

CHAPTER 4 EXAMINING THE CORRIDOR CONTEXT



4.0 INTRODUCTION

This chapter summarizes the existing conditions along the Byway corridor from numerous documents, and the policies and guidance that support, hinder or have the potential to impact the management of the Byway's intrinsic qualities and corridor characteristics. It highlights the opportunities and constraints that will guide the development of management strategies and an action plan for the Byway corridor. In seeking out strategies to retain the qualities of the Byway corridor, this assessment of existing conditions will help identify and define infrastructure improvements, management policies, tourism and education strategies and actions designed to preserve and enhance the Byway.

The Byway Corridor is dominated by a coastal landscape of tidal marshes, shoals, and creeks leading to the Delaware River and Bay, and characterized as mostly rural with farmland predominantly in the southern section of the byway. Industrial land dominates the northern landscape between the City of New Castle and the C&D Canal. Small coastal communities are found along the corridor offering a glimpse of life along the water. A significant portion of the land along the Byway Corridor is in public ownership with some suburban development interspersed near the larger urban areas at the northern end of the Byway corridor, and to the east of Middletown.

"Route 9 is a forgiving road - but watch out for water on the roadway. And where else can you go around a corner and nearly run into a 20-pound snapping turtle?"

*Harry Pressell
Former Bartender, Augustine Inn*

4.1 BAYSHORE INITIATIVE

Forty-one years ago, Governor Russell Peterson signed into law the Coastal Zone Act. This landmark legislation set the stage to preserve the Delaware Bayshore in perpetuity. Since the act was signed into law, more than 50% of the acreage east of Route 1 from Pea Patch Island to Lewes has been preserved. The Byway is located in the northern half of this area. The Bayshore is a world-class birding area. In DNREC's Bayshore Initiative there are a number of goals, each of which informs this Corridor Management Plan (CMP). They are highlighted below:



Abundant wildlife can be found along Delaware's Bayshore.

- Conservation and Restoration
 - *Land/Waterway Conservation:* Expand landscape-level conservation, farmland preservation, and habitat connectivity through voluntary acquisition/easement of unprotected lands.

- *Ecological Restoration*: Enhance critical native habitat and restore waterways to protect/promote species diversity, reduce flooding, improve water quality, and adapt to climate impacts.
- *Resource Protection*: Coordinate enforcement of existing regulations that prohibit trespass, vandalism, poaching, and disturbance to wildlife and habitats.
- Recreation and Connectivity
 - *Connectivity with Local Communities/Waterways*: Focus strategic infrastructure investments to connect wildlife areas to urban centers by enhancing Route 9, the C&D Canal Trail, local hiking trails, and navigable waterways.
 - *Safe and Healthy Recreational Experiences*: Promote low impact recreation activities and improve water quality to increase fish and shellfish populations; protect swimmers, seafood consumers and other users; and maximize enjoyment of outdoor experiences.
 - *Access Enhancements*: Ensure safe, aesthetically pleasing and more rewarding wildlife viewing, photography and other recreation opportunities in both urban and rural areas.
- Engagement and Marketing
 - *Visitor Engagement/No Child Left Inside*: Focus educational programming, interpretation and recreational efforts on inspiring the next generation of environmental stewards.
 - *Marketing*: Coordinate with local communities, tourism offices, local business and residents to aggressively promote the area regionally, nationally and internationally.
 - *Volunteerism Promotion*: Engage local residents, community groups, service organizations, schools and business to instill a sense of ownership and stewardship.



Views along the Route 9 Byway illustrate varying road conditions and landscapes.

4.2 INSTITUTIONAL SURVEY OF THE BYWAY

An important part of preparing a Corridor Management Plan is examining the various plans, policies and programs that have already been implemented by state, county and local governments. An inventory of selected planning-related policy documents, ordinances and data compiled and reviewed for the purposes of this CMP is included in the Appendix. The local municipalities and the counties have in place guidance that addresses land use, economic development, natural resource protection and historic preservation, most of which are compatible with the Byway vision and goals. However, additional sensitivity to the unique characteristics of the corridor in public decision-making could advance the quality of new development and improvements to enhance the byway's environmental and historic context.

The Fort DuPont Master Plan, currently underway will consider land uses that take into account the eco-tourism focus of this byway corridor to potentially encourage visitor amenities and services. The Fort DuPont Master Plan is being developed in parallel with this Corridor Management Plan. Chapter 4 of New Castle County's Comprehensive Plan in its recognition of the Byway with these words, "Continue to support the preservation of natural, cultural, recreational and historical resources through the State Scenic and Historic Highway Program", will further influence the Fort DuPont Master Plan, tying it to the goals and objectives of Delaware's Bayshore Byway.

Significant guidance is already in place for preserving and managing the resources within the extensive state and federal public lands along the corridor. Some properties, such as Bombay Hook National Wildlife Refuge, have many valuable resources in place, although a new management plan is currently underway to define future actions to improve this public asset. Others, such as Cedar Swamp Wildlife Area, could be further developed to improve management strategies for its protection and public-access opportunities.

In consideration and development of management strategies for the byway, the following policies, plans, programs, regulations were examined for their alignment and capability to support or challenge meeting the byway vision and goals. A more comprehensive summary of the institutional survey can be found in the Appendix. This analysis identifies what is already in place today, and the ability of them to address CMP requirements, such as compatible land use, multi-modal transportation and safe travel, protection of the byway intrinsic qualities, and traveler amenities and services. Ultimately, the CMP along with other policies, plans, programs and regulations will allow local stakeholders to realize the byway vision and meet the byway goals. Essentially, the combination of local, regional and state efforts and organizational endeavors provide a toolkit from which the CMP builds upon

Generally, the toolkit is organized around the following factors:

- Natural Resources and Environmental Considerations
- Land Use and Historic Preservation
- Transportation and Safety
- Community Qualities and Economic Potential

4.3 CORRIDOR TOOLKIT

4.3.1 NATURAL RESOURCES AND THE ENVIRONMENT

There are extensive tools in place to potentially assure the future byway character and protection of natural resources while providing for public access, use and enjoyment of them. Below is a summary of documents that guide the Byway Corridor’s public lands and the natural environment.

Delaware Sea Level Rise Adaptation Plan

There are two parts to the State of Delaware’s planning process to adapt to Sea Level Rise. The first is the Vulnerability Assessment and the second is the Adaptation Plan. They are briefly described below.

Sea Level Rise Vulnerability Assessment for the State of Delaware¹ -- Results of the Sea Level Rise (SLR) Vulnerability Assessment clearly demonstrates the impact on the Bayshore Corridor from sea level rise inundation. “Within those potentially inundated areas lie transportation and port infrastructure, historic fishing villages, resort towns, agricultural fields, wastewater treatment facilities and vast stretches of wetlands and wildlife habitat of hemispheric importance. “ The Vulnerability Assessment provides valuable data on the potential impact to Delaware resources. Of the sixteen resources of concern, which emerged in the study, the following are important to the future management of the Byway and Bayshore:

- Beaches and dunes
- Coastal impoundments
- Dams, dikes and levees
- Evacuation routes
- Freshwater tidal wetlands
- Future development areas
- Habitats of conservation concern
- Heavy industrial areas
- Roads and bridges
- Tidal wetlands
- Tourism and coastal recreation
- U.S. Fish and Wildlife Refuge



The quieter, wilder side of the Delaware Bayshore

Sea Level Rise Adaptation Plan -- Due to the byway’s location on the eastern shoreline of Delaware, this Adaptation Plan, scheduled for completion in Fall 2013 is a critical management tool for the communities and lands within the byway corridor. The plan will provide information about adaptation strategies and will recommend actions for the state to take to build its “adaptive capacity” including recommendations for coordination, filling data gaps, regulatory changes, technical assistance and education. It will serve as a roadmap for implementing actions that will improve Delaware’s ability to

¹ A Progress Report of the Delaware Sea Level Rise Advisory Committee (November 2011)

prepare and respond to the challenges of SLR. The Sea Level Rise Advisory Committee will ensure that the Adaptation Plan reflects potential solutions to reduce risk to sea level rise impacts.

The following list of Options for Preparing Delaware for Sea Level Rise was developed by Delaware's Sea Level Rise Advisory Committee for potential inclusion into the State's Sea Level Rise Adaptation Plan. The options below were the result of an October 2012 workshop, discussions with subject matter experts and deliberation by the Advisory Committee. The options target the 16 vulnerable resources that were considered a high or moderate concern in the 2012 Sea Level Rise Vulnerability Assessment for the State of Delaware.

