



OPEN SPACE PLAN
Adopted: December 4, 2007

Board of Supervisors

Deborah Love D'Elia, Chairman

George Thorpe, Vice-Chairman

Garry Paul, Supervisor

Open Space Committee

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CHADDS FORD TOWNSHIP OPEN SPACE PLAN

ADOPTED: DECEMBER 4, 2007

Developed by:

Chadds Ford Township Open Space Committee

Consultants:

Brandywine Conservancy
Environmental Management Center
P.O. Box 141
Chadds Ford, PA 19317
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Robert Lonsdorf, Senior Planner
John Snook, Senior Advisor
Erick Marklund, GIS Manager
Marti Coats, Municipal Assistance Program Associate

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Steven Beckley, Senior Planner, Environmental Planning
Julie DelMuto, Manager, GIS
Susan Hauser, Manager, Information Services

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Chadds Ford Township residents who took the time to complete the survey and attend the informational sessions

The Civic Association of Chadds Ford Township for including the Open Space survey in its newsletter

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Maryann Furlong, Chadds Ford Township Secretary/Treasurer

Chadds Ford Township Planning Commission

Phil Wenrich, Chadds Ford Township Webmaster

**CHADDS FORD TOWNSHIP
DELAWARE COUNTY, PENNSYLVANIA**

**RESOLUTION 2007- 23
ADOPTION OF THE CHADDS FORD TOWNSHIP
OPEN SPACE PLAN**

WHEREAS, the Supervisors of Chadds Ford Township have acknowledged the need to further the goals of protecting, managing and using the Township's natural and cultural resources, including but not limited to farm fields, meadows, woods, stream valleys and water resources, and historic sites and structures; and

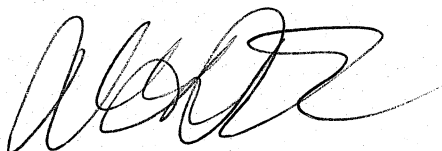
WHEREAS, an **OPEN SPACE PLAN**, including maps, charts and text, has been prepared by the Brandywine Conservancy Environmental Management Center, working with the Open Space Committee, Delaware County Planning Department and citizens of the Township, providing recommendations to shape and guide the future preservation of the community; and

WHEREAS, a public meeting of the Delaware County Planning Commission was held on October 18, 2007, and no substantial revisions in the proposed Open Space Plan resulted; and

WHEREAS, a public meeting of the Chadds Ford Township Planning Commission was held on November 14, 2007, and a public hearing was held on December 4, 2007, pursuant to public notice, and no substantial revisions in the proposed Open Space Plan resulted.

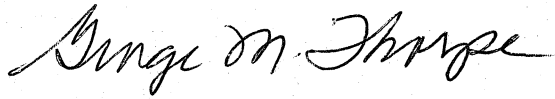
NOW THEREFORE, BE IT RESOLVED that the Chadds Ford Township Board of Supervisors do hereby approve and adopt the **OPEN SPACE PLAN FOR THE TOWNSHIP OF CHADDS FORD**, Public Review Draft 8/07 and addendum dated 11/15/07, in accordance with Article III of the Pennsylvania Municipalities Planning Code, Act 247 of 1968, as amended. The Open Space Plan is hereby incorporated into and made part of the existing Comprehensive Plan, last revised May, 1973, and shall similarly be incorporated into and made part of any and all revisions thereto.

**BY THE BOARD OF SUPERVISORS
CHADDS FORD TOWNSHIP**

A handwritten signature in black ink, appearing to read 'D. Love', is written over a horizontal line.

DEBORAH LOVE D'ELIA, Chairman

(Signatures continued on next page)

A handwritten signature in cursive script, appearing to read "George M. Thorpe".

GEORGE M. THORPE, Vice Chairman

A handwritten signature in cursive script, appearing to read "Garry Paul".

GARRY PAUL, Supervisor

Attest:

MARYANN D. FURLONG
Township Secretary

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CHAPTER 1: INTRODUCTION and OVERVIEW

The Chadds Ford Open Space Plan is a 20-year blueprint for the protection, management, and use of Chadds Ford's most important natural and cultural resources. These resources are exemplified by, among others, the Township's farm fields, meadows, woods, stream valleys and other water resources, and historic sites and structures. Based upon the plan's inventory, assessment, and documented public input, specific action steps are recommended to achieve the goals for open space protection and recreational access by utilizing extensive and creative implementation strategies.

This Chadds Ford Township Open Space Plan is consistent with the requirements of Pennsylvania Act 247, the Municipalities Planning Code (MPC), regarding provision of parks and recreation and planning for protection of natural and historic resources (e.g., Article III, Sections 301 (a)(2) and (a)(6)). The other subsections of MPC Article III, Section 301 will be addressed when Chadds Ford develops a comprehensive plan, planned to begin January, 2008. The applicable sections of the MPC are provided in Appendix A.

(While the MPC refers to "historic resources," it is commonly accepted planning practice to include historic resources within a broader cultural resource grouping to document the interrelated archaeological and scenic resources. Accordingly, general references to historic resources in this document refer in fact to cultural resources and so include historic, archaeological, and scenic resources.)

Chadds Ford is a Pennsylvania Township of the second-class, with a 2000 population of 3,170 persons (US Census, 2000). It 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 (#1 – 1), the Township abuts Thornbury and Concord Townships in Delaware County, as well as Pennsbury, Birmingham, and Thornbury Townships in Chester County. Chadds Ford also directly abuts the Brandywine Hundred and Christiana Hundred areas of New Castle County, Delaware. The Township 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.

Historically, the earliest (i.e., at contact with European settlers) inhabitants of the Chadds Ford area were the Native American Delaware Tribe known as the Lenape. The first Europeans to settle the Township were typically Quakers, who were drawn to the region by the religious freedoms proposed by William Penn. Not surprisingly, Chadds Ford lands were included in those granted to William Penn. Although not an original purchaser of the grant, Francis Chadsey acquired title in 1702 of a 500-acre estate and later purchased another 100 acres. He built a corn mill and residence on the Brandywine Creek in 1713. His son, John Chads, inherited much of this property and continued to run his father's mill. He also built another residence, opened a tavern, and, in 1736, established ferry service across the Brandywine Creek; hence, the name, "Chadds Ford."

Given that this pattern of small industry and extensive agricultural uses continued over 200 years, it is not surprising to note that Chadds Ford was once a much more rural municipality. Even more recently, however, the Township still had relatively few residents and extensive areas of farm, woods, and large

institutional uses such as the Chadds Ford Historical Society and the Brandywine Conservancy. More recent growth patterns are documented in the population change data provided in Chapter 4. In spite of its growth as a bedroom community in recent years, much of the Township's rural character remains. Chadds Ford's extensive natural and historic resources, including woodlands, streams, historic structures and sites, and scenic vistas, collectively create this rural nature. Accordingly, protection of Chadds Ford's rural heritage is an overarching goal of this plan, as supported by extensive public feedback (Chapter 3) and strong voter approval of the open space referendum (i.e., a self-imposed tax increase of \$0.28 per \$1,000 in property value; May 2005 – see below). Another important goal of this Open Space Plan is to address the recreational needs of Township residents. The Open Space Plan's goals and objectives are fully detailed in Chapter 2.

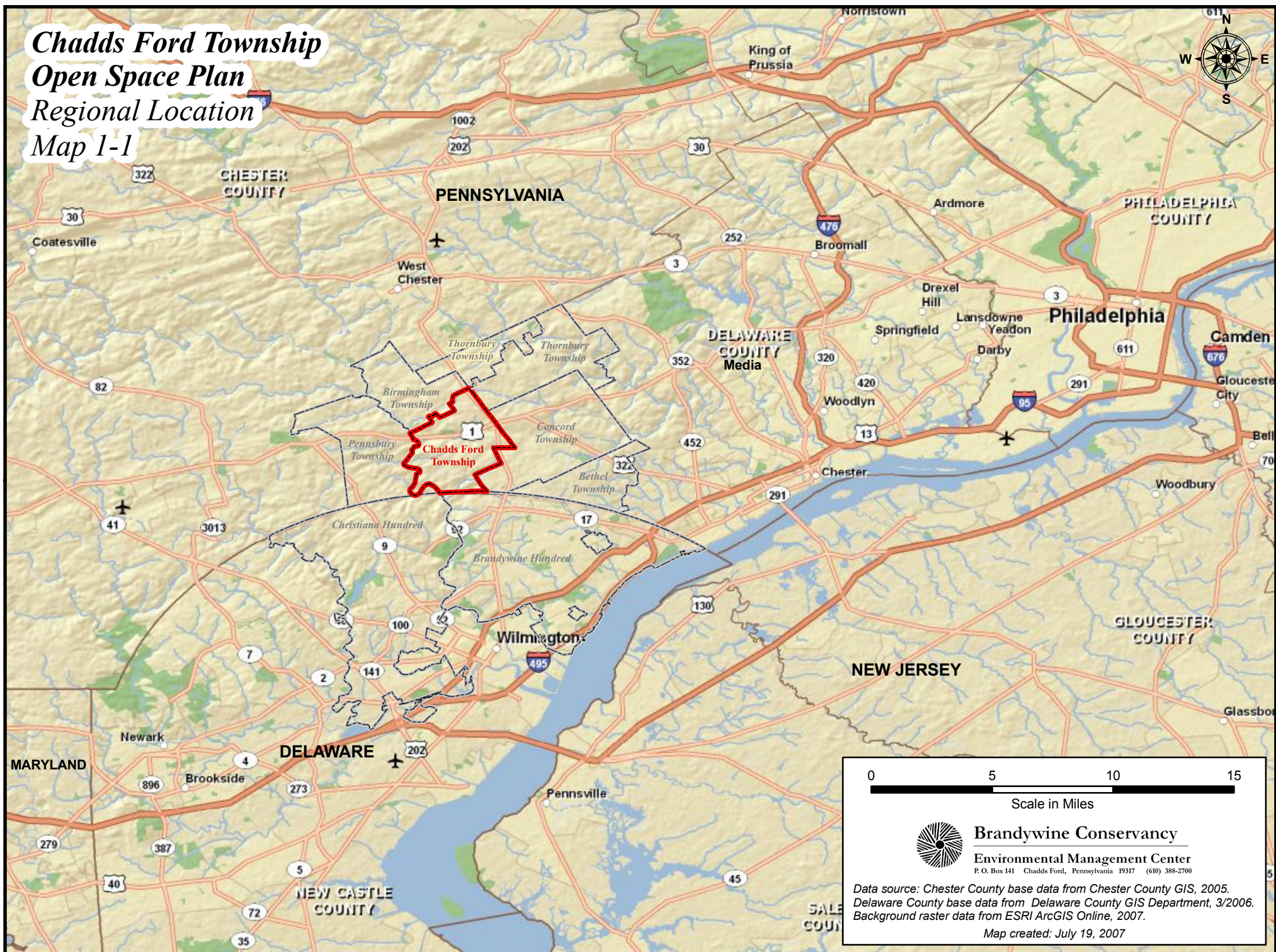
The Open Space Plan fulfills the following five functions in addition to its overall role in guiding the permanent preservation of Chadds Ford's remaining rural character and the provision of recreational amenities:

1. Documents those open spaces that could be permanently protected using property taxes currently collected from Chadds Ford taxpayers solely for the purpose of open space protection, pursuant to Pennsylvania Act 153 (i.e., "Open Space Preservation by Local Governments").
2. Meets the planning requirements of agencies that could grant permanent open space protection funds (in addition to those collected under Act 153) to the Township, such as the Pennsylvania Department of Conservation and Natural Resources (DCNR).
3. Functions as the "formally adopted recreation plan" required under a program for collection of "fees-in-lieu-of" for park and recreational improvements. This program is enabled by Article V, Section 503 of the MPC and is currently being contemplated by Township officials.
4. Serves as the basis for development of a Chadds Ford historic preservation plan, which would establish the legal framework for development of future historic resource protective strategies in the Township.
5. Meets the MPC's requirements for a comprehensive plan's natural and historic resource protection elements, as well as for a comprehensive plan's park and recreation components.


In conclusion, there are three sets of circumstances under which this adopted Open Space Plan may be reviewed and possibly revised:

1. As recommended by the MPC, the Open Space Plan should be reviewed 10 years after its adoption, with redrafting 20 years after adoption.
2. This plan should be reviewed as the broader comprehensive plan is developed, given that the comprehensive plan will serve as the "umbrella" for the Open Space Plan.
3. Should changes occur in the Township's planning priorities, demographics, or other factors (e.g., formalization of a Township Land Trust) that influence this plan's analyses, recommendations, and implementation strategies, the plan should then be revised accordingly.

Chadds Ford Township Open Space Plan Regional Location Map 1-1



0 5 10 15
Scale in Miles

 **Brandywine Conservancy**
Environmental Management Center
P. O. Box 141 Chadds Ford, Pennsylvania 19317 (610) 388-2700

*Data source: Chester County base data from Chester County GIS, 2005.
Delaware County base data from Delaware County GIS Department, 3/2006.
Background raster data from ESRI ArcGIS Online, 2007.
Map created: July 19, 2007*

CHAPTER 2: PLANNING GOALS and OBJECTIVES

While Chadds Ford's land use patterns have shown suburban trends over the past ten to twenty years, this pattern does not necessarily need to continue throughout the Township over the next ten to twenty years. Prospects are still good to permanently protect extensive natural and historic resources as well as to provide recreational opportunities. Accordingly, this chapter establishes a set of goals and objectives relative to these important planning issues, creating a framework for this Plan's analysis, recommendations, and implementation strategies.

Goal 1: Permanently protect Chadds Ford's open spaces – its farm fields and meadows, woods, stream valleys and other water resources, historic sites and structures, and scenic resources – which, in combination, create the Township's unique community character, remaining rural atmosphere, and quality of life.

Supporting Objectives:

Promote and facilitate the placement of voluntary and permanent easements on Chadds Ford's critical and sensitive open spaces; utilize other appropriate tools for permanent protection as needed, including outright acquisition or identification as a significant resource using applicable county, state, or federal programs.

Work towards permanent conservation of extensive areas of prime and significant agricultural soils to assure the potential for a range of farm-based businesses.

Pursue permanent conservation of woodlands, especially those 50 years and older that have significant areas of forest interior.

Promote the permanent protection of significant wildlife habitats, unique natural areas, and those locales that support rare plant species.

Seek to permanently preserve continuous riparian or open space buffers along stream corridors, as well as in and around areas of wetlands and steep slopes; seek to restore woody vegetation to these areas where needed.

Facilitate creation of permanently protected greenway corridors to link existing protected open space areas through land preservation or purchase of easements and rights-of-way.

Pursue protective strategies for the natural and historic resources identified, assessed, and prioritized in this Open Space Plan.

Encourage and facilitate the work of the Chadds Ford Historical and Architectural Review Board to fully implement and administer the Township's Act 167 Historic District ordinance.

Promote the permanent protection of historic and locally-significant landscape elements such as walls, hedgerows, meadows, large fields, and woodlands.

Encourage the cooperative efforts of the Brandywine Battlefield Task Force (BBTF) and surrounding municipalities to preserve lands within the Brandywine Battlefield National Historic Landmark.

Broaden the appreciation and protection of Chadds Ford's historic resources through Township sponsorship of measures such as an historic preservation plan.

Pursue permanent protection of Chadds Ford's scenic areas and vistas, especially where those areas also contain other significant natural and/or cultural resources.

Seek to maintain the essential qualities of the Township's scenic roadways (e.g., width, curvature, roadside trees, walls, structures) while planning for needed improvements.

Encourage the cooperative efforts of the Brandywine Valley Scenic Byway Commission (BVSBC) to protect the scenic nature of the Brandywine Valley Scenic Byway.

Maintain and improve watershed and sub-watershed water balances within and downstream of Chadds Ford to maintain flow levels, protect public water supplies, and shelter the integrity of aquatic life.

Educate Chadds Ford residents and taxpayers regarding the financial benefits of open space protection (i.e., schools and other services required by ongoing development of unprotected open space are not cost-effective).

Coordinate open space planning and protection with neighboring municipalities in Delaware County, Chester County, the State of Delaware, the Delaware Valley Regional Planning Commission, and Greenspace Alliance to protect shared resources and achieve common goals.

Strive to achieve consistency with and otherwise support development of County-level open space and greenway planning efforts.

Fully utilize technical assistance, educational, and/or funding resources that may be available from governmental and nongovernmental organizations.

Maximize use of Township open space protection revenue collected pursuant to the May 2005 referendum under Pennsylvania Act 153 to leverage open space protection funds from county, state, and other potential sources.

In order to fully implement this goal for open space protection and achieve the accompanying objectives, partner as appropriate with organizations such as, but not limited to, the Brandywine Conservancy, BBTF, BVSBC, Chadds Ford Historical Society, Natural Lands Trust, the Township's future land trust, and Chadds Ford residents and business owners.

Goal 2: Assure provision of an adequate level of recreational services and facilities to Township residents.

Supporting Objectives:

Coordinate with other public, quasi-public, and private agencies to maximize the use of recreational lands, facilities, and programs that these organizations may provide and that may be available to Township residents.

Formalize a program and fund for acceptance of cash contributions to Township recreational efforts, including, but not limited to, provisions for dedication of "fees in lieu thereof" (i.e., pursuant to the Municipalities Planning Code) for recreational lands from residential and nonresidential developers.

Consider the Township's growing population when planning future recreational facilities.

Work toward establishment of a Township trails system, addressing appropriate linkages, destinations, accessibility, general suitability, and appropriate uses (e.g., pedestrian, bicycle, equestrian, and cross-country ski) considerations. Specifically, seek to interconnect protected open spaces, recreational areas, and residential neighborhoods.

Consider development of an enclosed local dog park.

Consider applicable standards and criteria for recreational facilities for Township residents.

Pursue funding resources for recreational development through county, state, and other potential funding sources.

Encourage the cooperative efforts of the BVSBC to improve the recreational attributes of the Brandywine Valley Scenic Byway.

CHAPTER 3: PUBLIC PARTICIPATION

The Chadds Ford Open Space Plan reflects extensive participation by Township citizens and appointed/elected officials. Participation was facilitated through multi-faceted opportunities to learn about the plan, provide responses, and meet local officials leading the effort. For example, the survey described below was considered a “snapshot” of the opinions of those responding. Survey results were then presented at the first public meeting (also described below), since, presumably, not all attendees completed the survey.

Key opportunities for resident participation in development of the Open Space Plan are summarized as follows:

Open Space Committee: As appointed by the Township’s Board of Supervisors, the Open Space Committee members (names are provided inside the cover of this document) are all Chadds Ford residents committed to protecting the Township’s rural character through preservation of natural and historic resources. Members also represent the botany, planning, historic preservation, accounting, and legal professions. Further, two Committee members own lands subject to conservation easements granted by the respective parcels’ previous owners to the Brandywine Conservancy. As development of the plan progressed, the Committee interacted regularly with the Township’s Board of Supervisors and Planning Commission, given their formal roles in adoption of the plan (see below).

In addition to its role in developing and guiding the Open Space Plan and its future implementation, the Open Space Committee has several other responsibilities pursuant to Chadds Ford Township Ordinance No. 95 (August 6, 1997) which established the Committee. These duties include advising the Board of Supervisors regarding the dedication of public land created by subdivision and land development.

Survey: In order to address survey results in the Open Space Plan, the “Chadds Ford Township Open Space Survey of Residents” was developed by the Open Space Committee and sent with the cooperation of the Chadds Ford Civic Association in October, 2006 to an inclusive mailing list of approximately 1,250 persons. The introduction to the eight-question survey asked recipients to “get involved” by offering their opinions regarding protection of open spaces that safeguarded resources such as water supplies, farmland, and historic structures and sites. Several demographic questions (e.g., “How long have you resided in Chadds Ford Township?”) were asked so that the respondents could be broadly characterized. The 18 percent response rate represented 222 property owners and renters, as well as a few business owners. Very broadly, respondents considered natural resource protection to be extremely important, with a significant level of importance attributed to protection of historic resources. With respect to recreational uses and facilities, answers indicated that hiking, cycling, and equestrian trails would be most often used. A summary of the responses to the eight survey questions is presented in Appendix B.

Public Informational Meetings: The Open Space Committee organized two meetings which introduced attendees to the Open Space Plan, the process used to develop it, and its proposed recommendations.

The first meeting was held on December 4, 2006, several months into development of the Open Space Plan. Over 80 residents attended, many of whom spilled out into the hallway outside the Township's meeting room. Many stayed after to look at maps and ask questions. Presentations addressed the history and importance of open space planning in Chadds Ford (member of the Board of Supervisors), survey approach and results (Open Space Committee member), and inventory of natural, cultural, and recreational resources (Township consultants). The attendees left satisfied by and large, as reflected by their public and individual questions and comments which were typically positive and emphasized the need to permanently protect important natural and historic resources and to provide recreational opportunities such as trails.

The second public meeting was held on June 14, 2007, and was preceded by a guided walk on the existing trail between the Brandywine River Museum (meeting location) and the Chadds Ford Historical Society. This plan recommends that a trail be considered between the Chadds Ford Township building and the Museum so as to extend this existing passive recreational opportunity (Chapter 9). Approximately 15 people participated in the walk and about 70 attended the meeting. Using a panel discussion format, attendees learned of the plan's recommendations for open space protection and recreational access, and the bases for these recommendations. Comments and discussion were overwhelmingly lively and positive, including one attendee's remark that the Township was not collecting a large enough tax to permanently protect open space. Other comments supported this plan's recommendations for educational efforts.

Website: With assistance from a volunteer webmaster, the Open Space Committee maintains a website dedicated to open space protection issues in Chadds Ford. It is accessible directly at: <http://www.chaddsfordpa.net/openspace.htm>, or through the Township's site at: <http://www.chaddsfordpa.net/>. The Committee updates its site regularly and paid particular attention to this during development of the Open Space Plan. Examples of information posted during the planning process included survey results, meeting notices, and resource materials such as Frequently Asked Questions, Glossary of Terms, maps, and biological inventories.

Plan Review Adoption: A number of actions involving public agencies and/or meetings took place leading up to formal adoption of the Open Space Plan. The first of these was informal review of the plan by Delaware County Planning Commission (DCPC) staff. Secondly and as noted in Chapter 1, the Open Space Plan will become part of the broader comprehensive plan for Chadds Ford Township. Since DCPC is required by the Pennsylvania Municipalities Planning Code to formally review and comment on the comprehensive plan, DCPC was asked to review the Open Space Plan as the first step in that process. DCPC approved the Open Space Plan on October 18, 2007. Similarly, and also as required by the MPC for the comprehensive plan, the Open Space Plan was submitted to the municipalities adjacent to Chadds Ford and the Unionville-Chadds Ford School District for review and comment. All review letters are included in Appendix C.

As noted in the beginning of this document, the Open Space Plan was adopted by the Chadds Ford Board of Supervisors on December 4, 2007, pursuant to the MPC. This action was taken after a formally advertised public hearing, and it was based on the Chadds Ford Planning Commission's formal recommendation that the Board adopt the plan. The Planning Commission made this recommendation during a duly-advertised public meeting on November 14, 2007.

Future Involvement: As described in Chapter 10, the majority of the Township's organizations, businesses, and residents involved in developing, reviewing, learning about, and approving this plan will also have a role in implementing the plan's recommendations. Successful protection of the highest priority natural and historic resources will require continued coordination and commitment by all these parties to the preservation of Chadds Ford's rural quality of life.

CHAPTER 4: DEMOGRAPHIC TRENDS

As indicated by its title, this chapter provides several key sets of demographic data to support the Open Space Plan's 20-year time frame for protecting important open spaces in the Township and for providing recreational opportunities. These data sets are presented and analyzed as follows; the assistance of the Delaware County Planning Department in securing some of this information is gratefully acknowledged.

Travel Time to Work: The time it takes Township residents to travel to work is an important consideration in projecting recreational needs. In other words, the longer it takes for a resident to get to work, the less time he/she will have to take advantage of recreational opportunities in the Township. These residents are more likely to recreate closer to their place of work. The following table provides the most recent "snapshot" of travel time to work data for Chadds Ford residents; this information is further analyzed in Chapter 7.

Table 4 - 1: Travel Time to Work for Chadds Ford Township Residents, 2000

Travel time to work, minutes	Number of workers
<15	325
15-30	530
30-60	647
More than 60	212
Total	1,714

Source: US Census/ Pennsylvania State Data Center

Historic Population Trends: Population levels for Chadds Ford are provided by the US Census in 10-year increments including 2000 (most recently available year); this data is available through the Pennsylvania State Data Center and the Delaware County Planning Department. Population data is categorized by age; in some cases, interpolation was needed to allocate population numbers across consistent age groups so as to identify and evaluate trends.

For Chadds Ford, the following table documents the suburbanization of the Township as described earlier in this plan. Of particular note is the 60 percent (approximately) increase in population between 1970 and 1980 and the increase of slightly over 50 percent between 1980 and 1990. Conversely, between 1990 and 2000, Chadds Ford's population grew at a much slower rate – 1.7 percent. Without an influx of new (and typically younger) residents during this time period, the Township's population largely aged in place between 1990 and 2000. Specifically, the groups between the ages of 25 and 44 lost approximately 46 percent of their members while the oldest age groups all gained significant numbers of members. While the 1990 – 2000 timeframe is a documented "lull" in the Township's population, it will continue to grow, as evidenced by the following section.

Table 4 - 2: Historic Population Change in Chadds Ford Township, 1970-2000

Age, in years	1970 Population	1980 Population	Percent change, 1970-1980	1990 Population	Percent change, 1980-1990	2000 Population	Percent change, 1990-2000
<5	96	85	-11.5	162	90.5	156	3.7
5-14	272	353	29.8	390	10.5	398	2.1
15-24	179	291	62.6	342	17.5	300	-12.3
25-34	119	338	184	531	57.1	323	-39.2
35-44	184	358	94.6	531	48.3	496	-6.6
45-54	173	283	63.6	511	80.6	611	19.6
55-64	156	182	16.7	356	95.6	439	23.3
65 and over	102	167	63.7	295	76.6	447	51.5
Median age	32.9	34.5	---	38.0	---	43.5	---
Total	1,281	2,057	60.5	3,118	51.5	3,170	1.7

Sources: US Census/Pennsylvania State Data Center; Delaware County Planning Department

Population Projections: Estimating population growth is an important consideration for both open space protection planning and recreational needs analysis. As a municipality's population grows, open land, and the natural and historic resources it supports, will be consumed through the construction of new dwelling units. If the Township's population levels were to remain stable, then the population living in the majority of existing dwelling units would either stay or be replaced by new residents. While the previous section showed that the Township's population increased at a much slower rate between 1990 and 2000 than it had during the previous two decades, growth is continuing. Chadds Ford Township officials have approved at least three residential subdivisions since 2000, one of which was the development of 120 single-family residences at the former Girl Scout Camp Sunset Hill (now known as the "Estates at Chadds Ford").

