



Chapter 2

Land Conservation Plan

The goal of this chapter is to identify parcels of open land in the Battlefield that could viably be protected from development regardless of their historic significance. This mapping will be compared with mapping presented in *Chapter 3* that depicts significant historic resources, structures, and landscapes. The result will be a determination of which historic resources can be protected from development through conventional open space protection, and which will require other historic preservation techniques. This chapter addresses the conservation of land within the Battlefield focusing on natural features and land ownership concerns such as the availability of large undeveloped parcels that are well suited for preservation. Among the municipalities and grant programs in southeast Pennsylvania, the term “open space protection” is preferred to “land conservation,” and so that term will be used in this chapter.

The Battlefield and the surrounding Brandywine Valley are fortunate to have municipal governments and open space protection organizations with decades of experience in protecting undeveloped land. Protecting open space is not easy. Preserving just one farm or woodland can require substantial funding and many years worth of coordination and master planning. This chapter cannot provide such a detailed analysis. Rather, it presents a generalized evaluation of the various features that need to be considered when conserving landscapes, such as soils, water resources, parcel size, and existing and historical land use patterns. Given the highly competitive nature of the funding currently available to finance open space protection, it is simply unrealistic to assume that land will be protected only because of its historical significance. For this reason, the following evaluation will address how open space protection in the Battlefield will also result in benefits to natural resources.



Protected open spaces in the Battlefield, such as the grounds at Brandywine Battlefield Park, give the Brandywine Valley its distinctive scenic character.

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THE HISTORY OF LAND USE IN THE BATTLEFIELD

Colonial Settlement of a Crossroads Community

Chester and Delaware Counties were both part of William Penn's original colony established in 1682. They were part of his "Holy Experiment," which in many respects was an early exercise in coordinated land planning. Delaware County was originally part of Chester County. Delaware County split off in 1789, establishing its seat in Chester City, which in 1851 was moved to Media Borough. Chester County subsequently established its seat in West Chester, which was incorporated in 1799. During the Revolutionary War, West Chester was known as "Turks Head" in reference to a popular crossroads inn.

Penn established Philadelphia as a major port city and designed a series of roadways that would allow farmers in the surrounding areas to fill their carts with produce and drive them down slope to the city to sell, and return upslope with empty carts. These planned roads were major collectors following straight lines. PA Route 926, which crosses through the Battlefield, is now called Street Road. It was one of Penn's "straight roads," which in Elizabethan English was spelled "streight" and pronounced "street."¹

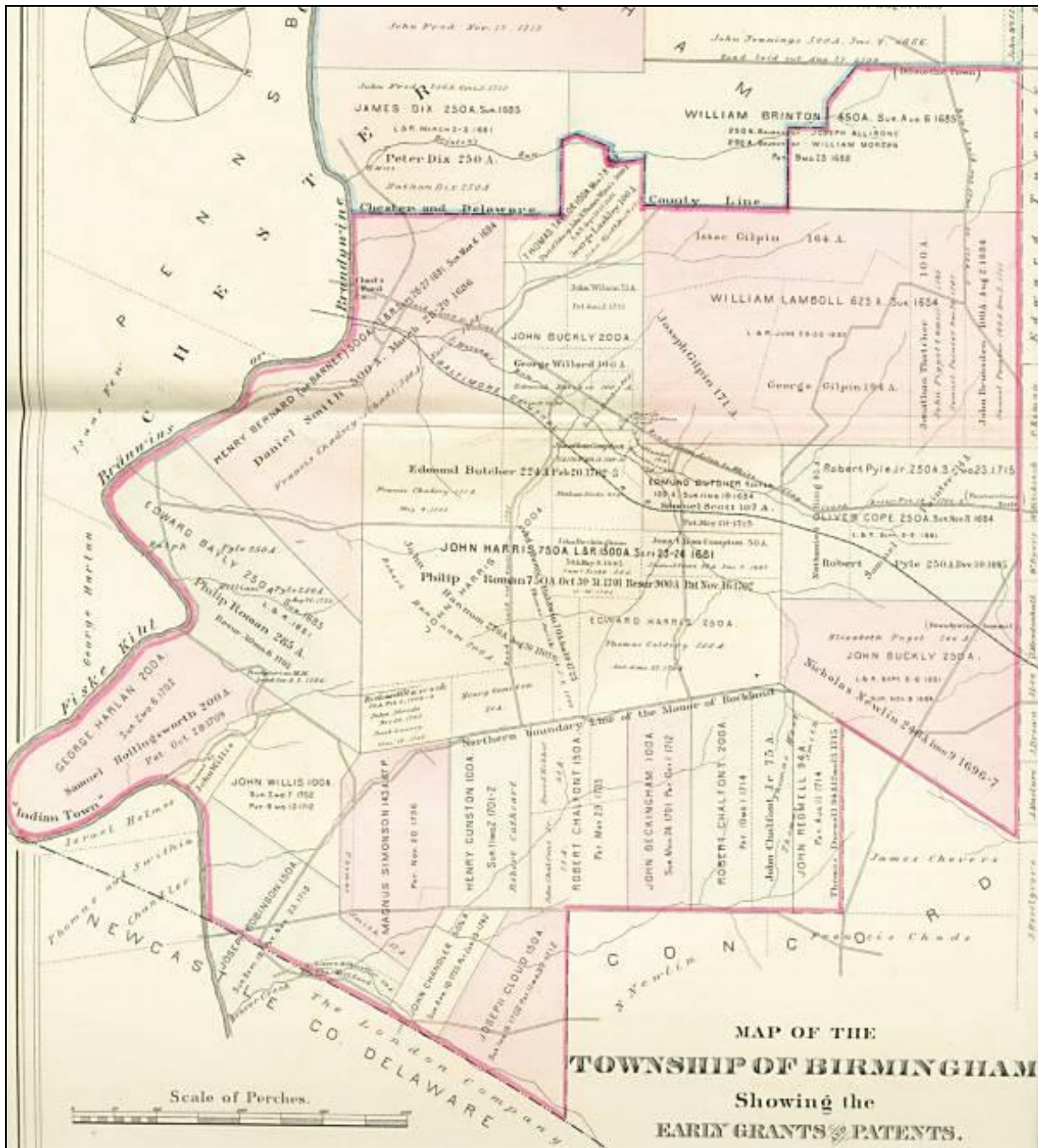


The Brandywine Creek near the location of the old Chadds Ford is largely forested. Many of the stream bank areas are wetlands and wildlife habitat.

The Battlefield is located in the southern reaches of the Brandywine Creek Watershed which covers 352 square miles, with 567 miles of streams. According to the most current available watershed mapping (1995), land use in the watershed was 37 percent in agriculture, 26 percent in development, and 37 percent in "other."² The main stem of the Brandywine Creek flows through the middle of the Battlefield. As shown in *Map 1.1*, the Creek is fed from the north by its East and West Branches which meet in the northern part of the Battlefield. Land along the West Branch tends to be more rural while the East Branch communities are more suburbanized. Prior to World War II, the entire watershed was largely agricultural and highly productive. The Brandywine Creek flows south into northern New Castle County, Delaware, where it once powered the many water mills that operated in the Wilmington, Delaware area. The far northern reaches of the Brandywine Creek abuts the French and Pickering Creek Watersheds which were the sites of many of the nation's first iron furnaces, some of which manufactured ordinance used during the Revolutionary War.

¹ William Penn's 1683 description of Delaware Indians was, "...they are generally tall, **streight**, well-built, and of singular Proportion..." as noted in Paul Wallace, *Indians in Pennsylvania* (Harrisburg, PA: Pennsylvania Historical and Museum Commission, 1993), 16.

