

Scenic Conservation Plan

Brandywine Valley National Scenic Byway

Final Report



Delaware Greenways, Inc.

October 2017

The cover picture shows a line of sycamore and cherry trees along the Kennett Pike. According to legend, Pierre S. DuPont mistakenly gave his beloved wife, Alice, a string of pearls to commemorate two consecutive birthdays. When she received the second necklace, she asked him instead to plant trees along the newly built Kennett Pike. Thereafter, she reportedly referred to the trees he planted along a ten-mile stretch of the road as her “pearls”. For many years thereafter, Mr. DuPont worked with his neighbors and other family members and maintained the beauty of the roadside and the ‘pearls’ that he planted for his wife, Alice.

Brandywine Valley Scenic Conservation Plan

New Castle County, Delaware

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The National Scenic Byways Program under a grant titled
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Brandywine Valley National Scenic Byway Partnership

Prepared by:

Delaware Greenways, Inc.



October 2017

ROLE OF THE GOVERNMENTAL AGENCIES WHO PARTICIPATED IN DEVELOPING THIS PLAN

The Scenic Conservation Plan is designed to reflect the vision, goals and recommendations of the members of the general public participating in the development of the Plan. While DelDOT and the other agencies participating with the public agree in principle with the Plan and its recommendations, it must be understood that these same agencies face many different and sometimes competing priorities, a changing regulatory framework, and funding challenges. As a result, the recommendations contained herein that are assigned to an agency for implementation may be implemented on a different schedule or in a different form than anticipated in the Scenic Conservation Plan or, due to unforeseen circumstances and regulatory requirements, not implemented at all. Nothing in this statement should be interpreted that any of the participating governmental agencies are withholding support of any of the contents of the Plan.

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TECHNICAL BASIS REPORTS

The Scenic Conservation Plan is built upon four Technical Basis Reports. These reports bound as separate documents and are considered appendices to this report:

1. Existing Conditions Report
2. Viewshed Analysis Report
3. Trend Scenario Report
4. Travel Demand Report



ABOUT DELAWARE GREENWAYS, INC.

Mission Statement: A non-profit organization dedicated to creating outdoor connections for active living and healthy eating.

The work of the organization centers on its three program areas.

Trails and Pathways: Creating a culture of active living in which walking and bicycling are favorite options for transportation and recreation. In partnership with others we work to expedite the creation of a complete family friendly pedestrian network connecting neighborhoods to important destinations.

Over the past 25 years, our advocacy has been instrumental in the creation of more than 45 miles of beloved trails, impacting the health, environment and overall quality of life for residents and visitors alike



The sunflowers at Historic Penn Farm are always spectacular.

Historic Penn Farm: This 112-acre urban farm has a unique history of being continuously worked for over 300 years. As the twenty-second tenant Delaware Greenways is committed to building on William Penn's legacy in a way that addresses current societal needs.

Our vision is to create a sustainable, bio-diverse, productive farm that inspires and educates the community towards healthier lifestyles, demonstrates good environmental stewardship through best practices, and provides a unique gathering place for community events.

Byways: Since the inception of Delaware's Scenic and Historic Highways Program in 2000,

Delaware Greenways has led the development of Scenic and Historic Byways in Delaware. Together with the communities and the natural and culture attractions along the Byways, we work to implement projects and plans statewide. We work to protect, preserve and enhance cultural, natural and historic road corridors that are important to those who live in, work in or visit the state's treasures that each Byway showcases.

Because of our work with community partners, Byway designation has been achieved for Brandywine Valley National Scenic Byway, Delaware's Bayshore Byway and the Historic Lewes Byway: Gateway to the Bayshore.

Tax ID: 51-0325462

www.delawaregreenways.org



Everyone loves the Northern Delaware Greenway Trail.



Twilight on the Delaware Bayshore Byway

FORWARD

ABOUT THE BRANDYWINE VALLEY NATIONAL SCENIC BYWAY

The roadways and landscapes associated with the Brandywine Valley National Scenic Byway routes are among the most beautiful and historically significant in Delaware. The Byway encompasses the Route 52 and Route 100 corridors extending from Rodney Square in downtown Wilmington, Delaware, north to the Pennsylvania state line.

The Brandywine Valley National Scenic Byway has national significance with a direct role in three centuries of American industrial history. The lower Brandywine Creek's water powered mills and proximity to the Port of Wilmington created thriving industrial and commercial markets, and spawned the development of Wilmington and the Wilmington-Kennett Turnpike in the late-eighteenth century (now Route 52) in 1811. A direct outgrowth of the turnpike was the legacy of buildings, parks, and cultural institutions created by eighteenth and nineteenth-century industrialists. These enduring cultural contributions add to the byway's significance. With the growth of the Du Pont Company in the early twentieth-century, the byway landscape became the site for the family's country estates. The DuPonts created cultural institutions and preserved thousands of acres of public parkland, open space, and recreational lands. The rolling landscape along the Byway, made famous by the Brandywine School of artists and most notably, the Wyeths, is dotted with historic villages, bed and breakfast inns and world-renowned museums, gardens, parks and libraries. It is both nationally and internationally known as a world-class tourist destination and continues to play a significant role in the region's history, culture, and economy.

The Brandywine Valley Scenic National Byway is much more than two historic roads; it is a cultural landscape that embodies the region's evolution over three centuries. It has received the imprint of multiple layers of development as represented by its changes as a roadway, from a rough Colonial trail, to a nineteenth-century toll road, to Pierre du Pont's reconstruction of Kennett Pike in 1919 as a modern "highway." These historic roads provided critical linkages between communities within the region; allowed for the transport of goods, services, and ideas; and embodied the cultural ideals and aspirations of the valley's residents. The roadways and cultural landscape of the Byway have continuously evolved over the past three hundred years and today represent the accumulated change that has occurred over that time, rather than any period in their evolution. In traveling the Byway today, residents and visitors experience the unique communities, vistas, and qualities of the Brandywine Valley landscape. The Brandywine Valley National Scenic Byway is special because no other historic corridor in Delaware so clearly and directly depicts the relationships between transportation, road building, the regional economy, and culture. The Byway is a unique resource with the potential to tell the story of America's transformation from an agrarian to an industrial society with expanding opportunities, increasing diversity, and the many conflicting issues associated with growth and change.¹

¹ Delaware Greenways, Inc., Brandywine Valley Scenic Byway Corridor Management Plan, 2005, p 1.1.

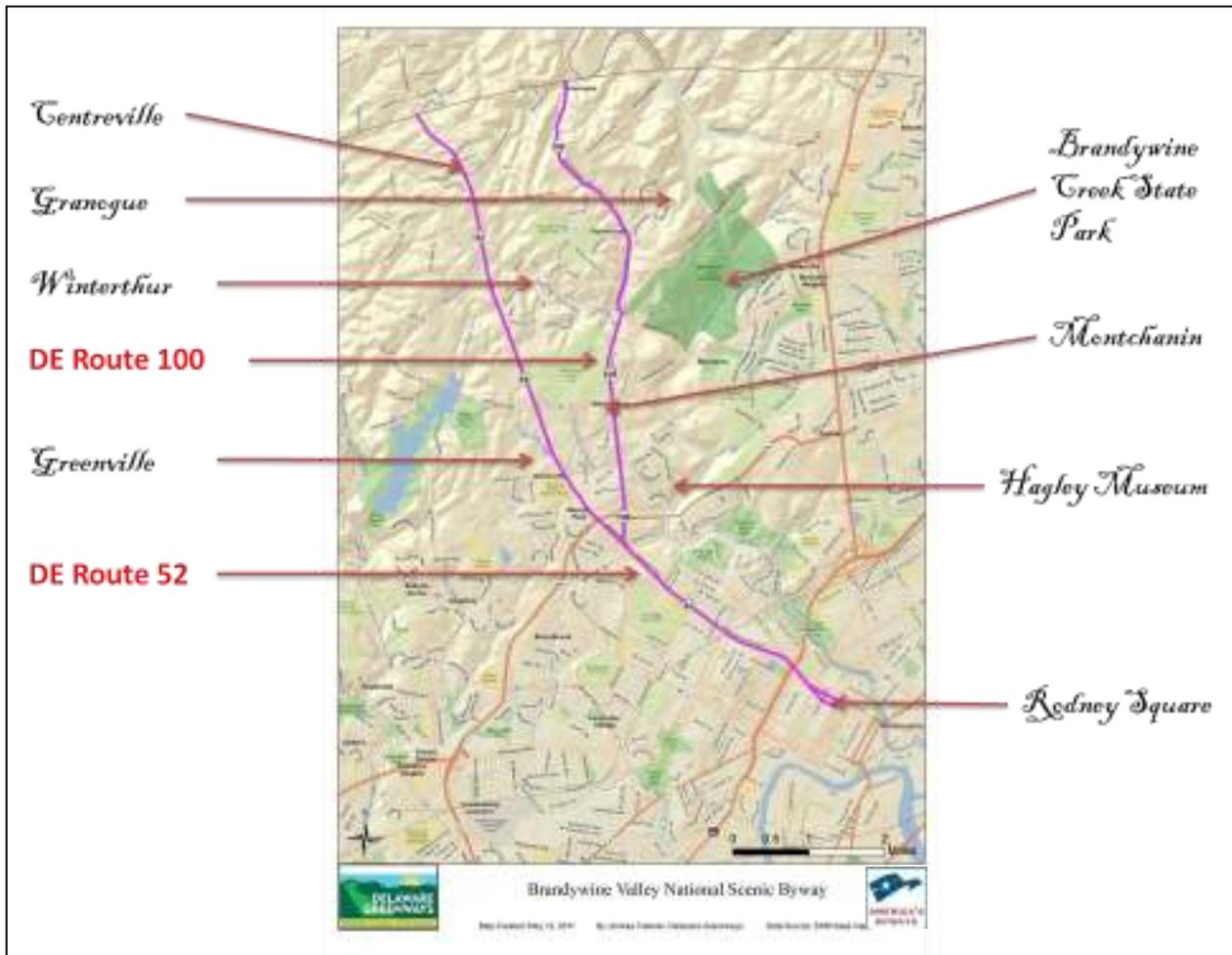


Figure i: Brandywine Valley National Scenic Byway Orientation Map

A National Scenic Byway is a road recognized by the United States Department of Transportation for one or more of its intrinsic qualities. The Brandywine Valley National Scenic Byway is just one of 120 such roads in the nation including such other treasures as the Blue Ridge Parkway in North Carolina and Virginia, Hells Canyon in Oregon, the Skyline Drive in Virginia, and the Top of the Rockies in Colorado. The Byway includes the Kennett Pike and Route 100 corridors from Rodney Square in the city of Wilmington to the border with Pennsylvania.

The Corridor Management Plan identified five 'intrinsic values' for preservation. They are:

- Scenic Quality
- Natural Quality
- Historic Quality
- Cultural Quality
- Recreational Quality

BYWAY MANAGEMENT

Managing a National Byway is largely accomplished by citizens and non-profit organizations. The Brandywine valley National Scenic Byway is fortunate to have a number of organizations responsible for its conservation, preservation and enhancement. These organizations have joined under the umbrella of the Brandywine Valley National Scenic Byway Partnership and are responsible for the day-to-day management of the affairs of the Byway. The permanent members of the Partnership are:

- Brandywine Conservancy and Museum of Art
- Centerville Civic Association
- Delaware Greenways, Inc.
- Delaware Museum of Natural History
- Delaware Nature Society
- Greater Wilmington Convention and Visitors Bureau
- Hagley Museum and Library
- Kennett Pike Association
- Member of the Business Community
- Winterthur Museum, Garden and Library
- Woodlawn Trustees

The Brandywine Valley National Scenic Byway Advisory Board was created through state legislation in 2012. Its role is to serve as an interdisciplinary advisory board to assist policymakers and other stakeholders in the ongoing effort to preserve, maintain, and enhance the nationally recognized historic, cultural and scenic qualities of this National Scenic Byway and manage the implementation of the Brandywine Valley Scenic Byway Corridor Management Plan.

- Secretary, Department of Transportation - Chair
- Division of Parks and Recreation, DNREC
- The Hagley Museum & Library
- New Castle County Department of Land Use
- Kennett Pike Association, President
- State Byway Coordinator
- Woodlawn Trustees, Inc.
- Delaware Greenways, Inc.
- Westover Hills Resident
- Westover Civic Association
- Board of Directors – Fairthorne
- Harriet Tubman Underground Railroad Byway Coordinator
- Centerville Civic Association
- Delaware Nature Society
- Delaware Tourism Office
- Delaware Economic Development Office
- Longwood Gardens
- Brandywine Conservancy
- City of Wilmington
- Delaware Museum of Natural History
- Inn at Montchanin Village & Spa
- Greater Wilmington Convention and Visitors Bureau
- First State National Historical Park

CHAPTER 1: INTRODUCTION

BACKGROUND

In September of 2005, the Brandywine Valley National Scenic Byway became the first designated National Byway in the State of Delaware. The 12.25-mile Byway corridor contains some of the most beautiful and historically significant roads and scenery in Delaware.

The Byway is comprised of the Kennett Pike (Route 52) and Montchanin Road (Route 100) corridors, extending from Rodney Square in downtown Wilmington, Delaware, north to the Delaware-Pennsylvania border. The Byway is composed of three major sections, which are: (1) The

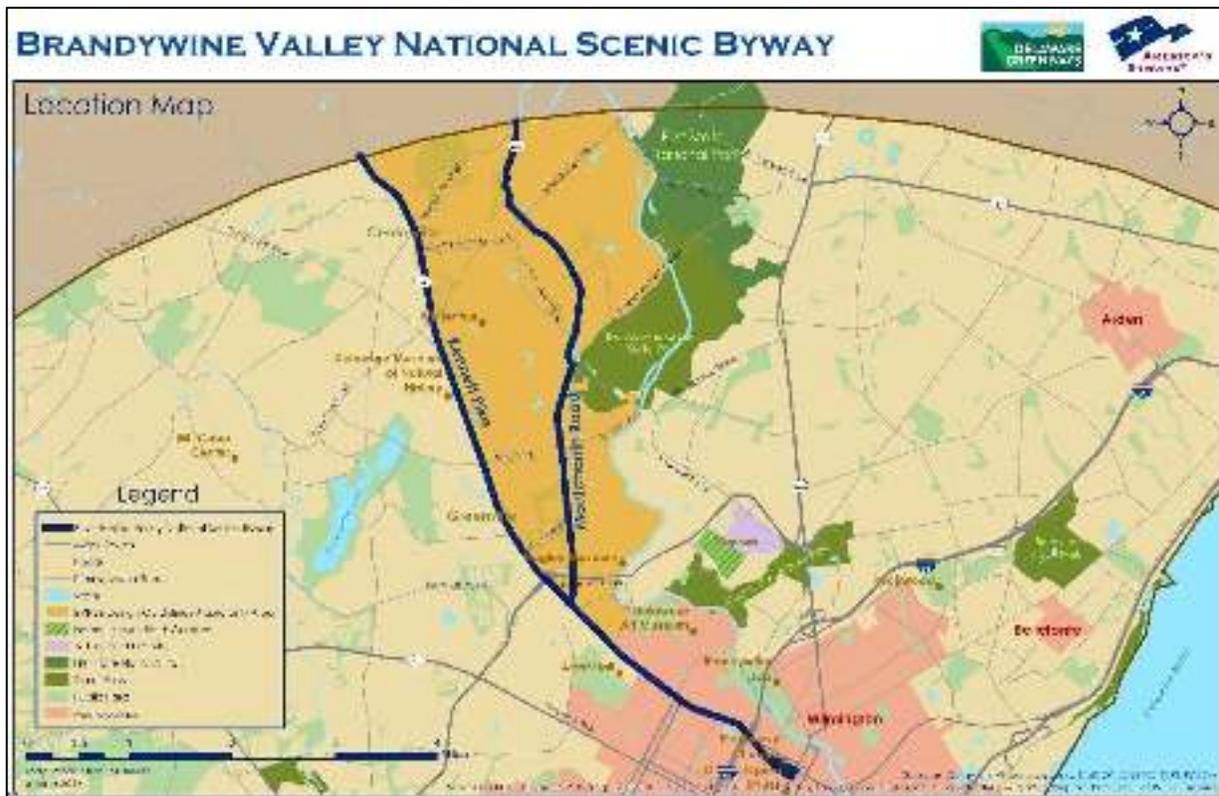


Figure 1: Location Map

City of Wilmington (lower Route 52 from Rodney Square to Rising Sun Lane), (2) Kennett Pike (upper Route 52 from Rising Sun Lane to the Pennsylvania border) and (3) Montchanin Road (Route 100 from Kennett Pike to the Pennsylvania border). For the purposes of the Scenic Conservation Plan, only the Kennett Pike and Montchanin Road sections will be addressed, as the section within the City of Wilmington faces significantly different issues and challenges to scenic conservation. Figure 1 shows the portion of the Brandywine Valley National Scenic Byway covered by the Scenic Conservation Plan.

THE PURPOSE OF THE SCENIC CONSERVATION PLAN

The Byway Corridor Management Plan produced a set of goals and identified associated objectives and action steps to facilitate sustainable management of the Byway. The Scenic Conservation study and planning process was initiated out of concern for maintaining the intrinsic qualities of Delaware's Brandywine Valley Byway corridor in light of potential development. The final product of this work will be the Scenic Conservation Plan, which will identify a path forward as a series of recommendations to protect and preserve the beauty and accessibility of the Byway corridor and its landscapes, while providing for sustainable growth and development. The planning process began in September 2010, and was suspended in 2013 so that a separate but related study, called the Greenville Village Study, funded under a separate Byways Grant, could 'catch-up'.

Prior to the suspension of the Scenic Conservation Plan study effort, four basis reports have been prepared. They are:

1. The Existing Conditions Report dated February 2011
2. The Viewshed Analysis Report dated January 2011
3. The Trend Scenario Report dated September 2011
4. The Travel Demand Report dated June 2013



This aerial view of Kennett Pike shows the beautiful landscape enjoyed by residents and visitors alike. The goal of the Scenic Conservation Plan is to permanently preserve such iconic views.

The four completed reports paint a picture of the future of the study area if the status quo is maintained. This report builds upon the final report and develops a path forward that addresses the identified challenges.

The Scenic Conservation Plan has three main goals:

1. to maintain the character and experience of the Byway corridor;
2. to protect property values; and,
3. to provide safe, convenient access to the Byway corridor amenities and resources for residents, businesses and visitors.

PREVIOUS PLANNING INITIATIVES

The Plan builds upon previous planning initiatives.

- *The Brandywine Scenic River and Highway Study* (New Castle County, 1987). This study, sponsored by New Castle County, formally documented the natural beauty and historical

significance of the Brandywine Valley. It became one of the guiding documents for all subsequent planning in the Brandywine Valley undertaken by New Castle County.

- *Brandywine Valley National Scenic Byway Corridor Management Plan* (Delaware Greenways, Inc., 2005). Once the Brandywine Valley National Scenic Byway was awarded state designation, Delaware Greenways, in conjunction with WILMAPCO and DelDOT developed a comprehensive plan to preserve the beauty and intrinsic resources of the Byway Corridor. The goals and recommendations of the Corridor Management Plan provide the guidance for the Scenic Conservation Plan. Specifically, the Corridor Management Plan (CMP) documented the resources of the Byway Corridor and developed goals, objectives and recommendations for the management and preservation of the Byway. It also suggested actions to be taken by government and by Delaware Greenways to manage the roadways and surroundings of the Byway. The Scenic Conservation Plan is being developed in direct response to Goal 3 of the CMP:

*“to establish a **collaborative, interdisciplinary approach** to developing and implementing all future transportation projects along the byway, involving all stakeholders to ensure that transportation projects are in harmony with the byway communities; **to preserve and enhance environmental, scenic, aesthetic, and historic resources while enhancing safety and mobility...**”*

- *Scenic Stewardship: A Plan to Preserve and Enhance the Landscape of the Brandywine Valley Scenic Byway* (2005). This Plan developed landscape design standards for the Byway Corridor.

While the New Castle County Comprehensive Plan and associated implementing ordinances are comprehensive, development, alien to the character of the villages and landscapes is still possible despite those planning initiatives and guidance from the other existing documents. Left alone, development will lead to an increase in unsustainable traffic that will inhibit the mobility of residents and visitors and limit the ability to access and enjoy the Byway and the surrounding valley. Threats to the Byway Corridor and to the entire Valley thus remain, and must be addressed by additional measures.

Because land use patterns and the resultant movement of people, goods and services affect the Byway, the Scenic Conservation Plan has been developed with an emphasis on the importance of integrating land use and transportation. The Plan development process focuses on the land use, scenic resources, and roadways that make up the Byway Corridor.

A Conservation Plan provides a management structure, policies, and implementation tools that will protect and preserve the essential beauty and function of the Brandywine Valley and the Brandywine Valley National Scenic Byway.

Ultimately, the Plan will guide:

1. Maintenance of the character and experience of the Byway
2. Preservation of land values
3. Provision of safe, convenient access for residents, businesses, and visitors

CHAPTER 2: SIGNIFICANT EVENTS SINCE 2013

Since the suspension of the study in 2013, there have been noteworthy events and initiatives that affect the Scenic Conservation Plan.