With respect to recreational planning, the ages of new residents as well as the potential number of new residents over the 20-year period are major factors in the range of leisure opportunities that should be considered. Resident age will be governed in large part by the type of residences built; e.g., single-family, four-bedroom houses will bring young families into the Township. The effect of these trends on recreational planning is addressed in Chapter 7.

Accordingly, it is important to project what Chadds Ford's population growth patterns could be if current trends should continue. To meet this need, two sets of calculations were performed; also, one existing population projection data set from the Delaware Valley Regional Planning Commission (DVRPC) was utilized. The first set of calculations (i.e., arithmetic population projections) assumed that the Township's population would grow by the same number as it had based on the trends documented in Table 4 - 2. Secondly, geometric population projections assumed that the Township's population would grow by the same rate as it had in the past. The arithmetic and geometric calculations were performed for the same

five-year intervals used for the DVRPC population projections in order to generate consistent data. These data extend to 2025, which is the limit of DVRPC's projections and almost to the end of the 20-year period for this plan (i.e., 2027). Population projections for Chadds Ford, using the three data sets, are presented in the following table.

Table 4 - 3: Population Projections for Chadds Ford Township, 2000-2025

Population Projection Type	2000 Population, actual	2005 Population, projected	2010 Population, projected	2015 Population, projected	2020 Population, projected	2025 Population, projected
Arithmetic	3,170	3,448	3,736	4,004	4,282	4,560
Geometric	3,170	3,592	4,070	4,612	5,226	5,922
DVRPC	3,170	3,360	3,660	3,920	4,340	4,760
Average	3,170	3,466	3,822	4,178	4,616	5,080

Sources: Delaware Valley Regional Planning Commission (DVRPC); US Census/ Pennsylvania State Data Center

Build-out Analysis: As noted in the previous section, continued population growth consumes land and affects the natural and historic resources supported by those lands. This growth also creates demand for recreational opportunities. Therefore, it is important to estimate population growth as completely as possible. The population growth rates projected in the previous section are strictly numeric and do not consider whether land is available to construct dwellings for those new residents and whether available land is zoned for residential uses. Accordingly, the "build-out analysis" presented in this section will take population projections one step further by considering the amount of land and its zoning available for the future build-out of Chadds Ford. Chapter 5, Existing Land Use, outlines the Township's current zoning ordinance (ZO).

The methodology presented here is fairly straightforward as it utilizes developable land areas calculated for the Township during consideration of ZO amendments in mid-2005. Identified were tracts in the current R-1 and R-2 zoning districts (remaining residential districts have little open land), based on then-current tax parcel boundaries, that could be subdivided into more than two parcels. Next, the area of their natural resource constraints was subtracted. For the current analysis, this net developable area in the three applicable residential zoning districts was tabulated. After subtracting 25 percent of the net developable area to account for tract dimensional constraints and land that would be dedicated to infrastructure if developed (e.g., roads), the permitted density in each district was applied to the remaining area to produce the number of dwelling units that the zoning district would yield. The results of this process are presented in the following table.

Table 4 - 4: Future Build-out Analysis for Chadds Ford Township

Zoning District	Permitted density, du/ac¹	Net developable area, acres²	Less 25 percent³	Net available area, acres	Dwelling unit calculation
R-1	1 du/2 ac.	554.2	138.5	415.7	207
R-2	1 du/1 ac.	16.0	4.0	12.0	12
PRD	2 du's/1 ac. ⁴	458.7	114.7	344.0	688
Total	---	1,028.9	257.2	771.7	907 du's

¹ Density as allowed by the ZO, in dwelling units (du)/acre (ac).

² Reflects prior subtraction of the extent of natural resource-limited lands such as floodplains and steep slopes in accordance with the ZO.

³ Twenty-five percent was subtracted to account for the land that would be used for nonresidential improvements (e.g., roads) as well as for "configuration constraints;" i.e., not every tract is of a size that could be uniformly subdivided.

⁴ With public off-site or community water and sewer services, per the ZO.

As shown on the above table, Chadds Ford has a little over 1,000 acres available for residential development after natural resource-constrained lands are removed from the equation. Assuming certain configuration and site layout limitations (i.e., 25 percent reduction) leaves slightly more than 770 acres that could be subdivided into residential building lots under current zoning. Application of the allowed density to these areas yields 907 dwelling units.

According to the US Census data (2000) for Chadds Ford, each Township household had 2.41 persons. If all 907 dwelling units were constructed, full-build out of the Township would generate 2,185 new residents (907 x 2.41). Table 4 - 3 indicates that the average population projection for Chadds Ford in 2025 is 5,080 residents, an increase of 1,910 residents (an increase of approximately 60 percent). Given the less than 15 percent difference between the two, the 2025 population projection of 5,080 residents is representative of full build-out of the Township's remaining lands.

In summary, this analysis documents that the Township's undeveloped and unprotected land could support enough of an increase in residential uses, as allowed by current zoning, that Chadds Ford's population could grow by about 60 percent. The lands that could support this growth contain valuable natural and historic resources, as documented by this plan; accordingly, this plan recommends the permanent protection of many of these lands (Chapters 8, 9, 10) to protect resources and to moderate population growth.

CHAPTER 5: EXISTING LAND USE

As described in Chapter 6, Chadds Ford's lands support a wide range of natural and historic resources. Some of these lands are permanently preserved and, therefore, protect the resource. This chapter describes how all land in Chadds Ford is currently used and what protections, ranging from temporary to permanent, currently exist for the resources found on these lands.

Specifically, this chapter describes the 12 land uses in Chadds Ford, starting with the three uses that comprise close to 90 percent of the Township's 5,572 acres, as shown in the following table. This analysis is principally based on the Existing Land Use map (#5 - 1). The map also identifies where lands are permanently protected, while the narrative describes both permanent and temporary forms of protection. The map and accompanying analysis should be considered a "snapshot" of the Township's land uses taken during the process of Open Space Plan development as land use can change fairly quickly.

Table 5 - 1: Existing Land Use in Chadds Ford Township

Land Use Category	Acres	Percent of Total
Agriculture, pasture, meadow	1,173	21.0
Commercial	218	3.9
Institutional	65	1.2
Manufacturing: heavy industrial	1	<0.01
Recreation	37	0.7
Residential: multi-family	75	1.3
Residential: single-family	1,873	33.6
Transportation	48	0.9
Utility	93	1.7
Vacant	43	0.8
Water	52	0.9
Woodland	1,894	34.0
Total	5,572 acres	100 percent

Source: Delaware Valley Regional Planning Commission data, field inspection

Agriculture, pasture, meadow (1,173 acres (ac.)). These farmed areas cover 21.0 percent of Chadds Ford's land area, existing principally in the southwestern and northeastern areas of the Township. This category includes row crops, fields mown one – three times/year for wildlife habitat or hay production, and fenced areas to contain livestock. The natural resource value of the prime agricultural soils that typically underlay these uses is described in Chapter 6.

Residential: single-family (1,873 ac.) and multi-family (75 ac.). Single-family residential uses comprise almost 34 percent of the Township's area, virtually the same extent as woodlands. These areas occur through the central areas of Chadds Ford, both north and south of Route 1. This type of land use supports human habitation, and each building lot on which the housing unit(s) is found may include secondary uses and/or accessory buildings or structures (e.g., home-based business, garage, etc.).

Multi-family residential land uses can be similarly described in terms of how they are used; the principal difference is that the dwelling units are typically attached. Residences of this type occupy only 1.3 percent of Chadds Ford's land area, and principally occur east and west of Route 202.

Woodland (1,894 ac.). These areas are comprised of hardwoods or mixed hardwoods of varying ages and extent. The largest woodlands in Chadds Ford occur in the southwestern and northwestern areas of the Township. Their natural resource value is described in Chapter 6.

Commercial (218 ac.). Commercial land uses include retail businesses, service operations, and offices which cover a modest 4 percent (approximately) of Chadds Ford's land area, occurring principally along the Route 202 corridor in the eastern part of the Township.

Institutional (65 ac.). As with commercial uses, institutional uses in Chadds Ford account for a minor percentage of its land area (i.e., 1.2 percent) and are scattered throughout the Township. These uses include St. Cornelius Church and School; Township-owned land at the municipal building and Mother Archie Church sites; and organizations such as the Chadds Ford Historical Society, the Christian Sanderson Museum, and the Brandywine Conservancy/Brandywine River Museum.

Manufacturing: heavy industrial (<0.01 ac.). Comprising a negligible extent of the Township's land area, manufacturing is found within the otherwise commercial area at the intersection of Routes 1 and 202 in the eastern part of Chadds Ford.

Recreation (37 ac.). The principal use in this category, which covers less than 1 percent of Chadds Ford's land area along Route 1, is the Brandywine Battlefield State Park. While the Park's principal purpose is to interpret the events of the Battle of the Brandywine (September 11, 1777), it also provides active and passive recreational opportunities in the forms of hiking, picnicking, and nature observation.

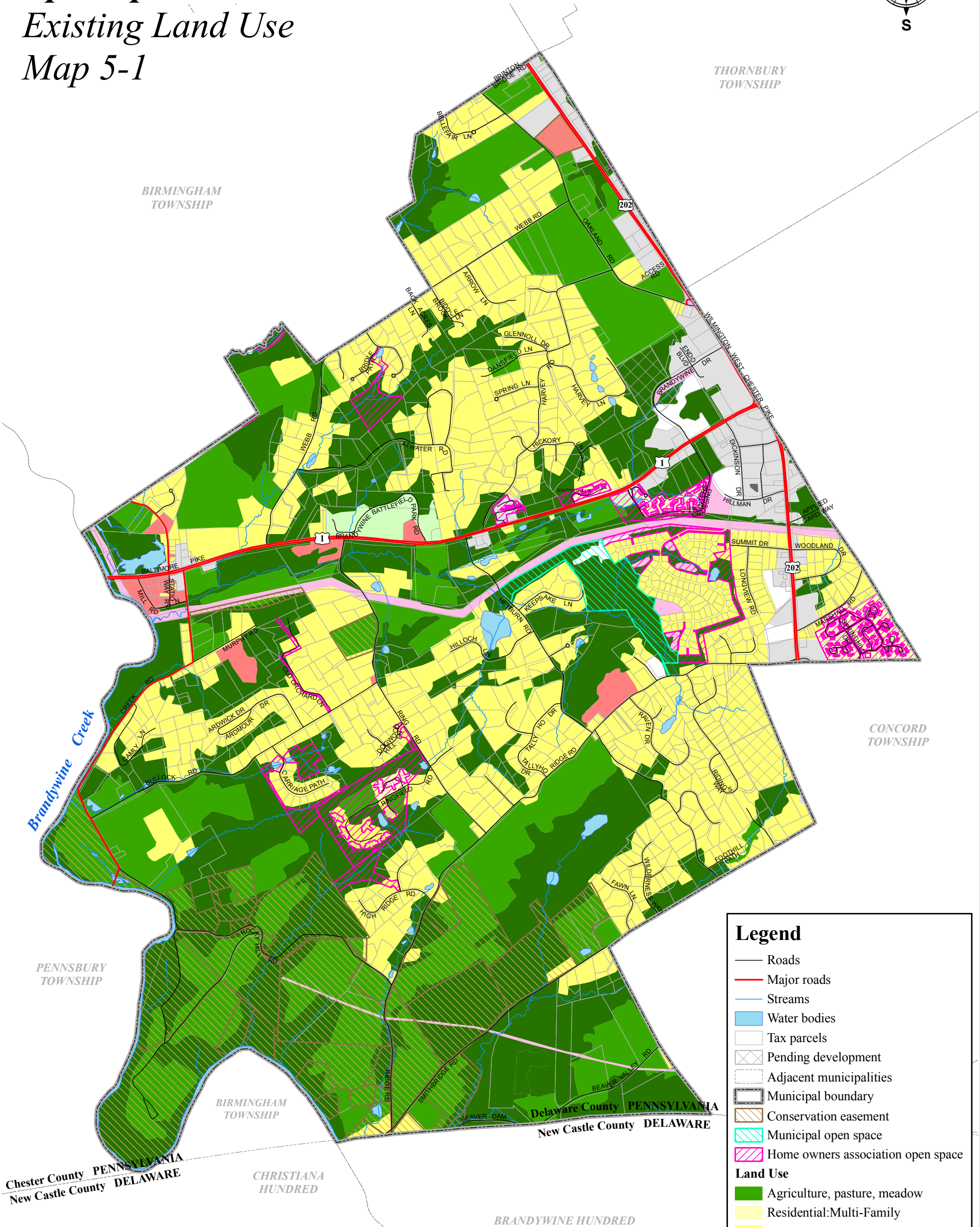
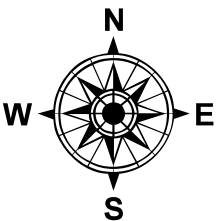
Transportation (48 ac.). This extent of land use is comprised of the rights-of-way for Chadds Ford's two major roadways: Route 1 and Route 202. These areas occupy less than 1 percent of the Township's land area.

Chadds Ford Township

Open Space Plan

Existing Land Use

Map 5-1



Legend

- Roads
- Major roads
- Streams
- Water bodies
- Tax parcels
- Pending development
- Adjacent municipalities
- Municipal boundary
- Conservation easement
- Municipal open space
- Home owners association open space

Land Use

- Agriculture, pasture, meadow
- Residential: Multi-Family
- Residential: Single-Family
- Institutional
- Recreation
- Commercial
- Manufacturing: Heavy Industrial
- Transportation
- Utility
- Vacant
- Water
- Woodland



Brandywine Conservancy

Environmental Management Center

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Data source: Base data from Delaware County GIS Department, 3/2006 (edited to reflect recent subdivisions, 8/2006). Land Use from DVRPC, 2000 (edited by Brandywine Conservancy staff based on field check, 8/14/2006). Home owners association open space and municipal open space from Delaware County Planning, 2006. Conservation easements from Brandywine Conservancy, 2006.

Map created: July 19, 2007

Utility (93 ac.). Similar in size and extent to transportation, utilities in Chadds Ford occupy 1.7 percent of the Township's area. This category is comprised of land used to support the transmission of gas and electricity and the collection, treatment, and/or disposal of wastewater or stormwater.

Vacant (43 ac.). These areas occur in the eastern parts of the Township, occupying less than 1 percent of Chadds Ford land area. At the time of the land use inventory, these lands were typically being prepared for development as evidenced by various stages of land grading and their location within or near other developed lands.

Water (52 ac.). While obviously not land, water is included here since water bodies such as streams and ponds do occupy almost 1 percent of Chadds Ford's total extent of 5,572 acres.

Current Land Use and Protection Strategies

Given that the ultimate focus of this Open Space Plan is to facilitate protection of the highest priority lands containing important natural and historic resources (Chapters 6, 7, 8, 9), it is important to understand how land is used and protected. In Chadds Ford, the landowner has the right and option to use his/her land for a variety of uses that are governed by individual (or organizational) preferences and financial situations, as well as by local ordinances.

Permanent Protection. As shown on the Existing Land Use map, there are two categories of land in Chadds Ford that are considered permanently protected.

The first category includes lands subject to a conservation easement. These lands are used for a variety of purposes, but their use is limited typically to ongoing use and protection of natural or historic resources because of the easement. A conservation easement is a legally binding land protection agreement held, monitored, and, if need be, enforced by an outside party (deed restrictions alone are not generally protective enough). A landowner may donate the easement, resulting, in some cases, in a federal tax deduction because the land can no longer be developed for financial gain.

The second category is open space lands owned by both the Township and homeowners associations. In these cases, open space lands are typically intended for recreational uses such as hiking, nature observation, and organized games such as tennis where space is made available. In the specific case of the Township, the area of municipal open space shown on the map was dedicated as part of the agreement to develop the former Girl Scout Camp Sunset Hill; the developed area is now known as the Estates at Chadds Ford. As noted and recommended in Chapters 8, 9, and 10, this area could benefit from site planning to improve and manage its natural resources and its use by Chadds Ford residents.

Temporary Protection. While the following section outlines how a landowner might be required to protect certain resources on his/her land when proposing to develop it, certain lands in Chadds Ford are considered protected in the short or long term due to their ownership by institutions regarded as having land protection priorities (e.g., Chadds Ford Historical Society, Brandywine Conservancy, Woodlawn Trustees). However, and as noted in Chapter 8, any of these organizations could be requested to consider placement of a conservation easement on its open lands that contain important natural and historic resources, permanently protecting those resources.

Regulatory Protection. In the absence of outright or institutional protection of priority lands, development will ultimately convert the Township's remaining fields, meadows, or woods to houses or commercial uses. Accordingly, an inventory and analysis of the regulations that guide these conversions is important to ensuring that land development results in the protection of important open space resources (Chapters 8, 9) to the extent practicable. The following paragraphs generally describe the two principal documents guiding land use in Chadds Ford; i.e., its zoning ordinance (Chapter XII of the Township's Ordinances, as amended) and subdivision and land development ordinance (SLDO; Chapter XI of the Township's Ordinances, as amended).

Very broadly, the ZO governs the density and location of land uses, as well as dimensional requirements such as area and bulk standards. Zoning criteria such as these and other standards facilitate land use patterns that can help or hinder protection of high priority resources. In Chadds Ford, ZO standards are differentially applied depending on the district or area of the Township under consideration. While the zoning map (available at the Township building) shows the location of the ZO districts, the actual districts are outlined in Table 5-2. Currently in Chadds Ford, these consist of four residential, one industrial, and five business districts as well as six overlay districts.

Table 5 - 2: Current Zoning in Chadds Ford Township

Zoning Designation	Major Uses Allowed; Density; Purpose
R-1, Residence	Single-family detached dwelling; 1 unit/2 acres
R-2, Residence	Single-family detached dwelling; minimum lot size, 1 acre
R-A, Residence/Apartment	Apartment buildings; 12 units/acre
R-M, Residence/Multi-family	Attached and detached residential dwellings; 6 units/acre
B and B-1, Business	Offices, shops, restaurants, etc.; minimum lot size, 1 acre; maximum lot coverage, 25%; minimum planted/landscaped area, 35%
PBC and PBC-1, Planned Business Center	Shopping center, offices, private recreational facilities; maximum building coverage, 25%; different minimum lot size depending on district type; minimum planted/landscaped area, 35%
POC, Planned Office Center	Professional offices, schools; maximum building coverage, 25%; minimum planted/landscaped area, 35%
LI, Light Industrial	Professional offices, research and development, light metal processing; maximum lot coverage of 60%

*Chadds Ford Township
Open Space Plan
Adopted, 12-07*

Zoning Designation	Major Uses Allowed; Density; Purpose
F-P, Floodplain Overlay	Uses limited to those that do not impact floodplain function; boundaries overlay the 100-year floodplain identified within the Township
H, Historic Overlay	Protect certain historic structures and sites within the two designated Act 167 districts (refer to Chapter 6)
PRD-1, Planned Residential Development Overlay	Predominantly overlays R-1 district; allows detached and attached, multi-story dwellings at underlying density (higher if served by public sewer/water); minimum tract size, 50 acres for residential uses; protection of natural features and provision of open space
PRD-2, Planned Residential Development Overlay	Predominantly overlays R-2 district; allows detached and attached, multi-story dwellings at underlying density (higher if served by public sewer/water); minimum tract size, 50 acres for residential uses; protection of natural features and provision of open space
T, Cellular and Wireless Towers Overlay	Allows cellular and wireless towers within specified overlay area
BP, Baltimore Pike Overlay	Removes certain natural resources from lot area calculations

Source: Chadds Ford Township Zoning Ordinance; i.e., Chapter XII of the Township's Ordinances, as amended

The SLDO establishes minimum requirements for building lot layout and design, as well as for necessary development-related improvements such as roads and utilities (water, wastewater) disposal. The Township's SLDO includes standards that protect natural resources during land development. These include, for example, requirements for controls that prevent erosion and siltation into the wetlands and streams often found downslope of construction sites. Additional standards also address stormwater management since stormwater discharged during and after development often carries sediment and other pollutants. Earlier, more conventional approaches in most areas had directed stormwater into wetlands and streams, diverting it from groundwater aquifers and drinking water wells. The relatively new standards adopted by Chadds Ford require groundwater infiltration to maintain more local water balances, for example.

Finally, regulatory protection of wetlands occurs at the federal level under Section 404 of the Clean Water Act.

CHAPTER 6: NATURAL and HISTORIC RESOURCES

This chapter inventories and analyzes Chadds Ford's natural and historic resources, i.e., its biotic, woodlands, greenways, riparian, water, land, archaeological, historic, and scenic attributes. It is very important to understand and appreciate the value of these resources (especially how they interrelate with each other), as this plan addresses the need to permanently protect at least some of Chadds Ford's lands that contain these resources. Plan implementation should result in a pattern of protected open space that preserves the most important resources, facilitates suitable recreational uses, and allows appropriate development to occur as planned by landowners and/or desired by the Township.

The contents of this chapter are based on Geographic Information Systems (GIS) analyses of the most recent available data, field observation, and other pertinent data provided by the Township and others. GIS is a commonly used software program in the planning field, as it displays and analyzes geographic data in a spatial manner. For example, the location of a large tract of woodland relative to streams, woodlands, and/or floodplains will result in a higher or lower value for that woodland. The generosity of the Delaware County Planning Department in sharing historic and archaeological data is acknowledged. The large format printouts of this chapter's maps, as well as all other maps in this Open Space Plan, are on file with the Township.

NATURAL RESOURCES

Currently, Chadds Ford is in the midst of a second wave of rapid land use conversion in its three-hundred year history as an incorporated municipality. The first wave occurred when the Township was settled by farmers in the early 1700s. Old growth forests were cleared, and the prime agricultural soils they had produced were widely plowed and planted for agricultural crops. Over recent decades and now continuing, a second large-scale conversion is occurring as many of those farmlands are being converted into residential developments.

These changes are reflected in the following sections of this chapter that describe and analyze Chadds Ford's existing natural resources. These resources, along with subsequently described cultural resources, form the backbone of this Open Space Plan's priorities and recommendations for resource protection.

Biotic: Chadds Ford's biotic resources are comprised of the natural world's living resources, i.e., the biodiversity of wildlife and plants that exist in the Township, along with the habitats that support that diversity. Chadds Ford's biota is separated into a number of categories as shown on the Biotic Resource map (#6 - 1).

There are no known general wildlife population surveys specifically for Chadds Ford. However, several inventories of wildlife species that exist in the immediate vicinity of the Township are available. These include Birds Along Brandywine Creek Near Chadd's Ford, Pennsylvania, 1965-1998 (Overlease, William and Edith); Birds of Brandywine Creek State Park (Delaware Division of Parks and Recreation, undated); "List of fishes taken in the Brandywine River drainage" (Delaware Division of Natural Resources and Environmental Control, unpublished and undated); "List of Mammals Known or Likely to Occur in Southern Chester County" (applicable to Chadds Ford adjacent to Chester County, unpublished and undated); and Chadds Ford plant list (unpublished and undated). These documents are available through the Open Space

Committee's website (Chapter 3). Refer also to the Greenways section for discussion of the wildlife habitat value of these areas. Lastly, the Township does support several large habitat areas in close proximity (including Brandywine Creek State Park in Delaware, and large open space areas owned or eased by the Woodlawn Trustees or the Brandywine Conservancy). Accordingly, it is likely that Chadds Ford in general serves as extension habitat for many species that use those larger areas.

In more specific terms, there are several target species that are of ecological concern to support or restore to Chadds Ford. The presence of these species indicates higher quality conditions for their particular habitats:

- ◆ endangered, threatened, and rare species (i.e., natural areas inventory and others discussed below);
- ◆ riparian species such as beaver, mink, river otter, Cooper's and red-shouldered hawks;
- ◆ habitat-restricted species such as those that inhabit forested interiors (explained later in this chapter) or that require wetlands such as the bog turtle and wild rice;
- ◆ wide-ranging mammals, which use greenways and which potentially include bobcat, river otter, and gray fox; and,
- ◆ migratory fishes, such as the American shad.

A different set of target plant and animal species are those that are non-native, some of which are also invasive. The botanical survey for Chadds Ford, which was conducted by professional botanist Janet Ebert, a Chadds Ford resident, indicates that the Township supports over 800 plant species, including some 200 – 300 plants not native to the area. Of these, at least three dozen are invasive, which means that they did not co-evolve over long time periods in the area, because they were introduced either intentionally or accidentally. Invasive plants are a serious ecological threat to the Township's natural areas and require extensive efforts and endless vigilance to minimize, much less eradicate.

Additional biotic information regarding Chadds Ford is shown on the Biotic Resources map. Its natural areas inventory locations utilize data from Delaware County's Natural Features Inventory, Delaware County, Pennsylvania (1984, 1992, and currently under revision). In addition, the Township contains nine known rare plant species locations as generally shown on the map. Their locations are not pinpointed because poaching and trespassing can jeopardize the continued survival of these species. It is known that these locations support at least two rare orchid species and one rare grass species, wild rice. The federally-threatened and state-endangered bog turtle is also known to reside in Chadds Ford as well as in surrounding watersheds. Bog turtle habitat is quite specialized; the turtle needs almost treeless meadows where groundwater typically sheet flows over a relatively flat, mucky surface vegetated by sedges and grasses. No other rare, threatened, or endangered species are known in the Township.