- Improve Communication and Coordination between State, Federal, Local and Regional Partners to Streamline Sea Level Rise Adaptation Efforts.
- Provide Increased Regulatory Flexibility for Adaptation and Improve Consistency between Regulatory Agency Decisions.
- Provide Consistent and Predictable Policies for Future Growth, Investment, and Natural Resource Management.
- Increase Public Awareness of Sea Level Rise through Education, Outreach and Marketing.
- Improve the Availability & Robustness of Sea Level Rise Data Sets.
- Provide Technical Assistance to Partners for Assessing Vulnerability and Choosing Adaption Strategies.

Delaware Coastal Programs Sea Level Rise Initiative -- To help assess, prepare for and minimize the potential impacts of SLR, the Delaware Coastal Programs Section of DNREC is leading a multi-year Sea Level Rise Initiative. Its goal is to reduce Delaware's future vulnerability to the effects of sea level rise by:

- Providing scientific and technical support for decision-making;
- Implementing on-the-ground project in partnership with stakeholders;
- Providing educational and outreach opportunities for stakeholders and the public; and
- Improving existing policies and management practices and/or developing new policies and management practices where necessary.

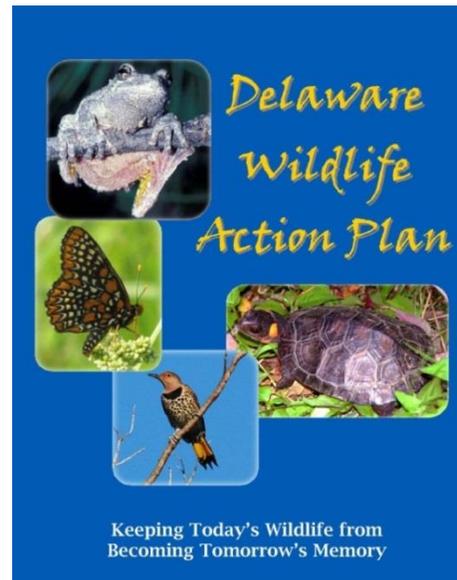
As part of the goal of providing scientific and technical support for decision-making, Delaware Coastal Programs scientists have partnered with the National Wildlife Refuge System, the University of Delaware, local Estuary Programs and other state agencies to fill gaps in knowledge about coastal storms, tide levels and marsh sediment accretion. This data and information will be used for policy development and communication of this new information is a component of the ongoing outreach strategy by DNREC.

Delaware Wildlife Action Plan (Olin Allen, 2006)

This plan is currently undergoing a required review and revision process that will be completed by October 2015. In the current Action Plan, wildlife and habitat conservation issues and actions provide guidance on strategies that DNREC and its partners can take. One important implementation strategy is the development of detailed, site-based conservation plans for ecologically distinct portions of the Green Infrastructure Natural Resources Focus Areas. Doing so will further develop recommendations to protect wildlife and plant species in important habitat corridors, some of which are located along the Byway.

The goal of this Action Plan is to provide strategic direction, and an information and logistical framework, for conserving Delaware’s native wildlife and habitats as vital components of the state’s natural resources. It is based on the following principles:

- Conservation of Species vs. Habitats – Emphasize the management of ecological structure and function of key habitats over management of individual species
- Management on Conservation Lands – Direct management in state wildlife areas, parks and forests in the Green Infrastructure Natural Resources Focus Area, which are areas, defined using criteria and mapping to identify an interconnected network of forest, upland and wetland habitat for a variety of species.
- Management on Private Lands – Direct private lands management toward buffering and connecting conservation lands in the Green Infrastructure Natural Resource Focus Area.
- Measuring Success – Establish performance indicators to measure the success of conservation actions and plan implementation by conducting inventories, research and monitoring of species, habitats and the impacts of conservation to guide adaptive management.
- Partnership Development – Strengthen partnerships among conservation agencies and organizations to link landscapes, tie together complementary efforts, and leverage investments.
- Data Collection and Information Management – Collect, manage and analyze data to support wildlife diversity conservation efforts with sound science.
- Education, Outreach and Enforcement – Increase public knowledge of wildlife conservation issues to develop an understanding of habitats, species, and conservation issues and actions; foster a sense of responsibility for personal choices; actively engage citizens in conserving natural resources; and otherwise cultivate support for wildlife diversity conservation. Enforce regulations to promote responsible behavior in interactions with wildlife.



Kent County's Comprehensive Plan (2007), Green Infrastructure Plan

This Plan is aligned with the DNREC'S efforts to protect wildlife and plants in a conservation framework. This Green Infrastructure Plan includes a strategy to utilize the Wildlife Action Plan, Green Infrastructure, and Source Water Protection maps produced by DNREC in conjunction with Land Evaluation Site Assessment (LESA) scores in ranking properties for County agricultural land preservation funding. This effort can advance the preservation of the byway's rural landscape in the County. Kent County also incorporated a modeling effort, Delaware Ecological Network (DEN), which was published in a peer-reviewed journal in 2007 and referenced in their comprehensive plan. DNREC is currently updating this DEN model with The Conservation Fund as part of the update to the Delaware Wildlife Action Plan.

“If the County’s goal is to enable the creation of communities, the effort cannot be considered complete without also integrating natural resources in the design.”

Kent County
Comprehensive Plan

US Fish and Wildlife Service Delaware Bay Estuary Project

The Delaware Bay Estuary Project is part of the U.S. Fish & Wildlife Service's National Coastal Program. The Coastal Program focuses the U.S. Fish and Wildlife Service's efforts in bays, estuaries and watersheds around the U.S. coastline. The purpose of the Coastal Program is to work together with our partners to conserve fish and wildlife and their habitats.

Partnership for the Delaware Estuary

The Partnership for the Delaware Estuary is a nonprofit organization established in 1996 to take a leadership role in protecting and enhancing the Delaware Estuary, where fresh water from the Delaware River mixes with salt water from the Atlantic Ocean. It is one of 28 congressionally designated National Estuary Programs throughout the coastal United States working to improve the environmental health of the nation's estuaries. <http://www.delawareestuary.org/>.

Coastal Zone Laws and Regulations

Both the **Delaware Coastal Zone Act Program** (1971) and the **Regulations Governing Delaware's Coastal Zone** (1991) put in place a law and regulations to promote improvement of the environment while providing for existing and new industries to stay competitive. Although this program and its governing regulations reach beyond the byway corridor, it provides guidance for lands along the Byway, prohibiting certain uses and managing others, thus reinforcing the intent to protect this region's natural resources, and promote the area for tourism.

The following documents specifically focus on Byway destinations that contribute to the natural, scenic, and recreational qualities that make this a significantly unique byway:

Blackbird Creek Reserve Ecological Restoration Master Plan (March 2007)

Blackbird Creek Reserve, a major natural resource in the central portion of the byway corridor has public access. It is part of the Delaware National Estuarine Research Reserve, one of 28 National Estuarine Research Reserves across the country protecting over 1.3 million acres of coastal and estuarine habitat for purposes of long-term research, environmental



This image of Blackbird Creek taken from the Blackbird Creek Reserve Ecological Restoration Master Plan illustrates the beauty and importance of this resource.

monitoring, education and stewardship. It is comprised of land held by private landholders protected under the Delaware State Wetlands Act in addition to lands the managed by the Department of Natural Resources and Environmental Control. The acquisition of several parcels in 2003, 2004 and 2005 within the Blackbird Creek Reserve is part of a regional conservation effort that is defined in this Master Plan. This Master Plan also identifies potential restoration initiatives to assure that a coordinated effort is taken to develop a strategy for a site’s ecological restoration needs and priorities.

Bombay Hook National Wildlife Refuge

Bombay Hook National Wildlife Refuge (NWR) is developing a long-term management plan in which the NWR can serve the needs of both wildlife and people. It is important for this significant national resource to maintain, improve and enhance its amenities and resources for the byway traveler.

Delaware Birding Trail

The map and guide to birding sites in Delaware is a joint project by Delaware Audubon, Delmarva Ornithological Society, and DNREC’s Division of Fish & Wildlife. Of the 27 sites throughout the state, nine are located along the Byway. Information about year-round birding in the state provides valuable details on the site, a description of birds that often nest or can be seen at the site, and seasonal considerations. Access and directions to the site and what the sites are described in the map/guide found on the website: <http://www.delawarebirdingtrail.org/>.

Natural Resources Opportunities and Challenges

Review of the existing site conditions, plans, policies and regulations already in place have revealed the following natural resource and environmental opportunities and challenges for the Corridor Management Plan.

OPPORTUNITIES:

- The Bayshore is a world-class birding area, and the Delaware Birding Trail is already in place to encourage eco- and nature- based tourism.
- Extensive plans to protect natural resources by the State and County agencies.
- Regulations to protect Delaware's coastal zone.



