



WEST BRANDYWINE TOWNSHIP

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COMPREHENSIVE PLAN UPDATE 2020



**COMPREHENSIVE PLAN UPDATE 2020**  
West Brandywine Township  
198 Lafayette Road, West Brandywine, PA 19320

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**BRANDYWINE  
CONSERVANCY**

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# Chapter 1 Introduction and Overview



*The entrance to the West Brandywine Municipal Building.*

## Introduction

The 2019 West Brandywine Comprehensive Plan is an update of the 2005 Comprehensive Plan. The 2005 Comprehensive Plan set to guide West Brandywine Township through what was expected to be a period of considerable growth. However, the Great Recession of 2008 saw many residential developments that were planned subsequently abandoned. In the interim period, West Brandywine Township has seen very little additional growth and this plan provides a framework for balancing future growth with a focus on protecting its natural and historic resources, maintaining its unique agricultural and rural character, and providing for enhanced transportation networks and trails.

West Brandywine Township is just over 13 square miles in size and was estimated to have 7,449 residents as of 2016. As shown on the Regional Location Map on page 7, West Brandywine Township is located in the northwest corner of Chester County. West Brandywine Township is bisected by Route 82 as it runs north-south, while Route 322 traverses northwest-southeast across the northern third of the Township. The City of Coatesville lies roughly 2 miles south of West Brandywine Township, while the Borough of Downingtown lies approximately 5 miles to the south and east.

West Brandywine Township's character is generally defined by three primary land uses. The center of West Brandywine Township is dominated by open, prime agricultural lands that also sit upon the divide between major drainages of the East and West Branches of Brandywine Creek (see Aerial Map on page 9). The western

side of West Brandywine Township is predominantly rural in nature with extensive woodlands and other natural resources dominating the landscape. The predominant land uses on the eastern side of West Brandywine Township are primarily suburban in nature with residential neighborhoods and institutional land uses being common. Commercial land uses in the Township can be found, primarily, along the Route 322 corridor as it passes through West Brandywine Township from East Brandywine Township to Honey Brook Township.

Located within the Coatesville Area School District, West Brandywine Township is primarily a bedroom community serving the larger commercial and retail communities to its south and east in the center of Chester County. However, residents are afforded close access to two scenic and popular Chester County Parks, Springton Manor Farm and Hibernia County Park, both offering a variety of hiking trails and other recreational opportunities, including camping, canoeing, and educational programs. Only a few miles further to the east from Springton Manor Farm lies the 1,727 acre Marsh Creek State Park, another location offering a variety of opportunities for recreation and nature based activities.

## What is the Comprehensive Plan?

This 2019 Comprehensive Plan is intended to guide the development and preservation of West Brandywine Township over the next 20 years as per the Community Vision, Goals, Objectives and Strategies included herein. It establishes implementation recommendations for natural resources and open space, historical and cultural resources, community facilities and services, transportation and trails, future land use, housing, and energy conservation.

The recommendations of this Plan have no legal effect on the actual use of land, i.e., West Brandywine Township cannot mandate how land is used or developed by adopting this Comprehensive Plan. However, this Plan will serve as an important policy guide for use by West Brandywine Township officials for a variety of municipally-related topics and can also be used when establishing work programs for its various committees and commissions, and when seeking public funding for projects identified in the Plan for implementation.

This Plan also serves as a foundation for revisions to West Brandywine Township's land use regulations. The Township's main sets of regulations for land use are the Zoning Ordinance (ZO) and Subdivision and Land Development Ordinance (SALDO). While the Comprehensive Plan provides guidelines, the ZO primarily controls the types and intensities of the various land uses and design standards for their existing use and future development. The SALDO primarily establishes the procedures for approving new lots and other land developments. The SALDO also establishes design standards for the construction of roads, stormwater management, and other improvements.

## Plan Components

**Chapter 1: Introduction and Overview**

**Chapter 2: Vision, Goals, and Objectives**

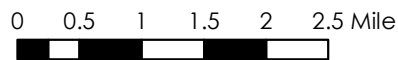
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### Township Regional Location Map




The map shows West Brandywine Township in context with its regional neighbors.



## Regional Location



### Legend

-  State boundary
-  Township boundary
-  Adjacent municipalities

- Chapter 3: Public Participation**
- Chapter 4: Demographics**
- Chapter 5: Current Land Use**
- Chapter 6: Natural Resources and Open Space**
- Chapter 7: Historical and Cultural Resources**
- Chapter 8: Public Facilities and Services**
- Chapter 9: Transportation and Trails**
- Chapter 10: Energy Conservation**
- Chapter 11: Adjacent and Regional Planning**
- Chapter 12: Future Land Use and Housing**
- Chapter 13: Implementation Strategies**
- Appendices**

This section outlines how this document’s individual Chapters interrelate to form this Comprehensive Plan for West Brandywine Township’s future.

West Brandywine Township’s Vision, Goals, and Objectives (Chapter Two) and Future Land Use Plan (Chapter Twelve) are informed by public participation (Chapter Three) in the planning process, as well as the data and analysis contained in Chapters Four through Eleven.

Chapter Four documents both historic and more recent demographic trends (including housing) in West Brandywine Township, its surrounding communities, and Chester County, while Chapter Five provides an overview of the current land uses found in West Brandywine Township.

Chapters Six and Seven describe West Brandywine Township’s significant natural and cultural resources, including historic sites and buildings, ecologically significant watersheds, scenic views and vistas.

West Brandywine Township’s infrastructure, facilities, services, and transportation network, including trails, are described and assessed in Chapters Eight and Nine, while Chapter 10 analyzes energy use and opportunities for conservation.

Chapter Eleven documents how land use and zoning in West Brandywine Township relates to both its adjacent communities and its regional setting, important to consider so that incompatible land uses are not adjacent to one another.

Chapter Twelve and its Future Land Use Map consider all the aforementioned chapters and provides a general policy guide for land use in West Brandywine Township over the several decades.

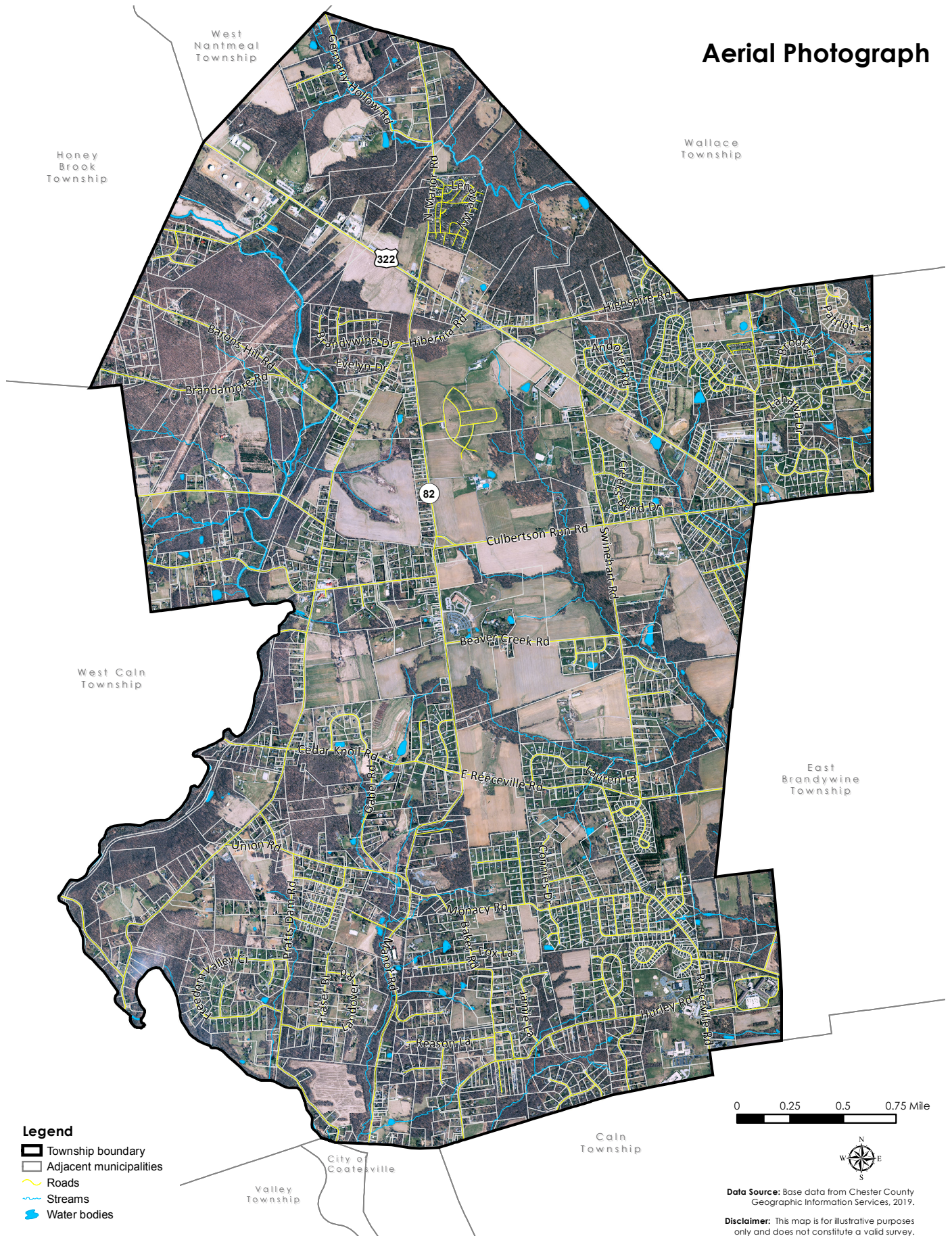
Finally, Chapter Thirteen provides an implementation matrix that provides a framework for the realization of the Plans Vision.

Note: Chapters 6, 7, 8 and 9 are structured in that the primary issues of these topics and their associated recommendations are presented and discussed at the beginning of each chapter. The second section of each of these four chapters provides additional background information that some readers may find useful and informative. These sections are shown with a grey background to differentiate them from the rest of the chapter.

### **Township Aerial Map**

The map on the adjacent page shows the municipalities that West Brandywine Township. The map outlines individual parcels, roadways, streams, and other water bodies in the Township.

# Aerial Photograph





## Chapter 2 Vision, Goals and Objectives



*A typical agricultural scene in West Brandywine Township.*

### Overall Vision Statement

West Brandywine Township recognizes and seeks to protect the natural, historic and rural features of its landscape, maintain neighborhood character, enhance social and geographic connectivity, and promote a diverse and vibrant community that can be sustained over time.

### General Goals

West Brandywine Township will consider funding, modify policy, fill administrative needs, and budget accordingly to achieve the following goals and their respective objectives over the planning horizon for this Comprehensive Plan:

**Goal 1: Conserve and Enhance Community Character**

**Goal 2: Promote Community Connectivity**

**Goal 3: Nurture a Diverse, Livable Community**

**Goal 4: Maintain and Enhance Community Facilities**

**Goal 5: Provide Effective Township Services**

Each of these goals include a series of objectives:

## Goal 1: Conserve and Enhance Community Character

- 1.1 Guide the location and character of land development and open space preservation in consideration of community character, natural and cultural resources, and availability and capacity of community services.
- 1.2 Promote long-term economic viability of local agricultural activities.
- 1.3 Retain open space appropriate for active and passive recreational use within residential areas.
- 1.4 Seek to maintain the essential qualities of scenic roadways within West Brandywine Township.
- 1.5 Promote viable adaptive re-use of historic resources.
- 1.6 Promote protection of natural resource corridors, for both wildlife and recreational purposes.
- 1.7 Promote protection of existing neighborhood character while allowing for diversity in residential housing to address all needs.

## Goal 2: Promote Community Connectivity

- 2.1 Continue to develop a trails system to interconnect open space, recreation areas, schools, residential neighborhoods, and businesses.
- 2.2 Promote local and regional public transportation and para-transit opportunities.
- 2.3 Advocate for strategic improvements to the state-owned road network.
- 2.4 Maintain the safety and function of Township-owned roads.
- 2.5 Continue to require developers to help finance or otherwise provide for road improvement needs induced or impacted by their development through implementation of West Brandywine Township's Act 209 Plan.

## Goal 3: Nurture a Diverse, Livable Community

- 3.1 Provide for a wide range and variety of housing suitable for diverse income levels and compatible with resource protection objectives, the transportation network, and community facilities and services.
- 3.2 Promote increased economic development opportunities and mixed use in logical locations of West Brandywine Township, aiming to supplement economic activities offered in the surrounding region.
- 3.3 Provide opportunities for employment-generating development consistent with community character objectives.
- 3.4 Foster and enhance relationships with community institutions to offer diverse recreational opportunities and programs.

## Goal 4: Maintain and Enhance Community Facilities

- 4.1 Facilitate safe and adequate water supply, stormwater management, wastewater management, solid waste disposal and recycling throughout West Brandywine Township.
- 4.2 Maintain and enhance the use of public sewer infrastructure.
- 4.3 Ensure well-maintained on-lot sewage disposal systems in areas not served by public sewers.
- 4.4 Maintain and enhance stormwater management practices to increase recharge and improve the quality of stormwater runoff.
- 4.5 Continue to monitor the efforts of the local school district to provide quality and cost-effective

- education opportunities and facilities and their impact on West Brandywine Township.
- 4.6 Monitor other public infrastructure needs, including electricity, natural gas, phone, cable, and internet services within West Brandywine Township.

## Goal 5: Provide Effective Township Services

- 5.1 Assure provision of adequate levels of public services to West Brandywine Township residents and periodically address staffing needs by maximizing coordination with other public and quasi-public agencies.
- 5.2 Monitor the provision of police protection and support for regional fire protection and emergency services to assure adequate service to West Brandywine Township residents.
- 5.3 Promote energy conservation and efficiency.
- 5.4 Explore options for promoting the use of the West Brandywine Township building as a Community Center.



## Chapter 3 Public Participation



*Township residents and business owners participate in the Community Visioning Session held in May of 2018 during this plan update.*

### Public Participation

The Comprehensive Plan is intended to be a document that reflects the goals and priorities of the individual municipality. As such, development of the plan is guided by West Brandywine Township citizens and maximizes opportunities for input and feedback from the general public.

### Task Force

The West Brandywine Township Board of Supervisors appointed a 13-member Task Force to work with its planning consultant, the Brandywine Conservancy. During the period of the Comprehensive Plan Update, two members were unable to continue to participate, so replacement members were added to the Task Force. The Brandywine Conservancy included as part of its planning team Thomas Comitta Associates, Inc., for orchestrating the Community Visioning Session and compiling the results of the Community Survey, and McMahon Associates, Inc., to prepare the Transportation Chapter of the Plan.

The Task Force was comprised of West Brandywine Township residents representing an array of interests and experience and a member of the Board of Supervisors. Some Task Force members also serve on other West Brandywine Township committees, such as the Open Space Review Board, the Parks and Recreation Board, and the Planning Commission. The Task Force also included a resident of Wallace Township who owns a business in West Brandywine Township. The Task Force met monthly from January 2018 through August 2019 to discuss West Brandywine Township's vision, provide direction on the major Plan Chapters, and to assist in mobilizing

other West Brandywine Township residents to participate in the planning process through public participation forums.

The Task Force maximized opportunities for public participation throughout their two-year planning process. Public input actions included:

- Community Visioning Session
- Community Planning Survey of all West Brandywine Township households
- Planning Commission Public Meeting
- Public hearing before the Board of Supervisors

## Community Visioning Session

On May 31, 2018, the Task Force hosted a Community Visioning Session at the Pope John Paul II Catholic Elementary School to kick off the public’s participation in the Comprehensive Plan update and listen to their priorities regarding quality of life, future improvements, and spending. This session was attended by over 60 residents from all geographic areas of West Brandywine Township.

The Community Visioning Session produced “Places Loved” and “Places Needing Improvement” in West Brandywine Township from participant input, and Appendix A shows these “Places” as identified by the Visioning Session participants. Participant “Spending Priorities” were also identified through a Visioning exercise.

Examples of each include:

- Places loved – Hibernia County Park, the agricultural heart of West Brandywine Township, scenic views from township roads, West Branch Brandywine Creek.
- Places to be improved – Route 322 through West Brandywine Township, Intersection of Rt. 82 with Route 322, Hibernia Rd, and E. Reeceville Rd./Cedar Knoll Rd.
- Spending priorities – Trails and paths, open space and farmland preservation, transportation improvements

The Task Force also learned from this Session:

- Retaining rural character and agricultural lands was important.
- Promoting local opportunities to shop, dine, and socialize within West Brandywine Township.
- A concern over school district issues (high taxes and quality of education).
- Enforcing speed limits within residential neighborhoods and some through-roads.

A complete summary of the Visioning Session results is included in Appendix A.

## Community Survey

At around the halfway point in the planning process, the Brandywine Conservancy team developed a community survey to be sent to all residents. The survey was included as a mail-back element in West Brandywine Township's 2018 fall Newsletter and was also available online throughout October and into November. Additional efforts were made to promote the survey at the polling stations on election day in November 2018. This survey sought responses to 17 questions related to West Brandywine Township and regional planning issues. Survey responses, along with input received at the Community Visioning Session, helped shape and define the new

Comprehensive Plan. The survey was completed by 578 residents, and a tabulated summary of survey results is included in Appendix B. From survey responses, the Task Force learned:

- “Housing availability or cost”; a “rural, quiet lifestyle”; and “scenic beauty” were the three reasons people chose to live in West Brandywine Township.
- “Taxes too high”, followed by “Area becoming overdeveloped”, and “Increased crime rate” were the greatest reasons people would move out of West Brandywine Township.
- When asked what issues were the most important to consider when planning for the future of West Brandywine Township, respondents ranked “Improving traffic and road conditions” highest, closely followed with “Retaining the rural atmosphere”, with “Preserving working farmland” ranking third amongst residents.
- If future commercial development were to occur in West Brandywine Township, most people would prefer to see such development along Route 322, with fewer also suggesting the area around the intersection of Routes 82 and 340 as being acceptable. However, a fifth of respondents did not want to see any additional commercial development in West Brandywine Township.
- The intersection of Route 82 and East Reeceville/Cedar Knoll Rds. was ranked as the highest priority for intersection improvements within West Brandywine Township, closely followed by the Route 322 and Route 82 intersection.
- Of the proposed trail connections included on the survey, people ranked the East-West Trail between Hibernia Park and the Struble Trail, the focus of a recently completed feasibility study, as the most important to them.
- Over 50% of the respondents who completed the survey have lived in West Brandywine Township for more than 20 years, and almost 75% of respondents have lived in the Township for more than 10 years.

## Adoption

Upon Task Force completion of its work to produce a draft comprehensive plan, a public meeting was held by the West Brandywine Township Planning Commission on September 26th, 2019 to present the draft to the public and obtain any suggestions or other input. The final draft Plan was refined to respond to public input and recommended to the Board of Supervisors for adoption. Upon completion of the State-required Act 247 review process, the Comprehensive Plan Update was adopted by the Board of Supervisors on January 16th, 2020.



## Chapter 4 Demographics



*An old school house in West Brandywine Township located just across the road from the Municipal Building.*

### Introduction

Analysis of demographics is fundamental to the planning process. Trends in population, income, employment, and housing are major drivers of land use change and have important implications for the quality of life in West Brandywine Township. Underlying several elements of this Comprehensive Plan, demographic information provides the needed context for deliberation of proposed policies and programs, including those related to land use, housing, resource protection, and municipal service delivery.

The majority of data presented in the following pages comes from the U.S. Census Bureau's decennial Census of Population and Housing, as well as the 2016 American Community Survey 5-year estimates. Where available, data from the Chester County Planning Commission, and Coatesville Area School District were used to supplement Census data. A complete set of data tables is included in Appendix C.

### Population

#### *Historic Trends*

As of 2016, the population of West Brandywine Township was 7,449. Figure 1, on the following page, depicts population growth in West Brandywine Township between 1930 and 2016 (also found in Table 1, Appendix C). The rate of population growth in West Brandywine Township has declined considerably since 2000, which marked the end of a period of considerable growth over the previous four decades. The population of West Brandywine

Township is expected to continue to grow, according to the Delaware Valley Regional Planning Commission (DVRPC), but at decreasing rates over the next 20-25 years until 2045, at which point the population is expected to be just over 11,000 (Table 2, Appendix C).

### Regional Change

Between 2000 and 2010 the population of West Brandywine Township grew at a rate much lower than Chester County as a whole, and slower than all of its surrounding municipalities (see Table 3, Appendix C). Only the much smaller municipalities of West Nantmeal and Wallace saw comparable growth rates. Of the surrounding municipalities, Honey Brook Township, Valley Township, and West Caln Township all grew at a rate that far exceeds those seen in all the surrounding municipalities, and also exceeded rates seen for the County as a whole. The municipalities of Caln and West Caln saw the greatest numeric increase in population with both townships adding almost two-thousand residents between 2000 and 2010.

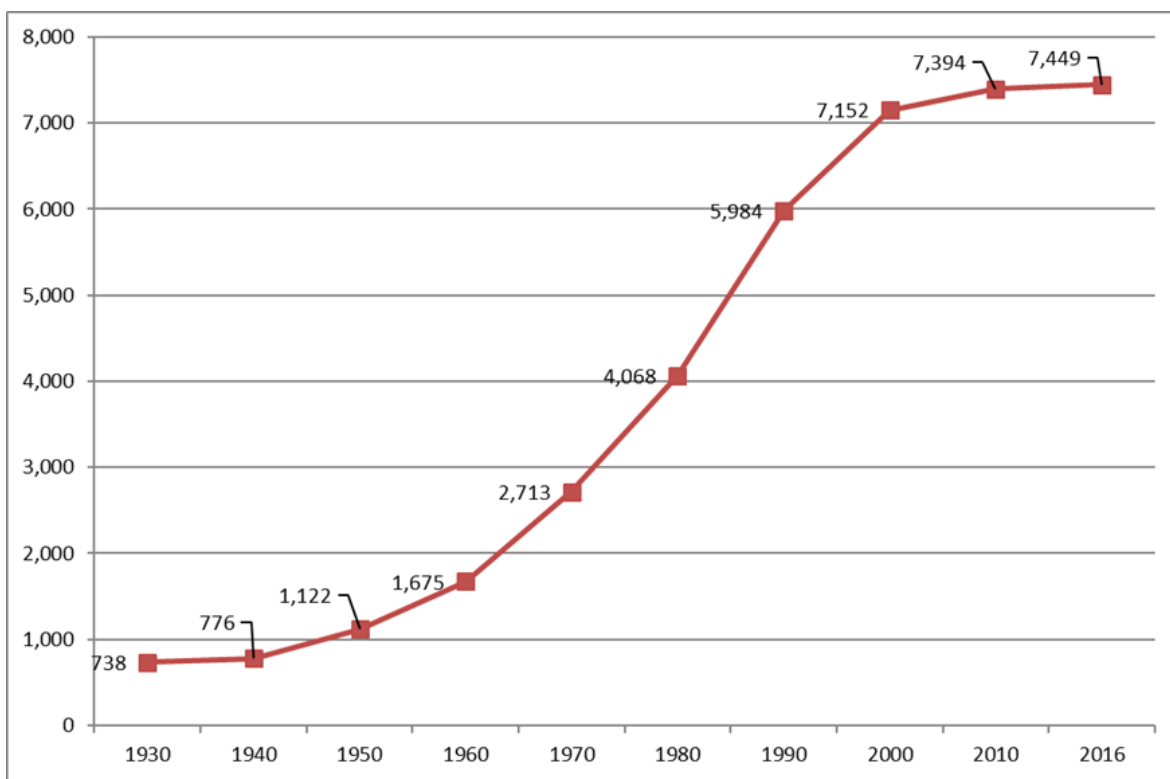


Figure 1 - Population Growth, West Brandywine Township, 1930-2016

### Population Density

Population density in West Brandywine Township in 2010 was 564 persons per square mile, an increase of 19 persons per square mile from 2000. This represents a density of around 100 person per square mile less than that of the County as a whole, which itself saw an increase of almost 100 persons per square mile between 2000 and 2010. Of the surrounding municipalities (see Figure 2), East Brandywine, Caln, and Valley all have higher densities, with Caln's being almost three times that of West Brandywine Township. The remaining surrounding municipalities all have lower population densities than West Brandywine Township, with West Nantmeal having the lowest at around 160 persons per square mile (see Table 4, Appendix C).

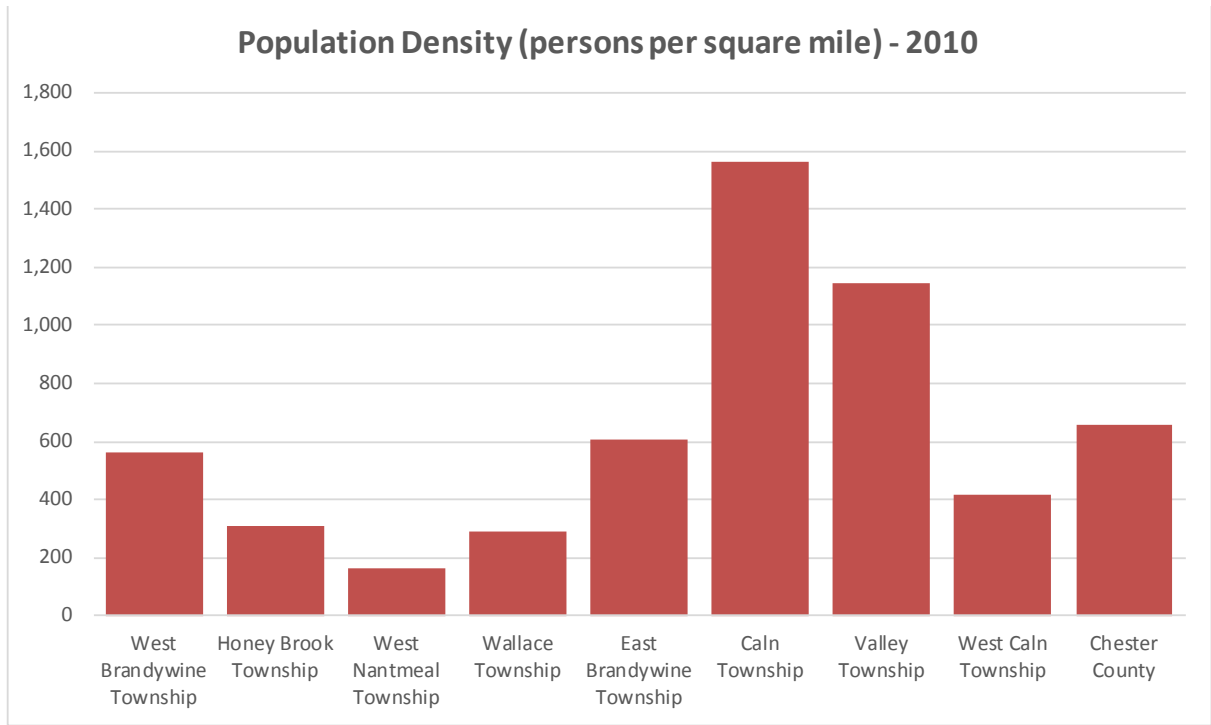


Figure 2 - Population Density, West Brandywine, surrounding townships, and Chester County

### **Median Age and Age Structure**

Like most communities in Chester County, median age in West Brandywine Township is increasing. Median age in 2010 was 45.5, up from 39.0 in 2000. Surrounding municipalities, as well as the County and Commonwealth, exhibit the same general trend (see Table 5, Appendix C), although West Brandywine Township’s increase is markedly higher than that of the County as a whole. Of the surrounding municipalities, only Caln and Valley Townships have a median age lower than that of the County as a whole, and only West Nantmeal has a median age higher than West Brandywine Township.

Population by age group and sex as a percent of total population in 2000 and 2010 for West Brandywine Township are presented in Figures 3 and 4 on the following pages. While West Brandywine Township’s population pyramid for 2000 seems to suggest a population made up of middle-aged families (equally high numbers of young children and childbearing adults), the lower half of the pyramid has begun to develop a more uniform shape, suggesting that fewer young families or newly married couples are moving into the area. Those who were aged 35-50 in 2000 have simply aged in place with no younger families taking their place. Also noticeable is the marked increase in those residents greater than 80 in age, especially amongst females.

Those cohorts aged 65 and over are also of interest to planners for a variety of reasons. Within West Brandywine Township, the size of these cohorts has increased considerably, both in absolute terms and proportionally, over the past 15 years and now represent some 17% of the total population, up from closer to 14% at the turn of the century. A similar trend can be found for Chester County, although the increases are not quite as high.