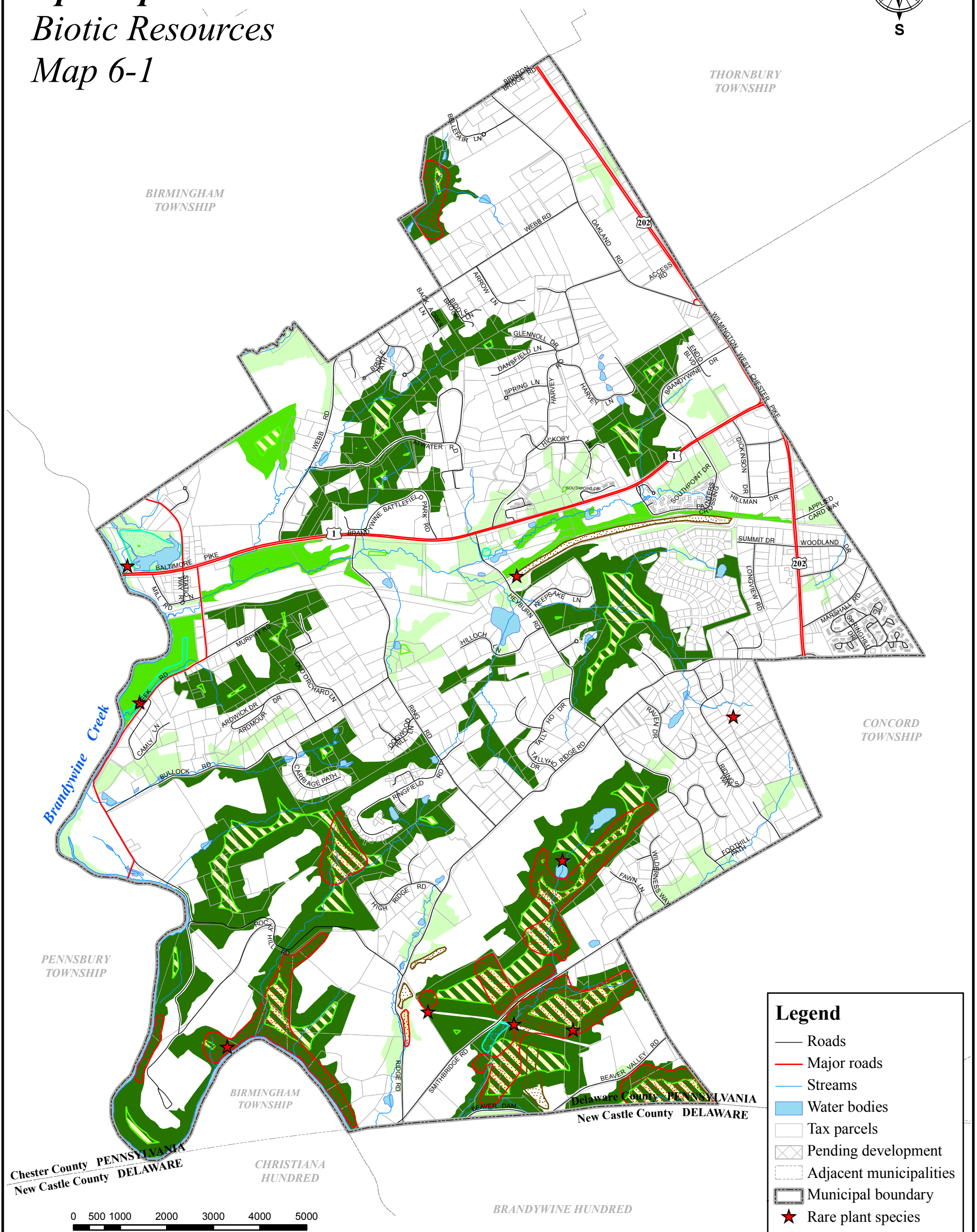
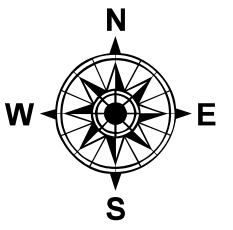
The Biotic Resources map also shows outstanding meadows, wetlands, and woodlands. These were also identified by Janet Ebert. Overall, these areas are relatively intact, species-rich, native plant-dominated communities, and as such, are reservoirs of biodiversity. In spite of their labels, they may consist of more than one plant cover type. Outstanding areas support one or more of the following characteristics:

Chadds Ford Township

Open Space Plan

Biotic Resources

Map 6-1



Legend

Roads

Major roads

Streams

Water bodies

Tax parcels

Pending development

Adjacent municipalities

Municipal boundary

Rare plant species

Outstanding meadows

Outstanding wetlands

Outstanding woodlands

Forest interiors

Woodlands

Class I

Class II

Class III

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Data source: Base data from Delaware County GIS Department, 3/2006 (edited to reflect recent subdivisions, 8/2006). Natural areas inventory from Delaware County Planning, 1992 (edited by Brandywine Conservancy to reflect hard copy report by TNC). Outstanding natural areas and rare plant species based on field inspection by Janet Ebert, 7/2006. Woodlands from DVRPC Land Use (edited to show rights of way and reflect recent subdivisions, 8/2006), 2000.

Map created: July 19, 2007

- ◆ contains species uncommon or declining in the Township or the region;
- ◆ has unusually rich and diverse examples of the Township's characteristic plant communities;
- ◆ reflects unusual or regionally uncommon geologic features or structures; and,
- ◆ contains plant species with limited ranges of ecological tolerance or high degrees of fidelity to narrow ranges of habitat condition, indicating a specialized or long-established community.

Outstanding woodlands in Chadds Ford total about 268 acres and are mainly situated in the southern portion of Chadds Ford along Beaver Creek and other Brandywine Creek tributaries; one is located in northern Chadds Ford along Brinton's Run. There are five outstanding meadow patches (approximately 24 acres) in Chadds Ford, including one long linear meadow found along the right-of-way that parallels Route 1; the others are found in the southern part of the Township. Finally, one outstanding wetland habitat was identified north of Route 1 along Brandywine Creek.

The Biotic Resources map also shows forest interiors and Class I and II woodlands. These resources have significant biotic value and are described in the Woodlands section of this chapter. Similarly, it is documented that the other natural resources subsequently described in this chapter also have significant biotic value.

Woodlands: Wooded areas are highly significant for their environmental, social, and economic functions and values, based on several factors. Woodlands are the defining habitat type for this region (i.e., the northern Piedmont) since it was wooded prior to settlement. In other words, Chadds Ford's biodiversity evolved in wooded habitats; the remaining woodlands still host beneficial species (e.g., pollinators), soil organisms, and natural predators (e.g., insect-eating birds). Woodlands are the best type of land cover for watershed management, since trees absorb large amounts of water through their roots which is stored in the stem and leaves and then released as evapotranspiration; they also provide natural erosion and flood control by decreasing the speed and amount of stormwater runoff. They are especially valuable along streams as riparian buffers, on steep slopes, and in headwater areas and also have aesthetic and commercial values (e.g., passive and active recreation, logging, etc.). Overall, trees function as natural barriers by reducing the unwelcome impact of noise, strong winds, wind-transported substances (e.g., dust, snow), and by screening unsightly areas. Woodlands further function to reduce temperature extremes and moderate evaporation, acting as the "lungs" of the Township.

Several key characteristics of woodlands are described as follows and are shown on the Woodland Classification map (#6 – 2).

Woodland Classes. There are 64 individual woodlands greater than or equal to one-quarter acre in size in Chadds Ford (about 1,988 acres or 36 percent of total land area). Much of this acreage is located on hydric soils, steep slopes, and floodplains – areas that could not be easily farmed. These areas do not have equal value, however, due to variety in size, age, quality, and biological/ecological functions. Using available GIS data, relative values were assigned to various woodland characteristics as subsequently described. The Township's woodlands were compared according to all of these attributes, generating classes for each woodland area. The important characteristics of Class 1 and Class 2 woodlands are depicted in Table 6 - 1.

Table 6 - 1: Characteristics of Woodland Classes 1 and 2, Chadds Ford Township

Map I.D.	Total acres	Class	Headwater acres	Forest interior acres	Steep slope acres	Headwater stream miles	Stream miles
1	466	1	199	64	220	2	6
2	225	1	170	61	139	<1	<1
3	144	1	<1	43	79	<1	1
4	136	1	54	25	65	<1	1
5	96	1	54	3	47	<1	<1
6	96	1	67	6	34	<1	<1
7	92	1	36	2	27	<1	<1
8	63	1	63	7	26	<1	<1
9	55	1	38	5	30	<1	<1
10	49	2	37	1	22	<1	1
11	40	2	0	18	20	0	<1
12	35	2	0	0	<1	0	1
13	33	2	6	0	15	<1	<1
14	30	2	8	0	0	<1	1
15	27	2	21	4	17	0	0

Source: GIS data for Chadds Ford Township through Delaware County and other sources

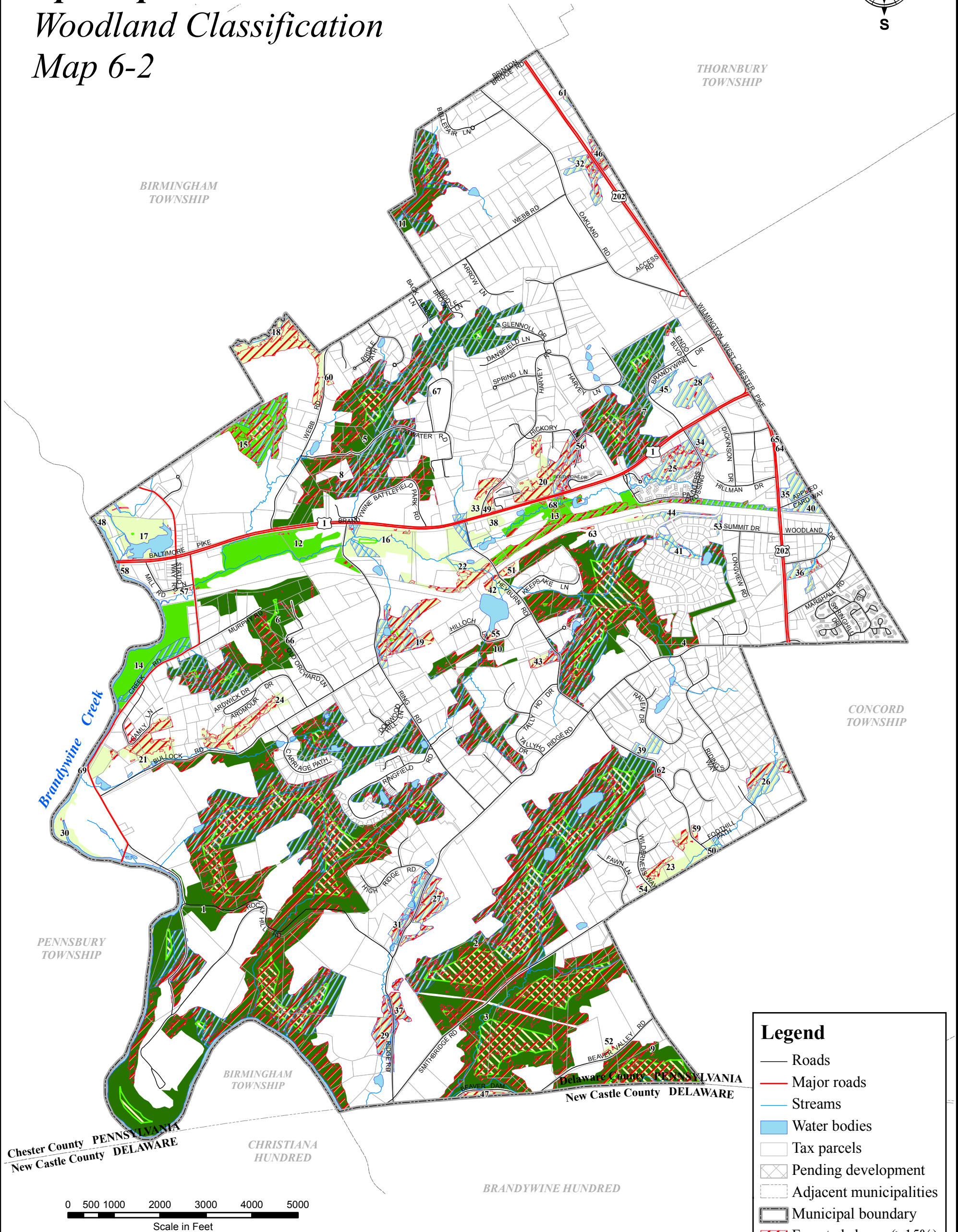
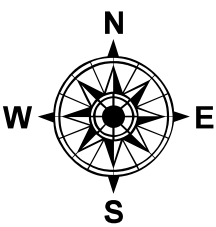
Class I forests are the most important from the standpoint of functions provided and are worthy of a higher level of protection than other woodlands; there are eleven Class I woodlands totaling about 1,385 acres. Class II woodlands also provide significant ecological services and perform important watershed functions, but not as much as Class I woodlands. There are four Class II woodlands totaling approximately 232 acres. All other woodlands in Chadds Ford (49, totaling just under 371 acres) are included in Class III.

Forest Interiors. Forest interiors are “deep woods” areas that lie beyond many of the influences that degrade a forest from the outside (e.g., light, wind, noise, non-native species), and are measured at 300 feet from any outer edge. In other words, forested interiors are the “hole” in a “donut” with a 300-foot wide edge. The Woodland Classification map shows the extent of the typically large and mature woodlands that contain forested interiors. These areas support those certain species of forest plants and wildlife that depend specifically on the unique conditions of a healthy forest ecosystem. For example, many species of songbirds, wildflowers, and other rare and unusual species have adapted only or principally to forest interior conditions. There are only about 230 acres of forested interiors in Chadds Ford (approximately 4 percent), the largest of which are contained within Class I woodlands.

Forested Slopes. Forested slopes occur where steep slopes (>15 percent) and woodlands coincide. Here woodlands perform the vital function of protecting against erosion, to which steep slopes are prone.

Forested Headwaters. Headwaters areas are the watersheds for first-order streams, the smallest tributaries within a watershed, and the most sensitive resources to grading and other land disturbances (refer to the

Chadds Ford Township
Open Space Plan
Woodland Classification
Map 6-2



Legend

- Roads
- Major roads
- Streams
- Water bodies
- Tax parcels
- Pending development
- Adjacent municipalities
- Municipal boundary
- Forested slopes (>15%)
- Forested headwaters
- Forest interiors
- Woodlands
 - Class I
 - Class II
 - Class III

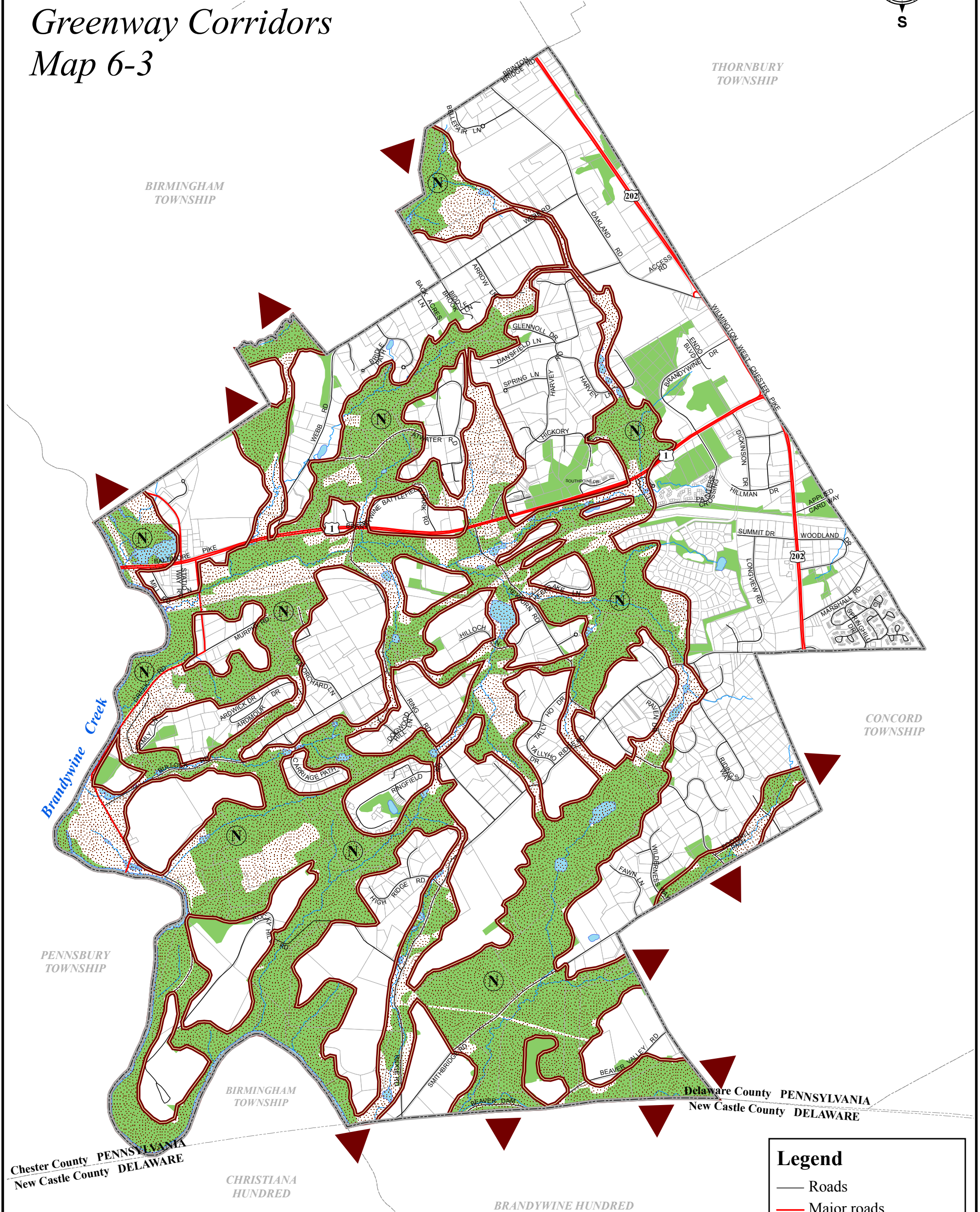
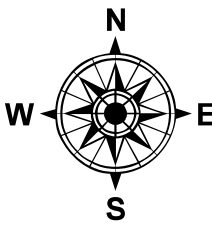


Brandywine Conservancy

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Data source: Base data from Delaware County GIS Department, 3/2006 (edited to reflect recent subdivisions, 8/2006). Woodlands from DVRPC Land Use, 2000 (edited to show rights of way and reflect recent subdivisions, 8/2006). Slopes derived from USGS contours, 1996. Streams and waterbodies from Delaware County and Chester County GIS Departments edited, 7/2006. Headwaters watersheds created by the Brandywine Conservancy, 7/2006.
Map created: July 19, 2007

*Chadds Ford Township
Open Space Plan
Greenway Corridors
Map 6-3*



0 500 1000 2000 3000 4000 5000
Scale in Feet



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Environmental Management Center
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Data source: Base data from Delaware County GIS Department, 3/2006 (edited to reflect recent subdivisions, 8/2006). Woodlands from DVRPC Land Use, 2000 (edited to show rights of way and reflect recent subdivisions, 8/2006). Greenways developed by Brandywine Conservancy, 7/2006.
Map created: July 19, 2007

Legend

- Roads
- Major roads
- Streams
- Water bodies
- Pending development
- Tax parcels
- Adjacent municipalities
- Municipal boundary
- Greenways
- Woodlands

Water Resources section of this chapter for more detail). Forest areas directly adjacent to a stream (i.e., a riparian buffer, also discussed subsequently) are also very important for high quality streams. Accordingly, forested headwaters are particularly valuable to maintaining and protecting the quality and quantity of first-order streams.

Greenways: The natural resource inventories represented by this chapter facilitate the layering of collected GIS data to ascertain what patterns emerge. Specifically, these patterns suggest ways to move from lower to higher organizational levels for natural resources; that is, the identification of an integrated system of sites, a network where the whole is greater than the sum of its parts, promoting the broader environmental health and public welfare of the area in question. This system can also be multi-purpose in nature, benefiting watershed and biodiversity resources certainly, but also steep slopes, farmland, scenic, recreational, and historic resources. Chadds Ford's natural resource patterns make a strong case for proposing an interconnected network of corridors based primarily on stream corridors and woodlands – i.e., greenways. This approach follows recent thinking in resource management and open space planning as evidenced by Delaware's conceptual greenways plan and Pennsylvania's Greenways: An Action Plan for Creating Connections (June 2001). Also, Delaware County is in the process of developing its Greenways Plan, and Chadds Ford's efforts should ultimately be coordinated with the County's and the other efforts cited here, as many of the Township's corridors would continue into adjacent jurisdictions, ultimately requiring a regional approach for implementation, as described in Chapters 8 and 10.

Specifically, Chadds Ford's greenways are comprised of stream corridors and woodlands and represent resource-rich overlaps that support the natural resource networks shown on the Greenway Corridors map (#6 - 3). Most of the Township's wetlands, floodplains, hydric soils, and many steep and very steep slopes, Class I and Class II woodlands, and headwater areas are contained in its greenways. The map was produced by analyzing the confluences of natural resources and joining them in one natural resource network. The corridors widen where the woodlands are larger, sometimes growing into a larger woodland that serves as an "anchor point" or "node" for the larger system. Redundancy is intentionally built into this system, so that if one corridor is blocked by a new development or substantially degraded by logging, another may be used in its place. Roadways, especially larger ones such as Routes 1 and 202, can also be an obstacle to smooth wildlife movement, but special wildlife crossing design techniques can mitigate their impact. While this system likely functions today, it is far from perfect due to gaps in forest or other wildlife cover.

Riparian Analysis: Riparian buffers are the land areas next to a stream or creek that have a significant effect on the health of the stream, depending on the vegetation of that land area. Forested riparian buffers represent the combination of two of the Township's most important resources – woodlands and the streams themselves. Protecting these land areas is widely recognized as one of the most important ways to protect a stream's overall health, given that Chadds Ford's water resources evolved under primarily forested conditions. Accordingly, riparian buffers function best when they are forested because they cool water temperature; provide wildlife habitat in the form of food, water, and shelter; supply important nutrients from leaves; contribute woody debris to regulate stream flow and to create resting spots; and filter runoff from surrounding lands through their roots and vegetative growth underlying the trees. Culturally, riparian forests make excellent flood control areas, recreational corridors, and are highly scenic.

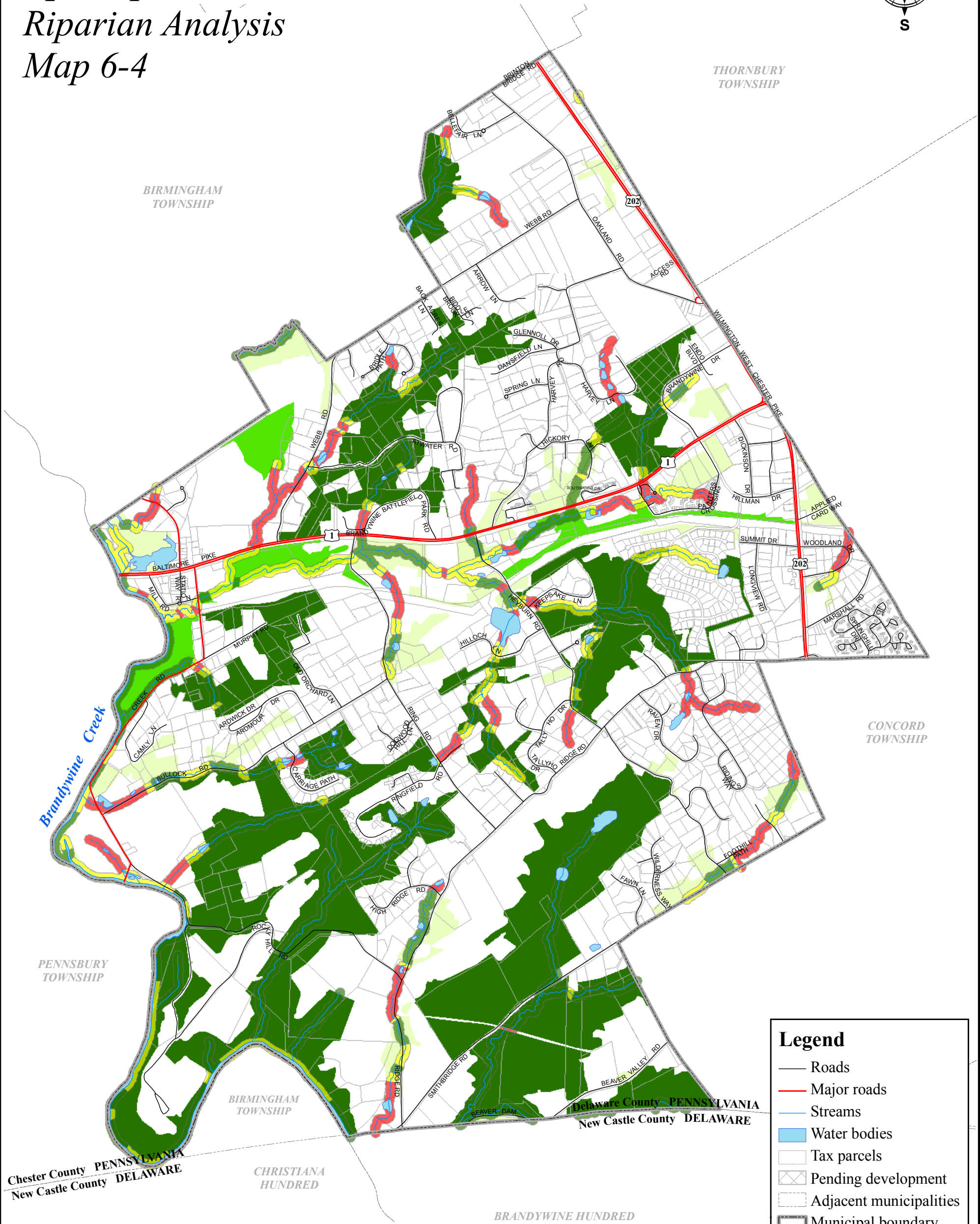
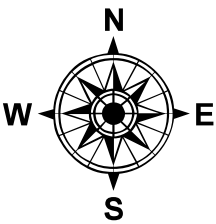
Although the presence and relative amount of forested riparian buffers was one factor in the previously described woodland classification, riparian buffers are important enough to warrant Township-wide analysis as a natural resource. The Riparian Analysis map (#6 - 4) depicts riparian buffers (defined as those lands within 100 feet of either side of a stream) in one of three conditions – fully buffered with full tree cover (shown in green on the map), partially buffered (yellow), or with gaps (red) due to few or no trees along the stream. A total of 708 acres occur as riparian lands within the Township. Of these, about 392 acres (55 percent) are fully buffered, approximately 182 acres (26 percent) are partially buffered, and about 135 acres (19 percent) are without forested buffers. These gap lands are highlighted for future reforestation, especially along Harvey Run, which is the Township's largest internal stream and has the highest density of development within it. Furthermore, and as described in the next section of this chapter, Harvey Run drains the largest area of Chadds Ford and, therefore, has the greatest potential effect on the Township's water quality and quantity. Refer to Chapters 8 and 10 for information regarding funding efforts for Harvey Run restoration.

Water: Water resources are among Chadd Ford's most important and most sensitive resources. As is the case throughout eastern Pennsylvania and northern Delaware, the use of water resources often faces competing interests. Directly interrelated, surface water and groundwater supplies are used to meet domestic and commercial needs. Groundwater and streams are used to assimilate treated wastewater, while aquatic life depends on clean water for its survival. Streams can provide attractive recreational resources. In order to sustain all of these uses, it is important to protect water resources through proper management of the land uses that directly and indirectly affect adjacent and downstream water resources.

The Water Resources map (#6 - 5) depicts Chadds Ford's aquatic attributes, which are also described as follows.