1. Designation of the First State National Historic Park
2. Completion of the 2012 Update of the New Castle County Comprehensive Plan and the follow-up project to update the County's Unified Development Code
3. Greenville Village Study undertaken in cooperation with DelDOT, the New Castle County Department of Land Use and the Brandywine Valley National Scenic Byway Partnership
4. The Design Guidelines Project of the Brandywine Valley National Scenic Byway Partnership and the corollary effort of the Red Clay Byway Commission to develop Design Guidelines and the upcoming effort to marry the guidelines together undertaken by New Castle County

THE FIRST STATE NATIONAL HISTORIC PARK

After many years of effort, two initiatives came together to designate a National Park in Delaware, the only state heretofore without one. Led by Senator Thomas Carper, the

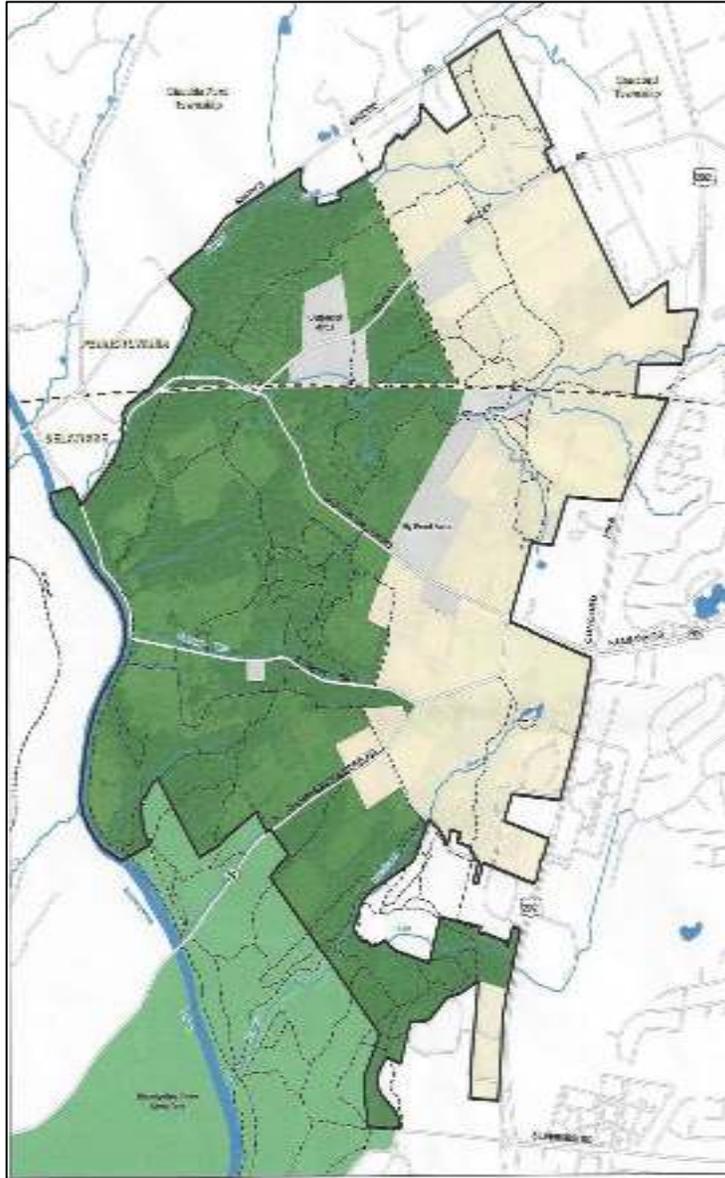


Figure 2: Woodlawn Tract Purchased for the First State National Monument. The subject lands are shown in dark green. The lighter green depicts a portion of the Brandywine Creek State Park and the lands within the black border depict the lands still owned by the Woodlawn Trustees and still available for development.

State's Washington Legislative Delegation convinced President Barack Obama to designate a National Monument in Delaware. The initial proposal for the First State National Monument would designate historic sites in New Castle, Dover and in Lewes. On a parallel tract, the Conservation Fund, under the leadership of Blaine Phillips, collaborated with the Mt. Cuba Center to purchase 1,500 acres of land from the Woodlawn Trustees. This land was the center of attention and one of the primary reasons for the initiation of the Scenic Conservation Plan. Figure 2 illustrates the Woodlawn property purchased for the First State National Monument. Subsequently, in 2015, Congress designated the Monument as the First State National Historical Park.

2012 COMPREHENSIVE PLAN UPDATE

The New Castle County Department of Land Use, as required by Delaware Law, has updated the County Comprehensive Plan. The updated plan will be in effect until 2022. The Comprehensive Plan provides the blueprint for future development and redevelopment in New Castle County. Changes to the Unified Development Code, re-zonings, and capital programs must all be reviewed within the context of conformity with the Comprehensive Development Plan.

UNIFIED DEVELOPMENT CODE REVISIONS (UDC)

The UDC revisions are what put the 2012 Comprehensive Plan Update into practice. Work on the UDC updates is continuing, although at this writing, it is clear that the coordination with the County's Department of Land Use by the Byway Partnership has had an impact on the UDC Revisions. Currently, the County is progressing two elements that will make a substantial difference to the Brandywine valley National Scenic Byway. The first is in the Guiding Principles that implement the community's vision for the future by providing guidance for development and redevelopment. These Principles are designed to maintain the community's character, protect neighborhoods, manage transportation systems, and encourage sustainable development in a suitable manner that ensures a high quality of life. These principles are specifically intended to:

- Address a variety of situations, such as transit oriented corridors and suburban commercial centers.
- Establish a vision that is appropriate to the pattern of growth and the County's future land development policies.
- Streamline the approval process and increase certainty for both the applicant and surrounding neighborhoods

The Guiding Principles Document can be found at the following link to the New Castle County website document center: <http://www.nccde.org/DocumentCenter/View/12109>

The second element is the Neighborhood Preservation Overlay. This overlay is available to neighborhoods to encourage economic development, placemaking, and healthy communities in a way that protects the character of existing residential neighborhoods. The amendment creates new standards for establishing neighborhood regulations, focusing on broad characteristics that provide neighborhood character including, but not limited to, building height, setbacks, massing, open space, and streetscape elements. A Neighborhood Preservation Overlay designation is primarily

intended for neighborhoods dealing with issues of incompatible infill and structural alteration that could drastically change the appearance of residential neighborhoods and/or the streetscape. The neighborhoods along the Brandywine Valley National Scenic Byway can be expected to benefit by taking advantage of this new overlay.

GREENVILLE VILLAGE STUDY

Except for the Village of Greenville, the Brandywine Valley has retained its rural character and most of its iconic viewsheds.

Greenville is an enclave of suburban commercial strip centers, single-family housing, schools and office buildings. Although the area is largely well maintained, it is not walkable, does not contain the visual character of the other villages in the Valley, and can easily fall into more intense development that would leave it as any other generic suburban area. The Greenville Study was undertaken in coordination with DelDOT and the New Castle County Department of Land Use. The study area of the Greenville Village Study is shown in Figure 3.

The objectives of the Greenville Village Study are:

- To enhance and protecting the Scenic Byway
- To ensure that the character and form of future development is reflective of and compatible with a broadly supported community vision



Figure 3: Greenville Village Study Area. The Study Area for the Greenville Village Study was chosen by the participants of the First Public Meeting for that study. Note that it overlaps with the study area for the Scenic Conservation Plan and actually extends further west into the Red Clay Valley. (National Park not shown)

- To provide accessibility to services, recreation, and schools
- To create a multi-modal, safe, and livable commercial and surrounding area
- To ensure the strength and vitality of community's center

The main product of the Greenville Village Study will be a set of design guidelines for the village. A separate report for that study will be prepared detailing the results of the effort.

DESIGN GUIDELINES

The Brandywine Valley National Scenic Byway Partnership has been leading the effort to establish Design Guidelines covering land development and redevelopment in the Brandywine Valley and for the Brandywine Valley National Scenic Byway. The Byway Partnership Design Guidelines Committee, the Greenville Village Study, and the corollary effort of the Red Clay Byway Commission to develop Design Guidelines have been underway. The advocacy of the Partnership to have the County marry all the efforts together has taken root and the effort by New Castle County represent perhaps the most significant development arising from the continued coordination and advocacy led by the Brandywine Valley National Scenic Byway Partnership.

The Design Guidelines for the Brandywine Valley National Scenic Byway are fully described in the report for the Greenville Village Study Report. The guidelines, as recommended by the Brandywine Valley National Scenic Byway Partnership, cover the following:

- Building Heights
- Building Setbacks
- Signage Dimensions
- Signage Illumination
- Number and Colors of Signs
- Utility Fixtures
- Utility Lines

In addition, the Greenville Village Study will supplement the Guidelines recommended by the Partnership.

CHAPTER 3: THE EXISTING SITUATION

INTRODUCTION

This chapter consists of a description of the land use and zoning, demographic, transportation, and viewshed features of the approximately 16,000 acres (25 square miles) that make up the study area

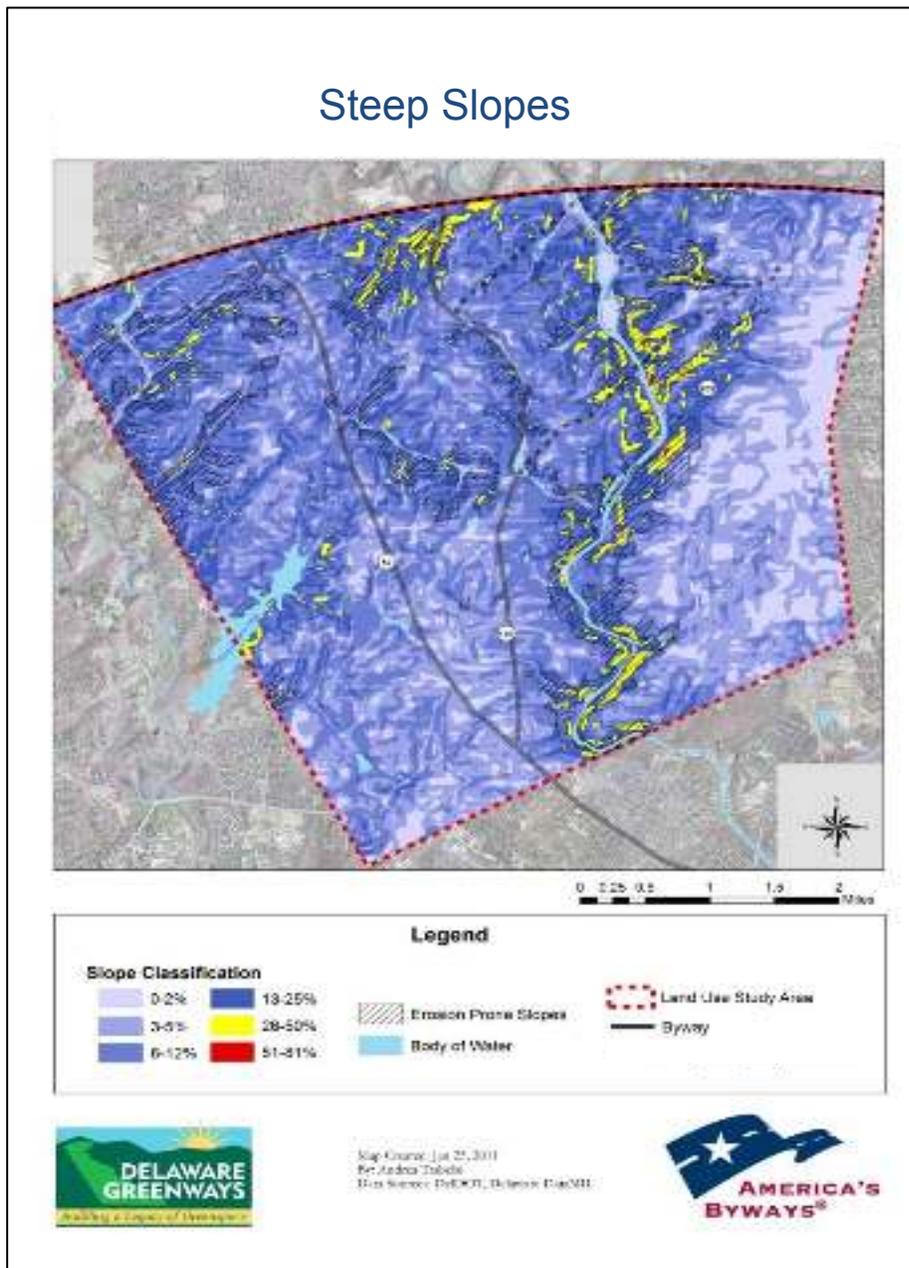


Figure 4: Steep Slopes within the Study Area

The existing conditions addressed include geography, natural features, land uses, zoning, and infrastructure.

LAND USE AND GEOGRAPHY

The Brandywine Valley is comprised of undulating hills, which are increasingly steep and variable as one travels northward. Figure 4 shows the grade of the land (in percent slope) in the study area. Steep slopes (slopes greater than 25%) are the areas highlighted in red and yellow on the map. Concentrations of steep slopes occur in the northern section of the study area, particularly along Montchanin Road, along the Brandywine Creek, and to a lesser degree along tributaries of the Brandywine Creek and other water bodies. In addition, the map also

shows erosion prone slopes, which are locations where development is riskier because of potential

for slope failure. Erosion prone slopes are also sources of water degrading silt and suspended solids.

Slopes of greater than 25% cannot be built upon and the amount of building is significantly reduced in areas of slopes of between 15% and 25%. Most of the steeper slopes are along the Brandywine Creek. Other areas with steep slopes are clustered around Route 100 and located near the Pennsylvania border along tributaries to the Brandywine Creek. Slopes between 6% and 25% can be considered 'rolling landscape' and cover 3,000 acres (19%) of the countryside and add landscape variation, contributing to the beauty of the study area.

WATER RESOURCES

The Brandywine Creek, flowing north to south, and roughly bisecting the study area, is a significant visual, cultural, and environmental resource. Figure 5 shows the Creek and other water resources in the study area as well as the protection areas for the water resources. The presence of the Creek both attracts development and puts limitations on it. Development in the New Castle County Unified Development Code generally does not allow development on a wetland, and allows only very low impact uses in any floodplain.

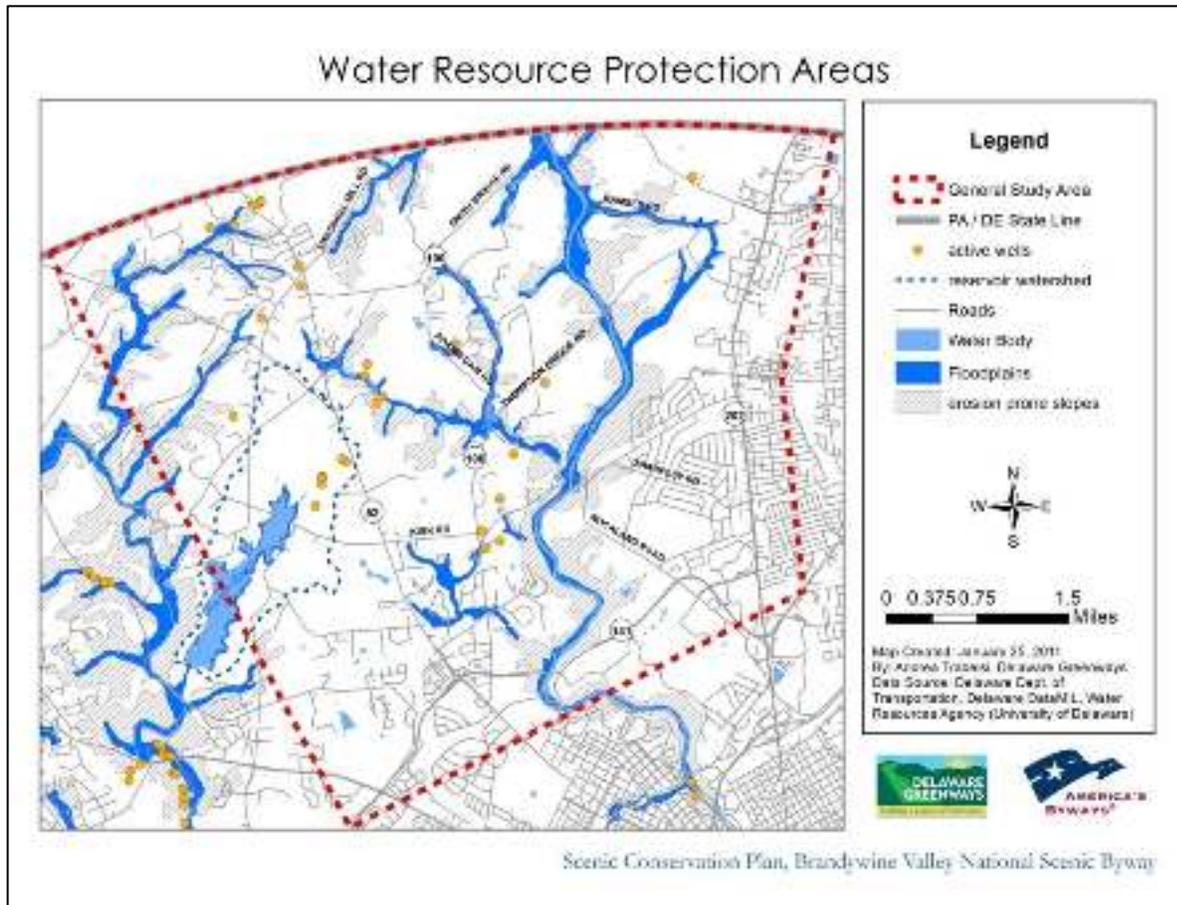


Figure 5: Water Resource Protection Areas

POPULATION

The Brandywine Valley area has some of the lowest population densities in northern New Castle

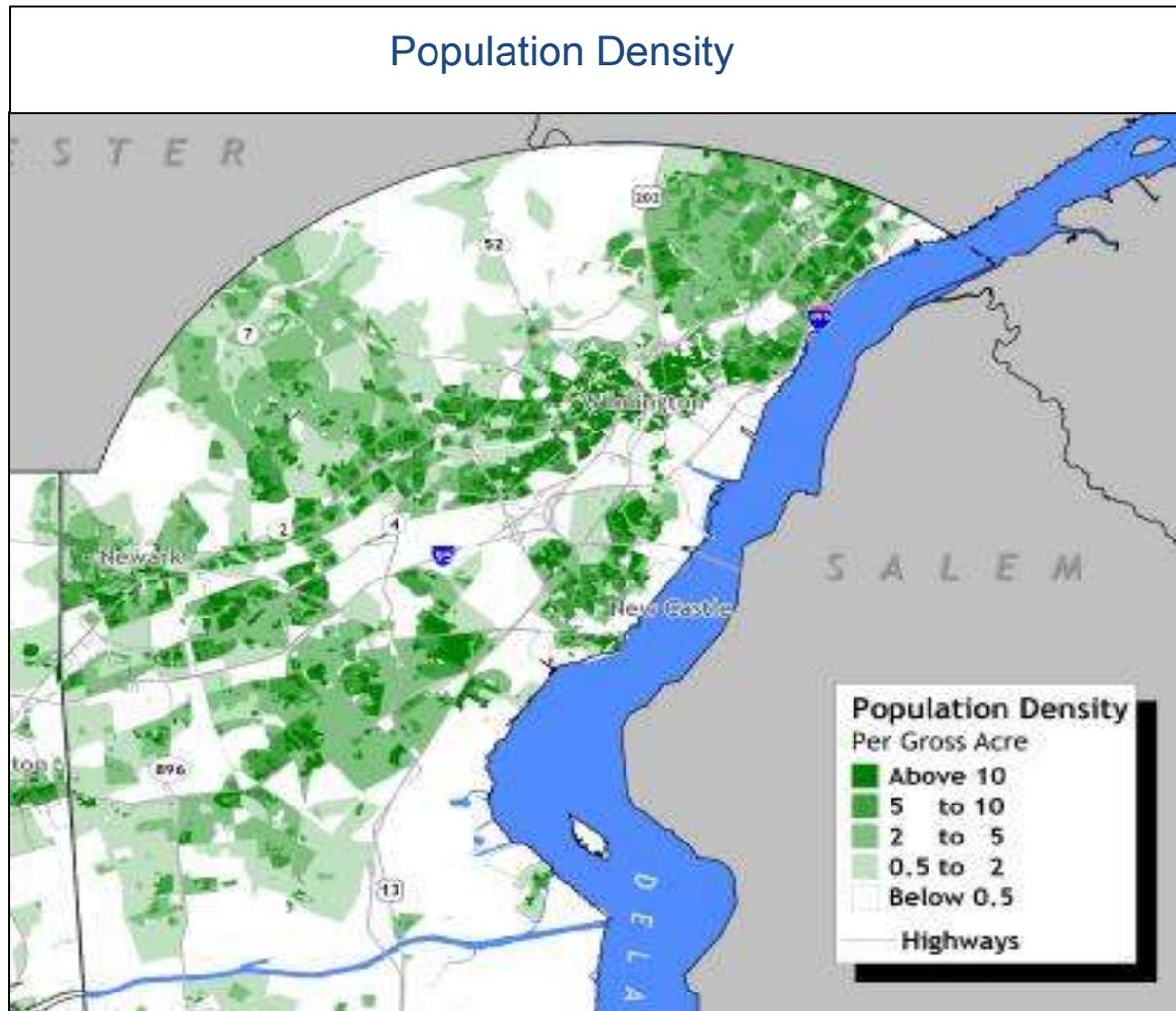


Figure 6: Population Density by Census Block (Source: WILMAPCO)

County. Figure 6 shows the population density by census block according to the 2000 U.S. Census. The average population density over the entire study area is roughly .75 persons per acre (1 person per every 1.3 acres). The population of the study area is approximately 8,8502. The figure indicates that the population is concentrated along Route 202 on the eastern edge of the study area, from Greenville in toward Wilmington, and in Centreville in the northwest section of the study area. Table 2.2-A further explains the current population and population density within the study area.

² Delaware Population Consortium estimate

The demographic makeup of the population in the study area differs from statewide and countywide averages. Residents of the study area tend to be older, wealthier, and have fewer individuals per household as compared to the county and the state.

The median age for the study area was 49.3, with approximately 80% of the population over 18 years old and 25% of the population over 65 years.

