New Road
CORRIDOR MASTER PLAN

December 2019

HISTORIC
LEWES BYWAY
GATEWAY TO THE BAYSHORE

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Prepared for:

City of Lewes

Sussex County

Delaware Department of Transportation

Prepared by:
Lardner/Klein Landscape Architects, P.C.

with the assistance and support of
Delaware Greenways

Acknowledgments

The New Road Corridor Master Plan is an implementation project of the Historic Lewes Byway Corridor Management Plan initiated by the Historic Lewes Byway Committee. The work is funded with the support of Delaware State Senator Ernesto Lopez and Delaware State Representative Steve Smyk. Additional support is provided by the DelDOT Byways Program. Pro bono staff and funding support was provided by Delaware Greenways and the Historic Lewes Byway Committee. The plan was prepared with the input and contributions of many residents and other stakeholders that participated in two public meetings and the stakeholder workshop, taking the time to participate and provide ideas and suggestions as well as thoughtful comments on the Master Plan.

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Preface: How to Use This Master Plan

The purpose of this Corridor Master Plan is to establish a vision for the desired character of New Road, one of three entrance corridors originating from State Route 1 to the City of Lewes that comprises a portion of the Historic Lewes Byway. New Road was identified in the Historic Lewes Byway's Corridor Management Plan (2015) as the more rural of the three entrance corridors with a conservation emphasis aimed at retaining its overall rural character, including its farms, forests, wetlands and tributary streams. However, circumstances have changed dramatically since the Corridor Management Plan was completed.

Additional development activity has increased along and adjacent to the corridor. DelDOT has also accelerated certain transportation projects to meet growing transportation demand throughout the region, and several of those projects will directly affect the New Road Corridor. The focus of this Corridor Master Plan has shifted towards how to address and coordinate the roadway-related changes that are planned in both the near term (funded projects entering the design and engineering phases) and mid-term (next five to ten years).

The Corridor Master Plan (Master Plan) frames the vision for the corridor as one that still works to retain certain character-defining features, while acknowledging the likelihood of new development and transportation projects. The Master Plan shows examples of how that vision can be achieved and offers guidance to the development community, the City of Lewes, Sussex County, DelDOT, the Lewes Scenic and Historic Byway Committee and the public, on how the recommendations contained in the Master Plan can be implemented. It is the hope of the authors of the Master Plan and all of those who have contributed to it that the principles, strategies, and recommendations contained herein are implemented. While the plan is focused on recommendations for the road and public right-of-way along New Road, a limited number of recommendations illustrate how developers and landowners can voluntarily work together to help achieve the Master Plan's community-based vision and goals. Everyone who works on projects within the corridor will need to cooperatively work together to successfully implement the Master Plan.

The Master Plan does not, however, make specific recommendations for engineering, traffic, environmental, or right-of-way needs to design roadway-related changes. That authority rests with DelDOT and its formal project development process for publicly-funded projects or subdivision review process for development projects. However, the roadway typical sections, conservation priorities, traffic calming recommendations, landscape design concepts, and recommended pedestrian and bicycle facilities are intended to be implemented as shown or as close to as shown as possible. Additional, formal public workshops following DelDOT public outreach procedures, formal NEPA compliance, and maintenance provisions will ultimately determine the level of implementation. The illustrations provided with this document are meant to explain a planning concept or application. As projects advance through the design phases based upon more detailed information, the resulting designs will follow and be consistent with the intent of the drawings, but may not look exactly as shown.

The principles, strategies, and recommendations contained herein are consistent with the DelDOT publications, "Context Sensitive Solutions for Delaware Byways," DelDOT's Traffic Calming Manual and the *DelDOT Road Design Manual*. The Master Plan reflects the desires of the many people that participated - neighbors, property owners, those that use the roadway on a daily basis, and those that value the distinct identity and sense of place that has been maintained in the face of mounting development pressures. In the spirit of community consensus building, designers working on projects within the corridor—whether the projects are proposed by private property owners or by DelDOT in response to changing transportation and land use contexts—must consider the Master Plan as the concept design to be built upon and implemented. Accordingly, the Master Plan document should be used as one of the justifications for design decisions as projects are developed over time.

In the end, the success of this Master Plan rests with the good faith and diligent efforts of the City, County, DelDOT, developers, the Byway Committee and the public. As an adopted policy document, this Master Plan should become an integral part of all DelDOT, City and County development and project review processes.

01 Introduction

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Purpose

The purpose of the project is to develop a master plan and establish the desired future character for New Road, located in Lewes, Delaware. The route serves as one of three gateways from SR 1 into the City of Lewes and is part of the Historic Lewes Byway, a state designated scenic byway. The Historic Lewes Byway Corridor Management Plan (CMP) was approved by Delaware's Secretary of Transportation in 2015 and is referenced in both the most current Sussex County and City of Lewes Comprehensive Plans. The CMP was created to guide growth along the corridor and to assist in preserving and enhancing significant natural and historic resources. The CMP specifically noted New Road's conservation emphasis aimed at retaining its overall rural character, including its farms, forests, wetlands and tributary streams.

Figure 1 New Road (ESRI)

However, circumstances have changed since the Corridor Management Plan was completed. Development pressure has increased along and adjacent to the corridor. DelDOT has also initiated certain transportation projects to meet growing transportation demands throughout the region, and several of those projects will directly affect the New Road Corridor.

While land conservation along the corridor remains a priority, the focus of this Master Plan is how to address and coordinate the roadway-related changes that are planned in both the near-term (funded projects entering the design and engineering phases) and mid-term (next five to ten years).

The Master Plan provides a comprehensive overview of design concepts in relation to roadway improvements and desired roadway character that reinforce the community's desired vision. The plan also identifies the coordinated public and private actions necessary to achieve the desired vision and character. The concepts included in the Master Plan are intended to guide future changes to the corridor and are not intended for design or construction exactly as shown.

Project Location

Originating from SR 1, New Road serves as one of three gateways into Lewes. New Road primarily consists of one, ten-foot wide travel lane in each direction. Shoulders and other minor upgrades are associated with more recent subdivisions. For most of its length, bicyclists must ride with traffic and there are almost no facilities for pedestrians.

New Road is a state highway classified as a major collector that extends from Nassau Road to Pilottown Road and includes the following distinct segments:

Figure 2 New Road near Lynne Road intersection

Figure 3 New Road approaching 4th Street

- Between Nassau and Old Orchard: semi-rural with agricultural uses and scattered residences on the WB side, existing commercial uses at the SE intersection with Nassau, and a residential subdivision on the EB side
- Between Old Orchard and Canary Creek: existing agricultural land is being converted to a new residential neighborhood on the WB side while the EB side includes primarily residential subdivisions (with a few limited commercial uses on individual parcels) and a new residential neighborhood proposed at the Brittingham Farm adjacent to Canary Creek
- Between Canary Creek and Fourth Street: primarily residential with limited commercial uses and a church on individual parcels on the WB side and primarily residential subdivisions on the EB side
- Between Fourth Street and Pilottown Road: the right-of-way (R/W) narrows and residences are closer to the street on both the EB and WB side with a marine services use located at the historic "Ice House" property (WB side)

It is the intent of the Historic Lewes Byway Committee to seek the endorsement of the Lewes City Council and Sussex County Council as well as the approval of the Master Plan by DelDOT. These steps would establish the Master Plan as a policy document, meaning that the recommendations contained herein must first be considered and further determined in their viability and implementation unless there is a compelling reason to do otherwise. Any governmental agency finding the need to significantly alter a recommendation would be obligated to communicate this with the Historic Lewes Byway Committee (and others involved) to find an alternative measure in keeping with the initial recommendations and consistent with the required public outreach and environmental and policy guidance.

Collaborative Approach

The process for developing the Master Plan was an open and collaborative effort involving the corridor's many stakeholders, City, County and DelDOT staff and representatives, the Historic Lewes Byway Committee, and State agency representatives and legislators. A project team comprised of representatives from the City, County, DelDOT and the Byway Committee coordinated the development of the Master Plan. The City of Lewes served as the contractual entity for the project and established the Ad Hoc Committee. The Ad Hoc Committee provided critical input at three key milestone meetings throughout the process. The Historic Lewes Byway Committee, in addition to being represented on the project team, provided support in reviewing private landscape concepts and initiating early action, communicating with developers (on a voluntary basis) of the Brittingham Farm and Groome Church property (Tower Hill). Key meetings and milestones included the following:

Meeting	Topic	Month
AC #1	Identify issues and opportunities	8/22/18
AC #2	Review initial master plan concepts/corridor design principles	10/24/18
Public #1	Community Design Work Session (public meeting)	11/27/18
AC #3	Joint Ad Hoc / Historic Lewes Byway Committees Meeting (public workshop)	3/27/19
AC #4	Review and refine draft plan concepts and principles	5/7/19
Public #2	City of Lewes/Sussex County meetings to review draft	June 2019

Comments, meeting summaries, and display materials from these meetings are included in Appendix A.

Key Issues and Concerns

Throughout the planning process, several common issues were raised that have shaped the content of this plan. These include:

Corridor Management

- Allow corridor treatments to vary for each section/ character area
- Serve the emergency evacuation needs of nearby neighborhoods
- Encourage creative and innovative practices to guide development

Conservation/Preservation and Land Use

- Preserve and maintain character-defining features in the face of rapid change
- Address flooding and drainage problems
- Address sea level rise and its potential impact on nuisance flooding in the near term, and tidal storm surge in the long term
- Promote compatibility of new development with existing uses and character
- Preserve historic buildings and working farms

Transportation/Context Sensitive Design

- Consider alternative travel demand approaches for roadway and intersections prior to increasing their capacities
- Retain New Road as the slow and scenic route – consider traffic calming to slow operating speeds
- Consider the potential impact of proposed near- and long-term transportation projects (Minos Conaway, Five Points, etc.)
- Consider the potential effect of development projects, both approved and in the pipeline, on the capacity of New Road (especially intersections)
- Provide pedestrian and bicycle facilities that are compatible with character-defining features
- Make connections with the Georgetown to Lewes Rail-Trail or design an independent alignment coordinated with adjoining development projects, instead of an alignment immediately adjacent to the roadway

Figure 4 New Road Corridor Master Plan public meeting

Character-defining Features

The use of the term "character-defining features" is derived from the Secretary of Interior's Guidelines for the Treatment of Historic Properties and is used to establish the baseline from which various treatment approaches can be selected: whether to preserve, restore, rehabilitate or reconstruct an historic property.