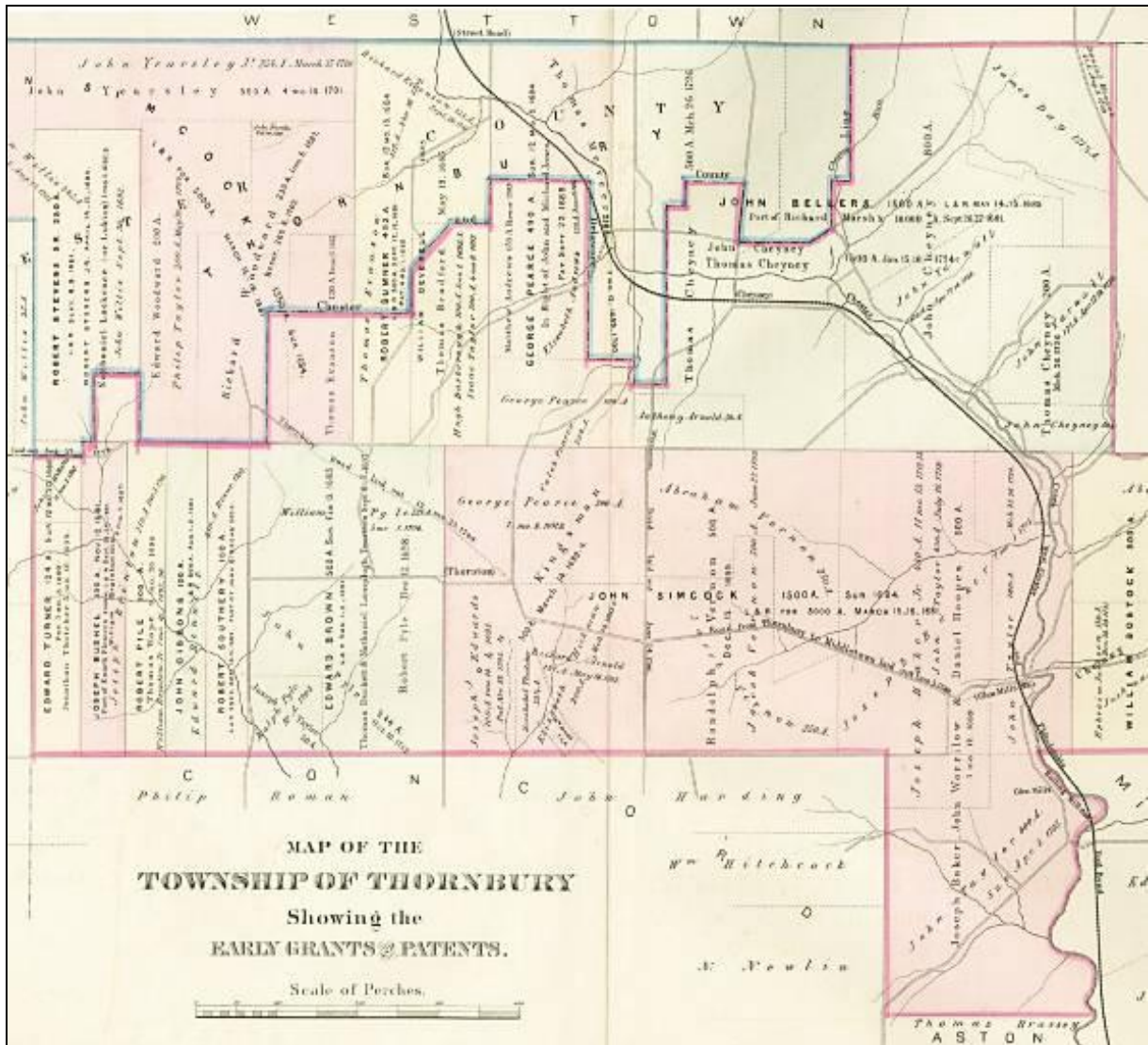
² Chester County Commissioners, *Watersheds: An Integrated Water Resources Plan for Chester County Pennsylvania and Its Watersheds* (West Chester, PA: Chester County Water Resources Authority, 2002), 18.



The municipality founded as Birmingham Township Delaware County is now known as Chadds Ford Township.

As Map 1.6 in Chapter 1 shows, “old” Chester County was centrally located between the mining and agricultural regions of Berks and Lancaster Counties, and the mercantile ports of Philadelphia and Wilmington. “Old” Chester County was a crossroads region with many inns visited by travelers using the region’s fine network of roads.

Map 2.1 shows the oldest available detailed mapping of the Battlefield, which comes from insurance maps created in 1883. The maps to the left and below show the mapping for Battlefield municipalities within Delaware County. These maps show that, as of the late 19th century, the Battlefield remained an agricultural community little changed from the 18th century. (Combining the available digitized mapping for Delaware County with that of Chester County would require extensive technical manipulation that is beyond the scope of this project.)



When “old” Chester County was split, so was “old” Thornbury Township creating Thornbury Township, Chester Co. and Thornbury Township, Delaware Co.

This predominant agricultural land use can also be seen on the 1904 USGS mapping shown on *Map 2.2*, and the aerial photography from 1937 and 1958 as presented on *Maps 2.3* and *2.4*, respectively. These photographs show a gradual increase in suburban-style residential growth within and just east of Kennett Square Borough, and in central Pocopson Township.

Map 2.5 shows the 1993 USGS mapping which illustrates the boom in development that occurred in the Battlefield during the 1970s and 1980s. It shows the extensive development along US Route 1, PA Route 926, and PA Route 52. Aerial photography from 2010, as presented on *Map 2.6*, demonstrates how most of the Battlefield is primarily residential development with medium to large lots (two to 10 acres).

- **Issues/Analysis:** The current predominance of residential lots within the Battlefield significantly reduces opportunities for the future preservation of open space. Most state and county funded land preservation programs require that isolated parcels must cover 10 acres or more in order to be eligible for protection. Non-profit land trusts prefer to protect parcels of 10-acres or more because the amount of time and money required to protect an 80-acre property is essentially the same as is required to protect a smaller 5-acre property.

Quality Soils Spurred the Establishment of an Agricultural Landscape



Although farming is no longer the dominant industry in the Battlefield, there are enough viable farms to support agriculture over the long term.

The high quality soils and moderate climate of the Battlefield are ideal for agricultural production which continues to this day. *Map 1.8* in *Chapter 1* indicates that the Battlefield is underlain primarily by hard metamorphic rock formations which have been weathered to gently-rolling topography suitable for crop production. *Map 1.7* in shows that the Battlefield is primarily underlain by Class 1, 2, and 3 soils, which are designated as Prime Agricultural Soils by the United States Department of Agriculture (USDA) Soil Conservation Service.

Class I soils have few limitations that restrict their use for farming. They are therefore considered the best for agricultural purposes. Class II soils have some limitations that reduce the choice of plants for crops or require moderate conservation practices. Class III soils have more severe limitations that reduce the choice of plants for crops, require special conservation practices, or both. Class III soils are included as prime agricultural soils by Commonwealth designation as agricultural soils of statewide importance.

Map 1.7 also shows parcels enrolled in a municipally-designated Agricultural Security Area (ASA) which is authorized by the state through the Agricultural Security Areas Act (Act 43 of 1981). Farmers who enroll their land in an ASA are protected from nuisance lawsuits. Their land can only be condemned after approval of the Agricultural Land Condemnation Approval Board. Land in an ASA is not protected from development or condemnation. Landowners may remove their property from the ASA at any time without any rollback tax penalty. However, farms must be in an ASA to be eligible to apply for a state funded Agricultural Conservation

Easement. In general, mapping of ASA parcels is a good way to determine where soils and community infrastructure are well-suited for viable agricultural production.

The Delaware County portion of the Battlefield contains few farms and is mostly residential. Despite its recent growth, Chester County remains one of the leading agricultural counties in the nation and is likely to remain in that position. Good soils and ample rainfall reduce costs for irrigation. The County’s close proximity to major markets and ports from Boston to Washington, D. C. reduces the shipping time and the fuel consumption needed to deliver fresh produce from “field to table.” The USDA Census of Agriculture gathers statistics at the County level, and so data are not available for just the Battlefield municipalities. In 2007, the total “Market Value of Production” for the state was over \$5.8 billion, with Chester County contributing over \$550 million (or about 1/10th). *Figure 2.1* indicates that Chester County accounts for two to three percent of total agricultural output in the State (out of 3,079 counties).

Figure 2.1: Farm Features for Chester County³

Selected Farm Features	Chester County	Chester Co. % of PA
Number of Farms	1,733	2.7%
Land in Farms	166,891 acres	2.1%
Average Size of Farm	96 acres	N/A
Market Value of Production	\$553.2 million	N/A
Market Value of Production: Average per Farm	\$319,267	N/A

Figure 2.2 indicates that Chester County ranks 3rd in the nation in terms of nursery and greenhouse operations, which includes the mushroom industry. Mushroom production is the most dominant agricultural sector in Chester County and it is centered in an around Kennett Square Borough. It is because of this clustering of mushroom farms that Kennett Square markets its self as the “Mushroom Capital of the World.” As *Figure 2.3* illustrates, the number of farms, farmers, and acreage in farms has declined in Chester County over the past decade. However, the total agricultural output in terms of value continues to increase.



Mushrooms are cultivated in the western part of the Battlefield. They are grown in large drawers stacked in windowless mushroom houses called “doubles.”

³ The sources for this and the following two figures are USDA, *Census of Agriculture* 1997, 2002, and 2007.