Millennials, or those born between 1980 and 2000, are of particular interest to planners and “futurists” alike as they tend to exhibit different behaviors to the generations that came before them. When compared to the population as a whole, millennials, in both West Brandywine Township and Chester County, represent between 20 and 25% of the population. For the County, this number has shown a small decrease in the past decade, while

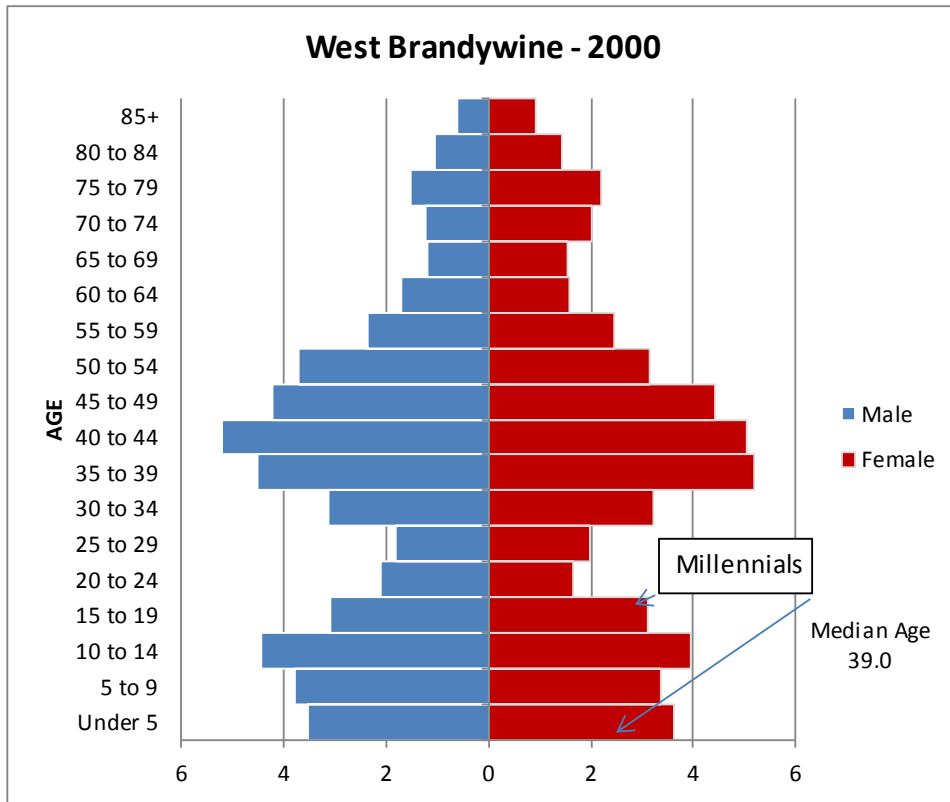


Figure 3 - Population by Age and Sex, 2000

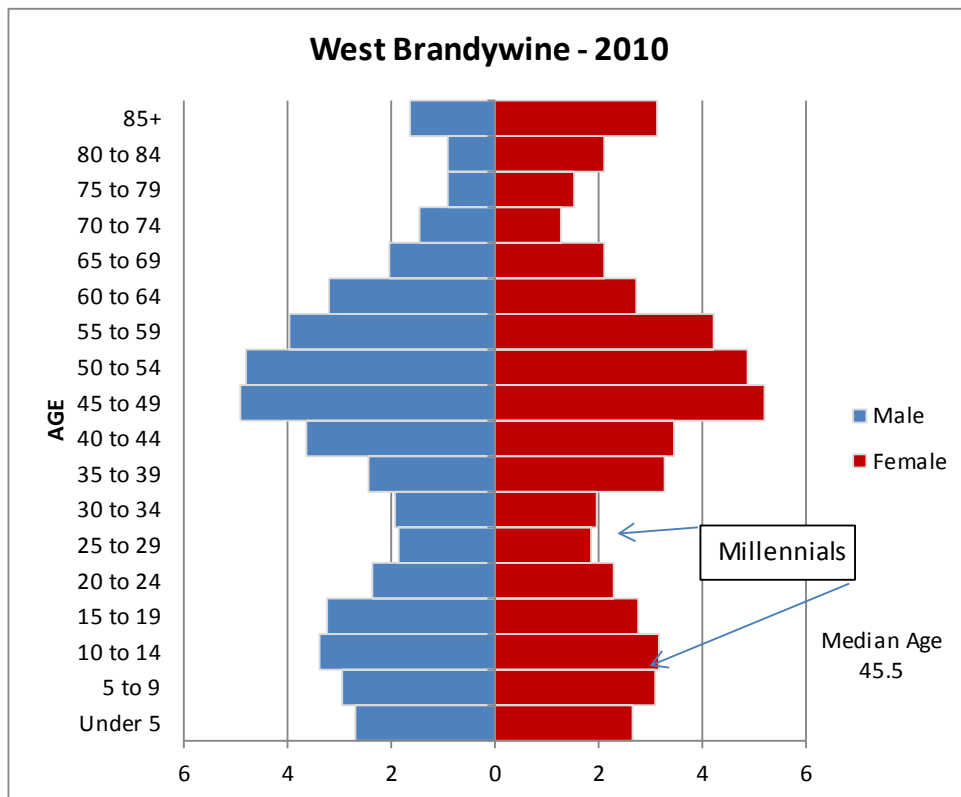


Figure 4 - Population by Age and Sex, 2010

\*The graphs above are known as population pyramids and show a graphic representation of the distribution of the population by 5-year cohorts, broken into male and female.

the decrease has been more marked in West Brandywine Township with the proportion of millennials falling from just under 30% in 2000 to around 21% in 2010, which may be the result of the generation reaching college graduation age and moving away from home. As alluded to in the previous discussion of population pyramids, the number of individuals in the child bearing age cohorts (primarily Generation X, those aged 30-45) has fallen within West Brandywine Township (See Table 6, Appendix C).

## ***Household Size***

The average number of persons per household (Table 7, Appendix C) has fallen slightly since 2000 at around 2.56 persons per household in 2010. This is slightly lower than both Chester County as a whole (2.65) and comparable with nationwide numbers (2.58) in 2010. Generally, household size has been in decline over the past several decades.

## ***Educational Attainment and School Enrollment***

Roughly 93 percent of West Brandywine Township residents in 2016 had a high school diploma, while 36 percent had a bachelor's degree or higher (see Table 8, Appendix C). The percentage of residents with high school diplomas is identical to that of the County educational attainment levels, but those with a bachelor's degree or higher is considerably lower than the County as a whole. Besides Wallace and East Brandywine Townships that have levels of advanced educational attainment higher than the County, all other surrounding communities have levels that are lower than the County.

West Brandywine Township is part of the Coatesville Area School District, which includes the City of Coatesville, the Boroughs of Modena and South Coatesville, and Caln, East Fallowfield, Sadsbury, Valley, West Brandywine, and West Caln Townships. Enrollment in the Coatesville Area School District in 2015 was 6,785 students. Enrollment has remained steady since 2010 and was expected to rise by less than 1% over the following 5 years. Beyond 2020, enrollment is expected to fall by around 0.5% per year. (Table 9, Appendix C).

## ***Income and Poverty***

### ***Family and Household Income***

Median family income in West Brandywine Township in 2016 was \$84,779, up from \$69,514 in 2000<sup>1</sup>. Both figures are lower than County-wide median incomes in 2016 and comparable with most neighboring municipalities. Wallace and East Brandywine Townships have far higher median family incomes when compared with the other surrounding municipalities, at \$127,222 and \$137,500 respectively (Table 10, Appendix C). East Brandywine Township's median family income has also grown the most of surrounding municipalities since 2000, with an almost 68% increase. Over the same time period, West Brandywine Township's median family income grew only 22%, which is half of that seen across the County as a whole and lowest amongst the neighboring communities.

Median household income (Table 11, Appendix C) for West Brandywine Township is again lower than that of the County as a whole, and comparable with many of its neighbors, bar those of Wallace and East Brandywine Townships that have household incomes well above all of the surrounding municipalities. East Brandywine Township, once again, has also seen the largest growth (63%) in median household income since 2000, while only Honey Brook Township (20%) has seen a lower growth in median household income than West Brandywine Township (25%).

<sup>1</sup> Families are a subset of households, excluding persons or groups who are not related. Persons living alone or cohabiting (and not related) are excluded from family income measurements.

## Poverty

Poverty rates<sup>2</sup> vary across the area with some municipalities having levels lower than the County, while others have levels higher. West Brandywine Township's poverty rate (5.8%) in 2016 was slightly lower than the average for the County (6.9%), with Honey Brook (7.0%) and Valley (8.4%) Townships exhibiting higher than average levels when compared to the County. Generally, poverty levels have increased since 1999, which can almost certainly be attributed to the economic recession of 2007/8. For instance, the percentage of families below the poverty level in West Brandywine Township more than doubled between 1999 and 2016.

A recent study by United Way of Pennsylvania, *Alice in Pennsylvania: A Financial Hardship Study*, that looked at a segment of the population known as ALICE - an acronym for Asset Limited, Income Constrained, Employed - examined the number of households in our communities that do not earn enough to afford basic necessities. For West Brandywine Township, they estimate that 37% of the households in 2017 were either classified as ALICE or living in poverty, higher than the 27% estimated for Chester County, where 7% live below the poverty line and 20% are considered ALICE.

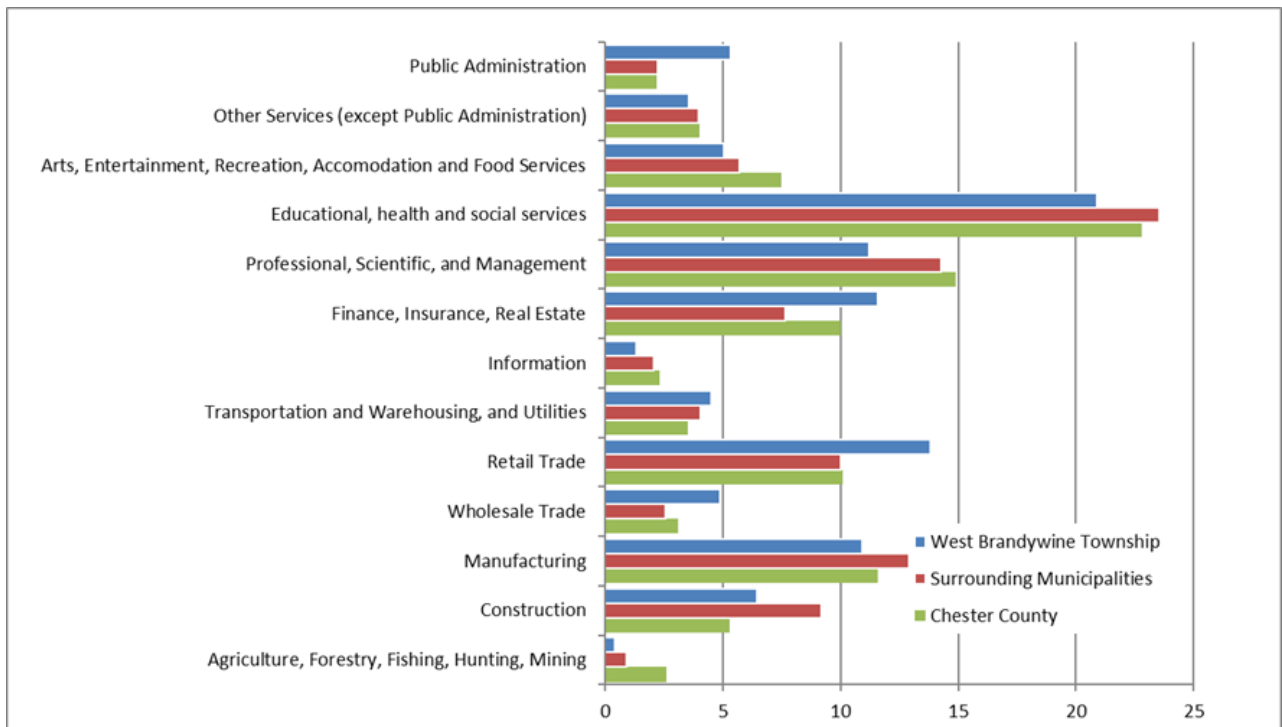


Figure 5 - Employment by Industry

(Sources: U.S. Census Bureau; 2012-2016 American Community Survey 5-Year Estimates)

\*\*Surrounding Municipalities include Honey Brook, West Nantmeal, Wallace, East Brandywine, Caln, Valley, and West Caln.

<sup>2</sup> The Federal poverty guidelines used to determine eligibility for certain Federal programs was \$12,490 for a single person household, \$16,910 for a household of 2, \$21,330 for a household of three, and \$25,750 for a family of 4 in 2019 (additional levels for larger household also exist).

## Employment

### *Employment by Industry*

The distribution of employment by industry in West Brandywine Township is presented in Figure 5 on the previous page (see also Table 12a, Appendix C). The largest source of employment for West Brandywine Township residents is educational, health and social services (20.9 percent), followed by retail (13.8 percent). While the educational, health and social services sector is similar to the County (see Table 12b, Appendix C) as a whole, West Brandywine Township's employment in retail higher than for the County and surrounding municipalities. Agricultural and natural resource based industries employ the least number of residents in West Brandywine Township.

### *Unemployment*

As of 2016, the unemployment rate (see Table 10, Appendix C) in West Brandywine Township was 5.9 percent, up from 1.6 percent in 2000<sup>3</sup>. Unemployment throughout the surrounding municipalities and the County has, for the most part, also risen since 2000, but West Brandywine Township's unemployment rate is now higher than that of the County as a whole (it had been lower than the County in 2000).

## Housing

### *Occupancy and Quantity*

There were 3,040 housing units in West Brandywine Township in 2016, 16 percent more than there were in 2000 (see Tables 13 and 14, Appendix C). The majority of these homes are owner occupied (88.5 percent), while approximately one tenth are rented. The vacancy rate of homes in West Brandywine Township has risen considerably since 2000 with over 7% of the homes vacant in 2016. Of the surrounding municipalities, East Brandywine (93.6%) and West Caln (91.5%) have the highest levels of owner occupied housing, while Caln (70.3%) and Honey Brook (73.1%) have the lowest levels. Honey Brook Township has the highest percentage of vacant housing (7.9%), just above what is found in West Brandywine Township.

The rate of growth in housing units in West Brandywine Township between 1990 and 2000 was higher (27%) than that seen across the County as a whole (17%), but then slowed considerably the following decade. Across the same two decades, the growth of housing units in Chester County remained steady and is now higher than that found in West Brandywine Township. Since 2010, very few new homes have been built in West Brandywine Township.

### *Diversity of Housing Stock*

The housing stock in West Brandywine Township is predominantly single-family detached (75 percent), with an additional 15 percent in multi-family housing and another 9% in mobile homes (see Figure 7 below and Table 15, Appendix C). Of the surrounding municipalities, Wallace (92 percent) has the highest levels of single-family detached homes, while Caln (55 percent) has the lowest. In contrast, Caln has both the highest level and number

<sup>3</sup> The unemployment rate is calculated by dividing the total labor force by unemployed persons. It excludes people 16 years and older "not in labor force" (students, housewives, retirees, off-season seasonal workers, unpaid family labor, etc...).

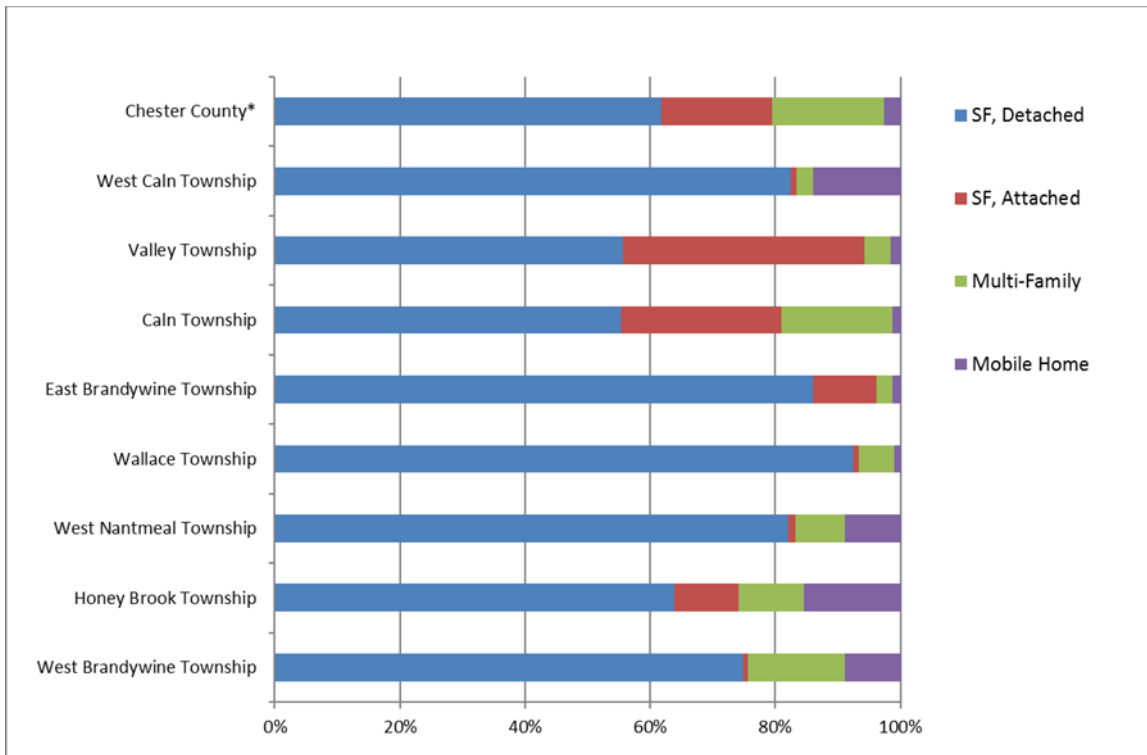


Figure 7 - Housing Stock Diversity, 2016  
 (Sources: U.S. Census Bureau; 2012-2016 American Community Survey 5-Year Estimates)

of multi-family units amongst the surrounding municipalities. While mobile homes make up a small fraction of the housing stock in most surrounding communities, both Honey Brook and West Caln have higher percentages (15.5% and 14%, respectively) and absolute numbers (434 and 475, respectively) of mobile homes than West Brandywine Township.

### Age of Housing Stock

As of 2016, around 45% of West Brandywine Township’s housing units had been built since 1990 (see Table 16, Appendix C), with almost all of these being built between 1990 and 2010. New home construction all but came to a stop in West Brandywine Township at the tail end of the first decade of the 21st century and has continued to this day. While slower new home construction has been a trend since the economic recession of 2007/08 across the region and country, some surrounding communities continue to see the construction of new homes, most notably East Brandywine and Valley Townships who have seen over 22% and 15%, respectively, of their total housing stock constructed since 2010.

### Housing Value and Rent

In 2016, the estimated median value of owner occupied housing in West Brandywine Township (excluding homes on lots greater than 10 acres or that include business uses) was \$281,700 (see Table 17, Appendix C), around \$60,000 less than Chester County’s median home value (\$339,700), and up around 85% on housing values in West Brandywine Township in 2000. All of West Brandywine Township’s neighboring communities have seen increases in median value of owner occupied housing since 2000, as has the County as a whole, but the 120%

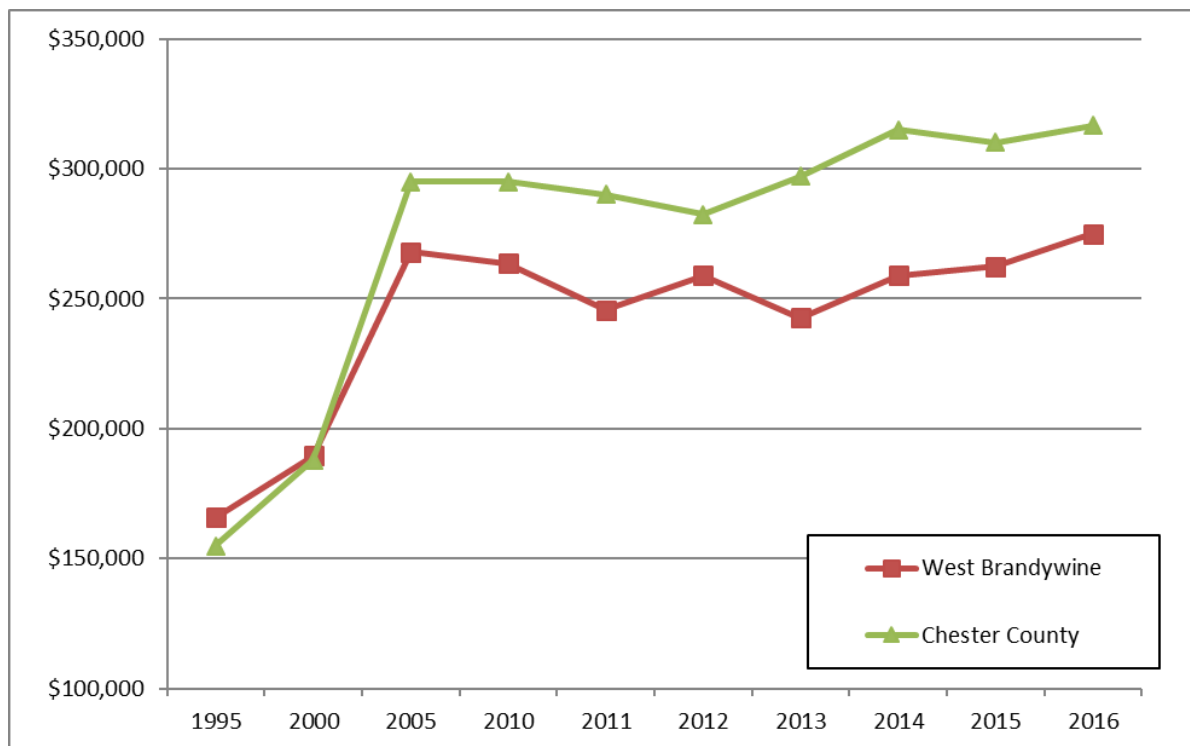


Figure 8- Median Home Price  
 (Sources: Chester County Planning Commission; Housing Cost Profiles, 1995 through 2016)

growth of housing value in East Brandywine Township far exceeds that of any other municipality (see Table 17). Both West Brandywine Township and the County as a whole seem to have now regained the value lost in housing which started during the recession of 2007/8 (see Figure 8).

Median gross rent – contract rent plus utilities – in West Brandywine Township in 2016 was \$1,225, up from \$706 in 2000 (see Table 18, Appendix C). Just as in 2000, median rent in West Brandywine Township remains very similar to the County as a whole and similar to many surrounding municipalities, bar those in Wallace, which are 17% higher, and those in West Nantmeal, where rents are around 30% lower than in West Brandywine Township. Of the surrounding municipalities, Honey Brook Township saw the greatest proportional increase in median gross rent where it more than doubled between 2000 and 2016.

### Housing Affordability

Housing affordability can be measured a variety of ways. Generally, expenditure of 30 percent or more of one’s income on housing – for both owner-occupied and rental housing – is considered the threshold for overpayment. Data Tables 19-22 (Appendix C) describe housing costs for homeowners and renters as a percentage of household income in West Brandywine Township, surrounding municipalities, and Chester County.

The percentage of homeowners in West Brandywine Township paying 30 percent or more of their incomes on housing rose from 25 to 29 percent between 2000 and 2016. This is slightly higher than for the County as a whole during the same time period, and is comparable to many of the surrounding municipalities. Generally speaking, all municipalities in the area saw an increase in the percentage of homeowners paying more than 30% of their income on housing between 2000 and 2016, as did the County.

For renters, over 80% of them in West Brandywine Township pay more than 30 percent of their income on housing, which is significantly higher than that for the County as a whole, and the highest amongst surrounding

municipalities. Only Wallace Township has a comparable number of renters paying more than 30 percent of their income on housing. For West Brandywine Township this has increased significantly since 2000 when the percentage of renters overpaying for housing was much lower.

Without considering the incomes of homeowners and renters, it is difficult to gauge just how severe the affordability problem is. Measuring the gap between median family income and the median value of homes in 2016 is one reasonable way of doing so. In 2016, the estimated median family income in West Brandywine Township and Chester County was \$84,779 and \$108,663, respectively. The estimated median value of homes in 2016 in West Brandywine Township was \$275,000, and in Chester County, \$316,500. The difference between income and home value in West Brandywine Township (\$190,221) is less than the difference between income and home value in the County (\$207,837), indicating that it costs relatively less to buy a home in West Brandywine Township for the average West Brandywine Township family than it does to buy a home in Chester County for the average Chester County family. In other words, while housing affordability is an issue in West Brandywine Township, it is one of the more affordable communities in Chester County.

## Demographic Summary for West Brandywine Township

- The population is growing, but that growth is expected to slow in the next 30+ years.
- The population is aging with fewer school-age children.
- Fewer of West Brandywine Township's population are university graduates than in surrounding communities and the County.
- Income growth in West Brandywine Township lags behind that seen in surrounding communities and the County.
- Housing affordability is still an issue in West Brandywine Township, especially amongst renters, but within Chester County, West Brandywine Township is a more affordable community.
- Construction in the housing sector has all but stopped since 2010.
- Health and education services are the dominate industries for West Brandywine's working population.
- Home values in West Brandywine Township have generally rebounded since the Great Recession, but are lower than the County average.

## Chapter 5 Current Land Use



*Hurricane Hill Farm is a well known and recognizable feature of central West Brandywine Township.*

### Introduction

Without a thorough understanding of existing land uses, it is difficult to make an informed plan for future land uses. This critical component of the Comprehensive plan provides an important overview of current land uses in West Brandywine Township.

The Current Land Use Map (see page 30) provides a “snapshot” of land uses as of 2015 (when the most recent data was collected), and is used to inform future planning. The analysis of current land use types is based on the Current Land Use map, which is derived from data provided by Delaware Valley Regional Planning Commission (DVRPC), and was modified to reflect field observations.

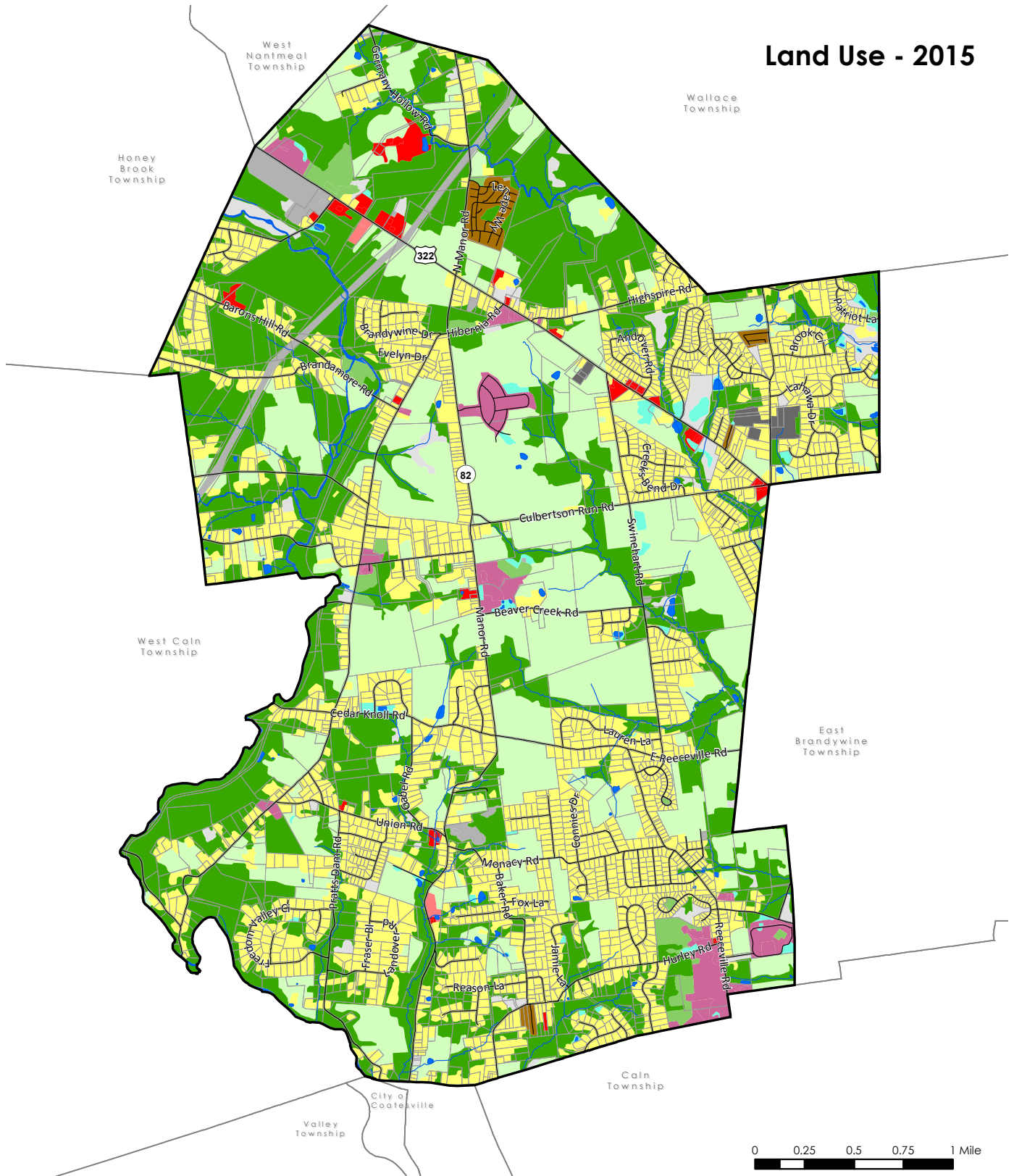
This Chapter identifies and describes the significant land use types in West Brandywine Township. These land use types are organized from largest to smallest, starting with West Brandywine Township’s predominant land use types (Residential, Woodland and Agricultural).

### **Residential Uses**

#### **2,814.6 acres or 33.1 percent of Total Land Area**

Making up a third of West Brandywine Township, residential uses are a significant component of its current land use. Residential land uses are divided into three types: single-family, multi-family, and mobile home park. Of

# Land Use - 2015



## Legend

### Land Use Type

<span style="display:inline-block; width:15px; height:15px; background-color:yellow; border:1px solid black;"></span> Residential: Single-Family (2,738.4 ac.)	<span style="display:inline-block; width:15px; height:15px; background-color:lightcoral; border:1px solid black;"></span> Industrial (9.5 ac.)	<span style="display:inline-block; width:15px; height:15px; background-color:lightgreen; border:1px solid black;"></span> Recreation (97.3 ac.)	<span style="display:inline-block; border:2px solid black; width:15px; height:15px;"></span> Township boundary
<span style="display:inline-block; width:15px; height:15px; background-color:orange; border:1px solid black;"></span> Residential: Multi-Family (1.2 ac.)	<span style="display:inline-block; width:15px; height:15px; background-color:purple; border:1px solid black;"></span> Institutional (172.6 ac.)	<span style="display:inline-block; width:15px; height:15px; background-color:darkgreen; border:1px solid black;"></span> Wooded (2,690.3 ac.)	<span style="display:inline-block; border:1px solid black; width:15px; height:15px;"></span> Adjacent municipalities
<span style="display:inline-block; width:15px; height:15px; background-color:brown; border:1px solid black;"></span> Residential: Mobile Home (61.1 ac.)	<span style="display:inline-block; width:15px; height:15px; background-color:grey; border:1px solid black;"></span> Transportation (27.3 ac.)	<span style="display:inline-block; width:15px; height:15px; background-color:blue; border:1px solid black;"></span> Water (60.6 ac.)	<span style="display:inline-block; border-bottom:1px solid black; width:15px;"></span> Roads
<span style="display:inline-block; width:15px; height:15px; background-color:red; border:1px solid black;"></span> Commercial (73.8 ac.)	<span style="display:inline-block; width:15px; height:15px; background-color:lightgrey; border:1px solid black;"></span> Utility (116.9 ac.)	<span style="display:inline-block; width:15px; height:15px; background-color:cyan; border:1px solid black;"></span> Drainage Basin	<span style="display:inline-block; border-bottom:1px dashed black; width:15px;"></span> Streams
	<span style="display:inline-block; width:15px; height:15px; background-color:lightgreen; border:1px solid black;"></span> Agriculture (2,220.8 ac.)	<span style="display:inline-block; width:15px; height:15px; background-color:lightgrey; border:1px solid black;"></span> Undeveloped	<span style="display:inline-block; width:15px; height:15px; background-color:blue; border-radius:50%; border:1px solid black;"></span> Water bodies

**Data Source:** Base data from Chester County Geographic Information Services, 2019. Land use data provided by DVRPC, modified by Brandywine Conservancy

**Disclaimer:** This map is for illustrative purposes only and does not constitute a valid survey.

these types, single-family residential remains the largest of the three (2,752.3 acres or 32.4 percent of the total land area). Mobile home park and multi-family development contributes to a much smaller area (65.1 acres or 0.8 percent; 1.18 acres or 0.01 percent respectively).

Although West Brandywine Township has not seen significant residential development in the last 15 years, Chester County is expecting significant growth over the next decade.

## ***Woodland***

### **2,690.3 acres or 31.7 percent of Total Land Area**

About a third of West Brandywine Township's current land area is comprised of woodlands. These woodlands are primarily located along the western and northern portions of West Brandywine Township. In addition to these larger swaths of woodland, there are also sections of woodland along the banks of many rivers and streams. Chapter Six provides additional information on West Brandywine Township's woodlands from a natural resource perspective.