The same methodology can be adapted to scenic byways and historic roads by adjusting the treatment approaches to "preserve, maintain, or enhance" a byway's character-defining features.

The term,"character-defining features," is used throughout this master plan document, in reference to the intrinsic qualities or resources and the elements of the road and roadside context that contribute to a byway's designation as a Delaware Scenic and Historic Byway.

The Historic Lewes Byway CMP includes documentation on the significance of the Byway and provides a list of character-defining features, such as scenic and historic resources. Information about the Historic Lewes Byway can be found on DelDOT's byway web page at: https://www.deldot.gov/Programs/byways/index.shtml?dc=cmp.

Figure 5 New Road east of Nassau looking toward Black Hog Gut

Figure 6 New Road view looking north near Blue Heron Drive

Figure 7 New Road view of Canary Creek

Figure 8 New Road looking east toward Pilottown

Common Assumptions

The plan is based upon the following commonly held assumptions among all stakeholders:

OVERALL GOAL:	Increase safety for all users while maintaining the bucolic and diverse nature of the corridor
FUNCTION:	Continue to provide local access to existing and planned residential neighborhoods, retail and marine businesses, government field offices, the University of Delaware and public boat ramp
TYPICAL SECTION:	For new development projects, a two lane road (one travel lane in each direction) with eleven-foot travel lanes, six-foot shoulders and a ten-foot wide, off-road, shared use path are assumed. Within the City of Lewes, that section may need to be narrowed due to R/W and land use constraints – to two ten-foot lanes, five-foot striped bike lanes, twelve-inch curb and gutter pan (narrow); a five-foot sidewalk on one or both sides, and various widths for planting strips on both sides or one side for street trees (fits within 50' R/W). Where existing R/W narrows to less than 50', the sidewalk and planting strip may need to be removed from one side of the road.
MAINTENANCE:	Landscape enhancements must require cooperative agreements and safety assurances between DelDOT and a sponsoring organization (for anything more complex than just grass and trees). The Historic Lewes Byway Committee will strive to identify responsible parties as it works with developers, homeowners associations, the Lewes Parks and Recreation Commission, Sussex County and DelDOT to implement landscape recommendations and maintenance both within and outside in the state R/W.

Character-Defining Features

The character of New Road is recognized for the following character-defining features:

- Diverse array of open spaces (differing sizes, orientation, shape and composition)
- Waterways and Wetlands – most notably, Roosevelt Inlet, Canary Creek and Black Hog Gut, feeding into the Great Marsh
- Hedgerows – located between cultivated fields and some remnants along roadside areas, providing important birding and wildlife habitat as well as serving to shape the visual experience of traveling along New Road
- Agricultural Fields – remaining farmlands have been in continuous cultivation or agricultural use since at least the settlement period, and likely pre-settlement, which makes them eligible for the National Register of Historic Places as a cultural landscape and archeological resource
- Pillottown – with its marine architectural heritage, narrow setbacks and narrow right-of-way, retains a distinct historic maritime neighborhood character

02 Planning Context

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Growth and change along New Road is shaped by land use plans, land development policies and an active citizenry that advocates for land and neighborhood conservation.

As part of a state-designated scenic and historic byway, New Road, one of six designated routes that comprise the Historic Lewes Byway, was the subject of a Corridor Management Plan (CMP) that was accepted by DelDOT as a requirement for its designation. The CMP was subjected to a comprehensive public review process including support from both Sussex County and the City of Lewes.

Portions of New Road are located in Sussex County (generally west of Canary Creek) and portions within the City of Lewes. The City of Lewes recently enacted an annexation policy and at least one property along New Road, the Brittingham Farm, was annexed.

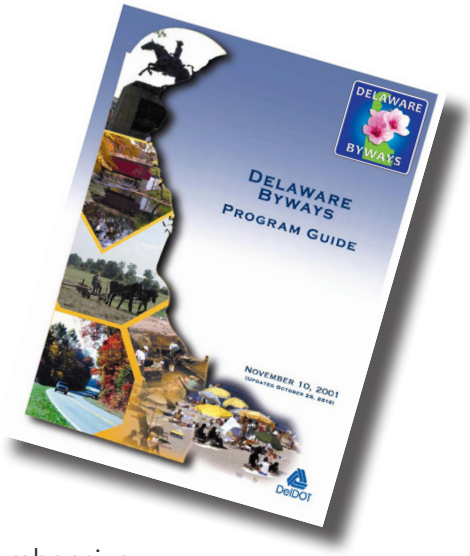

Figure 9 Delaware Byways Program Guide provides overall policy direction for designation and management of the state and nationally designated scenic and historic byways

The County (2019) and City (2015) both have current and adopted Comprehensive Plans. The New Road corridor is a rapidly developing area with at least twelve active development projects in varying states of review. The Delaware Department of Transportation, partly in response to this rapid development, has initiated several transportation planning and capital improvement projects.

There are two state policies that specifically influence future land use and modifications to transportation projects: Executive Order 41, Preparing Delaware for Emerging Climate Impacts and Seizing Economic Opportunities from Reducing Emissions (2014 and subsequent guidance); and, Executive Order No. 6, State of Delaware Complete Streets Policy, (2009 and subsequent guidance).

Each of these planning and transportation initiatives and/or projects are discussed on the following pages.

Historic Lewes Byway Corridor Management Plan[1]

The Corridor Management Plan (CMP) for the Historic Lewes Byway (2015) recommended that a master plan be developed for each byway route describing the potential roadway improvements and landscape recommendations so as to retain the character-defining features of the Byway. The CMP also recommended that the master plans be developed by forming a strong alliance between DelDOT, the City of Lewes, Sussex County, and the Byway organization as a means of achieving compatibility in land use design along the Byway routes.

The CMP recommended transportation strategies, that when considered all together, can help to achieve compatibility between the land development and zoning codes of the City of Lewes and the County of Sussex and the transportation improvements that are often tied to development proposals.

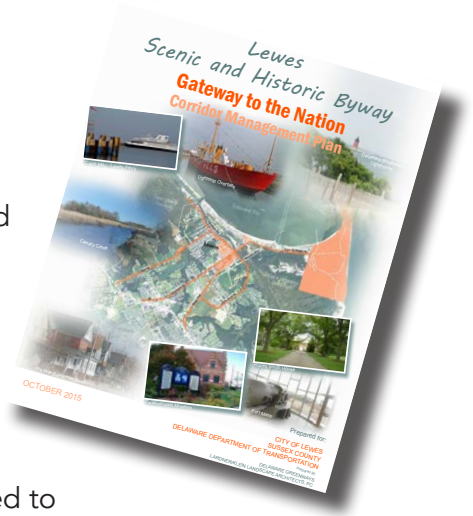

Figure 10 Lewis Scenic and Historic Byway Corridor Management Plan report

1 *The name of the byway was changed to the "Historic Lewes Byway: Gateway to the Bayshore" after completion of the Corridor Management Plan*

CMP Goals for New Road (2015)

OVERALL GOAL:
Conservation. Retain the overall rural character Including its farms, forests, wetlands and tributary streams.

- *Preserve and maintain character-defining features*
- *Improve safety and mobility by utilizing context sensitive approaches*
- *Work with developers to guide change in a positive manner*
- *Establish Byway routes as corridors for human powered recreation*

Once adopted, the New Road Corridor Master Plan (Master Plan) will provide the justification for incorporating its recommendations as set out in this master plan into the subdivision plan review process.

Context Sensitive Design:

The CMP also recommended that all transportation improvements along the Byway be designed to be sensitive to its context and in accordance with the policy documents adopted by DelDOT for Byways. The CMP recommended that master plans be utilized to establish design guidelines for roadside and median environments, as well as roadway design elements such as landscaping and paving materials, while recognizing that safe design is the first priority. (See page 43 of 2015 CMP for Context Sensitive Design approach and principles).