Hundreds of thousands of shorebirds can be seen particularly during the migration season along the Delaware's coastal landscape of Delaware's Bayshore Byway.

CHALLENGES:

- Additional human and financial resources are needed to undertake some of the ambitious plans to protect, improve, and provide visitor amenities.
- Public lands could go further in developing or implementing plans to improve the management including protecting resources, addressing flooding, and improving recreational and interpretative facilities.
- Finding opportunities to generate revenue for operations and management of all the public facilities needs to be further explored throughout the Byway Corridor.
- Counties and local municipalities are significant partners in protecting the valuable natural environment in their communities. The development and implementation of green infrastructure systems is critical. Examining the implementation of the Kent County Green Infrastructure Plan could assist in defining its successes, gaps and modifications.
- Although each municipality and county have strong plans and regulations, it is important that decision-making focuses on policies and development that minimizes any negative impact on the Byway resources while identifying opportunities to enhance or improve the Byway experience for future generations.
- While SLR remains a challenge, the state is developing an Adaption Plan to address it.

4.3.2 LAND USE RESOURCES, PLANS AND GUIDANCE

Land development along Delaware’s Bayshore Byway is limited to a few areas including undeveloped areas in New Castle, the Governor Bacon complex at Fort DuPont, and a major planned development for some 700 residential units in Port Penn along Port Penn and Pole Bridge Roads between US Route 13 and State Route 9. There are no developments proposed in Kent County, where the Byway corridor is entirely outside of the designated growth area.

There are a number of state, county and local planning policies that encourage the type of growth and development that would retain the rural and natural characteristics of the Byway corridor, and their communities. Decision-makers should rely and refer to the following documents, among others as appropriate, that highlight guidance to meet CMP requirements established by the National and State Scenic Byways Programs for ***a strategy to enhance existing development and accommodate new development while preserving the qualities of the corridor.***

Delaware Strategies for State Policies and Spending (Coordination, 2010) – The purpose of the *Strategies for State Policies and Spending* is to coordinate land-use decision-making with the provision of infrastructure and services in a manner that makes the best use of our natural and fiscal resources. The importance of such coordination lies in the fact that in Delaware land-use decisions are made at the local level, while the bulk of infrastructure (e.g., roads and schools) and services (e.g., emergency services and social services) that support land-use decisions are funded by the state. Thus the development of this document with local governments and citizens helps to create a unified view toward growth and preservation priorities that all levels of government can use to allocate resources.

The *Strategies* are designed to guide the State to use its fiscal resources to enable and encourage the creation of “Complete Communities.” A Complete Community has a number of important characteristics. These include: complete streets, which accommodate pedestrians, bicycles and transit in addition to autos; efficient land use that provides a mix of residential, commercial, and industrial activities essential to a healthy economy; healthy and livable attributes, such as trails, parks and access to healthy foods; inclusive and active elements which provide activities, festivals, and programs that enhance social connections and a sense of place; and sustainability which relates to harmony with the natural environment as well as a sustainable economy. Many of these goals can be achieved in the corridor in concert with the recommendations in the plan.



“The tremendous growth in Delaware’s farmers’ market program helps strengthen the agriculture industry and support local jobs,” Governor Jack Markell

The *Strategies* maps identify the bulk of the corridor area as either “Out of Play” or “Investment Level 4.” Areas that are considered “Out of Play” are already preserved for agricultural or natural resources purposes, and will not be subject to future development activity. The other rural lands in the corridor

are designated Level 4, which indicate that State investments will support agricultural preservation and natural resource protection. The incorporated communities along the corridor are mostly identified as Investment Level 3, with a few including some Level 2 areas. The *Strategies* support investments that will enhance these communities to bring them more in line with the Complete Community concepts. Many of the low impact ecotourism uses described in this plan are certainly compatible with the goals and policies in the *Strategies*.

Department of Agriculture Land Preservation Foundation is an important effort in the State to protect farmland. More than 100,000 acres of Delaware farmland are permanently preserved by the Department of Agriculture, a milestone that protects a fifth of all agricultural land in the state. In addition, farmers' markets provide a significant economic boost to Delaware agriculture with growth due to the rising interest in locally grown food and healthy eating. There is the potential to increase these markets along the Byway and embrace the agricultural lifestyle of the people who live it.

“To preserve New Castle County as a strong community, where residents can grow up and grow old in a healthy and safe environment, by encouraging environmentally and economically sustainable use of land, which protects the county’s natural, cultural, agricultural, and historic resources.”

Vision Statement, New Castle County Comprehensive Plan

Draft New Castle County 2012 Comprehensive Plan Update – This County update is aligned with the goals and objectives of the byway in several ways as noted below:

- Recognizes the State Scenic and Historic Highways Program (currently the Delaware Byways Program) as a measure to support the preservation of natural, cultural, recreational and historical resources.
 - Work with those involved in byways to identify potential code issues that impede preservation.
 - Enter into partnerships to study and preserve byways.
- Addresses community design including sustainable design standards including:
 - Promote design, which is compatible with the community and its surroundings
 - Create compact mixed-use development opportunities.
 - Promote environmentally and economically sustainable growth.
 - Establish stewardship and preservation of the unique character of the County’s villages and hamlets.

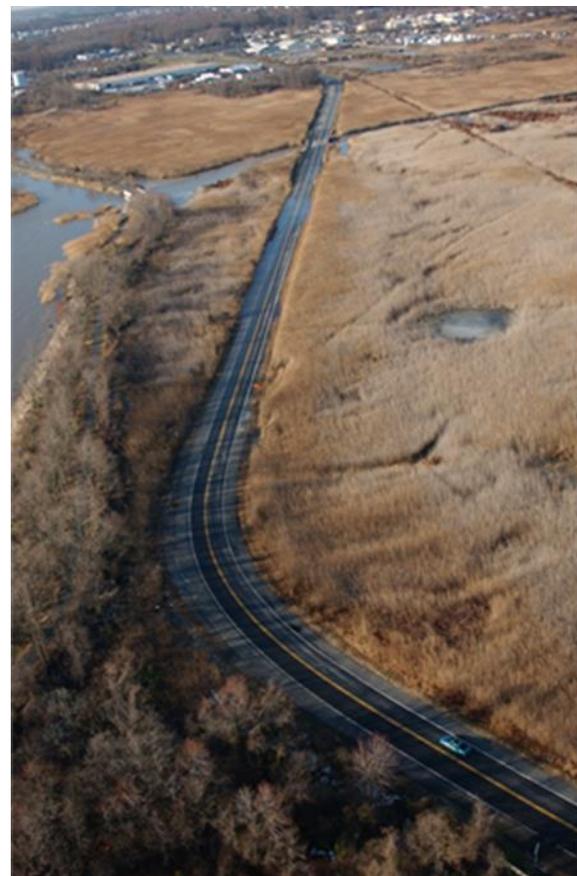
- Establishes new zoning classifications – Small commercial on urban fringe, agriculture preserve, and open space zones can guide place-sensitive development and the protection of open space along the Byway. Because this Plan Update directs future growth to Growth Areas, it reinforces the goals to preserve and protect the valuable natural resources along the Byway.

City of New Castle 2009 Comprehensive Plan – The City supports the burying of utilities in connection with road improvements, which could enhance the street view along the Byway. A number of adopted Zoning Ordinance amendments on land use and design could support historic preservation, conservation-minded retention of natural resources, place-sensitive design, and a mix of uses that encourages a pedestrian-oriented community with walking tours and traveler services. There are also a number of goals and strategies adopted by the City of New Castle that encourage the preservation of this unique historic district and improvements that support visitation by Byway travelers. They include:

- Land Use Goal 1: Continue to encourage mixed residential/retail/office uses. The City is pursuing opportunities to strengthen the downtown ties to the waterfront. This presents an opportunity to examine market options to improve services and amenities for the Byway traveler.
- Land Use Goal 2: Develop New Castle’s remaining undeveloped parcels, brownfields, and redevelopment areas harmoniously with nearby land use; the city is focused on several parcels on Route 9 and Larkin Streets. Future development of these parcels can enhance or detract from the Byway, and consideration should be given to land uses and design guidance that will enhance the visual



This property is directly on the Byway and its future use could contribute to the visual appeal along this section of the route as well as provide byway services or amenities.



This section of Route 9 just south of the City of New Castle hugs the shoreline and in many cases as shown here crosses over numerous water bodies. It is subject to flooding for much of its length.

attractiveness of the area, such as street trees and other landscape improvements, pedestrian and bicycle facilities, location of buildings close to the street with parking in the rear.