CURRENT ZONING

In New Castle County, there are 16 zoning classifications regulating development in the Unified Development Code (UCD). Each classification allows a major land use type, within which other acceptable auxiliary uses and building types are identified. Each classification has different bulk

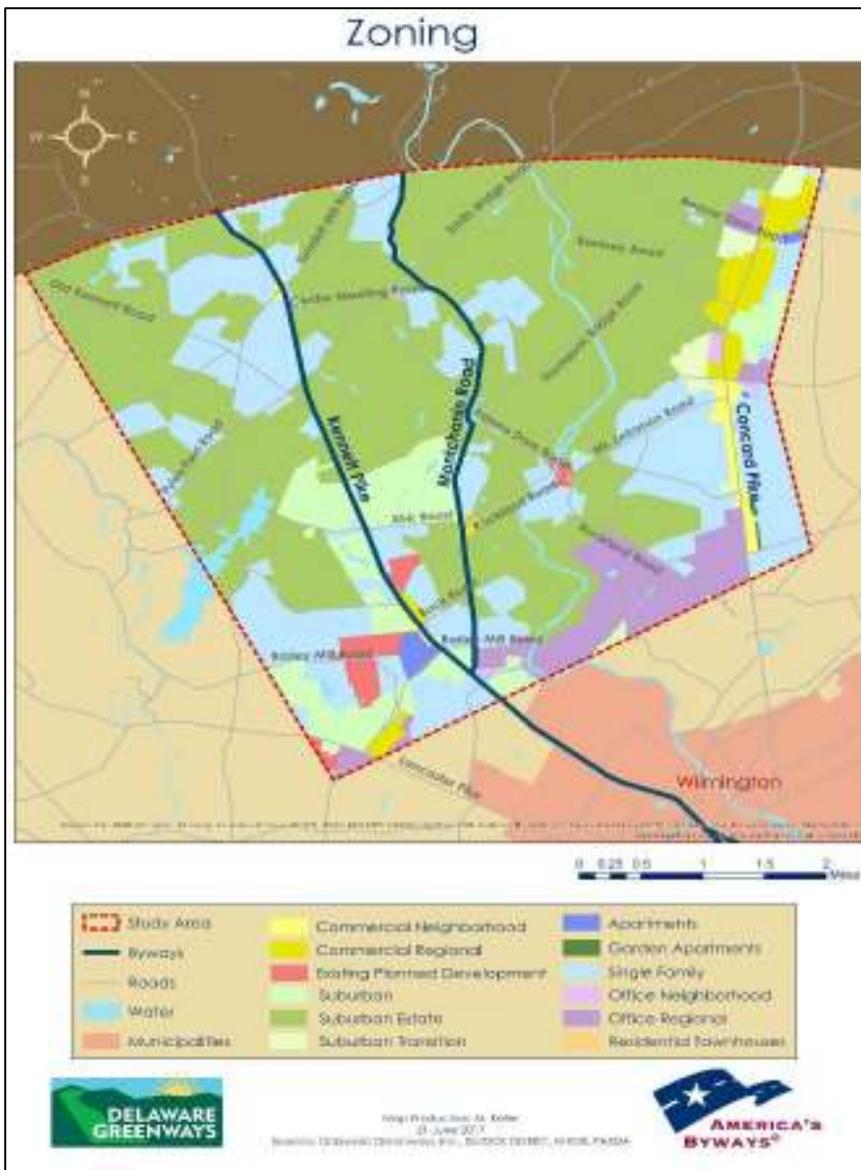


Figure 7: Current Zoning (as of 2013)

standards that control building placement, allowable building envelopes and identifies areas protected from development. Figure 7 illustrates the current zoning in the study area. Table 1 describes the various zoning districts of the Study Area.

An assessment of development that could occur by right in the study area based upon current zoning reveals that large residential towers are permitted by right in the commercial regional zone. Regional commercial development is permitted in Montchanin. Millions of square feet of office are permitted on a part of the DuPont Country Club and the hillside surrounding Granogue can be dotted with almost 300 houses. Throughout the Study Area, some 2,500 new

single-family houses and 2.4 million square feet of office space could be constructed by right, after deducting public lands, and other protected lands the areas restricted from building upon by the UDC.

Table 1: Description of the Zoning Districts in the Study Area

Zoning District	Purpose of the District
Suburban	This district permits a wide range of residential uses. This district includes all the newly developing areas designated as growth areas in the Comprehensive Development Plan.
Suburban Reserve	This district is intended to be served with sewer and water in the future and rezoned to Suburban when the sewer construction is imminent. The district is also designed to permit limited development that does not foreclose ultimate sewerage of the area. The preservation of large amounts of open space and agricultural land is encouraged in this district and such land may be used for spray irrigation.
Suburban Estate	This district is not serviced by sewer, and is not planned for sewer service in the future. Some areas may have public water available. The development pattern is planned for full buildout.
Commercial Neighborhood	The scale and intensity of the development is regulated to ensure that uses primarily serve the surrounding residential neighborhoods
Commercial Regional	This district is intended to provide for community and regional commercial services. Its character is suburban transition.
Suburban Transition	This district provides for high quality moderately high-density development with a full range of residential and limited nonresidential uses.
Office Neighborhood	This district is intended to provide for professional and administrative offices in a park-like setting whose character is suburban transition.
Office Regional	This district is intended to accommodate large regional employment centers that are primarily office employment together with support type uses.

Source: New Castle County Unified Development Code

HISTORIC AND CURRENT LAND USE

Land use patterns in the Brandywine Valley have remained relatively the same as what they were 30 years ago, as reported in the 1987 New Castle County Brandywine Valley Scenic River and Highway Study. Table 2 shows the amount of different land uses in the study area.

Table 2: Land Uses in Study Area

Use	Area (acres)	Percent of Study Area
Industrial	70	0.5 %
Institutional/Governmental	100	0.6 %
Retail Sales/Wholesale/Professional Services	900	5.8 %
Single Family Dwellings	4,900	33.6 %
Multi Family Dwellings	160	1.0 %
Mixed-Urban/Other Urban/Built –Up Land	1,000	6.5 %
Recreational	1,350	8.7 %
Farmsteads/Farm-Related Buildings	500	3.2 %
Natural Areas/Farmland/Pasture	6,500	42.0 %
TOTAL	15,480	100 %

Development over the last half-century in the Brandywine Valley has been largely influenced by historic travel patterns, the area’s proximity to Wilmington, and the nature of land ownership. Development originally concentrated along the prime travel routes, Routes 52 and 202, and near Wilmington, and growth and development pressure remains strongest in those areas. Areas closer to the Brandywine Creek and to the northern portion of the study area have remained relatively

undeveloped, much the result of the large land holdings of several families, institutions, and businesses, which have held onto their property without significant subdivision as well as the lack of public sewer and water service. Figure 8 illustrates the patterns of land use in the study area. Aside from natural areas, farmland, and pastures, much of land use in the study area is single-family residential (33%). Most are homes located on one-acre lots or larger in suburban, cul-de-sac style subdivisions. Commercial, office, and industrial land uses make up roughly 6% of the study area and are concentrated near Wilmington and the US 202 corridor, Route 52 in Greenville, and at the intersection of

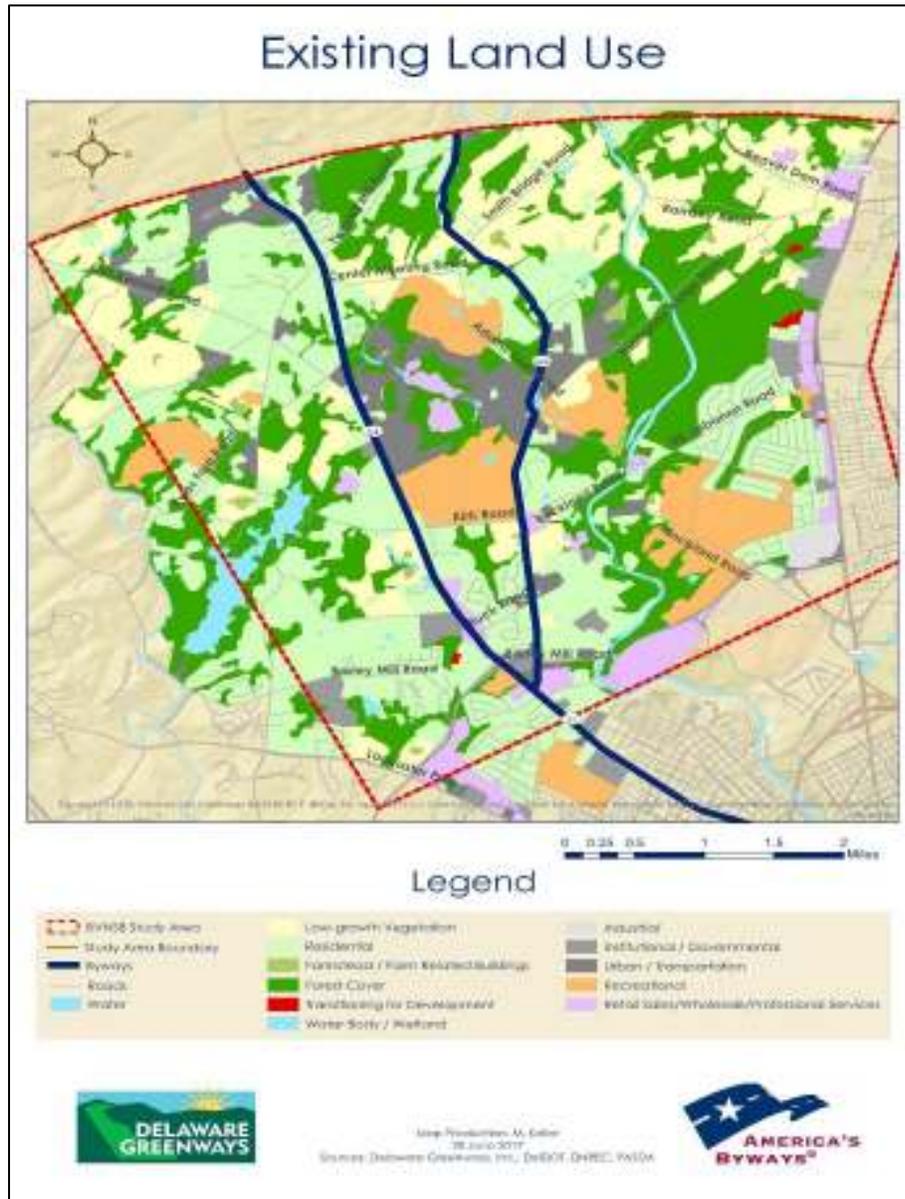


Figure 8: Existing Land Use

Delaware Routes 141 and 48. Centreville is also the location of several small retail stores and offices. The shopping center developments along US 202 serve a regional shopping market extending into Pennsylvania as well as northern New Castle County. Astra Zeneca and J. P. Morgan

Chase have major facilities on US 202. Along DE Route 141, DuPont has research and development facilities. The Nemours Children’s Hospital is also along the DE Route 141 corridor.

PROTECTED LANDS, PARKS, RECREATION, AND OPEN SPACE

Approximately 40 percent of the study area is made up of other natural areas and open space, much

of which is publicly owned or open to the public, as shown in Figure 9. The Brandywine Creek State Park and the First State National Historical Park consist of almost 2,000 acres within the study area. Roughly nine percent of the study area is used for recreational purposes, which includes private golf courses and other public parks oriented toward structured athletic activities, such as tennis or field sports.

There are 24 sites in the study area on the National Register of Historic Places and an additional 32 locations have been deemed historically significant by the Delaware Historical Society.



Figure 9: Protected Lands

ICONIC VIEWSHEDS OF THE STUDY AREA

A central characteristic of the Brandywine Valley's story is a tradition of landscape conservation. The rolling landscape of the Brandywine Valley made famous by the Brandywine School of artists and the Wyeths, has been preserved largely due to the efforts of prominent families such as the DuPonts and the Bancrofts.



An analysis was conducted to assess the quality of the existing landscape and identify the iconic viewsheds that delight visitors and residents alike.

In all, some 400 acres were classified as outstanding, 1,500 acres as distinctive and 800 acres as noteworthy. Review of the map indicates that the viewsheds with composite scenic value were generally located to the west of Route 52, along the Brandywine Creek and within the Byway Corridors.



Volunteers from the Byway Community gathered to field verify the viewsheds. The outcome from the field review verified the findings from the technical analysis: valuable views are scattered throughout the study area. Further, field day analysis volunteers brought to light the fact that most, if not all the scenery is of high value and worth preserving, and it is the views and landscapes *in aggregate* that make the Byway and its surroundings such a unique experience.



Views and vantage points identified through all resources consulted as well as during the field day are shown in Figure 10. It should be noted that each of the teams of volunteers noted that the view to Granouge from Smith Bridge Road was the most significant view. The other significant viewsheds were along the Brandywine River and are now part of the First State National Historical Park.

Many thanks to the volunteers who assisted with the Viewshed Analysis

CHAPTER 4: TRANSPORTATION

INTRODUCTION

The transportation study area is roughly defined as the area bound by Delaware Route 52 on the



Figure 11: Roads of Interest in the Study Area

west, US Route 202 to the east, the Pennsylvania-Delaware state line to the north, and Delaware Route 141 to the south. In addition to the Brandywine Valley National Scenic Byway (Route 52 and Route 100), special and contributing roads of interest include Smith Bridge Road, Ramsey Road, and Thomson Bridge Road, and other roads in the study area, which are highlighted in Figure 11.

ROADWAYS OF INTEREST

The following are the roadways of interest in the Scenic Conservation Plan study area. For a complete description of the roadways, see the Existing Conditions Report³.

³ Sources: DelDOT and Google Earth.



Kennett Pike near the Lower Brandywine Presbyterian Church

Delaware Route 52 (Kennett Pike), a roadway of the Brandywine Valley National Scenic Byway, is a two-lane roadway, except in Greenville, where it is a divided roadway with two 12-foot travel lanes in each direction. Kennett Pike also passes through the historic village of Centreville.

Delaware Route 100 (Montchanin Road), the second roadway of the Brandywine Valley National Scenic Byway, is a two-lane roadway with 10-foot travel lanes in each direction. Montchanin Road passes through the village of Montchanin and provides access to the Brandywine Creek State Park and the First State National Historic Park.



Montchanin Road looking toward the rear of Winterthur.

Delaware Route 92 (Thompson Bridge Road) is a two-lane roadway with 10-foot travel lanes in each direction. Land uses are generally rural in nature. Thompson Bridge Road is a gateway to the Brandywine Creek State Park.

Buck Road is a two-lane roadway with 10-foot travel lanes in each direction except in Greenville as it approaches Route 52 where it is three lanes wide and curbed. Land uses along its length are commercial in Greenville and suburban residential elsewhere.



Thompson Bridge Road passes through beautiful farmland.

Rockland Road is a two-lane roadway with two 10-foot travel lanes in each direction.

Smith Bridge Road is a 20-foot wide two-lane roadway with 10-foot travel lanes in each direction. It passes through the rural countryside by a mix of estates and small houses. It crosses a covered bridge near the Pennsylvania Line.

Twaddell Mill Road has a pavement width of 18 feet. It is striped with two nine-foot travel lanes. Land uses adjacent to it are rural in nature and the roadway.

Adams Dam Road has two sections. The first section is between Mt. Lebanon Road and Thompson Bridge Road. This section is a 20-foot wide, two-lane roadway and connects to the Brandywine



Smith Bridge located on Smith Bridge Road

Creek State Park. The travel lanes are 10 feet wide. Along this section, land uses are residential homes on large lots. The second section is between Montchanin Road and Center Meeting Road. It is also a 20-foot wide road with two 10-foot lanes. Land uses along this section are generally suburban residential as well as a golf course.

Beaver Valley Road is a two-lane road with a variable paved width of between 18 and 22 feet. There are no shoulders. There is a short section of the road in Pennsylvania but still maintained by the Delaware Department of Transportation. Land uses along its length are generally rural with office developments at its intersection with US 202. It passes through the First State National Historical Park.



Center Meeting Road near Biderman Golf Club

Center Meeting Road is a two-lane road with a pavement width of 20 feet. Land uses along its length are generally rural in nature except as it approaches Centerville where it takes on a village atmosphere with smaller buildings.

Creek and Ramsey Roads are both 18-foot wide two-lane roads. Land uses along its length are rural in nature. It passes through the First State National Historical Park



Ramsey Road in the First State National Historical Park

TRAFFIC VOLUMES

Average daily traffic is a measure of how much traffic uses the roadways of the study area. Figure 12 illustrate the average daily traffic volumes. As shown in the figure, the most heavily traveled roadway is US 202, Concord Pike, which carries an average of 50,000 vehicles per day. Route 141 carries about 19,000 vehicles per day while Route 52 carries 17,000 and 11,000 vehicles per day in Greenville and Centerville, respectively. Route 100 carries 14,000 vehicles per day near Route 141 and Route 92 but steadily decreases as it makes its way north to Pennsylvania. At the Pennsylvania line, it carries just 1600 vehicles per day. Similarly, Route

92 carries about 8,000 vehicles per day. The remaining roadways in the study area carry about 2,000 vehicles per day.

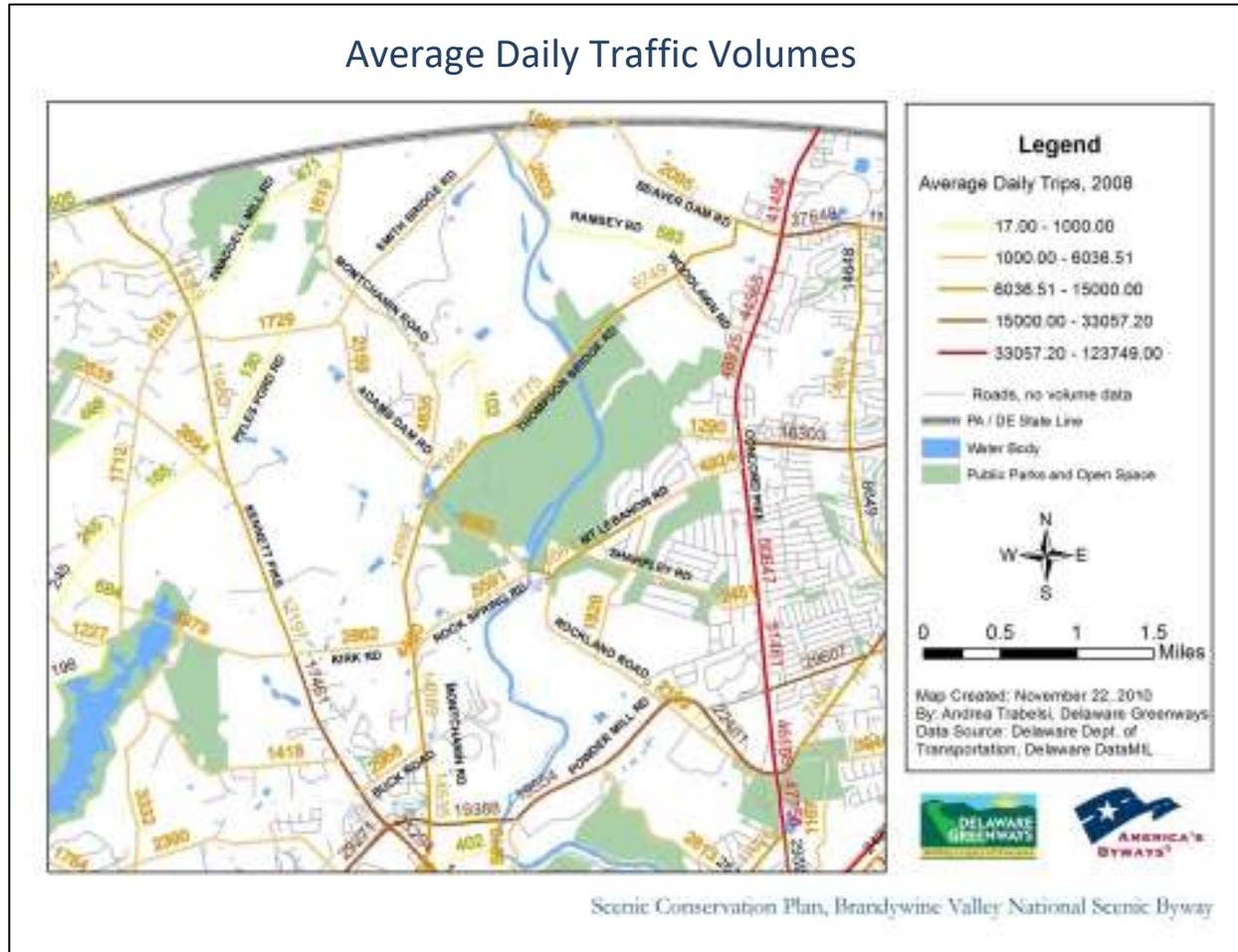


Figure 12: Average Daily Traffic Volumes

CRASH SUMMARY

Between 2007 and 2009, on the study area roadways, there were 1,243 crashes, 63 crashes with injuries and 5 crashes with fatal injuries. There were also five pedestrian involved crashes. Figure 13 illustrates the location of the crashes. Table 3 illustrates the crashes by roadway, ranked by the number of crashes. As would be expected, Route 202 accounted for 726 (58%) of the study area crashes. Route 52, Kennett Pike accounted for 178 crashes, about one fourth of the total crashes that occurred on Route 202. However, taken together, Routes 202 and 52 accounted for 72% of the total study area crashes. The Brandywine National Scenic Byway consisting of Routes 52 and 100 accounted for 292 crashes or 23% of the crashes.