Planned Land Use and Zoning

In the Sussex County portion of the corridor, lands generally northwest of New Road are planned for "Low Density" uses. Lands generally southeast of New Road and fronting along Nassau are planned for "Coastal Area" uses. Low Density is one of two types of rural area designations in Sussex County, with the other being "Protected Land". The primary uses envisioned for Low Density areas are agricultural activities and homes. Coastal Areas generally encompass areas

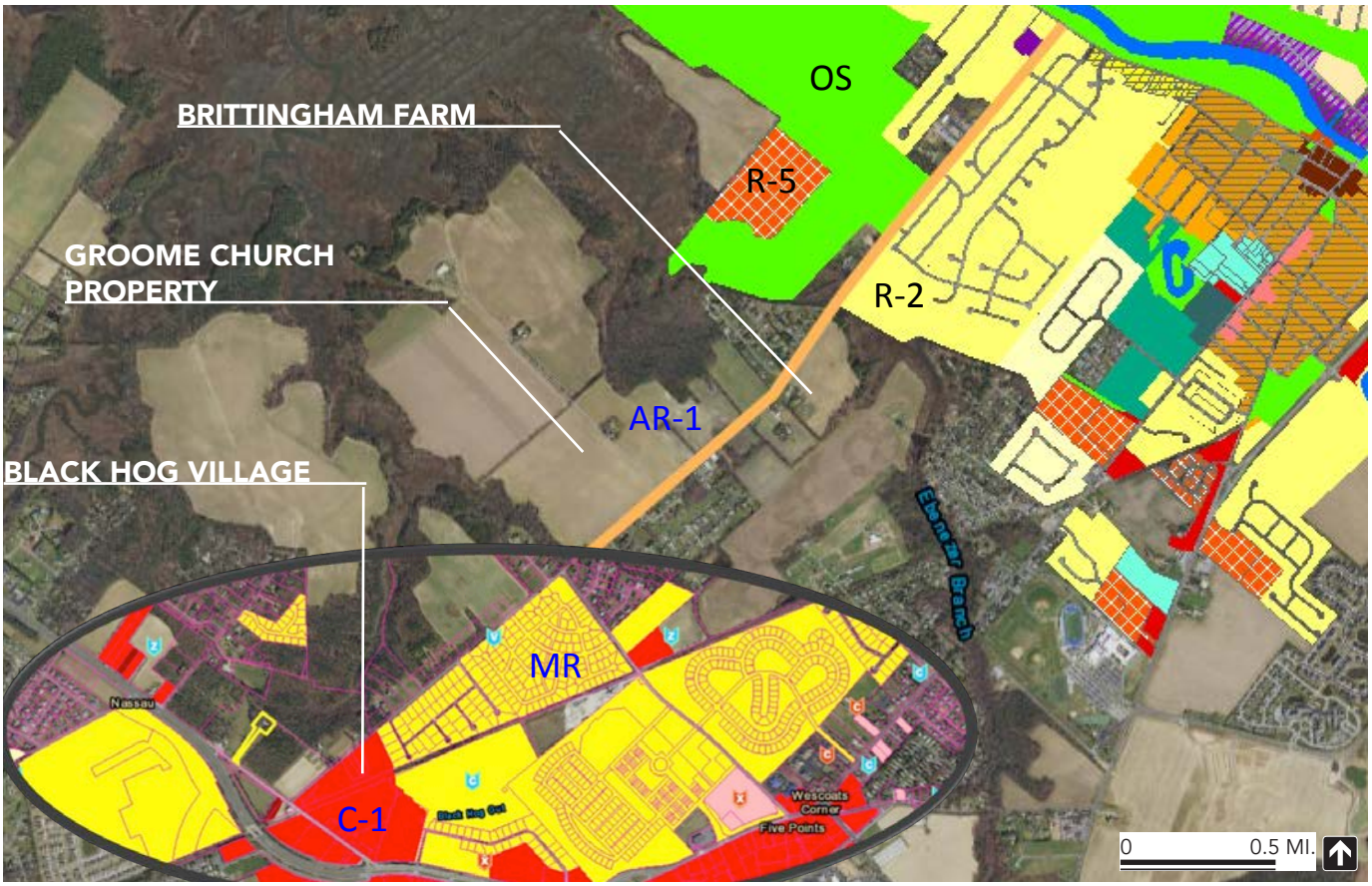

Figure 11 Existing zoning found along New Road showing three properties where development has been proposed

within what was previously referred to as the "Environmentally Sensitive Developing Areas" of prior Comprehensive Plans. According to the 2018 Comprehensive Plan, the Coastal Area designation is intended to recognize two characteristics. First, this region is among the most desirable locations in Sussex County for new housing, as is reflected in new construction data and real estate prices. Second, this region contains ecologically important and sensitive characteristics that help to absorb floodwaters and provide extensive habitat for native flora and fauna.

Within the City of Lewes, the lands along New Road are planned for residential use, and on the northwest side of New Road, for Open Space. There is one parcel with existing industrial use that continues to be planned for that purpose.

Figure 11 on page 10 illustrates the current zoning for properties along New Road. In the Sussex County section, lands are zoned primarily as Agricultural Residential (AR-1) with existing developed areas zoned as either Commercial (C-1) or Medium Density Residential (MR). Within the City of Lewes, lands are zoned as Low Density Residential (R2).

The Comprehensive Plan in Sussex County was updated in December 2018. The plan references the Historic Lewes Byway throughout in sections related to greenways and trails, heritage tourism and transportation. The plan includes a specific strategy for working with byway groups to implement corridor management plans. One recently enacted ordinance that affects the New Road Corridor will prohibit developers from counting state wetlands when calculating total density in a subdivision. State wetlands will be removed from the overall developable parcel size when calculating allowable density.

Annexation

In May of 2018, the City of Lewes added two new zoning categories exclusively for annexed land, one for Residential and one for Mixed Use. The Mixed Use option is primarily located along Savannah Road and Kings Highway, developed as a transition to commercial zones. The annexation zones include provisions that allow clustering of housing to preserve open space. In July 2018, developers of the property known as Brittingham Farm on New Road adjacent to Canary Creek, filed an annexation request under the city's new annexation-residential zone. The developer is seeking to develop approximately 90 townhouse lots using cluster development provisions with a minimum of 50 percent open space and any required buffers. The annexation and rezoning request was approved by the City of Lewes Mayor and Council on November 13, 2018. A subdivision application is under review by the Lewes Planning Commission.

Conservation and Preservation Priorities

The 2015 CMP identified a distinct set of conservation priorities for the Historic Lewes Byway. These included remaining farms, forests, riparian areas and other character-defining features that contributed positively to the byway experience. Remaining farms, forests, riparian areas and hedgerows continue to deserve additional conservation efforts as character-defining features that contributed to the byways designation as a Delaware Scenic Byway. These properties, if conserved, could contribute to reducing impacts of sea level rise on existing developed properties in the Canary Creek watershed.

As part of the outreach effort for the Master Plan, contributors also noted the importance of the diversity of open spaces—both big and small—that contributed to the desired character of New Road. Conservation efforts should continue to focus on voluntary and cooperative efforts among private landowners, the Historic Lewes Byway Committee and other public and private partnerships whose mission is focused on the conservation of the Great Marsh and its environs. Conservation priorities can also be discussed through the development process and can include increased setbacks, stormwater management facilities, trails and focal areas around which new development can be organized.

New Road's significant cultural landscape associated with its agricultural history can be traced to the 1800s. Orchard crops are shown on the earliest recorded aerial photograph taken in 1937 (Figure 25 on page 27), which shows apple and peach orchards in cultivation. References to Nassau Orchards dates back to 1916[2]. In addition, archeological resources associated with the areas along Canary Creek were identified through the statewide development review process as one of the most significant cultural sites in Delaware with evidence of Native American burials, as well as other burial sites. There are two archeological sites on the Groome Church (Tower Hill) Property, as well as the Prettyman family cemetery.

2 *"Belltown's history dates back to middle 1800s", Ron MacArthur, published in Cape Gazette, June 7, 2010*

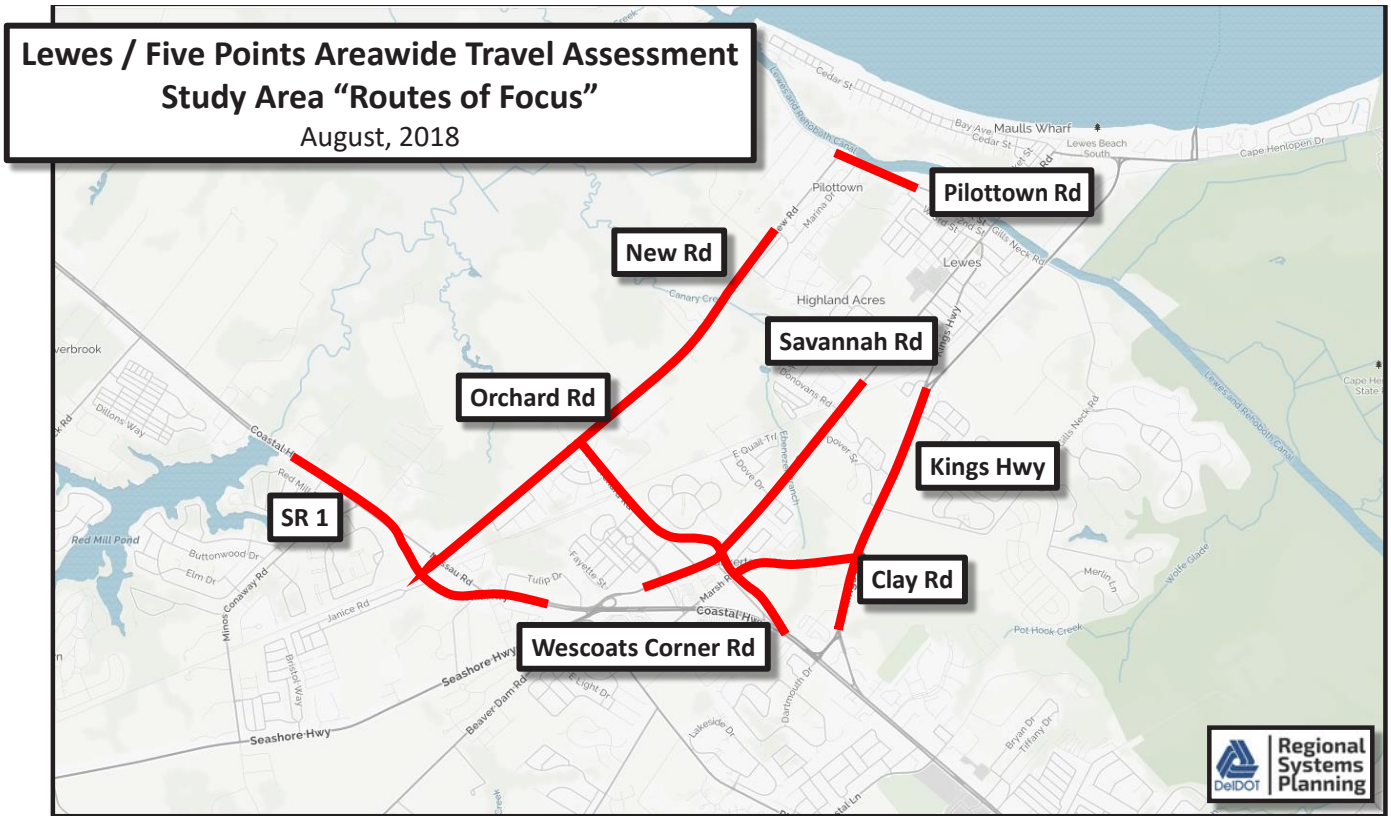

Figure 12 Study area for the travel assessment under development by DelDOT

The following specific viewpoints identify scenic areas along New Road where additional efforts are needed to maintain the character defining features of the landscape as seen from New Road (see Figure 13 on page 14):

- Knapp Family Farm/Nassau Orchards
- Red Barn Buildings at Nassau
- Nassau Station (remaining buildings, structures or objects from the old railroad station and canning factory)
- Black Hog Gut
- Black Hog Farm
- Pagan Creek Dyke (historic site listed on the National Register of Historic Places)
- Great Marsh, Canary Creek and adjoining wetlands
- Preserved Parkland at Park Road (Great Marsh Park and open space leased to City of Lewes)

Active Land Use and Transportation Projects

In addition to the Groome Church (Tower Hill) and Brittingham Farm properties, there are many more development and transportation projects that are in the pipeline, having been submitted for development review or as part of a state funded transportation study or other capital improvement. A third development project, Black Hog Village, is proposed for the lots directly behind the existing bakery and distillery at the intersection of Nassau and New Road.