- Land Use Goal 3: These recommendations for redevelopment have the potential to enhance the Byway.
 - Develop and adopt long-term redevelopment vision plans for Ferry Cut-off and the 7th and South Streets area. This area is strategically important because it is the northern gateway to the Harriet Tubman Underground Railroad Byway, and the northern end of Delaware's Bayshore Byway. The City and DelDOT are prepared to undertake a Context Sensitive Solutions process to develop a gateway vision and transportation improvements at this site.
 - Seven parcels to the north and south of Dobbinsville are recommended for open space acquisition since it serves as neighborhood open space and a southern gateway for the City of New Castle. A proposed fishing pier and waterfront trailhead are suggested uses for this acquisition and important as providing additional access to the Delaware River and Byway amenities.
 - Another acquisition on the east side of 6th Street, north of downtown is recommended for a waterfront trail extension, another important improvement for the Byway user providing additional access to the Delaware River.

Kent County Comprehensive Plan (2007) – A number of goals that guide the County's future can further enhance the byway including the building of community centers, and the protection of natural resources and the County's rural character. The natural amenities of Kent County are significant components of the high quality of life and support the economy both for the County and the Byway. Plan guidance recommends ensuring that development will be responsive to these natural features, which integrates with an interconnected network of natural areas and green space known as green infrastructure.

The Plan goes further in recognizing that the protection of the rural character is dependent on the ability to encourage and protect agricultural uses.



A typical sprawling subdivision should be avoided in order to retain the rural scenic views along the Byway.

Protection of historic places is an integral component of this Comprehensive Plan and the Byway Corridor Management Plan (CMP).

Most importantly is the guidance to discourage sprawl development. Although the Growth Management Strategy says all the right things, zoning still allows for low-density residential (1 – 4 DU per acre), which could result in a sprawling pattern when development review is not required. The Byway corridor is outside of the Growth Zone Overlay, and the Transfer of Development Rights (TDR) map shows the area as a high-priority sending area, which reinforces a vision for the byway’s rural landscape.

The agricultural industry in Kent County contributes to the scenic beauty and “road less traveled” character of the Byway. A combination of incentive-based strategies and regulatory tools in the County’s Comprehensive Plan support the protection and enhancement of the byway character and the sustainability of the agricultural industry by:

1. Promoting the retention of farms and farmland within Kent County;
2. Seeking to strengthen the agricultural sector of Kent County;
3. Developing regulations that will direct development to areas where infrastructure exists or is planned in order to encourage agriculture and maintain the current quality of life for the residents of the County; and,
4. Seeking to promote and develop less mainstream agricultural uses such as: horse farms, orchards, organic farming, wineries, sod farms and aquaculture.

Areas outside of the Growth Zone Overlay are predominantly agriculture with many properties that have sensitive environmental features such as wetlands, woodlands, and habitat, all crucial to preserving the byway character. In support of this, the County’s primary interest outside the agricultural land and rural infrastructure is to protect environmentally sensitive areas and water quality of the Delaware Bay and Chesapeake Bay Watersheds. One area along the byway where development might occur is the water service area southwest of Leipsic.

The County’s Green Energy Project, centered on wind energy generation and biomass, depending on the location and the siting of these facilities may have not only a visual impact on byway character but an impact on birds and bats so important to the area’s recognition as an important global birding area.

Town of Leipsic Comprehensive Plan (2006) – the plan was prepared to establish a zoning code and map to guide new development for compatibility with the Town culture and its

Community Vision

The Town of Leipsic is a historic, small town with a rich maritime heritage that will maintain its waterman based lifestyle and small town historic character while allowing for modest growth and redevelopment that is consistent with the town’s character and its agricultural and rural surroundings.

Town of Leipsic Comprehensive Plan

resources. Leipsic is located on the Lower Leipsic River, and the landing and quick access to the Delaware Bay was the major reason people settled into this geographic area. A substantial portion of the town is tidal wetlands, which in one way characterizes this community's attractive coastal setting. The town seeks to:

- Preserve its historic homes;
- Retain and expand local business; and
- Seek land uses, such as maritime commercial, parks and recreational facilities, and single-family residential.

The Town's Comprehensive Plan and Vision is in alignment with the CMP Vision and Goals for the byway and its discovery zones including some recommendations, such as:

- Explore opportunities to develop parks and recreational facilities;
- Connect the town to a greenway;
- Community character and design recommendations especially
 - Maintaining a clear edge between the town and countryside
 - Maintaining a walkable community
 - Pursuit of economic development that enhances community character including businesses that supply goods for fishing and agricultural activities
 - Agricultural preservation;
- Maintaining the maritime heritage through a waterfront district design and mix of land uses.

Town of Little Creek Comprehensive Plan (2006) – the plan provides a framework for development and annexation, and to craft the first land development code and zoning map. The Little Creek Wildlife Area is to the east of Town and Little River is one of the Town's valuable assets. "In order to fully utilize this asset, the town has expressed interest in pursuing a project that would provide recreational access to the Little River. Such a project would potentially include a



Fisherman, crab pots and gear.

Community Vision

Little Creek is a historic, small town with a rich maritime heritage that will maintain its small town character while allowing for modest growth and redevelopment that is consistent with its rural surroundings.

Little Creek Comprehensive Plan

walkway leading to a small dock/ramp for launching small boats.” Recommendations in the Comprehensive Plan include one to develop an access plan to Little River and to conduct a feasibility study to improve navigation on the river. These efforts are closely aligned with Delaware’s Bayshore Byway CMP. Others include:

- Promoting place-based restaurants, retail stores, and recreational and maritime businesses;
- Evaluating solutions for Main Street/Route 9 through the Town to address regional traffic;
- Working with the State of Delaware to study access to the Delaware Bay on Port Mahon Road; and
- Community Character Recommendations
 - Preserve the Town’s historic character
 - Encourage compatible design of new development to fit with the town
 - Maintain rural character through agricultural preservation options.

Land Use Opportunities and Challenges

Review of the existing site conditions, plans, policies and regulations already in place have revealed the following land-use opportunities and challenges for the Corridor Management Plan.

OPPORTUNITIES:

- The City of New Castle waterfront has the potential for an important amenity for the Byway traveler as well as residents.
- The Fort DuPont Master Plan has the potential for an eco-tourism focus and destination providing for byway visitor amenities and services, which is discussed in Chapter 3.
- Policies in place to reduce sprawl and encourage development in and near existing communities, and to protect farmland.

CHALLENGES:

- Protecting the view from the road with new development that avoids sprawling residential subdivisions, big-box retail and heavy industrial uses.



The Reedy Point Bridge is a cantilever truss bridge that carries two lanes of State Route 9 over the C & D Canal. The bridge is 8,432 feet in length. Construction began in 1966 and was completed in 1968. It replaced the last lift bridge over the canal. On a clear day, the views from the bridge are spectacular.

- Integrating new development with the Byway's historic, natural and scenic characteristics.
- Enhancing the view from the road in areas where existing development, such as the northern industrial area of the byway that takes away from the Byway's scenic qualities and predominantly rural landscape.
- Addressing future renewable energy projects and identifying potential locations for these facilities that will not have an impact on the Byway character and its resources.

4.3.3 TRANSPORTATION ASSESSMENT

State Route 9 parallels the Delaware Bay coastal flood plain between the City of New Castle and Kitts Hummock Road at the Dover Air Force Base. It connects the incorporated cities of New Castle, Odessa and Delaware City; the communities of Leipsic and Little Creek; and the unincorporated communities of Port Penn, Woodland Beach, Pickering Beach and Kitts Hummock. Between the cities and villages, State Route 9 provides access to the maritime and the agricultural communities as well as the residents and businesses along its route. But State Route 9 is most familiar to many for the natural areas along its route including state wildlife areas and national wildlife refuges – Thousand Acre Marsh, Augustine Beach, Cedar Swamp, Woodland Beach, Bombay Hook, Little Creek and Ted Harvey Conservation Area. The state's largest refinery and supporting industries are located between the City of New Castle and Delaware City.

While traffic is relatively light throughout the corridor and traffic operations are typically congestion free, there is a mix of vehicle types that can be found using the roadway. Mostly expert and long-distance bicyclists can be found riding the corridor. Farm equipment uses the byway between fields to plant, tend to, and harvest crops. Trucks servicing the industries in the northern end as well as the farms in the south bring supplies to customers and products to market. Lastly, there are suburban residential areas along the route, concentrated just south of the City of New Castle, and near Odessa and State Route 299.

Yet, to the traveler, except for the link between New Castle and Delaware City, the byway is predominately a rural roadway and a very pleasant drive. To the farmer who moves equipment and product, and to the refinery and related industries, the ability to use State Route 9 in an unrestricted and safe manner is paramount. Insuring that the Byway is not only compatible with the purposes of the Byway but also permit the agricultural, maritime, and refinery industry to prosper is a balance that defines the context of the road.