Figure 2.2: National Agricultural Rankings for Chester County³

Selected Features Used in Ranking all 3,079 Counties in the US	Chester County's National Rank
Total Value of Agricultural Products Sold	49
Value of Crops Including Nursery and Greenhouse	24
Nursery, Greenhouse, Floriculture, and Sod	3
Milk and Other Dairy Products from Cows	101
Horses, Ponies, Mules, Burros, and Donkeys	9

Figure 2.3: Agriculture Statistics for Chester County 1997-2007³

Farms, Land in Farms and Cropland	1997	2002	2007
Total Farms	1,983	1,918	1,733
Total Value of Agricultural Products Sold (millions)	\$384.7	\$376.7	\$553.2
Total Value of Products Sold: Crops (millions)	\$301.5	\$288.1	\$440.2
<i>Grains, oilseeds, dry beans and dry peas</i>	<i>N/A</i>	<i>\$8.1</i>	<i>\$21.0</i>
<i>Tobacco</i>	<i>\$1.7</i>	<i>\$1.4</i>	<i>\$2.6</i>
<i>Vegetables, melons, and potatoes</i>	<i>N/A</i>	<i>\$2.7</i>	<i>\$3.1</i>
<i>Fruits, Nuts & Berries</i>	<i>\$1.2</i>	<i>\$1.6</i>	<i>\$2.5</i>
<i>Nursery, Greenhouse, etc. (mostly Mushrooms)</i>	<i>N/A</i>	<i>\$269.1</i>	<i>\$402.2</i>
<i>Cut Christmas Trees</i>	<i>N/A</i>	<i>\$0.5</i>	<i>\$0.5</i>
<i>Other crops and hay</i>	<i>N/A</i>	<i>\$4.6</i>	<i>\$8.3</i>
Total Sales: Livestock, Poultry and Their Products (millions)	\$83.2	\$88.7	\$113.1

- **Issues/Analysis:** Although much of the farmland in the Battlefield has been converted to development, the land that remains still has the potential to be used for profitable agricultural operations because of its high quality soils and its close proximity to markets. Furthermore, this land could be used for local Community Supported Agriculture (CSA) operations, of which there are currently 21 in Chester County.⁴ The protection of undeveloped agricultural land is therefore a viable option in many parts of the Battlefield.

The Development and Loss of Open Space in the Late 20th Century

Soils that are well suited for agriculture are also those that are best suited for development. As a result, the Brandywine Valley, with its close proximity to employment centers in and around Philadelphia, PA and Wilmington, DE have experienced significant growth and development during the latter half of the 20th century and the early years of the 21st century. As *Figure 2.4* indicates, the population of the Battlefield municipalities more than doubled since 1970 and increased by over 50 percent in the last two decades.

⁴ Chester County Agricultural Development Council, *Chester County But Fresh Buy Local: 2011 Farm Products Guide*, (West Chester, PA: Chester County Commissioners, 2011),

Figure 2.4: Population in the Battlefield Municipalities 1930-2010⁵

Municipality	Population					Change 1990-2010	
	1930	1950	1970	1990	2010	Total	Percent
TOTAL	16,756	22,095	42,356	73,394	111,234	37,840	52%
Birmingham	398	429	834	2,636	4,208	1,572	60%
Chadds Ford (Del. Co.)	718	836	1,281	3,118	3,640	522	17%
Concord (Del. Co.)	546	1,945	4,592	6,933	17,231	10,298	149%
East Bradford	906	1,187	3,260	6,440	9,942	3,502	54%
East Marlborough	1,599	1,868	3,031	4,781	7,026	2,245	47%
Kennett	1,343	2,145	4,876	4,624	7,565	2,941	64%
Kennett Square	3,091	3,699	3,394	5,218	6,072	854	16%
New Garden	2,391	3,027	4,153	5,430	11,984	6,554	121%
Newlin	579	984	1,464	1,092	1,285	193	18%
Pennsbury	678	686	1,763	3,326	3,604	278	8%
Pocopson	416	513	1,556	3,266	4,582	1,316	40%
Thornbury (Ches. Co.)	244	233	1,435	1,131	3,017	1,886	167%
Thornbury (Del. Co.)	1,504	2,101	2,652	5,056	8,028	2,972	59%
West Bradford	1,558	1,530	2,996	10,406	12,223	1,817	17%
Westtown	785	912	5,069	9,937	10,827	890	9%

The development of open land associated with these population increases is presented in *Figure 2.5* which shows the amount of agricultural, recreational, vacant, and wooded lands that have been converted to development from 1970 to 1990. These figures were derived from a study of aerial photography from 1970 and 1990 conducted by the Delaware Valley Regional Planning Commission, which is the Metropolitan Planning Organization for Philadelphia and its surrounding counties, including Chester and Delaware Counties. Much of this development is due to the construction of “bedroom community” residential units whose owners commute south along US Route 202 to Wilmington or east along US Route 1 to Philadelphia.



The construction boom of the 1980s, 1990s, and 2000s has slowed, but development is still ongoing throughout most parts of the Battlefield.

⁵ US Census, 1950, 1970, 1990, and 2010. The 1930 Census data was included in *US Census, 1950 Census of Population, Vol. 2; Characteristics of the Population Part 38, Pennsylvania* (Washington, DC: US Government Printing Office, 1952) 19-20.

Figure 2.5: Conversion of Undeveloped Land in the Battlefield 1970 to 1990⁶

Municipality	Total Area (sq. mi)	Change in Agricultural, Recreational, Vacant, and Wooded Lands (sq. mi)	Percent Change
Total	153.49	-18.42	-12.0%
Birmingham	6.24	-1.25	-20.0%
Chadds Ford (Del. Co.)	8.73	-1.36	-15.6%
Concord (Del. Co)	13.6	-2.26	-16.6%
East Bradford	15.12	-2.37	-15.7%
East Marlborough	15.58	-1.91	-12.3%
Kennett	15.6	-1.30	-8.3%
Kennett Square	1.09	+0.05	+4.6%
New Garden	15.92	-1.09	-6.8%
Newlin	11.67	-0.03	-0.3%
Pennsbury	9.55	-1.14	-11.9%
Pocopson	8.51	-0.53	-6.2%
Thornbury (Ches. Co.)	3.95	-0.40	-10.1%
Thornbury (Del. Co.)	9.26	-0.91	-9.8%
West Bradford	18.67	-3.92	-21.0%
Westtown	18.37	-1.85	-10.1%



This photo from the eastern part of the Battlefield shows some of the high end real estate that can be found in the most affluent parts of the Battlefield.

Much of the boom in development in the Brandywine Valley is due to its close proximity to major employers in and around Philadelphia, PA and Wilmington, DE. Philadelphia International Airport and the I-95 Corridor are within an hour’s drive, and yet the Brandywine Valley retains much of its traditional rural “horse country” landscapes.

As a result, this region is home to many executives, which partially explains why Chester County has the state’s highest median income at \$84,741, with Delaware County ranking 4th at \$61,876. Only five counties in the state have a median income above \$60,000. The median income for the state as a whole is \$50,398.⁷

⁶ Delaware Valley Planning Commission, *Land Use in the Delaware Valley, 1970-1990 Analytical Report No. 2* (Philadelphia: 1994), 68-89.

⁷ US Census “Pennsylvania Median Income in the Past 12 Months (in 2010 Inflation-adjusted Dollars),” *2006-2001 American Community Survey 5-year Estimates* (Washington, DC: 2012).

CURRENT BATTLEFIELD CONDITIONS

Land Management in the Battlefield

The land within the Battlefield is generally well maintained in urban, suburban, and rural settings. As *Map 2.6* indicates, a substantial portion of the Battlefield has been developed with medium to large lot residential development scattered throughout. Most development is concentrated in the eastern half of the Battlefield. More urbanized development is clustered near Kennett Square Borough, but much of this is surrounded by low density rural lands.



Conventional suburban style residential development is common in the Battlefield, such as this subdivision in the central part of the Battlefield.

The Battlefield is also home to Longwood Gardens, the Myrick Environmental Center, and the Brandywine Conservancy Environmental Management Center, all of which offer programs to the local community that promote ecologically friendly and aesthetically pleasing best management practices for land use. The Battlefield is also home to many descendents of William Penn's original Quaker colonists, who still take pride in caring for their lands as part of their cultural heritage.

As a result of these economic and cultural features, the conditions of properties in the Battlefield are quite good, and retain many features present in 1777. Colonial-era houses are common, many of which are restored for everyday use. Large properties are commonly maintained in a rural style with large trees and meadows rather than mowed lawn. The more dense suburban development tends to date to the mid 20th Century when houses were built one at a time and are not all uniform in design and color.



Historic stone houses, or those rebuilt in a historic style, are common in the Battlefield, such as this example from the northern part of the Battlefield.