## ***Agriculture, Pasture, Meadow***

### **2,220.8 acres or 26.2 percent of Total Land Area**

Like much of Chester County, West Brandywine Township was once dominated by farmland. Although much of this land has been converted to other land uses, such as residential development, this agricultural heritage still remains. Concentrated in the central portion of West Brandywine Township, there are still large active farms that provide products to the community. Chapter Six provides an inventory of the current agricultural uses and values of these lands.

## ***Institutional Uses***

### **172.6 acres or 2 percent of Total Land Area**

As with commercial uses, institutional uses in West Brandywine Township account for a minor percentage of land area. These uses, which are typically spread across West Brandywine Township include: Coatesville Area School District (CASD) facilities; the Brandywine YMCA; the Houston Building associated with the Brandywine Hospital; the current extent of the All Souls Cemetery of the Archdiocese of Philadelphia; churches such as the Forks of the Brandywine and Hibernia; and, the Old Mill Bible Conference camp.

## ***Utility***

### **116.9 acres or 1.4 percent of Total Land Area**

Utility uses in West Brandywine Township include the Pennsylvania Electric Company (PECO) overhead transmission line, the Aqua PA Water Holding Tanks along Route 322, and lands used for the collection, treatment, and/or disposal of wastewater.

## ***Recreational***

### **97.26 acres or 1 percent of Total Land Area**

The majority of these recreational areas, used for active and passive recreation, are owned by West Brandywine Township. Although a portion of Hibernia (County) Park falls within West Brandywine Township, this area of the park is protected as a natural area and is not inventoried as a recreational area.

## ***Commercial***

### **73.8 acres or 0.8 percent of Total Land Area**

As indicated above, commercial land uses account for a relatively small amount of West Brandywine Township's land areas. These uses are generally of a modest scale and are not retail oriented, as most local retail service is found in adjacent municipalities.

## ***Water***

### **60.6 acres or 0.7 percent of Total Land Area**

While obviously not developed or open land, water is included here since water bodies such as streams and ponds do occupy part of West Brandywine Township's total extent of 8,540 acres.

## ***Industrial***

### **9.5 acres or 0.1 percent of Total Land Area**

Industrial uses make up a very small portion of West Brandywine Township's land uses and are predominantly comprised of small machine shops, but do also include the Sunoco Logistics Tank Farm located along the southerly side of Horseshoe Pike (Route 322).

## ***Transportation***

### **27.3 acres or 0.003 percent of Total Land Area**

Of the noted acres, about 20 are utilized for the Krapf's bus transportation storage and maintenance facilities. West Brandywine Township's road rights-of-way comprise the remaining acreage.

## Chapter 6 Natural Resources and Open Space



*View of the West Branch Brandywine Creek as it passes through an area once inundated by Icedale Lake in the northwest corner of West Brandywine Township.*

### Introduction

This chapter explores West Brandywine Township’s natural resources and its protected open space. In the background discussion below, natural resources are inventoried in three categories and are accompanied by maps depicting water resources, land resources, and biodiversity resources. West Brandywine Township’s protected open space is also inventoried. While the permanent preservation of open space protects West Brandywine Township’s natural resources through appropriate stewardship, natural resource processes transcend boundaries and are often impacted by activities elsewhere. As such, West Brandywine Township’s comprehensive policies and local regulations help maintain and promote the integrity of these critical resources.

### Key Issues

West Brandywine Township’s Zoning Ordinance (ZO) provides protection of natural resources through the Flood Plain and Steep Slope (overlay) Zoning Districts, as well as the Open Space Design Option (OSDO) which establishes specific guidelines and incentives for the protection of natural resources in applicable land developments. The Subdivision and Land Development Ordinance’s (SALDO) standards for stormwater management require the use of best management practices to improve stormwater quality and recharge subsurface/groundwater (vs. less desirable surface discharge). West Brandywine Township’s ZO also sets standards for the protection of woodlands as they pertain to timber harvesting plans, or to a homeowner’s association Open Space Management Plan. Other regulatory resource protection measures address riparian buffers. Further resource protection measures

beyond West Brandywine Township's efforts include State protection of High Quality waters and state/federal wetlands protection laws.

Nonetheless, additional resource protection measures are recommended in this Chapter. These recommendations consider and otherwise address: the resources' significance to the public health, safety, and ecology of West Brandywine Township; fulfillment of the protection goals and objectives identified in Chapter 2 (Goals and Objectives); and, the need for consistency with Chester County's Comprehensive Plan, Landscapes 3. While these recommendations focus primarily on continuing land development, other recommendations call for voluntarily improving the stewardship and protection of resources on private property throughout West Brandywine Township.

## Protect and Restore Valuable Water Resources throughout West Brandywine Township.

### *Why is this Important?*

West Brandywine Township contains several State designated High Quality waterways (see below) and is also the home to the headwaters of Beaver Creek, an important tributary of the East Branch Brandywine Creek (see Water Features Map, page 35). Forested headwaters are especially important for maintaining water quality, removing the need for expensive water treatment for public drinking water supplies. These forested areas provide valuable buffers for the streams, help reduce stormwater runoff, and filter pollutants and sediment before reaching the waterway. They also provide valuable wildlife habitat and shade for the stream, helping to regulate water temperatures that in turn provide for improved in-stream conditions for important fisheries.

### *Several Streams in West Brandywine Township are Non-Attaining (they do not meet water quality standards for their designated use).*

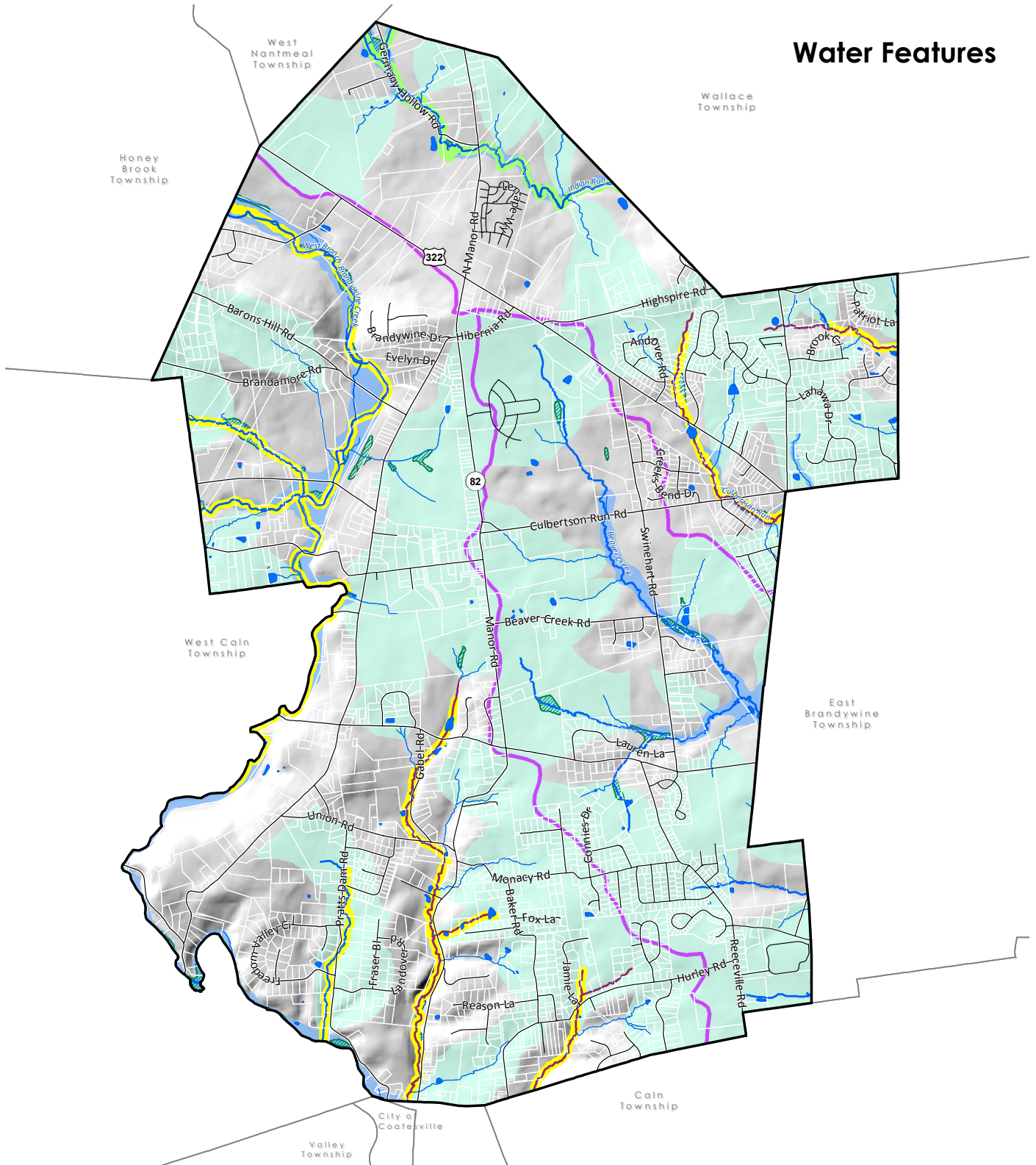
Impairments such as siltation and habitat modification mean that several streams in West Brandywine Township do not meet State water quality standards for their designated use. Measures such as improved land use regulations, potential restoration of riparian habitats, improved stewardship of resources on private property, and the adoption of Best Management Practices (BMPs) on agricultural land, could help improve water quality designations for West Brandywine Township's streams. Furthermore, the implementation of such practices will help maintain the positive status of water quality in the other waterways of West Brandywine Township.

#### **Special Protection Waters**

Pennsylvania has two Special Protection categories (Exceptional Value (EV) and High Quality (HQ)) that are based, at least in part, on biological integrity. EV streams are defined as "the best" Cold Water Fisheries, while HQ streams are "very good" Cold Water Fisheries and "the best" Trout Stocking and Warm Water Fisheries. Because these are relatively rare and important water resources, Special Protection is granted by Pennsylvania to protect all existing uses of the stream (i.e. by aquatic life and humans) and to safeguard the quality of its water. In both EV and HQ streams, water quality should not be lowered, except in the event that a discharge into a HQ stream is the result of "necessary" social or economic development.

Taken from, Understanding Stream Conditions, published by Stroud Water Research Center, 2009

# Water Features



## Legend

- Township boundary
- Adjacent municipalities
- Roads
- Streams
- Water bodies
- Wetlands (NWI)
- 100-year floodplains
- Headwaters (first order streams)
- Watersheds (HUC12)
- Streams**
- Non-attaining streams
- Attaining streams
- Other streams
- Chapter 93 Designated Use Streams**
- High Quality - Cold Water Fishes
- High Quality - Trout Stocking

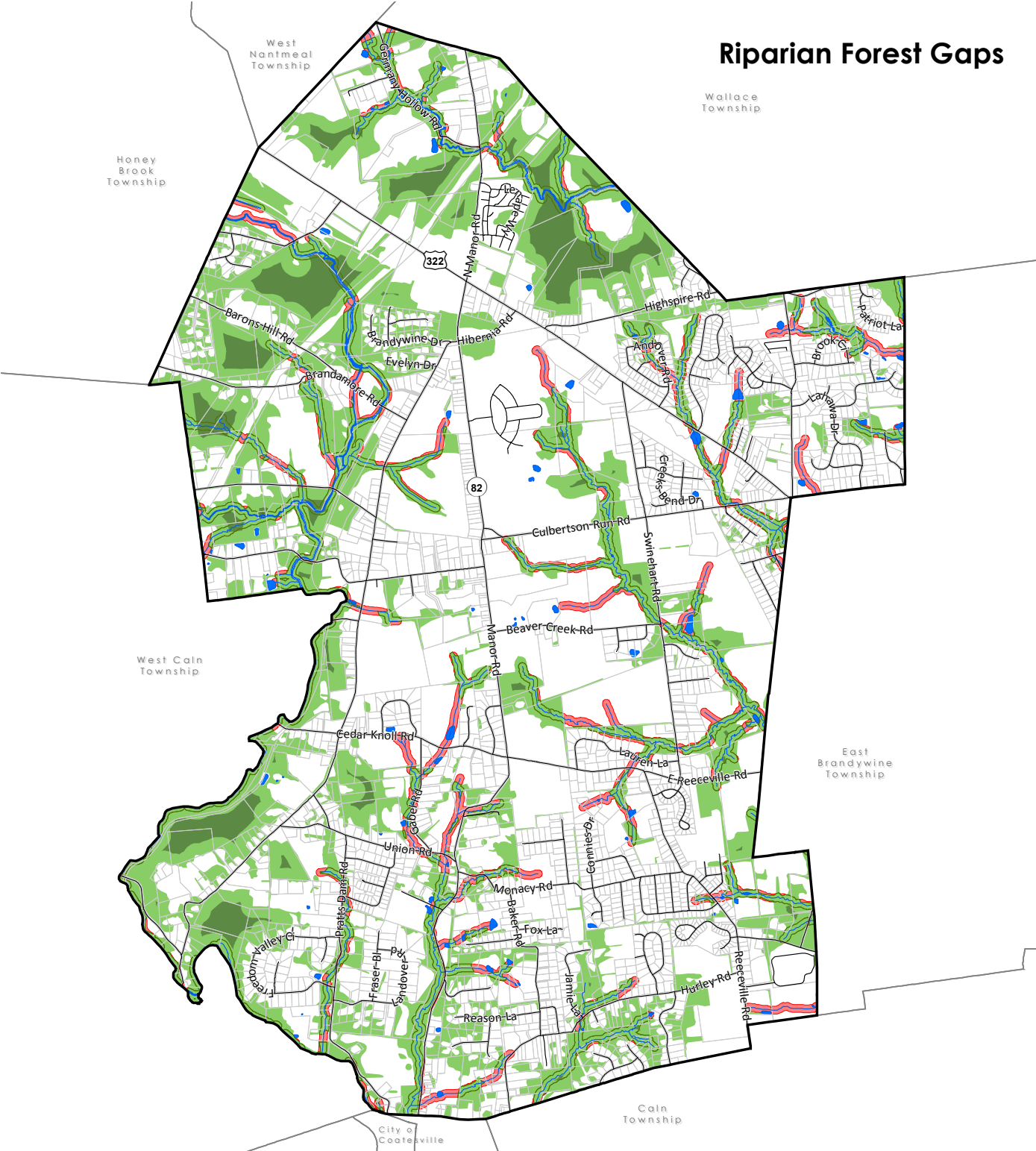
0 0.25 0.5 0.75 1 Mile



**Data Source:** Base data from Chester County Geographic Information Services, 2019.

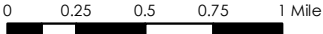
**Disclaimer:** This map is for illustrative purposes only and does not constitute a valid survey.

# Riparian Forest Gaps



**Legend**

- Township boundary
- Adjacent municipalities
- Tax parcels
- Roads
- Streams
- Water bodies
- Woodlands - 2,726.2 ac. (32.1% of township)
- Interior woodlands - 301.7 ac. (3.6% of township)
- 100-foot Riparian Buffer**
- Forested (591.3 ac.)
- Unforested (277.9 ac.)



**Data Source:** Base data from Chester County Geographic Information Services, 2019.  
**Disclaimer:** This map is for illustrative purposes only and does not constitute a valid survey.

## Protect and Expand Valuable Woodlands.

### *Why is this Important?*

Woodland habitat provides a variety of environmental and societal benefits to West Brandywine Township residents. Woodlands not only provide valuable habitat for wildlife, but help regulate local temperature, provide pollination services for local farmland, protect water resources, hold erosion sensitive soils in place (especially on steep slopes), act as valuable carbon sequestration banks, and provide valuable nutrient cycling services. In addition, they provide numerous recreational opportunities, are scenic, and, when managed sustainably, woodlands provide an economic value to their owners.

### *Where are they Located?*

Woodlands are primarily located in the western and northern portions of West Brandywine Township (see Riparian Forest Gaps Map, page 36), as well as along many of its rivers and streams. Some of these woodland areas are significant enough to contain sizeable interior woodlands (areas inside of a buffer 300' from the woodland edge). Some animal and plant species require these large contiguous tracts of woodland for their habitat and fragmentation can have a detrimental impact on the distribution and composition of plant and animal life. Some of the larger woodland tracts are protected either through ownership by the County or by easements held by West Brandywine Township and local land trusts.

Of the approximately 2,270 acres of unprotected woodlands in West Brandywine Township, the majority resides on lots greater than 10 acres in size. Given this, programs that work with private landowners that focus on options for permanent protection or appropriate ongoing stewardship of these resources would be beneficial to maintaining the integrity and health of this valuable resource.

## Promote the Preservation of Agricultural Resources.

### *Why is this Important?*

West Brandywine Township's agricultural heritage is still noticeable throughout the Township but is most evident in the central portion where prime agricultural soils and level ground make agriculture viable (see Land Features Map, page 38). However, these lands are also sought after by developers as they offer few costly constraints to development. Protecting prime agricultural resources also helps sustain the agricultural heritage and character of the town that many residents have come to cherish, and some rely on for their livelihood.

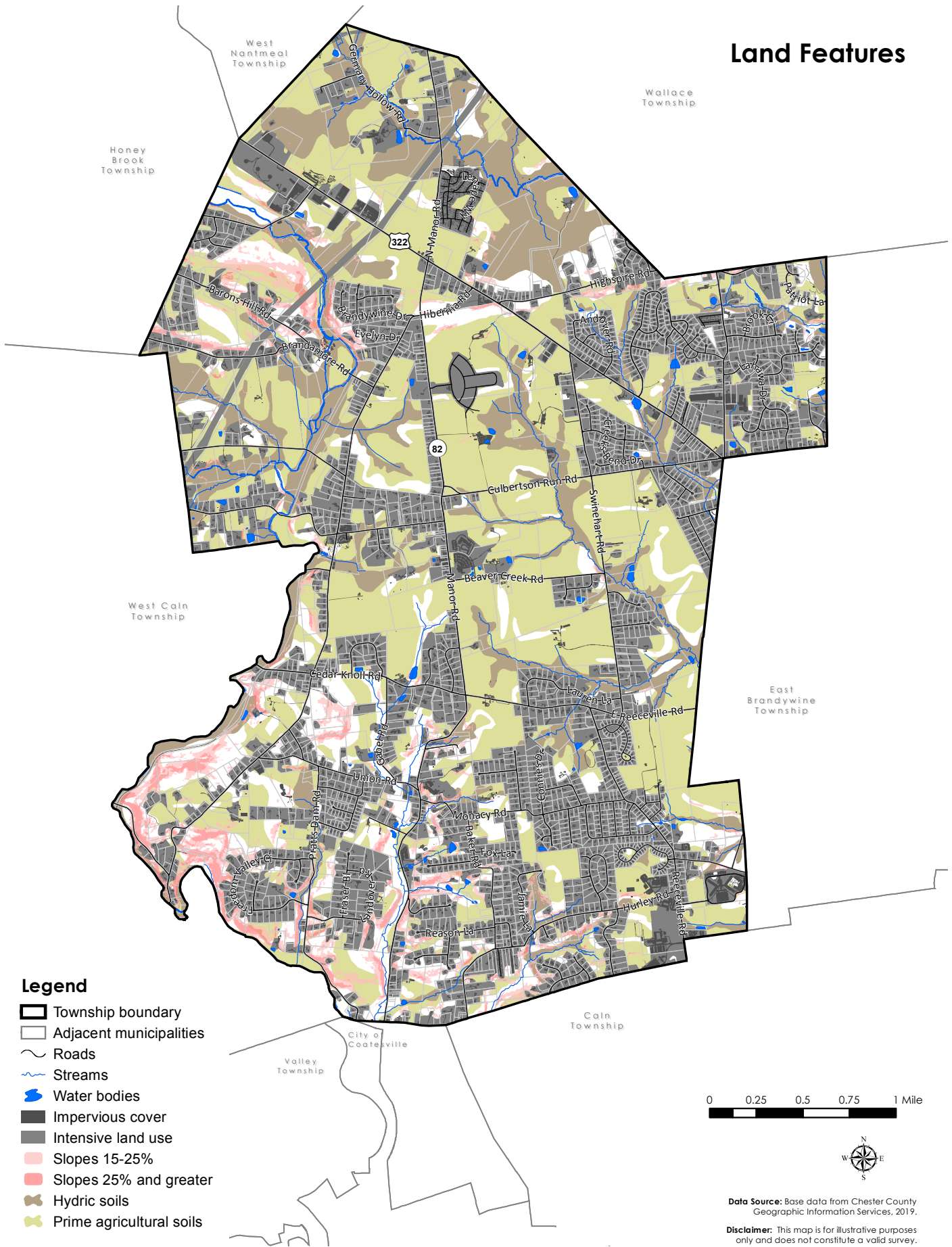
West Brandywine Township has several active farms which provide local products and services to the community, including, but not limited to, fresh eggs, organic fruit and vegetables, and seasonal entertainment, especially in the fall.

## Work to Protect High Priority Open Space Parcels

### *Why is this Important?*

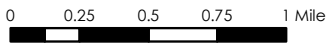
While West Brandywine Township contains a number of protected parcels (see Open Space Map, page 39), many of these are isolated from one another and together account for only 10% of the land area in West Brandywine

# Land Features



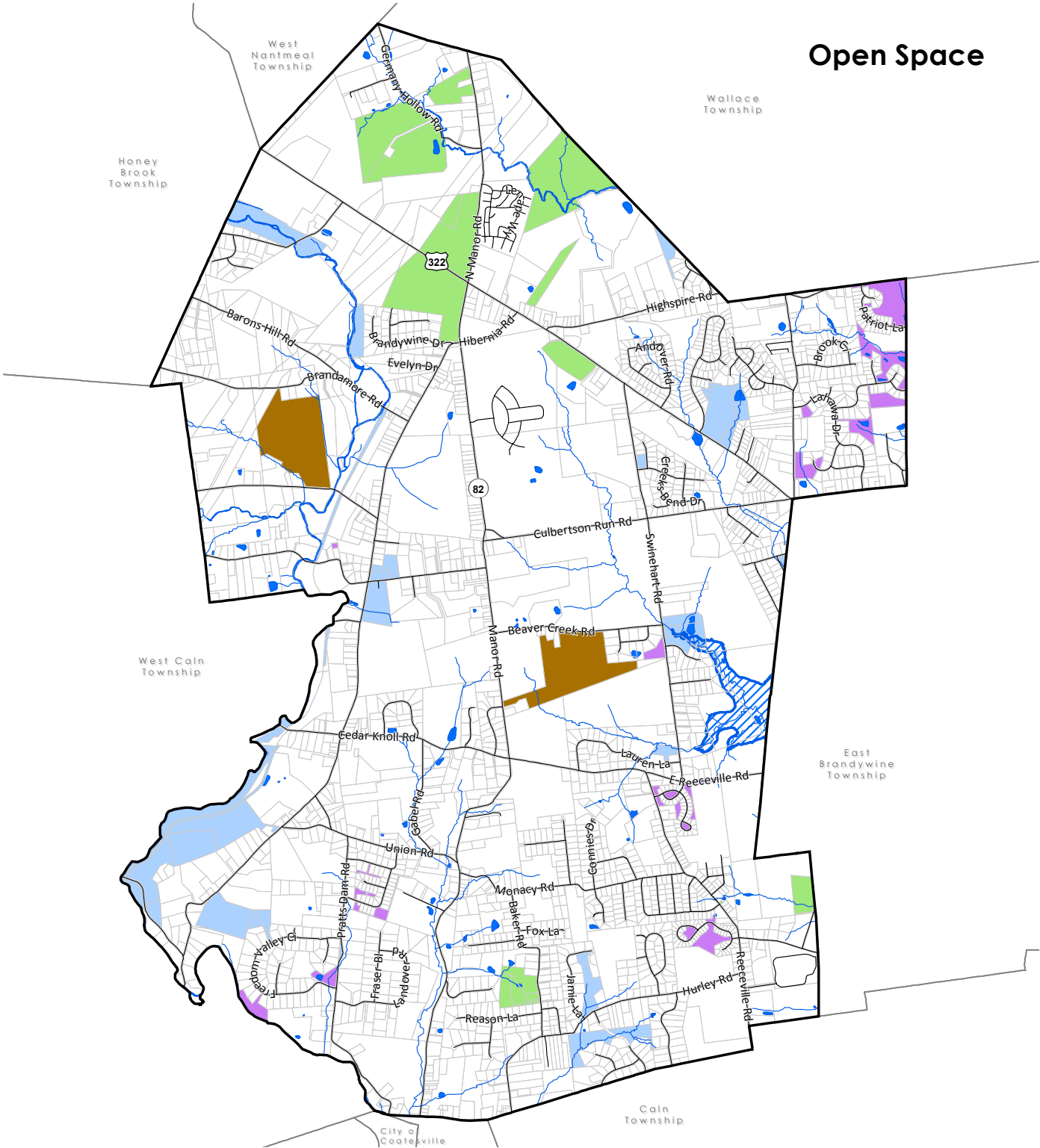
## Legend

- Township boundary
- Adjacent municipalities
- Roads
- Streams
- Water bodies
- Impervious cover
- Intensive land use
- Slopes 15-25%
- Slopes 25% and greater
- Hydric soils
- Prime agricultural soils



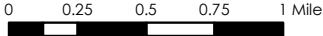
**Data Source:** Base data from Chester County Geographic Information Services, 2019.  
**Disclaimer:** This map is for illustrative purposes only and does not constitute a valid survey.

# Open Space



### Legend

- Township boundary
- Adjacent municipalities
- Roads
- Streams
- Water bodies
- Water resource restriction area
- Eased lands - 336.4 ac. (3.9% of township)
- County agricultural easements - 141.6 ac. (1.7% of township)
- Public lands (federal, state, county, and municipal) - 302.2 ac. (3.6% of township)
- Other protected lands - 96.7 ac. (1.1% of township)



Data Source: Base data from Chester County Geographic Information Services, 2019.

Disclaimer: This map is for illustrative purposes only and does not constitute a valid survey.

Township. The protection of open space and maintaining West Brandywine Township's rural character are important traits expressed by residents who attended the 2018 Community Visioning Workshop and responded to the resident survey. In addition, residents expressed a wish for more areas of public open space where trails and connections to future greenways could be established. This is important as many of the currently protected lands in West Brandywine Township are in private ownership and offer few tangible opportunities beyond their scenic attributes for residents to enjoy. The passing of the 2003 Open Space Referendum also is evidence of this support.

### ***Implementing Recommendations of the 2007 Open Space Protection Priorities Plan***

Upon passing of the Open Space Referendum, West Brandywine Township's Open Space Review Board completed an Open Space Priorities Protection Plan in 2007. This Plan prioritized parcels for protection throughout West Brandywine Township, focusing on farmland preservation, natural resource and watershed protection, and community trails and greenways. A periodic review of this plan and its implementation and recommendations may offer insights into future opportunities for land protection in West Brandywine Township.

## **Future Action and Policy Considerations**

### ***Protect and Restore the Water Resources of West Brandywine Township***

- Pursue reforestation of unforested riparian buffers through:
  - o Voluntary planting by private landowners.
  - o Modifying Zoning and Subdivision and Land Development Ordinances to require the reforestation of unforested riparian areas at the time of new development.
- Promote maintenance and protection of “fully” wooded riparian buffers given their importance to maintaining water quality and quantity. Enforce riparian buffer and woodland protection regulations and designate such buffers as priority open space.
- Consider creating a tree bank fund for riparian reforestation efforts. When appropriate use in place of compliance with landscape ordinance requirements.
- Continue to enforce the SALDO regulations to reduce impervious surfaces and other impacts to headwaters and first-order streams.
  - o Consider providing incentives to "De-pave", especially in headwaters where applicable in municipal regulations.
- Ensure that land development projects implement effective erosion and sedimentation control and stormwater management measures and protect sensitive surface, ground water, and wetland resources downgradient of upland site improvements.
- The Township's Zoning Ordinance Steep Slope provisions should be updated and enhanced to ensure that the disturbance of steep slopes is minimized in order to mitigate accelerated erosion that would otherwise lead to downstream sedimentation.

- Continue planning efforts to meet the six Minimum Control Measures and Pollution Reduction requirements under the MS4 (Municipal Separate Storm Sewer System) program to reduce the discharge of pollutants.
- Educate private landowners on the benefits of small-scale, stormwater improvements (such as rain gardens, water barrels, minimizing impervious surfaces, organic lawn treatment, and other landscaping practices that help “catch the rain”, promote groundwater recharge, and filter and minimize potential pollutants from stormwater.
- Continue to use West Brandywine Township dedicated open space funds to place conservation easements on properties located within headwater areas.

### ***Promote the Protection of West Brandywine Township's Woodlands and their Associated Resources***

- Consider options to sustain the maximum practicable extent of remaining woodlands in West Brandywine Township.
- Pursue reforestation opportunities along riparian corridors and reconnect fragmented woodlands in resource sensitive areas.
- Educate private landowners on long-term stewardship of woodland resources, including the identification and removal of invasive species.
- Consider the adoption of a Transfer of Development Rights (TDRs) program that includes woodland areas as TDR sending areas due to their sensitivity and importance.
- Continue to use West Brandywine Township dedicated open space funds to place conservation easements on wooded properties, subject to willing landowner approval.

### ***Promote the Preservation of West Brandywine Township's Agricultural Resources***

- Promote agri-tourism as a means to help West Brandywine Township's remaining farms stay in operation, including consideration of potential ordinance revisions to provide opportunities for accessory agricultural business and entertainment activities.
- Consider modifying West Brandywine Township regulations to specifically allow for agri-hood (the integration of agriculture into a residential neighborhood) development.
- Consider the adoption of a Transfer of Development Rights (TDRs) program that establishes prime agricultural soils and active farmland as TDR sending areas. See Chapter 12, Future Land Use and Housing, for further discussion on potential receiving areas.
- Consider the use of West Brandywine Township dedicated open space funds to place conservation and/or agricultural easements on properties that contain active farms and/or prime agricultural soils.

- o keeping in mind that once an agricultural easement is placed upon a property using State funds, they are ineligible for trail easements. This is important when considering other goals of the Open Space Priorities Protection Plan.
- Promote the use of Erosion and Sedimentation/Conservation Plans to protect soil quality and quantity.
- Consider establishing a West Brandywine Township Growers/Farmers market (possibly in partnership with surrounding municipalities) to promote and support local and regional growers.
- Work with local community efforts, such as the Chester County Food Bank and The Coatesville Youth Initiative's Innovation Center in Coatesville to explore how such programs may benefit local agricultural producers.

### ***Protect Important Open Space in West Brandywine Township***

- Implement the recommendations outlined in the 2007 Open Space Priorities Protection Plan.
- Periodically review and update the Open Space Priorities Protection Plan (especially the maps) to better reflect present day conditions and open space/greenway opportunities.
- Continue to participate in the Brandywine Creek Greenway, a planning initiative of the Brandywine Conservancy, to explore potential conservation and recreational opportunities, both within West Brandywine Township and with its neighbors.
- Consider the adoption of an Official Map that highlights potential parcels for the acquisition of open space interests.
- Review Open Space Design Option within the Zoning Ordinance to consider revisions that strengthen and expand resource protection and open space options, including the dedication of proposed open space to West Brandywine Township.