Outdoor Advertising

Fortunately, the Route 9 Byway contains few billboards, none of which are electronic or are of the kind typically found along major highways.

Existing Transportation Situation

Assessing the existing transportation situation along State Route 9 requires an examination of physical characteristics, traffic volumes, vehicle types and users of the roads.

Physical Characteristics of the Roadways

The Byway is comprised of a series of different but connecting roadways and with different local street names. By 1932, what would become State Route 9 between the Kitts Hummock area and Leipsic was designated as a state highway, along with the road between Port Penn and Delaware City as well as between the Cities of New Castle and Wilmington. When state route numbers were assigned, State Route 9 was designated along its current routing from US Route 113 (now State Route 1) west of Kitts Hummock, north to US Route 13 in Smyrna. By 1942, what is now State Route 9 between the Taylors Bridge area and Port Penn was paved and by 1959 was extended north to US Route 13 in Wilmington. The current Reedy Point Bridge carrying State Route 9 over the Chesapeake and Delaware Canal was completed in 1968. State Route 9 was realigned to bypass the City of New Castle in 1984 by following Washington Street and State Route 273 (Ferry Cut-Off). In 2009, the Route 1 interchange at the southern terminus of the Byway was constructed.

The Byway Route is illustrated in Figure 4-1. The segments and their lengths are shown in Table 4-1



Even in the winter, the streams of the Delaware Bayshore are beautiful.

Table 4-1: Byway Segments and Distances

Segment No.	Beginning	Ending	Communities/Natural Areas Included	Distance (mi.)
1	Ferry Cut-Off/Chestnut Street	Wranglehill Road/River Road	City of New Castle and the loop of city streets including Ferry Cut-Off, Delaware Street, Second Street, Chestnut Street, Sixth Street, South Street and Seventh Street	8.05
2	Wranglehill Road/River Road	Delaware City-Port Penn Road/Reedy Point Road	Delaware City and the loop of city streets including Fifth Street, Clinton Street Delaware Street and Clinton Street	5.59
3	Delaware City-Port Penn Road/Reedy Point Road	Taylor's Bridge Road/Taylor's Corner Road	Port Penn, Augustine Wildlife Area. Also includes the Odessa Spur that includes Old State Road, Main Street and Middletown-Odessa Road	10.98
4	Taylor's Bridge Road/Taylor's Corner Road	New Castle County/Kent County Line	Cedar Swamp Wildlife Area, Blackbird Creek Reserve	9.81
5	New Castle County/Kent County Line	North Main Street/Denny Street	Woodland Beach Wildlife Area, Bombay Hook National Wildlife Refuge, Leipsic	9.23
6	North Main Street/Denny Street	Route 1 Interchange	Little Creek, Dover AFB, John Dickinson Plantation, St. Jones Reserve, Ted Harvey Conservation Area. Also Includes the Kitts Hummock Spur which includes Kitts Hummock Road and Bergold Lane	13.25
Total Distance including spurs				56.91



Farming is a major contributor to the state's economy. Most of the farms are family owned and farmed by the same family for generations.

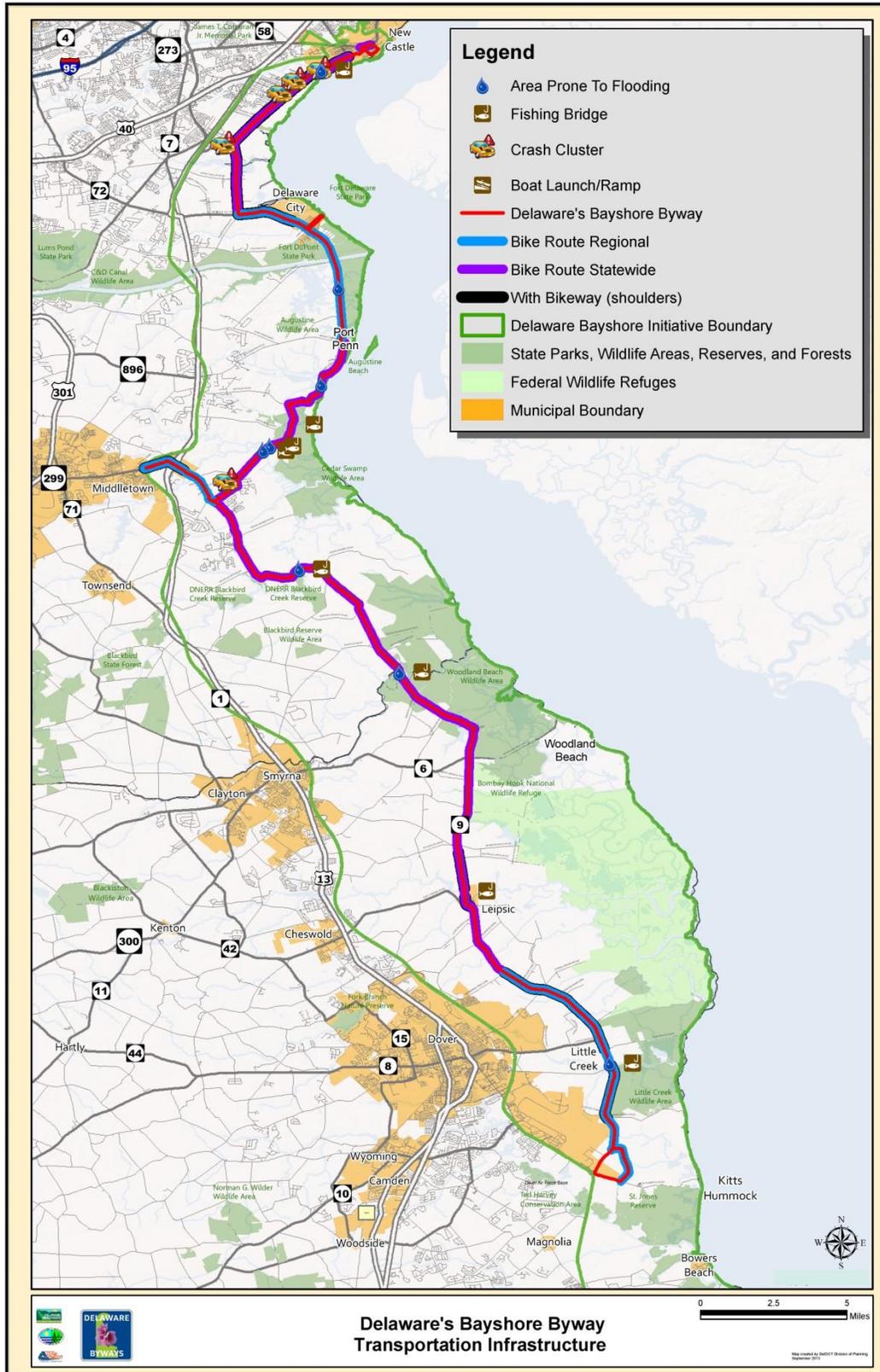


Figure 4.1 Existing Transportation Infrastructure Map

Figure 4.1 also illustrates the transportation features of the Byway. Throughout its length, the roadway consists of one travel lane in each direction. However, the width of that travel lane varies between 10 and 12 feet. Also not uniform throughout the corridor is the presence of and width of the paved shoulders. Shoulders, where present, vary in width from two feet to 12 feet. The posted speed limit also varies between 25 miles per hour in the cities and villages, and 45 or 50 miles per hour in the rural areas.

Current Travel Demand and Functional Classification

Traffic volumes range from almost 15,800 vehicles per day on the Old Ferry Cut-Off in the City of New Castle to about 400 vehicles per day at the New Castle/Kent County Line. Traffic volumes along State Route 9 are illustrated in Table 4.2.

Definitions of roadway functional classifications:

Arterial Roadways: The function of an arterial is to provide mobility. Although most arterials provide access to abutting land uses, that function is secondary to mobility. Typically, arterials carry the largest amount of traffic in the system the longest distances.

Collector Roadways: These roadways balance mobility with land access. Collector Roadways typically serve shorter distance trips, typically connecting nearby communities together.

Local Roadways: The primary function of local roadways is to provide abutting land uses with access. Accordingly, local roads serve mostly local traffic.