DelDOT conducted the "Five Points Transportation Study" in December 2017. The effort is intended to reduce congestion and improve capacity on Route 1 as well as move local traffic around the corridor without having to utilize Route 1 for every trip. The results of Phase One of the study identified the following recommendations and priorities:

- Implement policies and procedures to make the area more efficient, sustainable and beautiful (27 recommendations, eight were prioritized)
- Make the most of existing roadway infrastructure (20 recommendations, eight were prioritized)
- Make walking, bicycling, and transit more viable as alternatives to driving (15 recommendations, five were prioritized)
- Invest in new infrastructure to support anticipated growth (nine recommendations, three were prioritized)

The Phase One plan had several priority recommendations that would involve and potentially enhance the New Road Corridor, including modifications to the Canary Creek Bridge and recommendations to fill gaps in pedestrian facilities. The effort begins Phase 2, Implementation in April 2019 (https://deldot.gov/projects/Studies/fivepoints)

In a separate action, the Delaware Department of Transportation is proposing modifications to the roadway network at New Road and Nassau as part of the Minos Conaway Project - incorporating a grade separated intersection to increase safety and mobility as well as to help reduce congestion along Route 1. Roundabouts are proposed as the intersection design for travel exiting Coastal Highway at Nassau while opening up the underpass of the railroad right-of-way to incorporate both vehicular and pedestrian access towards New Road (and the Georgetown to Lewes Rail-Trail).

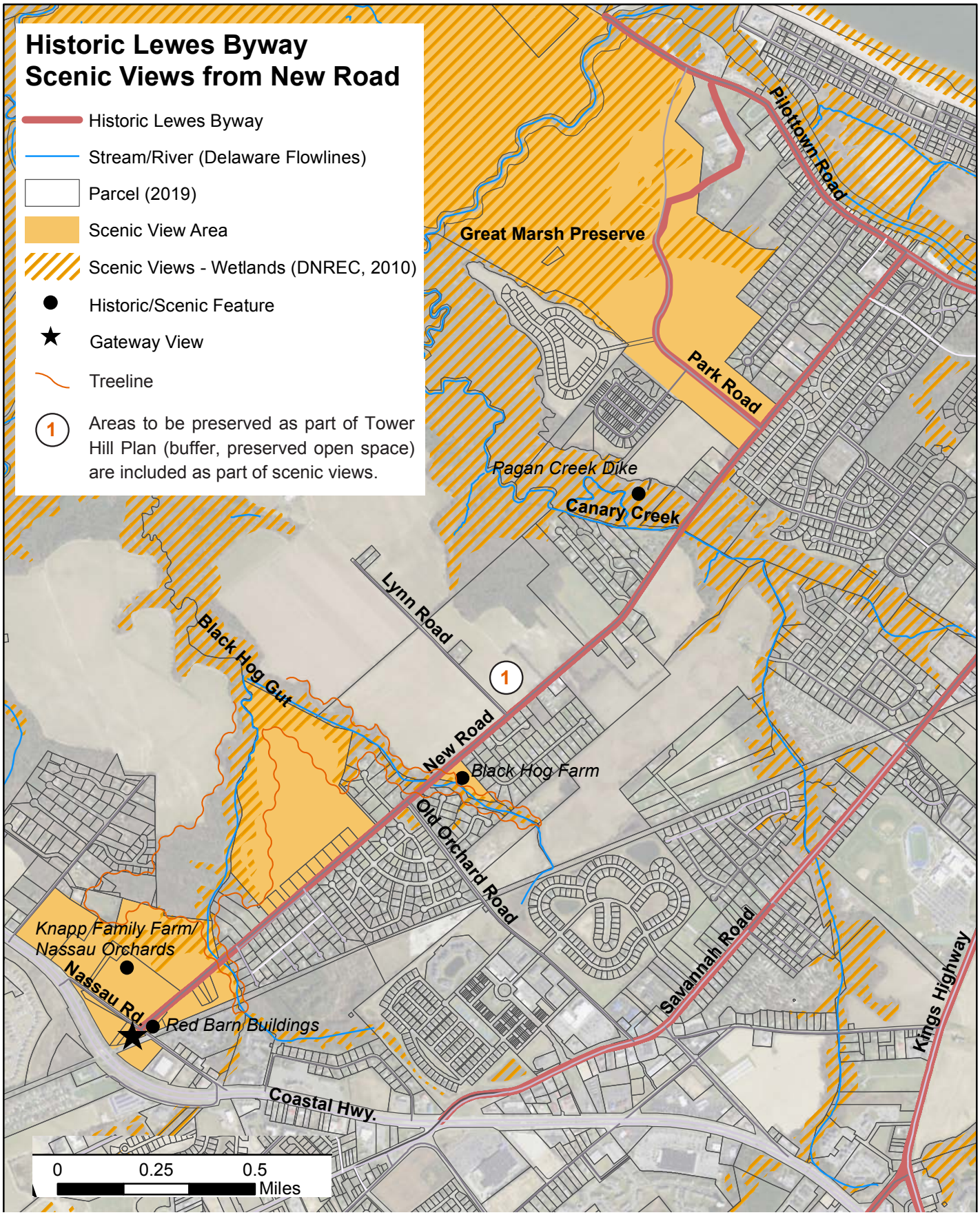

Figure 13 Scenic views and areas as seen from New Road (Source: Lewes Historic Byway Committee)

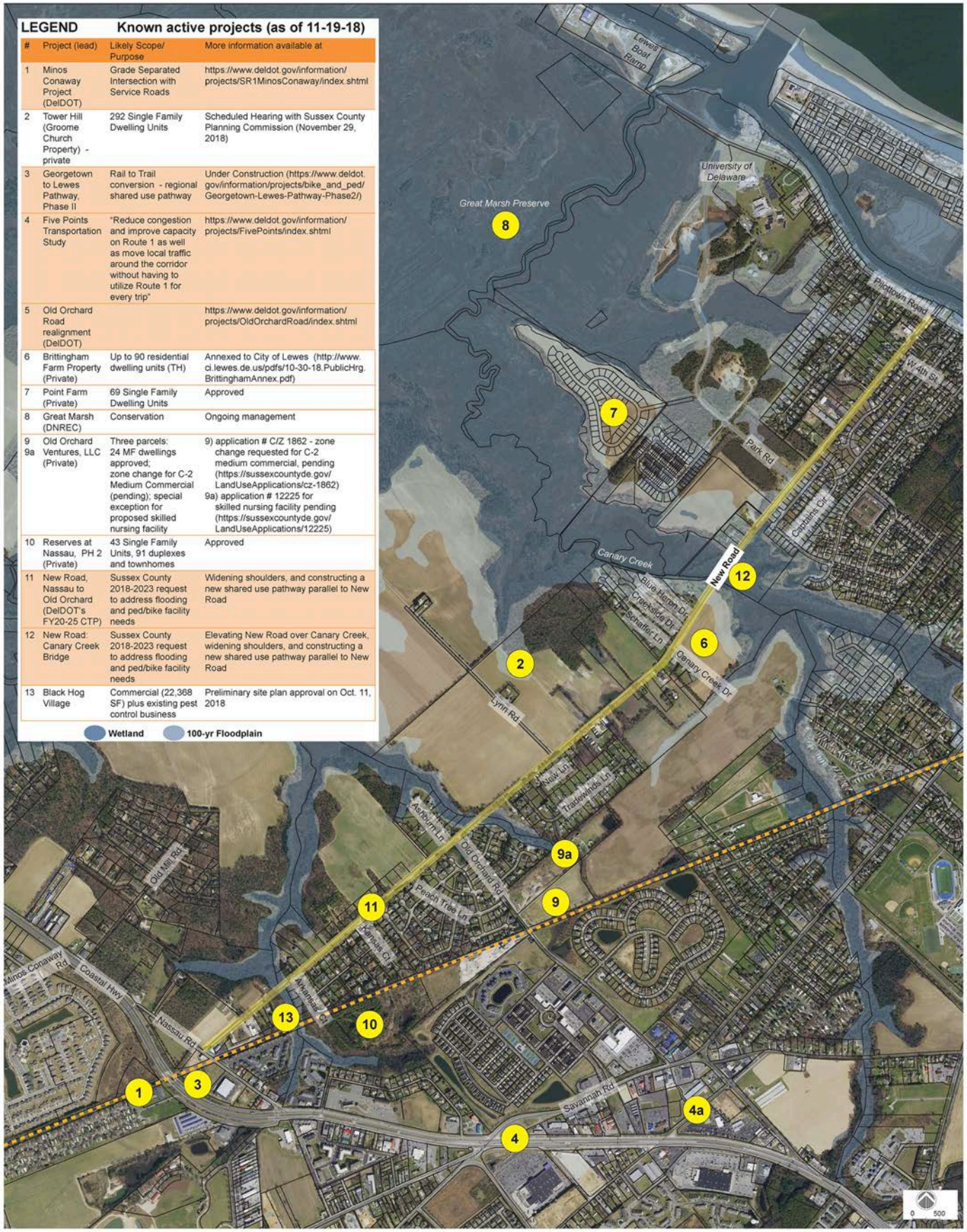

Figure 14 Active Development Projects along New Road as of November 2018

Modifications and realignment of Old Orchard is also under consideration between Savannah Road and Old Orchard Road at Wescoats Corner. Due to speculation of increased traffic and avoiding congestion on Route One, the City of Lewes requested a traffic study to address the cumulative effect of the various modifications. DelDOT presented the results of the study to the City of Lewes at a public meeting on July 1, 2019 (see https://lewes.civicweb.net/document/8566 for minutes).