Watershed boundaries and drainage patterns. With high land and the starting ground for numerous small tributaries, the boundaries of Chadds Ford's watersheds (i.e., the land area that drains to a given stream) is a useful focus for this section. As shown in Table 6 - 2, the Township's land drains to two major streams – the Brandywine and Chester Creeks. In turn, both of these drain to the Delaware River and Delaware Bay before joining the Atlantic Ocean. Also as shown on Table 6 - 2, land in the Township drains to six tributaries of these two major streams; some of these tributaries are so-called first-order streams as subsequently described in this section. As depicted on the Water Resources map, Route 202 is the approximate major watershed divide between the Brandywine and Chester Creeks. Accordingly, most of the Township drains to the Brandywine Creek, with almost half of the Township's land area draining to Harvey Run. Accordingly, protection and improvement of Harvey Run's watershed (especially its headwaters), riparian buffers, first-order tributaries, and wetlands/floodplains are critical to maintaining the overall quantity and quality of the Township's water sources.

Chadds Ford Township
Open Space Plan
Riparian Analysis
Map 6-4



Legend

- Roads
- Major roads
- Streams
- Water bodies
- Tax parcels
- Pending development
- Adjacent municipalities
- Municipal boundary
- Riparian buffer (100 ft.)**
 - Full
 - Partial
 - Gap
- Woodlands**
 - Class I
 - Class II
 - Class III



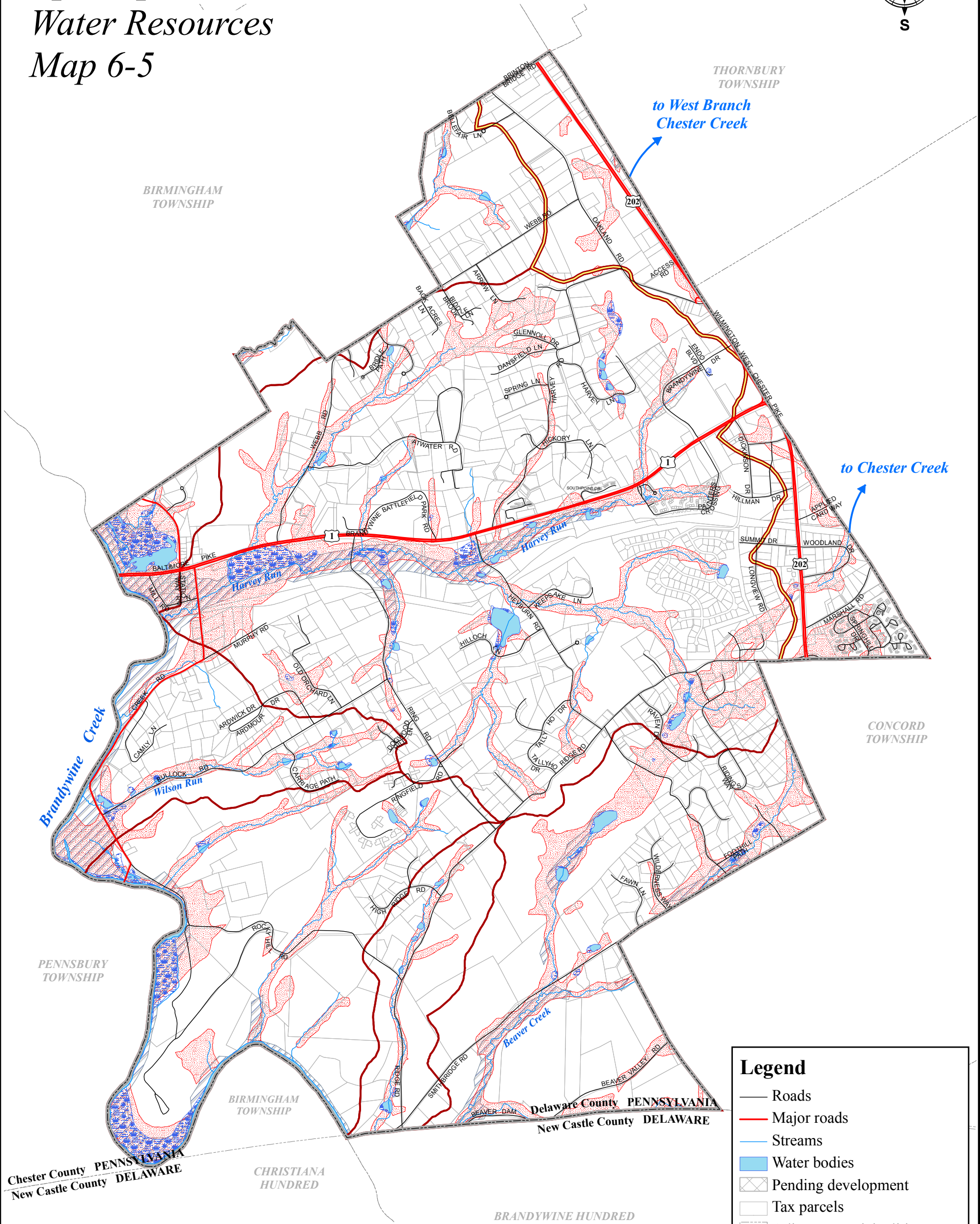
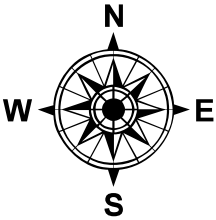
Brandywine Conservancy

Environmental Management Center
P. O. Box 141 Chadds Ford, Pennsylvania 19317 (610) 388-2700

Data source: Base data from Delaware County GIS Department, 3/2006 (edited to reflect recent subdivisions, 8/2006). Streams and waterbodies from Delaware County and Chester County GIS Departments edited, 7/2006. Woodlands from DVRPC Land Use, 2000 (edited to show rights of way and reflect recent subdivisions, 8/2006).

Map created: July 19, 2007

Chadds Ford Township
Open Space Plan
Water Resources
Map 6-5



Legend

Roads

Major roads

Streams

Water bodies

Pending development

Tax parcels

Adjacent municipalities

Municipal boundary

Chester Creek / Brandywine Creek watershed boundary

Minor watersheds within the Brandywine Creek Watershed

Floodplain

Wetlands

Hydric soils



Brandywine Conservancy
Environmental Management Center
P. O. Box 141 Chadds Ford, Pennsylvania 19317 (610) 388-2700

Data source: Base data from Delaware County GIS Department, 3/2006 (edited to reflect recent subdivisions, 8/2006). Streams and waterbodies from Delaware County and Chester County GIS Departments edited, 7/2006. Floodplains from FEMA, 1996. Hydric soils from NRCS, Soil Survey Digital Database, 1996. Wetlands from FWS National Wetlands Inventory, 1994. Watersheds from USGS, 1996.
Map created: July 19, 2007

Table 6 - 2: Watershed Characteristics, Chadds Ford Township

Major Watershed Name	Acres	Percent of Total
Brandywine Creek	5,104	92
Chester Creek	468	8
TOTAL	5,572	100
Minor Watershed Name	Acres	Percent of Total
Beaver Creek	861	15
Brandywine Creek	1,192	21
Brinton Run	226	4
Harvey Run	2,449	44
Wilson Run	376	7
Chester Creek	218	4
West Branch, Chester Creek	250	5
TOTAL	5,572	100

Source: GIS data for Chadds Ford Township through Delaware County and other sources

First-Order Streams/Headwater Areas. A first-order stream begins at the location where channelized flow occurs as a result of runoff, melting, springs, or groundwater discharge (i.e., base flow). These streams are important for many reasons, especially that they carry the majority of the system's base flow in any watershed to its downstream waterways, contributing significantly to both water quality and quantity in any given stream. Given their importance to both water quality and quantity and in the context of relatively low flow individually, first-order streams are disproportionately vulnerable to sedimentation and other degradation. Accordingly, first-order streams are significant beyond their size in the overall hydrologic regime. (A second-order stream forms where two first-order streams join, while a third-order streams forms at the confluence of first and second order streams, and so on.)

Headwaters are land areas that drain directly to first-order streams. The regularity of flow from headwaters areas is essential to the health of first-order streams and the wildlife on which they depend, particularly during periods of low flow. Thus, the headwaters watersheds of first-order streams are extremely sensitive to introduction of impervious surfaces, improper grading, discharge of pollutants, or poor agricultural practices. Maintenance or restoration of forested headwaters, particularly in close proximity to first-order streams, is especially important given the ability of wooded areas to slow and filter flows, control erosion and sedimentation, provide shade and water temperature regulation, and supply wildlife food and cover. Because they are sometimes closely associated with cold water seeps and springs, first-order streams can serve as refuge areas for wild trout populations. As shown on the Water Resources map, almost half of Chadds Ford's land area is comprised of headwaters. These are particularly extensive in the central and eastern upland areas of the Township. Route 202 in particular travels along headwater uplands.

Floodplains. A floodplain is defined by the boundary of the land area subject to flooding by an adjacent stream when that flooding occurs during a storm event with a frequency of at least once every 100 years. Floodplains are delineated by the Federal Emergency Management Agency (FEMA). FEMA has identified a number of areas within Chadds Ford's watersheds (especially along Harvey Run) that meet this criterion, as shown on the Water Resources map. During storm events (whether 100-year or more frequent), floodplains serve to absorb and slow flood waters and take up water-borne pollutants and flood-carried sediments. Where maintained in a relatively natural state, these areas limit erosion, downstream sedimentation, nonpoint-source pollution, and obstruction or alteration of the floodway. As with headwaters, maintenance or establishment of stable, wooded vegetative cover in floodplain areas can help maintain both stream water quality as well as control flooding. Generally, floodplains are not suitable for residential or commercial use, although flood proofing and engineering are often permitted to allow limited expansion of uses already existing within the floodplain. Floodplains can be used for some active recreational purposes and also make excellent passive open spaces.

Wetlands. Wetlands are defined as those areas where the soils are saturated for a significant part of the year, where plants typical of saturated soils occur, and where hydrologic conditions provide evidence of surface ponding, flooding, or flow. Despite significant federal and state attention that has been focused on wetlands in recent decades, wetlands can still be legally filled during development; they can even more easily be degraded by excessive water runoff, dirty runoff, and invasive species. This is in spite of their significant ecological contributions. Wetlands are centers of important biodiversity because they play important roles within both biotic and water resource assemblages. They support large varieties of plants and animals and act as nurseries for aquatic species. On the other hand, they play numerous important roles in a watershed context, including filtering water and slowing and storing water runoff that affects both water quality and quantities; hence their nickname as the "kidneys" of a watershed.

It has been documented by the U.S. Fish and Wildlife Service that approximately 50 percent of Pennsylvania's wetlands have been destroyed over the last three hundred years. Hydric soils (as subsequently described) are understood to generally be the "footprint" of former wetlands. Based on a comparison of existing wetland to hydric soil acreage, greater than 50 percent of Chadds Ford's wetlands were destroyed; there are about 1,135 acres of hydric soils in Chadds Ford versus approximately 115 acres of wetlands. As noted in Chapter 8, restoration of wetlands where possible could restore some of these acres.

There are currently 65 known individual wetlands in Chadds Ford, totaling about 115 acres or 2 percent of the Township's land area, based on National Wetlands Inventory (NWI) mapping. Given the national scale of this mapping, it is likely that the Township has many other wetlands missed by the NWI maps. The average size of wetlands as mapped by the NWI is small – a little under two acres each – although there are several larger ones, including three along the mainstem of the Brandywine and one in lower Harvey Run. The Township's wetlands are typically found along streams, where they are often narrow and linear in shape, or in upland depressions in headwater areas, where they are less linear in many cases.

Hydric Soils. As previously described, hydric soils are found in upland depressions and along the fringes of floodplains, generally within or adjacent to wetlands. Hydric soils also often indicate former wetland locations since they exhibit shallow depth to water table and, occasionally, standing water. These soils often correlate to headwater areas that include springs, seeps, and marshes at the uppermost terminus of streams. As a result, subsurface water seeping through hydric soils supplies groundwater to the surface water system, forming and defining stream baseflow.

There are 1,135 acres of hydric soils in Chadds Ford, comprising about 20 percent of the Township as noted above. Large hydric soil units (between 5 and 10 acres in size) occur along many headwater streams, while others parallel larger streams for sometimes over one mile. The largest hydric soil area is found along the lower two miles of Harvey Run. Other large units are found in upper Beaver Creek and along the Brandywine Creek. Hydric soil areas can make excellent passive open spaces and can serve as the basis for wetland and riparian buffer restoration projects.

While not presented on the Water Resources map, two other important characteristics of Chadds Ford's water resources are described as follows.

The Water Cycle. The water, or hydrologic, cycle consists of the migration of water, whether in a liquid, solid, or vapor phase, from the atmosphere to the surface of the earth and back again. Water falls to earth as precipitation. Some evaporative losses occur while rain or snow descends, but that which reaches the surface of the earth meets one of several fates. Precipitation that reaches the land surface either flows over the surface, penetrates the surface, or evaporates. Water flowing over the surface generally starts as broad "sheet flow" and collects in rivulets which join to create small streams, leading to larger rivers and eventually large water bodies, such as lakes, seas, or oceans. Infiltrating water is taken up by plant roots and returned to the atmosphere through plant transpiration; evaporates from the upper, unsaturated zone of the soil; or infiltrates to the saturated zone, becoming both groundwater and part of an aquifer (i.e., a large body of underground water). Although much groundwater that is part of the water cycle eventually discharges to a surface water body, the journey may take months, years, decades, or longer. Some groundwater seeps into bedrock aquifers, such as those used for drinking water supply in Chadds Ford. And, water that returns to the atmosphere will eventually fall back to earth.

The Water Budget. The water cycle in a given watershed follows an established average "water budget" developed over long climatic time periods. Using data from over 25 years, the U.S. Geological Survey determined an average water budget for the Brandywine Creek watershed:

Surface runoff	7-8"/yr. (approximately 17 percent of total precipitation)
Evapotranspiration (plant transpiration + soil evaporation)	23-27"/yr. (approximately 56 percent of total precipitation)
Groundwater recharge/stream base flow	12-14"/yr. (approximately 28 percent of total precipitation)
Total Precipitation	46-47"/year

(Note: Since numbers are averaged over many years, they do not add up exactly.)

Thus, slightly more than half of the water that falls to the earth is returned to the sky, some passing through plants first. Only about 17 percent runs off as surface water. As a watershed changes from largely rural land uses such as agriculture to single-family residences with significant pavement and other more impervious surfaces, this long-established equilibrium tends to skew. Specifically, surface runoff tends to increase, causing additional erosion and flooding, and groundwater recharge and the vital base flow it

provides to streams tends to decrease, potentially threatening shallow water supply wells and aquatic communities. With the widespread removal and simplification of vegetation layers, evapotranspiration rates may decrease as well. This becomes a watershed out of balance, an enormous natural mechanism that cannot simply be re-engineered.

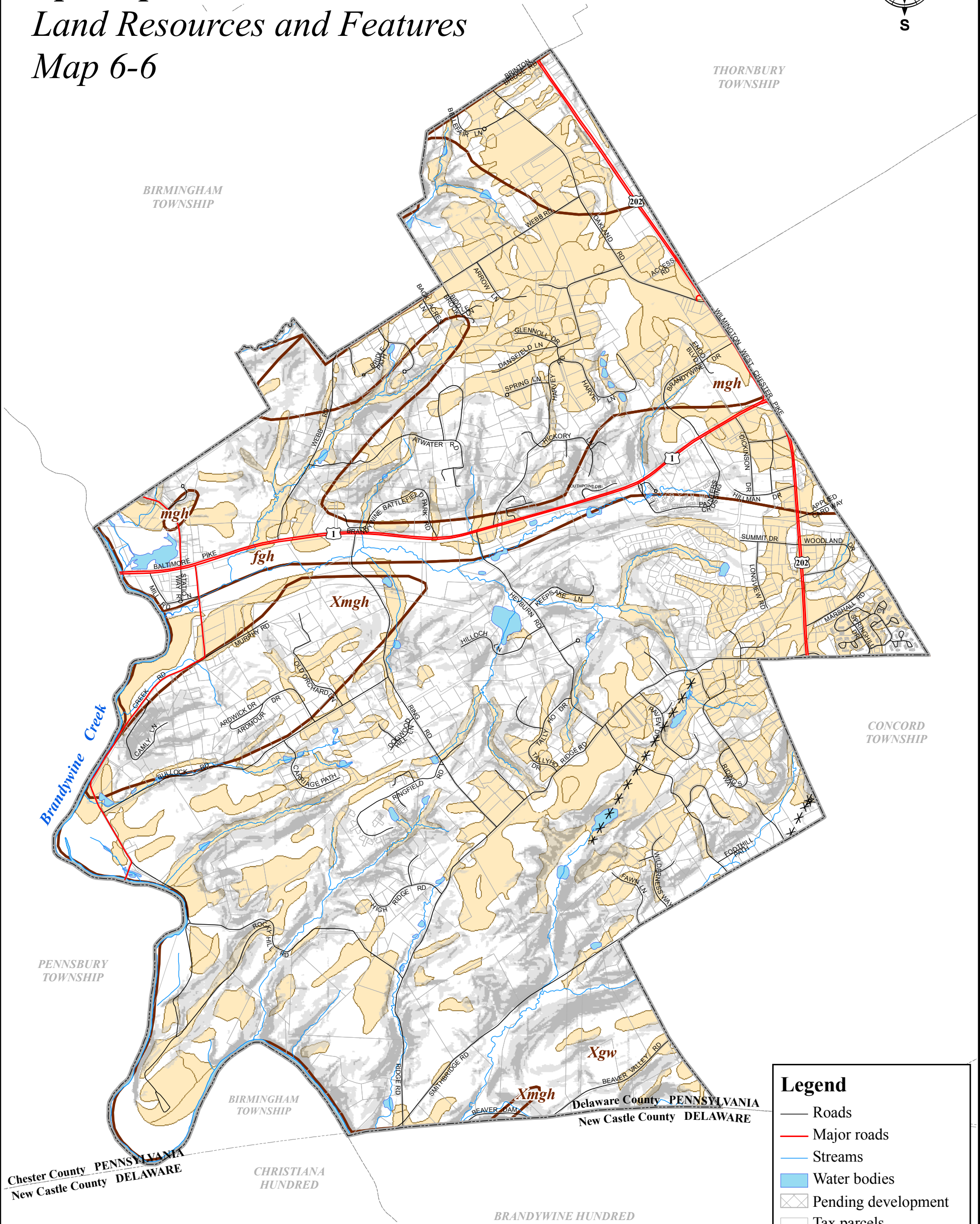
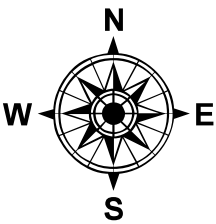
Land: As shown on the Land Resources and Features map (#6 - 6), Chadds Ford's land resources and features include the four different types of bedrock that underlay the Township, prime agricultural soils, and steep slopes. The effective interrelationship of these resources benefits drinking water supplies, the ongoing production of feed and forage crops, wildlife habitat, and water quality (among others) when they are protected, undisturbed, and/or restored.

Formation of any type of soil is an ongoing process, a complex interaction among factors such as weather, underlying geology, vegetative cover, and time. In Chadds Ford, this process historically occurred under humid hardwood forests where rainfall and evaporation are in reasonable balance so that leaching of soil nutrients is not as severe as in other more southerly areas of the United States. Those soils that are the most productive for food and feed crops, deep, not prone to erosion, nearly level, well drained, and generally devoid of stones and rocks are classified as prime agricultural soils. According to the USDA – Natural Resources Conservation Service, these are some of the most important lands in the United States for food and forage production. Chadds Ford contains approximately 1,780 acres of prime agricultural soils (about 32 percent of the Township). The principal agricultural uses for these soil areas, where they are still farmed, are row crops, hay production, and pasture. Besides their agricultural value, the farmed areas of the Township provide wildlife habitat and facilitate groundwater infiltration within the large extent of Chadds Ford served by individual drinking water wells. It is notable that the characteristics of prime agricultural soil that are good for farming and water infiltration are also good for development – these areas are easily graded and readily accept septic system discharge.

Chadds Ford's land resources and features also include steep slopes. The slope of the land is largely determined by both underlying geology and the weathering processes leading to soil formation at the land's surface. Specifically, Chadds Ford's slopes are separated by percentages (i.e., 15 – 25; >25), which indicate the contrasts between the Township's broad uplands and steeply walled valleys. Not surprisingly, steep slopes are located in many areas of Chadds Ford that do not have prime agricultural soils, given that the two categories are virtually opposite in their characteristics. The Township contains approximately 1,038 acres of slopes in the 15 – 25 percent category (about 19 percent of Chadds Ford's area) and about 452 acres of slopes greater than 25 percent (just over 8 percent of Chadds Ford). Disturbance of existing vegetation and topsoil on steep slopes accelerates runoff and erosion, causing downgradient sedimentation and water/wetland degradation. Where steep slopes are wooded, they provide valuable areas for wildlife cover and travel, as described elsewhere in this chapter.

The final category of land resources and features in Chadds Ford is bedrock geology. All of the Township's bedrock is extremely old and highly metamorphosed (i.e., altered by high temperature and pressure) as described below. The Wissahickon formation south of the Route 1 – Harvey Run corridor is fractured, with variable permeability and groundwater yield. It is intruded by a ridge of dark, fine-grained impermeable gneiss south of the current location of Chadds Ford village. The northern part of the Township is underlain by older gneiss of variable composition, which produces fertile soil but is generally of low permeability. The Route 1 – Harvey Run corridor is a fault zone or zone of weakness that marks the contact between rock types of different

Chadds Ford Township
Open Space Plan
Land Resources and Features
Map 6-6



0 500 1000 2000 3000 4000 5000
Scale in Feet



Brandywine Conservancy
Environmental Management Center
P. O. Box 141 Chadds Ford, Pennsylvania 19317 (610) 388-2700

Data source: Base data from Delaware County GIS Department, 3/2006 (edited to reflect recent subdivisions, 8/2006). Prime agricultural soils from NRCS, 2001. Slopes derived from USGS contours, 1996. Headwaters created by Brandywine Conservancy, 7/2006.
Map created: July 19, 2007

Legend

- Roads
- Major roads
- Streams
- Water bodies
- Pending development
- Tax parcels
- Adjacent municipalities
- Municipal boundary
- Dikes
- Geology
- Prime agricultural soils

Slopes

- 15 - 25%
- >25%

Map symbol	Geology Type
fgh	Felsic and intermediate gneiss
Xgw	"Glenarm Wissahickon" formation
mgh	Mafic gneiss
Xmgh	Mafic gneiss

Map symbol	Geology Type
fgh	Felsic and intermediate gneiss
Xgw	"Glenarm Wissahickon" formation
mgh	Mafic gneiss
Xmgh	Mafic gneiss

ages. Gneiss is a metamorphic rock, which means the rock was transformed from previously deposited igneous (volcanic) or sedimentary (water or wind borne) rock through tremendous heat and/or pressure. As previously noted, metamorphic rocks have low water-bearing capacity due to their close-to-impenetrable nature.

Water-bearing capacity is further affected by the presence of geologic dikes. These narrow igneous "intrusions" are scattered and linear in nature, may vary in width from five to 100 feet, and are generally associated with very low well yields. They impede infiltration of surface drainage, which also may literally create a subsurface dam or dike, altering the flow of groundwater. The low water-bearing capacity of the Township's bedrock is an important land protection consideration; i.e., the less development, the greater the groundwater infiltration and the ability of these rocks to maximize their water-bearing capacity for drinking water purposes.

CULTURAL RESOURCES

Chadds Ford's cultural resources include its historic, archaeological, and scenic resources. The values imparted by Chadds Ford's cultural resources are largely anthropomorphic, in that humans created, discovered, classified, and/or modified the resources. Yet they all have a direct connection to the Township's natural resources as described earlier in this chapter; hence, the grouping of natural and cultural resources. To better understand the interrelationship of these resources that are present today and their significance, a brief overview of the Township's development is necessary.

As described in Chapter 1, Chadds Ford's earliest settlers were the Lenape Native Americans, who co-existed peacefully with early European settlers. This bucolic setting was devastated in 1777 by the Battle of Brandywine, a confrontation of the American troops under George Washington trying to prevent the British Army under General Howe from getting to Philadelphia, the young nation's capital. The Battle was the largest in the Revolutionary War, and its effects were felt locally for decades.

Subsequently, early industrial operations were located along the Brandywine and its tributaries with water-produced milling operations. These mills increased in numbers and in size in the 19th century, especially along Beaver Creek. Commercial areas for the surrounding agricultural population developed in the Villages of Chadds Ford and Dilworthtown with the establishment of schools, churches, and stores. The railroad came to Chadds Ford in 1853, expanding horizons not only for outgoing agricultural goods, but also for inbound and wealthy city residents who lived in the Township during the summer. Kaolin (i.e., clay) quarries were started off of Heyburn Road with a railroad spur connecting these quarries with the railroad at Brandywine Summit (on what is now Route 202, the Wilmington-West Chester Road).

Artist Howard Pyle formed an art school in nearby Wilmington, Delaware, with a summer school in Chadds Ford; collectively, his students formed the Brandywine School. One of them, famed illustrator, muralist, and artist N.C. Wyeth, settled in Chadds Ford and was the patriarch of the lineage of world-renowned artists, including his son, Andrew, and grandson, Jamie. They became influential with the Brandywine School, the Brandywine River Museum, and other cultural attractions focusing on this aspect of Chadds Ford's cultural environment.

This rich heritage of cultural resources is strongly evident in Chadds Ford to this day: 18th century farmsteads and fields, remnants of 19th century mills, former summer residences, and village clusters have produced the identity and quality of life loved by many Township residents.

Historic: Today, Chadds Ford supports a veritable treasure trove of historic resources (e.g., buildings, ruins, water crossings) that are integral components of the Township's present-day rural character and reflections of its heritage. These resources are closely tied to Chadds Ford's other natural and cultural resources, representing, for example, the Township's wide-ranging past as an agricultural area for both Native American residents and European settlers with its still extensive prime farmland soils, the roles its fields and woods played in the Battle of the Brandywine (September 11, 1777), and the power-generating value of the Brandywine Creek and its tributaries to industrial operations, all as described elsewhere in this plan.

Not surprisingly, research into and assessment of Chadds Ford's historic resources has been conducted by a number of interested parties; these include the Chadds Ford Historical Society and the Delaware County Planning Department through the 1984 Historic Resource Survey with subsequent additions. Accordingly, the Township's currently-inventoried historic resources have been recognized as significant at various levels, as described in the remainder of this section. However, it should also be noted that research of historic sources is always ongoing, and as new information is uncovered, the inventory presented in this chapter could change. Further, as time goes on, resources become eligible for historic designation based on their age. Specifically, any resource older than 50 years may be included in future historic inventories if it is determined significant to the Township's heritage.

National. In the United States, the highest level of historic designation is *National Historic Landmark*; the selection of these is overseen by the National Park Service to recognize those historic resources of national significance and of exceptional value in illustrating the history of the United States. Chadds Ford is extraordinary in that three such Landmarks are located within the Township; all of these are fully or partially open to the public through various mechanisms. Chadds Ford's Landmarks are the 1704 Brinton House, the N.C. Wyeth Studio and home, and a large portion of the 10-square mile Brandywine Battlefield National Historic Landmark.