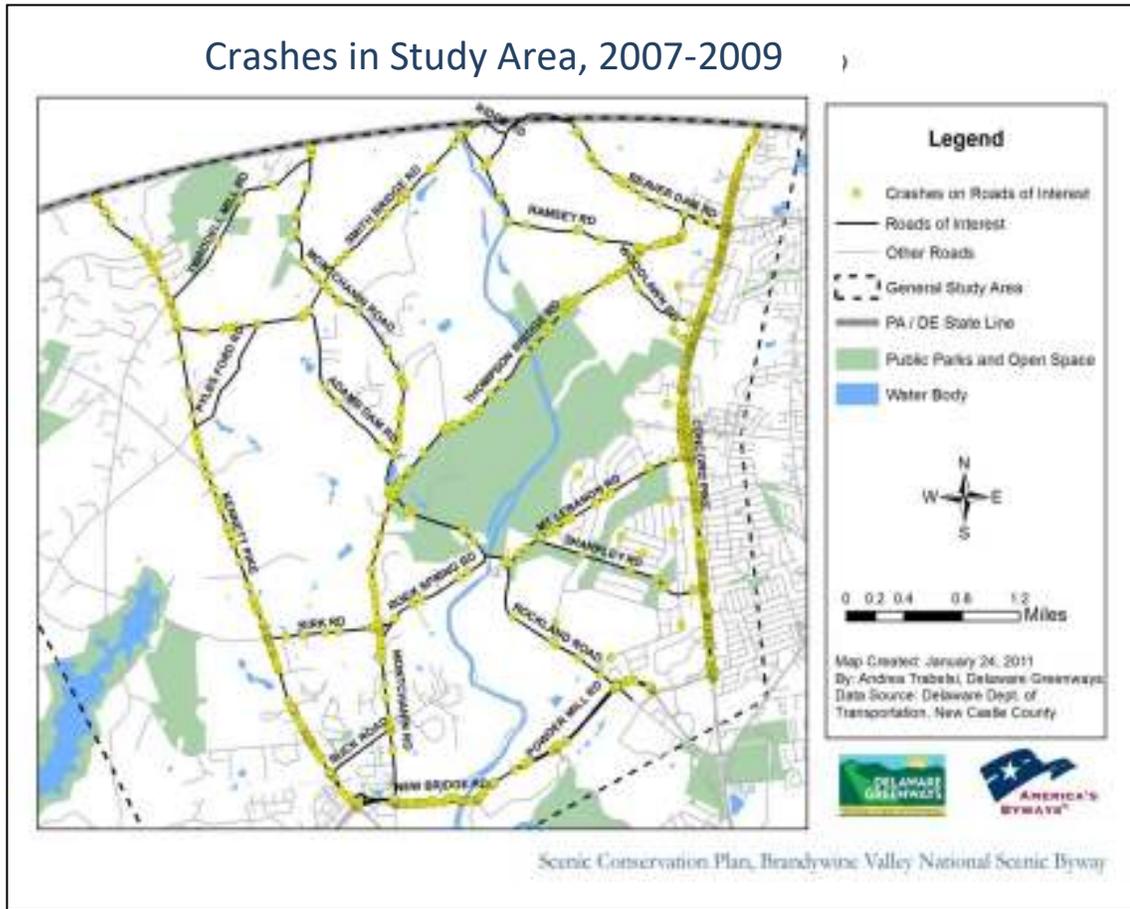


Figure 13: Study Area Crashes

Table 3: Crashes by Roadway

Roadway	Total Crashes	Injury Crashes	Fatalities Crashes	Pedestrian Crashes
Route 202	726	32	1	4
Route 52	178	10	1	1
Montchanin Road	114	4	0	0
Thompson Bridge Road	72	4	0	0
Route 141	51	4	2	0
Mt Lebanon Road	22	0	0	0
Ramsey and Creek Roads	17	3	0	0
Beaver Valley Road	15	3	0	0
Rockland Road	13	0	1	0
Smith Bridge Road	13	1	0	0
Center Meeting Road	7	0	0	0
Adams Dam Road	7	1	0	0
Kirk Road	5	1	0	0
Twaddle Mill Road	3	0	0	0
Buck Road	0	0	0	0
Totals	1,243	63	5	5

BICYCLING AND WALKING IN THE STUDY AREA

A recently completed analysis by Delaware Greenways produced the map shown in Figure 14. Shown on the map are the streets and roadways that are pedestrian and bicycle friendly. Although the assessment covered a much larger geographic area, most of the roadways within the study area are classed as less friendly for bicyclists and pedestrians. The Brandywine Valley National Scenic Byway roadways of Kennett Pike and Montchanin Road are classified respectively as “more friendly” for Kennett Pike and “less friendly” for Montchanin Road.

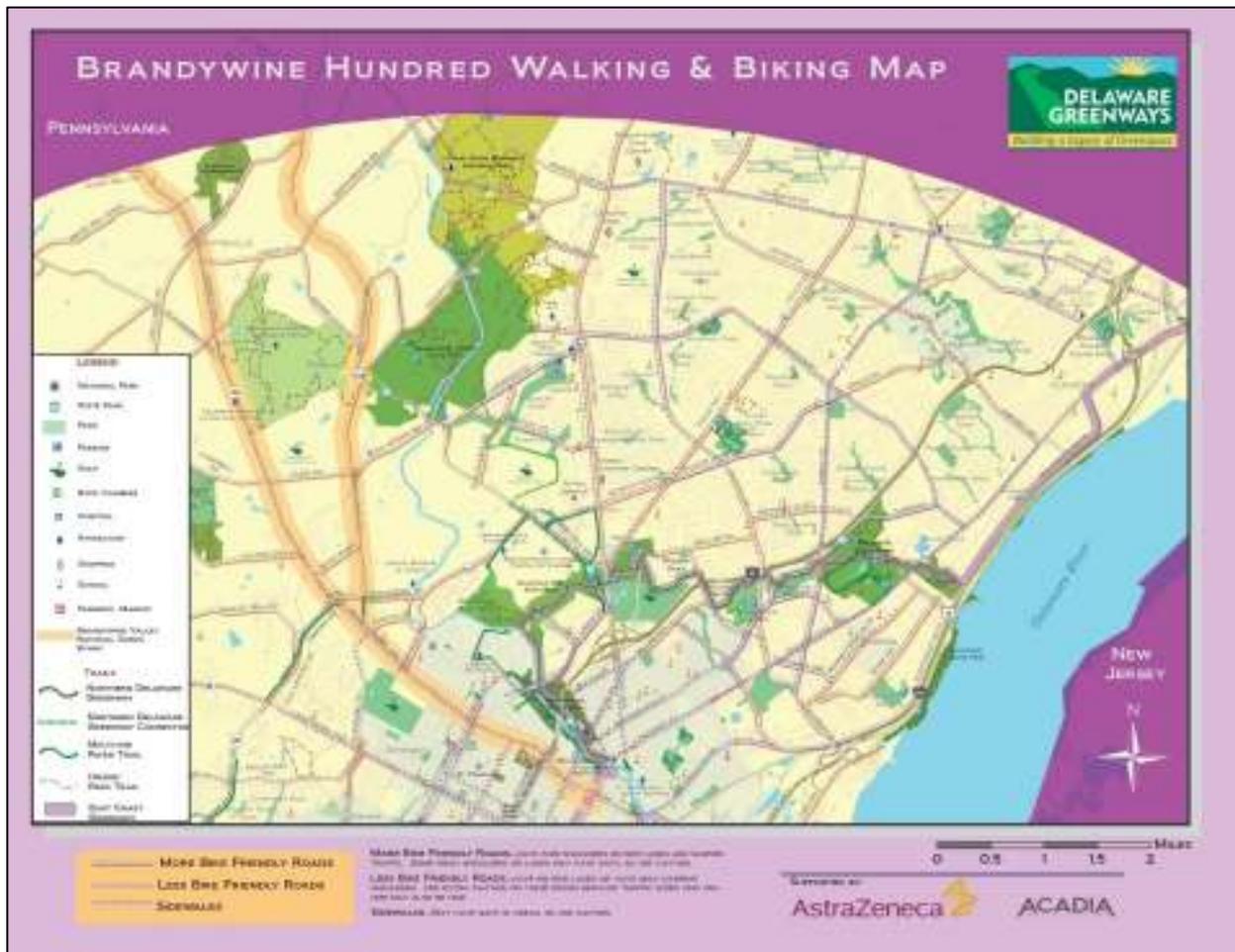


Figure 14: Study Area Pedestrian and Bicycle Network. Source: Delaware Greenways: http://delawaregreenways.org/portfolio_page/brandywinehundredwalkingmap/

PUBLIC TRANSPORTATION FACILITIES

Within the Brandywine Valley study area, Delaware Authority for Regional Transit (DART) operates four fixed route bus lines. Routes 2 and 35 runs along Concord Pike with service every 30 minutes throughout the day light hours. Route 10 which travels along Route 52 is essentially a peak period

service with 20-minute service during the morning peak hours and 30-minute service in the evening peak hours with sporadic service throughout the day. Route 28 operates limited service to Astra-Zeneca and the DuPont Experimental Station during peak hours.

CHAPTER 5: FUTURE PROJECTIONS

INTRODUCTION

The purpose of this chapter is to assess what would happen over time to a given study area if current trends and management practices continue. Any forecast is based on a number of assumptions, which relate to key variables that influence development: government regulations and policy; employment and population growth rates; environmental conditions; and, most significantly, the decisions of individual property owners. Details regarding the projections can be found in the Trend Scenario Report. The projections are for the year 2040.

The main assumptions used in the projections are:

- current zoning regulations will largely remain in place;
- growth, including population and employment, will continue largely as it has in the past; tempered only by market conditions;
- builders and developers will continue to build as they have in the recent past, and;
- the byways program never existed.

The projections of development were prepared using the following process:

1. Develop a maximum build-out scenario in which 100% of all entitlements⁴ are built.
2. Assess population and employment projections and refine the projections for the study area.
3. Determine the number of entitlements under current zoning and development practices required to accommodate the refined population and employment projections.
4. Identify the locations most likely to be developed between now and the study year of 2040 and distribute the entitlements that will accommodate the population and employment projections across the most likely to be developed parcels of land.

DEVELOPMENT POTENTIAL

Figure 15 shows the developable land and the maximum number of dwelling units (residential zones) or the maximum floor area (non-residential zones) developable on a parcel. In total, approximately 2,500 dwelling units may yet be developed in the study area and an approximately 2.4 million square feet of non-residential space may be developed under current zoning regulations.⁵⁶ The residential parcels do not consider the possibility of density bonuses for open

⁴ New Castle County's Unified Development Code (UDC) determines the number of entitlements that run with each parcel of land. An entitlement is defined as what can be built on a given parcel of land under its zoning classification. For example, a two-acre lot in the suburban estate zone is permitted one dwelling unit. That dwelling unit would be considered an entitlement.

⁵ Non-residential building square footage calculation based on existing sample parcels and UDC bulk density calculation guidelines.

⁶ At the time of this assessment, Barley Mill Plaza was considered a 'developed' parcel as it was the subject of a development plan review with a build-out of 1.6 million square feet of space. It is not included in the

space preservation or other possible variations that may be applied under the current UDC. (Open space development does not apply to non-residential parcels.) Notably, the non-residentially zoned parcels that are deemed available for development are almost all located along Routes 202 and 141.

The portion of the DuPont Country Club along Route 141 represents approximately 40 % of the non-residentially zoned parcels in allowable building square footage.

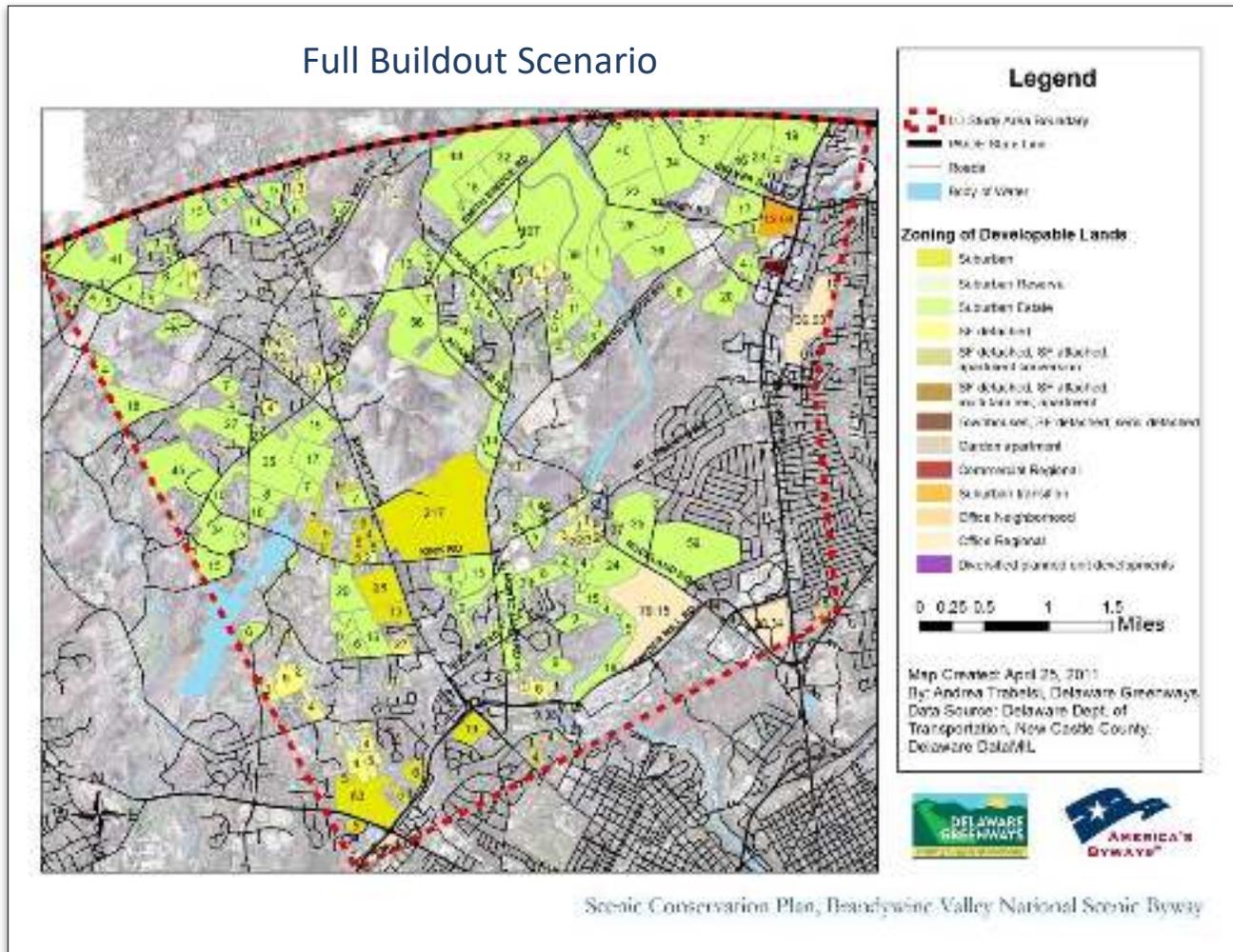


Figure 15: Buildout Scenario. The numbers in the parcels of lands shown in the map are the number of either dwelling units or square feet of building space.

PROBABILITY OF DEVELOPMENT

Not all development will occur in the foreseeable future. However, by 2040, the population of the Valley is projected to increase by 555 people and the number of employment opportunities is

amount of non-residential land available for development. Currently, beyond the approved plan for the Odyssey School, there are no active plans under consideration.

anticipated to increase by 1,538 leaving the question which parcels are most likely to be developed. While no one can read the mind of the property owners who would sell their holdings to a developer or anticipate how a developer would use the UDC to develop a property, some properties are more likely to be developed than others. Major factors guiding development and accounted for in the UDC are:

- Community water and sewer service. Lack of sewers has traditionally severely limited development in the study area
- Natural Features that limit developability such as steep slopes, stands of mature trees and wetlands
- Attractive options provided to developers in the UDC such as open space preservation in which a developer is permitted more units in exchange for preserving land or clustering provisions.
- Access to major roadways

Based upon an examination of WILMAPCO projections and an assessment of projections in the nearby townships in Pennsylvania (See the Trend Scenario Report for details), a growth rate of 0.43% per year, there will be an increase of 1,177 people and 884 new dwelling units by the year 2040 in the study area.

Projections of future employment are shown in Table 4.

Table 4: Employment Projection Summary

Component	Projected New Jobs
WILMAPCO Employment Projections w/o Barley Mill Plaza	555
Barley Mill Plaza at 1.6 million square feet (See footnote 5)	983
Total	1,538

In the Trend Scenario Report, several scenarios were examined, including conventional development where no developers utilized open space preservation options in the UDC and a separate scenario where the developers took advantage of the open space preservation options. It was concluded, however, that it is difficult to predict what a developer might do. For the Scenic Conservation Plan to be successful there must be strategies to direct development and control the type and density of development such that the most scenic lands not yet preserved can be preserved and the property owners retain the value of their entitlements.

Of the parcels of land that are undeveloped or could accommodate additional development, some are more likely developed than others are. Figure 16 shows which parcels are more likely to see development based upon an assessment of accessibility, availability of utilities and zoning.

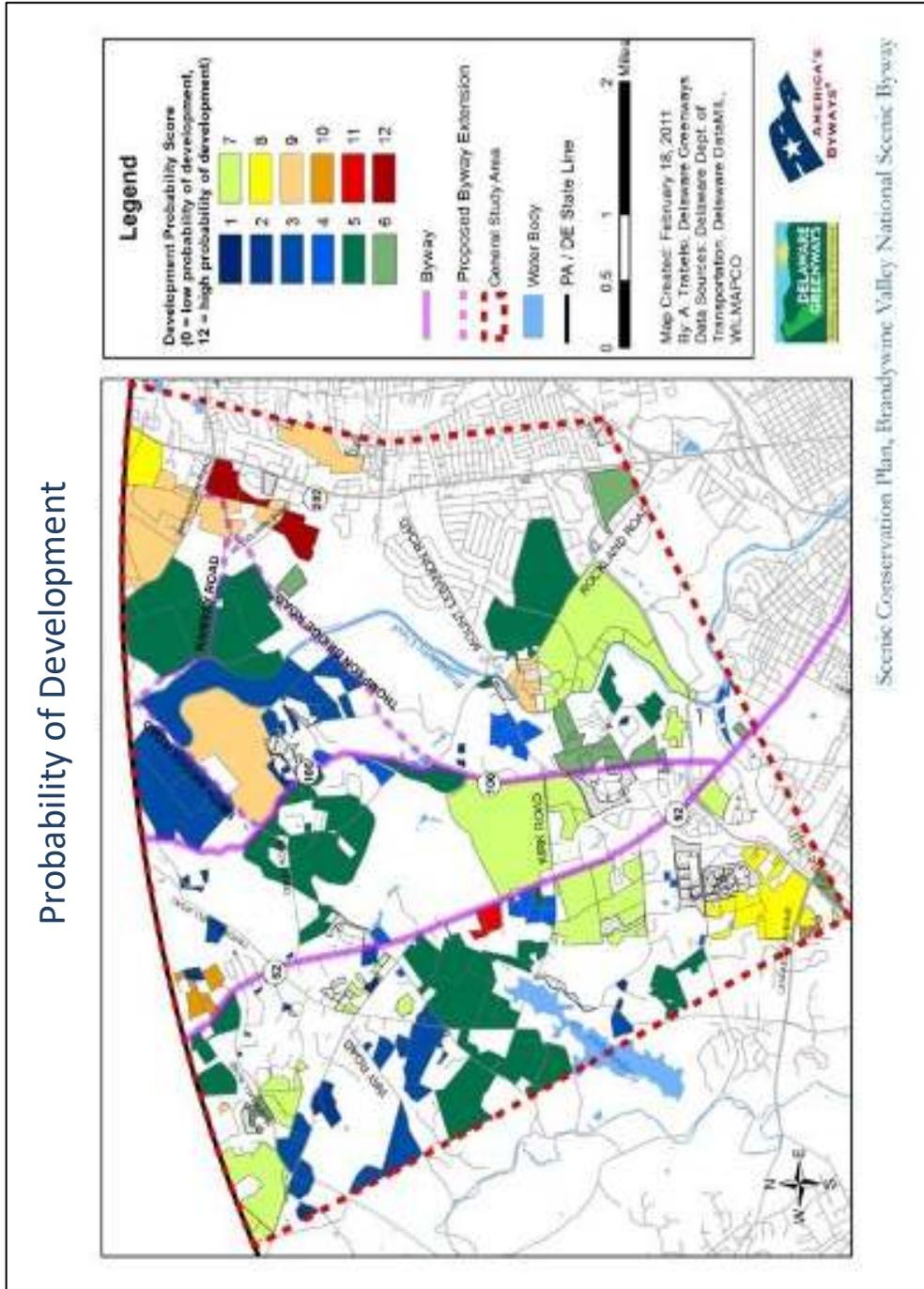


Figure 16: Probability of Development

CHAPTER 6: CARRYING CAPACITY OF THE TRANSPORTATION NETWORK

Understanding the level of vehicular travel enables an assessment of various alternative futures to be evaluated from the perspective of the transportation infrastructure. It is important to note that transportation infrastructure is only one of many parameters to be examined in the Scenic Conservation Plan. Scenic beauty, environmental impact, land use context, and water and wastewater infrastructure are also important to the Plan and should not be secondary considerations. For more detail regarding projection of future travel demand, refer to the Travel Demand Report.

The travel demand modeling process uses demographic data including household travel data and



Figure 17: Modeled Area, Peninsula Travel Demand Model
Source: DelDOT

physical data relative to the capacity and connectivity of the transportation system to develop future projections of travel demand. In support of the Scenic Conservation Plan, travel demand was first assessed with demographic and transportation system data from the year 2010 to replicate current travel conditions. The model was run a second time with population and employment projections for the year 2040 detailed in the Trend Scenario Report for the year 2040 to develop projections of travel demand for that future year.