The Southern Delaware Tourism in cooperation with the City's of Lewes and Rehoboth Beach, local chamber of commerce and other key stakeholders have completed a plan for a uniform wayfinding system that would be consistent and recognizable throughout the beach resort region. This wayfinding effort will begin on Route 1 and is intended to help guide travelers to primary destinations. The system directs Downtown Lewes and Cape Henlopen bound travelers to Savannah Road and Kings Highway from Route 1. The boat ramps at the end of Pilottown Road is the only destination that are slated for signing that use New Road (currently signed from Route 1. A funding and/or financing plan for implementing the project is in progress.

Strategies for State Policies and Spending

The State of Delaware helps coordinate local land use decision making with State decisions made about funding infrastructure through the guiding document entitled "Delaware Strategies for State Policies and Spending", last updated by the State in 2015. The State of Delaware works to ensure that State spending promotes quality, efficiency and orderly, compact growth while protecting resources.

The State's Strategies for State Policies and Spending map (Figure 15) classifies land areas by "Investment Level" (1 through 4). The state also designates areas as "Out of Play" for lands that are legally protected from development. The four investment levels are described as follows:

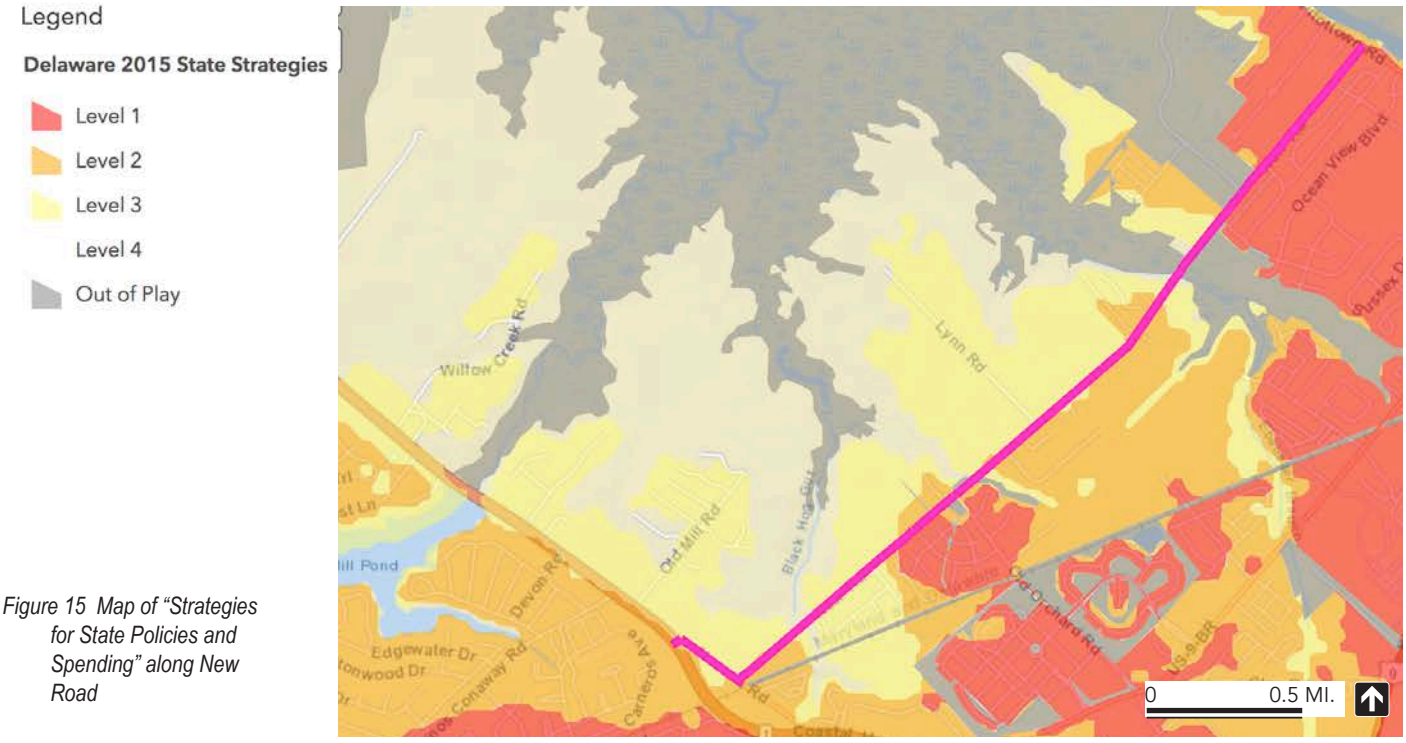

Figure 15 Map of "Strategies for State Policies and Spending" along New Road

- **Investment Level 1** seeks to maintain and enhance community character, to promote well-designed and efficient new growth, and to facilitate redevelopment.
- **Investment Level 2** seeks to promote well-designed development for a variety of housing types, user- friendly transportation systems, essential open spaces and recreational facilities, other public facilities, and services to promote a sense of community.
- **Investment Level 3** includes those areas identified in long-term growth plans of counties or municipalities where development is not necessary to accommodate expected population growth during the next five years or longer.
- **Investment Level 4** indicates the State's intent to discourage additional urban and suburban development unrelated to agriculture and to the area's needs, including limiting future infrastructure investment, while recognizing infrastructure investments may be appropriate where state and local governments agree that such actions are necessary to address unforeseen circumstances involving public health, safety, or welfare.
- **Out of Play** indicate lands that are not available for private development and include publicly-owned lands, private conservation lands, lands for which serious legal and/or environmental constraints on development are identified, and lands in some form of permanent open-space protection (such agricultural preservation easements and conservation easements).

The primary implication of the Strategies for State Policies and Spending is that the areas west of New Road are identified as Investment Levels 3 and 4 (bordering Canary Creek and Black Hog Gut). These lands continue to have significant conservation values as farmland and riparian forestland. Conservation of the Investment Level 4 and as much of the Investment Level 3 as possible would provide additional benefits for mitigating the potential effects of Sea Level Rise. The Sussex County Comprehensive Plan (2019) includes more detailed descriptions of the policy implications of these strategies for the County.

Sea Level Rise

As per Executive Order 41, Preparing Delaware for Emerging Climate Impacts and Seizing Economic Opportunities from Reducing Emissions (2014 and subsequent guidance); any state funded project shall address Sea Level Rise (SLR). For the New Road corridor, the planning issues associated with SLR include:

- Determining whether or not New Road will be treated as an Evacuation Route
- Establishing the elevation of new structures over Canary Creek and Black Hog Gut and their tributaries
- The role that associated riparian and wetland areas play in accommodating rising water levels and more frequent flooding
- The effect of rising sea levels on flooding and stormwater runoff

Effect of SLR on Flood Risk[3]

The floodplain is likely to expand due to SLR and the influence of land use and development. Today's floodplain is not tomorrow's floodplain. The State of Delaware advises its agencies not to build in the floodplain, and if it cannot be avoided, then higher design standards using nature-based approaches should be utilized. Nature-based approaches include bioswales, rain gardens, forests, wetlands, and open space. According to FEMA, higher standards could mean encouraging new

3 *Information on Flood Risk and Sea Level Rise Projections provided by Danielle Swallow, Coastal Hazards Expert, Delaware Sea Grant Program*

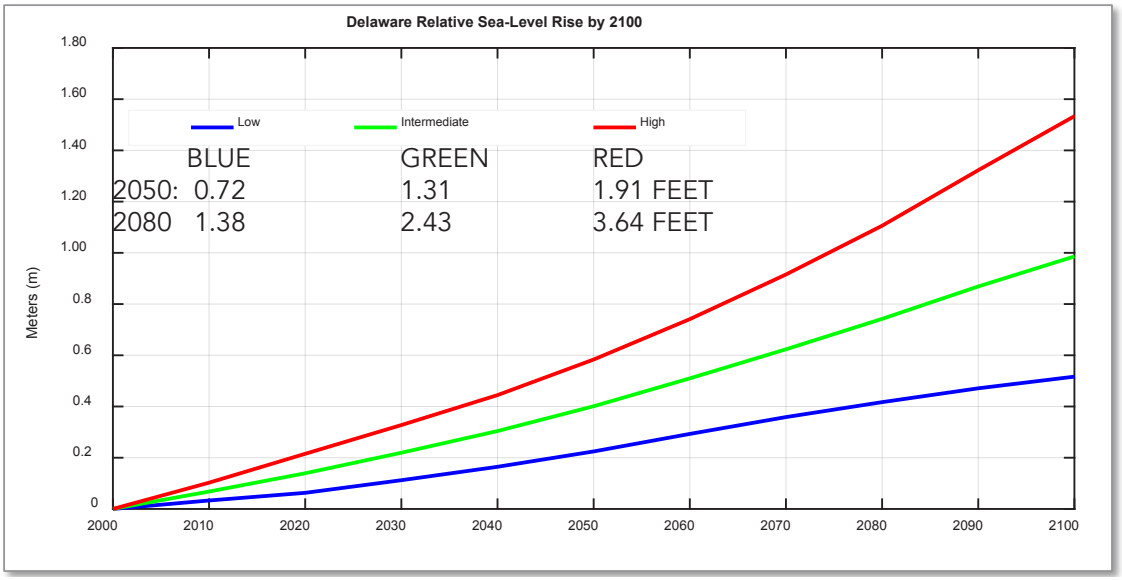

Figure 16 The Low, Intermediate, and High planning scenarios correspond with 5%, 50%, and 95% probability levels, respectively, under a "business as usual" greenhouse gas emissions future. (For example, the High curve indicates a 95% probability that sea-level rise will not exceed any year's value on that curve). SOURCE: 2017 State of Delaware Sea-Level Rise Planning Scenarios