Table 4-2: Average Daily Traffic and Roadway Functional Classification (Source: DelDOT)

Community	Street Name	From	To	AADT ²
New Castle	Old Ferry Cut-Off	Sixth Street	Delaware Street	15,600
	Delaware Street	Old Ferry Cut-Off	Market Street	Not Available ³
	Market Street	Delaware Street	Chestnut Street	
	Chestnut Street	Second Street	Old Ferry Cut-Off	
	Sixth Street	Delaware Street	South Street	
	South Street	Sixth Street	Seventh Street	
	West Seventh Street	South Street	Washington Street	8,850
	West Seventh Street	Washington Street	City Line	6,300
	River Road	New Castle City Line	Wranglehill Road	5,900
	Wranglehill Road	River Road	Dragon Creek	4,400
Delaware City	Fifth Street	Dragon Creek	Old C-D Canal Bridge	4,400
	Clinton Street	Fifth Street	Delaware Avenue	Not Available ⁴
	Delaware Avenue	Clinton Street	Washington Street	
	Washington Street	Delaware Avenue	Fifth Street	
	Delaware City-Port Penn Road	Old C-D Canal Bridge	West Market Street	1,250
Port Penn	West Market Street	Delaware City-Port Penn Road	St. Augustine Road	900
	St. Augustine Road	West Market Street	Fishenwarf Road	900
	St. Augustine Road	Fishenwarf Road	Bayview Road	900
	Bayview Road	St. Augustine Road	Silver Run Road	700
	Silver Run Road	Bayview Road	Thomas Corner Road	850
	Thomas Corner Road	Silver Run Road	Thomas Landing Road	850
	Thomas Landing Road	Thomas Corner Road	Taylor's Bridge Road	1,100
	Taylor's Bridge Road	Thomas Landing Road	Flemings Landing Road	600
	Flemings Landing Road	Taylor's Bridge Road	Paddock Road	600
	Flemings Landing Road	Paddock Road	Old Flemings Landing Rd	400
	Hay Point Landing Road	Old Flemings Landing Road	Smyrna Leipsic Road	700
	Smyrna-Leipsic Road	Hay Point Landing Road	Leipsic River Bridge	1,300
	Smyrna-Leipsic Road	Leipsic River Bridge	Front Street	1,600
Leipsic	Denny Street	Front Street	Second Street	1,600
	Denny Street	Second Street	North Main Street	1,300
	Bayside Drive	North Main Street	Persimmon Tree Lane	1,300
	Bayside Drive	Persimmon Tree Lane	Little Creek Road	1,600
Little Creek	Main Street	Little Creek Road	South Little Creek Road	1,900
	Bayside Drive	South Little Creek Road	State Route 1 Interchange	1,450
Odessa Spur				
	Old State Road (SR 299)	Taylor's Bridge Road	Appoquinimink River Bridge	5,000
Odessa	Main Street	Appoquinimink River Bridge	Park Alley	5,000
	Middletown-Odessa Road	Park Alley	State Route 1 Interchange	10,300
Kitts Hummock Spur				
	Kitts Hummock Road	Bayside Drive	Bergold Lane	300
	Bergold Lane	Kitts Hummock Road	Bayside Drive	100

Legend: Principal Arterial ■ Major Collector ■ Local Roadways ■ **Source:** DelDOT

² AADT: Total yearly traffic divided by 365 days in a year.

³ Not part of the state highway system.

⁴ Not part of the state highway system.

The table also illustrates the functional classification the Byway roadways. Roads serve two functions – they provide mobility and land access.⁵ The functional classification of a roadway is a measure of how the road is used in performing the two functions. Functional classes of roadways are expressed in terms of arterial roadway, collector roadway and local roadway.

As shown in the table, most of the route is classified as a major collector. Significantly, however, Ferry Cut-Off is a principal arterial as it routes traffic around the City of New Castle between Wilmington and the major north-south routes such as I-95 and US Routes 13 and 40.

Types of Vehicles using State Route 9

In addition to automobile traffic, the type of vehicles that use the Byway includes industrial trucks in the northern area, farm equipment in the central and southern areas, and bicycles throughout the corridor. Trucks serving the refinery and its associated industries do not travel long distances on the byway, but use connector roads such as State Route 72 to access the State Route 1 and the other major regional roadways.



The refinery just north of Delaware City shown in this picture, along with supporting industries nearby adds a significant amount of truck traffic to State Route 9. Most of the refinery truck traffic accesses the major roadways using State Route 72.

In the central and southern areas, the agricultural industry relies on State Route 9 to move farm equipment from field to field, and to move produce to market. Unlike the operations at the refinery near Delaware City which is relatively constant throughout the year, truck traffic generated by the agriculture industry depends upon the season.

There is a large and thriving farming community along the Byway corridor, particularly in Kent County and in southern New Castle County. Potatoes, corn, soybeans as well as other crops are raised

and harvested. In tending to their crops, farmers must move equipment between and among their fields. The busiest times for moving equipment are in the spring planting season and in the fall harvesting season.

Farmers plan the movement of their expensive equipment carefully. If possible, the equipment is moved from field to field off the public roads. If it has to be moved on the public roadways, it is moved on lower volume roadways as a first priority. State Route 9 is avoided if possible. North of Smyrna-Leipscig Road, it, too, is a lower volume roadway and the farming community relies upon it to move equipment.



Farming is a major industry along State Route 9 providing the means to move equipment between fields and produce to market.

⁵ Flexibility in Highway Design, Federal Highway Administration, March 13, 2012 (Updated)

Farmers typically move their equipment in the early morning hours, before the sun rises, using the lights and escort vehicles, avoiding the higher traffic during daylight hours. Two situations encountered on State Route 9 require extra caution when moving farm equipment. The first is where guardrail is placed adjacent to the travel lane and the second is where the pavement is lined with a deeply cut drainage ditch or abutted by marshland. Curves on the road exacerbate the situation.

The width of the equipment used by today’s farmers can be in excess of 20 feet in width. However, to be functional and movable between fields, the ability to ‘fold’ the equipment to a narrower width is designed in. Not all of the equipment can be folded to fit into a 10 foot travel lane; due to its off road design, the equipment can operate with one side of the equipment traveling off the pavement if it is graded. Additionally, the machinery is equipped with flashing lights for safety.

Cycling along the Byway

While State Route 9 is quite scenic and could be enjoyable for bicyclists, it is also very challenging given its length and isolation from services typically used by bicyclists. The low traffic volume allows bicyclists to safely share the road in most areas, particularly where shoulders are currently too narrow or non-existent. State Route 9 is an important part of Delaware’s Bicycle Route System.



The picture on the left shows State Route 9 in New Castle County which has a shoulder for bicycles to travel separately from the traffic stream. The picture on the right, also in New Castle County, shows a section without bicycle facilities, meaning bicycles and motorized vehicles must share the travel lane.

Delaware classifies its bicycling routes two ways. First is whether or not the roadway has provisions for bicyclists such as a shoulder or a wide outside lane that provides sufficient room for bicyclists to ride in a path separate from the general traffic stream. Or the roadway does not have such a provision and bicyclists must share the travel lane. The second way is by what the route connects.

In Delaware, bicycle classifications are as follows:

- Highest classification -- the Statewide Bicycle Route which connects the state’s three counties.
- Second classification -- the Regional Bicycle Route which connects major municipalities and activity centers.
- Connector classification -- routes that link local activity centers to the larger bicycle network.



**East Coast
Greenway.**

The East Coast Greenway is a developing trail system, spanning nearly 3,000 miles as it winds its way between Canada and Key West, linking all the major cities of the eastern seaboard. Over 25 percent of the route is already on safe, traffic-free paths.

In New Castle County, except between State Route 72 and Port Penn, State Route 9 is a Statewide Bicycle Route. Between State Route 72 and Port Penn, it is a Regional Bicycle Route. The Odessa Spur in New Castle County is a Regional Bicycle Route. The statewide classification extends into Kent County to south of Leipsic and Persimmon Lane where it becomes a Regional Bicycle Route. At the southern end of the Byway, the Regional Bicycle Route follows the Kitts Hummock Spur.

In the City of New Castle, bicyclists riding in the streets are a common sight, particularly in the historic area of downtown. Supporting the street system is the East Coast Greenway. Within the City, the current route begins at the southern terminus of the Industrial Track Trail, and then follows along State Route 273 to Delaware Avenue to Battery Park. It travels through Battery Park to Route 9 then along Route 9 to Washington Street where it returns to State Route 273.

Public Transportation

There are no public transit routes serving State Route 9.

Connections to other Regional Byways

Delaware's Bayshore Byway overlaps with the Harriet Tubman Underground Railroad Byway between Odessa and City of New Castle, traveling southeast on State Route 299, the Odessa Spur and then north on State Route 9 into the City of New Castle where Delaware's Bayshore Byway ends. The Harriet Tubman Underground Railroad Byway then continues to Wilmington and beyond.

The State of New Jersey has designated a series of roadways along its side of the Delaware Bayshore as the Bayshore Heritage Byway. The Delaware City-Salem Ferry, operated by the Delaware River and Bay Authority not only connects the two byways but also provides access to Fort Delaware on Pea Patch Island, Fort DuPont and Salem on New Jersey's Bayshore Heritage Byway. The Delaware City-Salem Ferry operates four round trips per day during the spring and summer months except on Mondays and Tuesdays when it does not operate.