CONGESTION IN THE BRANDYWINE VALLEY IN 2040

As shown in Table 5, the travel demand model projects average daily traffic volumes on the study area roadways to increase substantially between the base year of 2010 and the future year of 2040. Looking at the three key roadways in the Valley, the north-south roads show increases of 37% for Kennett Pike and 27% for Montchanin Road. DE Route 141 shows a substantial increase of 146%.

Table 5: Projected Daily Traffic Volume Increases

Roadway	Average Percent Increase
DE Route 52, Kennett Pike	37
DE Route 100, Montchanin Road	27
DE Route 141, Powder Mill, New Bridge Roads	146

The travel demand model expresses congestion in terms of traffic volume in relation to the capacity of the roadway or volume to capacity ratio, making that calculation separately for each section of roadway. In the base year of 2010, during the PM Peak Period (3:00 PM to 6:00 PM), the only link congested during the entire three-hour period of the PM peak was the Tyler McConnell Bridge, a two-lane section of road on an otherwise four-lane highway. However, by 2040, congestion spreads to other locations in the study area as shown in Figure 18. Consistent congestion spreads along DE Route 141 between Barley Mill Road and Alapocas Road as not only the back-ups at the bridge begin to extend, the adjacent sections containing the signals at Alapocas Road and at Montchanin Road begin to back up on their own as traffic volume exceeds the capacity of these sections. Along DE Route 52, congestion is projected between the Pennsylvania Line and Center Meeting Road. Congestion also occurs north of the intersection of Route 82.

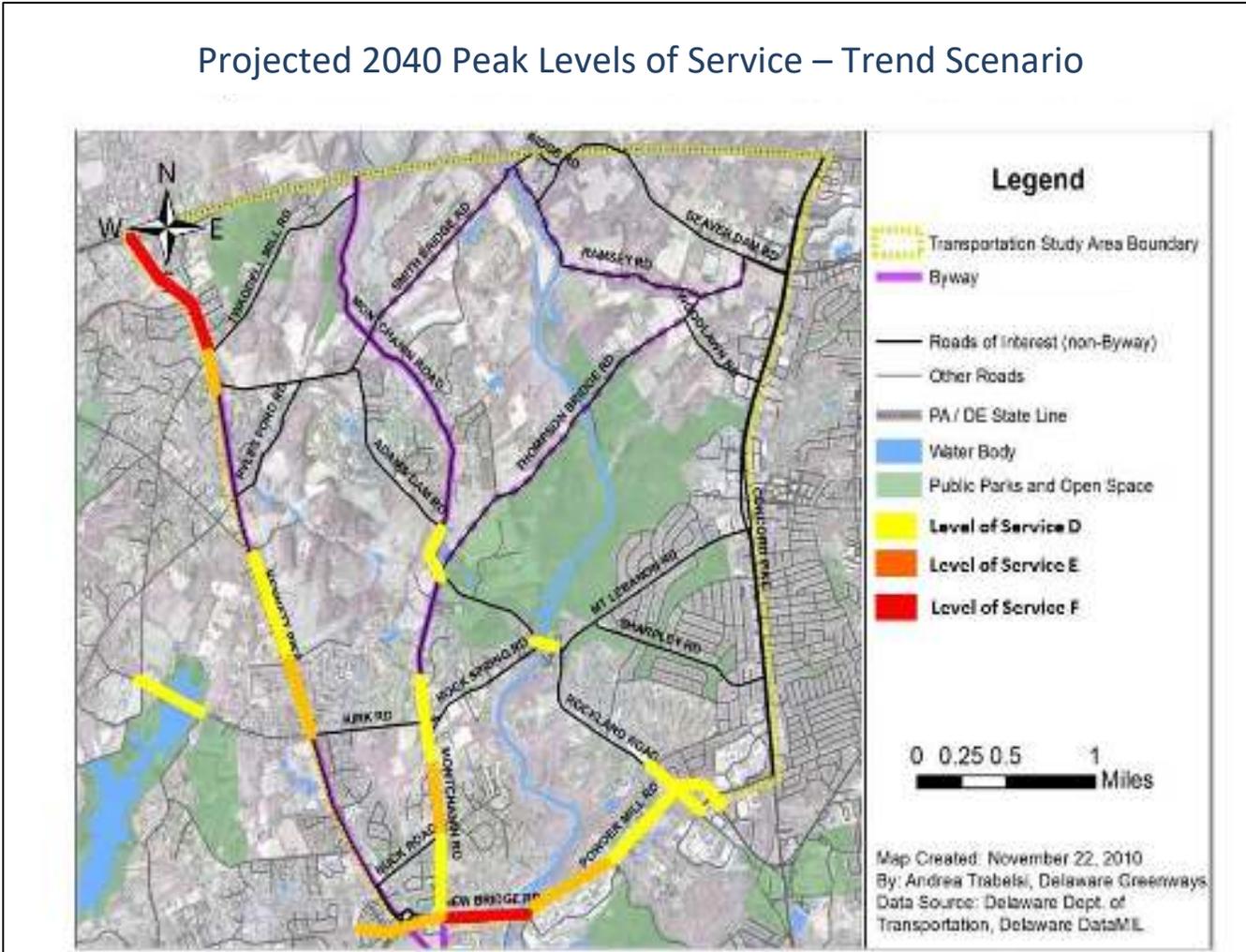


Figure 18: Projected PM Peak Hour Level of Service – Trend Scenario

CARRYING CAPACITY OF THE VALLEY'S ROADWAYS

Based on the travel demand models for 2040, the patterns of congestion along DE Route 141 and DE Route 52 are not good news. The congestion on DE Route 141 is not unexpected; we see it today. Only by 2040, it will get worse. Most of it is caused by a classic bottleneck or choke point in the roadway network approaching the Tyler McConnell Bridge. It is clear that the solution is to simply add travel lane capacity at and around the Tyler McConnell Bridge by widening. The congestion projected for DE Route 52 is another matter. This congestion is caused by something that Delaware cannot control or help manage. This is the land development proposals in neighboring Chester and Delaware Counties in Pennsylvania. Development in Pennsylvania contributes about 20% of all traffic to the roadways of northern New Castle County. Examination of Route 52 at the Pennsylvania line indicates that the traffic entering and leaving Delaware will operate at Level of Service F meaning traffic flow in Centreville is sensitive to development in Pennsylvania.

Finally, there is no question that the Full Build Scenario would drive travel demand well beyond the carrying capacity of the roadways of the Valley. While vehicle miles traveled increases only 14% over 2010, travel time and time spent in congestion more than doubles. The Carrying Capacity of the Brandywine Valley will be reached sometime between 2030 and 2035. We have time but we must get to work now.

DUPONT COUNTRY CLUB

It should be noted that the development of the office-zoned portion of the DuPont Country Club has not been assumed in any of the scenarios. However, recent events at the DuPont Company have made this analysis very timely. This site is located on the north side of Route 141 between Alapocas Road and Rockland Road. Its current zoning is office regional and could permit about 1,000,000 square feet of office space. It also has frontage on Rockland Road. Projected employment levels for the Valley can be accommodated assuming development in other non-residentially zoned tracts assumed for development. However, like any other location in the study area, development of this site might occur or might not occur. Nevertheless, because of its location accessible from a major roadway that by any measure could define the carrying capacity of the system, development of this parcel has been examined separately.

The conclusion of the separate analysis is that the potential development of the office portion of the DuPont Country Club will degrade traffic conditions on Route 141 and on Route 52 in Greenville. Further, considering Route 100, traffic conditions in the peak direction are also degraded and could get worse as traffic avoids Greenville.

CHAPTER 7: CHALLENGES AND OPPORTUNITIES

INTRODUCTION

The Scenic Conservation Plan has three main goals:

1. to maintain the character and experience of the Byway corridor;
2. to protect property values; and,
3. to provide safe, convenient access to the Byway corridor amenities and resources for residents, businesses and visitors.

By any measure, the Brandywine Valley is a beautiful place. The residents and businesses want to keep it that way. Over the years, many initiatives designed to preserve the intrinsic beauty have been implemented with a measure of success. There is a deep awareness throughout the Valley of the need to preserve and protect the natural beauty of the area. Of the 16,000 acres within the study area, some 4,300 acres are protected from development. While 933 acres of protected land are in the Brandywine Creek State Park and 1,000 acres in the First State National Historical Park, there are other large protected parcels such as the 1,000-acre Winterthur Museums and Gardens, still some 4,800 acres of land are eligible for development. Further, the average parcel size of the 350 individual parcels is 17 acres. Even though some of the private property owners have preserved land through various easement programs, sufficient development potential remains that would significantly affect the Byway character and experience that exist today.

Examination of the potential for population and job growth in the Valley could claim some 1,500 acres of development in the next 30 years, according to the modelled projections in this analysis. The attractiveness of the Valley and the impact of economic cycles on property owners and prospective property owners are factors will also affect the rate of development over the next 30 years.

With the threat of development of the Valley high, the potential to lose the valuable scenic, recreational, natural, and historic resources is very real. This threat is what has prompted the Scenic Conservation Plan Study.

From the research completed, a more clearly defined answer to the original research question, “what is the limiting factor for the continued existence of the Brandywine Valley as it is valued today?” The answer is scenic views and community character.

Under the current County development regulations, economic trends, and environmental conditions, this analysis revealed that of the key livability characteristics and defining qualities of the valley—transportation conditions, roadside character, scenic views, natural resources, historic elements and character, etc.—the most fragile and threatened in the next thirty years are the scenic views and historic character.

This chapter synthesizes the results of those previous investigations to explain:

- what key issues and trends are the challenges to sustainable development;
- why the scenic views and historic character are the limiting factor for future sustainable development; and
- what, in the face of the specific challenges, are the aims and visions for the future?

From the above, a comprehensive vision of the future for the Brandywine Valley will begin to form.

CHALLENGES

The Brandywine Valley is facing serious challenges, which threaten its continued value as a nationally significant Byway; the challenges jeopardize the value of those individual assets (natural, cultural, historic, and recreational resources) that make it worthy of such national status and make the area a wonderful place to live, run a business, or visit. The challenges are divided into two categories—land use and transportation—and are listed below.

Land Use:

- Viewsheds and Scenic Quality are at Risk
- Encouraging Conservation Conflicts with Preserving Property Rights
- Large Landowners Want to Maintain Land as a Future Income Source
- Current Wastewater and Water Resources Not Likely to Sustain Projected Development

Transportation:

- Pedestrian and Bicycle Access is Limited
- Public and Private Signage is Cluttered and Unclear
- Development Access and Entrance Layout Detract from Byway Character
- Certain Areas are Crash Prone
- Conflicts Between Traffic Flow and Context Sensitivity hurt the Character of the Valley
- Travel Demand, If Not Carefully Managed, Will Overwhelm the Valley

While the challenges were identified individually, they are all intertwined. Consequently, any implementation must be addressed using a systems approach of considering the interactions, for this conservation planning effort to be effective. Changes made to any one component will almost certainly affect another.

Most significant to address are the interactions between land use and transportation (an issue explored in more detail further on in this document and subsequent research in this research and planning process).

LAND USE CHALLENGES:

Much of the development permitted in the study area is in the zoning classification called suburban estate zoning, which permits a density of one dwelling unit per five acres. Another predominate classification in the study area is suburban which allows one dwelling per two acres. Between 2,500 and 4,900 new single-family homes and over 4 million square feet of non-residential space

could be built under current zoning within the 16,000 acres of the Brandywine Valley. To accommodate demographic projections for the next 30 years the following scenarios have substantial likelihood of occurrence:

- The entire DuPont Golf Course could be developed
- Barley Mill Plaza could see substantial redevelopment beyond the section purchased by the Odyssey School.
- Recent actions to downsize and reshape the DuPont Company's presence in northern Delaware and elsewhere could result in many residential properties in the study area to be sold. There will be pressure to subdivide the large remaining estates.
- Granogue could likely be developed unless actions to preserve it are successful.
- Continued development of the Woodlawn Trustees property not included in the First State National Park, such as the recent proposal for a new Wilmington University Campus at the intersection of Route 92 and US Route 202.

Being that these areas of the Valley have been identified among the most scenically valuable, this means the most treasured and iconic viewsheds could be lost forever. Even if the developers of these tracts use the available conservation mechanisms in the County's Unified Development Code to preserve open space, there is no guarantee that the incentives are sufficiently attractive or specifically defined such that the most significant viewsheds will be preserved.

VIEWSHEDS AND SCENIC QUALITY ARE AT RISK

The viewshed analysis of the study area concluded that many of the defining viewsheds of the Brandywine Valley are at risk. The viewshed fieldwork also identified both appealing and less appealing characteristics of the visual qualities of the byway landscape and buildings, which contribute to the iconic character of the Valley. Some offered examples of how good design can be applied. Other elements were identified as opportunities for enhancement of the scenic character of the Byway corridor. Through the viewshed study and analysis, it was made clear that preservation of the scenic quality and viewsheds are potentially the limiting factor for the carrying capacity of the Valley. That is, the extent of which the views and quality are at risk and the degree to which they define the Byway, the Valley, and its value to the local and wider community, are high.

Many landowners of new and old homes take extreme pride in how their properties are presented to the public. Landscaping, design treatments and an overall quality of maintenance add to the scenic qualities of the study area. However, one type of development, the large tract house, commonly called a "McMansion" presents architectural features that many consider to be out of place in the Valley. Many communities have developed guidelines beyond those in a typical zoning or land use and subdivision ordinance to guide architects as they design buildings and landscapes for the study area. *Taken as a recommendation, this study should develop design guidelines for the man-made environment (landscape) and buildings.*

Ongoing Action/Progress:

1. *The New Castle County Department of Land Use, as it updates the Unified Development Code, is adding new provisions that include Neighborhood Preservation Overlay District that establishes clear neighborhood compatibility standards regarding the distance, height, scale, and design of development. The Department is also progressing a Guiding Principles Ordinance that recognizes context areas that are consistent with the 2012 Comprehensive Plan, and general principles for site and building design that are appropriate for each context area. The ordinance recognizes and fully supports the design policies of the 2012 Comprehensive Plan, including: (1) walkable communities with a sense of place; (2) development design that respects the neighborhood context; and, (3) guiding design principles that are appropriate for each context area and that will better deliver the outcomes and goals provided in the 2012 Comprehensive Plan.*
2. *The Brandywine Valley National Scenic Byway Partnership has proposed a 150-foot setback for all residences in the residential zoning districts along the Byway. The County's Department of Land Use has embraced this setback and is instituting it in their reviews.*
3. *The Brandywine Valley National Scenic Byway Partnership has submitted design guidelines to New Castle County Council and the Department of Land Use for consideration. These design guidelines eliminate specific 'holes' in the current UDC that are not being addressed in any other current initiative. While these guidelines are mostly applicable to the commercial section of the Byway, one element, building setbacks, requires a 150-foot setback for residential buildings. The other areas covered are:*
 - a. *Building Heights*
 - b. *Signage Dimensions*
 - c. *Signage Illumination*
 - d. *Number and Colors of Signs*
 - e. *Utility Fixtures*
 - f. *Utility Lines*

ENCOURAGING CONSERVATION WHILE PRESERVING PROPERTY RIGHTS

It is clear that using the conservation style of development yields more compact development and provides the opportunity to concentrate development while protecting open space. Conventional development uses almost twice the land area to accommodate the same population and employment projections. Yet, it is not a simple matter requiring one form of development over another since property owners have the right to enjoy the reasonable value of their land holdings.

With large parcels of developable land within the study area and only the market and the individual decisions of each landowner governing which parcels will be developed, the most likely outcome is that some combination of the two types of development will occur. Further, development will likely occur on lands where this analysis has anticipated development, as well as on other parcels.

As a result, develop strategies (including property owner outreach and development regulations and incentives) to direct development and control the type and density of development such that the most scenic lands not yet preserved can be preserved and the property owners retain the value of their entitlements.

Ongoing Action/Progress

1. *The Kennett Pike Association takes the initiative to meet with developers and landowners at the beginning of the development process to ensure that development consistent with the Brandywine Valley National Scenic Byway occurs.*
2. *Additional protection is required for iconic viewsheds located beyond the 150-foot setback. For example, the Granogue Mansion located in a hill would not be protected by a fixed setback. Rather, the UDC should be revised to encourage clustering in such a way to better preserve the view corridors to the iconic viewsheds. One way to do this is to elevate scenic viewsheds to equal status as preserving steep slopes and preserving wetlands.*

LARGE LAND OWNERS WANT TO MAINTAIN LAND AS A FUTURE INCOME SOURCE

Land values are unquestionably high in the Brandywine Valley and as time goes on it is likely that some of the owners of large parcels will consider selling or developing some or all their holdings. Some of the large parcels are country clubs and some are owned by families who have lived in the area for generations. It is not known which landowners might find themselves in that position in the horizon of this study but since many of such parcels are zoned and not protected from development, this plan should consider this eventuality. Conversely, large landowners might find it prudent to develop their holdings in a sustainable manner and the plan should recommend policy and standards to encourage sustainable development. *The plan should develop alternative strategies enabling the owners to retain the value of their holdings.*

Ongoing Action/Progress

The Brandywine Conservancy assists property owners preserve their land through several options.

The UDC offers transfer of development rights to property owners wanting to develop their lands. This provision of the UDC permits landowners to sell the development rights or the entitlements that the UDC bestows upon the land to another property owner to increase the development of an area designated to receive such increased development. Currently, the UDC requires that the development rights be sold within the planning area of the selling property. It is for this reason that the program has not been successful. However, lifting the limitation and permitting the development rights to be transferred to any growth area in the County could make it more attractive.

CURRENT WASTEWATER AND WATER RESOURCES NOT LIKELY TO SUSTAIN PROJECTED DEVELOPMENT

Studies reviewed by USEPA cite onsite septic system failure rates nationwide at 10 to 20 percent. With at least half of the study area serviced by onsite septic systems and the possible need to

accommodate projected future growth in the area, failure and subsequent public health threats are of concern. As density increases in the study area, methods for managing wastewater effectively may need to be modified. Soil infiltration and hydraulic conductivity are two limiting factors that will affect the feasibility of continued practice of using conventional septic systems. Although the County has established guidelines for keeping most of the study area on on-site septic systems, an alternative method for management could occur at an undetermined point in the future. This issue is beginning to manifest itself in the Centreville area with warnings of E coli bacteria found in the water supply. With the potential for degradation to water quality and the need for other solutions looming, something will have to change, whether it be the County changing regulations for wastewater and development, or the state stepping in. *This plan should consider the possibility of this issue; how it affects the environment, the residents, and the businesses of the Brandywine Valley; and how the eventual solution might affect the Brandywine Valley landscape.*

Land use is the driver of human activity. This means that the better land use is managed, the better the environment will be for maintaining the character of the Brandywine Valley. The New Castle County Department of Land Use, through its latest project to update the Unified Development Code, is taking significant steps to strengthen management of land use within their jurisdiction.

TRANSPORTATION CHALLENGES

PEDESTRIAN AND BICYCLE ACCESS IS LIMITED

The viewsheds from the roadway system in the Brandywine Valley study area are exceptionally scenic and this beautiful scenery is visually accessible by motorized vehicle, but not easily or safely accessible by other modes. Except for Route 52, all the roads have no shoulders and have locations where curves, hills and valleys do not provide enough sight distance for motorists, bicyclists and pedestrians to occupy the travel lanes safely. There are locations where all three can see and be seen. Prudence indicates that an alternative system of connections for the slower modes of bicycles and pedestrians be developed. Access to trails and scenic areas of the Byway are limited mostly to the private attractions of the Byway. The emergence of the Northern Delaware Greenway as a spine along the Brandywine Creek at the southern extent of the study area is a positive development; however, except for Brandywine Creek State Park, public access and connections to the area's attractions and destinations are lacking. Access within the park to the trail network is easy and convenient. Parking is strategically provided in many areas within the park. Now with the First State National Historical Park, and the ongoing coordination and planning efforts between the two facilities, the expansion of trails and greenways to the most attractive locations in the Valley. Outside the parks, trail access is intermittent, as is signage. Scenic viewsheds in general, must currently be viewed from a moving vehicle. *Ideally, a multi-modal transportation network would provide connections to locations where the historic, scenic and cultural resources of the study area can be enjoyed.*

Ongoing Actions/Progress

1. *Develop a system of trails and pathways that can be used by bicyclists and pedestrians alike, connecting the neighborhoods that desire to be connected to the parks and cultural attractions of the Brandywine Valley. Two groups have been working on this issue. The Northern Delaware Trail Planning Group has been meeting and developing, among other projects, a trails and pathways plan to connect the neighborhoods of Brandywine Hundred, the commercial villages along Route 202 and the state and national park. The second group, the Woodlawn Coalition with The Nature Conservancy of Delaware, is developing an initiative to connect the neighborhoods of the City of Wilmington to the parks. Delaware Greenways is a leading participant in each initiative.*
2. *Where access to the cultural venues such as Winterthur and Hagley are limited, work with venue management to increase access for pedestrians and bicyclists.*
3. *Where major development is proposed or could be proposed, the UDC should require trail and easement connections throughout the development as well as connections to nearby trails in the plan.*
4. *Development reviews performed by DelDOT should solidify the external trail pedestrian connections through coordination with the County review.*
5. *The non-profit community should be encouraged to develop funding packages using non-traditional sources of funding for trail and pedestrian projects. Delaware Greenways is already taking the lead in this regard.*
6. *The trail and pedestrian plan should be included in the Transportation Improvement Plan managed by DelDOT and WILMAPCO.*

PUBLIC AND PRIVATE SIGNAGE IS STILL CLUTTERED AND UNCLEAR

There are several issues identified regarding signing. On-road traffic signing is solely the province of DelDOT and takes the following forms:

- Regulatory signs (such as stop signs, speed limit signs, no passing, and signs related to traffic signals)
- Warning signs (such as signs that warn of curves, intersections, signals ahead and animals)
- Directional signs (typically green signs that point to directions and place names)

There are other signs that DelDOT oversees. These include wayfinding signs informing motorists of area attractions, motorist service signs informing motorists of services and businesses and lastly, signing for Byways. When considering these last three types of signing DelDOT and the tourist bureaus typically solicits input from communities and community organizations. The issue of signing manifests itself as a balance between sign clutter and too little information. *Within the study area, signing is not very consistent and all categories should be consistent in design and application and in accordance with the Corridor Management Plan.*

Ongoing Actions/Progress

1. *Wayfinding Signs: The wayfinding signs prevalent in the Brandywine Valley are owned by the Brandywine Valley Convention and Visitors Bureau (Chester County, PA) with assistance from the Greater Wilmington Convention and Visitors Bureau. The wayfinding signs now in service do not meet current standards and both organizations have embarked on a project to replace the existing signs. As part of this program, all non-conforming and duplicative signing will be removed.*
2. *Byway Trailblazer signs have been installed denoting the National Byway status of both Routes 52 and 100 in Delaware.*
3. *The Byway Partnership under the leadership of the Kennett Pike Association has been working with property owners to upgrade their existing signing to be more attractive, illuminated externally and in context with the Byway. In addition, all new signing proposals are reviewed by the Kennett Pike Association for context sensitivity. The Partnership has submitted suggested signing guidelines to the County for adoption into the UDC specify that the signs be illuminated with soft, indirect light, and back lighting shall not be used. Neon signs would be prohibited, along with changeable electronic signs. Additionally, a series of limits on sign size are established along with language that tightens and clarifies existing ambiguities in the UDC.*

DEVELOPMENT ACCESS AND ENTRANCE LAYOUT DETRACT FROM BYWAY CHARACTER

Development within the study area has two characteristics. The first is single points of access to the roadway network, which places an added traffic burden on the roadway system by forcing all traffic to the Byway and other main roadways.