## Background Discussion

The complex nature of and interaction among land and water characteristics can significantly influence a wide spectrum of planning issues. Historically, natural capabilities and constraints led West Brandywine Township's settlers to the better farming and building locations. Even in the face of accelerating development activity, continued respect for natural resources, particularly those related to soil and water, can result in a pattern of development that is economically viable while posing the least negative impact on the environment.

## Water Resources

The use of water resources often faces competing interests. Surface water, as well as groundwater supplies, meets domestic, commercial, and industrial needs. Streams are used to assimilate treated (and sometimes untreated) wastewater. Aquatic life depends on clean water for its survival. Streams and lakes can provide valuable recreational resources and waterfront amenities, while parks can serve as valuable tourist attractions that benefit the local economy. 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.

This section describes a number of important attributes of West Brandywine Township's water resources; these are shown on the Water Features Map on page 35.

### *Drainage Patterns*

A complex interrelationship exists among an area's land, soil, water, and biotic characteristics – surface drainage patterns and water quality are good examples of this phenomenon. Surface water resources, as shown on the Water Features Map, reflect West Brandywine Township's geology, soil, and man-made influences, and include ponds, and streams; wetlands; floodplains; and, the land that contributes water runoff to these areas during storms, or from springs or snowmelt (a "watershed").

As displayed on the Water Features Map, West Brandywine Township is situated entirely within the Brandywine Creek watershed; a section of the East Branch-West Branch watershed boundary bisects the Township. West Brandywine Township's streams that are tributary to the East Branch include Indian and Culbertson Runs, and Beaver Creek. The western half of West Brandywine Township is drained directly by the West Branch, which flows from Honey Brook Township to the northwest. About halfway along its course southward through West Brandywine Township, the West Branch forms the boundary with West Caln Township until it exits into the City of Coatesville. The boundaries of the East and West Branch watersheds, as well as the streams that drain into them, are shown on the Water Features Map.

### *Water Quality*

The United States Environmental Protection Agency (EPA) and Pennsylvania Department of Environmental Protection (DEP) have developed water quality regulations designed to protect the physical, chemical, and biological integrity of streams in the U.S. and Pennsylvania. Specifically, DEP has established a classification system for protected water uses or types. The Brandywine Creek, West Branch below Telegraph Road, as well as Beaver Creek and its tributaries, are considered base level streams in terms of water quality standards. All other streams in West Brandywine Township, including Indian and Culbertson Runs, and

all tributaries to the Brandywine Creek, West Branch have been designated as High Quality (HQ) streams.

Per DEP standards, HQ waters are streams or watersheds that have excellent quality waters and environmental or other features that require special water quality protection. The water quality in an HQ stream can be permitted to be lowered as a result of stormwater or wastewater discharge, or other land use activity, only if the permitted discharge is the result of necessary social or economic development, specified water quality criteria can be met, and all existing uses of the stream are protected.

Therefore, all the surface waters in and downstream of West Brandywine Township have been classified as important resources from a water quality perspective. Land uses in these stream's watersheds can directly impact these resources. A particularly important aspect of many West Brandywine Township streams is their "first-order" status, and where applicable, the extent and composition of the contributing watershed (i.e., a "headwaters" watershed). (Refer to subsequent sections of this Chapter for discussion of the values of these resources.)

A first-order stream begins at the location where channelized flow occurs as a result of runoff, melting, springs, or ponding. These streams are important because 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. Second-order streams are formed at the confluence of two first-order streams, while a third-order stream is created at the influence of two second-order streams, and so on.

The Brandywine Creek, West Branch enters West Brandywine Township as a third-order stream, having significant watershed area and numerous tributaries upstream. Indian Run (a tributary of the Brandywine Creek, East Branch) and two small tributaries of the West Branch (in the vicinity of Telegraph Road) enter West Brandywine Township as first-order streams, having only small upstream watershed areas. All other streams draining West Brandywine Township begin as first-order streams within the municipality. Indian and Culbertson Runs, two branches of Beaver Creek, and two unnamed tributaries of the West Branch become second-order streams within West Brandywine Township; Beaver Run becomes a third-order stream just prior to flowing into East Brandywine Township.

With relatively low levels of flow and small contributing watersheds, first-order streams tend to be subject to greater potentially negative impact from direct runoff than are higher-order streams which have higher base flows. Degradation of the water quality in first-order streams can have serious impacts on downstream uses, and results most commonly from erosion and consequent sedimentation. This can accompany construction or other land disturbance activities (e.g., agriculture) that are not properly conducted in the field and/or adequately monitored. The retention of vegetation (especially woodlands) associated with first-order streams is particularly important from the standpoint of natural control of erosion and sedimentation. In addition, the vegetation often found naturally within stream corridors contributes to their value as wildlife habitat and breeding areas.

As described subsequently in this Chapter, West Brandywine Township's groundwater resources are closely related to both the previously described surface water resources and the underlying geology. Geologic characteristics are the principal determinants for the quantity, quality, and the potential contamination of groundwater. The capacity of these aquifers to transmit and store water varies directly with the physical and chemical properties of the geologic formations.

## **Headwaters of First-Order Streams**

Headwaters are those land areas that drain directly into first-order streams, the smallest tributaries of the larger stream system. As previously noted, first-order streams are significant beyond their size in the overall hydrologic regime. 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. 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 watershed to these first-order streams is extremely sensitive to introduction of impervious surfaces, improper grading, discharge of pollutants, or poor agricultural practices. Maintenance or restoration of wooded headwaters, particularly in close proximity to first-order streams, is especially important given the ability of wooded areas to: slow and filter flows; provide shade and water temperature regulation; and, supply wildlife food and cover.

As shown on the Water Features Map, over half of West Brandywine Township's land area is comprised of headwaters. These are particularly extensive in the central upland areas extending from Hurley Road in the south to Highspire Road in the north. Specifically, headwaters comprise 4,340 acres or 51 percent of West Brandywine Township's land area.

## **Floodplains**

Floodplains are identified in part by the boundary of the area subject to flooding resulting from a storm event with one percent chance of occurring in any one year, as delineated by the Federal Emergency Management Agency (FEMA; the "100-year storm"). Extensive areas within West Brandywine Township along the Brandywine Creek, West Branch, its tributaries, and tributary streams to the Brandywine Creek, East Branch, are all subject to periodic flooding or wet conditions and have been identified by FEMA as floodplains (and are shown in the Water Features Map).

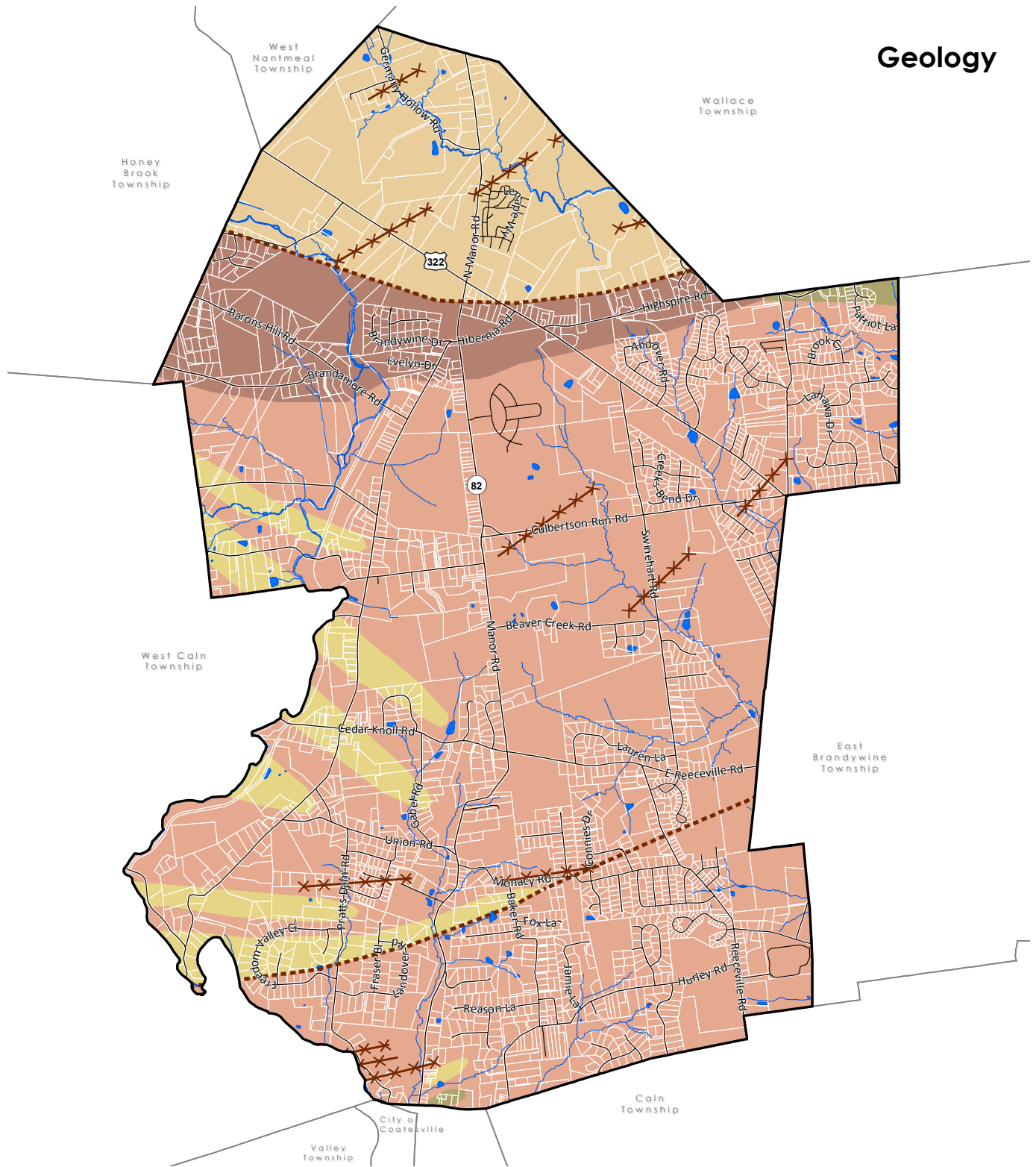
During storm events (whether 100-year or more frequent), floodplains serve to absorb and slow flood waters, and take up water-borne pollutants. Where maintained in a relatively natural state, these areas also help limit potential for erosion, downstream sedimentation, non-point-source pollution, and obstruction or alteration of the floodway. Many of these lands subject to flooding also are part of West Brandywine Township's headwater areas. 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.

## **Bedrock Geology**

West Brandywine Township lies entirely within the Piedmont Province of the Appalachian Highlands, a band of rolling land and underlying geology that stretches from New York to Georgia. The "fall line," marking the transition from Piedmont to Coastal Plain, is located only 5 – 10 miles to the southeast of Chester County.

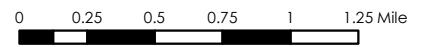
The Geology Map on page 46 shows West Brandywine Township's bedrock geology, given the significance of this resource to the local hydrology and its local water supplies. The five Geology Types are displayed on the Geology map and are described as follows.

# Geology



## Legend

- |                         |                     |                                |
|-------------------------|---------------------|--------------------------------|
| Township boundary       | Streams             | <b>Geology type</b>            |
| Adjacent municipalities | Water bodies        | Anorthosite                    |
| Tax parcels             | Dikes, sills, veins | Chickies Formation             |
| Roads                   | Faults              | Graphitic felsic gneiss        |
|                         |                     | Felsic and intermediate gneiss |
|                         |                     | Banded mafic gneiss            |



**Data Source:** Base data from Chester County Geographic Information Services, 2019.  
**Disclaimer:** This map is for illustrative purposes only and does not constitute a valid survey.

- i. Anorthosite suite. The Anorthosite formation is an interesting and unusual rock type for Chester County, and is found in the northern part of West Brandywine Township extending into Wallace and East Nantmeal in the shape of a large "bowl". This formation is a hard, igneous (i.e., formed by volcanic activity) rock associated with good surface drainage and moderate well yields.
- ii. Chickies quartzite. The Chickies quartzite coincides with the Baron Hills of northern Chester County, and is found in a narrow band in the north-central part of West Brandywine Township continuing into neighboring West Caln. It is a metamorphic rock, which was transformed from a previously deposited igneous or sedimentary (water or wind-borne) rock through tremendous heat and pressure. Most metamorphic rocks have low water-bearing capacity, due to their dense nature, including the Chickies formation.
- iii. Felsic gneiss, Graphic felsic gneiss, Felsic and intermediate gneiss, Banded mafic gneiss (all with amphibolite facies). These gneisses form the majority of West Brandywine Township's bedrock, throughout the central and southern sections. These rocks are also metamorphic with varying well yields.

Also, of note are the two fault zones that transect West Brandywine Township in an east/west direction. The first is located where the southern rim of the Anorthosite "bowl" thrusts up against the Chickies ridge, and the other passes through the southern part of West Brandywine Township. Because of the potential for increased fractures in the fault zones, groundwater yields in these areas may exceed those of the surrounding geology. Conversely, these zones also present greater opportunities for the spread of pollutants within the groundwater and may pose stability questions in relation to excavations or other land disturbances.

Further noteworthy geologic features include the dikes that are found throughout West Brandywine Township. These narrow igneous "intrusions" 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 ground water. The scattered, linear nature of these dikes makes site-specific testing for adequate water supply and soil percolation/wastewater disposal important.

As described in Chapter 8, most of the eastern part of West Brandywine Township is supplied by public water supplied by the Aqua Pennsylvania (AP) water company (formerly the Philadelphia Suburban water company); the remaining area is serviced by private on-site wells or two community water supply systems. Geologically, the water pumped through private wells or drawn by the community systems is taken from or otherwise affected by the previously described water-bearing rock formations. Private wells are located throughout the western half of West Brandywine Township, while two community systems are operated by the Woodbrooke Homeowner's Association (in the vicinity of Woodbrooke Drive and Pratts Dam Road) and Indian Run Village (off Route 82 and Manor Road). The specific sources of public water used by AP are not easily discernible due to the broad interconnected nature of the AP system. In fact, most AP sources are located outside West Brandywine Township. For example, AP sources include wells in Upper Uwchlan Township; which, among others located outside the municipality, are likely outside the range in which pumping or withdrawal could affect the water bearing bedrock formations in West Brandywine Township.

In summary, West Brandywine's Townships streams, watersheds, headwaters, floodplains, and geologic

formations collectively have significant values that include water supply, water quality attenuation, flood control, and wildlife/fisheries habitat. When properly protected and managed, these interrelated systems of land and water can: filter and otherwise bind up pollutants; slow flood flows so as not to contribute to greater downstream flood volumes; reduce sedimentation; and, provide food, cover, and shade for a wide range of wildlife and fish species.

## Soil and Land Resources

The characteristics of a particular soil type are an important determinant in the location of most land use activities. The characteristics displayed by the previously described geologic formations are major determinants of: the slope of the land surface, the soils that form at the surface; the quality and quantity of groundwater supplies; the suitability of certain types of sewage disposal systems; the ease of excavation; and, the soundness of foundations. This section and the Land Features Map and Riparian Forest Gaps Map describe West Brandywine Township's land slopes, riparian buffers, soil types, and woodland resources.

### *Land Slope*

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. Land slope is a significant factor in determining sensitivity to disturbance and suitability for development. Disturbance of existing vegetation and topsoil on steep slopes accelerates runoff and erosion, causing downgradient sedimentation and water/wetland degradation.

The Land Features Map shows West Brandywine Township's moderate (15-25 percent) and severe (> 25 percent) slopes. These categories are the same as those used by the West Brandywine Township's ZO to protect these sensitive resources and displays the contrast between the municipality's broad uplands and steeply walled valleys. Steeply sloped areas are concentrated in the southwestern and northwestern parts of West Brandywine Township, forming the valley "walls" of the Brandywine Creek, West Branch and certain tributaries. The remaining portions of the West Brandywine Township exhibit a gently rolling landscape with very few occurrences of severe slope.

As noted, steeply sloping lands are sensitive to ground disturbance and the removal of vegetative cover that could result in problems with stormwater runoff, erosion, and uncontrolled sedimentation. Concentration of runoff from the installation of impervious surfaces on sloped areas can diminish groundwater recharge. The potential for erosion from earthmoving and other disturbance activities is heightened on steep slopes, both during and subsequent to the activity, even with substantial erosion control measures. In contrast, the presence of intact vegetation, especially trees, contributes to slope stability and stormwater control. The West Brandywine Township's ZO currently includes provisions for regulation of steep slopes that call for both minimization of vegetative disturbance and limitations on grading, based on the identified and mapped steep slope categories.

### *Hydric and Alluvial Soils*

Hydric soils are found in upland depressions and along the fringes of floodplains, and/or within or adjacent to wetlands. While they are a reasonable indicator of flooding or wetland conditions, not all soils categorized as hydric (by the USDA-Natural Resource Conservation Service) fully meet the established

criteria. For example, the Glenville soil type contains hydric “inclusions,” meaning that the soil contains wetter areas definable as hydric but are not fully hydric.

With respect to their hydrologic characteristics, hydric soils exhibit shallow depth to water table and, occasionally, display standing water. These soils often correlate to the headwaters areas which include springs, seeps, and marshes at the uppermost terminus of stream corridors. Subsurface water, seeping through hydric soils, supplies groundwater to the surface water system. In turn, this subsurface water source forms the base flow in streams and defines a baseline for stream water quality.

Alluvial soils are soils that have been eroded, transported, and deposited by floodwaters over time; they generally indicate potential for flooding. These soils are typically consistent with the boundaries of the 100-year floodplain (shown on the Water Features Map), which was previously described in this Chapter.

As previously noted, the suitability of a particular soil type is an important determinant in the location of most land use activities, roadways, and public facilities. The soils in West Brandywine Township that have limitations include the previously described hydric and alluvial soils, as well as those with shallow depth to bedrock that are underlain by soft rock, and/or that are susceptible to erosion. A particularly important characteristic is the ability of a soil type to support on-site sewage facilities, which is affected when these limitations are present. The soil’s ability to assimilate and mitigate wastewater disposal (either on-site or from an off-site collector) is also a central element of the planning process and a primary determinant in locating land uses. Similarly, a soil’s suitability for stormwater management is also important. Due to compaction, permeability, and erodibility qualities, certain soils are better suited for certain management and/or disposal techniques than others.

## Biotic Resources

West Brandywine Township’s biotic resources consist primarily of wetlands and other water resources, woodlands, and riparian buffers. In addition to the information previously provided, the biological value of riparian buffers is discussed in this section.

### *Wetlands*

Wetlands are found in conjunction with and as part of many of West Brandywine Township’s streams, open excavations, and farm ponds. These areas are shown on the Water Features Map, and were identified by the National Wetlands Inventory based on aerial photography. No other comprehensive inventory of wetlands currently exists for West Brandywine Township.

Wetlands provide significant wildlife habitat. They are also important storage areas for both surface and groundwater resources, filtering pollutants, and releasing waters to maintain critical flows (e.g., for fisheries, water supply wells). Given these ecological and public health values, wetlands are regulated by DEP, the U.S. Fish and Wildlife Service, and the U.S. Army Corps of Engineers. In essence, no development activity may occur in a wetland area without a permit. The permitting process requires investigation of alternatives and may require mitigative action.

### *Riparian Buffers*

Riparian buffers are the transitional area between the flowing waters of streams and rivers, and upland areas. Protecting these land areas is widely recognized as one of the most important ways to protect

a stream's overall health. Wooded stream buffers: 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.

For the purposes of evaluating biologic function for this Comprehensive Plan, the boundary of a riparian buffer was set at 100 feet on each side of a given stream, for a total width of 200 feet. Using GIS, these buffers were then overlaid with West Brandywine Township's woodlands to determine whether a buffer was fully wooded for a 200-foot width (forested on the Riparian Forest Gaps Map on page 36) or not wooded (unforested on the map), representing an "opportunity" for reforestation. As previously noted, wooded riparian buffers are particularly valuable to high quality water supplies and wildlife habitat.

In summary, woodlands provide and enhance wildlife habitat, scenic views, and recreational opportunities. Natural vegetation also helps to prevent soil erosion, reduce stormwater runoff, filter groundwater recharge, purify air, and provide windbreaks.

## ***Woodlands***

Wooded areas are significant for their environmental, social, and economic values. In particular, these lands are a vital link in the hydrologic cycle. Trees function as natural barriers by reducing the unwelcome impact of noise and of strong winds and wind-transported substances (e.g., dust, snow) and by screening unsightly areas. Trees also absorb water which is stored in the stem and leaves and released as evapotranspiration. Stands of trees: provide natural erosion and flood control by decreasing the speed and amount of stormwater runoff; reduce temperature extremes; and, moderate evaporation – all of which are beneficial throughout West Brandywine Township, and especially in its riparian buffers. The total acreage of woodlands in West Brandywine Township is 2,726 acres or around 30 percent of its total land cover. These woodlands are shown on the Riparian Forest Gaps Map.

Much of West Brandywine Township's woodland areas are concentrated along the valleys of the Brandywine Creek, West Branch, Beaver Creek, and Indian Run. The Baron Hills in the northern and western parts of West Brandywine Township also remain largely wooded. Here, relatively poor soil and very steep slopes inhibit tree removal for other uses. Nonetheless, the Baron Hills are part of the greater Mid-Atlantic and Southern New England "Highlands" region, recently recognized at the federal level due to its significance in providing public water supplies and meeting wildlife habitat and recreation needs. In the Indian Run watershed, the gentle upland atop the anorthosite formation harbors significant area with shallow depth to groundwater. Perhaps too wet to farm, this area hosts large contiguous woodland areas. Hydric soils, geology, and woodland health are critical in developing management strategies to protect both branches of the Brandywine Creek and its watersheds.

## ***Forested Headwaters***

As previously described, 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. Forest areas directly adjacent to a stream (a wooded riparian buffer, also previously detailed) 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.

## ***Forested Interiors***

Forested interiors are those woodlands large enough to support an edge 300 feet wide, and still have woodland inside this edge. In other words, forested interiors are the “hole” in a “donut” that has a 300-foot wide edge. The Riparian Forest Gaps Map shows the extent of the typically large and mature woodlands that contain forested interiors. Given the ecology of these areas, they are likely to support a considerable variety of native vegetation and wildlife species. Certain species of forest plants and wildlife depend specifically on the unique conditions of a healthy forest ecosystem. Many species of songbirds, for example, are specifically adapted to forest-interior conditions and will not nest elsewhere. Similarly, numerous species of spring ephemeral wildflowers will only bloom on the rich, moist soils of the forest floor. There are approximately 300 acres of forested interiors in West Brandywine Township or 11 percent of the woodland area.

## **Agricultural Resources**

Soil formation is an ongoing process, a complex interaction among factors such as weather, underlying geology, vegetative cover, and time. In West Brandywine Township, 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. Accordingly, West Brandywine Township contains a significant amount of productive farm soils and as such, agriculture was the historically predominant land use in the municipality. As shown on the Land Features Map, West Brandywine Township still contains significant agricultural resources.

### ***Lands under Act 319 or 515***

Two state laws are in place to help reduce the property tax burden on agricultural lands. These include Act 319 (“Forest and Farmland Assessment Act of 1974”) and Act 515. The goals of these acts are, collectively, to preserve land in farm, forest, water supply and/or open space. This is accomplished by allowing eligible landowners to reduce their assessment based on the principle that eligible land should be taxed based upon its current use, rather than its potential use. Both programs require that the owner agree to land use restrictions for a specified period of years.

### ***Prime Farmland***

Prime farmland soils are highly productive for food and feed crops, deep, not prone to erosion, nearly level, well drained, and generally devoid of stones and rocks. As shown on the Land Features Map, West Brandywine Township is underlain by a significant percentage of prime agricultural soils. In the past, West Brandywine Township has lost a great deal of this agricultural land to residential uses, in particular during the 1990s. It should also be noted that the soil characteristics that create high agricultural value are also valuable in for other uses (e.g., good drainage is important in road construction and wastewater disposal).

### ***Agricultural Security Areas***

Agricultural Security Areas (ASAs) strengthen and protect agriculture when landowners work with their municipality to establish these Areas where agriculture is the primary activity. A minimum of 250 acres

from among all participating landowners is required. Benefits of ASA status include exemption from nuisance regulations, as well as meeting a criterion of Chester County's Agricultural Land Preservation Program. The term of an ASA is seven years followed by a re-certification process.

## Open Space Resources

West Brandywine Township's inventory of protected open space contains approximately 870 acres (or just above 10%) of land, as shown on the Open Space Map on page 39. This inventory is made up of a variety of land protection measures, including State-owned, County-owned and Municipally-owned open space. It also includes a number of both Conservation Easements and Agricultural Easements (which generally are in private ownership and do not allow public access) held by a variety of organizations, including West Brandywine Township, Natural Lands, and the County. Additional protected lands include those owned by various Home Owner Associations (HOAs) that were created as part of the development process. The percentage of land under protection is comparable with West Brandywine Township's neighbors to its east and west, but it falls below those neighbors to the north. Since the last Comprehensive Plan Update in 2005, West Brandywine Township has seen an additional 539 acres of land (around 6%) protected, which more than doubles the land protected prior to the previous plan.

## Chapter 7 Historical and Cultural Resources



*The Historic Hibernia Methodist Church, located within the Hatfield-Hibiernia Historic District.*

### Introduction

This chapter assesses West Brandywine Township’s cultural resources, including scenic landscapes and historical resources of local and national significance. Scenic landscapes and historic resources richly endow residents with a visible sense of place, providing a tangible connection to the layers of history and change that characterize a community. They are the evidence of the human experience, representing the natural and working landscapes, events, architecture, ideas, and individuals of the past. Criteria for designation of scenic landscapes and historic resources are discussed in the background discussion below, along with their planning and regulation.

### Key Issues

Cultural resources are an important element of the locally characteristic landscape, critically helping to endow West Brandywine Township with its sense of place and even quality of life. Local planning that integrates and protects cultural resources will encourage patterns of development, redevelopment, and neighborhood conservation that enhance West Brandywine Township’s sense of place. Based on the more detailed analysis and inventories presented in the background discussion below, cultural resources in West Brandywine Township continue to require special attention, identified here as key issues.

## Continue to Promote Preservation and Viable Use of Historic Resources.

### *Why is This Important?*

Existing inventories and zoning provisions are useful tools for recognizing and promoting preservation of historic resources in West Brandywine Township. Nevertheless, a number of resources appear threatened, including via “demolition by neglect”, rather than through bona fide applications for demolition permits. The plan review process also does not seem to be uniformly effective in promoting cultural resource preservation.

### *A Comprehensive and Up-to-Date Inventory is Critical.*

A key step toward ongoing preservation efforts is to maintain an up-to-date inventory of historic resources, including all resources potentially eligible for the National Register, as determined by the Pennsylvania Historical & Museum Commission (PHMC). A second step would be to expand such an inventory comprehensively to include definition and identification of all “principal” versus “accessory” structures on inventoried historic properties. The status of each structure should be noted as “contributing” versus “non-contributing” resources from the perspective of historical integrity. A third step would be to expand the inventory to include “structures” which are not buildings yet are historically important, such as early stone walls and landscape features. Most importantly, an up-to-date inventory and an appropriate map identifying regulated resource classes needs to be formally adopted by reference into the Zoning Ordinance.

### *Effective Use of all Preservation Tools is Necessary.*

Effective use of plan review processes is key, particularly the Sketch Plan where there is greater opportunity to inform landowners of options for preservation. A more comprehensive inventory is critical to meaningful regulation, while means to address demolition by neglect are needed. In the context of development plan submissions, the submission of an Historic Resource Impact Study also could be required where inventoried historic resources were located on or adjacent to the site proposed for development. Measures to mitigate identified impacts could then be required as part of development plan approval.

## Promote Preservation of Scenic Landscapes.

### *Why is This Important?*

There exist little formal definitions of scenic landscape elements, except as described in the 2019 Plan and in the 2005 Plan. Regulatory means to conserve scenic landscapes are somewhat weak, subjective, and only available to residential development applications selecting the ZO’s Open Space Design Option.

Scenic roadways, landscapes and viewsheds in West Brandywine Township can be integrated into the local preservation planning process. Working landscapes, woodlands, waterways, and historic settlement patterns are scenic resources whose protection can be promoted through adoption of regulatory provisions and through preservation incentives.

A key issue is the need to incorporate into the ZO definition and mapping of scenic landscapes as described herein. Adoption of mapping of scenic landscapes and designation of scenic roads by West Brandywine Township affords the opportunity to supersede otherwise subjective aspects of requiring developer/applicants to map

scenic resources. With an official inventory incorporated into the Zoning Ordinance, regulatory provisions can be established to promote development patterns consistent with scenic preservation objectives. Examples include: requirements for management of roadside vegetation along designated scenic roads; avoiding excessive vegetation removal; options and definitions for use of characteristic architectural treatment for new development within mapped scenic landscapes; and, where such options are not utilized, requirements for increased setbacks from points of public view and use of landscape buffers to screen new development from view.

## Future Action and Policy Considerations

### *Promote Preservation of Historic Resources*

- Maintain comprehensive inventory of nationally and locally significant historic resources, building on the Chester County Historic Resource Atlas. Define and, ideally, map “principal” versus “accessory” structures and “contributing” versus “non-contributing” resources site by site. Consider expansion of the inventory to include “structures” which are not buildings yet historically important. Adopt the map and inventory by reference in the Zoning Ordinance in conformance with existing zoning provisions.
- Inform landowners regularly of adaptive re-use opportunities and relaxation of otherwise applicable area and bulk requirements for historic resources, not available under base zoning provisions.
- Undertake regulatory revisions as necessary to use the Sketch Plan and other review processes to identify important historical attributes of the landscape and seek their protection.
- Require submission of photographs of historic resources likely to be impacted prior to land development.

### *Promote Conservation of Scenic Landscapes*

- Incorporate mapping and definitions of scenic roads, scenic landscapes and scenic views throughout West Brandywine Township into the Zoning Ordinance. Cover all scenic landscape types including working landscapes, woodlands, stream valleys, and historic settlement patterns, whether or not individually mapped.
- Establish subdivision and development regulations to protect scenic landscapes and views. Link requirements for identification of scenic landscapes to new definitions and mapping and require management of roadside vegetation, use of characteristic architectural treatment for new development and, where not utilized, provision for increased setbacks and landscape buffers.
- Undertake regulatory revisions as necessary to use the Sketch Plan and other review processes to identify important scenic attributes of the landscape and seek their protection.
- Require submission of photographs of scenic resources likely to be impacted prior to land development.

## Background Discussion

### Scenic Landscapes

Scenic landscapes have been mapped in many Chester County municipalities and are consistently defined as those landscapes visible from the public right of way which are characteristic of the natural heritage and historical settlement of the land. This includes remaining natural areas but excludes modern rural, suburban or urban development not characteristic or compatible with historical settlement patterns. Visibility, obviously, is manifestly different in the winter versus the summer where luxuriant vegetation conceals much. Scenic or visually significant landscapes, are typically mapped on the basis of a more inclusive winter view. Scenic landscapes in the Brandywine Valley comprise a diversity of “characteristic” landscape elements which can be described in terms of natural features - wooded ridges, wetland meadows, and rolling hills -- or human influenced features -- a hand-laid stone bridge, a tree-lined country lane, an old farmhouse, and a crossroads hamlet. Natural and human influenced elements overlap and interweave; a ready example is the historic farmstead with its adjacent rolling cropland and pasture.