Route of the East Coast Greenway through the City of New Castle.



The Delaware City-Salem Ferry Boat, the Delafort, docked and awaiting passengers at its berth in Delaware City.

Safety Assessment

A Byway must provide a safe environment for all users, current and future to travel along it whether for business or pleasure. This safety assessment is driven by both crash statistics and by observation.

Crash Statistics

Crash data from DeIDOT’s CARS data base was analyzed for the period beginning July 24, 2009 and ending July 24, 2012. During this three-year period, 115 crashes were analyzed for the 57-mile corridor of the Byway and spurs. Eight crashes occurred in the Kent County portion and 107 occurred in the New Castle County portion. There were 60 injuries and one fatality. There were no crashes involving pedestrians or bicycles.



This section of State Route 9 has no shoulders and 10 foot lanes.

The crash data also revealed:

- 47% of the crashes occurred in the daylight hours. 79% occurred when the weather was clear or cloudy and 70% occurred on dry pavement.
- 32% of the crashes involved hitting another moving vehicle. 52% involved hitting a fixed object such as a sign post, ditch or embankment along the roadside and 16% involved hitting an animal, most likely a deer.
- Impaired driving was a factor in 22% of the crashes, 16% involved a deer in the roadway and 18% involved some kind of reckless driving.

Review of the overall data set indicates that managing a safe roadside must be part of this plan. The locations with the highest concentration of crashes are shown in Table 4-3.

Table 4-3: Crash Clusters

County	Location	General Area	No. of Crashes
New Castle	Intersection of River Road and Hamburg Road	Between New Castle and Route 72	11
New Castle	Intersection of River Road and Langollen Drive	Between New Castle and Route 72	9
New Castle	Intersection of River Road and Grantham Lane	Between New Castle and Route 72	9
New Castle	Intersection of Old Corbett, Thomas Corner and Silver Run Roads	South of Appoquinimink River	9
New Castle	Curve south of New Castle City Line	Between New Castle and Route 72	7

As shown in the table, of the five cluster locations, four occurred between the City of New Castle and State Route 72 in New Castle County. These clusters comprised 36 of the 115 crashes analyzed or 31% of the crashes. In all, 63 crashes occurred in the 6.3 mile section of the Byway between New Castle City Line and Route 72. This represents 55% of all crashes occurring in the corridor.

Typical Section

While State Route 9 provides one travel lane in each direction, it has different cross sections throughout its length. Within the City of New Castle, curbs, sidewalks and on-street parking are typically provided. Similarly in Odessa, Delaware City, Port Penn, Leipsic and Little Creek, curbs, sidewalks and on-street parking are provided. In the rural areas, shoulders are provided along only part of the Byway. The cross sections of State Route 9 in the rural areas outside the towns and villages are shown in Table 4-4.

Table 4-4: Rural Cross Sections of State Route 9

County	From	To	Lane Width	Shoulder Width
New Castle	New Castle City	Delaware City	11	9 ft.
	Delaware City	County Line	10	None
Kent	County Line	Smyrna Leipsic Road	10	None
	Smyrna Leipsic Road	Leipsic	11	8 ft.
	Leipsic	Little Creek	11	2 ft.
	Little Creek	Kitts Hummock Road	11	4 ft.
	Kitts Hummock Road	State Route 1 Interchange	12	8 ft.
Odessa Spur	Taylor's Bridge Road	Appoquinimink River Bridge	10	None
	Park Alley	State Route 1 Interchange	12	10 ft.
Kitts Hummock Spur	Bayside Drive	Bergold Lane	10	None
	Kitts Hummock Road	Bayside Drive	9	None

As shown in the table, the only shoulders are located between the City of New Castle and Delaware City and from Smyrna-Leipsic Road to State Route 1. In the locations with no shoulders, the travel lanes are mostly 10 feet wide. In all, in the rural section of State Route 9, 23 miles have a paved shoulder of some width while 26 miles do not have a shoulder at all.

Given the predominance of run off the road crashes, shoulders and proper roadside treatments are important. However, much of the roadside is bounded by wetlands, including marshlands. Improving the roadsides to include shoulders requires special environmental permits.

Fishing From the Bridges of State Route 9

The sight of fisherman fishing from the Byway bridges is common and an activity that continues to be a part of the Byway corridor lifestyle for a long time. Fishing has



Some of the Bridges on State Route 9 have provisions for fishing built in to them.

also been integrated into the design of a number of the structures along State Route 9. It is an activity that, due to its popularity, needs to be accommodated in the future design of the structures crossing waterways along the Byway. There are seven structures across waterways of sufficient size and depth to be fruitful to the fisherman. To provide a safe environment for fisherman, there needs to be a safe place to fish from and a place for fisherman to park. Table 4-5 shows the structures at which fishing activity has been observed and those that with improvements could accommodate fishing.

Table 4-5: Provisions for Fishing from State Route 9 Bridges

Bridge Location	Waterway Crossed	Fishing Walkway on Bridge	Adjacent Parking Area
Delaware City –Port Penn Road	Long Marsh Impoundment	No. Area provided adjacent to roadway	Yes
Silver Run Road	Silver Run	Yes. Protected	Yes
Silver Run Road	Appoquinimink River	Yes. Protected	No
Silver Run Road	Appoquinimink River	Yes. Protected	No
Taylor’s Bridge Road	Blackbird Creek	Yes. From Shoulder, unprotected	No
Flemings Landing Road	Smyrna River	No. Area provided adjacent to boat launch area	Yes
Smyrna-Leipscic Road	Leipscic River	Yes. From adjacent boat launch area	Yes (Private)
Bayside Road	Little Creek	Yes. Protected	Yes

Marinas and Boating Facilities

There are eight facilities providing services to boaters along or near the Bayshore Byway. These facilities are typically located along the creeks that cross the Byway or drain into the Delaware Bay and River. Facilities also on the Transportation Infrastructure Map can be found at the following locations:

- Battery Park, City of New Castle.
- Canal Wildlife Area / C&D Canal, Delaware City/Fort DuPont (including the Delaware City-Salem Ferry to Fort Delaware and New Jersey).
- Augustine Beach (boat launch only).
- Collins Beach (boat ramps only) at Cedar Swamp Wildlife Area
- Blackbird Creek (Canoe/Kayak launch at Blackbird Creek Reserve
- Woodland Beach (boat ramps only) at Duck Creek.
- Woodland Beach (boat ramp only)
- Full Service Marina, Leipscic River, Leipscic.



Boats docked at the marina at Fort DuPont on the old C-D Canal in Delaware City.

- Port Mahon (boat ramp only) near Town of Little Creek.
- St. Jones River at Scotton Landing
- St. Jones River at Lebanon Landing

Sea Level Rise

The Bayshore Byway traverses the coastal plain of the Delaware Bay and its most low-lying sections are prone to flooding. Today, flooding of the roadway has been more frequent and occurring during less intense storm events. The State of Delaware, through its Sea Level Rise Advisory Committee, monitors and plans for the impact caused by sea level rise. If current trends continue, and sea level rise continues at its current rate of 0.13 inches per year in the next 10 years, then in 20 years, the mean sea level will rise about 2.5 inches further increasing the flooding experiences along the Byway corridor.

The locations that currently experience flooding conditions along the Byway are as follows:

- Between the City of New Castle and Delaware City in the vicinity of Army Creek
- Between the C&D Canal and Port Penn
- South of Augustine Beach at the Augustine Creek
- On Silver Run Road at three locations: Silver Run Creek, Appoquinimink River, and Drawyers Creek
- Taylors Bridge Road at Blackbird Creek
- Hay Point Landing Road at Taylors Gut
- Bridge over Little Creek



Boating piers on the Leipsic River

Planned/Proposed Transportation Improvement Projects

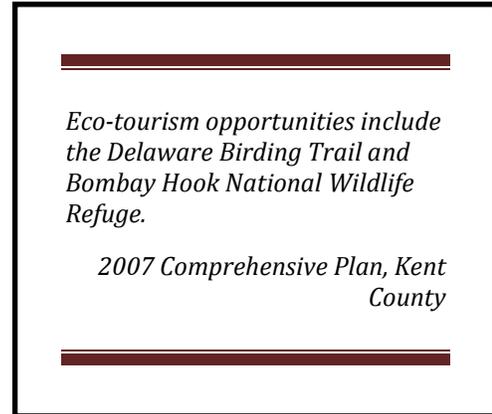
State Route 9 is a state maintained roadway. Review of the currently active improvement plans reveals the following:

New Castle County

- State Route 9, Delaware and Harmony Street Intersection Improvement Project – Originally, this project was to improve access to the City of New Castle from Ferry Cut-Off by extending Harmony Street to the Cut-Off as well as improving the intersection of the Cut-Off with

Delaware Street. The project is being reconsidered by DeIDOT in a joint effort with the City of New Castle to develop a context sensitive solution that addresses the multi-modal circulation needs of the community and the National Register Historic District, as a gateway to Delaware's Bayshore Byway, and an important segment on the Harriet Tubman Underground Railroad Byway.