The second issue is the layout of the development entrance. Typically, the design of development entrances follows DelDOT Design Standards and include left turn lanes and right turn deceleration lanes. The design also includes 12-foot wide traffic lanes. Unnecessary roadway widening detracts from the scenic character of the roadway.

DelDOT has published a manual on Context Sensitive Design for Delaware's Byways. This manual provides guidance for roadway planning and design for all of Delaware's Byways, leaving the specific design to be developed on a case-by-case basis within the manual's guidance. The Route 52/82 Safety Improvement Project and the improvements to Route 52 in Centreville have forced this issue for Route 52. The Route 92/100 Context Sensitive Design Charrette has developed standards for the Route 100 part of the Byway. *The Conservation Plan should include recommendations for improving traffic flow by improving accessibility and connectivity. The Plan should also include recommendations for flexible and context sensitive solutions for roadways and intersections. Design guidelines for access to developments and for new streets should also be a part of the design guidelines.*

Ongoing Actions/Progress

1. *DelDOT's Publication, Context Sensitive Solutions for Byways does not address commercial and subdivision driveway design. This leaves the existing driveway regulations in effect⁷. This typically means wide driveway designs and large corner radii, much like are designed in new roadways in rural areas. The roadways of the Brandywine Valley, particularly the byway roadways are historic and an overly wide driveway would be out of character doe the historic and scenic roadways. DelDOT should consider amending the regulations to provide special consideration for Byways and other scenic and historic roadways in the state.*

CERTAIN AREAS ARE CRASH PRONE

The results of the crash analysis revealed that the crash rates on Ramsey Road and Beaver Valley Road between Thomson Bridge Road and the Pennsylvania Line were substantially higher than any other roadway segments analyzed in the study area. On Route 100, Montchanin Road, there are clusters at the Kirk Road/Rock Springs Road intersection in the village of Montchanin. Clusters of crashes were noted on Thompson Bridge Road, Route 92, where there is a cluster of crashes beginning south of Ramsey Road and continuing westward to Beaver Dam Road. *The Transportation Design Guidelines should address the crash rates and speeding issues yet remain consistent with the context of the roadways and the adjacent land uses.*

1. *The roadways with the high crash rates are the minor roadways like Ramsey Road and Creek Road. Most of the crashes are run of the road crashes that could be mitigated by grading of the berm and installing grass shoulders to stay in context of the area.*
2. *DelDOT manages a highly effective Highway Safety Improvement Program that monitors crash rates throughout the state. Annually, locations with high crash rates are reviewed and projects are developed to address the crash issues.*

CONFLICTS BETWEEN TRAFFIC FLOW AND CONTEXT SENSITIVITY HURT THE CHARACTER OF THE VALLEY

Traditionally, the performance of a roadway system is defined by a concept called 'level of service'. This concept enables a layperson to assess if a given traffic condition is good or bad as well as compare it to other locations. It is well used because it covers most every component of a roadway system: intersections, roadway links, ramps, ramp junctions, etc. It also covers sidewalks and public transit service. Because it is universal in its application, many jurisdictions rely on it to determine the size and type of the transportation facility that is needed to serve a given demand. It also enables the reviewers of development proposals to compare traffic conditions with and without the additional traffic of a given development on the roadway system.

Level of service, typically expressed as a letter grade, 'A' through 'F', can be made into a standard and incorporated into ordinances and policies easily. The unit of measure is seconds of delay for

⁷ DelDOT Development Coordination Manual, effective March 2015.
<http://deldot.gov/information/business/subdivisions/changes/index.shtml>

most applications. For example, Departments of Transportation have considered Level of Service C in rural areas and level of Service D in urban areas as the standard to be designed into any new highway improvement project and represent the lowest acceptable amount of delay 20 years into the future.

Many land development or zoning ordinances have either level of service standards to be met at impacted intersections or the requirement that a developer offset the impact of the proposed development by adding capacity to the system. While using level of service as a standard is well intentioned and widely accepted; its application results in highways that are wide, operate at higher speed, or are not sensitive to the context of the area. Highway engineers and developers are provided with the requirements to design bigger roadways when level of service standards is not flexible.

Realizing this, some jurisdictions are considering methodologies ‘tame’ roadways so that they are sensitive to the context of the area that they pass through yet still serve their demand. In some cases, a deliberate decision is made to design at a higher level of delay or to reduce the intensity of development through zoning controls. *Similar flexibility of level of service standards at the state and county levels should be adopted for the roadways to allow designs that are sensitive to the context of the Brandywine Valley.*

Ongoing Actions/Progress

1. *The Memorandum of Understanding governing coordination and level of service standards between New Castle County and DelDOT allows some flexibility in levels of service for redevelopment areas. It also permits Level of Service D. Such flexibility does not extend to the Byway or to the minor roadways intersecting the Byway. Many times, this leads to wide roadways that detract from the historic nature of the Byway and the Valley.*

TRAVEL DEMAND, IF NOT CAREFULLY MANAGED, WILL OVERWHELM THE VALLEY

The analysis of travel demand has shown that the issue of development within the Brandywine Valley, on the National Byway and in Pennsylvania must be addressed. Failure to do so will cause the entire network to exceed its ability to function and serve the Valley. Specific challenges are:

1. *Fix the existing bottleneck of the Tyler McConnell Bridge.* It is the only link in the byway study area roadway currently operating at Level of Service F during the entire peak period. It is a two-lane bridge on an otherwise four lane approaching arterial corridor. Fixing the bottleneck will not be easy. DelDOT made a major attempt to widen and replace the current bridge several years ago that ended in no action (monitoring traffic conditions only). Failing to widen or add capacity at the Tyler McConnell Bridge will cause further traffic delays and backups. This will also cause other routes across the Brandywine River, some of which are which are in this byways study area: Rockland Road, Route 92 and Smith Bridge, especially if the DuPont County Club track is developed as permitted by current zoning. Several years ago, DelDOT made a concerted attempt to remove the Tyler

McConnell Bridge and replace the DE Route 141 crossing with a wider structure that would consist of two new structures with two lanes in each direction. The conceptual design had multi-modal elements as connections across the Brandywine Creek were provided for both pedestrian and bicycles. Subsequent funding and unjustified expenditures to justify replacement of the existing two lane bridge (i.e. not adding a twin span next to it) dried up efforts and the project was placed on an indefinite hold. The bottleneck remains. Until the existing bridge structure can be replaced or the existing bridge can be complemented with a twin structure, the area will continue to exist with regional implications. The effort and dialogue should be reengaged.

2. *Coordinate with the Counties and Municipalities in Pennsylvania to help manage development.* With the Wilmington area remaining as the employment center for southern Chester County and Delaware County in Pennsylvania, continuing the pattern of development prevalent in those areas will overload the roadway network beginning with Route 52, affecting Centreville. In Pennsylvania, land use decisions are municipality based. There are over 2,500 incorporated municipalities in Pennsylvania's 67 counties. Rarely is there close coordination across municipal boundaries. Worse, Pennsylvania law specifies that each municipality provide for all potential land uses in their zoning code. It is to the municipality's advantage to encourage low-density residential development across as wide an area as possible to deter undesirable land uses or force them by default to parcels on municipal boundaries. Increasing density through clustering does not mean fewer dwelling units or more publicly owned open space. Rather, it typically means the same number of units with privately owned open space. However, municipalities in Pennsylvania are realizing the costs of low-density development and the seeds of coordination are taking root. Recently, WILMAPCO and the Delaware Valley Regional Planning Commission (DVRPC) have published reports advocating coordination and documenting the coordination efforts underway.⁸ While the reports are regionally focused, the opportunity exists to develop a case study of cooperation between New Castle County and the counties of Chester and Delaware in Pennsylvania within the framework established by DVRPC and WILMAPCO. Focusing on encouraging best land use practices and integrating transportation into the land use planning process would go a long way to addressing the challenge. Increased coordination across state lines through peer-to-peer coordination and projects can shine a light on the benefit of increased coordination and cooperation.
3. *Resist Pressure to Add Roadway Capacity.* It can be expected that as development continues, particularly in Pennsylvania but also elsewhere, pressure to widen or substantially add capacity to the roadway system will increase, pitting neighbor against neighbor and community against community, those who are more concerned about mobility against those more concerned about the quality of life and the iconic scenery of the Valley.

⁸ Delaware Valley Regional Planning Commission, *Planning at the Edge*, July 2003 and WILMAPCO, *Inter-Regional Report, Making Connections Across Our Region's Borders*, 2012.

4. *Continue to insist on Context Sensitive Roadway Design even if it leaves behind a measure of congestion.* In the past, most roadway projects were planned to address capacity or level of service issues. Even if the project was driven by safety considerations, achieving Level of Service C became a project objective. Recently, DelDOT has adopted a context sensitive solution planning process for transportation projects on Delaware's Byways. The publication, Context Sensitive Solutions for Delaware Byways dated June 2011 provides a roadmap for transportation projects on the state's byways. Incorporating the principles of flexibility in highway design promoted by the Federal Highway Administration, projects can be sized to the context of the area that surrounds the project. Flexibility is provided for level of service, lane width, shoulder width, design speed, and other factors that define the footprint of a transportation project. Each project must also meet the Department's Complete Streets Policy that provides for accommodation of all travel modes.

Still, not all is lost. The level of service analysis in this report paves the way. If traffic volume growth in the peak commuter periods could be restrained to 10% to 15% less than projected by the travel demand model, achieving carrying capacity could be put off for years or, at the very least, until after 2040. Further, benefits of managing peak hour traffic demand by spreading the peak period through flex time and staggered working hours, telecommuting and carpooling can be a meaningful contribution to the needed reduction in traffic.

CHAPTER 8: THE SCENIC CONSERVATION PLAN

It bears repeating once again that the Brandywine Valley and its Brandywine Valley National Scenic Byway hold a very special place in Delaware. The industrial history of the Valley, the heritage of the DuPont and Bancroft families and their legacies has left an indelible print on the Valley. The cultural institutions they founded and the scenic vistas that they preserved are a gift. It is up to this and future generations to preserve that legacy. Fortunately, as documented in the last chapter, efforts are underway.

The recommendations and strategies in this chapter will define the Scenic Conservation Plan for the Brandywine Valley and set the stage for preserving the carrying capacity of the study area. As indicated previously, the most serious threats to the carrying capacity are preservation of the scenic qualities and management of future travel demand. However, while these two issues are the central focus of the plan, other recommendations have emerged from the analysis.

The recommended strategies are divided into land use and transportation.

LAND USE STRATEGIES

The land use strategies of the Plan will address the challenges set forth and summarized in Table 6.

Table 6: Land Use Strategies

Challenge	Strategy
Viewsheds and Scenic Quality are at Risk	<ul style="list-style-type: none"> • <u>Establish a Byway Overlay Zone</u> that contains Design Guidelines designed to preserve the scenic quality and character of the Valley. • For those properties adjacent to the National Park, <u>use the ability of the National Park Service to protect the viewsheds of the park.</u> • <u>Protect Iconic Views</u> far from the Roadway along the Byway and other roads. • <u>Protect Iconic Elements of the Viewsheds</u>
Encouraging Conservation While Preserving Property Rights	<ul style="list-style-type: none"> • Work with philanthropic organizations to <u>acquire threatened viewsheds and iconic properties.</u>
Large Landowners Want to Maintain Land as a Future Income Source	<ul style="list-style-type: none"> • <u>Retain land value by educating large landowners</u> regarding the tools they can utilize to retain the value of their land investment while protecting viewsheds and open space. • <u>Revise the Conservation Design option in the UDC</u> include scenic viewshed as an element for preservation • <u>Strengthen Transfer of Development Rights</u> to permit transfer to receiving zones to any permitted area in the county.

Table 6: Land Use Strategies

Challenge	Strategy
Current Wastewater and Water Resources is not Likely to Sustain Projected Development	<ul style="list-style-type: none"> • <u>Eliminate the ability to increase the number of entitlements in the Valley without Public Sewers</u> should public sewerage be required.

ESTABLISH A BYWAY OVERLAY DISTRICT

The purpose of the Byway Overlay District, in coordination with the similar district proposed for the Red Clay Scenic Byway, is to preserve, protect and enhance the intrinsic values of the Brandywine Valley National Scenic Byway and the surrounding roadways. The Corridor Management Plan identified the intrinsic values as follows:

- Scenic Quality
- Natural Quality
- Historic Quality
- Cultural Quality
- Recreational Quality

The Byway Partnership established a Committee on Design Guidelines chaired by John Danzeisen, President of the Kennett Pike Association. Committee members are:

- Joe Carbonnel, a local architect member of the Delaware Center for Horticulture and the Brandywine Valley Scenic Byway in Pennsylvania;
- Patty Hobbs and Ellie Maroney, local residents and two of the original advocates for the Brandywine Valley National Scenic Byway;
- Irv Hollingsworth, President of the Centreville Civic Association;
- Ginger North, planner for the Delaware Nature Society and project manager for the Red Clay Scenic Byway Design Guidelines and Overlay Zoning District Project;
- Bill Rowe, a local engineer and a member of the Kennett Pike Association; and
- Sarah Willoughby, Executive Director of the Greater Wilmington Convention and Visitors Bureau.

The Committee has prepared a report detailing a series of Design Guidelines addressing immediate concerns based upon the experience of having been involved in land use, zoning and signing issues. Their report has been approved by the Byway Partnership and officially submitted for action to the New Castle County Department of Land Use for inclusion in the current effort of the Department of Land Use to marry Design Guidelines for both the Red Clay and Brandywine Byways. The Committee's report is excerpted below:

1. Building Heights

The Unified Development Code (UDC) for New Castle County regulates building heights based on zoning designation. The maximum heights can range from 35-feet to 180-feet depending on the zoning. Certain parcels along the Byway allow buildings as high as 180-feet which, if constructed, would destroy the intrinsic scenic and historic qualities of the Byway. Many developers would be interested in capitalizing on the beautiful vista views, the historic qualities and the cultural heritage seen along the Byway at the expense of the community and the many visitors to the area. A few years ago, one developer proposed a high-rise residential and commercial tower in Greenville. Such a building would be an assault on the entire area and a permanent blight on the Byway.

Building Height Regulations

The NCC Unified Development Code establishes maximum building heights depending on zoning designations and on development type (See Table 7). In reviewing the Zoning maps for the Kennett Pike and Route 100 corridors, a variety of zoning designations are in place. The concentrated commercial districts of Greenville and Montchanin villages with zoning designations of Commercial Regional and Office Regional comprise about 9% of the Byway outside of the Wilmington City limits. All the rest of the Byway – some 91% of it – includes zoning designations of Office Neighborhood, Commercial Neighborhood, Suburban, Suburban Estate, and Neighborhood Conservation.

Table 7: Building Heights and Street Yard Setbacks

<u>Zoning</u>	<u>Description</u>	<u>Max Building Height (feet)</u>	<u>Min Street Yard Setback (feet)</u>
SE	Suburban Estate --- Single Family	40	40
SE	Suburban Estate --- Open Space Subdivision	40	40
SE	Suburban Estate --- Other Uses	40	100
S	Suburban --- Single Family	40	40
S	Suburban --- Open Space Subdivision	40	40
S	Suburban --- Churches, Schools, Fire Stns.	45	40
NC	Neighborhood Conservation		
	NC2a: 2 acre	40	50
	NC40: 40,000 sq. ft.	40	40
	NC21: 21,780 sq. ft.	40	40
	NC15: 15,000 sq. ft.	40	40
	NC10: 10,000 sq. ft.	35	25
	NCth: Townhouses	40	25
	Ncap: Apartments	60	40
ON	Office Neighborhood	35	15
OR	Office Regional		
	Offices, Comm'l Lodging, Industrial, Other	140*	40

Zoning	Description	Max Building Height (feet)	Min Street Yard Setback (feet)
	Restaurants	30	40
	Mixed Use	180*	40
CN	Commercial Neighborhood	35	15
CR	Commercial Regional		
	Heavy Retail, Car Sales, Other	50	40
	Offices	140*	15
	Commercial Lodging	140*	40
	Commercial retail, Other Commercial	50	15
	Mixed Use	180*	40

* Maximum Building Height: If there are single-family dwellings within 100 feet of property line of parcel to be developed with a building over 50 feet, the required front, street, side or rear yards adjacent to those dwellings shall be at a minimum equal to the height of the proposed building.

In the concentrated commercial districts of Greenville and Montchanin villages with zoning designations of Commercial Regional and Office Regional, building heights may be up to 180 feet tall for mixed-use developments, and up to 140 feet tall for other development types. These are the parcels of major concern.

All other Zoning designations along the Byway allow building heights up to 35 or 40 feet with the exception of churches, schools, fire stations that can be up to 45 feet and apartments, which can be up to 60 feet.

Many historic towns across the country set building height limits to preserve the heritage, culture and architectural integrity of the district. Haddonfield NJ and Princeton NJ set building height limits of 35 feet, while Moorestown NJ sets the limit at 45 feet.

Proposal

The tallest building situated directly on the Byway outside of the Wilmington City limits is the Greenville Crossing 1 main building, which is some 40-feet tall, and this sits well back off the Kennett Pike roadway. It is proposed to seek NCC agreement to stipulate in an Overlay Ordinance that the maximum height of any building situated directly on the Byway outside the Wilmington City limits is 40-feet. An exception should be made for churches, schools, fire stations, apartments and hotels that may be up to 45-feet. The agreement should stipulate that building height variances on the Byway should only be considered in cases of significant hardship and only for the general welfare of the entire community.

2. Building Street Yard Setbacks

Development codes specify building setbacks from the street, from neighboring properties on each side, and to the back. From the community's perspective, the street yard setback is a critical element in creating an orderly, pleasing and vista view of the surrounding open spaces. A 2-½-story

building set back 150-feet from the roadway is significantly less intrusive than the same building set back 25-feet from the roadway. Appropriate street yard setbacks differ for different zones and environments. National Scenic Byways are treasured for their vista views, and uninterrupted scenic views are an essential feature of them. Some street yard setbacks stipulated in the UDC are not appropriate for the Byway and if not addressed may result in a permanent downgrading of the vista views along the Byway.

Street Yard Setback Regulations

The NCC Unified Development Code establishes minimum building street yard setbacks depending on zoning designations and on development type (See Exhibit A). Street Yard setbacks range from 15-feet to 100-feet. Most suburban and neighborhood Zonings specify a minimum Street Yard Setback of 40 feet, with smaller lots and townhouses at 25 feet. Such setbacks are typical for most areas. However, the Brandywine Valley National Scenic Byway is recognized for its vista views of a beautiful countryside, open spaces and rolling hills. Many stretches along the Byway are zoned Suburban (S) or Suburban Estate (SE) and with few exceptions, the existing street yard setbacks are more than 150-feet. There is an opportunity to act now to increase the street yard setbacks along the Byway where there are S and SE zonings and preserve the wonderful views for future generations of residents and visitors.

Proposal

To preserve the views for everyone traveling along the Byway – the very views that were the essential elements in getting the National recognition – it is proposed to seek NCC agreement to set minimum street yard setbacks, which preserve, to the extent possible, the intrinsic scenic views along the Byway by creating an Overlay District.

For all S and SE Zonings along the Byway, the minimum street yard setback should be 150 feet, and that the first 100 feet should be preserved as open green space with no structures or parking lots permitted. For all other Zonings other than S and SE, the street yard setback should be a minimum of 40-feet. Any existing structures with smaller setbacks should be grandfathered but no future buildings or extensions on those sites may be closer than the existing setback. In addition, the agreement should stipulate that variances should be considered only in cases of significant hardship.