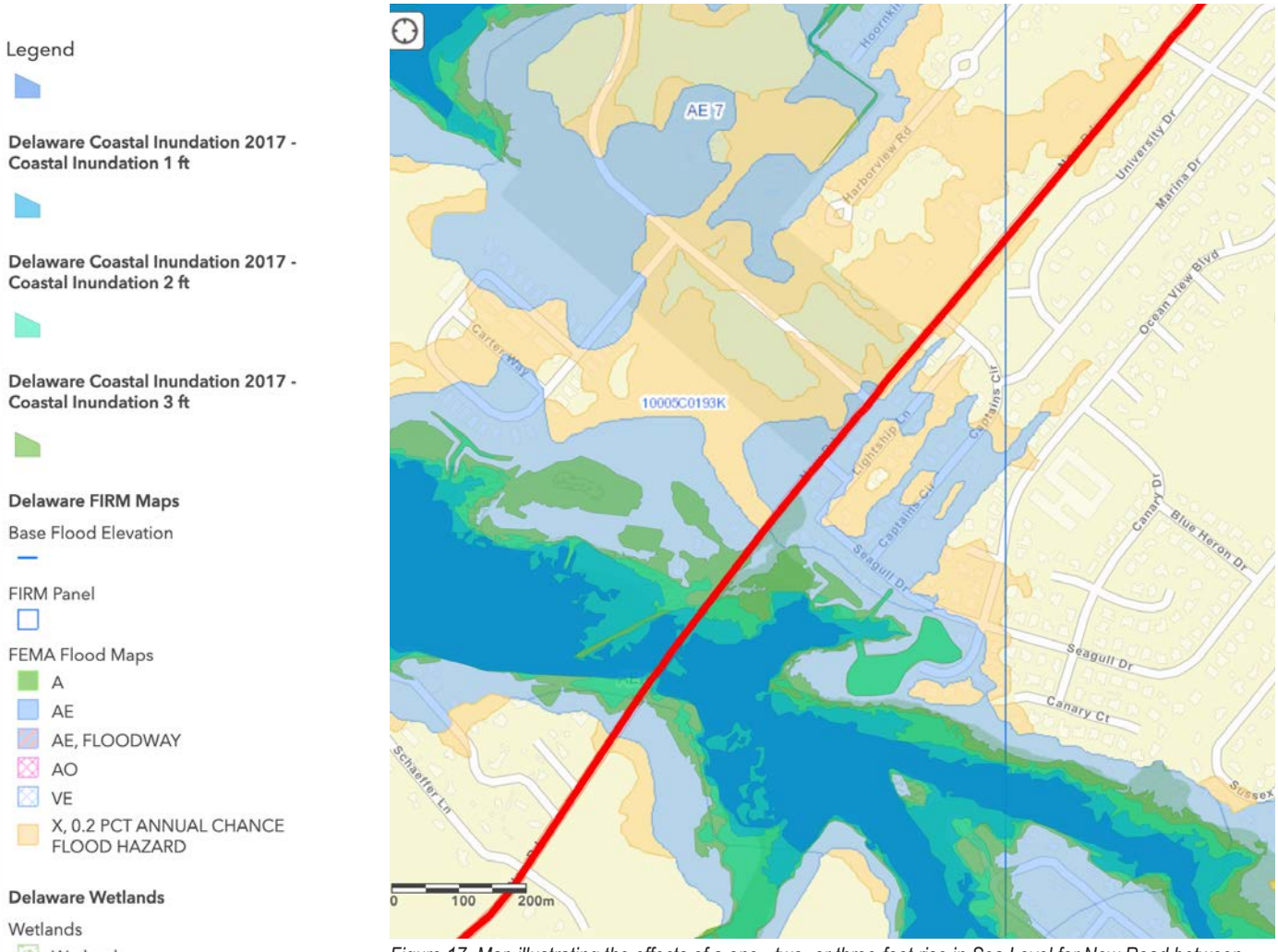

Figure 17 Map illustrating the effects of a one-, two- or three-foot rise in Sea Level for New Road between Canary Creek and 4th Street. The SLR elevations are overlain on top of the existing FEMA Flood Maps. Source: FEMA Flood Insurance Rate Maps Created Nov 17, 2014, Updated Jun 27, 2019 by State of Delaware (Authoritative); Delaware Inundation Maps Created Feb 7, 2017, Updated Sep 26, 2018, State of Delaware (Authoritative)

construction to be one or more feet above the base flood elevation and/or creating incentives to turn floodprone areas into open space through property buy-outs (from willing sellers) and proactive planning. Both FEMA regulations for critical facilities and the City of Lewes's Code refer to the 500-year floodplain and 500-year flood levels and both data are unavailable, or no longer accurate. Should more accurate flood elevation data become available, then they should be utilized to proactively address sea level rise as a factor in flood risk management, an ongoing issue along New Road east of Lynn Road.

Sea Level Rise Projections

The State of Delaware's SLR projections, tailored to the region, are designed to give maximum flexibility in choosing how much risk is acceptable when planning for future projects. SLR projections, expressed in the graph shown in Figure 16, assign confidence levels to each point on the curves. For example, any point along the red "High" curve implies 95% confidence that SLR will not exceed that value, whereas the green curve is the 50% confidence curve, and the blue "Low" curve implies only a 5% chance that SLR will not exceed any year's value along that curve.

Planners might choose the High curve for projects with a low tolerance for risk. An example where public safety is of concern would be an evacuation route or wastewater plant because there is a 95% probability that SLR will not exceed the points on that curve. Trade-offs will need to be made between the higher costs of designing projects based on a higher confidence level, or selecting an intermediate curve to design to and accepting some risk.

For the purpose of the Master Plan, an intermediate curve might be appropriate for a project with a life cycle in the 30-year range (the length of a typical mortgage, for example), while DelDOT designs bridges with life expectancies of 75-100 years. If New Road is an evacuation route, then the "high" curve should be considered.

The current 500-year floodplain will become part of the "new" 100-year floodplain with three feet of sea level rise. Land use changes, or other climate changes like more intense precipitation may promote expansion into that area sooner, but the most current models indicate that a 3' SLR would be upon us in 2075 (just 57 years away) and well within the lifespan of a bridge that is planned for construction at the out years of the current CTP.

Complete Streets Policy

Byway routes are, by Federal and State policy, multi-modal and should be designed to provide access to the venues and attractions found along the Byway route. In addition, the Historic Lewes Byway stated goal is to "Establish Byway routes as corridors for human powered recreation," including the development of a shared-use pathway.

Achieving complete streets policies on scenic and historic roads, in general, and along New Road, in particular, may be difficult due to complexities and challenges associated with the goal of preserving the scenic and historic qualities of the designated routes, available right-of-way, roadside ditch lines that serve multiple neighborhoods, and floodprone areas.

DelDOT's complete streets policy offers two approaches for addressing these issues:

- An exemption can be requested "if it is determined that a reasonable and equivalent alternative already exists for certain users or is programmed in the CTP/TIP as a separate project as determined by representatives of appropriate modes"
- A waiver can be requested no later than the semi-final design phase when "complexities and challenges exist[s] and there is a need to avoid or mitigate impacts to natural and cultural resources"

Large segments of the proposed shared-use trail along New Road will be built as part of the development of the Groome Church Property (Tower Hill) and the Brittingham Farm. Additional capital projects planned as part of the Minos Conaway Project, the Black Hog Village Development, the Old Orchard intersection (possibly developer contributions), and the Canary Creek Bridge reconstruction will make most of the proposed trail a reality in the near- to mid-term time-frame. Waivers may need to be requested for the urban segments, from Park Road to Pilottown Road, that address the right-of-way limitations and flooding problems.

03 Planning and Design Concepts

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Corridor Design Goals

The original 2015 Historic Lewes Byway CMP called for maintaining the rural character and character-defining features of the New Road corridor. However, due to changes in land use and transportation throughout the corridor, emphasis of the Corridor Master Plan has shifted towards working cooperatively with developers, land use authorities and DelDOT to achieve context sensitive design solutions that retain some of the character-defining features, while accepting that additional change is likely to happen. Preservation of the remaining farms and riparian forests continues to be a strong priority for the Historic Lewes Byway Committee and as evidenced by many comments during the public meetings for this project.

Similar to the nearby Kings Highway Corridor Master Plan, the Master Plan can be implemented through a combination of development review and guidance, developer contributions, capital improvement program projects, grant funding, HOA coordination, and volunteer support from the Historic Lewes Byway Committee.