West Brandywine Township’s scenic resources have been mapped as scenic roads, vista points and scenic open landscapes, along with woodlands. Together, these attributes create landscapes that are aesthetically pleasing, ranging from views of rolling farmland to steeply wooded hills along West Brandywine Township’s stream valleys. Of course, the landscape is also inhabited by humans, and includes single family homes along secondary roads, relatively new subdivisions, and several historic villages. Much of the scenic built environment reflects historical development and settlement patterns or embodies unique attributes of architecture or siting; it may also contribute to community sense of place and scenic landscape quality. Scenic resources are indicated on the Scenic Resources Map on page 57.

#### *Scenic Roads*

Scenic roads in West Brandywine Township, regardless of ownership (e.g., Township or State), are those characterized by scenic vista opportunities. Well-maintained and attractively landscaped properties abutting West Brandywine Township roads add weight to scenic road designations.

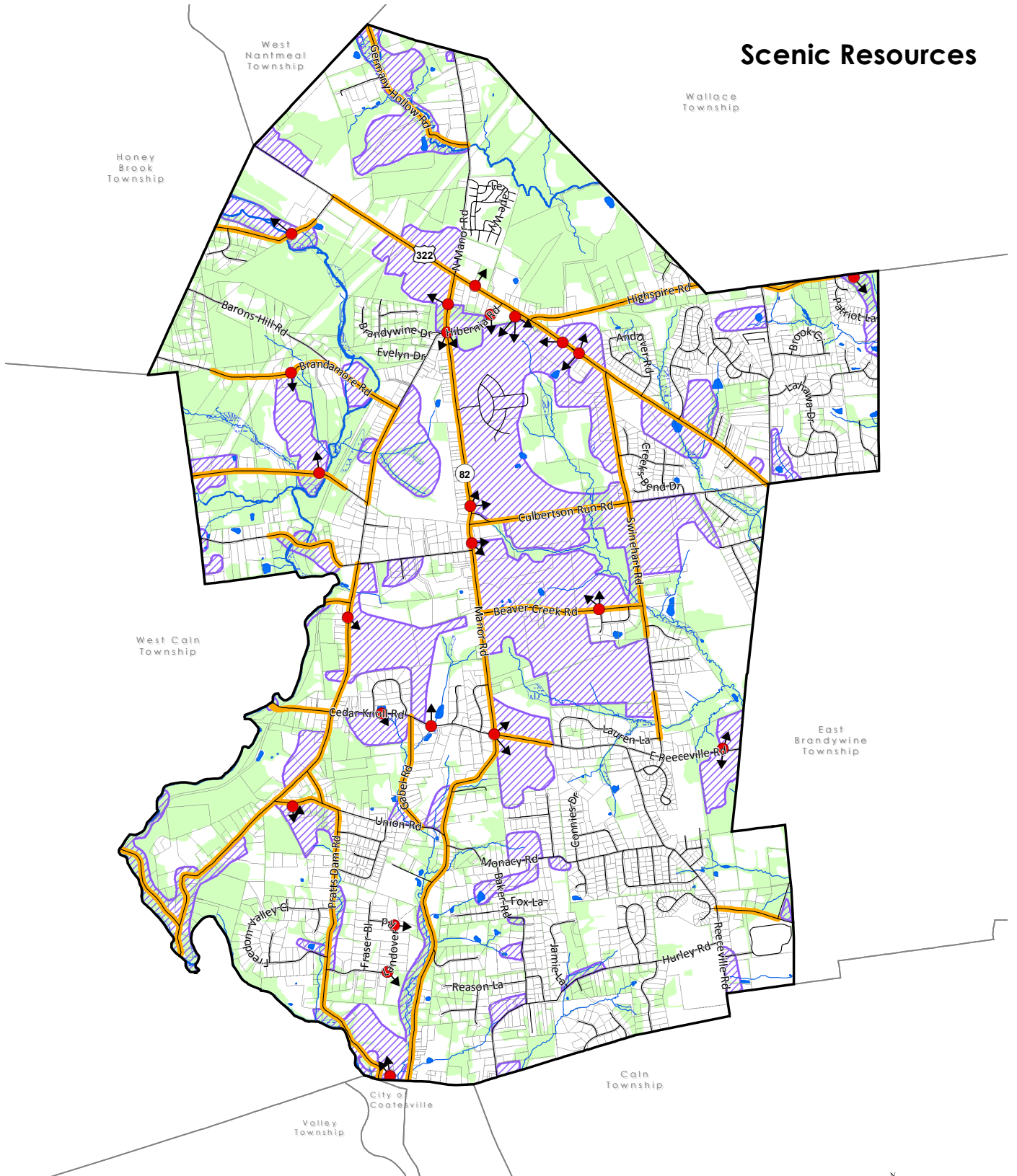
#### *Vista Points*

Scenic vistas were identified at points where a long view or a large landscape was within view of a public road, and where the visible land use (either foreground or background) was visually appealing due to the presence of a farm field or pasture, historic buildings attractively sited on the land, or an historic village, for example. Magnificent views may be seen from upland areas, looking over long rolling landscapes toward distant hills or focal points such as the Forks of the Brandywine Church.

#### *Scenic Open Landscapes*

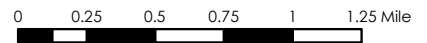
Scenic open space in West Brandywine Township typically includes broad, rolling farmland (pasture, cropland, or hayfields; historic farm buildings, etc.) that creates an expansive and pleasing view from a public road or other location accessible to the public. These landscapes also include woodland areas which, for the most part, define the stream valleys throughout West Brandywine Township.

# Scenic Resources



## Legend

- Township boundary
- Adjacent municipalities
- Tax parcels
- Roads
- Scenic roads
- ▶ Vista points
- ~ Streams
- Water bodies
- Wetlands (NWI)
- Woodland
- Scenic open landscape



**Data Source:** Base data from Chester County Geographic Information Services, 2019.  
**Disclaimer:** This map is for illustrative purposes only and does not constitute a valid survey.

## Historic Resources

The relative wealth and breadth of historic resources that remain in West Brandywine are integral to the character of the community. Historic resources can be buildings, structures, objects, sites, landscapes, or archaeological artifacts that have been identified as historically significant in their community context. Historic resources also can be defined in terms of historic districts, larger areas which possess a significant concentration or continuity of historic buildings, structures, objects, or sites, even while also including sites within their bounds that may not contribute to the historical context.

One hundred thirty-six buildings or groups of buildings were recorded as individual historic sites by the Chester County Historic Sites Survey in 1982. Unfortunately, that inventory was recorded by hand with dots on a fairly small-scale USGS quadrangle without parcel lines, impeding exact location of resources. Additional resources were subsequently added in a similar fashion and, at the time of the 2005 Comprehensive Plan, 141 historic sites were mapped. None of these sites were classified as to degree of historical significance, nor did these inventories detail the number of structures on any given property, ascertain which were principal versus accessory structures and identify any that were not contributing to the historical integrity of the site.

Also mapped in the 2005 Plan was the Hatfield-Hibernia Historic District, which had been placed on the National Register of Historic Places in 1984. The historic district comprises clusters of former tenant houses, principal residences, and industrial structures and ruins associated with the Hibernia iron works and the Hatfield Mill. It includes all of Hibernia Park, lapping well into West Caln Township. The database for this district, on file at PHMC, appears to detail every building including notation of which are “intrusions,” or “non-contributing” in today’s common parlance.

### *Classification of Historic Resources*

Properties listed in the National Register of Historic Places are recognized for their age, integrity and significance. These properties are eligible for federal preservation grants, federal investment tax credits, and other preservation incentives. For example, an income-producing property that is listed or determined to be eligible for listing in the National Register of Historic Places may receive tax credits for its rehabilitation. Determinations of eligibility (DOE) are made by the State Historic Preservation Office which in Pennsylvania is the PHMC. Within the National Historic Preservation Act of 1966, Section 106 initiates a review process for impacts on historic resources either listed in, or determined to be eligible for the National Register, for any project using federal funds or otherwise requiring federal approval, permitting, or license, including approvals delegated by the federal government to the states. This includes most PennDOT projects and other projects that receive federal approval or funding, such as telecommunications facilities and wetlands permits.

No individual historic resources in West Brandywine have been formally listed on the National Register of Historic Places. However, six historic resources have received from PHMC a “determination of eligibility” (DOE) for listing on the National Register and are afforded the same benefits as listed resources. Most iconic among these six is the Forks of the Brandywine Church. In addition, all of the resources in the Hatfield-Hibernia Historic District, deemed contributing to the historic integrity of the district, are treated as equals to any site listed individually on the National Register. This includes eleven structures in West Brandywine plus the Hibernia Methodist Church cemetery. The Reading Railroad trace is listed in the district with no notation as to whether it is considered a contributing resource or not. Only two

structures within the West Brandywine portion of the Hatfield-Hibernia district were listed in the district files as “intrusions” in 1984, in today’s PHMC parlance “non-contributing,” at least partly because they were not more than fifty years old at that time. One of them, built in 1940 at 139 Hibernia Road, is now included in the Chester County Historic Resource Atlas discussed below. The other is not included in the County Atlas but is also now more than fifty years old. To change their status, or that of the Reading Railroad trace, to “contributing resources” within the National Register historic district would require action by PHMC.

In 2012, Chester County, with cooperation from the West Brandywine Township Historical Commission, published a new component of the Chester County Historic Resource Atlas, compiling historical resources in West Brandywine Township (see Historic Resources Map, page 61). The Atlas includes, as recently updated, 389 resources in West Brandywine Township, well more than double the number inventoried in the past. The large majority of the increased number are resources that, as of 2012, were over fifty years old and not previously identified as “historic.” In the context of unique historical value, many of those now “old” resources are not particularly worthy of specific historical preservation efforts, most being early suburban residences unrelated to the historical style and architectural significance inventoried in the 1982 Chester County Survey.

The County Atlas inventory classifies resources into three main classes: Class 1 are resources listed or eligible for the National Register of Historic Places and Class 2 are other resources of local significance, consistent with West Brandywine Township regulation and prior inventories. Class 3 are other intact resources (structures) over 50 years old. A fourth class includes sites/structures that have been demolished or significantly altered. The new County inventory, while finally parcel specific, still does not consistently specify multiple resources on any given parcel nor the presence of non-contributing structures. Unfortunately, for Class 1, the County Atlas only includes resources having received a DOE from PHMC for listing on the National Register. Contributing resources in the Hatfield-Hibernia National Historic District are not included in the County’s Class 1 but for purposes of this Plan are. All Class 1 Resources are shown in the table below, and their parcels are shown on the Historic Resource Map, along with those parcels containing resources in classes II, III, and “Other”.

## Planning and Regulation for Cultural Resources in West Brandywine

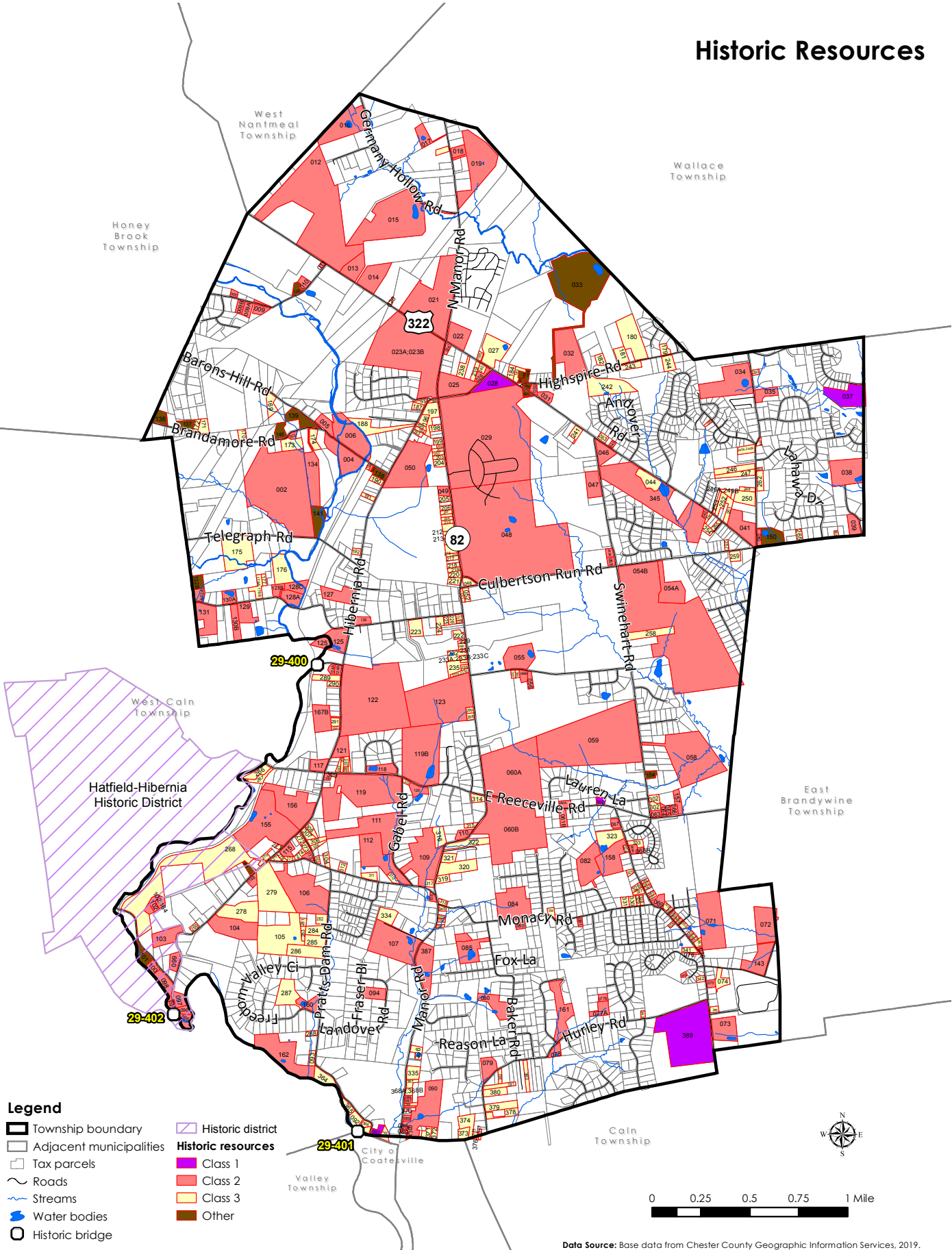
West Brandywine has many scenic landscapes and views and these have been mapped. Article XXII of the West Brandywine Township Zoning Ordinance, entitled Open Space Design Option, was originally adopted in 1996 and includes a number of standards aimed at preservation or mitigation of impacts to scenic resources. These include architectural guidelines for larger buildings, modification of screening and landscape criteria to keep scenic views open, and a call for development and open space layout to maximize conservation of scenic views from public roads. However, these standards only apply to residential development applications that select the Open Space Design Option. Except in the context of conditional use approval, where applicable, it is difficult to pin specific conservation standards on any one application, particularly in the face of mandates such as “maximum” and “to the extent feasible,” which tend to be subjectively measured.

The Pennsylvania Municipalities Planning Code (MPC) mandates that "zoning ordinances shall provide for the protection of natural and historic features and resources," a mandate that clearly establishes historic preservation as a legitimate public purpose for local government. Local land use planning initiatives can protect buildings from demolition, or alterations that may irrevocably change a structure’s

Property Name	County Atlas #	Address	Year Built	Tax Parcel #
<b>Properties with Determination of Eligibility (DOE) for the National Register of Historic Places from PHMC</b>				
Forks of the Brandywine Church	028	1682 Horseshoe Pike	1875	29-4-130-E
Hide-A-Way Farm	037	186 Patriot Lane	1780	29-5-1
Gordon Property	044	1548 Horseshoe Pike	1794	29-4-171-1B
Judith A. Taylor Property	062	643 East Reeceville Road	1780	29-7-28.1
James Grow House	091	104 Pratts Dam Road	1780	29-8-5
North Brandywine Junior High	389	256 Reeceville Road	1957	29-7-167
<b>Contributing Properties within the Hatfield-Hibernia National Register Historic District</b>				
Conti Millworkers House 1	096	371 Wagontown Road	1810	29-6-44.2
Conti Millworkers House 2	097	361 Wagontown Road	1800	29-6-44
Bowders Millworkers House	098	342 Wagontown Road	1810	29-6-41
Conti Residence, spring-house, barn	099	123 Hibernia Road	?	29-6-21
Schoener Millworkers House	100	328 Wagontown Road	1810	29-6-41.2
Becker Millworkers House	101	320 Wagontown Road	1810	29-6-41.1
Beideman Residence	102	143 Hibernia Road	1740	29-6-19; 29-6-19.1
Vietri Residence	103	135 Hibernia Road	1800	29-6-23.5
Pfitzenmeyer Residence	164	147 Hibernia Road	1910	29-6-19.2
Hibernia Methodist Church Cemetery	No #	Hibernia Road		29-6-24
Old Hibernia Methodist Church	268 (part)	Hibernia Road	1841	29-6-15

Property names reflect the names in the PHMC files. For the contributing properties in the Hatfield-Hibernia district, they are the names of the owners at the time of listing in 1984.

# Historic Resources



character-defining features. In Pennsylvania, a municipality also can regulate historic districts through the adoption of a local historic district ordinance, overseen by an Historical & Architectural Review Board (HARB). Municipalities may also protect historic resources through additional or alternative strategies, such as a requirement for the submission of a Historic Resource Impact Study for any subdivision or land development. Local regulations should be tailored to suit the land use requirements, development pressures, and historical character of the municipality.

Article XXII, Open Space Design Option, also calls for development design which preserves historic resources and their landscape contexts by intentionally incorporating them into development plans. Again, this provision only applies to residential applications selecting the Open Space Design Option.

In 1997, West Brandywine Township adopted “Special Provisions for Historic Resources” as Article XXIII of their Zoning Ordinance. For purposes of local land use regulation, the ordinance defines two classes of historic resources: Class I includes any resources listed or determined eligible for listing on the National Register; Class II includes all other resources identified in the 1982 County survey. Clearly, the 1982 survey is out of date in the face of the new County Atlas and the reference should be updated. At the same time, it needs to be clear that, as the text defines, for purposes of local regulation, Class I includes contributing resources in the Hatfield-Hibernia Historic District, despite not being so designated in the County Atlas.

The Ordinance text specifies applicability of regulation to “all Historic Resources identified on the West Brandywine Township Historic Resources Map, adopted by the Board of Supervisors as an overlay to the Township Zoning Map.” There is no indication of the existence of a formally adopted map in the disposition list in the West Brandywine Township Code.

The provisions of zoning Article XXIII are reasonably comprehensive, including incentives for adaptive reuse of historic structures and modification to otherwise applicable area and bulk regulations. The article sets of a process for demolition permitting, with provision for delay of demolition and even potential denial of demolition for Class I resources. There are no provisions for demolition by neglect nor requirements for new development to submit any Historic Resource Impact Study.

## Chapter 8 Public Facilities and Services



*Aerial view of West Brandywine Township's Municipal Building complex and Community Park.*

### Introduction

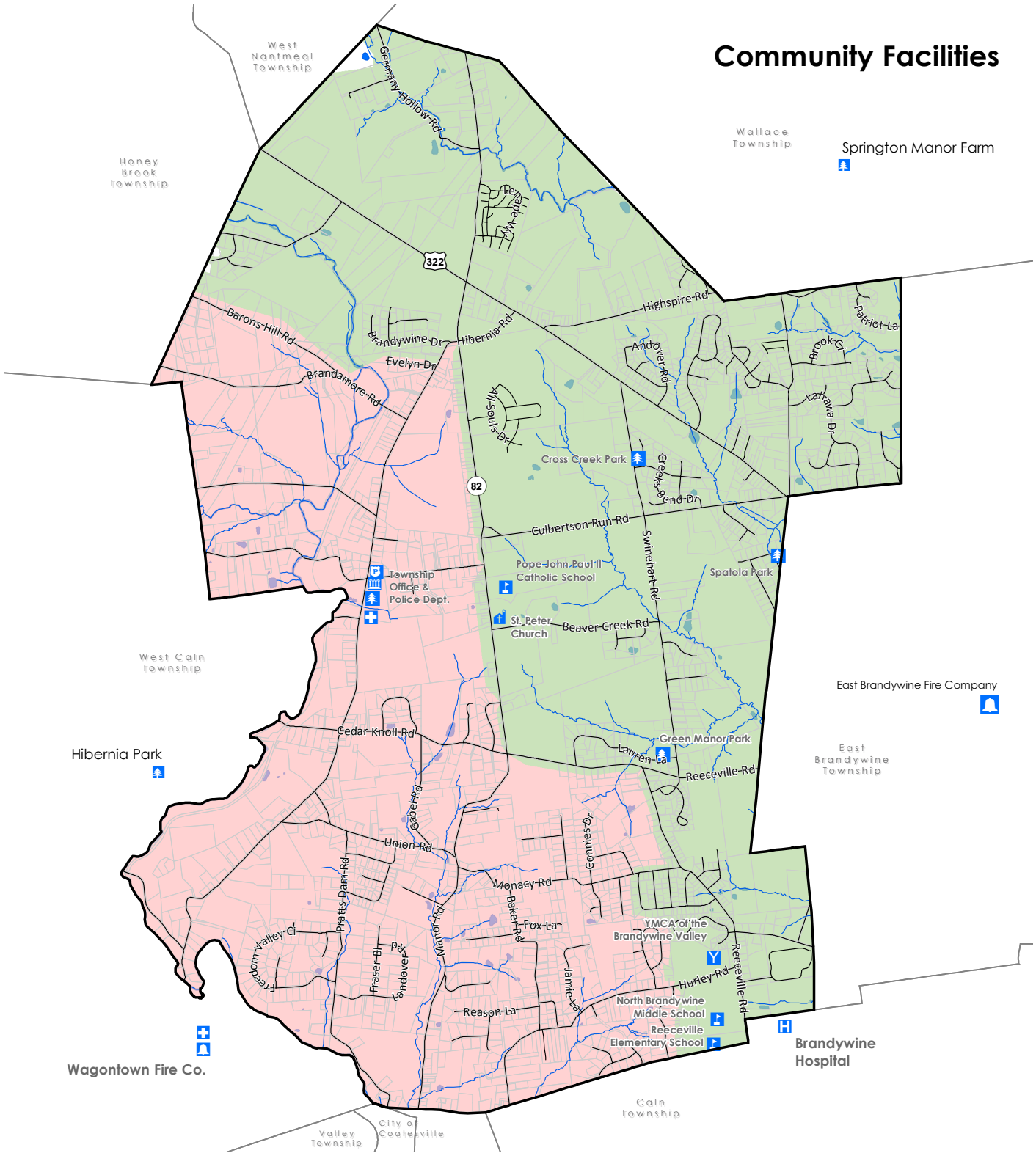
There are a wide variety of facilities and services available to the residents of West Brandywine Township. Some of these facilities and services are under West Brandywine Township management (public safety, municipal parks, and recreational programs), while others are not (educational institutions, sewer infrastructure, water service, and the library). Ensuring that these facilities and services support the high quality of life expected by residents is a key part of the Comprehensive Plan. This section addresses how the municipality can monitor, maintain, and enhance its community facilities in order to effectively and efficiently meet demands now and in the future.

This chapter examines and analyzes:

- Administration and Facilities
- Police, Fire, and EMS
- Sewer and Water Infrastructure
- Stormwater Management
- Parks and Recreation
- Educational Institutions

The Community Facilities Map on page 64 and Water and Sewer Service Areas Map on page 65 corresponds to the discussion found in this chapter. Appendix D of this Comprehensive Plan provides a summary of West

# Community Facilities



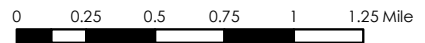
## Legend

- Ambulance\*
- Church
- Hospital
- Township Building
- Fire Station
- Police Station
- School
- Park
- YMCA
- Township boundary

## Fire Company Service Areas

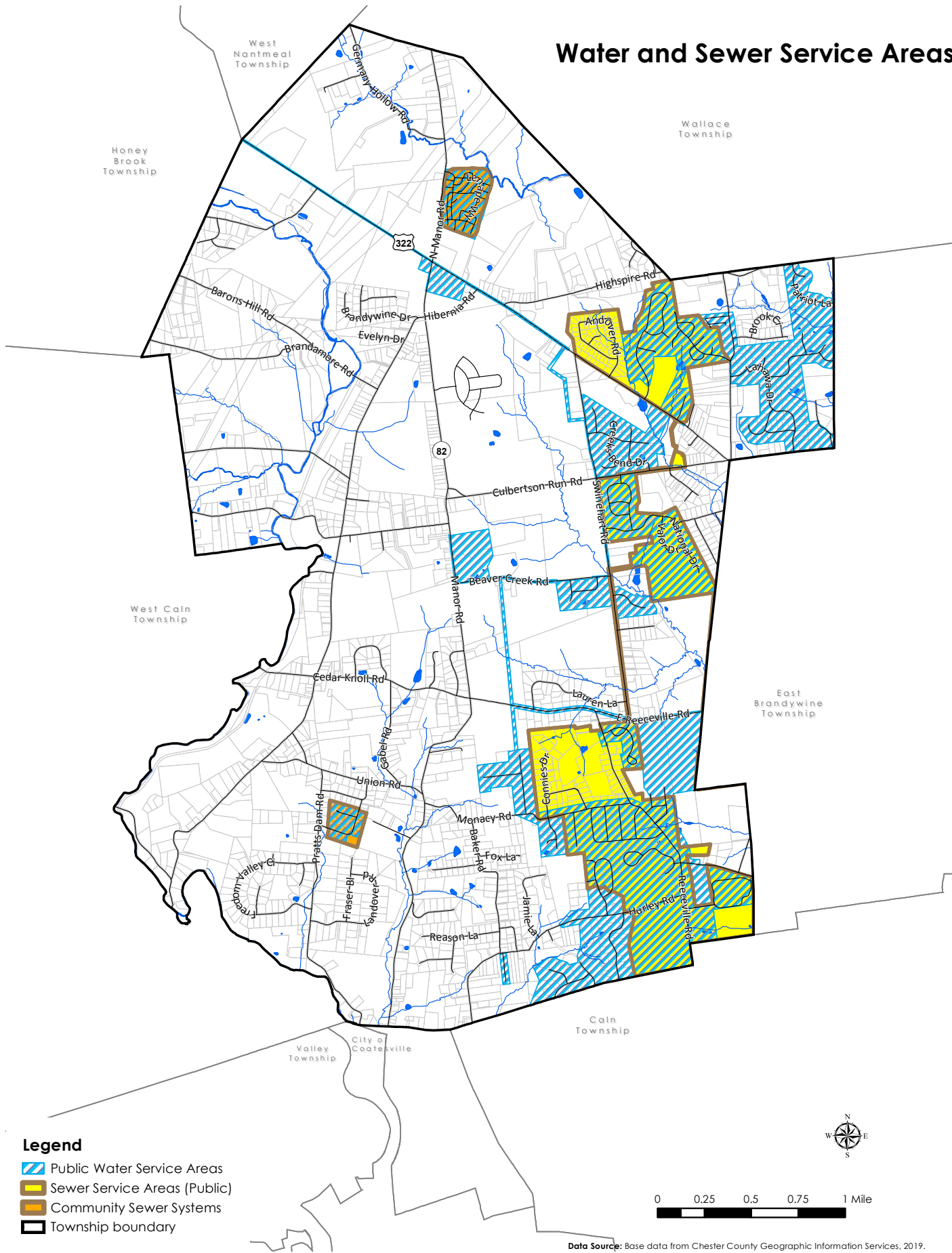
- East Brandywine Fire Company
- Wagontown Fire Company

\* All of West Brandywine Township covered by Westwood Ambulance from two locations (Township building and Wagontown FC).



**Data Source:** Base data from Chester County Geographic Information Services, 2019.  
**Disclaimer:** This map is for illustrative purposes only and does not constitute a valid survey.

# Water and Sewer Service Areas



## Key Issues

### ***Continue to monitor the impact of infrastructure on groundwater resources***

The majority of West Brandywine Township relies upon wells for its water supply. The quality and quantity of these groundwater resources within the aquifers is directly impacted by actions West Brandywine Township takes regarding septic system inspections and maintenance, managing stormwater runoff, and public water supply connections.

### ***Continue to assess potential for sharing services and equipment with adjoining municipalities.***

Residents have expressed concern with rising taxes and fees in West Brandywine Township. While school district taxes are outside of the municipality's control, the management and coordination of other West Brandywine Township functions has a direct impact on these costs. Cost-sharing with other municipalities will allow West Brandywine Township to maintain many of these services with increased efficiency and fiscal responsiveness.

### ***Evaluate the current and future needs for emergency services coverage in West Brandywine Township***

Given the growing and aging population in West Brandywine Township, perform a needs assessment and evaluation of current and future emergency service coverage and needs within the municipality. As the existing population continues to age and the construction of additional age-restricted developments take place, additional emergency services may be required to meet the needs of residents, creating additional costs for the West Brandywine Township.

### ***Continue to work with and monitor progress of the Coatesville Area School District and its impact on West Brandywine Township's ability to meet its goals and grow as a community.***

The CASD is of concern to many residents and businesses in West Brandywine Township. The District struggles with meeting the high demands of a quality education from parents and students within the limits of its financial resources. Even as the school district works to gain a stronger position, West Brandywine Township fears that the district's reputation is an impediment to its own growth and attractiveness to new businesses and residents.

## Future Action and Policy Considerations

### ***Provide for efficient, effective, and exemplary management of the public facilities and services throughout West Brandywine Township***

- Continue to require inspection and monitoring of private septic systems.
- Continue to explore options for coordinated and cost-shared services with adjoining municipalities.
- Evaluate the current and future needs for emergency service coverage in West Brandywine Township.

- Provide for better pedestrian and cyclist access to existing West Brandywine Township parks (See further discussion in Chapter 9).
- Consider an update to West Brandywine Township’s 1993 Open Space, Recreation, and Environmental Resources Plan.
- Continue to closely coordinate with the Coatesville Area School District to minimize adverse impacts on West Brandywine Township Residents.

## Background Discussion

### *Municipal Administrative Staff and Facilities*

The West Brandywine Township Building is located at the southeast corner of the Hibernia Road/Lafayette Road intersection, in the west-central part of the Township. The relatively new building is approximately 18,000-square foot and provides valuable meeting space for the governmental and other civic uses. The following administrative functions are housed at this location:

- Township Manager,
- Director of Public Works,
- Financial Administrator,
- Codes Officer; and
- The Police Department.

There are no planned upgrades for the West Brandywine Township building at this time.

Other facilities owned by West Brandywine Township include: the schoolhouse/former township building across the street. There are tentative plans to restore the schoolhouse for use as a local library and historic resource center.