The next level of designation is that of the *National Register of Historic Places*, also overseen by the National Park Service (i.e., by the Keeper of the Register). The resources listed on the National Register meet criteria that recognize their significance in exemplifying patterns of history, significant persons, and/or outstanding construction/architecture. There can be entire districts or clustering of structures or individual buildings. Chadds Ford supports extraordinary resources recognized either by National Register Historic District or Place, listed as follows:

National Register Historic District:

- ◆ Chadds Ford Village Historic District
- ◆ Dilworthtown Historic District

National Register of Historic Places:

- ◆ John Chadds House (currently open to the public as a house museum)
- ◆ Twaddells Mill and House ("the Big Bend")

- ◆ William Painter Farm
- ◆ Gilpin Homestead

Yet another level of designation is for those resources that have been *determined to be eligible* for the National Register of Historic Places, but generally an application has not been submitted for placement on the National Register. The following Chadds Ford historic resources are considered eligible for the National Register of Historic Places:

- ◆ Thomas Speakman House
- ◆ Brandywine Baptist Church Parsonage
- ◆ Ring-Kuerner Farm
- ◆ Samuel Painter Farm
- ◆ Philadelphia and Central Railroad
- ◆ Expansion of the Dilworthtown Historic District

Local. At the municipal level, designations of historic resources are very important since they identify those locally important structures that can be protected through local municipal ordinances. The Chadds Ford (Birmingham) Township Historic Resource Survey (Delaware County Planning Department, 1984) originally listed 117 historic resources; additions have expanded the list to 136. As previously described, historic research is ongoing, and as such, there is known resources that should be added to the survey (e.g., the railroad tunnel on Heyburn Road).

Some of these resources are clustered in areas, specifically in the villages of Chadds Ford and Dilworthtown. To protect these resources, the Township passed in 1989 an *Act 167 Historic District Ordinance* (Ordinance #69). This is a state-enabled local ordinance that allows the Township to create an Historical and Architectural Review Board to oversee and recommend changes within the Historic District. The Chadds Ford Local (Act 167) Historic District is somewhat larger than the Chadds Ford National Register Historic District and the same is true for the Dilworthtown District.

It should be noted that the National Register does not protect historic resources as well as local designations and ordinances. The National Register designation (and the Landmark and Eligibility designations) protects a resource only from state- or federally-funded projects that require that historic significance be considered. But these classifications afford no protection from an owner who wishes to demolish or inappropriately alter an historic resource. However, the Chadds Ford Township Historic District ordinance does provide tools for protecting those resources within the district.

The Historic Resources Table (#6 – 3) and the Historic Resources map (#6 – 7) show how the previously described categories interrelate. As presented in the table, the aforementioned 136 individual historic resources include structures, sites, and fords, some of which are designated as significant at the federal level and all of which are significant at the local level. Historic structures and sites typically differ by the presence of an intact, or reasonably intact, historic building. Specifically, an historic site is a location where an historic structure had been located or that has archaeological value; in some situations, ruins remain and may have been stabilized or the remnants of an historic structure were incorporated into a more modern one. Historic sites also designate where an historic event occurred. While a ford is any location on a waterway that can be readily crossed by foot or horseback, four of these crossings of the Brandywine

Table 6 - 3: Historic Resources, Chadds Ford Township

I.D. Number	Historic Resource Category from Map	Site Name	Location	Notes	Designation
1	Historic Structure	Brandywine River Museum (Merchant Mill)	Baltimore Pike by Brandywine Creek	core c. 1868	NRHD, CFHD
2	Historic Site	Chads' Ferry	each side of Brandywine	structure no longer standing	Site
3	Historic Site	House and Barn	Corner of Mill Road and Baltimore Pike	demolished 1987	Site
4	Historic Structure	Anderson House	1650 Baltimore Pike	c. 1899, now Environmental Management Center for the Brandywine Conservancy	NRHD, CFHD
5	Historic Structure	Gunsmith's House	1642 Baltimore Pike	c. 1876, now Brandywine Conservancy offices	NRHD, CFHD
6	Historic Structure	Victorian House	6 Station Way	1892	NRHD, CFHD
7	Historic Structure	former municipal building	10 Station Way	c. 1884 St. Lukes Episcopal Church, now rental property	NRHD, CFHD
8	Historic Structure	Bungalow	5 Station Way	c. 1930	NRHD, CFHD
9	Historic Structure	John Chads House	1719 Creek Road	c. 1724	NRHD, CFHD, NR
9A	Historic Structure	John Chads Springhouse	Creek Road opposite Chads House	prior to 1724	NRHD, CFHD, NR
10	Historic Structure	Isaac Watkin House	1721 Creek Road	c. 1843	NRHD, CFHD,
11	Historic Structure	Charles Twadell House	1733 Creek Road	c. 1850	NRHD, CFHD
12	Historic Structure	George Davis House	1743 Creek Road	c. 1840	NRHD, CFHD
13	Historic Structure	Brittingham House	1743 Creek Road	c. 1890	NRHD, CFHD
14	Historic Structure	Barn	Creek Road north	original to George Davis House (#12)	NRHD, CFHD
15	Historic Structure	Sanderson Museum	1755 Creek Road	c. 1842 Samuel Gamble House	NRHD, CFHD
16	Historic Structure	Margaret King House	1763 Creek Road	1850-1875	NRHD, CFHD
17	Historic Structure	Jeffries/Arment House	corner Baltimore Pike and Creek Road	rebuilt 1915	NRHD, CFHD
17A	Historic Site	Site of Blacksmith/Wheelwright Shop	corner Baltimore Pike and Creek Road	now Hanks Restaurant	Site

*Chadds Ford Township
Open Space Plan
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I.D. Number	Historic Resource Category from Map	Site Name	Location	Notes	Designation
18	Historic Structure	Baldwin's Store	1625 Baltimore Pike	rebuilt 1915	NRHD, CFHD
19	Historic Structure	Chadds Ford Inn	1617 Baltimore Pike	1807-1810	NRHD, CFHD
20	Historic Structures	Barn Shops	Baltimore Pike	outbuildings of various dates	NRHD, CFHD
21	Historic Structure	Chadds Ford Art Gallery	1609 Baltimore Pike	c. 1859	NRHD, CFHD
22	Historic Structure	Hopkins House	Baltimore Pike	early 1900s	NRHD, CFHD
23	Historic Structures	Greene's Quarters	1597 Baltimore Pike	c. 1735	NRHD, CFHD
24	Historic Structure	Barn to #23	1598 Baltimore Pike	barn to #23 c. 1781, moved	NRHD, CFHD
25	Historic Structures	Stonebridge	1551 Baltimore Pike	1920s	CFHD
26	Historic Structures	Brandywine Glen tenant house	671 Webb Road	barn foundations and tenant house, mid 18th century	CFHD
27	Historic Structures	Brandywine Glen	672 Webb Road	c. 1723, alterations 1882	CFHD
28	Historic Structure	Windtryst Barn	1509 Baltimore Pike	c. 1860, now a residence	CFHD
29	Historic Site	site of Windtryst	Baltimore Pike	structure no longer standing	Site
30	Historic Structure	Turners Mill/Pyle's Studio	10 Ring Road	c. 1868, now municipal building	CFHD
31	Historic Structure	Washington's Headquarters	149 Baltimore Pike	original burned, rebuilt 1952	CFHD
32	Historic Structure	Brandywine Baptist Church	1463 Baltimore Pike	1869	CFHD
32A	Historic Structure	Sexton's House	1461 Baltimore Pike	pre-1847	CFHD
33	Historic Structures	Lafayette's Quarters	1491 Baltimore Pike	1696-1698	NR, CFHD
34	Historic Structure	Lafayette Manor	1421 Baltimore Pike	1857	CFHD
35	Historic Structure	Parsonage, Brandywine Baptist Church	1414 Baltimore Pike	1883	DOE
36	Historic Structure	Samuel Painter Tenant House	1399 Baltimore Pike	1775-1799	R
37	Historic Structure	Whiskey Hill	Harvey Road	18th century	R
38	Historic Site	site of Gilpin cave and kiln	106 Harvey Lane	structure no longer standing	Site
39	Historic Structures	Springhouse to Gilpin Homestead	196 Harvey Road	c. 1750, now a residence	NR
40	Historic Structure	Gilpin Homestead/Howe's Headquarters	165 Harvey Road	1754	NR
41	Historic Structure	Gilpin Tenant House	58 Harvey Road	c. 1775-1799	R
42	Historic Structure	Former Birmingham School #3	Harvey Road	c. 1844	R

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I.D. Number	Historic Resource Category from Map	Site Name	Location	Notes	Designation
43	Historic Structures	Samuel Painter, Jr. Farm	38 Harvey Road	c. 1738	DOE
44	Historic Structure	1704 Brinton House	21 Oakland Road	1704	NHL
45	Historic Structure	George Brinton House	240 Brinton's Bridge Road	1857	NRHD, DHD
46	Historic Structure	Stucco over Stone House	300 Brinton's Bridge Road	mid 1800s	NRHD, DHD
47	Historic Structure	Stone House	302 Brinton's Bridge Road	mid 1800s	NRHD, DHD
48	Historic Structure	Biddlebrook	478 Webb Road	1750-1774	R
49	Historic Structure	Biddlebrook Tenant House	482 Webb Road	1725-1749	R
50	Historic Structures	Fox Hollow Farm	540 Webb Road	c. 1839	R
51	Historic Site	site of Iron Mine	Webb Road	structure no longer standing	Site
52	Historic Structure	Small Bank House	600 Webb Road	early 1800s	R
53	Historic Structure	Victorian House	1810 Creek Road	c. 1850	CFHD
54	Historic Structure	Former Birmingham School #2	182 Creek Road	c. 1870	CFHD
55	Historic Structure	N. C. Wyeth House	13 Murphy Road	1911	NHL, CFHD
55A	Historic Structure	Wyeth Studio	13 Murphy Road	1926	NHL, CFHD
56	Historic Structure	Dr. Handy's House	1825 Creek Road	1949-1950	CFHD
57	Historic Structure	McVey House	1839 Creek Road	pre-1870	CFHD
58	Historic Structures	Rocky Hill Farm	111 Bullock Road	c. 1870	R
59	Historic Site	Remains of Fish Weir	In Brandywine Creek along Creek Road between Murphy and Bullock Roads	late 17th century	Ruin
60	Historic Structure	Draper Property	12 Creek Road	springhouse and rebuilt house on hill	R
61	Historic Structure	Seal House	61 Rocky Hill Road	1852	R
62	Historic Structure	Locust Knoll Farm	74 Rocky Hill Road	1872	R
63	Historic Structures	Twaddell's Mill and House ("the Big Bend")	84 Rocky Hill Road	early 19th century	NR
64	Historic Site	Site of Indian Settlement		early 18th century	Site
65	Historic Site	Site of Lower Brandywine Presbyterian Church	SW corner Ridge and Smith Bridge Roads	c. 1720	Site
66	Historic Site	Site of Birmingham School #4, "Mt. Rachel"	NE corner between Ridge and Smith Bridge Roads	c. 1806	Site

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I.D. Number	Historic Resource Category from Map	Site Name	Location	Notes	Designation
67	Historic Site	Site of Grist Mill	Beaver Dam Road	structure no longer standing	Site
68	Historic Site	Ruins of Tempest's Paper Mill	Beaver Dam Road	structure no longer standing	Ruins
69	Historic Site	Ruins of Francis Tempest's House	Beaver Dam Road	structure no longer standing	Ruins
70	Historic Site	Site of Clover Mill	Beaver Dam Road	structure no longer standing	Site
71	Historic Structures	Structure	137 Beaver Valley Road	1913	R
72	Historic Site	Site of Saw Mill	Beaver Valley Road	structure no longer standing	Site
73	Historic Structure	Beaverbrook	138 Beaver Valley Road	c. 1700, 1776	R
73A	Historic Structure	Beaverbrook Barn	Beaver Valley Road south-side	1772	R
74	Historic Structure	State Boundary Marker	Beaver Valley Road	c. 1892	R
75	Historic Site	Site of Houses	Beaver Valley Road	structure no longer standing	Site
76	Historic Site	Site of Mill	Beaver Valley Road	structure no longer standing	Site
77	Historic Structure	Early 1800's House	392 Smith Bridge Road (north side)	1819	R
78	Historic Structure	Early 1800's House	393 Smith Bridge Road (south side)	early 1800s	R
79	Historic Structure	Morrison House	393B Smith Bridge Road	1804	R
80	Historic Site	Ruins of Morrison's Edge Tool Factory	Smith Bridge Road	structure no longer standing	Site
81	Historic Site	Ruins of Casey's Barn	Smith Bridge Road	structure no longer standing	Site
82	Historic Structures	House and Barn	Rocky Hill Road (south side) and Ridge Road	c. 1802	R
83	Historic Structure	Rumford House	134 Rocky Hill Road bordered by Rocky Hill and Ridge Roads	c. 1850	R
83A	Historic Structure	Springhouse to # 83	Ridge Road (west side)	mid 1800s	R
84	Historic Structure	Stucco over Stone House	398 Ridge Road	late 1800s	R
85	Historic Structure	Stone House	100 High Ridge Road	1791	R
86	Historic Site	Site of Kaolin Pothouse	Ridge Road opposite Ring Road	only shed extant	Ruin
87	Historic Structure	Lewis House	407 Ring Road	c. 1760	R
88	Historic Structure	Ring House	410 Ring Road		R
89	Historic Site	Ruins of Mother Archie's Church/Octagonal School	Ring and Bullock Roads	c. 1838, now township-owned	Ruin

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I.D. Number	Historic Resource Category from Map	Site Name	Location	Notes	Designation
		and Cemetery			
90	Historic Structure	Former School	5 Bullock Road	c. 1875	R
91	Historic Structure	Bullock Log House	61 Bullock Road	prior to 1800	R
92	Historic Structure	Federal Brick House	69 Bullock Road	1825-1849	R
93	Historic Structure	Stone House with additions	40 Orchard Lane	1725-1749	R
94	Historic Structure	Reward Farm	Orchard Lane off Bullock Road		R
95	Historic Structure	Ring Farm	415 Ring Road	1814 Kuerner's Farm	DOE
95A	Historic Structure	Kuerner's Son's Contemporary Studio	328 Ring Road		R
96	Historic Site	Saw Mill Ruins	Heyburn Road	structure no longer standing	Site
97	Historic Structure	Stone House "Halcyon"	33 Heyburn Road	early 1800s	R
98	Historic Structure	Heyburn Farm "Keepsake"	105 Keepsake Lane	1800-1805	R
99	Historic Structure	Hillock Farm	80 Heyburn Road	c. 1830-1840	R
100	Historic Structure	Barn formerly to Hillock Farm	Heyburn Road	1840, converted to residence	R
101	Historic Structure	Re-located Log House	60 Talley Ho Drive	pre 1850	R
102	Historic Structure	Ruins of Talley Farmhouse	123 Talley Ho Drive	incorporated into contemporary house	Ruin
103	Historic Structure	frame house	226 Ridge Road	core is log house	R
104	Historic Site	Site of Kaolin Works	Ponds formed from excavations	c. 1830-1910	Site
105	Historic Structure	Octagonal School, Frame School # 1	203 Ridge Road	1837	R
106	Historic Structure	Stone House, site of Birmingham School #1	190 Ridge Road	school built 1849, present residence built 1915	R
107	Historic Structure	Gleason Farmhouse, Old Ridge Village	Ridge Road and Route 202	mid 18th century, demolished 2002	Site
108	Historic Site	St. Cornelius Chapel	Route 202 at Ridge Road (east side)	1926 Chapel, demolished 1985	Site
109	Historic Structure	Small Stone House	corner Route 202 and Marshall Road	c. 1820	R
110	Historic Structure	Thomas Speakman House	1790 Wilmington-West Chester Pike	c. 1813, now physicians' offices	DOE
111	Historic Structure	Stone Cape Cod	1770 Wilmington-West Chester Pike	1940s house	R
112	Historic Structure	Summerfield Hall	1712 Wilmington-West Chester Pike	converted into apartments	R

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I.D. Number	Historic Resource Category from Map	Site Name	Location	Notes	Designation
113	Historic Site	Site of former Painter House	Baltimore Pike (north side)	demolished 1987	Site
114	Historic Site	1830's Farmhouse	Route 202 (west side)	demolished 1985	Site
115	Historic Structure	William Painter Farm (Dickinson Bldg)	1244 Baltimore Pike	1775-1799	NR
116	Historic Site	Site of Old Stuccoed House	Route 202 (north side)	1775-1799, demolished 1995	Site
117	Historic Structure	Reproduction of John Chad's House	4 Arrow Lane	1980s	R
118	Historic Structure	Small Stone House	97 East Baltimore Pike	with contemporary addition	CFHD
119	Historic Structure	Stone House	248 Heyburn Road	c. 1830-1840 with additions	R
120	Historic Structure	Log House	388 Smith Bridge Road	with new stone addition	R
121	Historic Site	Brick Victorian House	Route 202 south near RR tracks	late 19th century, Brandywine Summit, demolished 1990	site
122	Historic Structures	Frame House	1756 Wilmington-West Chester Pike	late 19th century, Brandywine Summit	R
123	Historic Structures	Frame House	1746 Wilmington-West Chester Pike	late 19th century, Brandywine Summit	R
124	Historic Structures	Kirkpatrick House	Oakland Road	1898	DHD
125	Historic Structures	Stone House, Wonderland Farm	125 Bellefair Lane	pre 1769	DHD
126	Historic Structures	Queen Anne House, formerly feed store	52 Woodland Drive	c. 1880	R
127	Historic Structures	Messersmiths	22 Murphy Road	1875	R
128	Historic Structures	Stuccoed fieldstone house	370 Brinton's Bridge Road	1770-1799	DHD
129	Historic Site	Pyle Tenant House #1 Frame bungalow	Creek Road South	demolished	Site
130	Historic Structures	Pyle Tenant House #2	10 Murphy Road		R
131	Historic Structures	Bungalow	9 Murphy Road		R
132	Historic Structures	Bungalow	9 Station Way		NRHD, CFHD
133	Historic Structures	Twin	1 Station Way		NRHD, CFHD
134	Historic Structures	Former St. Lukes Parsonage	14 Station Way		NRHD, CFHD
135	Historic Site	Beaver Valley Rock Shelter	PA/DE Border	not mapped	NR
136	Historic Site	Indian Camp Site	off Station Way Road	not mapped	Site

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Open Space Plan
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I.D. Number	Historic Resource Category from Map	Site Name	Location	Notes	Designation
F1	Historic Ford	Chads' Ford	Brandywine Creek		Ford
F2	Historic Ford	Pyle's Ford	Brandywine Creek		Ford
F3	Historic Ford	Gibson's Ford	Brandywine Creek		Ford
F4	Historic Ford	Corner Ford	Brandywine Creek		Ford

Source: Delaware County Planning Department

Designation Key:

NHL – National Historic Landmark, the highest designation given to an historic site by the Federal government. It indicates that the resource is significant.

NR – National Register of Historic Places, the official Federal list of resources significant to American history, architecture, archaeology, engineering or culture.

NRHD –National Register Historic District (the resource is within an area that is designated on the National Register of Historic Places as a federally significant district).

DOE – Determination of Eligibility; i.e., reviewed by the Pennsylvania Historical and Museum Commission and determined that the resource is eligible for the National Register of Historic Places.

CFHD – Within the Chadds Ford Historic District, Ordinance #69.

DHD – Within the Dilworthtown Historic District, Ordinance #69.

R – A locally significant historic resource included on the (Birmingham) Chadds Ford Township Historic Resource Survey (1984, original study).

Site – The site of a previous building or resource that may have archaeological value.

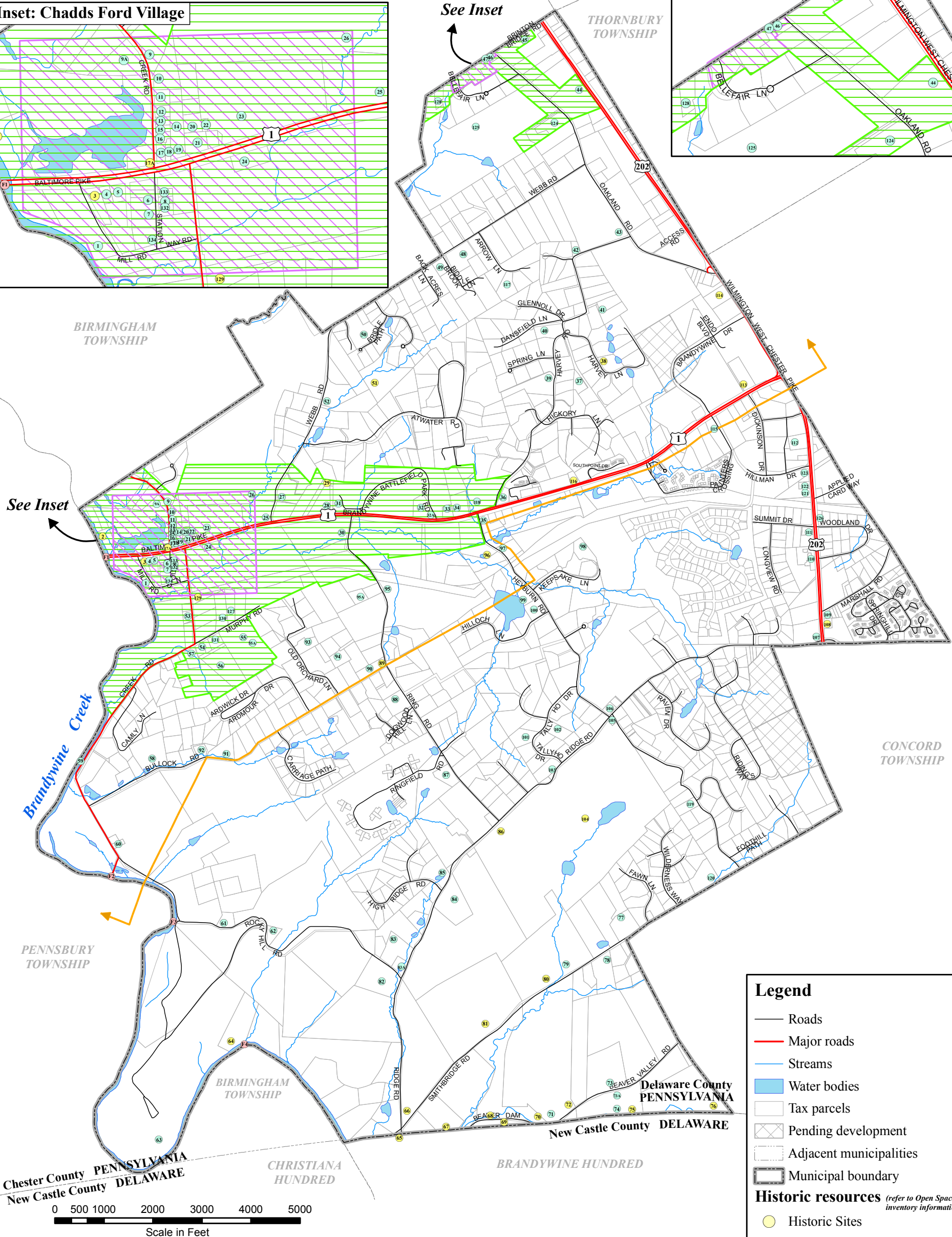
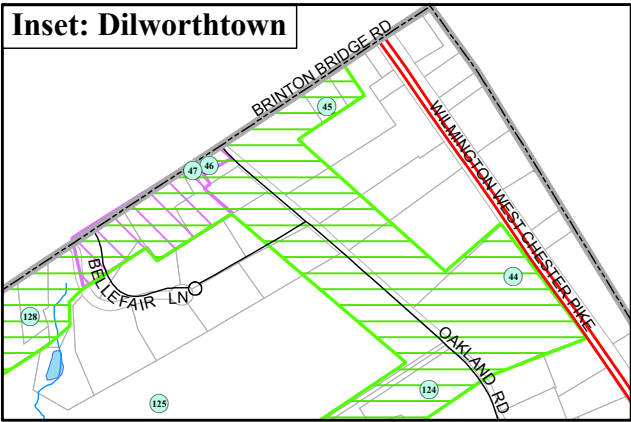
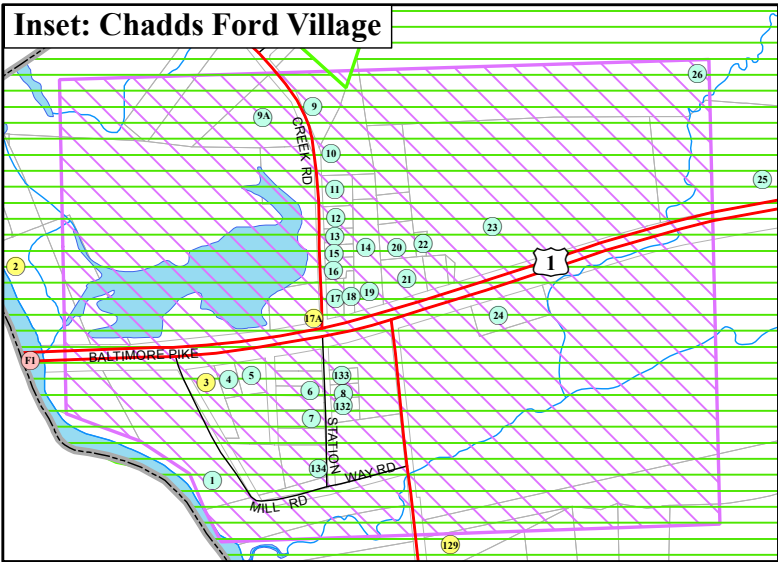
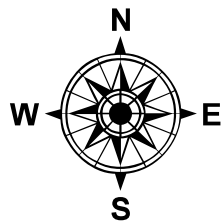
Ruin – Remains of an historic resource still visible.

Chadds Ford Township

Open Space Plan

Historic Resources

Map 6-7



Legend

- Roads
- Major roads
- Streams
- Water bodies
- Tax parcels
- Pending development
- Adjacent municipalities
- Municipal boundary

Historic resources (refer to Open Space Plan for inventory information)

- Historic Sites
- Historic Structures
- Historic Fords
- Act 167 Historic District
- National Register District
- Brandywine Battlefield National Historic Landmark boundary



Brandywine Conservancy
Environmental Management Center
P. O. Box 141 Chadds Ford, Pennsylvania 19317 (610) 388-2700

Data source: Base data from Delaware County GIS Department, 3/2006 (edited to reflect recent subdivisions, 8/2006). Historic resources received from Natural Lands Trust, 2005. Additional historic resources from Delaware County Planning Department, 2006.
Map created: July 19, 2007

Creek are of historic significance in Chadds Ford. For example, Chad's Ford ("F1" on the Historic Resources map) is situated about 100 yards north of the current crossing of the Brandywine Creek by Route 1. This is where George Washington expected British troops to cross the Creek at the start of the Battle of the Brandywine.