The following Corridor Design Goals help to organize the project's implementation into five distinct emphasis areas:

1. **Character Areas:** Define and manage each of the distinct character zones throughout the corridor (see page 24)
2. **Conservation and Development:** Retain a diverse array of open spaces using setbacks, floodplain management, community open space and greenway corridors (see page 26)
3. **Transportation:** Use context sensitive design to accommodate changing travel demands throughout the corridor (see page 28)
4. **Bicycling and Walking:** Expand bicycle and pedestrian trail network along the entire length of New Road and connecting to the Georgetown to Lewes Rail-Trail (see page 35)
5. **Corridor Landscape Concepts:** Establish a coordinated landscape treatment along frontage areas by working with willing developers and private property owners on a voluntary basis (see page 38)

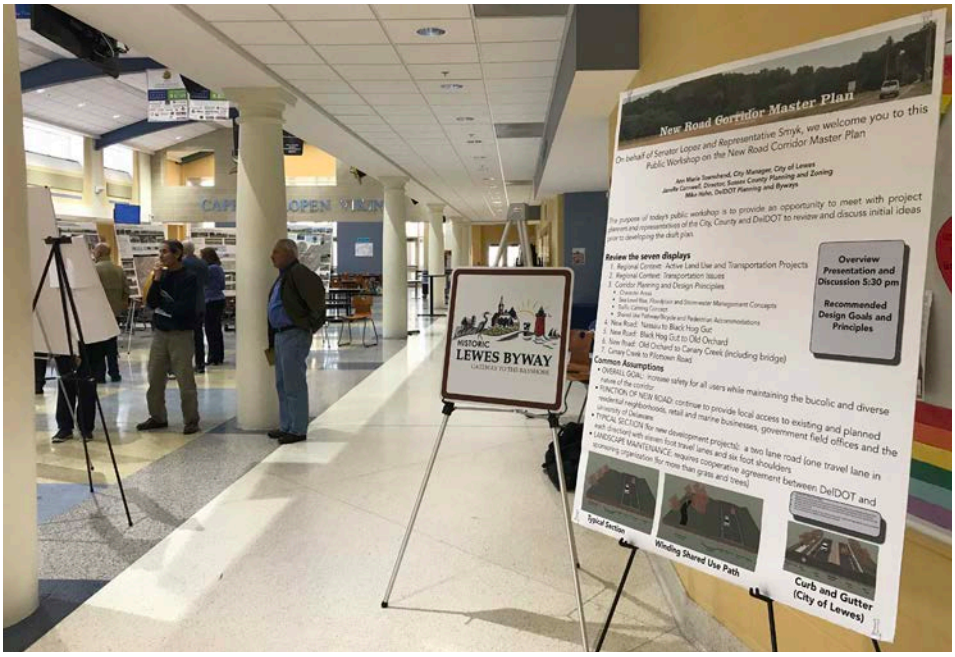


Figure 18 Introductory board at the November 2018 public meeting explaining the display boards available for review and the general assumptions established to guide the study efforts.

Character Areas

Goal:
Define and manage each of the distinct character zones throughout the corridor

The first goal and one that underlies all of the planning and design concept recommendations in this master plan is based upon the often-quoted notion that "one size does not fit all." When considering recommendations for preserving, maintaining and enhancing the character-defining features of the New Road Byway corridor, different treatments will be needed for four distinct character areas with the following character-defining features.

Figure 19 New Road Gateway

- **New Road Gateway:** Best reflected in the views that frame New Road, the gateway includes the adjoining Knapp family farm (Nassau Orchards) to the west, and the former barn, grain storage and refrigeration building to the east. In addition, trees along Black Hog Gut form an important backdrop to foreground farm and farm structure views.

  Changes under consideration that could potentially affect the character-defining features of this area include
  - SR1/Minos Conaway Grade Separated Intersection (roundabouts)
  - Black Hog Village (Duke property)

  During DelDOT's next public outreach effort for the SR 1 Minos Conaway Grade Separated Intersection Project (anticipated for summer/fall 2019), there will be opportunity to minimize encroachment on the adjoining Knapp Family farm and the commercially used former farm and rail buildings at the Nassau and New Road intersection. While recognizing a need for safety and

Figure 20 Black Hog Gut to Old Orchard

Figure 21 Old Orchard to Canary Creek

Figure 22 Canary Creek to Pilottown Road

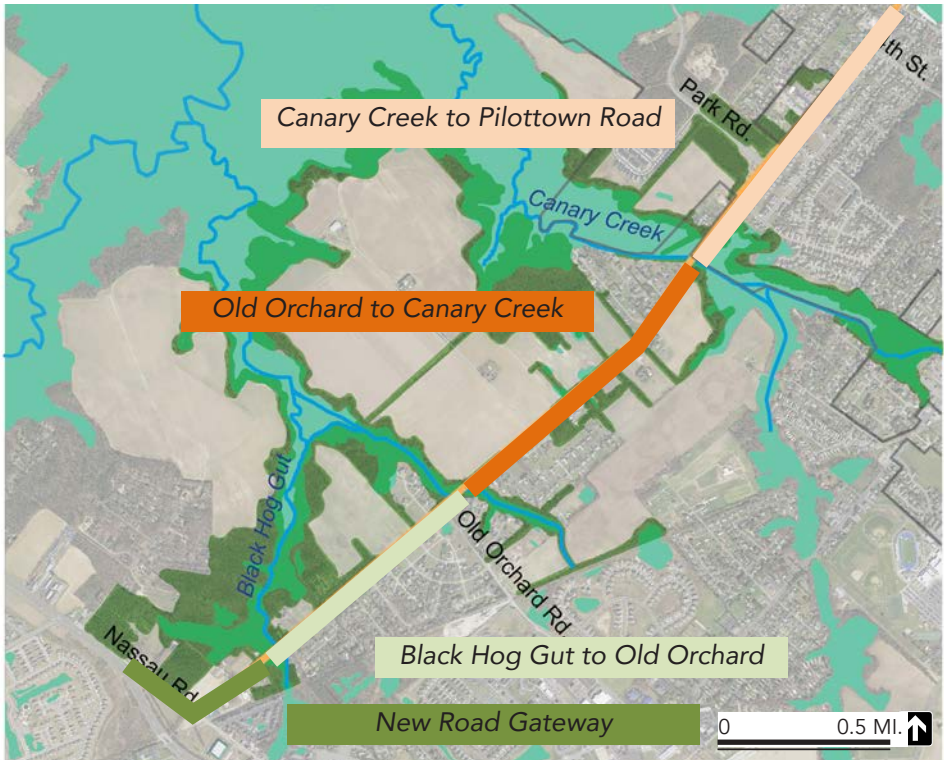


Figure 23 Map of Character Areas

mobility, complete avoidance may not be achievable. This analysis has yet to be completed.

- **Black Hog Gut to Old Orchard:** Crossing Black Hog Gut through the heavily vegetated riparian corridor, New Road opens to a view of farm fields with hedgerows to the west. On the east is an open grassy median area associated with Sand Dunes Village and a large man-made pond for stormwater management.

  Changes under consideration include:
  - SR1/Minos Conaway Grade Separated Intersection
  - DelDOT's FY 20-25 CTP (New Road To Old Orchard added)
  - Vehicular turning movements added at Old Orchard intersection from the realignment of Old Orchard & Wescoats Corner and from development of Orchard Plaza and Tranquility at Breakwater

  Opportunities include:
  - Expand pedestrian and bicycle facilities as part of Old Orchard intersection
  - Potential to enhance appearance of adjacent residential and corridor sections
  - Address drainage or flooding
  - Connect developing properties with the Georgetown to Lewes Rail-Trail

- **Old Orchard to Canary Creek**: Crossing the unnamed Black Hog Gut tributary, New Road passes through the former Black Hog Farmstead on the EB side, and the views open up to the fields of the Groome Church (Tower Hill) property on the WB side (now the site of the approved Tower Hill Development, Figure 14 on page 15) leading to three small subdivisions at on the south bank of Canary Creek. The subdivision Tradewinds Estates is setback from the EB side of New Road and primarily screened with hedges and other residential landscaping. Individual large-lot residences, a manufactured home subdivision and two pre-existing commercial lots continue on the EB side leading to the Brittingham Farm (now called the Lewes Waterfront Preserve).

  Changes under consideration include:
  - Development and vehicular changes for Groome Church (Tower Hill) and Brittingham properties
  - Elevation/resiliency of Canary Creek Bridge and approaches

  Opportunities include:
  - Accommodate shared-use trail with links to larger network
  - Address stormwater management and poor drainage
  - Preserve healthy roadside and riparian trees as deemed appropriate
  - Address future floodplain management needs
  - Preserve archeological resources
  - Preserve scenic views such as Canary Creek
  - Address local access and safety issues with a roundabout at Lynn Road coordinated with development project

- **Canary Creek to Pilottown Road**: Crossing Canary Creek, some of the best views in the Lewes area are found from the Canary Creek bridge. Reserves at Pilottown is the primary neighborhood on the EB side, separated by a ditch line and fences and hedges on the east. On the WB side are deeper setbacks associated with residential lots (not part of an HOA), a church and the Ice House, a local feature associated with

Goal:
Retain a diverse array of open spaces using setbacks, floodplain management and community open space.

Lewes' marine heritage. The right-of-way narrows east of 4th street and houses are closer to the street.