Kennett Square Borough has undergone a renaissance in recent years including the restoration of its Victorian and early 20th Century wooden and brick houses. Downtown Kennett Square and Chadds Ford Village are both local tourism centers with quaint restaurants and shops. None of the Battlefield communities are known for high crime rates. Vandalism is rare, and most bridges and structures have little if any easily visible graffiti.

A field view of the Battlefield was conducted in the Fall of 2011 by Chester County Planning Commission staff. The major environmental concerns are the prevalence of non-native vegetation and issues relating to storm water runoff and erosion. A few small illegal dump sites were observed as well as “party sites” with scattered beer bottles, mostly located in wooded areas near major streams or rail lines. There are some former industrial sites in and around Kennett Square Borough, but they are typically well maintained. Both Kennett Square Borough and Kennett Township are updating their comprehensive plans, in part, to address the redevelopment of these sites.



Outdoor “party sites” and hidden graffiti like this under the US Route 1 Bridge this are some of the very few land management issues in the Battlefield.

LAND CONSERVATION IN THE BATTLEFIELD

Land Conservation Efforts Began in 1949⁸

The protection of open space in the Battlefield dates to 1949 when the Commonwealth of Pennsylvania designated 50 acres of open space along US Route 1 in Chadds Ford, PA as the Brandywine Battlefield Park. In 1961, the US Secretary of the Interior designated the Brandywine Battlefield as a National Historic Landmark (NHL), although it was not until May 1977 that the National Park Service certified the NHL’s boundaries. Although the NHL designation did not by itself serve to protect property from development, it provided the justification for limiting development through local municipal ordinances and open space protection efforts. In 1997, the Brandywine Battlefield National Historic Landmark was designated as the first official Commonwealth Treasure by the Pennsylvania Historical and Museum Commission (PHMC).⁹

The first coordinated effort to protect land along the Brandywine Creek was initiated in 1967. At that time, a new industrial development had been proposed along the US Route 1 corridor which crosses through the Battlefield. In response, a number of Chadds Ford area residents created the Brandywine Conservancy of Chadds Ford, PA, a non-profit land trust which acquires parcels of land or conservation easements that limit future development.¹⁰ In the 1990s, the Brandywine Conservancy, and later the Natural Land Trust of nearby Media, PA, began to focus their open space protection efforts on protecting Battlefield properties following the 1989 publication of

⁸ Unless otherwise noted, the information in this section was derived from an undated memo received in November 2011 which was provided by David D. Shields, Associate Director for the Environmental Management Center of the Brandywine Conservancy.

⁹ T. McGuire and C. Benner, *Brandywine Battlefield Park: Pennsylvania Trail of History Guide* (Mechanicsburg, PA: Stackpole Books), 40.

¹⁰ Brandywine Conservancy, www.brandywineconservancy.org, accessed 2011.

Brandywine Battlefield National Historic Landmark Cultural Resources Management Study funded by the Delaware County Planning Department.¹¹ This effort was further enhanced in 1993 with the formation of the Brandywine Battlefield Task Force (BBTF), a consortium of local preservation groups, citizens, and government officials whose mission includes facilitating public and private partnerships to preserve lands within the National Historic Landmark.

Early efforts to protect historically important lands in the NHL resulted in a limited number of landowners agreeing to voluntarily protect their properties. However, residential development activity in the area continued to rise. Parcels that only a few years prior might have sold for \$5,000 or \$10,000 per acre were now commanding prices of \$50,000 per acre or more. It became much harder for preservation groups to convince landowners to restrict the development of their land or to make charitable donations. As a result, the land trusts concentrated their conservation efforts on five of the most historically significant properties located along what is known as the “Meetinghouse Road Corridor.” After a variety of preservation approaches were explored, it was concluded that the direct purchase of land or conservation easements was the best alternative. This required funding that was estimated at over \$9 million. After a 17-year effort, the Conservancy and its partners raised over \$16 million in public and private funds to finance the protection of open space along the Meetinghouse Corridor.

By 1999, approximately 550 acres had been protected, including the 51-acre Sandy Hollow property, which is now a park owned by Birmingham Township. Some of the most intense engagements of the Battle occurred at Sandy Hollow Park. Between 2001 and 2003, the Brandywine Conservancy and the Natural Lands Trust successfully acquired conservation easements on 403 acres covering the Brigham, Spackman, Worth and Wylie properties.



Sandy Hollow park was a portion of the 550 acres of land protected along the Meetinghouse Road Corridor as part of a 17-year effort. It is now a municipal park.

In 2005, the Odell family offered the Brandywine Conservancy an opportunity to assist in the protection of their lands. In 2007, 100 acres of this property was protected. The Brandywine Conservancy currently retains an option on 13 additional acres. Chester County also provided funding for this effort.

- **Issues/Analysis:** There is a long history of land conservation in the Battlefield and as a result, local residents are familiar with, and generally supportive of, land conservation efforts. Such community support is a significant advantage which is not always present in communities in which further development is likely to occur.

¹¹ Nancy V. Webster, *Brandywine Battlefield National Historic Landmark Cultural Resources Management Study* (Media, PA: Delaware County Planning Department, 1983).

Common Tools for Protecting Open Space in the Brandywine Valley

Under Pennsylvania law, municipal level regulations and ordinances have the final authority in most land use decisions.¹² To date, many of the Battlefield's municipal governments have adopted provisions in their zoning and subdivision ordinances which would limit development of sensitive sites. Some municipalities have also enacted ordinances that promote open space development whereby residential units are clustered on smaller lots while large areas of "common open space" remain undeveloped. Common open space is typically managed by a Homeowners Association. A variety of ordinance-based options for conserving land have been used in the Battlefield. However, the most effective tool has been the outright protection of open space through in-fee acquisition by a non-profit land trust, or protection through a conservation easement held by a land trust or government entity.



Many of the eased open space lands in the Battlefield are still used for agriculture, such as the properties along Meetinghouse Road.

A conservation easement is a legally binding interest in land that restricts an owner's use and development of the property and grants another party (the easement holder) the legal right to enforce the easement's restrictions. The Landowner continues to own and manage the property, subject to the easement's restrictions. The easement is perpetual and runs with the land, binding all future landowners.

Conservation easements in Pennsylvania are subject to the statutory requirements of the Pennsylvania Conservation and Preservation Easements Act (Act 29 of 2001). Furthermore,

conservation easements in the Battlefield are commonly designed to meet the requirements of a "qualified conservation contribution" as set forth in §170(h) of the Federal Internal Revenue Code.¹³ Most of the conservation easements in the Battlefield are held by the Brandywine Conservancy or the Natural Lands Trust.

The Commonwealth of Pennsylvania can also protect viable farmland through its Agricultural Conservation Easement Purchase Program. This program would be most applicable to the rural westernmost part of the Battlefield in Chester County. The statewide program was first used in Chester County in 1989. Farm owners interested in preserving their farm may sell an agricultural conservation easement, also known as the "development rights" of the farm, to Chester County, or the Commonwealth of Pennsylvania, or both. The State Agricultural Land

¹² *Pennsylvania Municipalities Planning Code Recodification & Amendments, 1998-2005: Historical Development and Commentary on Amendments* (Harrisburg, PA: Local Government Commission, General Assembly of the Commonwealth of Pennsylvania, 2006), 121.

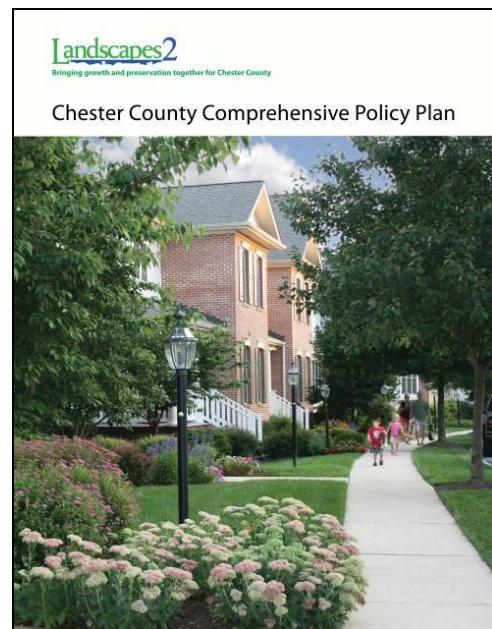
¹³ David D. Shields, Associate Director for the Environmental Management Center of the Brandywine Conservancy (Personal communication, 2011).