### *Police Protection*

The West Brandywine Township Police Department (WBTPD) provides police protection to residents of both West Brandywine and Wallace Townships. Within Wallace Township, the West Brandywine Police Department provides police coverage on a 24-hour/day, 7 day/week basis, providing a minimum of 40 patrol hours per week. The Department consists of 6 full time officers, 9 part time officers, and office staff. The Department handled a total of 9,186 calls in 2018.

A regional police study was completed in 2013 analyzing the potential of consolidating the WBTPD with those of Honey Brook Township and Honey Brook Borough. At that time, Wallace Township had contracted with the East Brandywine Township Police for its coverage. In 2016, this arrangement ended and Wallace Township contracted with West Brandywine Township for traffic enforcement services. This was expanded to part-time coverage in 2017 and then full time coverage of Wallace Township in 2018.

While the concept of consolidation into a formal regional police force has been put on hold, West Brandywine Township should continue to consider shared agreements with adjoining municipalities that increase cost effectiveness and increased coordination of services.

### *Fire Protection and EMS*

The East Brandywine and Wagontown Fire Companies provide West Brandywine Township with complete fire protection. In the past, West Brandywine Township was also covered by the Martin's Corner Fire Station, but this station was permanently closed in 2014. West Brandywine Township makes financial contributions to the operation of these organizations, which are currently staffed by fully-trained volunteers. The service area for each of these Fire Companies within West Brandywine Township generally reflects the proximity of each Company's home base: East Brandywine services the eastern parts of West Brandywine Township while its southern and western sections are protected by Wagontown.

Ambulance and EMS services for all of West Brandywine Township are contracted to Westwood Fire Company. Westwood Fire Company operates out of Valley Township, and is staffed with 32 member-volunteers, including 21 EMTs.

Chester County Department of Emergency Services operates the 911 dispatch and coordinates with local and regional agencies and organizations for appropriate emergency response.

The equipment available from each of these companies is listed as follows:

- East Brandywine:** 2 Pumper, Tanker, 2 Brush unit, Traffic control unit, 2 Chief’s car, 1 squad car, 1 ATV
- Wagontown:** Pumper, Rescue pumper, Brush unit, Utility unit (brush, traffic), water and ice rescue trailer
- Westwood:** 2 ambulances, one located at Wagontown Fire Company
- Medic 93:** 1 ambulancce

Future plans call for one ambulance to be housed at the West Brandywine Township Campus

For many emergency services, the demand for services grows with the community, but often outpaces the ability for these stations to grow their capacity in terms of manpower, vehicles, and resources. Recruiting and maintaining trained volunteers is becoming more challenging, and could eventually lead to the need for paid staff.

### **Public Sewer**

West Brandywine Township has two areas served by public sewer: the Kimberwick Sewer District in the northeast and the Friendship Village Sewer District in the southeast, comprising of approximately 500 customers. Residences and businesses outside of these service areas rely on on-lot disposal or septic systems for wastewater treatment.

Public sewer service in West Brandywine Township is administered through the West Brandywine Township Municipal Authority (WBTMA), a self-sustaining branch of the municipality created in 1995 for the specific purpose of collection and conveyance to those sewer districts within West Brandywine Township, both current and future. WBTMA consists of a five member Board of Directors and Manager who handles the day-to-day operation with the assistance of professional consultants such as an operator and engineer.

WBTMA is guided by West Brandywine Township’s Act 537 Sewage Facilities Plan. The Plan dates back to 1996 and was revised in 2016. It includes a corresponding map depicting extensive future service areas although none have been realized to date due to economic circumstances. Capacity for much of that anticipated future development was reserved for conveyance and treatment to Pennsylvania American Water’s treatment plant located in the Borough of South Coatesville.

The overall economic future is bright in 2019 with a planned 55-age restricted community on the horizon and interest in several of the otherwise abandoned projects. With additional users added to the public sewer system the likelihood of balancing out sewer rates is more positive.

There are also two private community collection, treatment and disposal systems within West Brandywine Township. The Woodbrooke system is located in the southwest and the Indian Run Mobile Home Park in the north.

Remaining business and homes not served by public sewer have on-lot disposal systems (OLDS). Regular maintenance of these systems is extremely important for the health of the community, and to protect the underground and surface water quality. In January 2018, West Brandywine Township, through its Act 537 Septic Management Program, commenced the maintenance and inspection of private on-lot systems. This program requires homeowners with on-lot septic system to have those systems inspected and pumped once every three years. Proof of a passing inspection must be submitted to West Brandywine Township. This program is an important step toward protecting the natural resources of West Brandywine Township.

## ***Water Supply***

Similar to wastewater, West Brandywine Township residents obtain water in one of three ways:

- Public water managed through Aqua Pennsylvania;
- Private water supplies (corresponding to the private wastewater treatment areas) in Westbrook and Indian Run Mobile Home Park; or
- Individual wells.

The Community Facilities Map depicts the Public Water Supply District Overlay. This is where public water infrastructure exists and/or is permitted. All remaining portions of West Brandywine Township, and thus the majority, have individual wells and therefore rely on a safe and sufficient supply of local groundwater. These potable water sources can be compromised in two ways: groundwater contamination or by overuse, and thus a reducing or depleting of the water supply stored in underground aquifers.

West Brandywine Township is one of many municipalities regionally that is working to better manage its water resources and does this in a variety of ways. As discussed in the section on sewer treatment, on-lot septic systems must be monitored and maintained to prevent contamination from older or malfunctioning systems. In addition, stormwater regulations (discussed later in this section) are ramping up to ensure that runoff is managed for both quantity and quality. West Brandywine Township also has a Public Water Overlay Zone as a method of limiting connection to the public water system and thus encouraging the use of local water sources. To this end, new public water connections outside of the Overlay District can only be made through Conditional Use approval. Further discussion of water resource management can be found in the Natural Resources and Open Space Chapter of this Plan.

## ***Stormwater Management***

Stormwater management has become an increasingly complex and expensive function of governments across Pennsylvania. From 1970s through the 1990s, federal administration and regulation of the Clean Water Act focused on the quantity of stormwater runoff. This all changed in 1999, when the EPA began to require states to address pollution and the quality of storm water runoff in order to better protect water quality. At the local level, including West Brandywine Township, municipalities are required to develop specific plans that reduce pollution from stormwater runoff by a specified amount over a period of time. Specific goals can be unpredictable and projects can be costly, placing additional financial burdens on local governments.

West Brandywine Township most recently updated its Pollutant Reduction Plan in July 2017. Primary sources of water quality impairment in West Brandywine Township include agricultural runoff and suburban development. West Brandywine Township is required to reduce its pollutant load by a minimum of 10% over five years. After careful considerations of the many options, the plan recommends a stream stabilization project along the Culbertson Run estimated to cost \$160,000. In the future, projects may become larger and more expensive, as the “low-hanging fruit” is picked and remediation projects become more complex. Regional partners will become increasingly important as municipalities strive to meet their mandates in cost-effective ways.

Managing stormwater is also a challenge for new development, and many players have roles in ensuring new development does not add to the pollutants found in local waters. Municipal engineers review proposed developments to make sure that they do not increase downstream runoff from pre-development conditions. In addition, the County Conservation District reviews development plans to make sure that erosion will be controlled, avoiding sedimentation of creeks, as well as working with farmers to find ways to reduce pollution from agricultural runoff.

### ***Solid Waste Collection and Disposal***

Solid waste collection and disposal, as well as recycling services, within West Brandywine Township are handled by an approved private service provider. They are charged with removal of household and bulk trash, as well as single stream recycling of paper, metals, aluminum, plastics, and cardboard.

Collected solid waste is disposed at the Lanchester Landfill located in Honey Brook Township and extending into Lancaster County. The landfill is operated by the Chester County Solid Waste Authority on a 525-acre site. West Brandywine Township pays a tipping fee in return for disposal privileges as carried out by Mr. Blosenski. West Brandywine Township provides brush drop-off for residents at the Department of Public Works Building on the first Saturday of every month.

### ***Library Facilities and Services***

The nearest library facilities for West Brandywine Township residents are the Coatesville and Honey Brook Borough libraries. West Brandywine Township residents can also utilize the main Chester County Library, located in Exton. The County Library contains over 20,000 books and also contains a community meeting room, two classrooms, and audio-visual facilities. At one point, West Brandywine Township considered renovating the former Township building, an historic schoolhouse, into a local library.

## **Educational Institutions**

West Brandywine Township hosts several educational institutions, including three schools that are part of the Coatesville Area School District, and the Pope John Paul II Catholic School.

### ***Coatesville Area School District***

West Brandywine Township is served by the Coatesville Area School District (CASD), which also includes Caln, East Fallowfield, Sadsbury, Valley and West Caln Townships, the City of Coatesville, and the Boroughs of South Coatesville and Modena. Two school district facilities are located within West Brandywine Township: North Brandywine Middle School is located in close proximity to Freedom Village, while

Reeceville Elementary is located on the municipality's boundary with Caln Township. A third facility, Friendship Elementary School, was closed in 2019 by the Coatesville Area School District. The students were evenly distributed to three other existing elementary schools in the district.

While many residents are proud of the school district, many others have significant concerns regarding the district's future and the quality of education it can provide. The School District budget for the 2019-20 school year includes a 3.9% increase in real estate taxes, down from the 6.12% seen in the 2018-19 school year. The school district faces these challenges for a combination of reasons, including the transfer of tuition to charter schools, increased pension costs, and increased special needs services. Continued communication between CASD and West Brandywine Township is clearly necessary.

### Parochial Schools

In addition to the school district facilities, the Archdiocese of Philadelphia opened a new elementary school in 2007 adjacent to St. Peter's Church. Pope John Paul II Regional Catholic School serves four parishes within the region and serves students from preschool through the eighth grade.

## Recreation and Open Space Facilities

West Brandywine Township has a variety of parks that help to meet residents' needs for outdoor recreation, wellness and connecting with nature. Many of these parks are depicted on the Community

Park	Type	Facilities
Cross Creek Park	Neighborhood Park	Baseball field, playground
Green Manor Park	Neighborhood Park	Trails, covered picnic tables, workout stations
Hibernia Park (West Caln Twp.)	Regional Park	Camping, fishing, hiking, playground, Hibernia mansion, open fields
Spatola Park (owned by East Brandywine)	Neighborhood Park	Baseball field
Springton Manor Park (Wallace Township)	Regional Park	Pond, farmhouse, hiking, open fields, barn complex
West Brandywine Township Community Park	Community Park	Soccer fields, softball/little league field, basketball, sand volleyball, open playfield, playground, stage/band shell, walking trails

Facilities Map and inventoried in the table below.

Open space facilities and parks can be classified as regional parks, community parks, or neighborhood parks. This continuum of parks is intended to provide a complementary variety of recreational activities for different geographies. Thus the larger, regional parks will serve a wide geographic area with a greater variety of offerings, while the community and neighborhood parks are intended to serve a smaller geographic area with recreational activities typically associated with daily needs.

Not specified on the Community Facilities map is the private open space and recreational land owned and managed by homeowners associations and additional private facilities. These include the 4-H center, the golf driving range, the Forks of the Brandywine Church's ball field, and related uses at the CASD and YMCA facilities.

Throughout the year, West Brandywine Township hosts a variety of community events, including a Community Day, Saturday with Santa, and others intended to celebrate West Brandywine Township. With respect to organized recreational opportunities, residents are able to participate in a wide variety of active programming sponsored by organizations such as the YMCA, Caln Athletic /Association, Downingtown Young Whippets (football), Downingtown Spirit (soccer), and the East Brandywine Youth Athletics Leagues.

The West Brandywine Township's most recent Open Space, Recreation and Environmental Resources Plan dates to 1993, with updates found in the 2005 Comprehensive Plan. Park planning should closely relate the evolving needs and demands of the existing residents of West Brandywine Township, as well as anticipated future population. In light of this, West Brandywine Township may wish to consider updating its 1993 OSRER Plan to better assess recreation desires of residents, but to also holistically determine open space needs and overall access to these amenities. While access to public parkland has always been important, there is a rising demand for recreation that does not require a vehicle to access.



## Chapter 9 Transportation and Trails



*Aerial view of Route 322 as it passes through the northwest corner of West Brandywine Township.*

### Introduction

This chapter describes how the existing transportation network in West Brandywine Township serves the community and assess the investments that should be made to improve the network over the next 10 to 20 years. The chapter identifies Key Issues facing the transportation network and how West Brandywine Township and its planning partners may respond to these issues to meet transportation needs now and in the future. A Background Discussion describes the overall existing transportation conditions in West Brandywine Township.

### Key Issues

A connected, efficient, and accessible transportation network is essential to the success of any community. West Brandywine Township benefits from good highway access via US 322, PA 82, and close proximity to the US 30 Coatesville Bypass. However, public transit access is minimal and bicycle and pedestrian access is lacking in most areas of the municipality. Based on the more detailed analysis and inventories presented in the background discussion below, transportation resources in West Brandywine Township continue to require special attention, identified here as key issues.

## ***Safety of all Users of the Transportation Network Regardless of Mode***

Based on input from residents, traffic congestion within and beyond West Brandywine Township has led to high travel speeds and cut-through traffic on several local and residential streets. There are a number of traffic calming strategies that can be used to reduce speeds and deter cut-through traffic. Traffic calming strategies include capital improvements, such as speed humps, speed enforcement, and education.

## ***Traffic Flow, Congestion, and Connectivity Along and To Key Corridors***

A well connected and reliable transportation network is key to the success of any community. Like many communities, motor vehicle use is the primary mode of transportation for residents in West Brandywine Township, so roadways are expected to remain a lifeline for the foreseeable future. To ensure West Brandywine Township's future success, strategies to improve traffic flow, reduce congestion, and increase connectivity to the major corridors that flow through the municipality (US 322, PA 82, etc.) as well as to major regional connections like the US 30 Coatesville Bypass should be supported.

## ***Opportunities for Walking and Biking***

Walking and biking are sustainable transportation options that provide numerous community benefits, such as reducing traffic congestion, improving public health, and decreasing the need for investment in additional roadway capacity. The importance of bicycle and pedestrian connections in West Brandywine Township for both transportation and recreation was documented in previous planning efforts, including the Brandywine Greenway Strategic Action Plan and the East-West Bicycle and Pedestrian Facilities Plan. The West Brandywine Township's Trail Committee has been actively advancing plans for potential trail connections. This Plan identifies a network of multi-use trails, sidewalks, on-road bicycle lanes, signed bicycle routes, and streetscape improvements to connect key destinations within and beyond West Brandywine Township. Beyond those connections identified in the East-West Bicycle and Pedestrian Facilities Plan, this chapter is accompanied by the Trails Map (see below) that identifies additional possible trail connections throughout West Brandywine Township.

## ***Resources for Capital Improvements and Infrastructure Maintenance***

Identifying funding for significant transportation improvements and routine maintenance can be a challenging task for municipalities. West Brandywine Township has various tools at its disposal to maintain and improve the assets that it controls. In addition to municipally controlled funding (i.e. the township budget, Act 209 funds, Liquid Fuels, etc.) West Brandywine Township can work with funding partners and developers to improve the transportation system.

## ***Transportation Policies that Support West Brandywine Township Goals***

It is important for the municipality's ordinances and operational policies to enable West Brandywine Township to achieve the community's transportation goals. Zoning and Subdivision and Land Development Ordinance (SALDO) should be updated to reflect the goals set forth in this plan. Policies related to the enforcement of its codes and maintenance of township infrastructure should also reflect the shared vision for the community.

## ***Roadway Functional Classification***

Existing transportation features, proposed roadway functional classification, and identified key intersections are

presented on the Transportation Features and Roadway Functional Classification Map below.

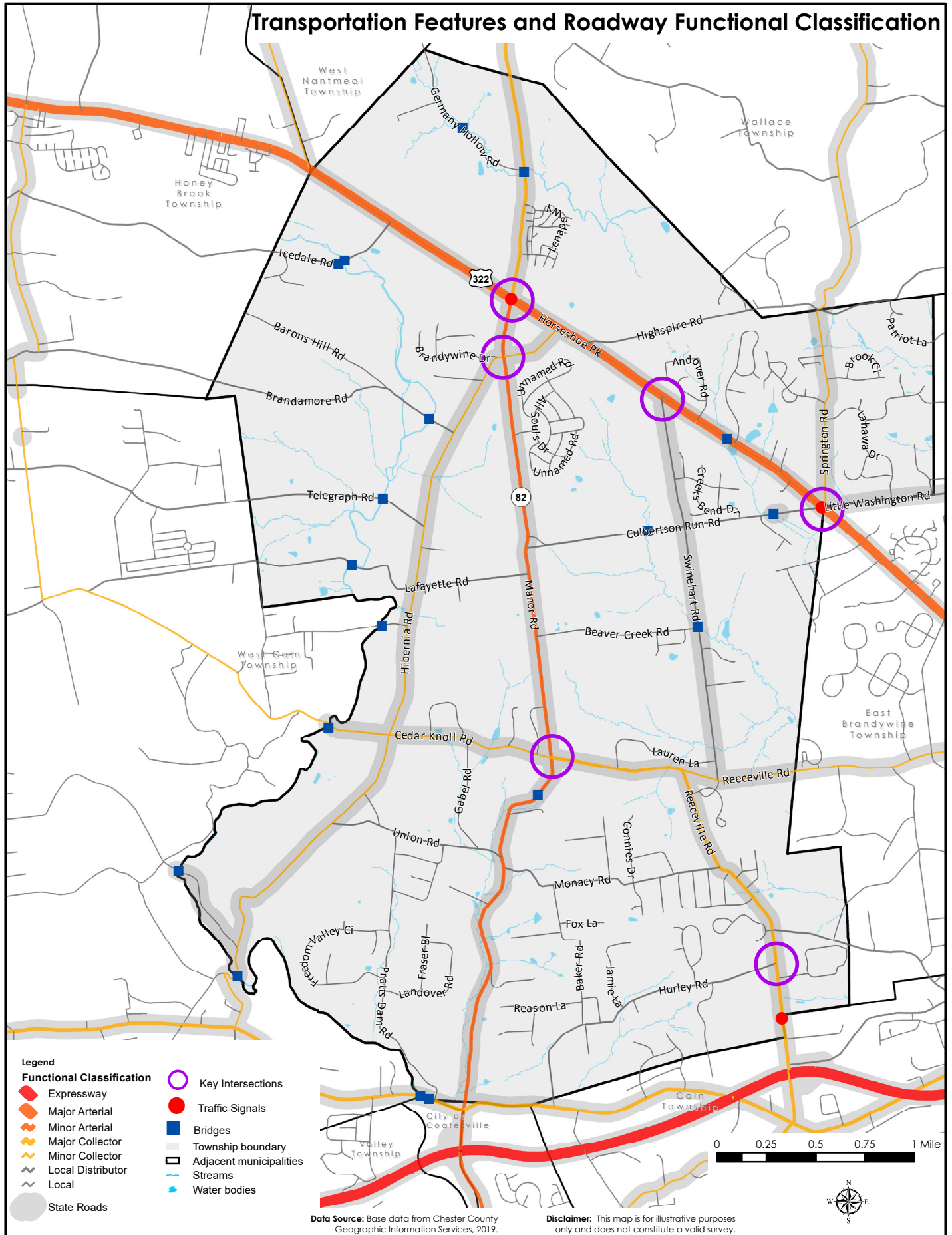
Functional classification refers to the categorization of roadways according to the function they serve. Different roadways serve varying traffic volumes, trip lengths, and accommodate different travel speeds. Functional classification can be used to establish roadway design guidelines, access management policies, and prioritize improvements. Function also reflects the relationship between access and mobility. Typically, the higher the roadway’s capacity to facilitate traffic flow, the lower its ability to provide efficient access to adjacent properties, and vice versa.

Based on the 2005 Comprehensive Plan, updated traffic volumes available from PennDOT, and other information, the Recommended Roadway Functional Classification is listed on the table below and the map on page 76. At

<b>Focus Roadways</b>	<b>Recommended Functional Classification Comp. Plan 2018</b>	<b>Township Functional Classifications Comp. Plan 2005<sup>1</sup></b>	<b>PennDOT Functional Classification</b>
Horseshoe Pike (US 322)	Major Arterial	Major Arterial	Principal Arterial
Manor Road (PA 82)	Minor Arterial	Minor Arterial	Minor Arterial
Kings Highway (PA 340)	Major Collector	Major Collector	Urban Collector
Reeceville Road	Major Collector	Major Collector	Urban Collector
East Reeceville Road	Minor Collector	Minor Collector	Urban Collector
Hibernia Road	Minor Collector	Minor Collector	Urban Collector
Cedar Knoll Road	Minor Collector	Minor Collector	Urban Collector
Springton Road	Minor Collector	Minor Collector	Urban Collector
Little Washington Road	Local Distributor	Local Distributor	Local
Caln Meetinghouse Road	Local Distributor	Local Distributor	
Culbertson Run Road	Local Distributor	Local Distributor	
Highspire Road	Local Distributor	Local Distributor	
Hurley Road	Local Distributor	Local Distributor	
Lafayette Road	Local Distributor	Local Distributor	
Monacy Road	Local Distributor	Local Distributor	
Union Road	Local Distributor	Local Distributor	
Swinehart Road	Local Distributor		
Icedale Road	Local Distributor		
Brandamore Road	Local Distributor		
Telegraph Road	Local Distributor		

<sup>1</sup> Same as Chester County Functional Classification, Chester County Planning Commission, adopted June 2003

# Transportation Features and Roadway Functional Classification



this time, no changes are recommended to the roadway functional classification designations. The table includes a comparison with the PennDOT and roadway functional classifications.

## Future Action and Policy Considerations

### *Improve Safety and Reduce Congestion at Key Intersections*

- Coordinate with PennDOT regarding planned roundabout at the PA 82/East Reeceville Road intersection and planned safety improvements at the US 322/PA 82 intersection.
- Update the West Brandywine Township’s Act 209 Transportation Impact Fee Study to evaluate existing and future conditions at key intersection and identify improvements to address deficiencies.
- Coordinate with the Chester County Planning Commission to add identified intersection improvements to the County’s Transportation Improvements Inventory (TII).
- Pursue funding and other opportunities to advance design and construction of the following priority intersection improvements:
  - o PA 82/East Reeceville Road/Cedar Knoll Road: PennDOT has proposed a roundabout at this location .
  - o US 322/Culbertson Road Intersection: There is a need for turn lanes on US 322 and traffic signal upgrades.
  - o US 322/PA 82 Intersection: PennDOT has proposed left turn lanes on US 322 and additional lighting to improve safety at the intersection.
  - o Reeceville Road/Hurley Road Intersection.
  - o PA 82/Hibernia Road Intersection.
  - o US 322/Swinehart Road Intersection.

### *Calm Traffic and Support Safe Conditions for All Modes of Transportation*

- Evaluate and implement traffic calming measures on key corridors, including:
  - o Cedar Knoll Road
  - o Lafayette Road
  - o Reeceville Road
  - o PA 82
  - o US 322
  - o Hibernia Road
- Develop and establish a traffic calming policy and procedures that outline how requests for traffic calming measures are reviewed, evaluated, recommended, and prioritized for implementation.
- Coordinate with the West Brandywine Township Police Department regarding speed enforcement, particularly on key corridors identified for traffic calming.

- Consider options for accommodating bicycles when implementing traffic calming measures.

### ***Improve Traffic Flow, Reduce Congestion, and Enhance Safety Along US 322***

- Advance key intersection improvements at the following locations:
  - o US 322 at PA 82.
  - o US 322 at Swinehart Road.
  - o US 322 at Little Washington Road/Springton Road/Culbertson Run Road.
- Continue to participate in the Western Chester County Council of Government’s sub-committee for the US 322 corridor.
  - o Coordinate with PennDOT, Chester County Planning Commission, and neighboring municipalities regarding land use and transportation plans and improvements along the corridor, including land development activities, intersection improvements, access management, and traffic signal coordination and upgrades.
- Plan for future commuter bus service, including pedestrian facilities and identifying potential park-and-ride locations.
- Continue to monitor and evaluate the long term need for potential roadway widening on US 322 to provide two lanes in each direction in conjunction with neighboring municipalities. Revise ordinances, such as roadway right-of-way width requirements or setback requirement, so that future widening is not precluded by new development adjacent to the roadway.

### ***Improve Access to the US 30 Bypass and Regional Highway Network***

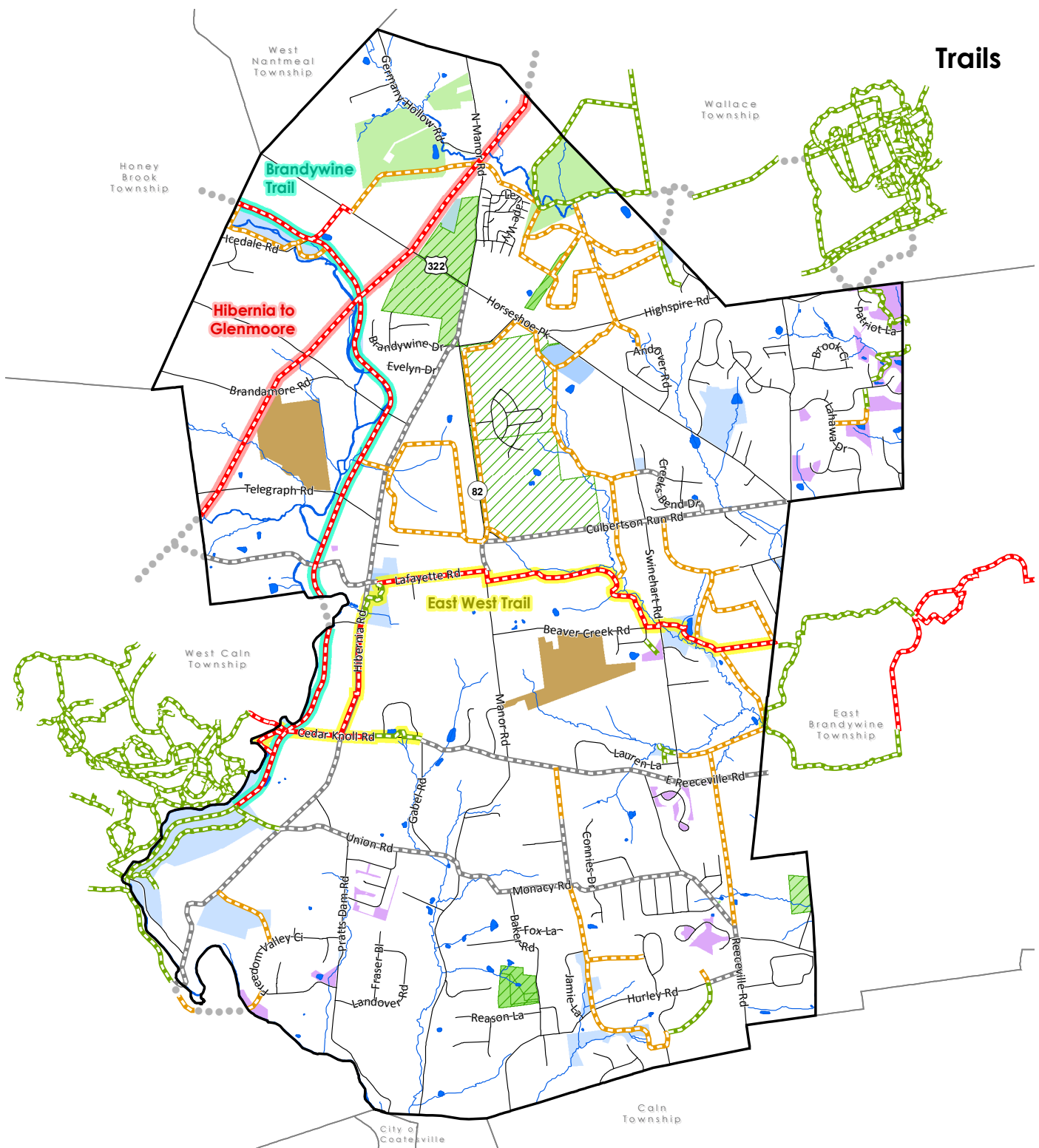
- Coordinate with PennDOT, Chester County Planning Commission, and neighboring municipalities regarding planned improvements to the US 30 Bypass interchanges at Reeceville Road and PA 82.
  - o Monitor, participate, and advocate for the advancement of design, funding, and construction of the US 30 Bypass, including potential widening of the Bypass, reconfiguration of the interchanges, and related intersection improvements.
  - o Coordinate with PennDOT and Caln Township to address traffic congestion and safety issues along the Reeceville Road corridor between PA 340 and Hurley Road. Key intersections in Caln Township that impact transportation in West Brandywine Township include:
    - \* Reeceville Road at Fisherville Road.
    - \* Reeceville Road at PA 340/N. Caln Road.
  - o Consider partnering with Caln Township to complete a joint Reeceville Road Corridor Plan, including conceptual improvements and cost estimates for both near term and longer term improvements to ease congestion along the corridor.
  - o Coordinate with PennDOT, West Caln Township, Valley Township, and the City of Coatesville to address traffic congestion at the PA 82/PA 340 intersection.

## *Expand Facilities and Connections for Walking and Biking*

[See/Reference Trails Map on Page 80]

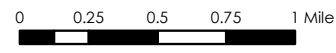
- Support activities of the Trail Committee, including continued coordination with neighboring municipalities on planned trail connections and regular updates to West Brandywine Township's trail map.
- Identify funding for preliminary engineering for priority trail segments, including:
  - o Cedar Knoll Road between Hibernia Road and Hibernia County Park (East-West Trail Segment W-HC-3).
  - o Hibernia Road between Township Park and Cedar Knoll Road (East-West Trail Segment W-HT-2).
  - o Glendale Preserve to Icedale as part of the Indian Run Trail connecting to Springton Manor.
- East-West Trail: Implement priority action items identified in the East-West Bicycle and Pedestrian Facilities Plan, including:
  - o Coordinate with Chester County regarding connections to Hibernia Park, the proposed trailhead parking on Cedar Knoll Road, and potential trail connections to the Rim Trail.
  - o Coordinate with property owners and potential developers regarding the trail alignment and connections along the Beaver Creek corridor.
- West Branch Brandywine Trail:
  - o Coordinate with Honey Brook Township regarding connections to the section of trail near the West Brandywine Township border and Icedale Meadows.
- Coordinate with property owners regarding potential trail easements.
  - o Require dedication of trail easements to West Brandywine Township when property ownership changes and/or when land is subdivided.
- Require construction of trails within new subdivisions at the earliest possible stage of development.
- Update the West Brandywine Township Subdivision and Land Development Ordinance to define and provide design standards for different types of bicycle and pedestrian facilities and trails that are depicted on the West Brandywine Township's trail map.
- Identify potential trail hub locations in the municipality and key properties with trail access that can be acquired and conserved, possibly using open space funds.
- Identify and coordinate with volunteers to assist with ongoing trail maintenance.

# Trails



## Legend

- Township boundary
- Adjacent municipalities
- Roads
- ~ Streams
- Water bodies
- Eased lands - 336.4 ac. (3.9% of township)
- County agricultural easements - 141.6 ac. (1.7% of township)
- Public lands (federal, state, county, and municipal) - 302.2 ac. (3.6% of township)
- Other protected lands - 96.7 ac. (1.1% of township)
- Parcels containing trail easements
- Existing trails
- Proposed Trails**
- Regional trails
- Bicycle friendly roads
- Unpaved hiking trail
- Potential trail connections



**Data Source:** Base data from Chester County Geographic Information Services, 2019.  
**Disclaimer:** This map is for illustrative purposes only and does not constitute a valid survey.

