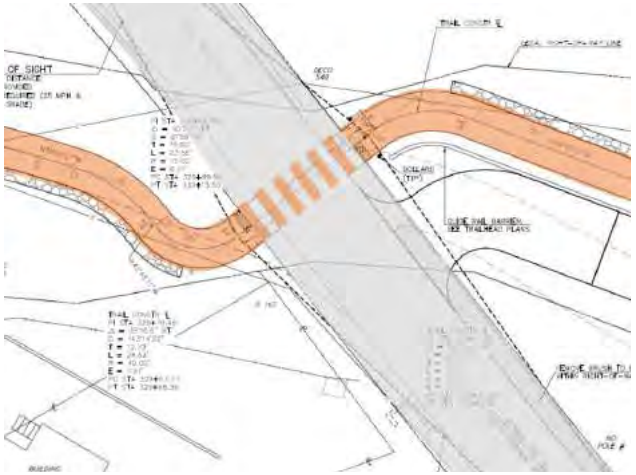
ROAD CROSSINGS

As multi-use trails are developed to provide connections, it is inevitable that they will cross roadways. When the crossing is not located at a signalized intersection, it should be designed to be extremely visible and provide adequate warnings to trail users as well as vehicles and pedestrians along the roadway. Signage along the both the roadway and trail should provide notice along the approach to the intersection. Stop signs and street name signs should be placed along the trail approach. On many roadways, flashing signals can be activated by trail users to warn vehicles of cross-traffic on the trail. Painted crosswalks and other traffic-calming devices, such as medians, can help to slow down vehicular traffic and provide safer crossings.

Gates are installed across the trail to limit unauthorized vehicles while still providing space for trail users. The gates can be opened by first responders in the event of an emergency or for routine maintenance access.

Chester Valley Trail

Trails should be designed to meet roadways at right angles to provide adequate sightlines at the intersection (below).



Chester Valley Trail

Chester Valley Trail

Bonner Park, Thornbury Township

When a trail crosses a low-volume roadway, particularly in a residential setting, a simple, highly-visible crosswalk can still be safe and effective. Low-volume crossings will need to meet ADA standards, including detectable warning strips in the pavement, and should include gates to restrict unauthorized motor vehicles.

TRAIL AMENITIES

As with any public facility, there is a range of amenities that can be provided along the trail based on need. Perhaps the most common amenities are simple rest areas with benches and bicycle racks at trail heads, particularly near destinations such as commercial centers and employers. Bicycle "fix-it" stations, which include repair tools and an air pump, can be installed along heavily used stretches of trails. Some trail providers work with local businesses to offset the cost and brand the station with the company's logo and colors. Amenities can make the user's experience more enjoyable and safer; however, care should be taken to place them in appropriate locations.

Riverwalk, Wilmington, Delaware

Grant Wood Trail, Iowa (Credit: homemadeiowalife.blogspot.com)

Chester Valley Trail (Credit: tmacc.org)

Riverwalk, Wilmington, Delaware

Haverford Reserve, Haverford Township

Riverwalk, Wilmington, Delaware

Darlington and Cornicopia Trails, Middletown Twp.

Riverwalk, Wilmington, Delaware

Consistent signage along a trail can provide clear directions and information to visitors. It can range from simple trail markers (bottom left) to more elaborate systems with space for community postings/event announcements (top left). Educational signage can be added along trails to highlight some of the features along the trail (left).

Signage can also be used to reinforce some of the health benefits of using a trail. The Riverwalk in Wilmington (above) features "tips" every quarter-mile along the trail sponsored by local health providers.

OTHER PLANNER'S PORTFOLIOS:

CHARACTER AREAS
March 2016

COMPLETE STREETS
April 2016

FUNDING SOURCES
April 2016

Court House and Government Center
201 West Front Street
Media, Pennsylvania 19063

Delaware County Council
Mario Civera, Jr., Chairman
Colleen P. Morrone, Vice Chairman
John P. McBlain
David J. White
Michael F. Culp

County Executive
Marianne Grace

Planning Department
Linda F. Hill, Director
Ryan T. Judge, Senior Planner

For more information, contact the Delaware County Planning Department at 610-891-5200 or visit www.co.delaware.pa.us/planning to see the complete Planner's Portfolio series.