Preservation Board established the following minimum requirements that farmland tracts must meet to be eligible for easement purchase. Farmlands must:

1. Be located in an Agricultural Security Area consisting of 500 or more acres.
2. Have contiguous acreage of at least 50 acres in size unless the tract is at least 10 acres in size and is either contiguous to a property which has a perpetual conservation easement in place or is utilized for a crop unique to the area.
3. Have at least 50 percent of the soils that are available for agricultural production and are of capability Classes 1-4.
4. Contain the greater of 50 percent or 10 acres of harvested cropland, pasture, or grazing land.

Chester County also maintains a program to complement the existing state program. Funding for this program provides an opportunity for partnerships between the county and local entities such as townships and other public and private sources. Since this program began in 2001, the County Commissioners have committed over \$35 million to be used throughout the county, spread out over series of years to be used as a dollar-to-dollar match with local sources. To be eligible for this program a farm must:

1. Be located in a municipality that has committed, in writing, to participate by providing matching funds for successful applications for development right acquisition. The above may be waived if the applicant indicates a 50 percent donation on their application, or if other match-funding source is committed in writing.
2. Be enrolled in an adopted municipal Agricultural Security Area(s).
3. Be situated in areas designated as a "Rural" or "Natural" Landscape in the County comprehensive policy plan, *Landscapes2*.
4. Contain a minimum parcel size of 25 acres if not contiguous to an existing protected parcel; or a minimum of 10 acres if contiguous to another protected parcel.
5. Contain at least 50 percent cropland, pasture or grazing land.



Chester County only will fund open space preservation projects that are consistent with the adopted County Comprehensive Plan.

Public-Private Partnerships have been Successful¹⁴

Past efforts to protect the Battlefield have involved contributions of time and money from a variety of public and private sources. Key partners were the families who owned land in the Meetinghouse Corridor including the Brighams, the Wylies, the Spackmans, the Worths, and the Odells. Between 1969 and 2008, more than 30 landowners donated conservation easements protecting over 990 acres. Individuals and neighbors contributed over \$1.8 million while foundations and other non-profit groups contributed \$4.0 million. These organizations included the First Cornerstone Foundation, Longwood Foundation, McLean Contributionship, Mt. Cuba Center, R. K. Mellon Family Foundation, Roemer Foundation, and the Welfare Foundation. The Conservation Fund provided a short term loan on favorable terms. The Chester County Conference and Visitors Bureau also provided significant funding toward Battlefield land acquisition projects.



The preservation of land along the Meetinghouse Road corridor would not have been possible without the extensive cooperation of landowners.

Local governments have been active in protecting the Battlefield. Birmingham Township secured ownership of a key Battlefield property when it negotiated its donation to the Township as a park, now known as Sandy Hollow Park. The Township also agreed to be a co-holder of the easements toward which it contributed acquisition funds and, in doing so, now shares the obligations and burdens of enforcing those easements.

Birmingham Township also adopted a trail plan and agreed to assume joint responsibility with Chester County for the construction and maintenance of public trails located on

easements that cross the corridor properties. Thornbury Township provided an easement on 4 acres of Township land adjacent to Sandy Hollow. The Township also contributed toward the easement purchase of the Spackman property and agreed to be a co-holder of the easement.

All told, government funders provided over \$10.5 million or over 64 percent of total land acquisition costs. The federal government, the state and the counties have all contributed to this effort. The National Park Service (NPS) helped fund the 1989 planning study by Delaware County and provided a Challenge Cost Share Grant to support the conservation easement initiative. NPS staff helped with the passage of the Pennsylvania Battlefields Preservation Act. This Act authorized up to \$3 million for the protection of the Meetinghouse Road Corridor, as well as \$1.5 million for the Paoli Massacre site and a Revolutionary War visitors center. The PHMC provided grant funding through the State's Keystone Grant Program. The Pennsylvania

¹⁴ The information in this section was derived from an undated memo received in November 2011 that was provided by David D. Shields, Associate Director for the Environmental Management Center of the Brandywine Conservancy.

Department of Conservation and Natural Resources and the Department of Community and Economic Development provided over 20 percent of the funding for easement acquisitions. Chester County, through its Preservation Partnership Program grant, provided substantial grant funding for the purchase of land and conservation easements in the Meetinghouse Road



The Paoli Massacre site north of the Battlefield in Malvern, PA was protected with federal funding that also preserved the Meetinghouse Road Corridor.

Corridor. Delaware County funded the 1989 planning study entitled “*Brandywine Battlefield National Historic Landmark Cultural Management Plan.*”

Land trusts have played a major leadership role in terms of managing and coordinating preservation efforts in the Battlefield, most notably the Brandywine Conservancy. Its two divisions are the Environmental Management Center and the Brandywine River Museum, nationally known for its collection of art by three generations of the Wyeth family.

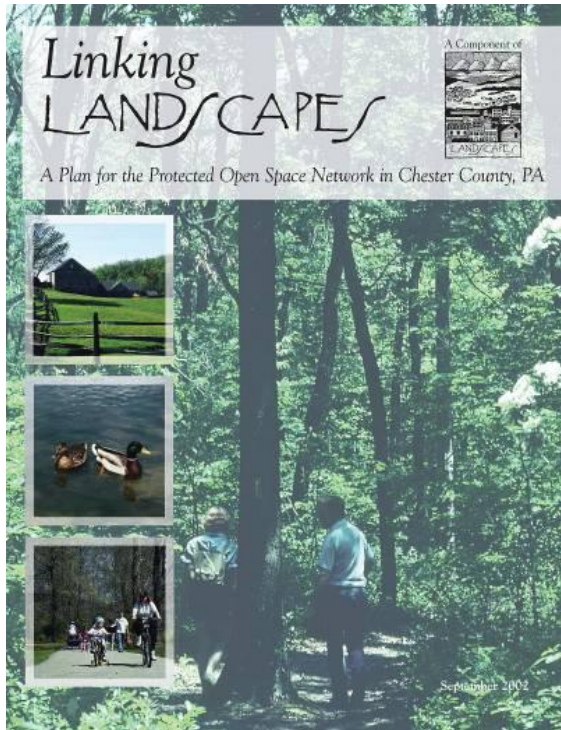
The Environmental Management Center provides land conservation assistance to landowners and municipalities and has been instrumental in permanently protecting more than 40,000 acres in Pennsylvania and Delaware. Another important partner has been the Natural Lands Trust (NLT), a regional non-

profit land conservation organization with extensive holdings of land and easements in Pennsylvania and New Jersey. NLT also provides planning and conservation consulting services to landowners, organizations, and governments.

EXISTING PROTECTED OPEN SPACE

Defining “Open Space” and “Protected Open Space”

Over the last few decades the term “open space” has become a topic of conversation from corporate boardrooms to corner coffee shops. However, if you ask a cross section of the general public to define “open space,” you are likely to get a variety of answers. For some people, a farm is “open space,” but others might say that a farm is a business. Some might say that a sports field is “open space,” while others say “open space” must be set aside for wildlife only. There is, in fact, no one set definition for open space, and even professional planners do not always agree on what it is. For the purposes of this document, the term “open space” is defined very broadly as any land that is not covered by buildings or pavement. This definition covers all forms of open space from a multi-acre park to a 10-foot wide public walking path around an industrial park.



Linking Landscapes was adopted by the Chester County Commissioners in 2002 and sets forth open space protection policy for Chester County.

The term “protected open space” refers to open land that is rigorously protected by a conservation easement or is highly unlikely to ever be developed. In Chester County, protected open space is strictly defined in the County’s 2002 adopted open space plan as: “*Land and water areas that have little or no development; are used for recreation or preserving cultural or natural resources, including productive agricultural soils; and are protected either permanently or on a long term basis.*” This definition more or less applies to all the protected open space in the Delaware County portion of the Battlefield.

For a parcel to be rigorously protected, there must be some kind of formal agreement, like a conservation easement, which will ensure that the property is protected even after it is sold by its current owner. Publicly owned properties that are largely undeveloped are also regarded as protected open space. Although it is technically possible for a publicly owned park or open space to be sold, it is highly unlikely. In

general, the public opposes any effort to reduce existing publicly-owned open space. More specifically, protected open spaces include:

- **Parcels that are owned by a private non-profit land trust**, such as the Brandywine Conservancy or the Natural Lands Trust. Such property is acquired by a land trust specifically to fulfill its mission of preserving open space in perpetuity.
- **Parcels that are owned by private individuals** who have either donated or sold their development rights to a land trust in the form of a conservation easement.
- **Parcels owned by farmers** who sold the development rights for their land to the Agricultural Conservation Easement Program administered by the state and the County.
- **Parcels owned by a homeowners association** as common open space. These parcels are not likely to be developed regardless of who moves into or out of the development.
- **Parcels that are owned by federal, state, county or municipal governments** and are largely undeveloped, including parks, playgrounds, public gardens, historic sites, non-recreational public open spaces, and natural preserves.