In addition, the Historic Resources map shows Chadds Ford's two Act 167 Historic Districts as previously identified. The first of these is located in the Village of Chadds Ford, at the intersection of Route 1 and Creek Road, while the other is situated in the northeastern part of the Township where the historic Dilworthtown Village extends into the Township. The Township's two National Register Historic Districts are also shown. The Historic Resources Table (6 - 3) identifies the resources that contribute to these Districts.

Archaeological: Under the broad umbrella of "cultural resources," Chadds Ford's archaeological and historic (following section) resources are closely related, since by definition, archaeological resources are highly historic. Specifically, archaeological sites consist of physical evidence of past human activity. This includes building foundations, former landscapes, millraces, or any other man-made landform as well as tools, pottery, botanical remains, food remains, architectural elements, and skeletal materials. Prehistoric archaeological resources relate to Native American culture, while historic archaeological resources are those classified as post-European contact (generally after 1638).

Archaeological sites provide vast amounts of information regarding the history of an area and can be found anywhere (e.g., surrounding an historic farmstead or barn; in an open field undisturbed by modern development). A site may contain lithic materials or stone tools from a Native American work station or wartime artifacts. It is important to note that archaeological information is most important and significant when found in place, i.e., it is possible to document the precise location on the ground, the depth in the soil, and the type of soil as well as the surrounding area.

Of particular interest within the Township, as displayed on the Archaeological Resources map (#6 – 8), is the archaeological potential for resources relating to the Battle of Brandywine. The 10-square mile Brandywine Battlefield National Historic Landmark was designated to protect intact open space within the Landmark because of its potential to yield information to interpret this significant Revolutionary War Battle. Since it was the largest land battle of the Revolution, involving thousands of active participants, the archaeological potential is exceptional.

Additional archaeological potential was noted by the Delaware County Archaeological Resource Inventory and Management Plan (June 1991), also as shown on the map. Areas of identified known sites are the Gilpin House, the Gilpin Lime Kiln, and areas along the Columbia Gas Line. According to the inventory, other sites that have high potential for archaeological resources are those relating to the fighting or encampment sites for the Battle of Brandywine, as noted above, plus sites of past industrial activities such as quarries and mills. There have been additional identified sites within Chadds Ford Township, but these records are kept at the Pennsylvania Historical and Museum Commission in Harrisburg and were not examined for this plan.

Scenic: As shown on the Scenic Resources map (#6 – 9), Chadds Ford's scenic resources consist of lines of sight within scenic areas, visually accessible woodlands, and water bodies. Together, these attributes create landscapes that are aesthetically pleasing, ranging from views of rolling farmland to steeply wooded

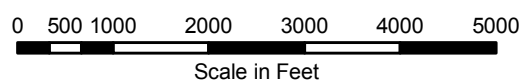
hills along the Township's stream valleys. The Township's landscape also includes the historic Village of Chadds Ford and many historic homes along secondary roads.

Overall, the Township's scenic areas are those where a large landscape is within view of a public road and where the visible land use (either foreground or background) is visually appealing due to the presence of a farm field or pasture or historic buildings attractively sited on the land, for example. Lines of sight are generally those long views through or towards these visually appealing landscapes. Also included within scenic resources are publicly visible woodlands and water bodies; both of these resources add significant aesthetic value to a largely unaltered landscape. Most of Chadds Ford's scenic resources also include significant historic, agricultural, or ecological areas that contribute resource value to the Township, as documented elsewhere in this chapter.

Of particular note is the scenic value of Creek Road (the former PA Route 100) in Chadds Ford, which is part of the larger Brandywine Valley Scenic Byway in both Pennsylvania and Delaware. This road passes through sites of both early Pennsylvania settlement and one of the most significant battles in the Revolutionary War, as well as through a traditional village crossroads that has evolved during the last three centuries into a cultural community of note. The scenic integrity of the landscape is basically unaltered and continues to highlight the natural and historic resources of southeastern Pennsylvania.

As Creek Road enters the Township from the north, it winds through floodplain and forest, as well as the center of the Brandywine Battlefield National Historic Landmark. In 1777, the 400-foot bluffs to the left, called "Brandywine Heights," provided cover for the troops of General George Washington where they attempted to prevent the British Army from crossing the Brandywine Creek on their march toward Philadelphia. The troops' artillery line extended along the bluff, continuing parallel to modern day Creek Road until the woods open up to reveal the stone house and springhouse of early settler John Chads; the current historic significance of these structures was previously documented in this chapter.

Creek Road then passes through the Chadds Ford National Register District and locally designated Act 167 Historic District and intersects US Route 1, known as "Ye Greate Road to Nottingham" in colonial times since it was the major connection between Philadelphia and Maryland. South of Route 1, Creek Road takes a westerly turn toward the Brandywine Creek. Just to the east at this turn is the N.C. Wyeth Studio, a National Historic Landmark. Creek Road continues south, curving along the Brandywine Creek with scenic vistas of stone walls, horse pastures, and wetlands. It exits the Township at Twin Bridges, a long span once housing two covered bridges.



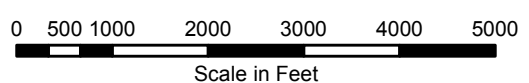
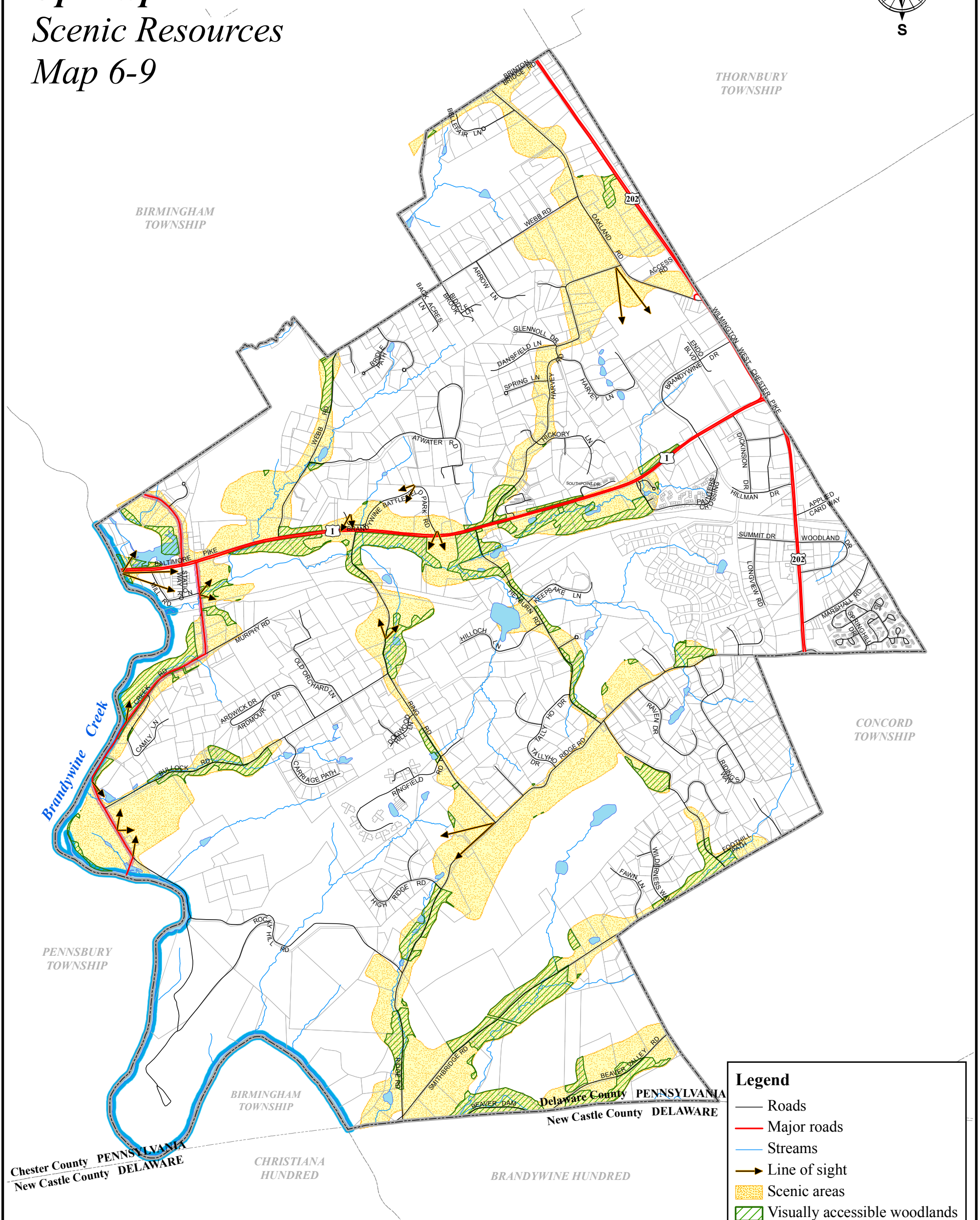
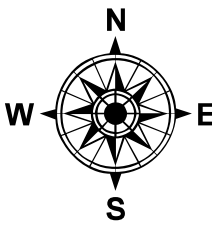
Environmental Management Center
P. O. Box 141 Chadds Ford, Pennsylvania 19317 (610) 388-2700

Data source: Base data from Delaware County GIS Department, 3/2006 (edited to reflect recent subdivisions, 8/2006). Streams and waterbodies from Delaware County and Chester County GIS Departments edited, 7/2006. Delaware County Archaeological Resource Inventory and Management Plan and accompanying map, 1991.

Map created: July 19, 2007

 Roads
 Major roads
 Streams
 Water bodies
 Areas of moderate to high archaeological sensitivity
 Previous archaeological investigations
 Pending development
 Tax parcels
 Adjacent municipalities
 Municipal boundary

Chadds Ford Township
Open Space Plan
Scenic Resources
Map 6-9



Brandywine Conservancy
Environmental Management Center
P. O. Box 141 Chadds Ford, Pennsylvania 19317 (610) 388-2700

Data source: Base data from Delaware County GIS Department, 3/2006 (edited to reflect recent subdivisions, 8/2006). Scenic resources received from Natural Lands Trust, 2005; and Brandywine Battlefield National Historic Landmark, Cultural Resources Management Study (1989). Field work by Brandywine Conservancy, 8/06.
Map created: July 19, 2007

Legend

- Roads
- Major roads
- Streams
- Line of sight
- Scenic areas
- Visually accessible woodlands
- Brandywine Creek state scenic river
- Creek Road state scenic by-way
- Water bodies
- Pending development
- Tax parcels
- Adjacent municipalities
- Municipal boundary

CHAPTER 7: RECREATIONAL OPEN SPACE

This chapter examines recreational opportunities available to Chadds Ford Township residents. While most park-based recreational opportunities are not directly provided by the Township, residents make use of diverse park and recreational facilities throughout nearby portions of Chester, Delaware, and New Castle Counties. Limited direct Township involvement has stemmed from overall low population density in Chadds Ford and local perception of appropriate governmental roles. It is appropriate that the Township monitor ongoing recreational opportunities, assess unmet local recreational needs on a periodic basis, and reevaluate potential Township roles as outlined in this chapter.

In a broad sense, recreational open space includes lands and facilities specifically designated as such, as well as trails and “informal open spaces” which may be available for passive recreational opportunities such as hiking, enjoyment of scenic landscapes or cultural resources, or nature observation. “Recreational open space” may provide for a broad range of recreational facilities and activities, from picnicking and playground equipment to active field or court sports. These resources are described in the following sections, and most are shown on the Recreational Open Space map (#7 – 1).

Regional Recreational Facilities: Regional recreational facilities include larger scale parks typically provided by federal, state, or county governments. They often support a broad range of recreational uses, especially those that require large land or water areas, or are destination in nature, serving a relatively large population base. Examples of regional recreational facilities serving Chadds Ford residents within a one-hour driving radius include Valley Forge National Historical Park; Pennsylvania’s French Creek (Berks and Chester Counties), Evansburg (Montgomery County), Marsh Creek (Chester County), and Ridley Creek (Delaware County) State Parks; Delaware’s Brandywine Creek, Walter S. Carpenter, and Lum’s Pond State Parks; Maryland’s Susquehanna and Elk Neck State Parks and Fair Hill Natural Resources Area; Pennsylvania’s Octorara Preserve (recently redesignated the Valley Forge State Forest, District #17); the bi-state White Clay Creek Preserve (Chester County and New Castle County); Philadelphia’s Fairmount Park; Delaware County’s Clayton Park; Chester County’s several county parks; and New Castle County’s Delcastle Recreation Area, Iron Hill Park, and Middle Run Natural Area, among others. Examples of private preserves open to some form of public access that also augment regional recreational roles include Woodlawn Trustees lands; Longwood Gardens; Winterthur; the Hagley Museum grounds; Mount Cuba Center; Delaware Nature Society facilities; the Brandywine Conservancy’s Laurels and Waterloo Mills Preserves; Natural Lands Trust’s Stroud Preserve; and Tyler Arboretum.

Community Recreational Facilities: Community recreational facilities are usually provided by municipal government to serve a variety of local outdoor recreational needs on a regular basis. It is a generally accepted community planning premise that a municipality will fulfill the recreational needs of its residents with recreational facilities fully or partially owned and operated by the municipality and not rely entirely on federal, state, or county parks or facilities owned and operated by another municipality. In many municipalities, a system of parks, nature preserves, trails, and/or freestanding recreational facilities might collectively meet local needs in a variety of settings. Ideally, such a system will distribute facilities within walking distance via paths or trails or within a short drive of most residents. Municipally owned facilities

might be augmented by those offered by private and quasi-public providers and other municipalities or other public agencies. Duplication of services is not necessary if the broad community is reasonably well served, regardless of the range of actual providers. Examples of community recreational facilities currently or potentially serving Chadds Ford Township residents include the new (i.e., as of the date of this plan) Township open space adjacent to the Estates at Chadds Ford, facilities at the Unionville-Chadds Ford schools, the Brandywine Battlefield Park, Chadds Ford Historical Society properties, the Brandywine River trail between the Brandywine River Museum and the Chadds Ford Historical Society, and, to a certain extent, park facilities in neighboring Birmingham, Pennsbury, and Concord Townships.

It is also appropriate to inventory the actual recreational programs that Chadds Ford's residents can utilize. The municipal role in recreational programming is often quite limited as it is in Chadds Ford Township. However, it is appropriate for Chadds Ford officials to monitor recreational demand, to encourage local residents' access to facilities and programs provided by others, and to monitor need for future municipal action. Recreational programs are far-ranging, from organized and individual athletics to arts and crafts, social and cultural programs, and the special community events that may be available to children, youth, adults, senior citizens, and handicapped individuals.

Available recreational programming may be offered by a variety of agencies and organizations, including other municipal and county agencies, local school districts, fire companies, churches and social organizations, local YMCA branches, and local youth or adult athletic leagues (e.g., the Kennett-Avondale-Unionville Little League and Brandywine Youth Organization, both heavily utilized by Chadds Ford residents). Most local recreational programs are offered on the basis of local demand and, as such, are flexible enough to meet changing needs over time. Collectively, existing programming agencies appear to be offering reasonable recreational opportunities for Chadds Ford residents, although few are offered within the Township. Lack of nearby accessibility is particularly critical for programs geared to young children and other transportation-dependent individuals, including many elderly persons. Establishment of programs at nearby community parklands may facilitate efforts on the part of recreational programming agencies to directly serve Chadds Ford residents at little or no direct cost to the Township.

Recreational Needs Analysis: Results from the "Chadds Ford Township Open Space Survey of Residents" indicated a relatively strong preference among Chadds Ford residents for individual activities not involving structured recreational facilities, e.g., walking, hiking, and jogging. Support for organized recreational activities or structured facilities, such as sport courts and fields, was much weaker. Further and as shown on Table 4 - 1 (Chapter 4), virtually half of Chadds Ford's working residents commute 30 minutes or less to their jobs, meaning that these citizens with shorter commutes have the greatest opportunity to enjoy local, nonstructured recreational opportunities such as walking on trails.

It also is useful to examine nationally accepted recreational standards; i.e., those established by the National Recreation and Park Association (NRPA) are utilized to help evaluate need for selected recreational facilities. Recreational needs are expressed in number of facilities per 1,000 residents, which is a rather large planning threshold for use in a municipality of Chadds Ford's size. Thus, such standards should not be viewed as entirely definitive but, rather, as setting a gross order of magnitude of "need." For this purpose, the Township's estimated 2005 population of 3,500 was used to approximate the present service population (equating to 3.5 X 1,000), along with a 2025 planning horizon population of 5,100, as documented in Chapter 4 (5.1 X 1,000). The following table presents the results of this analysis for Chadds Ford.

Chadds Ford Township Open Space Plan Recreational Open Space Map 7-1

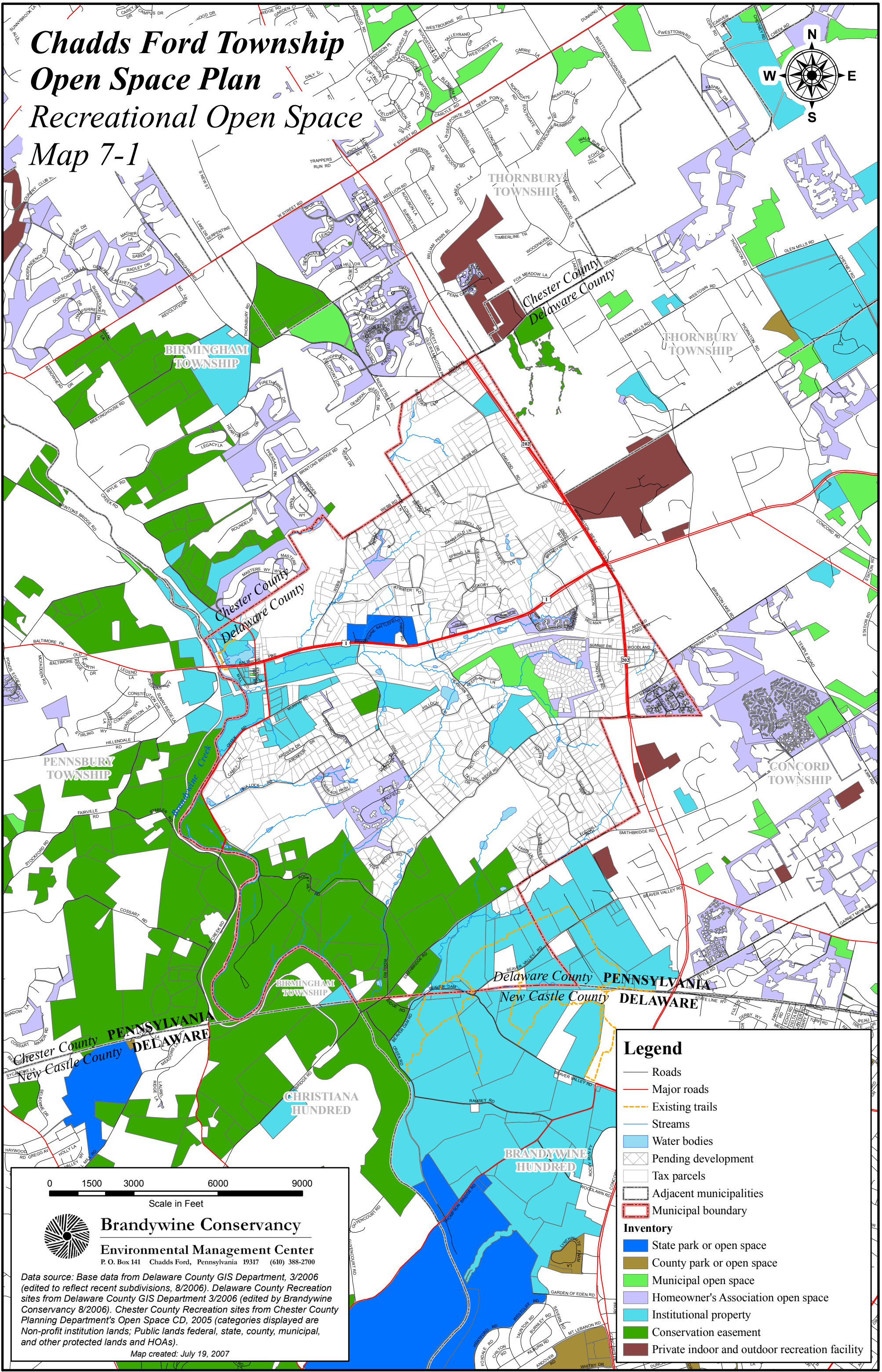


Table 7 - 1: Recreational Facility Needs, Chadds Ford Township, 2005 and 2025

Population-Based Standard	Current Inventory	2005 Need (3.5 x 1,000)	2025 Need (5.1 x 1,000)
Baseball/Softball Fields: 0.4/1,000	0	1	2
Football/Soccer/Field Hockey Fields: 0.2/1,000	0	1	1
Tennis Courts: 0.5/1,000	0	2	3
Basketball Courts: 0.2/1,000	0	1	1
Volleyball Courts: 0.2/1,000	0	1	1
Community Parkland: 10.0 acres/1,000	50 + ac., undeveloped	35 ac.	51 ac.

Source: NRPA; Chapter 4

NRPA also offers the following spatial needs for standard field and court facilities, including the following:

Standard Field Sizes

- ◆ regulation baseball: 3.0 acres
- ◆ junior baseball: 1.2 acres
- ◆ softball: 1.8 acres
- ◆ football, soccer, or field hockey: 1.7 acres

Standard Court Sizes

- ◆ two regular tennis courts: 0.35 acre
- ◆ regular/full basketball court: 0.2 acre
- ◆ regular volleyball court: 0.1 acre

While gross acreage standards are easily met with the land protected for Township uses adjacent to the Estates at Chadds Ford, along with the potential for some recreational use at the Township Building property, there is a clear need for development of some field and court sport areas, based on NRPA standards. However, NRPA standards do not necessarily imply that such areas be structured for organized sport use. Recreational development may largely be limited to establishment of relatively flat areas mowed for “pick-up” or practice use and/or set aside for potential future recreational development. As the Township demographic profile shifts over time, the needs implied by NRPA standards also may become more evident to residents. It also is always important to recognize that local facilities are most important to the youngest and oldest segments of the population, who tend to be transportation dependent.

Trails: Trails are an important recreational resource, both as links to other recreational facilities and as an alternate means of transportation. They may be incorporated into designated open space areas or may be independent, extending recreational opportunity beyond such areas. While they only occupy a narrow, linear land area, they may offer extensive access, both physical and/or visual, to the broad open space

landscape. Trails may be geared to one or more types of use, including hiking, jogging, running, bicycling, equestrian use, and cross-country skiing. According to state recreational planning documents, bicycle paths are the most needed recreational facility in southeastern Pennsylvania. Survey results also indicated that trails were at the top of the list of desired recreational facilities for most Chadds Ford residents, with opportunities for hiking, walking, and jogging. Current demographic information shows an above-average age profile for Chadds Ford residents (Chapter 4) while national and state recreational information shows recreational walking as one of the top activities for senior residents. Yet walking along local roads has become increasingly unsafe.

Trails planning in Chadds Ford should logically look at key destinations within the Township and link those destinations with trails where opportunities may exist. Institutional and municipal lands are logical "destinations" for connection, as are protected open spaces and natural areas. Examples include the Township Building, the Township open space adjacent to the Estates at Chadds Ford, Brandywine Battlefield Park, Chadds Ford Historical Society, Brandywine River Museum and associated open lands, Brandywine Creek State Park (just across the municipal boundary in Delaware), and the Woodlawn Trustees lands. Other logical destinations include the historic Villages of Chadds Ford and Dilworthtown, as well as the concentration of mixed-use development at and in the vicinity of Painters Crossing.

A key to proper trail usage is a meaningful system of trails with logical beginning and ending points, as described above. Accordingly, trails should be located where easily managed and monitored, and where impacts to residential properties can be minimized. Minimum design standards required for intended trail use type(s) and landowner permission should be accommodated. Within road rights-of-way, trails may be established parallel to but separate from the vehicular cartway.

Trail easements may be voluntarily acquired from willing owners of institutional or other lands where potential trail locations do not coincide with publicly accessible lands or public rights-of-way. Where formal provision for recreational trail access is made across private lands, landowner liability has been specifically limited by Act 586 of 1987. Except in cases of "malicious" failure to warn of hazardous conditions, the Act releases landowners from liability for injury to person or property occurring when recreational use is permitted without charge. The Act also specifically defines and prohibits "recreational trespass," including vandalism, littering, and failure to leave gates, fences, etc. in the same condition as they were found.

Over-use of trails can also result in real or perceived problems, ranging from erosion of trail surfaces and habitat damage to deterioration of the recreational experience. Clearly, the more extensive the available network of trails, the less likelihood that individual segments will suffer from over-use. It is important that trail rights-of-way or easements be clearly documented as to any access restrictions, maintenance or management responsibilities, and monitoring rights or obligations. As appropriate, such issues should be resolved to the satisfaction of the Township prior to approval of any subdivision or land development plan providing formalized trail access.

Fee in Lieu Thereof Policy: The Municipalities Planning Code (MPC) specifically provides for mandatory dedication of recreational lands or fees in lieu thereof. These provisions require formal adoption of a recreation plan as a prerequisite to implementation of mandatory dedication provisions. This Open Space Plan does serve that purpose. It is important to note that dedication of recreational lands or payment of a fee does not supplant an applicant's obligation to provide general open space areas or trail rights-of-way.

Both lands and fees obtained through required dedication must be used to provide park or recreational facilities accessible to future residents of the development from which they were obtained. Lands dedicated from the same tract under application for development approval obviously will serve future residents as long as such lands are appropriate and accessible for recreational purposes. Fees in lieu thereof, where utilized for recreational development serving the entire community, regardless of specific location, arguably also serve the development subject to application. Any funds obtained through fee in lieu thereof also may be used to match potential state and/or county grant funds for acquisition or development.

Fees collected must be earmarked for specific recreational facilities and deposited into interest-bearing account(s) to be expended only for those facilities for which the fees specifically were collected. If the Township does not utilize the specified fees within three years of collection, the developer who paid the fee may request a refund plus interest accrued. By the same token, it is likely that some applicants will forego opportunities to claim refunds, whether in the interest of public relations or due to the manner in which they treat the fees paid for tax purposes. At the time of fee dedication, it is recommended that the Township request that the applicant sign a voluntary waiver to future refund. Any fee in lieu thereof program should be carefully reviewed by the Township's Solicitor.