3. Signage Dimensions

Signs are an important part of our everyday lives informing us, directing us and advertising our commercial enterprises. However, in addition to building structures, signs intrude on, and disrupt views of open spaces and scenes if not restricted in a reasonable way. The size of signs is one of the most important aspects in creating the ambiance and character of a community or location. Present regulations are not entirely appropriate, and there is a threat that large, out-of-place signs will significantly diminish the character and views of the Byway. In addition, the New Castle County

Land Use Department has at times interpreted the present regulations in a way neither written nor intended by the authors of the UDC, thus posing additional threats to the Byway.

Signage Dimension Regulations

New Castle County restricts the size, placement, number and illumination of signs in its Unified Development Code (UDC). The regulations and stipulations are extensive and generally comprehensive. In Suburban, Suburban Estate and Neighborhood Conservation Zonings, Nameplate signs are limited to 1.5 sq. ft., and ID and Bulletin Board signs are limited to 20 sq. ft. These are adequate for the Byway. For Office Neighborhood and Office Regional Zonings, Nameplate signs are limited to 2 sq. ft. and Bulletin Board signs to 20 sq. ft. – both adequate for the Byway. However, ID signs can be up to 75 sq. ft. – too large, obtrusive and out of place for the Byway. In Commercial Neighborhood Zonings, Wall signs are allowed up to 200 sq. ft., far too large for the Byway. In Commercial Regional Zonings Wall Signs can be up to 300 sq. ft. – again far too large and out of place for the Byway. In Commercial Regional Zonings, roof signs are allowed up to 300 sq. ft. Roof signs are out of place and out of character along the historic and cultural Byway. The Centreville Village Design Guidelines limit wall signs to 8 sq. ft., freestanding signs to 20 sq. ft., and aggregate signage to 20 sq. ft. Window signs and awning signs there are limited to 20% of the window or awning area. The City of New Castle limits signs to 12 sq. ft. in the Historic Commerce District, and to 10 sq. ft. per lineal foot of street frontage or 100 sq. ft. max.

Proposal

To preserve and protect the character and views along the Brandywine Valley National Scenic Byway, maximum sign limits should be reduced in certain specific Zonings. It is proposed to seek agreement for the Byway for NCC approved signs on the following:

- For ON and OR Zonings on the Byway Identification signs should be limited to a maximum area of 50 sq. ft.
- For CN Zonings on the Byway single use buildings and individual business shopping center wall signs should be limited to a maximum area of 100 sq. ft. In addition, such signs should not be closer than 3 feet from the top and bottom of the wall to which they are attached.
- For CR Zonings on the Byway shopping center wall signs should be limited to a maximum area of 100 sq. ft. In addition, wall signs should not be closer than 3 feet from the top and bottom of the wall to which they are attached.
- All roof signs, flags and banners should be prohibited along the Byway.
- Signs displayed in a window shall not exceed 20% of the window area.

Sign Dimension Enforcement

Section 40.06.020 of the present UDC defines sign area to “...include the entire sign, together with all trim, moldings, battens, cappings and nailing strips which are attached and are part of the sign proper or incidental to its decoration.” In a recent case at PetValu in Greenville, a permit for a wall sign was granted for a 12-sq. ft. sign. The sign, which was erected, did a framed sign over 210 sq. ft.

with the words “PetValu” comprise 12 sq. ft. and an integral and attached 198 sq. ft. mural of a dog in a field. The County did not initially consider the mural part of the sign to be a sign, even though in a previous case they cited another storeowner for adding artwork around their permitted sign.

Proposal

It is proposed to seek agreement with NCC that, on the Byway, strict interpretations of the existing code be followed and any variations in interpretations should err on the side of conservation.

4. Signage Illumination

The character qualities of the Byway corridors can be described as historic and cultural. The Byway is the home of many visitor sites including Winterthur, the Delaware Museum of Natural History, Brandywine Creek State Park, and the Gibraltar Estate. It also serves as a gateway to many other important sites such as Longwood Gardens, Hagley Museum, the Nemours Estate, Brandywine River Museum, Brandywine Battlefield Park, and the First State National Monument. In addition, and perhaps most importantly, the Byway’s other defining aspect is its scenic qualities. The Byway’s vista views, rolling hills, undisturbed landscapes and natural beauty are enjoyed by residents, hikers, bicyclists and many hundreds of thousands of visitors each year. Other than out-of-character towering buildings, no other element is more disruptive to these intrinsic qualities than signs, especially bright highly illuminated signs. The signage regulations regarding sign illumination are inadequate to preserve and protect the qualities of the Byway, which were responsible for its National designation in the first place.

Sign Illumination Regulations

Recognizing the importance of preserving and protecting Delaware’s Byways, the state enacted regulations limiting the lighting of signs on those roadways. Title 17 of the Delaware Code, Chapter 11 addresses the Regulation of Outdoor Advertising on Byways, both state and national. This chapter specifically prohibits variable message signs on designated byways. In addition, signs of such intensity as to cause glare are prohibited, as are signs, which include flashing or moving lights. Clearly, the State of Delaware understands the deleterious impact of brightly lit signs on scenic byways. The NCC UDC also places restrictions on sign illumination. Prohibited in the UDC are signs which flash, sparkle or glitter, and signs which move or are animated, flags, banners, and sandwich-type sidewalk signs. In Centreville, the Village Design Guidelines stipulate that signs shall be illuminated with soft, indirect light, and back lighting shall not be used. Neon signs are prohibited, as are changeable electronic signs. For many years, organizations such as the Kennett Pike Association have asked commercial institutional establishments to not use internal lighting for their signs, and to opt instead for externally lit signs if lighting is needed at all. There are exceptions such as gasoline stations where an internally lit sign shows the way to the station from a distance away. Most other establishments, but not all, have agreed to honor the wishes of the community, but this is managed on a case-by-case basis and more recently, some local businesses have erected internally lit signs. In many historic districts across America, signs are limited to no lighting or

external lighting and all signs are equally visible, rather than a competition for whose sign is the biggest and brightest.

Proposal

It is proposed to seek agreement with NCC and the State of Delaware to stipulate that on the Byway outside of the City of Wilmington limits, all electronic variable message signs and all signs illuminated with neon and other colored or brightly lit intense sources are prohibited, and that signs shall be lit with shielded soft, indirect white light and not back lit. Neon and other intensely lit signs should be prohibited everywhere, including in window displays. Searchlights and beacon lights should be prohibited.

5. Number and Color of Signs

With ever-increasing regulations at the federal, state, county and local levels, and with intensifying competition for customer attention, there has been a proliferation of signs along our roadways and the Byway is no exception. A small sampling of the more common signs which overload our field of view include: Way finding, Speed Limit, Distance, Stop, Street Name, Real Estate, Yield, Bicycle, Directional, Turning, Shopping Center, Store, and Institution signs placed on buildings walls, roofs, yards, monuments, sidewalks, and curbs. In some places, there are so many competing signs a passerby cannot possibly see them all, let alone read them. The UDC limits the number of signs on many but not all premises. In some cases, the limits set are not adequate to preserve and protect the intrinsic qualities of the Byway. The UDC also does not include adequate specifications for the colors used in signs, resulting in some cases with a jarring array of clashing and disrupting colors.

Number of Signs Regulations

The Centreville Village Design Guidelines limit wall signs to one (1) per wall façade per building, with consideration for an added sign if the building is on a corner. The NCC UDC places clear limits on the number of signs allowed on properties Zoned S, SE, NC, ON and OR --- generally one sign type (ID, Nameplate, Bulletin) per dwelling or building. For the most part, these are adequate limitations. For properties zoned CN and CR, ground signs are adequately limited, but wall signs are not. Single use or shopping center sites have no limit on the number of wall signs permitted if they conform to the specified area limits. This has led to some cases where a store in a shopping center has three (3) or even four (4) separate signs on a single wall. This is excessive and disrupts the attractiveness, architectural continuity and appearance of the entire site.

In addition to concerns about wall signs in CN and CR Zoning districts, there is a broader concern about the number of signs all along the Byway. Federal and State regulations require certain signs to be posted, and posted in a certain way for purposes of public safety. There is also a strong case to be made for erecting way-finding signs along the byway to direct visitors to their intended destinations. In all other cases, the number of signs should be minimized along the byway protecting the open vista and scenic views many have traveled specifically to enjoy.

Proposal

It is proposed to seek agreement with NCC to set a limit on the Byway of one (1) wall sign for each business on a wall up to 50 lineal feet. For walls greater than 50 lineal feet, two (2) signs may be permitted subject to other area limitations. In addition, it is proposed to seek agreement with the State of Delaware to minimize the number of signs wherever possible along the Byway.

Color of Signs Regulations

The New Castle County UDC does not attempt to control or limit the colors used on signs. In most cases wall sign owners use colors which are complementary to the building and trim colors to which they are attached. The Centreville Village Design Guidelines include a section on Sign Color: "Colors used for the sign shall generally match or compliment (sic) either the background or the trim color of the structure which it serves. No more than two or three colors should be used. If more than one sign is used, the colors on all signs shall be coordinated with each other to present a unified image."

Proposal

It is proposed to seek agreement with NCC to specify in an Overlay District ordinance the following:

The colors used for signs shall generally match or complement the background and trim colors of the structure it serves. No more than two (2) or three (3) colors should be used.

6. Utility Fixtures

The distinguishing characteristics and qualities of the Byway stem from its historical and cultural heritages. Along most of the length of the Byway are properties preserved in the condition when they were first developed. The predominant architectural style of the buildings and structures along the Byway is 20th century. Modern lighting fixtures and traffic signals installed along the Byway contradict this style and character and disrupt the scenic, historic and cultural qualities of the Byway.

Utility Fixture Regulations

Street lighting fixtures and traffic light fixtures are generally installed in state rights of way and are not regulated by style in Delaware.

Proposal

It is proposed to seek agreement with the state of Delaware to incorporate into state code for the Byway that street lighting fixtures and traffic signal devices and standards should be unobtrusive, and context sensitive in design. Fixtures and poles, when necessary, should have minimal impact to the scenic and historic landscape of the Byway. Aesthetic considerations should include the retention or improvement of roadside character. Consistency of design is another key factor. Each

fixture or pole should be considered on a case-by-case basis, and stakeholder input sought, to ensure the best design and protection of the roadside character.

7. Utility Lines

Power and telecommunications lines strung between rough-hewn utility poles as far as the eye can see have become over the last 100 years the most intrusive and disruptive force in our interrupted views of treasured countryside. These lines and poles exist along the Byway and it is hard to imagine how much more beautiful the vista views would be without them. Unfortunately, it would take a very significant amount of money to move these lines underground at once. However, we can start now the lengthy process of moving these unsightly obstructions underground when the opportunity presents itself, and we can certainly put new lines underground where it is feasible to do so. Several decades ago, the Kennett Pike Association was successful in getting the state to put the utility lines underground in a section of Greenville roadway that was being modified. Utility lines have competed with trees that align the Byway and in many cases large sections of these beautiful old trees have been hacked away to make room for the overhead lines.

Utility Lines Regulations

At present there are no state regulations requiring utility lines to be placed underground, even though long-term maintenance and reliability are enhanced with underground lines.

Proposal

It is proposed to seek agreement with NCC and the State of Delaware to incorporate into their codes



View of Granogue from the Ramsey Farm. The Ramsey Fram is now part of the First State National Historical Park and protected. Granogue is not. Picture the mansion surrounded by single family homes. Such development is permitted under current zoning.

for the Byway that utility lines should be placed underground when lines are installed for new developments and construction. New lines should go under the Byway and underground alongside the Byway and not above the roadways strung on utility poles. When existing lines are replaced, they should be placed underground whenever possible.

USE THE ABILITY OF THE NATIONAL PARK SERVICE TO PROTECT THE VIEWSHEDS OF THE PARK

All National Parks require a General Management Plan to be prepared. One of the elements of the Plan is a Viewshed Preservation Plan. The Byway Partnership will be a stakeholder in the development of the Viewshed Protection Plan.

The Plan should include the protection of the views of the surrounding properties including the iconic view of Granogue from the Ramsey Farm.

PROTECT ICONIC VIEWS FAR FROM THE ROADWAY

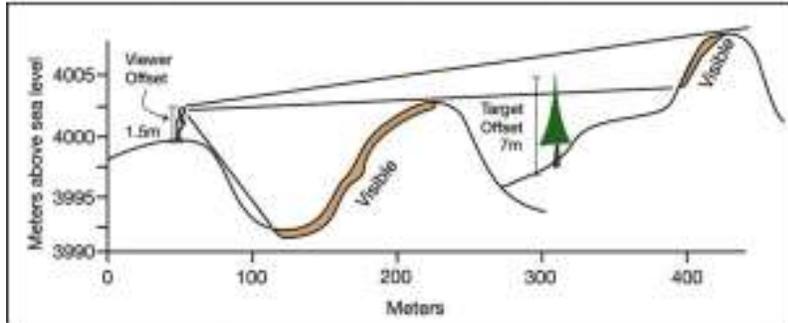


Figure 19: This diagram shows that from a single vantage point, there can be many views worthy of preserving depending upon the contours of the land. Taken together, each view makes for an entire viewshed.

Not all viewsheds would be protected with only a buffer of 150 feet as suggested in the design guidelines of the previous section. As demonstrated in Figure 19, a single vantage point can reveal beautiful views at several distances and as many of such views should be preserved as possible. The UDC should require the following each development proposal where it is clear that current sight lines

across the property from the roadway or other historical or cultural venue extend beyond the property should document each viewshed from the vantage point of the roadway or venue. The design of the development should protect such viewsheds and lines of sight from being blocked by the buildings or landscape proposed in the plan. The goal is to preserve the existing viewsheds that make the Valley iconic.

PROTECT ICONIC ELEMENTS OF THE VIEWSHEDS

Not only are the viewsheds iconic but so are the elements that make up the viewsheds. In the



adjacent collage of pictures are pictures of two of the towers at the Granogue Estate, one shows the tower in the middle of the property that demonstrates the importance of preserving key viewshed elements even if they are distant from the roadway. The tower adjacent to Smithbridge Road is shown in the lower right and the historic walls that line the roadways of the valley are shown in the upper right. It should be kept in mind that

Pictures of iconic elements that should be preserved

Conservation design: *A series of holistic land development design goals that maximize protection of key land and environmental resources, preserve significant concentrations of open space and greenways, evaluate and maintain site hydrology, and ensure flexibility in development design to meet community needs for complimentary and aesthetically pleasing development. Conservation design encompasses the following objectives:*

conservation/enhancement of natural resources, wildlife habitat, biodiversity corridors, and greenways (interconnected open space); minimization of environmental impact resulting from a change in land use (minimum disturbance, minimum maintenance); maintenance of a balanced water budget by making use of site characteristics and infiltration; incorporation of unique natural, scenic and historic site features into the configuration of the development; preservation of the integral characteristics of the site as viewed from adjoining roads; and reduction in maintenance required for stormwater management practices. Such objectives can be met on a site through an integrated development process that respects natural site conditions and attempts, to the maximum extent possible, to replicate or improve the natural hydrology of a site.

Source: New Castle County Unified Development Plan

the goal is to preserve the viewshed as they were at the turn of the century when the Byway earned its designation.

ACQUIRE THREATENED VIEWSHEDS AND ICONIC PROPERTIES

Property rights must be protected. However, history demonstrates that many of the large property owners are very civic minded and have worked with land conservancies to preserve portions of their properties. Some have even protected all or part of their properties thorough deed restrictions and other tools. Yet, some properties are still vulnerable to development. Philanthropic foundations and conservancies should be encouraged to continue to acquire the most important parcels. The Kennett Pike Association has negotiated deed restrictions that retain open space and preserve viewsheds.

RETAIN LAND VALUE BY EDUCATING LARGE LANDOWNERS

As property is handed down to succeeding generations, at some point the temptation to ‘cash out’ or subdivide becomes too attractive to ignore. Maintaining large estates, financial troubles, the desire to move elsewhere at some point or another tend to drive the decision to cash out or subdivide. The Viewshed Analysis Report lists the available methodologies to protect land in New Castle County. The Brandywine Conservancy has been particularly active in working with private landowners to educate them to the benefits of land preservation.

REVISE THE CONSERVATION DESIGN OPTION IN THE UDC

The New Castle County UDC currently encourages large landowners planning to develop their properties to consider an as-of-right option in the design of the development. (Division 33.300 General Definitions) It is called the Conservation Design Option that provides density bonuses if the design preserves open space. While scenic and historic site features are among the holistic design goals called out for protection, they are not among the required features listed in the resource protection

standards Division 40.10.100: Resource Protection Standards. It is recommended that scenic views be elevated to a mandatory protection status.

STRENGTHEN TRANSFER OF DEVELOPMENT RIGHTS

Transfer of development rights from one property to another enables a property owner to preserve the full value of his property by selling the rights to develop the (first) property to another property owner to increase the level of development on that (second) property. This is successful when the owners of the two properties agree to the transfer and the administrating agency, in this case, the Department of Land Use, determines that both plans and the transfer agreement are approvable under the Code.

The UDC however, requires that the transferring property and the receiving property be in the same planning district. Because there seems to be few receiving parcels in the Brandywine and Piedmont Planning Districts, it is recommended that the UDC be amended to permit development rights to be transferred to any part of the County designated for growth.

ELIMINATE THE ABILITY TO INCREASE THE NUMBER OF ENTITLEMENTS IN THE VALLEY WITHOUT PUBLIC SEWERS

The lack of public sewers has limited growth in the Brandywine Valley. However, as indicated previously, concern exists that public sewer service may need to be extended into these areas because on lot septic systems have begun to fail collectively. Should this occur, and sewer service is extended, pressure to permit increased density through major changes to the zoning code or by the action of the zoning board typically occurs. It is feared that it would only be a matter of time until that pressure succeeds. This is particularly true when the cost to install a public sewer system is high. Property owners then look to sell and developers press to increase yield.

Public sewers address a public health issue that cannot be ignored. The Byway Partnership must remain vigilant to ensure that the density of development does not increase because public sewers lift a capacity ceiling on development. The iconic beauty of the Brandywine Valley is at stake.

TRANSPORTATION STRATEGIES

The land use strategies of the Plan will address the challenges are set forth and summarized in Table 8.

Table 8: Transportation Strategies

Challenge	Strategy
Pedestrian and Bicycle Access is Limited	<ul style="list-style-type: none"> • <u>Develop and Implement a Trails and Pathway Plan for the Valley that connects the parks and cultural venues.</u> • <u>Work with cultural venues to permit public trails and trail easements on their properties.</u> • <u>Where major development is proposed or could be proposed, the UDC should require trail connections throughout the development as well as connections to nearby trails in the plan.</u> • <u>Development reviews performed by DelDOT should solidify the external trail connections through coordination with the County review.</u> • <u>The non-profit community should be encouraged to develop funding packages using non-traditional sources of funding for trail projects.</u> • <u>The trail plan should be included in the Transportation Improvement Plan managed by DelDOT and WILMAPCO.</u> • <u>For the Byway Roadways, Implement the Partnership's Policy on Context Sensitive Pedestrian Pathways</u>
Public and Private Signage is Still Cluttered and Unclear	<ul style="list-style-type: none"> • <u>Work with DelDOT and others to reduce sign clutter both in and on private property adjacent to the public right of way.</u>
Development Access and Entrance Layout Detract from Byway Character	<ul style="list-style-type: none"> • <u>Revise DelDOT's Development Coordination Manual to permit flexibility in driveway design on the Byway and on the roadways in the Valley.</u> • <u>Require landscaping consistent with the Scenic Stewardship Plan</u>
Certain Areas are Crash Prone	<ul style="list-style-type: none"> • <u>Develop a typical section for the rural roadways that retain the character of the area.</u>
Conflicts Between Traffic Flow and Context Sensitivity hurt the Character of the Valley	<ul style="list-style-type: none"> • <u>Institute Context Sensitive Solutions when planning transportation improvements for the Valley</u> • <u>Implement the recommendations of the Route 92/100 Design Charrette as required by conditions in the field and by approval of the Partnership.</u>
Travel Demand, if Not Carefully Managed, Will Overwhelm the Valley	<ul style="list-style-type: none"> • <u>Reinitiate the Tyler McConnell Bridge Project to address the DE 141 bottleneck and regional traffic needs.</u> • <u>Coordinate with the Counties and Municipalities in Pennsylvania to help manage development.</u> • <u>Resist Pressure to Add Roadway Capacity.</u> • <u>Continue to insist on Context Sensitive Roadway Design even if it leaves behind a measure of congestion.</u>

DEVELOP AND IMPLEMENT A TRAILS AND PATHWAY PLAN FOR THE VALLEY THAT CONNECTS THE PARKS AND CULTURAL VENUES.

Trails have become a very popular amenity in the Brandywine Valley. The Northern Delaware Greenway has been attracting more and more users as folks become familiar with it. Connecting Fox Point State Park, Bellevue State Park, Alapocas Woods State Park and Brandywine Park in Wilmington, it is used by hundreds of people each day. In the First State National Historical Park, the trail along the Brandywine Creek is a popular recreational venue as is the network of trails in Brandywine Creek State Park. Yet, there are many missing links in the network. Most prominently is the link between the Northern Delaware Greenway and Brandywine Creek State Park as well as connections across US Route 202 between Brandywine Hundred and the First State National Historical Park.

Delaware Greenways is undertaking a leadership role in developing a trails and pathways plan for northern Delaware, which includes the Brandywine Valley. It has a three-fold action plan:

1. Build a sustainable coalition based organization of organizations interested in trails as transportation facilities, for activity programming, and/or recreation. The coalition will take ownership of elements of the trail plan for funding and implementation. The goal is to involve philanthropic organizations to help fund trail projects.
2. Work with government to develop a partnership that combines private funding sources cultivated by the organizations of the coalition to build more trails faster.
3. Identify early action projects that demonstrate the effectiveness of the coalition's plan.

WORK WITH CULTURAL VENUES TO PERMIT PUBLIC TRAILS ON THEIR PROPERTIES.