A LAND CONSERVATION PLAN FOR THE BATTLEFIELD

Existing and Potential Protected Open Space in the Battlefield

Map 2.7 shows the currently protected open space in the Battlefield. Most of this land is protected by non-profit land trusts and is privately owned. Protected open space is mostly clustered in the Chadds Ford area along the lower main stem of the Brandywine Creek, and also in the Northbrook area in the northwestern part of the Battlefield.

Map 2.8 shows the results of an evaluation undertaken to identify parcels which have basic features that could make them well suited for protection as open space. These parcels fall into the following three categories each of which is designated by a color on the map:

- **Open Parcels Over 10 Acres (Blue)** are parcel of ten acres or more that are regarded as “vacant” or “farmland” in tax assessment records. These blue parcels may or may not have historic or archaeological significance. However, they still have the potential for protection as open space because they are mostly undeveloped and are large enough to be eligible for protection by state and county open space protection programs. Digital mapping for Delaware County vacant properties is not readily available.
- **Marching Corridor Parcels (Yellow)** are parcels of any size within 600 feet of either side of roadway that was used for major troop movements. This 600-buffer (200 yards) was recommended by the ABPP staff as an appropriate buffer to account for the area used by troops marching with horse drawn cannons. These parcels represent land upon which troops advanced, rested, or retreated and so they have the potential for historic or archaeological value. Some of these parcels are undeveloped and some are developed.
- **Engagement Zone Parcels (Pink)** are parcels of any size that are completely or partially covered by one the Battlefield Engagement Zones delineated in the 2010 KOCOA mapping. These parcels represent land upon which active combat occurred and have potential historic or archaeological value. Some of these parcels are undeveloped and some are developed.



Much of the land along the marching corridors is developed because the roads used by British troops are still major transportation corridors.

Map 2.8 indicates that there are a significant number of open parcels that have the potential to be protected as open space. However, as shown previously on *Map 2.7*, there are already a large number of protected open spaces within the Battlefield. A second evaluation was therefore conducted to determine which parcels (from

Map 2.8) have the potential for protection but are not yet protected. The result of this evaluation is presented on *Map 2.9* which includes three categories of open land:

- **Protected Open Space (Green)** parcels are already protected as open space.
- **“Unprotected Open Space” (Pink)** are parcels that have the potential to be protected as open space but are not yet protected. These are known as “unprotected open spaces.”
- **Developed Open Ground (Hatched Green)** parcels are properties that are largely open ground but are technically speaking “developed lands.” These include school grounds, prison grounds, golf courses, and the fields and arboretum lands belonging to Longwood Gardens. These properties are not protected from further development and could be sold for residential or commercial development, although it is not likely in the near future. It is worth mapping these lands because it is conceivable that they could be at least partially protected by a conservation easement at a future date.

As *Map 2.9* shows, many of the green “unprotected” parcels are in close proximity to existing protected open space.¹⁵ This is especially true in the Marshallton area, where the unprotected green parcels have the potential to link together the existing protected parcels creating a large cluster in the northwest of the Battlefield. State and county programs that fund the protection of open space are more likely to fund projects which create large clusters of open space. As a result, the **Marshallton Cluster** would be well suited to receive funding. Other potential open space clusters include:

- **The Old Kennett Meetinghouse Cluster** focuses on the Old Kennett Meetinghouse and include lands owned by Longwood Gardens.
- **The Baggage Train Cluster** includes lands along Hickory Hill and Hillendale Road where British forces parked their baggage train during the Battle.
- **The Brandywine/Chadds Ford Cluster** consists mostly of lowland and floodplain properties along Brandywine Creek and around Chadds Ford Village.
- **The Strodes Mill Cluster** is small, but includes a number of properties with standing historic structures.



Greene’s Rearguard Line of Defense took place on an unprotected field just west of US Route 202. This is one of the few undeveloped lands in the area.

¹⁵ Local officials requested that this map be presented as a schematic rather than in detail to respect the privacy of private landowners of protected properties.

- **The Sandy Hollow Cluster** is largely protected open space. However, there are still some large open lands that are not protected in the vicinity of Birmingham Road. This cluster also includes an active farm that was the site of Greene’s Reguard Line of Defense. The protection of this site is one of the highest priorities for the preservation of the Battlefield.



Although the dominant land use on the Battlefield is single family residential, there are still many active farms, especially around the Marshallton area.

The “unprotected” open spaces shown in *Map 2.9* were further evaluated to determine if they still possess wooded or agricultural land uses like those found in the Battlefield in 1777. The goal of this exercise was to locate existing landscapes which maintain the general scenic character of the Colonial Era. *Map 2.10* shows the current Anderson Land Use cover for the Battlefield. This map also includes those parcels identified in *Map 2.9* as being “unprotected.” This map indicates that the parcels that are well suited for protection are largely agricultural and wooded, and therefore still possess attributes similar to the landscapes in 1777.

- **Issues/Analysis:** Much of the Battlefield has been developed or subdivided into small parcels that are not likely to ever be protected as open space. However, there are still a number of areas where clusters of protected open space could be established. These clusters could be created by filling gaps in the existing protected open space network. This approach is attractive to grant program administrators because it permits them to fund the protection of one property while at the same time expanding a more regional protected open space cluster.

NATURAL CONSTRAINTS AND OPPORTUNITIES

Preserving Natural Resources through Open Space Protection

As noted above, protecting the open spaces within the Battlefield could be used to preserve historic resources. Such protection could also help to preserve or restore natural resources such as forests, wetlands, or riparian buffers along streams. Open spaces that help sustain the environment and also preserve historic resources are more likely to receive preservation funding. For this reason, the “unprotected” open spaces in *Map 2.9* were evaluated to determine how their protection might impact natural resources. *Map 2.11* shows the existing woodlands in the Battlefield, along with the wooded lands that existed in 1777 based on the 2010 KOCOA mapping. As this *Map 2.11* shows, the great majority of the 18th Century woodlands have been developed into open farmland or residential development. As a result, there is essentially no viable opportunity to restore the forests in the Battlefield to their original condition.

Conversely, *Map 2.12* suggests that open space protection could serve to preserve and restore floodplains and water features. Pennsylvania Code Title 25, Chapter 93 designates some of Pennsylvania's streams as "Special Protection Waters." The Brandywine Creek Watershed contains numerous stream corridors that have been designated as "high quality" (HQ) or "exceptional value" (EV) by the Pennsylvania Department of Environmental Protection (DEP). However, the only waterway within the Battlefield designated as a HQ Special Protection Water is Broad Run. Furthermore, within the Battlefield, all of the main stem, east branch, and west branch of Brandywine Creek is a state designated Scenic River, as well as Pocopson Creek and Broad Run.

The Battlefield includes a number of "Impaired Streams" as designated by the DEP. Impaired Streams, which are shown in red on *Map 2.12*, are sections of watercourses that do not meet Pennsylvania water quality standards for sediment and nutrient content. The northwestern part of the Battlefield is largely free of impaired streams, and protecting these areas from further development would support the maintenance of the current water quality.



Although the Battlefield is not pristine wilderness, it does include areas that serve as valuable wildlife habitat, especially in wetland complexes and floodplain areas.

Protecting land in southern Newlin Township and northeastern Kennett Township could also improve the quality of impaired streams which flow through them. Such an effort would support the "Red Streams Blue" initiative developed by the Brandywine Valley Association, a local watershed protection group. The goal of Red Streams Blue is for all the streams in the watershed to meet the state water quality standards.

Map 2.13 shows that there are still large wetland complexes along the Brandywine Creek and smaller wetland areas scattered throughout the Battlefield, mostly adjacent to a small streams. This map also delineates Pennsylvania Natural Diversity Index (PNDI) Sites which, in general terms, are areas known to have threatened or endangered species or unique habitats. Following state guidelines, the exact locations and the species are not identified for their protection. The amount and quality of PNDI sites in the Battlefield is common throughout the Brandywine Creek Watershed and warrants no special land use consideration aside from those already in place at the municipal level. Within the Battlefield, the PNDI sites include¹⁶:

- A large woodland north of Kennett Square Borough
- A meadow northeast of Kennett Square Borough

¹⁶ Chester County Board of Commissioners, *A Natural Areas Inventory of Chester County, Pennsylvania* (West Chester: Chester County Planning Commission, 1994, 2000).