- State Route 9, River Road Area Improvements, Flood Remediation – Frequent flooding of State Route 9 in the area of the Army Creek makes the road impassible. Design will include realigning Route 9 onto a viaduct. Retrofit of the tidal gates will also be pursued by DNREC as a companion project.



Kent County

- No improvement projects are planned.

Transportation and Safety Opportunities and Challenges

The existing Transportation infrastructure Map illustrates the issues brought forward in the preceding paragraphs. The map shows bicycle facilities, shoulder locations, sections prone to flooding, crash clusters, boat launch ramps, fishing bridges, as well as the towns and communities of the Byway. It is from this map and other site and data collection that the challenges and opportunities that follow were identified.

OPPORTUNITIES:

- The majority of Route 9 is a low volume route that is generally safe.
- The analysis and designation of Route 9 as part of the statewide bicycle network is conducive to identifying the bicycle friendly elements needed to complement the designation.
- The State is developing a plan to address sea level rise.
- DeIDOT will be installing Byway trailblazing signs.
- DeIDOT is planning a context sensitive project for the northern byway gateway in New Castle.

CHALLENGES:

- A roadway cross section that provides a safer roadside, and accommodates farm equipment and bicycles needs to be developed.
- A safe area for fishing from the right of way, either on the structure as an area separated from the roadway by a barrier as well as a safe area for parking needs to be developed as demand requires.

- As noted in Chapter 2, safe areas for birding, wildlife viewing and to enjoy the view sheds for motorists.
- The frequency and depth of flooding.
- Signing and wayfinding to existing attractions is inconsistent and not inclusive of the Discovery Zones or the location of services to travelers.

4.3.4 COMMUNITY QUALITY AND ECONOMIC POTENTIAL

Delaware's Bayshore Byway is an untapped resource for eco-tourism, and economic development associated with the services and amenities for byway travelers. The City of New Castle, Delaware City, Port Penn and Odessa are already taking advantage of the natural and historic assets of their communities and nearby resources to attract residents and visitors. Leipsic and Little Creek are poised also for services and amenities to accommodate traveler needs.

The CMP will draw upon the following documents, among others, and existing community initiatives to develop management strategies and reveal the potential for economic development within the byway corridor. The

Byway could be strengthened to achieve locally based economic development that is consistent with the byway character and the needs and plans of each Discovery Zone.

The **New Castle County Economic Development Business Guide** does not mention tourism but includes goals within the Sowing Seeds Growing Jobs Program that could support the Byway:

- Expanded program is to promote locally made manufactured and artisan goods, and support local independent businesses through partnerships with Rely Local, Main Streets, and Delaware by Hand with a webpage to buy local.
- The "Buy From Your Neighbor/Made in New Castle County Challenge" strengthens assistance to local businesses giving them more credit when competing for County Business with point percentage allocation doubled for Delaware firms bidding on professional services.
- The goal to expand tourism and the Main Street Program supports the goals of this Corridor Management Plan.

Kent County Comprehensive Plan (2007) states that the County's economy is diverse with jobs in government, manufacturing, tourism, agriculture and financial services. Recommendations for economic development, which support the Byway's vision and goals include:

The 721 farms of Kent County total 185,329 acres or 49.1% of the County's land area. The farming community contributes the following to the economy of the County:

- 1. Market Value of farm production: \$128,675,000 of which livestock sales contribute \$54,400,000 and crop sales contribute \$74,276,000.*
- 2. Average farm net cash income from 2002 operations was \$58,418 with 398 farms reporting net gains in income.*

2002 Farm Census

- Tourism is a newly emerging industry within the County that can target a wide range of interests including arts and culture, history and heritage, sports and gaming, outdoor recreation, and shopping and leisure.
- Agriculture remains a vital and significant sector of the economy in Kent County.
- Infill and redevelopment is promoted to optimize existing infrastructure, creating transit corridors with a mix of housing and relieve the pressure of “Greenfield Development;”
- Protection and promotion of agriculture in coordination with the Department of Agriculture to develop and promote farm markets and other agri-business opportunities.
- Develop a strategy in cooperation with the Delaware Economic Development Office, Chamber of Commerce, and Central Delaware Economic Development Council to reach the small business community and provide information and assistance.
- Retail is one of the largest employment sectors but is challenged by new retail displacing older establishments. “Create ordinances that prohibit “big box” development without the planning for the adaptive reuse of the proposed development project including the land and buildings thereon in order to avoid “dark” stores and promote community vitality.” It is critical that the county and municipalities not only encourage more compatible retail that is context-sensitive to the location but to examine tools that provide incentives for small business and unique retail, restaurants and lodging entrepreneurs to locate within the byway corridor.

The Economics Associated with Natural Areas in the Delmarva Peninsula is a report that examines the Delmarva Peninsula’s natural areas and outdoor recreation in terms of measurable economic benefits. The report indicates 395,000 anglers, hunters and wildlife watchers spending \$659,877 for trips and equipment in Delaware. The report summary of findings indicates the following:

- The total contribution from camping, biking, and trail based recreation in the Delmarva Peninsula is \$1.07 billion a year and generates over 11,000 jobs throughout the region. Included in this total is almost \$80 million in gear retail sales, \$830 million in trip-related sales and over \$150 million in federal, state and local taxes.



Shops and dining along historic New Castle Street on the Byway

- Hunting, fishing and wildlife watching engaged more than 1.6 million people on the Delmarva Peninsula, of which 570,000 fished, 184,000 hunted and nearly 1.3 million enjoyed wildlife watching. While pursuing all of these activities, they spent more than \$1.5 billion.
- Recreational boating contributed more than \$1.3 billion in sales that supported over 11,000 jobs and paid out over \$400 million in wages.
- Combined, outdoor recreationists such as boaters, hunters, anglers, cyclists and others annually spend up to \$3.9 billion to enjoy Delmarva's natural areas. These dollars support upwards of 27,900 jobs.

Discovery Zones and Quality Tourism Amenities

The beauty of this byway is its natural and recreational resources along with the historic coastal communities of New Castle, Delaware City, Port Penn, Odessa, Leipsic and Little Creek. As a result, tourist amenities, such as hotels, restaurants and even gas stations are limited within the byway corridor. This presents an opportunity to concentrate economic development potential on place-sensitive traveler amenities that embrace the unique natural and historic character of the byway. Small inns, bed and breakfast establishments, and cabin and camping facilities that are eco-friendly are needed and necessary amenities to accommodate the existing and future byway traveler. Additional restaurants, retail shops and traveler services should be carefully integrated into existing communities.

Today, traveler amenities can be found a short distance off the byway in the City of Wilmington, Towns of Middletown and Smyrna, and in the City of Dover but these communities are not on the byway. It is critical to expand upon the existing byway traveler amenities and capitalize on the Discovery Zone potential to provide unique services and amenities that reflect the rich variety of historic, natural, and scenic qualities within them.

Directed Tourism Opportunities and Challenges

Review of the existing site conditions, services, amenities, initiatives and studies already in place have revealed the following economic development opportunities and challenges for the Corridor Management Plan.

OPPORTUNITIES:

- 432,000 participants in hunting, fishing and wildlife watching in Delaware alone (residents and non-residents) in 2011. They spent \$351 million in trip-related and equipment expenses and \$90M in trip related expenses alone. (USFWS 2011 Survey)
- An estimate of 1.6 million people participated in hunting, fishing and wildlife watching in the Delmarva Peninsula (Delaware, Maryland and Virginia). (Associates, April 2012)
- Historic structures and undeveloped sites along byway main streets.
- State and county policies to encourage tourism and agriculture industries to be retained or expanded upon.

- Potential for added services and amenities for current travelers.

CHALLENGES:

- Lodging and other visitor services need to be increased in existing communities, private lands adjacent to public lands, and within public areas (where compatible with conservation mission) throughout the Byway corridor.
- Integrating the Byway and Bayshore Initiative with the major redevelopment plans for Fort DuPont.
- The need to better understand the existing and potential visitor, tourist market, and the amenities that will improve and increase stays.
- A plan to encourage viable local businesses that are unique to the corridor, and support the needs of its residents and visitors.
- Directing travelers along and to the byway attractions and Discovery Zones is generally inconsistent or in some cases, non-existent.