The major cultural institutions in the Brandywine Valley do not permit the public to use the trails on their properties either because of liability or admission fee policies. There are also private property owners resistant to permitting trails on or near their properties due to privacy and liability concerns. However, if there was a way to address these concerns, some of the roadways of the Valley that are difficult to traverse on bicycle or on foot could be bypassed. Delaware Greenways will take the lead in working with the venues.

THE UDC SHOULD REQUIRE TRAIL CONNECTIONS THROUGHOUT MAJOR DEVELOPMENTS AS WELL AS CONNECTIONS TO NEARBY TRAILS

Trails are not a required element in certain types of developments permitted in the UDC. Neither are sidewalks. The UDC should recognize the Trails and Pathways Policy developed for the Brandywine Valley National Scenic Byway. The UDC should also require developments are connected to the trail network and where applicable, include the trails in the network on site. Further, in large developments, there should be an internal trail system. While sidewalks could satisfy this requirement, in the more rural areas of the Valley, they would be out of character.

DELDOT SHOULD SOLIDIFY THE EXTERNAL TRAIL CONNECTIONS THROUGH COORDINATION WITH THE COUNTY REVIEW

DelDOT subdivision reviews concentrate on the external roadways and are designed to be sure that development impacts are mitigated in accordance with their Regulations. While coordination with the County Department of Land Use occurs, it does not always reflect the community's desire for trails. Accordingly, it is recommended that the trail plans of the community be adopted and made a requirement for developers to address.

DEVELOP FUNDING PACKAGES USING NON-TRADITIONAL SOURCES OF FUNDING FOR TRAIL PROJECTS

Traditional government sources of trail funding are decreasing. This is a product of declining revenues. Table 9 illustrates the declining revenues for transportation for out years of the Transportation Improvement Program for New Castle County. As shown in the table, funding for Bike/Ped projects is slated to decline by 73%.

This means that the pot of funds traditionally available is not sufficient to maintain a robust trail building program. New funding to supplement government funding is needed. Delaware Greenways has taken the lead in this effort and, as noted earlier is building a coalition of organizations to develop a trail and pathways plan for northern Delaware and cultivating non-traditional funding sources for its planning and implementation.

INCLUDE THE TRAIL PLAN IN THE TRANSPORTATION IMPROVEMENT PLAN MANAGED BY DELDOT AND WILMAPCO

Delaware has developed an extensive Trails and Pathways Plan that focusses on the named major trails. By any measure, the plan is world class and one of the few in the nation that is a statewide plan. However, it does not cover all communities in the state and not every trail proposal is included. By adopting the trail plan into the Transportation Improvement Plan, it will be eligible for government funding.

Table 9: Available Transportation Funding

Funding by Mode	FY 2016-19	Percent	Out years FY2020-21
Bike/Pedestrian	26,694	1.6%	7,264
Multimodal	236,598	14.6%	97,003
Other	237,651	14.7%	109,837
Road	1,005,725	62.2%	245,647
Transit	111,503	6.9%	58,619
Total	1,618,171		518,370

(\$s x 1,000)

Source: WILMAPCO

WILMAPCO hosts a Non-Motorized Transportation Working Group. Delaware Greenways is a member of the group and as part of its membership advocates to have the trails included in the Program.

IMPLEMENT THE PARTNERSHIP'S POLICY ON CONTEXT SENSITIVE PEDESTRIAN PATHWAYS

The Delaware Department of Transportation maintains a series of policies mandating sidewalks in areas of the state that are within towns, villages and cities. The policies also require sidewalks to be constructed along roadways in suburban areas and in areas that are suburbanizing. This is pursuant to a Complete Streets Policy that requires all non-limited access roadways to safely serve motorized vehicles, bicycles and pedestrians. To implement the policy, the Department has created maps that detail where sidewalks are required to be installed by developers as part of their roadway frontage improvements. Outside the City of Wilmington, the policies require the installation of sidewalks from the Wilmington City Line to Winterthur and the Country House and through the village of Centreville on Route 52. On Route 100, sidewalks are required between Route 141 and Montchanin.

The Corridor Management Plan for the Byway provides general guidance with regards to sidewalks, calling for their installation where appropriate. The Partnership believes that sidewalks have already been installed where appropriate along Route 52 in the commercial center of Greenville and in the village of Centreville. As development proposals are submitted, the Partnership is concerned that DelDOT will continue to adhere to the policy and require the installation of sidewalks, severely changing the character of the Byway.

When development proposals are submitted to the Department of Land Use, current practice is to defer to DelDOT regarding the property frontage regarding sidewalks. Coordination with DelDOT at the Deputy Secretary level indicate that DelDOT will defer to the County's Department of Land Use if requested by the County if the County puts in place a policy that adheres to the Complete Streets Policy managed by DelDOT.

Context Sensitive Pathways, unlike over-engineered sidewalks, respect the mature trees and bushes and utilize them as an aesthetic and safety buffer. Such pathways enable residents to safely enjoy the scenic and historic corridors and viewsheds without being intimidated by vehicular traffic, encourage healthy lifestyles, and provide an option other than vehicles to walk to where we live, shop, work, pray, play and school our children, while respecting the rural character of the roadways. Ideally, the pathways should be further away from the roadway than the minimal 10-foot DelDOT right of way, be no wider than 5 feet, be constructed of asphalt, undulate with the natural topography and not be in a straight line.

1. The area under consideration is Route 52 from Stonegates and Brook Valley Road to the PA line except for the Village of Centreville from Center Meeting Road to Snuff Mill Road, which already has sidewalks, plus Route 100 from Route 141 to the Pennsylvania line. No sidewalks should be installed along these areas.

2. Where possible, and without significantly disrupting the inherent qualities of the Byway and its viewsheds, and without destroying mature landscaping, context sensitive pathways are preferred over standard concrete sidewalks in the areas noted in Policy Element No. 1.
3. Pathways should generally be asphalt, no more than 5-feet wide, meandering and undulating with the natural topography of the land.
4. Pathways should be landscaped and preferably located beyond the right-of-way, set back more than 10-feet from the paved roadway or shoulder. If it is impractical to locate the pathway beyond the right-of-way, a pathway in the right-of-way should be considered, or no pathway where an adequate shoulder exists and can serve as a pedestrian walkway.
5. Where a publicly accessible pathway exists within a development, there is no need to construct a second pathway parallel to the roadway. It is important, however, that the pathways internal to the development are connected to pathways on the adjacent properties.
6. The rights of property owners should be respected through active involvement in the planning and design process.
7. Pathways, when required, should be installed only along one side of the Byway. In the case of Route 52, the west side is preferred where possible, but some crossover to the east side may be needed.
8. When the pathway network crosses over the roadway, a pedestrian signal should be installed.
9. Between Stonegates and Kirk/Campbell Road, pathways should also be installed on the east side where possible, and beyond the right-of-way and beyond the right of way where internal pathways are not publicly accessible. West side pathways between Brook Valley Road and Kirk Road should only be considered if and when the properties on that side are significantly developed.
10. Public hearings should be held to determine the communities' preference for where the pathways are located. It is likely that there will be viable alternative pathways along the full length of the network between Greenville and Centreville. Such pathways could be within the right-of-way, beyond the right-of way, or internal to developments.
11. There should be no formal government sponsored pathway or sidewalk project for the Byway. Rather, along these defined areas, context sensitive pathways should be constructed as part of significant development projects.

REVISE DELDOT'S DEVELOPMENT COORDINATION MANUAL TO PERMIT FLEXIBILITY IN DRIVEWAY DESIGN

The Development Coordination Manual governs the relationship between developers and property owners and the Department of Transportation as it relates to access to streets and highways and the rights of a property owner in those transactions. Of necessity, it is very proscriptive and precise in its requirements so that it eliminates as much uncertainty in the relationship as possible.

As proscriptive as the requirements of the Manual are, they are also less flexible in their application when it comes to certain elements of access design. In most applications, this inflexibility serves the state very well. On the state's byways and in the most scenic areas, it does not direct the user of the Manual to consider the context or character of an area in the design process for the access in question. In fact, the words 'byways' and 'context sensitive design' are not present in the Manual. Some progress has been made but it has been on a case-by-case basis requiring the advocacy of the Byway supporters, the intervention of the Department's engineers and planners and a developer or property owner who gets it.

Further, while the State Byway Coordinator is supposed to be notified of applications that are along or affect the Byway, some still 'slip through the cracks' and are caught at a point where design changes are difficult to make.

It is recommended that the Manual be revised to require consideration of the Byway Program and its Manual, *Context Sensitive Solutions for Byways*, the approved Corridor Management Plans and associates documents such as this report and the Department's context sensitive solutions policies contained in the Road Design Manual. This action will insure that access to these special roadways and areas is not out of character with its surroundings yet remains safe and functional.

REQUIRE LANDSCAPING CONSISTENT WITH THE SCENIC STEWARDSHIP PLAN

Completed contemporaneously with the Corridor Management Plan for the Brandywine Valley National Scenic Byway is the Scenic Stewardship Plan: A Plan to Preserve and Enhance the Landscape of the Brandywine Valley National Scenic Byway⁹. This Plan analyzed the historic landscape along each of the sections of the Byway and based upon the analysis, developed a path forward for each section to restore and enhance the landscape. Over the years since publication of that document, property owners have consulted the document as they have landscaped their property. The Kennett Pike Association, with the assistance of the Delaware Center for Horticulture has landscaped areas along the Byway with funding from sponsoring businesses. It has been a success as shown in the example below.

⁹ S. Burton, et. al., for the firm Regional Landscape Enhancement, *Scenic Stewardship Plan: A Plan to Preserve and Enhance the Landscape of the Brandywine Valley National Scenic Byway*, prepared for Delaware Greenways, Inc., 2005.



The developer of an office park at the northeast corner of Buck Road and Kennett Pike in Greenville, landscaped the frontage (left) in accordance with the Scenic Stewardship Plan (left)

In 2014, under a National Scenic Byways Grant Program, Delaware Greenways, on behalf of the Byway Partnership, completed a landscaping project on Kennett Pike on the grounds of the Methodist Home and the Delaware Museum of Natural History to replace a section of Alice DuPont’s ‘pearls’ damaged by the power company’s program of pruning trees.



The picture on the left shows the trees damaged and unappealing by excessive pruning and on the right, the replacement trees. The trees closest to the road are cherry trees that bloom in the spring and behind them are sycamore trees that display spectacular colors in the fall.

The Byway Partnership should work with property owners to alert them to the principles of the Scenic Stewardship Plan, guide them to improve their existing landscape to be in conformance with the Plan and assist in arranging for assistance should the property owner need it.

DEVELOP A TYPICAL SECTION FOR THE RURAL ROADWAYS THAT RETAIN THE CHARACTER OF THE AREA.



This picture of Ramsey Road shows the narrow travel lanes and the drainage ditch along the roadway on the right side of the picture. Also shown is the proximity of the large boulders on the left side. This section of Ramsey Road is in the First State National Historical Park.



This section of Creek Road in the First State National Historical Park is lined with boulders.

The crash analysis presented in detail in the Existing Conditions Report identified the rural roadways as having the highest crash rates in the study area. Route 100 from Adams Dam Road to the Pennsylvania Line, Ramsey Road, Beaver Dam Road and Creek Road, four of the most picturesque roadways had very high crash rates compared to their very low traffic volumes. More than half of the crashes involved vehicles running off the road. The common physical feature of the roadways is that they each have nine or 10-foot travel lanes and no shoulder. Drainage ditches run along the edge of the travel lane and sometimes the pavement at the roadway edge is broken and spalling away. Many of these roads were farm to market roads and the farmers who leased land from the Bancroft family would line the roadways along their fields with boulders they removed to make plowing the field easier.

The typical mitigation would be to add a five-foot wide paved shoulder and move the drainage ditch away from the paved area. That mitigation would change the character of these historic roadways. Accordingly, an alternative mitigation is proposed.

The alternative shown in Figure 21 calls for turf covered drainage swales designed to support the weight of a vehicle. The shoulders would be planted with grass where it is clear that the adjacent property owner is willing to maintain and mow the grass. Where the natural look is desired such as in the National Park, DelDOT should coordinate with the Park Superintendent.

The large rocks should be located outside the clear zone. Since most of the roadways that are lined are posted at a low speed (Ramsey Road and Creek Road are posted at 25 mph., a minimum clear zone of 10 feet is required.



Figure 21: Turf Shoulder. Many of the roadways in the Brandywine Valley are narrow with 10-foot wide travel lanes with no shoulders. Widening them would change the character of the Byway and of the surrounding countryside. One concept could be to install turf shoulders, strong enough to support the weight of a vehicle yet surfaced with turf which can be mowed by the adjacent property owner in residential areas.

INSTITUTE CONTEXT SENSITIVE SOLUTIONS WHEN PLANNING TRANSPORTATION IMPROVEMENTS

Context sensitive solutions (CSS) “is a collaborative, interdisciplinary approach that involves all stakeholders in providing a transportation facility that fits its setting. It is an approach that leads to preserving and enhancing scenic, aesthetic, historic, community, and environmental resources, while improving or maintaining safety, mobility, and infrastructure conditions.”¹⁰

Chapter 10 of DelDOT’s Road Design Manual defines Context Sensitive Design as, “... a term used to identify a design process that balances the design features of a project with: user safety, transportation system needs, accessibility and mobility, preservation of historic sites and districts, natural and man-made environmental concerns, state and local economic needs, and preservation of community values”.¹¹ However, Chapter 10 refers the roadway designer to previous chapters of the Road Design Manual for design criteria and other design requirements. This sometimes leads to difficulties when working with the Byway communities on projects as the designers first present a design that in the mind of the community does not fit into the character of the Byway. Chapter 10 then goes on to indicate, “Since the criteria is conservative in many areas with a significant margin of safety, there is room for creative yet safe designs when a designer has to look beyond the criteria

¹⁰ Results of Joint AASHTO/FHWA Context Sensitive Solutions Strategic Planning Process Summary Report March 2007.

¹¹ DelDOT, Road Design Manual, Chapter 10.1.

to meet a constraint or issue that arises.” However, these words are sometimes ignored given the concern for safety.

To help address this conflict, the Department has published, “Context Sensitive Solutions for Delaware Byways¹² . This document provides the designer with additional guidance by integrating Context Sensitive Solutions (CSS) with the Delaware Department of Transportation’s (DelDOT) Project Development Process, providing guidance for projects within designated byway corridors during the planning, design, construction, and operation and maintenance of projects on Delaware Byways. While not suggesting new design standards and criteria, it instructs the designer to understand the unique intrinsic qualities of the Byway and consider those in the design of the improvement.

The above documents provide guidance to the designer and should bring the community and the designers closer in their perceptions of good design practice that represents the character of the Byway.

IMPLEMENT THE RECOMMENDATIONS OF THE ROUTE 92/100 DESIGN CHARRETTE

In March 2015, the Brandywine Valley National Scenic Byway community came together at a three-day charrette designed to explore options for improving the intersection of Route 92 and Route 100 in a manner consistent with preserving the intrinsic values of the Byway. The community consensus at the end of the charrette process was a preference that the area surrounding the intersection remains as it is today. Should conditions change such that transportation improvements are required, the Partnership should be empowered to consider first whether the need to act is powerful enough to overcome the desire to keep the area as it is today. Should that threshold be crossed, the Charrette Report suggested a progression of improvements that should be considered¹³.

¹² DelDOT, Context Sensitive Solutions for Delaware Byways, June 2011.

http://www.deldot.gov/information/business/drc/manuals/context_sensitive_solutions_for_delaware%20byways.pdf

¹³ Planning Communities, *Brandywine National Scenic Byway SR 90/SR100 Charrette Summary Report*.



Route 100 approaching the intersection with Route 92. Winterthur is on the left side of the picture and the Brandywine Creek State park is on the right. Note the stone walls on the Winterthur side.

As part of their mission, the Winterthur Museum, Garden and Library has recorded a substantial amount of knowledge regarding the historic landscapes around the intersection of Routes 100 and 92 and made this knowledge available to the participants of the charrette. Indicating that the DuPont families that owned the land maintained the gently sloping landscape much as it has always been and when improvements were made, they were fit into the landscape with minimal disturbance, Winterthur staff advised and the participants agreed that preserving the landscape was paramount. Further, one element left for future generations were the stone walls with their capstones found throughout the Brandywine Valley.

The Brandywine Valley Byway National Scenic Byway Partnership and the Brandywine Valley National Scenic Byway Advisory Board should work with all levels of government, the cultural and natural resources communities, developers, public utilities and other civic groups to preserve the picturesque valley. When transportation improvements are needed as deemed by the Byway Partnership, they should be developed in a context sensitive manner.

REINITIATE THE TYLER MCCONNELL BRIDGE PROJECT TO ADDRESS THE DE 141 BOTTLENECK AND REGIONAL TRAFFIC NEEDS

Several years ago, DelDOT made a concerted attempt to remove the Tyler McConnell Bridge and replace the DE Route 141 crossing with a wider structure that would consist of two new structures with two lanes in each direction. The two new structures and capacity improvements were considered by many to be more harmonious of the area than simply adding a similar twin structure to the existing two-lane bridge and attempting to improve the current aesthetics. Both bridge concepts provided multi-modal use for pedestrians and bicycles. However, the existing 1952 bridge is eligible for the National Register of Historic Places and was found to be in good structural condition. A proposal to remove a structurally sound bridge and a historic resource was found unjustified to various agencies regulatory to DelDOT and its federal funding programs. As a result,



Views of the Tyler McConnell Bridge that carries DE Route 141 across the Brandywine Creek. The structure has been deemed historic to the National Register of Historic Places. This presents challenges in either a replacement or in offering a twin structure that may or may not be harmonious to the viewshed and of other historic properties as seen from below.

expenditures to justify a total replacement of the existing two lane bridge (i.e. not adding a twin span next to it) dried up and efforts and the project were placed on an indefinite hold. Traffic monitoring currently takes place. In doing so, the bottleneck and current circumstances remain. Until the existing two-lane bridge structure can be replaced or the existing bridge can be complemented and approved with a twin structure, the area will continue to exist with regional implications. Based on the conclusions of the Travel Demand Report and traffic monitoring, this effort and dialogue should be reengaged.

COORDINATE WITH THE COUNTIES AND MUNICIPALITIES IN PENNSYLVANIA

In Pennsylvania, land use decisions are municipality based. There are over 2,500 incorporated municipalities in Pennsylvania's 67 counties. Rarely is there close coordination across municipal boundaries. Worse, Pennsylvania law specifies that each municipality provide for all potential land uses in their zoning code. It is to the municipality's advantage to encourage low-density residential development across as wide an area as possible to deter undesirable land uses or force them by default to parcels on municipal boundaries. Increasing density through clustering does not mean

fewer dwelling units or more publicly owned open space. Rather, it typically means the same number of units with privately owned open space. However, municipalities in Pennsylvania are realizing the costs of low-density development and the seeds of coordination are taking root. Recently, WILMAPCO and the Delaware Valley Regional Planning Commission (DVRPC) have published reports advocating coordination and documenting the coordination efforts underway.¹⁴ While the reports are regionally focused, the opportunity exists to develop a case study of cooperation between New Castle County and the counties of Chester and Delaware in Pennsylvania within the framework established by DVRPC and WILMAPCO. Focusing on encouraging best land use practices and integrating transportation into the land use planning process would go a long way to addressing the challenge. Increased coordination across state lines through peer-to-peer coordination and projects can shine a light on the benefit of increased coordination and cooperation. WILMAPCO should be enabled to submit formal comments on land use actions in the nearby Pennsylvania municipalities, and particularly those that feed traffic to the Kennett Pike Corridor. New Castle County Department of Land Use should collaborate with the Chester County and Delaware County Planning Commissions to coordinate planning efforts and DelDOT and PennDOT should coordinate on major projects that have impacts across state lines.

RESIST PRESSURE TO ADD ROADWAY CAPACITY.

Rarely is any the zoning plan tied to the carrying capacity of the infrastructure it relies upon; rather, it is an exercise of insuring the preservation of property rights. It is not reasonable or prudent to radically change the number of development entitlements; such changes are classed by the courts as takings warranting fair market based compensation. For years, however, in the Brandywine Valley, public-spirited landowners have worked with non-profit conservancies and government to preserve the most treasured lands. Recently, Woodlawn Trustees, the largest landowner in the Brandywine Valley sold 1,100 acres of their holdings to create the First State National Historical Park forever preserving some of the most beautiful and best viewsheds of the Brandywine Valley. Continued efforts to preserve land are clearly warranted and opportunities exist given the interest in the valley. Nevertheless, as traffic increases, pressure to relieve congested roadways increases.

The Brandywine Valley National Scenic Byway Partnership members should remain vigilant to such pressures and intervene as needed on behalf of the Byway. Certainly, such actions will lead to congestion that elsewhere in other areas would be remedied with projects that increase roadway capacity. Here, in the Brandywine Valley, the intrinsic values of the valley are far too significant to endanger with larger and larger highways. Such pressure should and must be resisted.

¹⁴ Delaware Valley Regional Planning Commission, *Planning at the Edge*, July 2003 and WILMAPCO, *Inter-Regional Report, Making Connections Across Our Region's Borders*, 2012.

A CALL TO ACTION

The Brandywine Valley National Scenic Byway began, like all other byways, as a citizen led initiative to protect and preserve the Brandywine Valley and its iconic viewsheds and institutions. The DuPont and Bancroft families left a legacy that is as much unique as it is special. Most importantly, this landscape is valued by the general public and the community through its leaders and cultural institutions has stepped forward and accepted the responsibility to be a steward of this treasure. and must be preserved. These strategies provide a roadmap for this generation and generations to come to achieve the widespread goal of preservation and protection of the Brandywine Valley. It is incumbent upon the residents, businesses and governmental agencies to rise to the challenge so that this treasure handed down to us to protect is not lost.