- A small woodland northeast of Kennett Square Borough
- A large woodland in northern Pocopson Township
- A large meadow along the Brandywine Creek Main Stem
- A riparian corridor along Broad Run, a tributary of the West Branch Brandywine Creek
- A large serpentine barrens, whose underlying rock supports unique habitat
- A former serpentine quarry, whose remaining exposed rock supports unique habitat

➤ **Issues/Analysis:** There is significant potential for protecting open space clusters and expanding existing open space clusters within parts of the Battlefield. The most well suited areas are in the Marshallton Cluster and the Brandywine/Chadds Ford Cluster along Brandywine Creek. The protection of open space in these areas could simultaneously protect historic resources, wetlands, and water resources, and thus make them more likely to receive funding through competitive grants.



The Myrick Conservation Center includes over 300 acres of protected open space that is a core element of the Marshallton Cluster.

PUBLIC AND STAKEHOLDER COMMENTS



Draft mapping and recommendations for open space protection were reviewed by local stakeholders at a public meeting at the Brandywine Battlefield Park.

The following comments were gathered at the three public meetings held at the Brandywine Battlefield Park from 6:30 to 9:00 PM on October 6, 2011, July 7, 2011, and November 8, 2012. These meetings were all well attended. They included a presentation by project staff and a breakout session in which comment and input was gathered from attendees who included residents, landowners, other stakeholders and municipal and state officials.

Many of the comments about land conservation that were shared at these meetings focused on the need to acquire funding and to respect the rights and privacy of private land owners. There was general agreement on the need to maintain properties in a way that would protect natural resources and be consistent with the rural and scenic characteristics of the Battlefield. It was also noted that encouraging numerous landowners to voluntarily adopt best management practices would require a major coordination effort. The key Land Conservation related comments are summarized below:

Comments about Land Conservation from the Public Meetings

Protecting land through an easement can cost a lot of money. Changing zoning ordinances can be a less expensive option, even though it is not always permanent.

There should be an effort to inform landowners of the significance and location of the Battle. People need to see maps that show where the troops marched not just the fighting areas.

People with long term ties to the land, like farmers, are more likely to preserve their land and so are landowners who realize its historic significance. The Farmland Preservation Program is one of many tools available for conservation.

Each municipality needs its own mapping of areas where troops marched and fought.

Municipal historic committees need to get more involved in protecting land, not just buildings.

The National Historic Landmark should be expanded so that the whole Battlefield could get the preservation benefits.

Land conservation should be viewed as part of telling the story of the Battlefield.

There are private property issues all over the Battlefield. If you want to start preservation you should start at the Park where you know you can get something done.

It is good to make maps available about what lands could be protected, but you need to determine how much information you want to make public. Listen to the landowners.

Zoning is a good tool but nobody wants anything that will involve taking land by condemnation.

The Official Map can be useful but residents and local officials need to be educated to know how to make it work. There are deadlines that municipalities have to meet to protect land on an Official map.

In some municipalities, all they have are small parcels of land that are hard to protect.

The forests are scenic and should be protected as well as open lands.

There is great inconsistency in protecting land. Some areas are very well protected, others are not.

RECOMMENDATIONS

The recommendations listed below are presented as possible work efforts that could be initiated in the short term, which for these purposes is approximately three years. Long term and ongoing recommendations are listed in *Appendix E*. The priorities and cost estimates for all these recommendations are presented in *Appendix C*.

Recommendations for the Protection of Open Space

There has already been great success with the protection of open space within the Brandywine Valley. Much of this effort has focused on the preservation of viable farmland, natural resources or historic resources relating to the battlefield engagement zone, but not the marching corridors. The following recommendations represent an effort to expand on the successful protection of open space in the Brandywine Valley in two ways. First, these recommendations call for open lands along the marching corridors to be protected where possible. Second, they call for existing open spaces to be linked together thus creating larger clusters that ultimately form an interconnected network through the Battlefield.

2.1: Make the expansion of the existing clusters of protected open space a priority. Most of the existing protected open space within the Battlefield is located on large parcels that were originally flat to gently-rolling cultivated fields. In many instances these parcels are at least partially surrounded by smaller open parcels that may include wooded slopes or floodplains. Therefore, protecting parcels that are adjacent to exiting protected open spaces should be a priority. Such an approach creates larger open space areas that can be managed jointly. For example, a woodland restoration project on one parcel can extend over into an adjacent open parcel. Such a scenario is impossible on open space parcels that are separated by a corridor development. Furthermore, many land preservation programs, such as Agricultural Conservation Easements, give higher priority to protecting farmland in large clusters. By protecting clusters of farms, the multiple numbers of farmers can use the same farm support industries, such as tractor repair shops.

2.2: Manage the land on protected open space in a way that is consistent with long-term Battlefield planning. If properly maintained, open space can provide scenic vistas that promote tourism and natural habitat that supports wildlife and reduces stormwater runoff. However, poorly maintained open space, that is not vegetated, or is overrun with a monoculture of non-native species, can provide few benefits.



Protected open space clusters could be extended along the flat lowlands and floodplains along the lower reaches of the main stem of the Brandywine Creek.

Vacant lots can even reduce property values and attract vandalism and “party sites.” For this reason, protected open spaces should be well maintained. The very landscape of the Battlefield is a feature that could be used to promote historic interpretation and tourism. These landscapes should be managed in way that is consistent with the long-term Battlefield planning and also reflects land management practices that relate to the colonial era. Such practices may include using colonial style fences, signage, or shrubbery. This approach could require creating a guide for landowners.

2.3: Work with developers and municipal governments to include the protection of open space as part of the land development process. The Battlefield has undergone significant development in the past few decades. Nonetheless there are still some undeveloped lands that could be developed. There are also properties which could undergo redevelopment (commonly called “knockdowns”), even in suburban settings. Developers can therefore play a significant role in setting aside open space within new developments. Developers can work with municipal governments or non-profit land trusts to design and build conservation developments. Such developments are also dependent on municipal land use ordinances and regulations.

Recommendations for the Conservation of Natural Resources

Many of the key historic resources within the Brandywine Battlefield are not manmade structures but rather natural features, such as the fords crossed by the troops, or the floodplain where Washington was nearly shot by a sharpshooter. These natural features must be properly protected and maintained or else they will cease to exist. Hillsides used by troops can disappear through erosion, while streams forded by battalions can disappear. Indeed, nearby Valley Forge National Historic Site has a stream which periodically runs dry. The following recommendations focus on natural resources whose preservation will serve to protect historic landscapes and so create greater historic interpretation opportunities for visitors.

2.4: Continue to conduct and implement greenway master planning for the Brandywine Creek corridor. The Brandywine Conservancy has already begun a greenway plan for the Brandywine Creek that includes the Battlefield, as well as much of central and northern Chester County. Such a greenway would serve as the central spine of a regional network linking the Battlefield to other parts of Chester County. This greenway planning effort should be pursued because it will make the Battlefield more likely to receive funding for projects that are County-wide in scope while also promoting the Battlefield as key destination along the larger greenway.



The Brandywine Creek is the central natural and cultural feature of the Battlefield and could be the focus of joint greenway and historic resource planning.

2.5: Focus the protection of open space along stream corridors and their associated floodplains and wetlands. Much of the undeveloped land that is well suited for protection as open space is located along the banks of the Brandywine Creek and its tributaries including the surrounding floodplains. Stream corridors are by themselves a valuable natural resource worthy of protection. However, in the Battlefield such wet areas are also the locations where combat often occurred. Protecting these stream corridors will not only protect natural habitat but also the original landscapes that influenced the strategies employed by the opposing armies during the Battle.

2.6: Continue to protect farmland and agriculture as an industry within the Battlefield. In 1777, the Battlefield was largely a farm community dominated by crop production. Although much of the Battlefield is developed, it still retains a number of productive farms. Some of these farms sow field crops as was done in 1777. Other farms are high-tech mushroom production, which are usually quite modern looking, but can be screened or have a more historic looking façade, such as painting them brick red. Retaining the existing crop farms is important, since they reflect a historic land use. However, maintaining the modern farm operations is equally

important because they help to maintain agricultural support industries, such as tractor mechanics. In the modern economy, all forms of agriculture from computerized mushroom growing houses to simple corn fields are interdependent parts of the local agricultural industry.

Recommendations for Updating Municipal Regulations and Ordinances

The Battlefield extends through parts of 15 municipalities and two counties. Therefore, preservation is simultaneously a historic preservation effort and an overall general land use preservation effort. In Pennsylvania, some of the most effective tools in the preservation of open space on a municipal level are the use of the municipal zoning and subdivision and land development ordinances, or a combination of the two. The Pennsylvania Municipalities Planning Code (MPC), also known as PA Act 247, addresses municipal ordinances as follows:

The Zoning Ordinance - The MPC designates the zoning ordinance as a tool for regulating residential and non-residential land uses including protected open space and recreational facilities. The MPC notes that the zoning ordinance should reference a statement of community objectives, which is a kind of documented overall philosophy that can be included in the comprehensive plan or zoning ordinance. Protecting open space is a valid community objective, and it is appropriate to address it in municipal zoning. There are several techniques that can be used to address open space preservation in municipal zoning.