A common method to establish recreational fee in lieu thereof requirements is to set a land dedication requirement and allow for a fee in lieu thereof based on the value of the land otherwise required. An example used in several nearby municipalities is a dedication requirement of one acre per twenty new homes or 0.5 acre per new unit. Where a fee is accepted in lieu of land, an appraisal typically would set the equivalent value. However, to reduce the burden on the applicant, the Township could simply set a reasonable per-unit fee, based on expert testimony as to prevailing land values, and revisit the fee on a periodic basis.

Some municipalities separately require dedication of recreational facilities and/or commensurate fees, in addition to land dedication or fee in lieu thereof. It is not unreasonable to assume that a fee for recreational development might comprise a separate dedication of funds in the same amount the land dedication would have required. It also is not unreasonable to require an additional dedication for trails.

To the extent that any developer dedicated appropriate lands or facilities, any fee should be correspondingly reduced. In cases where open space is being designated through cluster planning, it may be configured to augment the recreational value of lands/facilities otherwise requested for dedication, and appropriate credit may be granted. However, land dedication alone is very unlikely to ever meet the full realm of recreational need for the subject application and, therefore, some fee is nearly always justified.

Finally, the mandatory set-aside of recreational land or payment of a fee in lieu thereof can be made applicable to nonresidential subdivisions and land developments. A number of municipalities in the region now employ this measure as a means to meet recreational demands posed by nonresident employees, shoppers, and other visitors to the Township. The amount of land or fee can be based on the amount of building floor area and varied somewhat by type of use. Typically, institutional uses are exempted from these provisions.

Community Recreational Funding. With respect to funding for community recreational development, including trails, Chadds Ford should continue to obtain both lands and appropriate facility development through the development approval process given the potential expense otherwise involved. All new development may be required to adequately provide for the recreational needs of future residents or employees, including both appropriate lands and commensurate recreational development. As previously described, developers also may be required to pay to the Township a fee in lieu thereof of actual recreational dedication.

The Commonwealth of Pennsylvania also has grant programs to assist municipalities in funding the acquisition and development of parkland and related open space and facilities. Specifically, the Pennsylvania Department of Conservation and Natural Resources makes grant funds available for parkland acquisition, development, and rehabilitation and for technical planning assistance for open space and recreation projects. DCNR also funds planning, acquisition, and development of trails projects, rivers conservation planning and implementation projects, and land trust/conservation organizations for acquisition and planning of open space and natural areas.

CHAPTER 8: OPEN SPACE PROTECTION PRIORITIES and RECOMMENDATIONS

This chapter documents the categories of Chadds Ford's lands that create the Township's unique community character, remaining rural atmosphere, and quality of life. Such lands protect public health, safety, and welfare through their critical roles in preventing floods, supplying drinking water wells, and supporting cultural resources, among a myriad of other benefits as documented in Chapter 6. Accordingly, these lands should be priorities for permanent protection, primarily through the purchase and/or voluntary donation of easements (i.e., severance and retirement of development rights) or acquisition of the fee simple title.

Implementing a program of land protection will achieve the planning goals and objectives established in Chapter 2 and help to moderate the growth potential documented in Chapters 4 and 5. Specifically, attaining these goals and objectives will have environmental, cultural, and financial benefits for Township residents. In particular, the fact that the service costs (e.g., schools, public safety) associated with residential development far outweigh the revenue generated by such development has been widely documented by the American Farmland Trust, PennState Cooperative Extension Service, the Brandywine Conservancy, and others. It is also notable that the pursuit of permanent land protection is consistent with the results of the "Chadds Ford Township Open Space Survey of Residents" as summarized in Chapter 3 and presented in Appendix B.

Open Space Protection Categories: This section identifies and describes Chadds Ford's high priority land protection categories; the noted resources may be viewed on the maps included in Chapter 6. As a group, these priorities are shown on the Open Space Protection Focus Areas map (#8 - 1). It is notable that while some lands are already protected, the resources these lands support often still need management to fully realize their value to the Township's residents and non-human inhabitants. And as noted on the Focus Areas map, some smaller areas are not shown on the map but are worthy of protection. As the plan's recommendations are implemented, some of these smaller areas may take on increased importance to meeting this plan's goals. For example, a small field may become significant to protect in order to extend a previously established trail or the biological integrity of a large protected woodland may be enhanced through preservation of a smaller, abutting woodland under different ownership.

Chadds Ford's focus areas for open space protection are described as follows:

- ◆ **Cropland, hayfields, pasture, and meadows.** This category of landscapes, defined by its row crops, fields mown one – three times/year for wildlife habitat or hay production, and fenced areas to contain livestock, typically comprises prime agricultural soils. Prime agricultural soils are rated as some of the most important in the country for food and fiber production due to their fertility and drainage, according to the U.S. Department of Agriculture, Natural Resources Conservation Service. Farm fields and meadows also provide wildlife habitat and contribute to groundwater infiltration of drinking water wells; the latter is an important benefit to residents served principally by private and community drinking water wells. Farm fields and meadows also often provide scenic vistas, and many are associated with significant historic events that have defined the Township and the region's past. Where protected, some fields may serve as recreational open spaces (see Chapter 9).

- ◆ Water and/or related land resources. Interrelated areas of wetlands, floodplains, hydric soils, riparian buffers, and first-order stream headwaters naturally manage stormwater and contribute directly to the prevention of flooding, allow for groundwater infiltration of drinking water wells, and provide a wide range of important wildlife habitats, among other values. In addition, these areas make a significant contribution to the Township's rural character as defined by its rolling hills, valleys, and streams and creeks.
- ◆ Woodlands. Chadds Ford's woodlands are the best type of land cover to facilitate groundwater infiltration to drinking water wells; they also provide natural erosion and flood control. Woodlands provide significant habitat for birds, mammals, and plants, most notably in their core forest interior that is removed from woodland edge conditions. Woodlands also contribute to the diversity of the Township's scenic landscape qualities. Important resources and features that overlap woodlands include steep slopes and first-order stream headwaters.
- ◆ Greenways. Greenways are networks that organize the Township's natural resources to reflect the needs of wildlife to move through protected corridors as well as for water to move along its normal course to the next downstream discharge point. Overall, protected greenways can benefit Chadds Ford's water, biologic, land, soil, and historic resources.
- ◆ Historic and archaeological resources. Historic structures and sites, as well as archaeological resources, are extensive in Chadds Ford. Also important for protection are historic and locally significant landscape elements such as walls, hedgerows, meadows, and large fields and woodlands, especially where their extent is the same as or mimics the landscapes of historic periods or events. Historic resources are also important contributors to the Township's overall scenic quality. While largely hidden, archaeological resources are important assets in the Township's historic inventory.
- ◆ Scenic resources. Scenic views and vistas offer pleasant and largely unobstructed views of the Township's open spaces and are significant contributors to Chadds Ford's rural quality of life. Scenic areas range from historic roads (defined by their designation as such and/or by their width, curvature, roadside trees, walls, structures) to open fields, meadows, woodlands, and water resources such as streams and their valleys. Scenic areas typically contain other natural and cultural resources considered worthy of protection elsewhere in this chapter.
- ◆ Other features and/or resources. Included in this category are features such as steep slopes, which are important to protect for maintenance of scenic and hydrologic quality, among other reasons, as well as significant biological areas such as those that host known populations of rare plants.

Open Space Protection Recommendations: This section recommends the actions needed to protect the previously identified high-priority resources and in turn to meet this plan's goals and objectives as laid out in Chapter 2. Chapter 10 defines the party(ies) responsible for carrying out the recommendations within suggested time frames; this chapter also outlines potential sources of funding and technical assistance to guide implementation.

Overall, the recommendations provided herein can take advantage of existing “tools” in the Township’s “toolbox” to protect open space, or new or revised tools are suggested where appropriate. For example, Chadds Ford uses a website to inform residents of Township business; the educational recommendations could utilize this website as well as other forums for execution.

Further and given the complex interactions among the Township’s land and water resources, the following recommendations are broad, creative, and serve to “push the envelope” for Chadds Ford officials, residents, and other stakeholders concerned about the Township’s ecological well-being, many of whom are directly responsible for implementation of this chapter’s recommendations (see Chapter 10). As documented in this Open Space Plan, Chadds Ford’s ecological health has a direct effect on the public health of Township residents and visitors through protection of drinking water supplies, flood control, and provision of opportunities to walk, among other benefits. It is also noteworthy that natural resource capabilities and constraints led Chadds Ford’s earliest settlers to the better farming and building locations. As the Township grows, the continued respect for natural resources can result in a pattern of development that is economically viable while minimizing negative impacts. The following recommendations emphasize the restorative and renewable powers of Chadds Ford’s natural resources, so that the Township can actually improve many of its key environmental and ecological indicators, including watershed health and water quality, woodland cover, and wildlife habitat quantity, health, and variety. For this to occur, though, open space should be both preserved and managed to maximize the benefits it provides.

A similar respect for and approach to cultural resource (i.e., archaeological, historic, scenic) protection is also appropriate. This Open Space Plan documents Chadds Ford’s wealth of historic structures and sites, many of which are significant at the national, state, and local levels; the as-yet-undiscovered archaeological resources which have similar significance; and the fields, valleys, and woodlands that, when taken together, yield a picture of rural quality of life that deserves protection. Accordingly, the following recommendations also consider cultural resource protection.

Permanent Land Protection

1. Carry out open space protection efforts so as to permanently preserve high priority lands, either through the landowner’s voluntary donation or sale of a conservation easement or through outright purchase from a willing landowner. Target these landowners for outreach and educational efforts. Develop and distribute information regarding land protection methods for interested landowners.
2. As an umbrella to more specific educational efforts recommended herein, undertake broad outreach and education regarding implementation of these recommendations to reach residents and landowners who will ultimately support or participate in open space protection. Consider holding informational meetings at least once per year.
3. Use all sources of funding (e.g., Act 153/open space tax revenue, future fees-in-lieu-of, grants, fundraising, borrowing, cost-sharing) to create a pool of funds that can be leveraged to protect and manage high priority lands.
4. Explore partnerships with Delaware County, Brandywine Conservancy, Natural Lands Trust, and other local, regional, and nonprofit partners regarding the protection, use, and management of new and existing open space/natural lands.

5. Conduct outreach to owners and managers of institutional lands with the goal of securing a conservation easement or other means to permanently protect such lands. A conservation organization dedicated to permanent land protection should hold any easement on institutional land.

Resource Management/Education

6. Develop and implement natural area (woodland, wetland, stream, and meadow) protection, management, and restoration plans for Township-owned lands such as the Township Building parcel and the future nature preserve at Township open space adjacent to the Estates at Chadds Ford. Become familiar with basic natural area management/restoration principles and methods.
7. Specifically, focus efforts on the protection and improvement of Harvey Run's watershed (especially its headwaters), riparian buffers, first-order tributaries, and wetlands/floodplains, given that it drains approximately half of the Township's land area.
8. Develop plans to restore wetlands on the Township building site, as affected by construction and runoff, and incorporate these plans into other public outreach and use efforts.
9. Homeowner Association Open Space Management Plans should address natural area management/restoration issues and should be monitored to ensure compliance with Open Space Management Plan recommendations.
10. Continue consideration of a local land trust that could own and facilitate the management of small pieces of land that no other conservation entity may wish to own. The land trust could also hold conservation easements on small pieces of land and on Homeowner Association lands created through the land development process.
11. Offer education to owners of large forested interiors and/or outstanding natural areas about the value of the resources on their lands, especially wildlife habitats and greenways; provide assistance regarding the management measures that will improve or protect the habitats and resources within the area(s).
12. Use a range of tools (e.g., education, technical assistance, grants, letter writing, ordinance revisions) to reforest woodland and wildlife gaps as well as to maintain or restore forested headwaters, especially those in close proximity to the first-order stream that drains them. Consider wildlife crossing(s) at Route 202, especially given the proposed widening of the road through Chadds Ford.
13. Coordinate with Delaware County as it develops the county Greenways Plan to ensure that Chadds Ford's resources, especially its greenways, are considered. Since these resources continue into adjacent jurisdictions, not just Delaware County, consider coordination as well with Chester County and the State of Delaware to embrace a regional approach for implementation.

Water Resource Protection/Restoration

14. Protect and restore headwater areas wherever possible, especially on public lands and with willing landowners.
15. Promote protection and restoration of 100-foot wide forested riparian buffers through landowner education, voluntary planting, and consideration of ordinance revisions.
16. Where existing development occurs within headwater areas, identify opportunities to provide additional stormwater management and tree planting. Pursue funding, for example, through Pennsylvania Department of Environmental Protection Growing Greener or TreeVitalize programs.
17. Wetland restoration, coordinated through pertinent interest groups and using the previously identified outreach, education, etc. tools, should be undertaken to restore previously filled or altered acreages.
18. Consider identification and analysis of wetlands on a local scale, since the maps used herein were produced nationally. Coordinate this inventory with wetland delineations previously provided by land development applicants.

Land Development Considerations

19. Consider development and adoption of an Official Map to identify key areas for protection in accordance with this Open Space Plan's recommendations.
20. Where new development occurs in headwater areas, consider ordinance revisions limiting impervious coverage percentages.
21. Continue vigilant administration of the Township's stormwater management ordinance (#104) regarding groundwater infiltration and improvement of runoff quality. Consider requiring higher recharge standards for headwater areas and for groundwater-fed wetland areas. Consider ordinance revision to reduce unnecessary requirements for impervious cover in proposed land development projects (e.g., cartway/roadway widths, parking requirements, building setbacks for shorter driveways, etc.). Additional considerations include minimization of impacts to natural stream channel and bank geometry, especially from excessive stormwater runoff; maintenance of aquatic communities and their habitats, including wetlands; and minimization of piped discharges as well as surface runoff from lawns, parking lots, and other developed areas directly into streams, ponds, and wetlands.
22. Avoid excessive new development within hydric soils by considering the establishment of limits on disturbance of hydric soil units.
23. Consider increased protection of forest interiors and higher classes of woodlands as can be provided through ordinances.
24. Consider revisions to the Planned Residential Development Ordinance to reduce its current provisions which allow higher density build-out that may be inappropriate in many areas of the Township which support extensive natural, archaeological, historic, and scenic resources.

25. Continue vigilant and consistent administration of the Zoning Ordinance's Baltimore Pike Overlay District given its stated goals of protecting the Township's bucolic character and water resources.

Historic and Archaeological Resource Protection

26. Develop an historic preservation plan for Chadds Ford that will facilitate historic resource evaluation, establish funding needs, and integrate historic preservation into broader municipal planning efforts.
27. Encourage and assist owners of historic sites and structures with the permanent protection and appropriate restoration, where applicable, of their resources.
28. Assist the Chadds Ford Historical and Architectural Review Board where needed to fully implement and administer the Township's Act 167 Historic District ordinances.
29. Consider an ordinance to establish a Chadds Ford Historical Commission; the Commission would evaluate protective strategies for historic resources and serve as an advisory group to Township officials regarding historic matters.
30. Consider ordinance revisions to promote the permanent protection of historic sites and structures not otherwise covered by the Township's Act 167 ordinance and encourage the protection of locally-significant landscape elements such as walls, hedgerows, meadows, and large fields and woodlands.
31. Maintain Township participation in the Brandywine Battlefield Task Force to support its efforts to promote the Brandywine Battlefield National Historic Landmark and to permanently preserve otherwise undeveloped lands within the Landmark.
32. Separately or as part of other outreach efforts, provide educational opportunities regarding the Township's historic resources, especially those that are publicly accessible such as the Mother Archie's church site (Township-owned), the Brandywine Battlefield Park (state-owned), and the John Chads House (owned by the Chadds Ford Historical Society).
33. Continue following the ongoing effort to consider designation of the Brandywine region as a National Heritage Area and ensure that Township officials, residents, and other stakeholders are informed of these efforts to expand support of this initiative.
34. Promote communications with the Chadds Ford Historical Society, the Brandywine Battlefield Park, the Brandywine Battlefield Task Force, the Sanderson Museum, the William Brinton 1704 House, and the Brandywine River Museum regarding matters of mutual interest.
35. Facilitate historical preservation through ongoing update of the Township's inventory of historic resources.

36. Research the files of the Township's archaeological sites at the Pennsylvania Historical and Museum Commission in Harrisburg to create a complete record of such sites for Chadds Ford.
37. Educate Township residents regarding the value of existing and potential archaeological sites in Chadds Ford, with the goal of avoiding disturbance until professional assistance is sought.

Scenic Resource Protection

38. Encourage the cooperative work of the Brandywine Valley Scenic Byway Commission (BVSBC) to protect the scenic nature of the Brandywine Valley Scenic Byway as it passes through Chadds Ford. Specifically, the Township's role in the BVSBC (e.g., in the "vision and values" exercise just underway at the time of plan development) should facilitate consistency between this plan and the BVSBC's efforts. Further, the proposed development of a corridor management plan will address similar goals in this plan such as pedestrian and bicycle circulation and open space protection.
39. Educate landowners within the Brandywine Valley Scenic Byway about the contribution their land makes to the Byway; similarly, conduct broad education, Township-wide, regarding the importance of protecting scenic areas to the quality of life in Chadds Ford.
40. Consider ordinance revisions to encourage the permanent protection of Chadds Ford's scenic areas and vistas, especially where those areas also contain other significant natural and/or cultural resources. Likewise, consider the use of ordinances to maintain the scenic qualities of the Township's local roads, while planning for needed improvements.

CHAPTER 9: RECREATIONAL OPEN SPACE PRIORITIES and RECOMMENDATIONS

As documented in Chapter 8, a wide variety of resources in Chadds Ford contribute to the Township's quality of life. Permanently protecting these resources benefits the public health and welfare; benefits are extended where these lands have a recreational component (e.g., picnic area, trail). Accordingly, this chapter identifies those priorities for provision of recreational opportunities for Township residents, whether in conjunction with resource protection or outside of it. Implementing a program of land protection and securing of recreational access will achieve the planning goals and objectives established in Chapter 2. Further, this program is consistent with the results of the "Chadds Ford Township Open Space Survey of Residents" as summarized in Chapters 3 and presented in Appendix B.

Recreational Access Priorities: Chadds Ford's high priorities for recreational access (i.e., trails, recreational fields and facilities) are described below. Specific trail routing is not included in this Open Space Plan and, as such, is not shown on a map in this plan. Nonetheless, some trails as well as other recreational facilities and fields may become available when priority open spaces such as hayfields, pastures, or meadows (Chapter 8) are protected as shown on the Open Space Protection Priorities Map (8-1).

- ◆ Trails. Linear open spaces are potentially important for pedestrian, bicycle, equestrian, cross-country skiing, and snowshoeing uses and could appropriately interconnect protected lands (e.g., by state, county, Township), residential neighborhoods, etc. Trails may be sited and administered such that they maximize the user's appreciation of natural and cultural resources, as described in Chapter 6.
- ◆ Recreational fields and facilities. 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, institutional lands, or other protected open spaces to accommodate facilities such as a picnic area, nature study site, and/or practice play fields. Similar to trails, such passive and active recreational uses and facilities may be part of open spaces protected for other reasons.

Recreational Access Recommendations: This section recommends the actions necessary to meet the previously identified priorities for recreational access, while Chapter 10 defines the party(ies) responsible for carrying out the recommendations as well as the applicable strategies, time frames and potential sources of funding and technical assistance.

1. Undertake broad outreach and educational efforts regarding implementation of plan recommendations to reach residents and landowners who will ultimately support or participate in recreational facility provision/use. Consider holding informational meetings at least once per year. Become familiar with federal and other funding sources.
2. Use all sources of funding (e.g., Act 153/open space tax revenue, future fees in lieu thereof, grants, landowner donation of value, fundraising, borrowing) to create a pool of funds available to provide access to passive natural areas.

3. Begin preparations to own and manage the recently-dedicated Township open space adjacent to the Estates at Chadds Ford as a nature preserve/natural area, including consideration of a master plan for a range of appropriate uses.
4. Future recreational planning should be focused on providing passive and “low-key” active opportunities such as trails, nature study and observation, picnic areas and informal or practice play fields. Consider looping of trails, as well as linkages of destinations, especially between neighborhoods willing to be connected by a walking trail.
5. Specifically, pursue a naturally-surfaced pedestrian trail connection between the Township building and the Brandywine Conservancy campus, where an existing trail already connects the Brandywine Conservancy and the Chadds Ford Historical Society. Beyond the Historical Society, the potential exists for connection to trails under consideration in Birmingham Township, Chester County.
6. As allowed by the Pennsylvania Municipalities Planning Code, implement the ordinance and other programmatic requirements to require that land development applicants dedicate land, or pay fees-in-lieu-of, to meet recreational open space needs, including passive natural areas and trails.
7. Continue to support the “Brandywine Greenways Plan,” a multi-municipal and multi-stakeholder effort to establish a publicly-accessible greenway along the Brandywine Creek between Downingtown Borough (Chester County) and Brandywine Creek State Park in New Castle County, passing through Chadds Ford Township.
8. Maintain support of the Brandywine Valley Scenic Byway Commission; e.g., the proposed development of a corridor management plan will address recreation-related issues such as pedestrian and bicycle circulation and open space protection.

CHAPTER 10: IMPLEMENTATION STRATEGIES

The short and long term strategies outlined in this chapter should be followed for Chadds Ford to effectively implement this Open Space Plan's recommendations (Chapters 8, 9) over the plan's 20-year planning period with 10-year review (Chapter 1). As noted in both Chapters 8 and 9, actions are recommended to specifically result in the permanent protection of open space lands that sustain key natural and cultural resources and that provide certain types of recreational access. The dual outcomes of land preserved in perpetuity and the creation of recreational opportunities will meet this plan's goals and objectives (Chapter 2). In turn, the goals and objectives reflect the Township's demographic trends, existing land uses, natural and cultural features, and its recreational open spaces (Chapters 4, 5, 6, 7). Public input is reflected in the development of all aspects of this plan, as summarized in Chapter 3. Finally, it is noted that this chapter is intentionally general so it can respond to changes in community values and community characteristics.

Implementation of the Open Space Plan's recommendations will be the direct responsibility of elected and appointed Township boards and committees. Their actions will likely be supported at various times by county, state, and federal agencies; landowners and developers; land conservation interests represented by groups such as the Brandywine Conservancy and the Natural Lands Trust; and existing and future residents of Chadds Ford. Specifically, this plan envisions that the Chadds Ford Open Space Committee will guide many of the recommendations provided herein with oversight and direction by the Board of Supervisors. The Planning Commission is also predicted to have specific roles in implementation. The other interest groups noted at the beginning of this paragraph will inform and, in many cases, play critical roles in the implementation process through efforts such as funding, negotiation, technical assistance, public participation, etc. The following table identifies the abbreviations of those parties responsible for implementation, as the abbreviations are subsequently used in this chapter.

Table 10 - 1: Organizations Responsible for Implementing the Chadds Ford Township Open Space Plan

Abbreviation	Full Spelling
BOS	Chadds Ford Township Board of Supervisors
PC	Chadds Ford Township Planning Commission
OSC	Chadds Ford Township Open Space Committee
MSA	Chadds Ford Township Municipal Sewer Authority
HARB	Chadds Ford Township Historical Area Review Board
HC	Chadds Ford Township Historical Commission (see Immediate Action Items)

Additional considerations for implementation of this chapter's recommendations include funding and technical assistance. Various sections of this plan note where major funding sources are or could be available for open space protection and provision of recreational opportunities; these include grants, fees in lieu thereof, open space tax revenue, etc. Specifically, the current Township budget is included in Appendix

D of this plan to document current open space revenues (e.g., tax) and expenditures (e.g., Mother Archie's Church, included with Building maintenance). Further, the Chadds Ford Board of Supervisors also provides financial support for the Open Space Committee's operations in the Township's annual budget. With respect to technical assistance, many sources exist; for example, these include governmental agencies such as the Delaware County Planning Department and the USDA/Natural Resources Conservation Service, as well as nonprofit organizations such as the Brandywine Conservancy and the Natural Lands Trust.

As previously noted, the recommendations of this Open Space Plan are designed for implementation over a 20-year time frame with a progress review at 10 years. Accordingly, the following recommendations, with the noted responsible party, are categorized according to:

- ◆ immediate action items, which should be started as soon as the plan is adopted by the Board of Supervisors;
- ◆ short-term action items, which are intended for initiation within the next two to five years;
- ◆ standing policy and ongoing coordination, some of which already are underway with other actions recommended for initiation as soon as is practicable and to be continued on an ongoing basis; and,
- ◆ suggested follow-up planning activities, which can be initiated at any time during the planning period.