## ***Ensure Ordinances and Policies for Transportation Infrastructure are Aligned with West Brandywine Township Goals, Applicable Standards, and Emerging Issues***

- Review and update West Brandywine Township ordinances that are based on the Roadway Functional Classification and ensure that the Roadway Functional Classification Map in the Comprehensive Plan is referenced appropriately.
- Review and update West Brandywine Township’s Zoning Ordinance, Subdivision and Land Development Ordinance (SALDO), and other Township policies related to the planning and design of roadways, access management, sidewalks, trails, on-road bicycle facilities, and parking facilities.
  - o Consider preservation of the rural character of roadways when updating ordinances, particularly related to roadway widths, roadside signage, and vegetation.
  - o Consider accommodating the use of electric vehicle charging stations.
  - o Consider requirements for pick-up and drop-off areas, particularly given ridesharing services and advances in vehicle technologies.

## Background Discussion

### *Commute Patterns for Western Chester County*

Commuter patterns were analyzed for West Brandywine Township and the surrounding region in Chester County, including: Caln Township; Coatesville City; East Brandywine Township; Honey Brook Township; Wallace Township; West Caln Township; West Nantmeal Township; and Valley Township.

Based on U. S. Census Bureau LEHD Origin-Destination Employment Statistics data from 2015, there are approximately 16,000 jobs in the region, however a majority of those jobs are being filled by people who are commuting from elsewhere. Of approximately 34,000 workers living in the region, more than 86% work outside of the region. The dominate commute direction for workers living in this region is to points east. Philadelphia and Downingtown receive the largest shares of workers, followed by West Chester, King of Prussia, and Exton. The US 30 Bypass plays a critical role in job commutes and access to employment centers.

### *West Brandywine Township Transportation Demographics*

More than 80% of workers who live in West Brandywine Township commute by driving alone. All other commute modes (Work from Home, Public Transit, Walk, Carpool) each account for less than 10% of the work trip commutes. Due to West Brandywine Township's location and distance to major employment centers, people spend more time commuting to work than the Chester County average. The commute mean travel time for West Brandywine Township residents is almost 34 minutes, while the Chester County average is less than 30 minutes. Over 60% of households have access to two or more vehicles. Median income families in West Brandywine spend more than 24% of their income on transportation. Low income individuals spend more than 67% of their income on transportation. High vehicle ownership rates and limited access to other transportation options cause people in West Brandywine Township to spend a significant share of their income on transportation.

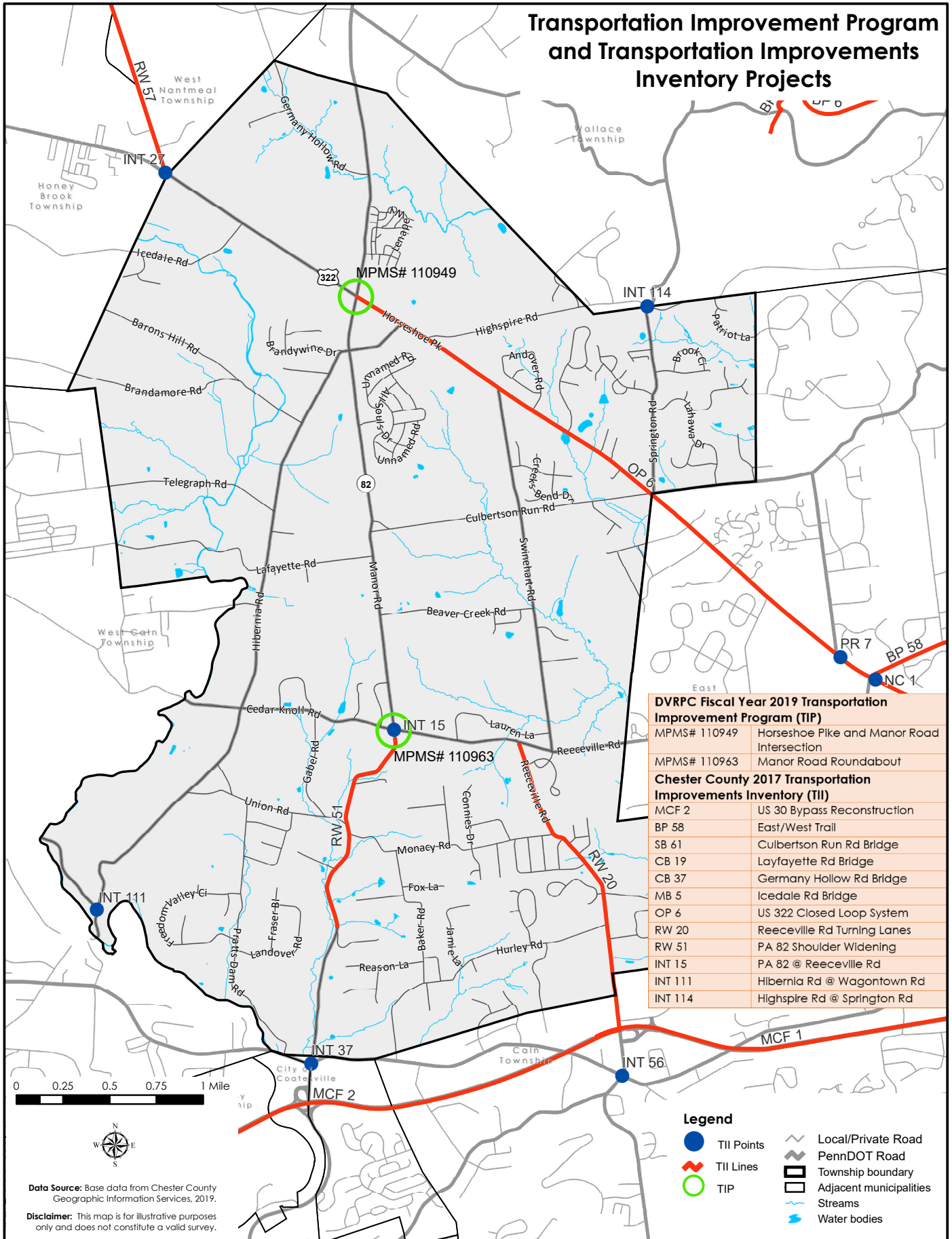
### *Transportation Plans and Projects Underway*

There are two active transportation improvement projects in West Brandywine Township on the Delaware Valley Regional Planning Commission (DVRPC) FY2019 Transportation Improvement Program (TIP). These projects are highlighted on the Transportation Improvement Program and Transportation Improvements Projects Map on page 83, which also shows transportation needs identified on Chester County's 2017 Transportation Improvements Inventory (TII).

### *DVRPC FY2019 Transportation Improvement Program (TIP): Projects in West Brandywine Township*

TIP Project ID	Project Description
MPMS 110949	Horseshoe Pike (US 322) and Manor Road (PA 82) Intersection Improvements
MPMS 110963	Manor Road (PA 82) and East Reeceville Road/Cedar Knoll Road Roundabout

# Transportation Improvement Program and Transportation Improvements Inventory Projects



In addition, there are improvements under design for the US 30 Bypass, which is just outside of West Brandywine Township, and regional discussions about the US 322 Corridor.

### ***US 30 Bypass and Interchange Areas***

The US 30 Bypass, also known as the Coatesville-Downingtown Bypass, is part of the regional highway network that connects West Brandywine Township to key employment and shopping locations, including Downingtown, Exton, West Chester, Great Valley, King of Prussia, and Lancaster. Since the Bypass was constructed in the 1960s, development has occurred and traffic volumes have increased, resulting in safety, congestion, and operational issues, particularly at the interchanges. The US 30 Bypass interchanges at US 322, Reeceville Road, and PA 82 are located just outside of West Brandywine Township. Traffic operations at the interchanges impact access to the regional highway network for West Brandywine Township residents. Additionally, congestion at the interchanges, particularly Reeceville Road and PA 82, leads to high speeds and cut-through traffic on township roadways that were not designed or built for regional traffic. PennDOT is developing and evaluating alternatives to reconstruct the Bypass and each of the interchanges, but it will take several years to complete engineering and construct needed improvements.

### ***US 322 Corridor***

The US 322 Corridor is the main commercial corridor in West Brandywine Township. Travel patterns along the corridor are predominantly eastbound in the morning and westbound in the afternoon. Traffic congestion is an issue, particularly in the peak direction during the peak period and at key locations. There are a number of commercial (and residential) drive ways along US 322, which also contribute to safety and congestion issues.

The West Brandywine Township 2005 Comprehensive Plan identified several issues and recommendations along US 322 related to roadway widening, intersection improvements, access management, future public transit, and park-and-ride locations. Since 2005, DVRPC completed a US 322 Study and the Chester County Planning Commission completed the County's Public Transportation Plan, including a 2030 vision with commuter bus service along US 322. Widening of US 322 through West Brandywine Township would be a significant cost and undertaking with impacts to adjacent properties. Additionally, widening would need to be coordinated with neighboring municipalities. The Western Chester County Council of Governments (COG) formed a sub-committee focused on the US 322 Corridor. West Brandywine Township representatives are participating in the sub-committee to discuss and plan for both near-term and long-term solutions. For the near term, key issues include specific intersection improvements, traffic signal upgrades/coordination, land use planning, access management, and planning for transportation alternatives. Additionally, plans and improvements along US 322 should be closely coordinated with neighboring municipalities and PennDOT.

## Chapter 10 Energy Conservation



*Antiquing is a popular activity in the area.*

### Introduction

While the formal consideration of energy conservation as part of the Comprehensive Plan is a relatively new occurrence, it has been an optional component in the Municipal Planning Code (MPC) for many years. Section 301.1. of the MPC states, “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 Plan on the present and future use of energy in the municipality; details specific measures contained in the other Plan components 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.”

Energy conservation can be considered from both a supply and demand perspective. Opportunities to generate alternative, renewable energy sources within West Brandywine Township will lessen its reliance on fossil-based fuels, while promoting efficiency and adopting alternative practices or management scenarios can lessen the demand and use of energy.

The following section: examines estimated energy usage and spending in West Brandywine Township; considers

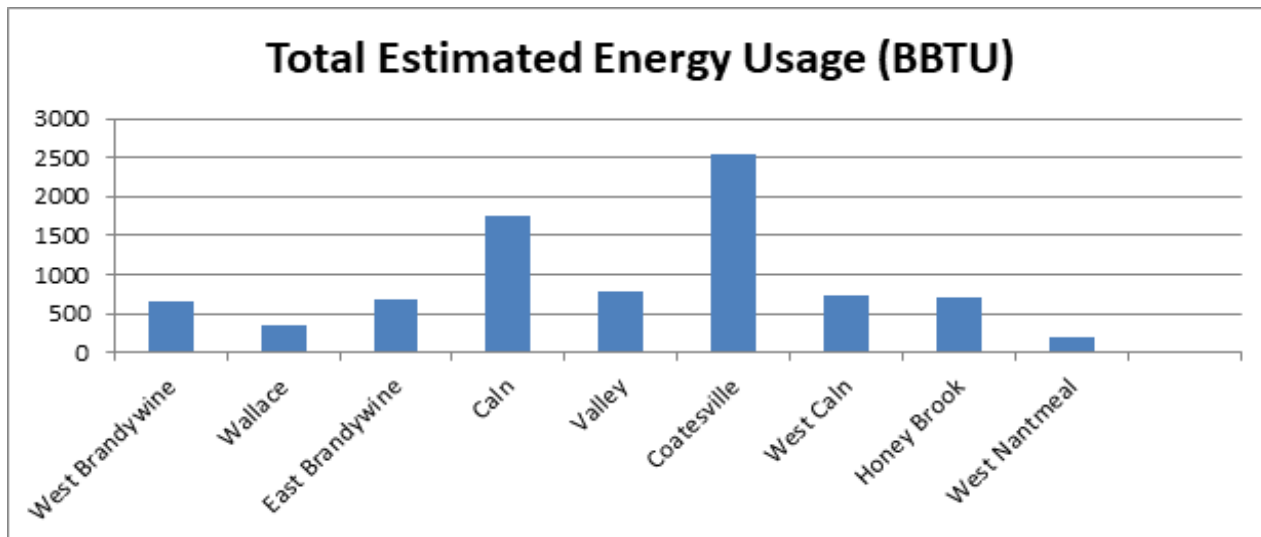
key areas where energy usage can be impacted; and provides strategies where the municipality can play a role in reducing energy usage.

## Energy use in West Brandywine Township

In 2018, the Delaware Valley Regional Planning Commission (DVRPC) produced Energy and Emissions profiles for each municipality in its 9-county region using 2015 data. A summary of data is provided below for West Brandywine Township and its surrounding municipalities.

### Total Energy Usage

DVRPC estimates that West Brandywine Township consumed a total of 667 billion BTUs (BBTUs) of energy per year, at a total estimated cost of \$15,274,000. In comparison to the surrounding municipalities, this rate of use is similar, bar the consumption levels in Caln and Coatesville, both of which are much more developed and have much larger populations.

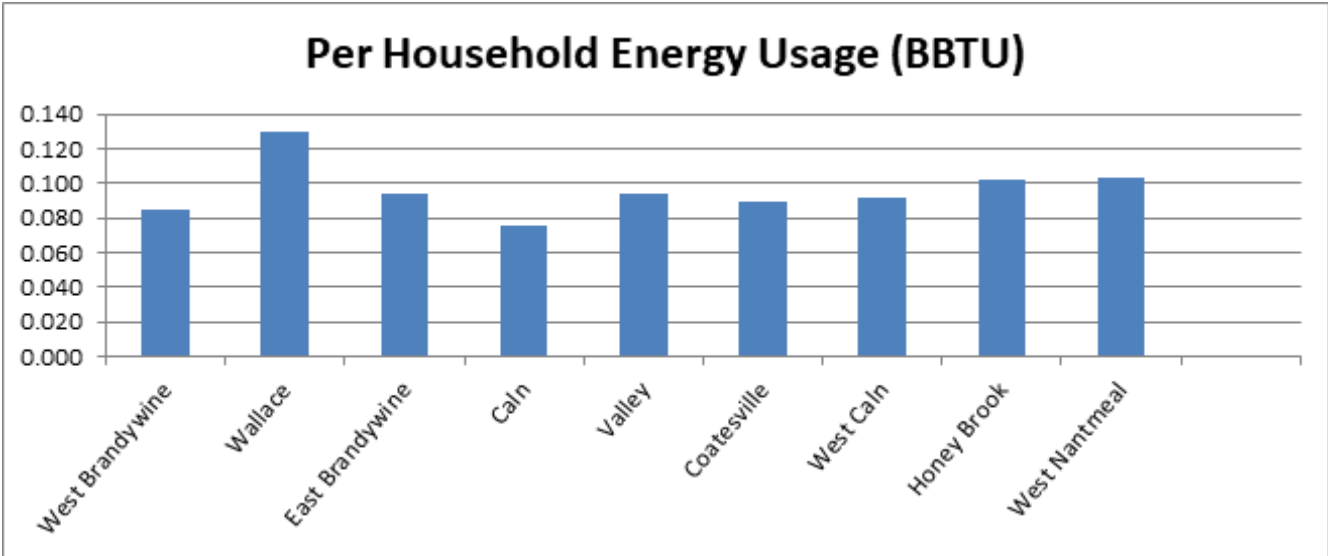
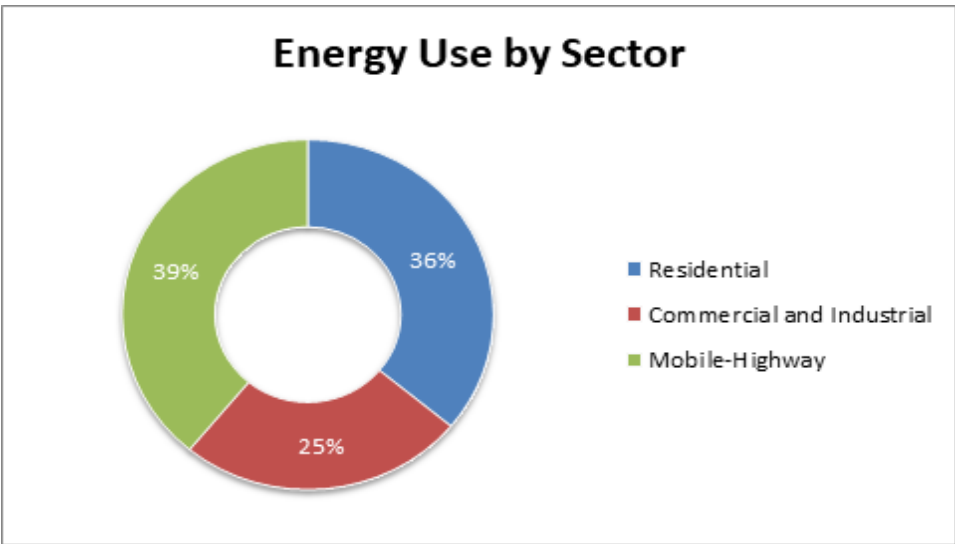


### Energy Use by Sector

Energy use is assigned to a category of user, including residential, commercial and industrial, and vehicles (Mobile-Highway). With the heavy reliance on automobiles for travel to and from work, as well as to commercial or recreational areas both inside and outside of West Brandywine Township, it is no surprise that this sector consumes the most energy. However, residential use contributes almost as much to the overall energy consumption in West Brandywine Township.

### Household Energy Use

The chart below shows the usage per household in West Brandywine Township and surrounding communities. Per household use in West Brandywine Township of around .085 billion BTUs is on the lower side when compared to surrounding communities. Only Caln has a lower rate of household use.



**Emissions**

The annual consumption of energy in West Brandywine Township results in almost 60,000 metric tons of CO2 equivalent being released into the atmosphere on an annual basis, with residential and transportation uses being almost identical in their contribution with about 20,000 metric tons equivalent being released by these sectors. However, factors associated with land use, land use change and forestry, provide an offset of some 8,400 metric tons of CO2 equivalent.

**Key Energy Conservation Issues**

**Reducing auto-dependency**

The single largest consumer of energy in West Brandywine Township is the automobile and other transportation related vehicles. As a result, anything West Brandywine Township can do to reduce the use of individual

automobiles through encouraging alternative means of transportation (both locally and regionally) and promoting land uses and trail networks that increase opportunities for individuals to either walk or cycle between destinations will reduce energy consumption associated with the automobile.

### ***Increase energy efficiency of the built environment***

As a close second in energy consumption to transportation, increasing the efficiency and use of energy at the residential level will have a positive impact on energy consumption and emissions. West Brandywine Township should consider ways in which to promote more energy efficient construction in new developments, such as promoting LEED-ND (neighborhood development), Energy Star, or Passive House. Furthermore, work with owners of older homes to make them aware of opportunities to upgrade systems and efficiency through programs offered by government entities and the utility sector.

### ***Renewable energy production***

Currently, the ZO does not directly address private, on-lot alternative energy systems such as solar, geothermal, and wind energy systems. These technologies are constantly evolving, so ordinance provisions should not unnecessarily hinder the use of alternative energy systems as an accessory use to residential, commercial, or other buildings and structures. However, the removal of prime farmland from production to establish a commercial solar farm would be inconsistent with the Plan’s agricultural preservation policies.

### ***Green infrastructure***

West Brandywine Township’s woodland resources offer carbon sinks as offsets for carbon emissions, so their continued protection and the planting of additional trees (such as along riparian areas) will continue to provide valuable carbon sinks into the future. The careful planting of deciduous and evergreen trees on individual house lots can also have a significant impact on energy consumption at the household level, reducing the need for heating and cooling in the winter and summer. Converting areas of turf grass to wildflower meadows, native plant gardens, and woodland that do not require weekly mowing can also have a positive impact on energy consumption and the emission of greenhouse gases.

## **Future Action and Policy Considerations**

### ***Work to decrease non-renewable energy use throughout West Brandywine Township***

- Increase the opportunities for walking and biking in West Brandywine Township as alternative transportation methods to connect residents to places of work, recreation, and commerce.
- Work with regional partners to evaluate public transport needs and opportunities.
- Adopt regulatory standards permitting the use of accessory alternative energy systems as by-right uses within West Brandywine Township.
- Enact ordinance amendments to:
  - o Encourage the use of alternative energy systems, such as solar roofs and geothermal, in new construction.

- o Provide incentives, such as increased density or reduced permit fees, for buildings with Energy Star, LEED, or Passive House certification.
- o Require that new development or redevelopment meet certain standards for energy efficiency.
- o Ensure the installation of electric vehicle charging stations is permitted.
- Consider enacting a commitment to join other Pennsylvania communities who have committed to 100% clean energy through the “Ready for 100” campaign.
- Promote household energy efficiency and conservation through residential education and outreach programs in coordination or partnership with public utilities and non-profit entities.
- Undertake an energy audit of municipal buildings, vehicles, and operations. Promote improved energy efficiency outcomes through municipal outlets (newsletter, webpage, in-building displays).

***Encourage the use of green infrastructure technologies and landscaping to help off-set non-renewable and carbon emitting energy use***

- Consider creating a tree bank fund for riparian reforestation efforts in lieu of compliance with landscape ordinance requirements elsewhere in West Brandywine Township.
- Ensure ZO and SALDO provide for and promote the energy saving benefits that can be derived from the installation of suitable landscaping.
- Demonstrate green infrastructure opportunities, including low-mow options, on municipally owned land.





*Hibernia County Park, parts of which are located in West Brandywine Township, is a popular destination for local recreation enthusiasts.*

## Introduction

As required by the Municipalities Planning Code, this Chapter inventories and assesses the relationship of West Brandywine Township's planned land uses to those of contiguous municipalities. Chapter 5 identifies and describes West Brandywine Township's existing and near-term pending land uses, while Chapter 12 describes the longer-term future land uses planned for West Brandywine Township. The Future Land Use Map found in Chapter 12, graphically displays these future land uses for West Brandywine Township.

## Future Land Use Plans of Contiguous Communities

The analysis in this Chapter, as well as the Future Land Use Map (see page 98), Chapter 12, both show that West Brandywine Township's future land uses and those of its abutting communities are generally consistent with each other, given the similarities between residential and open space land use categories. In support of this conclusion, the following descriptions of adjacent municipalities include the future land use from each Comprehensive Plan, current zoning, and any other items of note relating to land use.

### *Wallace Township*

The majority of West Brandywine Township's northeast boundary borders Wallace Township. To determine land use compatibility, Wallace Township's current zoning map and Comprehensive Plan (2015) were reviewed.

## Shared Boundary: 3.13 Miles

### Current Zoning:

- Wallace Township's zoning along West Brandywine Township's boundary with Wallace Township is Flexible Rural Residential (FRR). This zoning is consistent with the Rural Residential (R-2) zoning along the boundary in West Brandywine Township.

### Future Land Use:

- Areas adjacent to West Brandywine Township are identified as Rural Density with limited areas of Protected Resource Areas.
- The Rural Density area aims to preserve the rural characteristics of the area, while balancing a landowner's development rights. In this future land use category, West Brandywine Township aims to encourage the use of its Conservation Subdivision design, which balances resource protection with housing density needs through a cluster development design.
- The Protected Resource Areas noted along small portions of the boundary, are generally located in stream valleys or in other restricted development areas. Although development is restricted in these areas, Wallace Township will allow low intensity uses in these areas, such as trails, conserved open space, private residential yards and recreation areas.

### Additional Notes:

- There are several areas of protected lands along the boundary between Wallace and West Brandywine Township. One of these areas has existing trails that run between the two municipalities.

## *East Brandywine Township*

The majority of West Brandywine Township's eastern boundary is shared with East Brandywine. To ensure compatible land use, East Brandywine's current zoning map (2014) and Comprehensive Plan (2009) were reviewed.

## Shared Boundary: 4.62 Miles

### Current Zoning:

- East Brandywine Township's zoning along West Brandywine Township's boundary are Residential, R-2 and R-3.
- According to East Brandywine's township code, the R-2 residential district is for detached single family residential, agriculture and recreational uses.
- The R-3 residential district allows for agricultural uses and a variety of housing types, including concentrated single family detached dwellings and two-family and multifamily dwellings through clustered residential development.
- In both zoning districts, cluster development is allowed and encouraged to promote open space and natural resource protection.

### Future Land Use:

- In East Brandywine's 2009 Comprehensive Plan, it identifies future land use along the boundary with

West Brandywine Township as residential and protected open space.

- Much of this preserved open space is associated with residential cluster design, however, Spatola Park is identified as public open space.
- These future land uses are compatible with the future land uses of West Brandywine Township, suburban site-responsive development and areas of open space and resource protection.

#### **Additional Notes:**

- West Brandywine Township has several proposed trails that connect to existing trails in East Brandywine.

### ***Caln Township***

Caln Township borders a large portion of West Brandywine Township's southern boundary. The current zoning map (2018) and Caln Township's 2017 Comprehensive Plan were reviewed for land use compatibility.

#### **Shared Boundary: 1.73 Miles**

#### **Current Zoning:**

- Caln Township's zoning along West Brandywine Township's boundary are low to medium density residential (R-2) and regional commercial (C-2).
- The low to medium density residential area (R-2) allows single family detached residential, general agriculture, municipal uses and conservation areas.
- The regional commercial district is for high-profile commercial uses, business, medical campuses, professional parks and industrial parks.
- These two zoning districts correspond with West Brandywine Township's medical/ service institutional district and rural residential district.

#### **Future Land Use:**

- In Caln Township's 2017 Comprehensive Plan, future land use along this boundary is classified as medium to low density residential and major community facilities and institutional uses.
- These future land uses are consistent with current zoning and future land uses in West Brandywine Township.

#### **Additional Notes:**

- Brandywine Hospital is located along this boundary, which influences development in both municipalities.

### ***Valley Township***

Valley Township borders a small section of West Brandywine Township's southwestern edge, adjacent to the City of Coatesville. The current zoning map (2015) for Valley Township was consulted for zoning and land use compatibility. Valley Township is currently updating their Comprehensive Plan.

#### **Shared Boundary: 0.36 Miles**

### **Current Zoning:**

- The small portion of Valley Township that borders West Brandywine Township is comprised of residential (R1) and highway commercial districts.
- The residential (R1) district is characterized by suburban detached residential uses. In addition, other uses allowed in this zoning district include; passive recreation, agriculture, and institutional uses such as schools and churches. This district also promotes the conditional use of cluster design.
- The highway commercial (HC) district accommodates highway-oriented retail, services and entertainment businesses. Permitted uses in this district include offices, financial institutions, restaurants, retail stores, hotels, theaters, home improvement stores, dry cleaners and other commercial uses meant to serve residents and passing motorists.

### ***City of Coatesville***

The County's only third-class city, Coatesville, has an irregular northern boundary, which is surrounded by Valley Township on the East and west and abuts West Brandywine Township's southwestern corner.

### **Shared Boundary: 0.23 Miles**

### **Current Zoning:**

- The special use commercial district (C-4) allows for larger lot commercial areas. This district permits trades schools, convenience stores, spas, hospitals, indoor commercial recreation, mass transit terminals, professional offices, large parking lots and garages, active and passive recreation, restaurants and retail complexes.

### **Future Land Use:**

- In the 2014 Comprehensive Plan, the City of Coatesville identifies this small sliver as an area of potential development.

### **Additional Notes:**

- Various City planning documents address uses in this area and include plans for the sale of the upland parts for commercial development, while a park and streamside trails are planned for development along the Brandywine Creek, West Branch.
- This part of Coatesville is situated along Routes 82 and 340, which influences the development of this area.
- The City of Coatesville currently owns approximately 63 acres of land situated in West Brandywine Township in the vicinity of the intersections of Route 82 and 340 (Kings Highway). The property has road frontage along both Route 82 and Pratts Dam Road.

### ***West Caln Township***

The majority of West Brandywine Township's western border abuts West Caln. West Caln's current zoning map and its 1998 Comprehensive plan was consulted to ensure complementary land uses. West Caln is scheduled to update its Comprehensive Plan during 2019.

## Shared Boundary: 6.16 Miles

### Current Zoning:

- West Caln Township's zoning along West Brandywine Township's boundary are characterized as Site Responsive Residential (SRR) and Rural Center (RC).
- The Site Responsive Residential district (SRR) is primarily characterized by single-family detached residential units in a cluster design, minor conventional subdivisions, agricultural use and conservation areas. This zoning district prioritizes the conservation of environmentally sensitive areas, open space, agricultural soils and historic resources.
- The Rural Center district (RC) allows mixed uses including residential, commercial and institutional development. This district also allows a variety of housing types and densities, including multi-family.

### Future Land Use:

- According to West Caln's Comprehensive Plan (1998), the Rural Center allows for the extension of public sewer and water supplies in order to encourage development within an appropriate area.

### Additional Notes:

- The southern portion of this boundary is delineated by the West Branch Brandywine Creek, making this section ideal for open space and resource protection.
- Hibernia County Park and Hatfield-Hibernia Historic District is also located along this section and has several existing and proposed trail connections between West Brandywine Township and West Caln Township.

## *Honey Brook Township*

West Brandywine and Honey Brook Townships adjoin along West Brandywine Township's northwestern boundary. According to Honey Brook's 2015 Comprehensive Plan and 2018 zoning map, most of this adjoining section is primarily dedicated to resource protection with small areas of mixed use.

## Shared Boundary: 1.21 Miles

### Current Zoning:

- Honey Brook Township's zoning along West Brandywine Township's boundary are classified as the Resource Conservation (RC), Mixed-Use Residential (MUR) and Mixed-Use Commercial (MUC).
- The Resource Conservation District aims to provide appropriate levels of protection for natural features. This district allows agriculture, open space uses, single family residential, and rural residential subdivisions using a cluster or conservation design
- The Mixed-Use Residential District allows a variety of housing types and densities, agricultural uses and commercial retail with hour restrictions.
- A small portion of the boundary is comprised of the Mixed-Use Commercial District. This district allows commercial uses, live work communities, agricultural uses, and upper-level apartments.

### Future Land Use:

- The current zoning districts reflect the future land uses identified in Honey Brook Township’s 2015 Comprehensive Plan.

### ***West Nantmeal Township***

West Nantmeal Township borders West Brandywine Township along its northwestern boundary, between Wallace and Honey Brook Townships. West Nantmeal’s current zoning map was consulted to determine land use compatibility.

#### **Shared Boundary: 0.85 Miles**

#### **Current Zoning:**

- The boundary with West Brandywine Township is primarily comprised of the Light Industrial District (I-1), with a small section of Rural Residential (R-2).
- The Limited Industrial district allows commercial and industrial uses that are supported by the infrastructure on the individual lot.
- The Rural Residential district promotes the preservation of agricultural and conservation uses, along with single family detached dwellings. Residential cluster developments are allowed through conditional use.