Protected open space includes private property with conservation easements or public lands like Sandy Hollow Park which has open fields and trails.

Subdivision and Land Development Ordinance (SLDO) - While zoning determines the type of land use and densities permitted on a property, the SLDO regulates the subdivision and development of land. According to the MPC, a subdivision is:

“The division or redivision of a lot, tract, or parcel of land by any means into two or more lots, tracts, or parcels or other divisions of land including changes in existing lot lines for the purpose, whether immediate or future, of lease, partition by the court for distribution to heirs or devisees, transfer of ownership or building or lot development...”

The MPC designated land development as, “The improvement of one lot or two or more contiguous lots, tracts, or parcels or land...” or a subdivision of land or other specific forms of development.

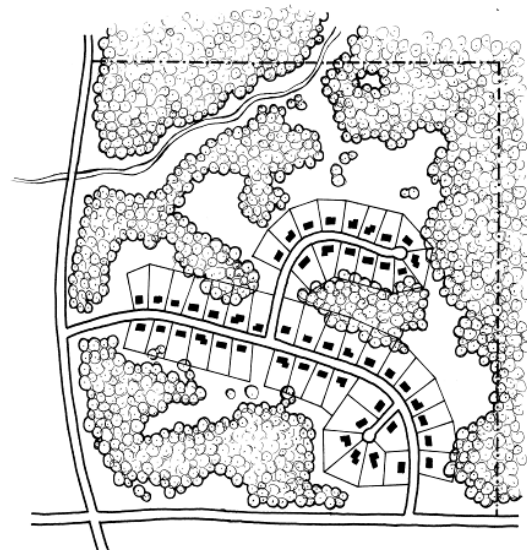
2.7: Battlefield municipalities should adopt a consistent definition for “protected open space” in their ordinances and regulations. Efforts to protect open space in the Brandywine Valley have proven to be most effective when they take a regional approach as opposed to focusing on isolated individual properties. For this reason, it is best if adjacent municipalities use a similar definition for “open space” in their ordinances and regulations. The adopted open space plan for Chester County defines “protected open space” as:

“Land and water areas that have little or no development; are used for recreation or preserving cultural or natural resources, including productive agricultural soils; and are protected either permanently or on a long term basis.”

The Battlefield municipalities need not adopt this specific language, but it would be useful for them to use it as a starting point.

2.8: Battlefield municipalities should consider adopting provisions for open space cluster development in their ordinances and regulations.

Cluster Development is a form of land development in which residential units are grouped together, usually on less than half of the property, leaving the majority of it permanently protected as open space. This preserved area of open space is typically managed by a Homeowners Association (HOA). Depending on the type of facility options available and the district in which the subdivision is located, up to 75 percent open space can be protected. Uses permitted in open space can include natural and historic resources, recreational facilities, as well as existing agricultural uses. Possible options for implementing cluster development include:



With cluster development, multiple units are “clustered” on lands best suited for development which protects sensitive areas as common open space.

- **Lower Base Density for Conventional Development.** This strategy keeps or even lowers the base density for conventional subdivisions, while allowing a higher density for cluster subdivisions. It offers a significant incentive for choosing cluster development over conventional subdivisions. Allowing a higher gross density through the cluster option could also increase the percentage of open space that would be retained.
- **Allow Cluster Development By-Right versus Conditional Use.** This approach allows cluster development as a by-right (default) use, while requiring conventional subdivisions to go through the conditional use or special exception approval process. Some municipalities have taken a more rigorous approach in which cluster subdivisions are mandatory for larger parcels (20 to 40 acres) in certain zoning districts.

2.9: Battlefield municipalities should consider adopting an open space “fee-in lieu provision” in their ordinances and regulations. With this approach, a developer is required to provide a specific amount of open space for certain types of development (usually large scale residential), or pay a fee which can be used by the municipality to fund the future acquisition of open space. Accepting a “fee-in-lieu of open space” can be effective in cases where the open space would not contribute to the expansion of or access to, the open space network, or would not be of significant recreational benefit to residents of the development. The amount of the fee-in-lieu should be reviewed and adjusted at least every five years to account for rising land costs. Municipal ordinances should specifically indicate what types of open spaces can be acquired with budget fee-in-lieu funds. Such open spaces may include, but not be limited to, recreational parks, trails, greenways, or natural resource preserves with limited-access.

Recommendations for Further Initiatives

2.10: Study the viability of protecting open space in the Baggage Train Cluster. This cluster is not a large area, nor was it the location of combat. However, it does include a significant cluster of open lands that are well suited for protection. This area could provide a unique historic interpretation opportunity since is the last remaining location for behind-the-lines activities that still retains its original open land use. Other behind-the-line locations such as the US Route 1 corridor through Kennett Square Borough, is largely developed. The protection of unprotected lands in this cluster should be pursued through coordination with landowners.

2.11: Coordinate with Longwood Gardens to consider options for protecting open space lands in and around their properties. Longwood Gardens is a major landowner in Battlefield. Their holdings include open fields and forestlands that are outside the formal gardens visited by the public. None of these parcels are protected with an easement. Although it is unlikely that Longwood Foundation would ever move, their land is privately owned and so could possibly be developed in the future. Although it is not common, there have been instances in the region where old estates or golf clubs have become financially distressed and have been forced to sell all or part of their lands. The protection of this and the other unprotected lands in this cluster should be pursued through coordination with a non-profit land trust.

2.12: Coordinate with the local farming community to explore options for protecting active farmland as open space. The farms in the Battlefield are unique in that they consist of a small number of crop farmers, whose land is well suited for protection, and a larger number of mushroom farmers, whose land is developed into mushroom houses.



The indoor mushroom operations in the western part of the Battlefield do not cover large acreages, but are a major economic contributor to the areas.

Typically, mushroom farms are not well suited for protection because they are on small parcels of land much of which is paved. However, the mushroom farming community benefits by having crop farms in the area to supply them with straw and other farm products needed in mushroom cultivation. Outreach should therefore be conducted with the farm community as a whole.

2.13: Publicize and celebrate open space protection efforts at heritage centers or museums dealing with the Battlefield to better educate the public about the value of open space protection. In the past, public education efforts regarding the Battlefield have focused on the Battle or other colonial era topics. However, the history of land preservation over the last 40 years could also be presented to the public. Such publicity would celebrate the efforts of local residents and organizations while educating the public about open space benefits.

2.14: Identify what topographic areas were important to the Battle and target them for open space protection. There are a number of hills such as Osborne Hill, which were important strategic landscapes for the Battle. These areas were used as sites where officers could scan the landscapes and formulated battle plans. Where possible, these points could be protected with a focus on protecting areas that give a view of the surrounding landscapes. Such an effort may only require that an acre of land or less be protected just as long as that small property provides a good view.

2.15: Identify smaller parcels of land that should be protected as a second phase of protection after the larger parcels are protected. It is possible that in the coming years, the majority of the large open parcels in the Battlefield will either be protected or developed.



Many properties in historic Strode's Mill Village are located on small parcels of land, which is one reason why they have yet to be protected as open space.

Under such a scenario, most of remaining open land would be smaller parcels (generally under 10 acres), which are currently not a priority for preservation. These parcels could be identified for a second phase of preservation. Designating these parcels in the short term would open the possibility that they could be protected sooner rather than later if an unexpected source of funding were to arise.

2.16: Identify scenic vistas that aid in the interpretation of the Battle and target them for open space protection. The Battle took place in a largely agricultural valley characterized by rolling hills interspersed with forested areas and small crossroads settlements with several buildings. Fortunately, there are still a number of scenic vistas which can provide a context for understanding the Battle. At these locations, visitors can still view the same agrarian landscape

through which troops marched in 1777. These locations include open fields and lands associated with marching routes, fording areas, farmsteads, and clusters of historic buildings. Where possible, these important landscapes could be protected even if they were not used for active combat or troop movements. Designating these landscapes as important view sheds could provide further justification for protecting them.



The Village of Marshallton provides a scenic view of rural Chester County. The village grew after the Revolutionary War but the cornerstone of the district remains Martin's Tavern, the Bradford Meetinghouse, Humphrey Marshall's home, and the blacksmith shop. All of these buildings were standing and played important roles during the Battle.



The rolling hills and farmland of the Trimbles Ford area are some of the most scenic view sheds in the Battlefield. The open fields in this area surround the where Gen. Howe first crossed the Brandywine Creek and where the first skirmish of the flanking march took place. The farmhouse to the lower right was standing during the Battle.