Recommended Immediate Action Items

1. Develop and execute a coordinated effort to identify, educate, and negotiate with the owners of high priority open spaces to effect permanent protection of those lands either through purchase and/or donation of conservation easements or outright acquisition of ownership in fee simple. (BOS, OSC)
2. Consider appointment of a Chadds Ford Historical Commission. (BOS)
3. Initiate a regular series of educational programs that collectively or individually address the following audiences and topics: (OSC, HC)
 - ◆ Open space landowners: land protection methods; financial benefits of easement donation
 - ◆ Township residents: public health, cultural, and ecological values inherent in, and financial benefits of, permanent land protection
 - ◆ Township residents: importance of existing and potential archaeological sites; historic resources; and the multitude of resources contained within scenic areas, especially the Brandywine Valley Scenic Byway
 - ◆ Institutional landowners: organizational benefits of permanent land protection
 - ◆ Owners of forested interiors and/or outstanding natural areas: value of the resources on their lands, management steps that can improve or sustain the habitats on those lands
 - ◆ Owners or developers of land containing headwaters and riparian buffers: re-planting and/or restoration of currently non- or partially-forested buffers
 - ◆ Owners of historic sites and structures: options for permanent protection and appropriate restoration, where applicable

- ◆ Township residents: benefit of passive recreational opportunities as will be created under the Open Space Plan
- 4. Identify and pool funding to protect important open spaces; especially to leverage funds currently collected by the Township under Act 153, Open Space Preservation by Local Governments. Also begin a process to enact a fee in lieu thereof program to support recreational access and improvements, as enabled by Act 247, the Municipalities Planning Code. (BOS, OSC)
- 5. Further the ongoing process to form a local land trust. (BOS, OSC)
- 6. Initiate and implement a plan to own and manage the Township open space adjacent to the Estates at Chadds Ford, addressing passive recreational uses and improvements, as well as natural resource protection, management, and restoration. (BOS, OSC)
- 7. Commence recreation-specific planning to meet Township needs for recreational uses such as looped trails, nature study and observation, picnic areas, and informal or practice play fields and to meet the requirements of Act 247 if applicable. (BOS, OSC)
- 8. Consider development of a naturally-surfaced pedestrian trail connection between the Township Building site and the Brandywine Conservancy campus. (BOS, OSC)
- 9. During development and ultimate implementation of the Township's comprehensive plan, ensure inclusion of this plan's open space protection and recreational access recommendations (as well as other pertinent plan components), since they represent Chadds Ford's commitment to protecting and appreciating its history, rural character, and natural resources. (BOS, PC, OSC)

Recommended Short Term Action Items

- 10. In coordination with the Sewer Authority and other interested parties, develop and implement a plan to restore wetlands on the Township Building site, and incorporate these plans into other public outreach and use efforts; e.g., previously recommended educational programs or interpretive material for users of the trail that may start at the site. Overall, initiate and execute a natural area protection, management, and restoration plan for this site. (MSA, OSC, HC)
- 11. Consider wildlife crossing(s) at Route 202. (BOS, OSC)
- 12. Pursue identification and analysis of wetlands on a local scale. (PC, OSC)
- 13. Commence efforts to regularly update the Township's inventory of historic resources. (HC, HARB)
- 14. Research Pennsylvania Historical and Museum Commission files for additional Chadds Ford archaeological data. (HC, HARB)

Recommended Standing Policy and Ongoing Coordination

15. Coordinate with Delaware County's development of a regional Greenways Plan; extend greenways coordination efforts to Chester County and the State of Delaware. Continue support of the "Brandywine Greenways Plan." (BOS, PC, OSC)
16. Encourage and support the cooperative work of the Brandywine Valley Scenic Byway Commission, especially as it relates to education (see above), recreational opportunities, and the ongoing "vision and values" exercise. (BOS, PC, OSC)
17. Continue following and consider formal participation in the potential National Heritage Area designation for the Brandywine region. (BOS, PC, OSC, HC)
18. Maintain Township participation in the Brandywine Battlefield Task Force. Similarly, coordinate with other organizations in Chadds Ford regarding matters of mutual interest. (BOS, OSC, HC, HARB)
19. Continue attentive oversight of Chadds Ford's stormwater management ordinance provisions. (BOS, PC, OSC)
20. Continue vigilant and consistent administration of the ordinance governing the Baltimore Pike Overlay District. (BOS, PC, OSC)
21. Assist the Chadds Ford Historical and Architectural Review Board where needed to fully implement and administer the Township's Act 167 Historic District ordinances. (BOS, HC, HARB)

Suggested Follow-up Planning Activities

22. Explore the following local regulatory actions to implement this plan's recommendations; where current ordinances address a stated issue, consider revisions to strengthen the open space protection benefit of those provisions: (BOS, PC, OSC, HC, HARB)
 - ◆ Develop and adopt an Official Map pursuant to Article IV of the Municipalities Planning Code
 - ◆ For headwater areas, limit impervious coverage percentages in headwaters by requiring higher recharge standards (also applicable to groundwater-fed wetlands)
 - ◆ To protect water resources throughout the Township reduce impervious cover, minimize stormwater and other discharges to streams and other sensitive water resources, limit hydric soil disturbance, and maintain aquatic communities and their habitats
 - ◆ Increase protection of forest interiors and higher classes of woodlands
 - ◆ Minimize the effects of the Planned Residential Development density provisions on the Township's natural and cultural resources
 - ◆ Promote the permanent protection of historic sites and structures not otherwise covered by the Township's Act 167 ordinance and encourage the protection of locally-significant and historic landscape elements

- ◆ Encourage the permanent protection of Chadds Ford's scenic areas and vistas, especially where those areas also contain other significant natural and/or cultural resources; maintain the scenic qualities of the Township's local roads
- ◆ For Homeowner Association Open Space Management Plans, require consideration of natural area management/restoration issues and that implementation of said plan is monitored

APPENDIX A:
Municipalities Planning Code
Excerpt Regarding
Comprehensive/Open Space Plans

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:

Open Space Survey Results

Summary: Chadds Ford Open Space Survey



POPULATION DATA

RESIDENT AGE PROFILE		TIME OF RESIDENCE PROFILE	
	Number		Number
Pre-School & Younger	15	<1 Year	0
Kindergarten/Middle School	55	1-5 years	31
High School/Adult	63	5-10 years	49
Adult 21 - 65	305	10-15 years	27
Adult 65+	111	15-25 years	48
		25+ years	65

OWNERSHIP PROFILE

Ownership	Size	Number
Renters	N/A	3
Owners	Condominium	49
	1 acre	35
	2 acres	53
	3 acres	31
	4 - 5 acres	26
	6+ acres	19

PREFERENCE DATA

OPEN SPACE PROTECTION FOR NATURAL RESOURCES

	Extremely Important	Somewhat Important	Not Important
Groundwater supply	200	14	2
Surface water quality	174	33	4
Wetlands and stream corridors	177	35	1
Woodlands and plant habitats	178	34	3
Diverse wildlife habitats	148	56	10
Bird breeding/nesting grounds	131	62	18

PREFERENCE DATA

OPEN SPACE PROTECTION FOR CULTURAL RESOURCES

	Extremely Important	Somewhat Important	Not Important
Scenic Views	177	33	4
Historical Structures and sites	171	39	5
Community resources	134	65	12
Farmland	155	50	7

RECREATIONAL FACILITIES RANKING

	1 st Choice	2 nd Choice	3 rd Choice	(X) Choice	8, 9,10 Choice	Blank Choice
Trails - Hiking	67	45	29	9	3	33
Trails - Bicycling	22	26	34	7	10	67
Trails - Horse	6	3	5	0	55	107
Playgrounds/tot lots	12	15	16	1	20	94
Athletic fields	7	7	12	1	30	100
Athletic courts	6	9	13	3	35	98
Walking/jogging loop	62	42	29	6	4	49
Dog park	1	12	8	3	55	98
Picnicking area	11	18	21	3	18	77

Other: 31 TOTAL

APPENDIX C:
Comment Letters: Delaware County
Planning Commission, Abutting
Municipalities, Unionville-Chadds Ford
School District

Birmingham Township
Chester County

1040 West Street Road
West Chester, Pennsylvania 19382-8012
Phone: (610) 793-2600
Fax: (610) 793-3417

October 16, 2007

Deborah Love D'Elia, Chairman
Chadds Ford Township
10 Ring Road
Chadds Ford, PA 19317

Dear Chairman D'Elia:

Thank you for sending the Chadds Ford Township Open Space Plan, Public Review Draft, to Birmingham Township for review and comment.

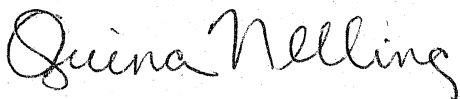
The Plan was reviewed by the Planning Commission at its meeting on October 9, 2007 and by the Board of Supervisors at its meeting on October 15, 2007.

The Planning Commission found that the Plan did not present any inconsistencies with the Birmingham Township Comprehensive Plan and in fact felt that the Plan would be beneficial for similar efforts in Birmingham Township.

The Board of Supervisors found the Plan to be an aggressive, good plan and support its adoption by Chadds Ford Township.

Thank you for the opportunity to review the Chadds Ford Township Open Space Plan, Public Review Draft.

Sincerely,



Quina Nelling
Secretary/Treasurer

Cc: Board of Supervisors



DELAWARE COUNTY PLANNING COMMISSION

COURT HOUSE/GOVERNMENT CENTER
201 W. Front St. Media, PA 19063

COUNCIL

ANDREW J. REILLY
CHAIRMAN

LINDA A. CARTISANO
VICE CHAIRMAN

MARY ALICE BRENNAN
MICHAEL V. PUPPIO, JR.
JOHN J. WHELAN

Office Location: Toal Building, 2nd & Orange Sts., Media, PA 19063
Phone: (610) 891-5200 **FAX:** (610) 891-5203
E-mail: planning_department@co.delaware.pa.us

PLANNING COMMISSION

THOMAS J. O'BRIEN, AIA
CHAIRMAN

THOMAS J. JUDGE
VICE CHAIRMAN

KENNETH J. ZITARELLI
SECRETARY

JOHN E. PICKETT, AICP
DIRECTOR

October 18, 2007

Ms. Maryann Furlong
Chadds Ford Township
10 Ring Road
Chadds Ford, PA 19317


RE: Name of Plan: Chadds Ford Open Space Plan
DCPD File No.: CP 04-6485-07
Applicant: Chadds Ford Township
Recv'd in DCPD: September 5, 2007

Dear Ms. Furlong:

In accordance with Section 301.3 of the Pennsylvania Municipalities Planning Code, the above captioned submission has been reviewed by the Delaware County Planning Commission. At a meeting held on October 18, 2007, the Commission took action as shown in the recommendation of the attached review.

If the plan is adopted, please forward a copy of the final text to this office for our files.

Very truly yours,


John E. Pickett, AICP
Director

JEP/hmg





DELAWARE COUNTY PLANNING DEPARTMENT

Court House/ Government Center , 201 W. Front St., Media, PA 19063
Office Location: Toal Building, 2nd & Orange Sts., Media, PA 19063
Phone: (610) 891-5200 FAX: (610) 891-5203
E-mail: planning_department@co.delaware.pa.us

Date: October 18, 2007

File No.: CP-04-6485-07

PLAN TITLE: Chadds Ford Open Space Plan

DATE OF PLAN: August 2007

APPLICANT: Chadds Ford Township

MUNICIPALITY: Chadds Ford Township

PROPOSAL: Draft a new Open Space Plan

RECOMMENDATIONS: Approval, contingent upon consideration of the stated recommendations

STAFF REVIEW BY: Steve Beckley and Dennis DeRosa

REMARKS:

PURPOSE

As stipulated in a memorandum to the Delaware County Planning Department, "Chadds Ford Township intends that the Open Space Plan will meet the requirements for its forthcoming Comprehensive Plan's natural and historic resource protection sections, as well as for its park and recreation planning elements."

The Township is in the beginning stages of drafting a new comprehensive plan which will amend the existing plan dated May of 1973. Within this plan, recommendations are briefly stated with the goal of preserving "parks, recreation, and historic sites."

PENNSYLVANIA MUNICIPALITIES PLANNING CODE

As stated within Article III of the Pennsylvania Municipalities Planning Code (MPC), municipal comprehensive plans may identify areas for parks and open space in order to adequately plan and provide as needed to accommodate growth. Within Article V of

Date: October 18, 2007
File No.: CP-04-6485-07

REMARKS (continued)

the PA MPC "provisions requiring the public dedication of land suitable for the use intended may be included in the municipal subdivision and land development ordinance, provided the Township has a formally adopted recreation plan." It is also stated within Article VI that zoning provisions "shall provide for protection of natural and historic features and resources."

The Chadds Ford Township Open Space Committee and the Brandywine Conservancy Environmental Management Center obviously took great care and effort to create a plan addressing the specific conditions and needs of the Township and its residents.

The background information, goals, and recommendations in the plan appear strong with the potential to preserve much of the remaining open space in Chadds Ford for its many benefits and uses.

It appears that DCPD's Environmental section's comments on the June 2007 draft were addressed in this public review version.

DCPD advocates the creation of a municipal official map as is recommended in the Suggested Follow-up Planning Activities.

Much of the plan is based on the stewardship of natural lands, stream valley greenways, and historic structures. As much of this land is in private ownership, it is great that a recommended immediate action is a regular series of educational programs for landowners.

The plan recommends coordination with DCPD on our greenway planning but also recommends coordination with Chester County and the State of Delaware because portions of the natural greenways in Chadds Ford are part of larger greenways extending beyond Township boundaries.

RECOMMENDATIONS

It is commendable that one of the Immediate Action Items is to "commence recreation-specific planning to meet Township needs for recreational uses."

Another action related to that would be to explore the establishment of a Township Park and/or Recreation Board. DCNR's Bureau of Recreation and Conservation can lend technical assistance to the formation of a Board. C. P. 1

Date: October 18, 2007
File No.: CP-04-6485-07

REMARKS (continued)

Volunteer parks or athletic associations have also been beneficial to other communities. If trails become the main recreational amenity in the Township, a Chadds Ford trails citizens group should be encouraged to organize trail maintenance and advocacy.

In Land Development Considerations (p. 8-7), consider a provision the subdivision code requiring developers to make a set-aside of open space which 1) includes natural greenways such as streams, and 2) connects to other public parks, adjacent set-aside open space, or recreational trails. This could also go under Suggested Follow-up Planning Activities (p. 10-4).

A Recommended Immediate Action Item (p. 10-2) is "Initiate and implement a plan to own and manage the Township open space adjacent to the Estates at Chadds Ford."

This plan, or part of it, should include the development of a "master plan" for the park. Master plans are eligible for DCNR Community Conservation Partnerships Program funding, for which there are guidelines for developing the plans with public participation/public involvement components.

Explore the need, interest, and establishment of a Township Environmental Advisory Committee and Shade Tree Committee. Either or both of these may not have seemed necessary in the past, but will become so as the Township continues to grow.

One of the proposed goals is to "consider development of an enclosed local dog park."

In addition to promoting recreation for dogs within a designated area, either the current open space plan or the upcoming comprehensive plan should establish goals and objectives for bikeways within areas of open space either for recreation or access to specific sites/uses/businesses for utilitarian purposes.

With regard to "Implementation Strategies," the Township's recommendation to "consider development of a naturally-surfaced pedestrian trail connection between the Township Building site and the Brandywine Conservancy campus is commendable."

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REMARKS (continued)

The Township should also include, within the Implementation Strategies section, regulatory provisions within the subdivision and land development ordinance requiring that a specified percentage of bike paths traversing open space areas be naturally surfaced.

Also within Implementation Strategies, the Township recommends "continued vigilance and consistent administration of the ordinance governing the Baltimore Pike Overlay District."

As recommended by DCPC regarding the BPOD, it was suggested that the Township establish goals, objectives, and implementation strategies regarding traffic calming in the area of Chadds Ford Village. Specific suggestions were stated within DCPC's review.

This open space plan does a nice job of illustrating the linkage between cultural and historic resources and natural resources by addressing both resources in Chapter 6. Natural and cultural resources are often tied together with one impacting the other, especially in an area like Chadds Ford Township that possesses large areas of open space with minimal development that still contain many of the resources that stood in the area historically.

The inventory included in the open space plan is very extensive and would provide an excellent foundation for future protective measures. The plan also highly encourages continual updates, which will ensure that no significant resource gets overlooked. The plan also includes a brief history, an overview of preservation measures thus far, and organizations that have been involved. These, along with the inventory, would provide an excellent background for implementation of any further strategies that the Township wishes to enact.

CONCLUSION

The draft plan is an admirable document which should be included within the finalized version of the comprehensive plan. The Township should consider incorporating stated recommendations prior to adoption.

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REMARKS (continued)

ADOPTION

In accordance with Section 306(b) of the Pennsylvania Municipalities Planning Code, within thirty (30) days after adoption, the Township should forward a certified copy of the open space plan component of the comprehensive plan to the County Planning Department.

APPENDIX D:
Chadds Ford Township Budget

2008 CHADDS FORD TOWNSHIP BUDGET			
INCOME			
	301.00 • REAL ESTATE TAX REVENUE		
		301.10 • Township R.E. Tax - Current Yr.	135,500.00
		301.15 • Township R.E.Tax - Interim	1,000.00
		301.20 • Fire Prot-R.E.Tax-Current Yr.	37,500.00
		301.25 • Fire Prot.-R.E.Tax - Interim	285.00
		301.30 • Library Tax - Current Year	6,000.00
		301.35 • Library Tax - Interim	50.00
		301.40 • Capital Improvement Tax-Crnt Yr	45,500.00
		301.45 • Capital Improvement Tax-Interim	266.00
		301.50 • Open Space RE Tax - Current Yr	140,000.00
		301.55 • Open Space RE Tax - Interims	1,064.00
		301.60 • Fire Hydrant Tax	13,700.00
		301.65 • Fire Hydrant Interim	300.00
		301.70 • Delinquent Taxes from County	1,000.00
	Total 301.00 • REAL ESTATE TAX REVENUE		382,165.00
		310.10 • Real Estate Transfer Tax	245,500.00
		310.30 • Business Privilege Tax Revenue	12,000.00
		310.50 • EMS Tax Revenue	90,000.00
		TOTAL OTHER TAXES	347,500.00
	321.00 • FRANCHISE FEES		
		321.80 • Franchise Fees	52,000.00
		Total 321.00 • FRANCHISE FEES	52,000.00
	330.00 • FINES & FORFEITS		
		331.13 • State Police Fines	1,875.00
		331.10 • Court Fines	1,333.00
		Total 330.00 • FINES & FORFEITS	3,208.00
	341.00 • ACCRUED INTEREST		
		341.15 • Interest - Commerce General Fnd	20,000.00
		341.35 • Interest - Commerce Liquid Fuel	1,400.00
		341.70 • Interest - Bldg. Fund CD/Generator	-
		341.80 • Interest - Sewer Fund	-
		341.97 • Interest - Capital Improvements	90.00
		341.98 • Interest Tax Collector's Accoun	900.00
		Total 341.00 • ACCRUED INTEREST	22,390.00
	MISCELLANEOUS RECEIPTS		
		361.00 • Misc. Receipts	
		357.03 • County Aid (Highways & Bridges)	2,700.00
		355.00 SEO/DEP 1/2 Recoverable	2,500.00
		355.11 • Foreign Fire Tax Relief	50,000.00
		355.04 • Alcoholic Beverage Tax	2,200.00
		355.02 • Motor Vehicle Fuel Tax	73,731.00
		355.01 • Public Utility Realty Tax	955.00
		354.15 • Recycling/Act 101	2,750.00
		354.09 • Grants	-

		342.00 · Rental Receipts	6,900.00
		Total MISCELLANEOUS RECEIPTS	141,736.00
		361.01 · GENERAL FEES	
		361.10 · Sales of Maps & Ordinances	1,975.00
		361.71 · Photocopying Fee	275.00
		Total 361.01 · GENERAL FEES	2,250.00
		361.40 · Engineering Recoverables	150,000.00
		361.50 · Solicitor Recoverables	9,000.00
		361.70 · Outside Consultant Recoverable	10,000.00
		361.80 · Recoverable Expenses	4,940.00
		361.60 · SEO Planning Module Recoverable	
			173,940.00
		361.90 · Finance Charge on o/s balance	750.00
		TOTAL FINANCE CHARGE	750.00
		361.30 · FEES-PERMIT, APPLCTN & RCVRBLE	
		361.34 · Zoning Hearing Board Fees	3,150.00
		361.56 · Subdivision Application Fee	1,000.00
		361.57 · Land Development Applicatn Fee	3,500.00
		361.58 · Conditional Use Application Fee	
			7,650.00
		361.33 · Zoning and Sign Permits	16,800.00
		361.75 · Misc/Grading Permit Fees	2,150.00
		362.40 · UCC Fee	1,300.00
		362.41 · Building Permits/CO Fees	90,000.00
		362.42 · Electrical Permit Fee	14,100.00
		362.43 · Plumbing Permit Fees	8,150.00
		362.48 · HVAC Permit Fees	12,000.00
		362.55 · Grease Trap Inspections	2,800.00
		362.57 · Well Inspection Fees	600.00
		362.60 · SEO-BMT 150	7,000.00
		362.62 · SEO-BMT151	-
		362.63 · Sewer Lateral Fees	5,075.00
		362.64 · Sewer Inspection	300.00
		363.30 · Highway Occupancy Permit Fees	120.00
		389.00 · Misc Receipts	1,000.00
		393.02 · Sewer Authority Advance Reimbrs	-
		FEES-PERMIT, APPLCTN & RCVRBLE TOTAL	161,395.00
		TOTAL INCOME	1,294,984.00
Expense			
		TOWNSHIP OFFICIALS	
		400.10 · Supervisors Compensation	5,625.00
		400.20 · Supervisors Miscellaneous Expns	1,500.00
		400.30 · Supervisors Membership Fees	2,000.00
		400.40 · Roadmaster Compensation	1,800.00
		400.45 · Roadmaster Miscellaneous Expns	250.00

		400.50 · Temporary Staff Compensation	5,000.00
		400.51 · Open Space Chair Expenses	250.00
		400.52 · Planning Commission Chair Expen	250.00
		400.53 · ZHB Chair Expenses	250.00
		400.54 · HARB Chair Expenses	250.00
		400.55 · Fire Marshall/Constable Expense	500.00
		400.56 · Emergency Preparedness Expenses	3,600.00
		401.10 · CEO-Telephone Expenses	925.00
		401.15 · CEO-Miscellaneous Expenses	3,000.00
		401.20 · CEO-Health Care Contribution	2,205.00
	Total TOWNSHIP OFFICIALS		27,405.00
		218.00 · EMS/BP Tax	2,000.00
		402.10 · Audit Expenses	13,200.00
		402.20 · Consulting Services - Financial	1,000.00
		403.10 · Compensation of Tax Collector	14,500.00
		403.20 · Tax Collecton Expenses	1,650.00
			32,350.00
	SOLICITOR		
		404.15 · Solicitor - Recoverable	9,000.00
		404.10 · Solicitor - General Government	45,000.00
	Total SOLICITOR		54,000.00
	TOWNSHIP SECRETARY		
		405.30 · Sect/Trsr Health Care Contribut	2,205.00
		405.20 · Sect/Treasurer- Telephone Reimb	480.00
		405.10 · Sect/Treasurer-Salary	33,427.00
	Total TOWNSHIP SECRETARY		36,112.00
	OFFICE EXPENSES		
		406.10 · Advertising Non-recoverable	3,000.00
		406.15 · Advertising - Recoverable	2,000.00
		406.20 · Court Stenographer	1,750.00
		406.30 · Consulting Fees	7,000.00
		406.40 · Office Supplies	5,000.00
		406.41 · EarthLink/Web Site Service	200.00
		406.50 · Office Equipment - Maintenance	3,000.00
		406.60 · Postage	3,000.00
		406.70 · Bank Service Charges	-
		406.80 · Copying Expenses	1,975.00
	Total OFFICE EXPENSES		26,925.00
	ENGINEER		
		408.15 · Engineer - Recoverable	150,000.00
		408.10 · Engineer - General Government	75,000.00
	Total ENGINEER		225,000.00
	BUILDING EXPENSES		
		409.40 · Maintenance	12,500.00
		409.30 · Utilities	14,000.00
		409.20 · Telephone Service	3,500.00
		409.10 · Cleaning Services	1,215.00
	Total BUILDING EXPENSES		31,215.00
		409.60 · Turner's Mill Expenses	45,000.00
		409.70 · Turner's Mill Interest/Comrc	63,773.00

	409.80 · Turner's Mill I & F Chrgs/DVRFA	48,488.00
	411.00 · Foreign Fire Tax Relief Expense	50,000.00
	411.30 · Fire Protection Contract	37,785.00
		245,046.00
	INSPECTION FEES	
	413.19 · Comp. Well Inspection Fees	360.00
	413.18 · Comp Bldg Insp Grease Trap Fees	400.00
	413.17 · Comp Bldg Insp. - Misc. & GPs	1,505.00
	413.16 · UCC Fee Expense	1,300.00
	413.14 · HVAC Inspection Fees	7,200.00
	413.135 · Sewer Cert of Compliance	210.00
	413.13 · Comp Bldg Insp-Sewer Latrl Fees	3,045.00
	413.12 · Comp Bldg Insp - Plumbing Prmit	4,890.00
	413.11 · Comp Bldg Insp - BPs & COs	31,500.00
	413.07 · Comp. Code Inspections	8,460.00
	413.06 · Comp. Bldg Inspctr - Electrical	600.00
	411.50 · Fire Marshall Fees	-
	414.10 · Comp.CEO Zoning Permits	11,760.00
	Total INSPECTION FEES	71,230.00
	414.05 · CEO Retainer	11,592.00
		11,592.00
	ZONING & PLANNING	
	414.20 · ZHB - Court Stenographer Fees	2,300.00
	414.19 · ZHB Solicitor Fees	3,000.00
	414.18 · ZHB Compensation (recoverable)	540.00
	414.17 · Comp PC Secretary	1,500.00
	Total ZONING & PLANNING	7,340.00
	420.01 · MS4 Related Expenses	1,500.00
	422.00 · Animal Control Officer Fees	55.00
		1,555.00
	SEO EXPENSES	
	429.10 · SEO-BMT151 Expense	-
	429.05 · SEO- BMT152 & 153	4,600.00
	429.01 · SEO-BMT 150 Expense	10,500.00
	429.00 · SEO- BMT 130 Cnslt Fees Act 537	4,500.00
	Total SEO EXPENSES	19,600.00
	431.00 · ROADWAYS	
	431.20 · Street Clearing/Cleaning/Repair	33,500.00
	431.25 · Brandywine Drive Expenses	-
	Total 431.00 · ROADWAYS	33,500.00
	SNOW REMOVAL EXPENSES	
	432.70 · Roadway Supplies/Snow Removal	6,000.00
	432.30 · Snow Removal	35,000.00
	Total SNOW REMOVAL EXPENSES	41,000.00
	TRAFFIC SIGNALS	
	433.50 · Signal Maintenance	5,000.00
	433.46 · Signal Net Shared Expenses/CT	5,000.00
	433.45 · Signal Net Shared Expenses/BT	2,000.00

	433.40 · Signals PECO Charges	950.00
	433.30 · Signal Expenses/Applied Card	1,100.00
	Total TRAFFIC SIGNALS	14,050.00
	STREET LIGHTS	
	434.50 · Street Lights PECO Charges	2,000.00
	Total STREET LIGHTS	2,000.00
	STORM SEWERS	
	436.00 · Storm Sewer	2,000.00
	Total STORM SEWERS	2,000.00
	SIGNAGE	
	438.00 · Roadway Signage	2,500.00
	438.10 · Signage - Brandywine Drive	
	Total SIGNAGE	2,500.00
	438.25 · Roadway/Roadmaster Supplies	1,800.00
	438.80 · Highways/Bridges Emrgncy Rpairs	2,000.00
	439.09 · Roadways/Capital Improvements	12,000.00
		15,800.00
	LIQUID FUEL EXPENSES	
	439.60 · Road Program Expenses	28,269.00
	439.30 · Road Program Expense (State)	73,731.00
	Total LIQUID FUEL EXPENSES	102,000.00
	439.61 · Future Atwater Road Repairs	35,000.00
	FIRE HYDRANTS	
	448.00 · Fire Hydrant Rental Fees	13,700.00
	Total FIRE HYDRANTS	13,700.00
	COMMUNITY DEVELOPMENT	
	465.50 · Infrastructure Fund Expense	102,000.00
	465.05 · Turner's Mill WWTP	-
	465.01 · Village of Chadds Ford LPSS	-
	461.02 · Comprehensive Plan Expenses	
	461.01 · Open Space Conservation & Dev.	141,064.00
	456.00 · Rachel Kohl Community Library	6,050.00
	Total COMMUNITY DEVELOPMENT	249,114.00
	MISCELLANEOUS EXPENSES	
	481.00 · Payroll Expenses	3,700.00
	Total MISCELLANEOUS EXPENSES	3,700.00
	INSURANCE EXPENSES	
	486.00 · Insurance Premiums	25,000.00
	484.00 · Workers Comp Insurance	1,250.00
	Total INSURANCE EXPENSES	26,250.00
	493.00 · Sewer Authority Support Paymts	-
		-
TOTAL EXPENSE		1,294,984.00