## Chapter 12 Future Land Use and Housing



*Triticale, a cross of wheat and rye, dries in the early summer sun in West Brandywine Township.*

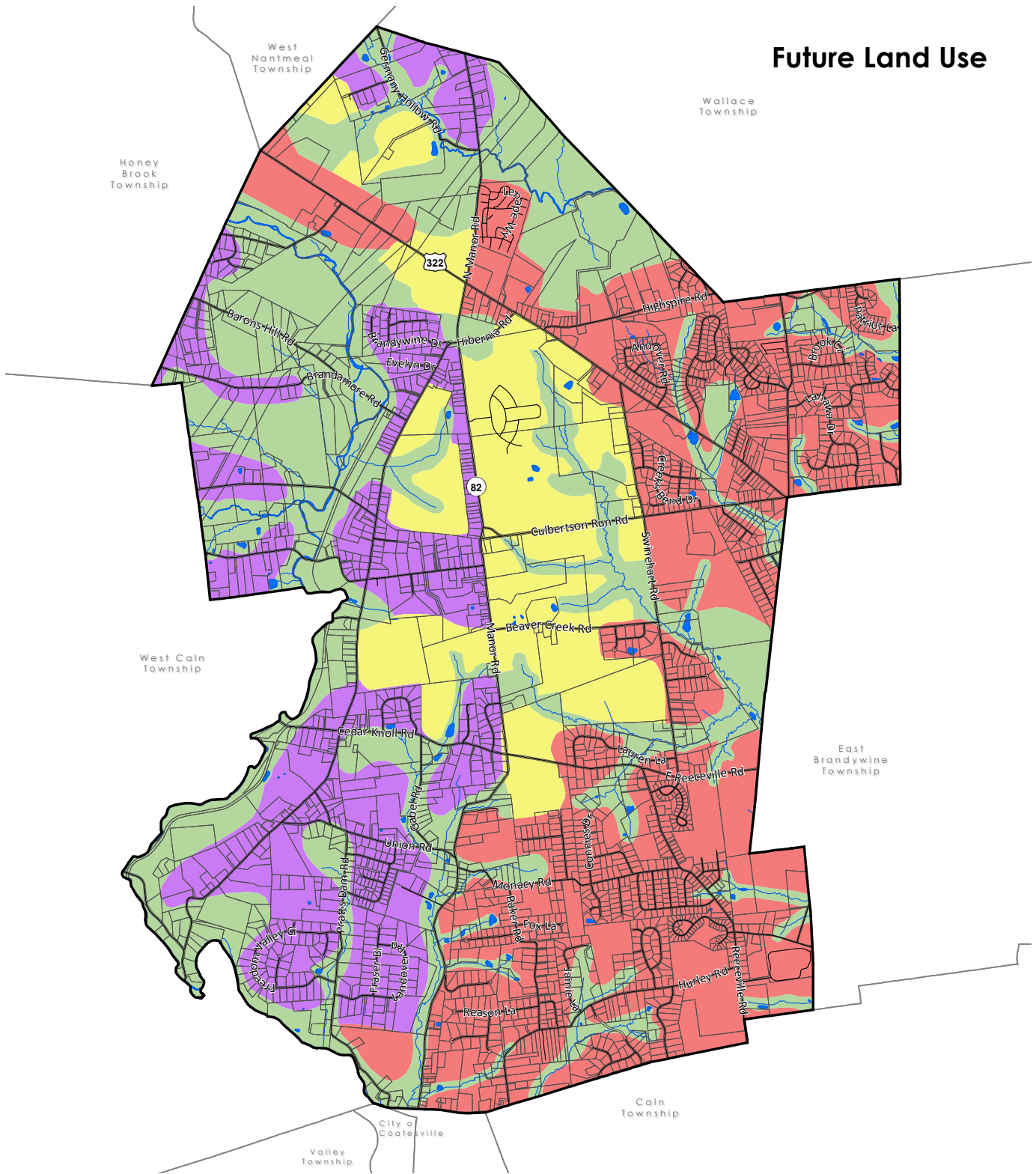
### Introduction

The Future Land Use Map shown on the following page establishes the general policy guide for land use in West Brandywine Township over the next ten to twenty years. It provides a graphic vision for municipal policy and action, integrating diverse planning issues and factors addressed and considered throughout this Comprehensive Plan. Recommended future land use patterns are based on a number of planning considerations, including community planning goals and objectives (Chapter 2); responses from West Brandywine Township citizens to the Community Values Survey and Community Visioning Workshop (Chapter 3); natural and cultural resources with their attributes and limitations imposed (Chapters 6 and 7); current land uses (Chapter 5); public facilities and services (Chapter 8); circulation patterns, including both roads and community trails (Chapter 9); and, land use plans relative to those of adjacent communities and in a regional setting (Chapter 11).

In addition, the future land use map assumes that most land currently developed with residential, public, or institutional uses will remain as such in the planning period for this comprehensive plan. Open, agricultural, or natural land, when preserved through a conservation easement or other restrictive covenant, will remain in some form of open space. This leaves the following lands potentially as developable: vacant lots; parcels with a single building but large enough to accommodate more buildings; large tracts of land in agriculture, woodland, or open space uses that are not permanently protected; and lands zoned and/or developed with commercial uses that could someday be developed or redeveloped.

Future land use recommendations outlined in this plan conform to Chester County's Comprehensive Plan,

# Future Land Use

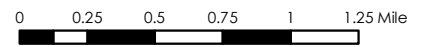


### Legend

- Township boundary (8,492.4 ac.)
- Adjacent municipalities
- Tax parcels
- Roads
- Streams
- Water bodies

### Future Land Use

- Suburban site-responsive development - 2,878 ac. (34%)
- Rural site-responsive development - 1,535 ac. (18%)
- Agricultural preservation - 1,207 ac. (14%)
- Open space / resource protection focus - 2,872 ac. (34%)



**Data Source:** Base data from Chester County Geographic Information Services, 2019.  
**Disclaimer:** This map is for illustrative purposes only and does not constitute a valid survey.

Landscapes 3. Landscapes 3 designates West Brandywine Township as a Rural Landscape north of Beaver Creek Rd, and a Suburban landscape south of Beaver Creek Rd. A Suburban Landscape is characterized by predominantly residential communities with locally-oriented commercial uses and community facilities. A Rural Landscape is characterized by open and wooded lands with scattered villages, farms and residential uses.

## Future Land Use Category Designations

The Future Land Use Map on page 98 divides the town into four land use categories. Within each of these categories, an appropriate mix of different land uses either exists, or is envisioned in the future. These categories are:

### ***Suburban Site-Responsive Development***

Designated in areas where existing development can largely be characterized as suburban residential, the area shown as Site-Responsive Suburban Development is currently dominated by single-family homes generally on modest size lots (less than 2 acres), and where future development is anticipated to continue a similar pattern. As shown on the Future Land Use Map, the “Site-Responsive Suburban” category applies to over 2,800 acres of West Brandywine Township, or around thirty-four percent of the land area. The category is applied primarily on the eastern side, abutting East Brandywine and Caln Townships. A smaller area of Site-Responsive Suburban Development is located along Route 322 adjacent to Honey Brook and West Nantmeal Townships.

The “site-responsive” designation infers case-by-case planning to reflect the character of the land, infrastructure availability, natural and cultural resource protection objectives, relationships to adjacent land uses, and protection of neighboring property values and community character. “Site responsive” is also intended to indicate that net densities of development might vary in response to market forces and the particular characteristics of individual sites and their surroundings.

The “Site-Responsive Suburban” area is presently zoned for a variety of single-family residential uses, as well as multi-family residential uses in accordance with a conditional use application utilizing the Open Space Design Option (OSDO). In addition, this area also contains areas currently zoned for commercial and professional uses. Such uses are to be sited in a manner that masses and groups structures, creates a cohesive sense of place, are not dominated by parking, are compatible with the surrounding area, and which maintain open lines of site at scenic views.

This Comprehensive Plan envisions that zoning provisions in effect at the time of Plan adoption, and the flexibility offered under the OSDO, will continue to allow for flexible residential development options and a range of densities, while providing for careful integration of infrastructure, trails, parks, and natural resources. Further, reasonable “net-out” provisions, presently in the Zoning Ordinance should continue to relate permitted densities of development to natural constraints to development. Throughout this land use designation, a fingery pattern of lands exist that is constrained by steep slopes, water courses or wetlands. These lands provide significant water resource values as well as natural habitat, cover, travel ways for wildlife, and scenic and recreational open space attributes.

Retirement communities, including opportunities for assisted living, are also appropriate for the “Site-Responsive Suburban” areas. These uses can offer a variety of housing types as well as community and recreation facilities to serve the growing population beyond typical retirement age. This population sector has a more limited impact upon community facilities and services, with little or no generation of additional school-age population.

The “Suburban Site-Responsive” land use designation is also appropriate for limited commercial, employment-oriented, recreational, and other non-residential development that might be suited for locations where direct access to the arterial roadway network can be provided and with careful consideration of potential impacts to existing residential neighbors. Placed in strategic and appropriate locations, commercial and employment-oriented development along or in close proximity to Route 322 can help bolster much needed tax revenue within West Brandywine Township and offset residential tax increases that may otherwise be required to cover the cost of municipal services.

Community facilities, as well as appropriate institutional and utility uses are also appropriate for this area. Design criteria, sewer and water service standards, stormwater management guidelines, and highway access-management requirements must be carefully articulated for non-residential uses in this area.

Given the availability of public services (water, sewer, etc.) within this map category, receiving areas for Transfer of Development Rights (TDR, see below) are appropriate here. Such areas could be officially created through zoning. The use of TDRs in this map category could be used to enhance residential and/or non-residential development or redevelopment opportunities.

Within the “Site-Responsive Suburban” future land use designation, sites and trails designated for community recreational purposes should also be established to accommodate existing and new residents, as recommended in Chapter 9 (Transportation and Trails). Under all development scenarios, carefully regulated access management also should be a primary consideration. Techniques such as shared driveways and marginal access roads, which run parallel to major roadways offering access to individual properties while limiting direct access onto such roadways, may be appropriate.

### ***Rural Site-Responsive Development***

While this designation contains some residential developments that have a more suburban appearance, overall this area promotes a predominantly rural feel. It is characterized by larger residential lots (generally served by on-lot water and wastewater disposal systems) with small agricultural lands scattered amongst larger tracts of woodlands and other natural resources. Future development is anticipated to continue in a similar pattern. As shown on the Future Land Use Map, the Site-Responsive Rural category applies to around 1,500 acres or about eighteen percent of West Brandywine Township’s land area, located predominantly along its western edge. Here too, the “site-responsive” designation is intended to infer case-by-case planning to reflect the character of the land, infrastructure availability (public water and sewer are not available in the defined area), and resource

#### **Transfer of Development Rights**

Transfer of Development Rights (TDR) is a zoning technique used to permanently protect land with conservation value (such as farmland, community open space, or other natural or cultural resources) by redirecting development that would otherwise occur on this land (the sending area) to an area planned to accommodate growth and development (the receiving area).

TDR programs financially compensate landowners for choosing not to develop some or all of their land. These landowners are given an option under municipal zoning to legally sever the development rights from their land and sell these rights to another landowner or a real estate developer for use at a different location. The land from which the development rights have been severed is permanently protected through a conservation easement or a restrictive covenant. The development value of the land where the transferred development rights are applied is enhanced by allowing for new or special uses; greater density or intensity; or other regulatory flexibility that zoning without the TDR option would not have permitted.

protection objectives.

The “Rural Site-Responsive” area is presently zoned predominantly for single-family residential use (R-1 and R-2 Districts), providing for gross densities of development less than one dwelling unit per acre. The flexibility offered under the OSDO allows for a diversity of residential development options and a diversity of net densities, while providing for integration of infrastructure, trails, parks, and natural resource protection. Reasonable “net-out” provisions presently in force through the Zoning Ordinance relate permitted densities of development to natural constraints and afford opportunities to conserve steep slopes, water courses, and wetlands.

This area may be appropriate for TDR receipt under modest density gains, and provided that such development does not require public water or sewer services.

### ***Open Space/Resource Protection***

The Open Space/Resource Protection category is designated in areas where a concerted focus on resource protection objectives is intended. Included in this designation are: areas with the highest concentrations of natural and cultural resource values; and areas that may provide for greenway linkages between larger open spaces, providing for both continuity of natural systems and potential recreational trail links. As shown on the Future Land Use Map, the “Open Space” category applies to over 2,800 acres or nearly thirty-five percent of West Brandywine Township’s land area. The Open Space land use designation is focused along stream valleys and wildlife corridors and in areas of significant woodlands. The designation forms a system of corridors and is intended to guide West Brandywine Township open space protection efforts. The Open Space land use designation is not intended to necessarily infer public ownership or formal public protection of open space, nor are developed land uses intended to be entirely excluded from this designation. Rather, resource protection is meant to be the principal planning focus and highest priority in these areas.

The “Open Space” area is presently zoned predominantly for single-family residential use (R-1 and R-2 Districts), providing for gross densities of development less than one dwelling unit per acre. Reasonable “net-out” provisions in the Zoning Ordinance relate permitted densities of development to natural constraints and afford opportunities to conserve resource areas, particularly those identified and analyzed in Chapter Four (Natural Resources and Open Space). The flexibility offered under the OSDO also allows for a diversity of residential development options and a diversity of net densities, while promoting opportunities to integrate open space conservation areas and trails. While, at present, permitted densities of development are the same as in the “Site-Responsive” designations, Chapter Eleven (Natural Resources and Open Space) makes recommendations for the further protection of natural and cultural resources, including consideration of amendments to applicable regulatory provisions to further emphasize resource conservation.

On very limited scale, the “open space” designation also envisions the potential for some development of commercial, institutional, utility and employment-generating uses. The principal focus for non-residential uses is intended within the small area of the Suburban designation just west of Route 82 (Manor Rd.) in the vicinity of Pratts Dam/Kings Highway in the very southern extent of West Brandywine Township. For all developed land uses, as elsewhere, design criteria, sewer and water service standards, stormwater management guidelines, and highway access-management requirements must be carefully articulated. Community recreational trails and passive recreational open space are envisioned as a particular development focus in the “open space” land use designation.

This category is not appropriate for TDR receipt, but appropriate for TDR sending.

## ***Agricultural Preservation***

Designated in areas where working agricultural lands and prime agricultural soils dominate, the Agricultural Preservation designation aims to protect the tradition of farming and provide for a diverse and robust agricultural industry in West Brandywine Township. Uses appropriate for this designation (all of which rely on on-lot water and wastewater disposal systems) include all types of agriculture, uses accessory to agriculture, and rural occupations. In addition, agricultural entertainment/agri-tourism activities such as fall festivals, farm stands, corn mazes, and Community Supported Agricultural operations are envisioned to help support a broader economic income stream that helps preserve farming activities and ensures the vitality of the farming community and sector.

On a limited scale, this designation also envisions the potential for some non-farm residential development that is in-keeping with the Site-Sensitive Rural designation and that preserves both the rural character of the area, its agricultural heritage, and its scenic vistas.

This category is not appropriate for TDR receipt, but appropriate for TDR sending.

## **Future Action and Policy Considerations**

### ***Ensure West Brandywine Township maintains its rural character, agricultural heritage, and protects its natural resources***

- Review Zoning Ordinance to ensure zoning districts and permitted land uses align with the goals of the future land use map, including the continued protection of West Brandywine Township's rural character and its natural resources, while supporting strategic growth.
- Consider amending the Zoning Ordinance to encourage scale appropriate economic and commercial land uses in strategic, designated locations in West Brandywine Township.
- Review Zoning Ordinance to ensure provisions do not hinder the continued agricultural vitality and use of existing agricultural lands throughout West Brandywine Township, including redirecting non-farm residential and other uses away from these areas.
- Consider adopting zoning provisions that would allow for alternative residential models, such as Agrihoods, that would provide for a variety of residential types, while also supporting local agriculture, lowering carbon footprints, and promoting active and rewarding lifestyles.
- Discourage extension of public water and sewer into the Agricultural Preservation and Open space/Resource Protection designated areas shown in the Future Land Use Map.
- Consider use of the TDR tool for managing growth and conserving resources by adding it to the Zoning Ordinance.

## Housing Plan

West Brandywine Township is committed to providing sufficient opportunity, through its land use planning and regulatory efforts, to meet the housing needs for projected population growth and to provide for a diverse range of housing types. As catalogued in the chapter on Demographics (Chapter Four) and further articulated in the future land use discussion above, existing housing stock and availability of developable parcels offers the opportunity for a variety of housing types, from detached and attached single-family units to apartments and mobile homes. The flexibility available under current zoning provisions infers continued availability of diverse housing opportunity through the end of the planning horizon for this Plan.

Historical development trends experienced by West Brandywine Township have tended to favor single-family residential development, although a number of mobile homes are also present. While several residential development projects were anticipated to begin soon after the completion of the 2005 Comprehensive Plan, the great recession halted these development projects. Very little residential development has taken place in West Brandywine Township in the last 15 years. As of the date of this Plan, and if carried through, some age-restricted residential development will occur on the eastern side of the municipality. Opportunities for higher-density multi-family housing are currently provided for in the RM (Rural Mixed Use), R-3, and R-4 Residential Zoning Districts. Additional multi-family development is also permitted under the Open Space Design Option (OSDO) in the R-1 and R-2 zoning districts, which constitute the bulk of West Brandywine Township's land area and undeveloped lands. Mobile Home Parks are permitted only in the R-4 District which is already substantially developed.

## Future Action and Policy Considerations

### *Provide for a diversity of housing options to meet the needs of all populations*

- West Brandywine Township should continue to encourage the development of housing for all ages and income levels. These can include additional retirement or life care facilities, or apartments for smaller families located over commercial space in future mixed-use developments.
  - o With the aging population of West Brandywine Township, consider adding “elder cottages” or accessory dwellings to the Zoning Ordinance that would allow “aging in place”.
  - o Adopt zoning provisions that encourage the development of mixed-use developments and redevelopment that can provide affordable housing opportunities, as well as commercial/retail establishments and communal meeting spaces frequented by millennials.
- West Brandywine Township should periodically assess existing housing availability in West Brandywine Township and the degree to which diverse housing options are available under applicable zoning regulations.
- Based upon periodic assessments of diverse housing opportunities, West Brandywine Township may consider zoning additional lands for multi-family or mobile home park development opportunities.



# Chapter 13 Implementation Strategies



*The Forks of the Brandywine Evangelical Presbyterian Church sits atop the divide of the East and West Branches of Brandywine Creek.*

## Introduction

The Comprehensive Plan Task Force distilled the recommendations from each of the preceding chapters. Priorities and time frames were then assigned to each recommendation. Each recommendation is listed on the ensuing pages, along with a priority for implementation and the lead parties in charge.

Implementation Priority			
ST	Short term: one to three years	LT	Long term: seven to ten years
MT	Medium term: four to six years	O	Ongoing
Lead Party Abbreviation			
BOS	Board of Supervisors	PA DOT	PennDOT
CC	Chester County	PD	Police Department
CCCD	Chester County Conservation District	PC	Planning Commission
HC	Historical Commission	PRB	Parks and Recreation Board
LT	Local Land Trust	TC	Trails Commission
OS	Open Space Review Board	TS	Township Staff

<b>Implementation Recommendations Matrix</b>			
Plan Section	Recommended Action	Priority	Lead Parties
<b>Natural Resources and Open Space (Chapter 6, page 40)</b>			
<i>Goal 1 - Protect and Restore the Water Resources of West Brandywine Township.</i>			
1	Pursue reforestation of unforested riparian buffers through voluntary and regulatory action.	O	PC, BOS, LT, CCCD
2	Promote maintenance and protection of “fully” wooded riparian buffers.	O	PC, BOS, LT
3	Consider creating a tree bank fund for riparian reforestation efforts.	ST	TS, BOS
4	Continue to enforce the SALDO regulations to reduce impervious surfaces.	O	PC, BOS
5	Ensure land development projects implement effective erosion control and stormwater management measures.	O	PC, TS
6	Continue to enforce the Zoning Ordinance steep slope provisions.	O	PC, BOS
7	Continue planning efforts to meet the requirements of the MS4 Program.	O	TS, BOS
8	Educate private landowners on the benefits of small-scale stormwater improvements.	ST	TS, LT, CCCD
9	Continue to use Township dedicated open space funds to place conservation easements on properties in headwater areas.	O	BOS, OS
<i>Goal 2 - Promote the Protection of Woodlands and their Associated Resources.</i>			
1	Sustain the maximum practicable extent of remaining woodlands in the Township.	O	PC, OS, BOS
2	Pursue reforestation opportunities along riparian corridors and reconnect fragmented woodlands.	MT	LT, TS
3	Educate private landowners on the long-term stewardship of woodland resources.	ST	LT, TS, OS
4	Consider the adoption of a Transfer of Development Rights program that includes woodland areas as TDR sending areas.	LT	BOS, PC
5	Consider the use of Township dedicated open space funds to place conservation easements on wooded properties.	O	BOS, OS
<i>Goal 3 - Promote the Preservation of West Brandywine Township's Agricultural Resources.</i>			
1	Promote agri-tourism as a means to help the Township’s remaining farms stay in operation.	MT	CC, TS
2	Consider modifying Township regulations to specifically allow for agri-hood residential development.	ST	BOS, PC
3	Consider the adoption of a Transfer of Development Rights (TDRs) program that establishes prime agricultural soils and active farmland as TDR sending areas.	LT	BOS, PC

4	Consider the use of Township dedicated open space funds to place conservation and/or agricultural easements on properties that contain active farms and/or prime agricultural soils.	O	OS, BOS
5	Promote the use of Erosion and Sedimentation/Conservation Plans to protect soil quality and quantity.	O	TS, BOS
6	Consider establishing a West Brandywine Growers/Farmers market.	ST	CC, TS
7	Work with local community programs to explore how they may benefit local agricultural producers.	LT	TS
<i>Goal 4 - Protect Important Open Space in West Brandywine Township.</i>			
1	Implement the recommendations outlined in the 2007 Open Space Priorities Protection Plan.	O	OS, BOS
2	Periodically review and update the Open Space Priorities Protection Plan.	ST	OS
3	Continue to participate in the Brandywine Creek Greenway	O	OS, TC, PRB
4	Consider the adoption of an Official Map.	MT	BOS, PC
5	Review Open Space Design Option within the Zoning Ordinance.	ST	PC, BOS
<b>Historical and Cultural Resources (Chapter 7, page 55)</b>			
<i>Goal 1 - Promote Preservation of Historic Resources.</i>			
1	Maintain a comprehensive inventory of nationally and locally significant historic resources.	ST	HC, CC
2	Inform landowners regularly of adaptive re-use opportunities and relaxation of otherwise applicable area and bulk requirements for historic resources.	O	TS, HC
3	Undertake regulatory revisions to use the Sketch Plan to identify important historical attributes and seek their protection.	LT	PC, HC, BOS
4	Require submission of photographs of historic resources likely to be impacted prior to land development.	O	TS, HC
<i>Goal 2 - Promote Conservation of Scenic Resources.</i>			
1	Incorporate mapping and definitions of scenic roads, scenic landscapes and scenic views throughout West Brandywine into the Zoning Ordinance.	MT	PC, BOS
2	Establish subdivision and development regulations to protect scenic landscapes and views.	LT	PC, BOS
3	Undertake regulatory revisions to use Sketch Plan to identify scenic attributes of the landscape and seek their protection.	MT	PC, BOS
4	Require submission of photographs of scenic resources likely to be impacted prior to land development.	LT	TS, OS

**Public Facilities and Services (Chapter 8, page 66)**

*Goal 1 - Provide for efficient, effective, and exemplary management of the public facilities and services throughout West Brandywine Township.*

1	Continue to require inspection and monitoring of private septic systems.	O	TS
2	Continue to explore options for coordinated and cost-shared services with adjoining municipalities.	LT	TS, BOS
3	Evaluate the current and future needs for emergency service coverage in West Brandywine Township.	MT	BOS, TS
4	Provide for better pedestrian and cyclist access to existing Township parks.	MT	PRB, TC, BOS
5	Consider an update to the Township's 1993 Open Space, Recreation, and Environmental Resources Plan.	LT	OS, PRB, BOS
6	Continue to closely coordinate with the Coatesville Area School District.	O	TS, BOS

**Transportation and Trails (Chapter 9, page 79)**

*Goal 1 - Improve Safety and Reduce Congestion at Key Intersections.*

1	Coordinate with PennDOT regarding planned intersection and safety improvements.	O	TS, BOS
2	Update the Township's Act 209 Transportation Impact Fee Study.	LT	TS, BOS
3	Coordinate with the Chester County Planning Commission to add identified intersection improvements to the County's Transportation Improvements Inventory (TII).	O	TS
4	Pursue funding and other opportunities to advance design and construction of intersection improvements.	MT	TS

*Goal 2 - Calm Traffic and Support Safe Conditions for All Modes of Transportation.*

1	Evaluate and implement traffic calming measures on key transportation corridors.	O	BOS, PADOT
2	Develop and establish a traffic calming policy and procedures.	O	TS, BOS
3	Coordinate with the Township police regarding speed enforcement.	ST	PD, TS
4	Consider options for accomodating bicycles when implementing traffic calming measures.	O	BOS, PADOT

*Goal 3 - Improve Traffic Flow, Reduce Congestion, and Enhance Safety Along US 322.*

1	Advance key intersection improvements.		
	<ul style="list-style-type: none"> <li>US 322 at PA 82</li> </ul>	ST	PADOT, BOS
	<ul style="list-style-type: none"> <li>US 322 at Swinehart Road</li> </ul>	MT	PADOT, BOS
	<ul style="list-style-type: none"> <li>US 322 at Little Washington Road/Springton Road/Culbertson Run Road</li> </ul>	ST	PADOT, BOS

2	Continue to participate in the Western Chester County Council of Government's sub-committee for the US 322 corridor.	O	BOS
3	Plan for future commuter bus service and identify potential park-and-ride locations.	ST	TS, PADOT
4	Continue to monitor and evaluate the long term need for potential roadway widening on US 322.	LT	BOS, PADOT
<b>Goal 4 - Improve Access to the US 30 Bypass and Regional Highway Network.</b>			
1	Coordinate with PennDOT, Chester County Planning Commission, and neighboring municipalities regarding planned improvements to the US 30 Bypass interchanges at Reeceville Road and PA 82.	O	PADOT, TS, BOS
	<ul style="list-style-type: none"> <li>Coordinate with PennDOT and Caln Township to address traffic congestion and safety issues along the Reeceville Road corridor between PA 340 and Hurley Road.</li> </ul>	ST	PADOT, TS, BOS
	<ul style="list-style-type: none"> <li>Consider partnering with Caln Township to complete a joint Reeceville Road Corridor Plan.</li> </ul>	MT	TS, BOS
<b>Goal 5 - Expand Facilities and Connections for Walking and Biking.</b>			
1	Support activities of the Trail Committee.	O	TC, BOS
2	Identify funding for preliminary engineering for priority trail segments along the East-West Trail.	ST	TS, BOS
3	Implement priority action items identified in the East-West Bicycle and Pedestrian Facilities Plan.	MT	TS, TC, BOS
4	Coordinate with Honey Brook Township regarding connections to the section of trail near the township border and Icedale Meadows.	ST	TC, BOS
5	Require construction of trails within new subdivisions at the earliest possible stage of development.	LT	PC, BOS
6	Update the Township's Subdivision and Land Development Ordinance to define and provide design standards for different types of bicycle and pedestrian facilities.	MT	PC, BOS
7	Identify potential trail hub locations in the Township that can be acquired and conserved.	MT	TC, OS
8	Identify and coordinate with volunteers to assist with ongoing trail maintenance.	O	TC, TS
<b>Goal 6 - Ensure Township Ordinances and Policies for Transportation Infrastructure are Aligned with Township Goals, Applicable Standards, and Emerging Issues.</b>			
1	Review and update Township ordinances that are based on the Roadway Functional Classification.	LT	PC, BOS
2	Review and update the Township's Zoning Ordinance, Subdivision and Land Development Ordinance (SALDO) related to the planning and design of roadways, access management, sidewalks, trails, on-road bicycle facilities, and parking facilities.	LT	PC, BOS
3	Consider preservation of the rural character of roadways when updating ordinances.	MT	PC, BOS

4	Consider accommodating the use of electric vehicle charging stations.	LT	PC, BOS
5	Consider requirements for pick-up and drop-off areas.	MT	PC, BOS
<b>Energy Conservation (Chapter 10, page 90)</b>			
<b>Goal 1 - Work to decrease non-renewable energy use throughout West Brandywine Township.</b>			
1	Increase the opportunities for walking and biking in the Township.	O	TS, TC
2	Work with regional partners to evaluate public transport needs and opportunities.	MT	TS, BOS, CC
3	Adopt regulatory standards permitting the use of accessory alternative energy systems.	MT	PC, BOS
4	Enact ordinance amendments to:		
	• Encourage the use of alternative energy systems.	LT	PC, BOS
	• Provide incentives for buildings with Energy Star, LEED, or Passive House certification.	LT	PC, BOS
	• Require that new development or redevelopment meet certain standards for energy efficiency.	LT	PC, BOS
	• Ensure the installation of electric vehicle charging stations is permitted.	LT	PC, BOS
5	Consider joining the "Ready for 100" campaign.	ST	BOS
6	Promote household energy efficiency and conservation.	O	TS
7	Undertake an energy audit of municipal buildings, vehicles, and operations.	O	TS, BOS
<b>Goal 2 - Encourage the use of green infrastructure technologies and landscaping to help off-set non-renewable and carbon emitting energy use.</b>			
1	Consider creating a tree bank fund for riparian reforestation efforts.	MT	PC, BOS
2	Ensure ZO and SALDO provide for and promote the energy saving benefits that can be derived from the installation of suitable landscaping.	ST	PC, BOS
3	Demonstrate green infrastructure opportunities on municipally owned land.	LT	TS, BOS, LT
<b>Future Land Use and Housing (Chapter 12, page 104)</b>			
<b>Goal 1 - Ensure West Brandywine Township maintains its rural character, agricultural heritage, and protects its natural resources.</b>			
1	Review Zoning Ordinance to ensure zoning districts and permitted land uses align with the goals of the future land use map.	ST	PC, BOS

2	Consider amending the Zoning Ordinance to encourage scale appropriate economic and commercial land uses in strategic, designated locations in the Township.	ST	PC, BOS
3	Review Zoning Ordinance to ensure provisions do not hinder the continued agricultural vitality and use of existing agricultural lands throughout the Township.	ST	PC, BOS
4	Consider adopting zoning provisions that would allow for alternative residential models, such as Agrihoods.	MT	PC, BOS
5	Discourage extension of public water and sewer into the Agricultural Preservation and Open Space/Resource Protection	O	BOS
6	Consider use of the TDR tool for managing growth and conserving resources.	LT	PC, BOS
<i>Goal 2 - Provide for a diversity of housing options to meet the needs of all populations.</i>			
1	Encourage the development of housing for all ages and income levels.	O	PC, BOS
2	Consider adding “elder cottages” or accessory dwellings to the Zoning Ordinance that would allow “aging in place”.	MT	PC, BOS
3	Periodically assess existing housing availability in West Brandywine.	O	TS
4	Consider zoning additional lands for multi-family or mobile home park development opportunities.	LT	PC, BOS