Changes under consideration include:
- Reconstruction of Canary Creek Bridge to address flooding
- Anticipated sea level rise on flood-prone areas

Opportunities include:
- Reconstruction of New Road Bridge over Canary Creek can also provide recreational access (fishing, crabbing, kayaking) and accommodate share use pathway
- Redesign intersection with Park Road to better direct vehicles with boat trailer traffic away from New Road/Pilottown Road intersection and towards public boat ramp
- Address poor drainage, flooding and emergency needs
- Add pedestrian and bicycle facilities where feasible

Conservation

Three overall planning concepts are recommended:
1. Preserve and restore riparian areas, wetlands and floodplains
2. Preserve remaining farms
3. Preserve and restore hedgerows and tree canopy

Preserve and Restore Riparian Corridors

The Historic Lewes Byway CMP (2015) recommended that the Byway's conservation goals be linked with land use, infrastructure and emergency services planning

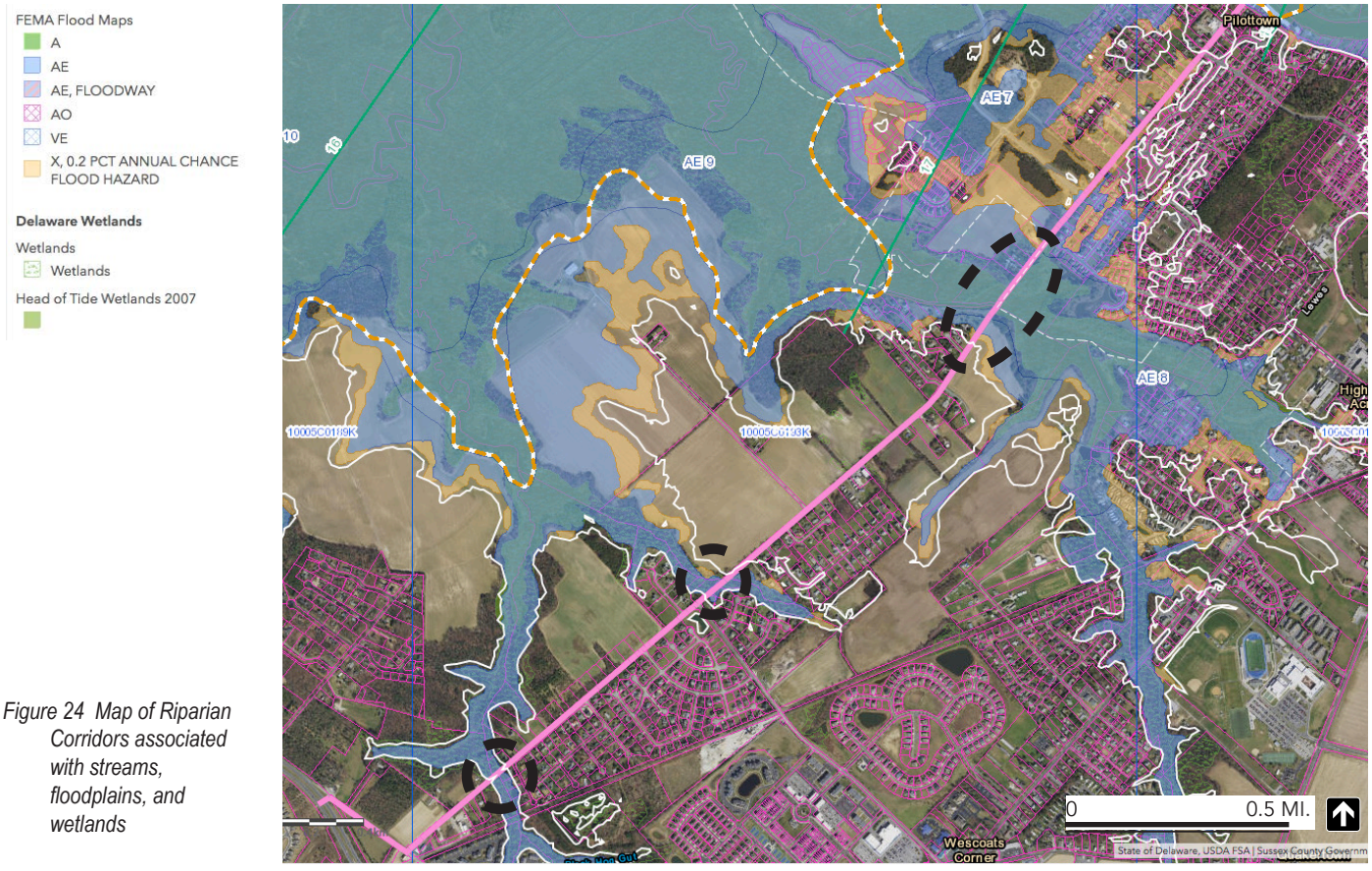


Figure 24 Map of Riparian Corridors associated with streams, floodplains, and wetlands

including sea level rise. The Byway's open spaces play a crucial role in providing infrastructure services by reducing infrastructure demand and contributing ecosystem services (especially for flood mitigation) to the overall quality of life.

Given that New Road serves as a local evacuation route for the northern end of Lewes (although not officially designated), the major activity areas (University of Delaware, DNREC facility, existing marine commercial uses and existing residential neighborhoods) are potentially isolated by Canary Creek and its tributaries. As sea levels rise flooding increases because surface water has no where else to go, more space is needed to reduce the flood risks and damage. The current 100-year floodplain serves this purpose today. However, the current 500 year floodplain is anticipated to become the future 100-year floodplain (Figure 17 on page 18).

Recommendation: Preserve wetlands and floodplains (both current and anticipated future 100-year flooding due to SLR) as open space through voluntary acquisition in fee simple, use of conservation easements, and/or development regulations.

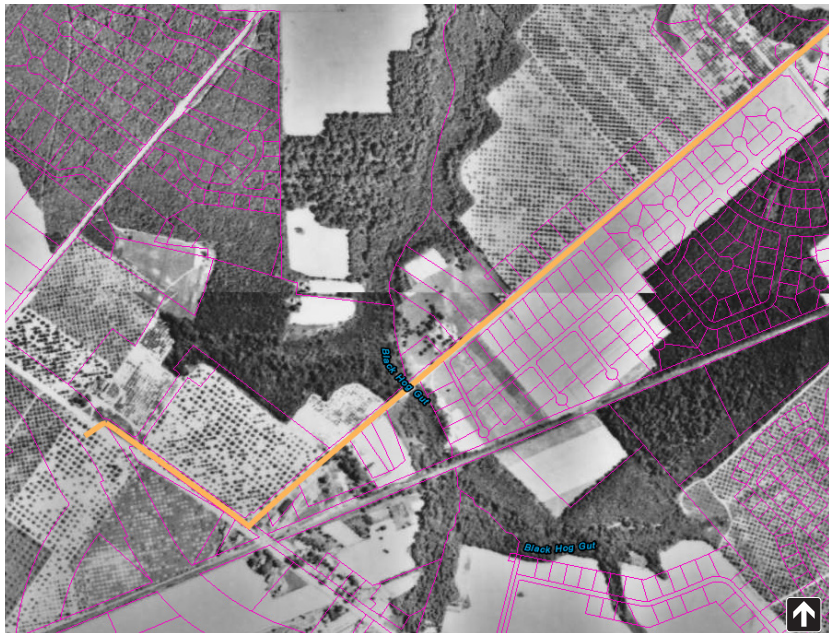


Figure 25 1937 aerial imagery of the Knapp Family farm and vicinity showing extent of orchards that exemplify the agricultural heritage of the corridor. The orchard lands continue to be retained in agricultural use.

Preserve Remaining Farms

The Historic Lewes Byway CMP identified areas that contribute to the experience of traveling along the Byway that are most vulnerable to change, including adjacent farms, pastures, and woodlands, such as the open farm fields along New Road, as a conservation priority. Currently, there are no farms or forest lands enrolled in the Delaware Agricultural Land Preservation Foundation (DALPF) along New Road.

Figure 26 Riparian vegetation along Black Hog Gut

Delaware's farmland preservation program has two major components – Agricultural Preservation Districts and Agricultural Conservation Easements. Preservation Districts are voluntary agreements where landowners agree to continue to only use their land only for agriculture for at least ten years. Agricultural easements are purchases of development rights from willing property owners on a voluntary basis by the Delaware Agriculture Land Preservation Foundation (DALPF), placing a permanent agricultural conservation easement on the property. Landowners must enroll their farm into a Preservation District before they can sell an easement.

Recommendation: During the time of this Master Plan effort, the owners of the Knapp Family Farm (Nassau Orchards) have indicated that they wish to continue its agricultural use. It is currently cultivated as a flower farm, but owners have stated that they plan to restore the Orchard business. The 1937 aerial photograph above, overlain with the current parcel map, shows the longevity of this farm—extensively planted with orchards and other crops since the farm's origins that date back to the 1900s. To every extent possible, all New Road related transportation projects should

Goal
Use context sensitive approaches to accommodate changing travel demands throughout the corridor.

be designed to best avoid or further minimize encroachment impacts to this important byway farm and community resource. Retention of Black Hog Farmstead for small scale or community agriculture is also recommended, but the property was put up for sale in late 2018. It is not known whether the new owners will continue its use as a Bed and Breakfast and small farmstead.

Preserve and Restore Hedgerows and Tree Canopy

Many of the remaining hedgerows along New Road are deteriorating and have been taken over by invasive species or removed for development projects. Hedgerows and healthy tree canopy play an important part in providing connectivity for wildlife and pollinators and absorb some water runoff.

Recommendation: Inventory the types of species, their health, and remove the invasive species as deemed necessary. Replant with new appropriate vegetation to achieve desired hedgerow function and appearance. For road & travel safety, plant selection for hedgerows along the roadway should avoid trees and shrubs that are attractive to deer. Restoration or replanting should be included as part of any development and /or transportation project throughout the corridor. (See Chapter 4 for examples of how the concept can be applied).

Transportation

New Road is a major collector that serves the needs of travelers that live in adjoining neighborhoods, work at the University of Delaware, Beebe Hospital or other nearby businesses, or enjoy access to public lands and shorelines. The route must address both the mobility of those trying to reach a destination from Coastal Highway and local access for those that must use New Road for daily travel needs.

New Road is located within both the City of Lewes and in Sussex County with four adjoining Traffic Analysis Zones (TAZ), serving a population estimated to be 4,105 (2015)[4]. Population within the four TAZs is projected to be 7,302 by 2050.

4 *Population, Household and Employment projections by Traffic Analysis Zone (TAZ) for all three counties in Delaware. Data Source:* https://firstmap.delaware.gov/arcgis/rest/services/Transportation/DE_TAZ/MapServer/0

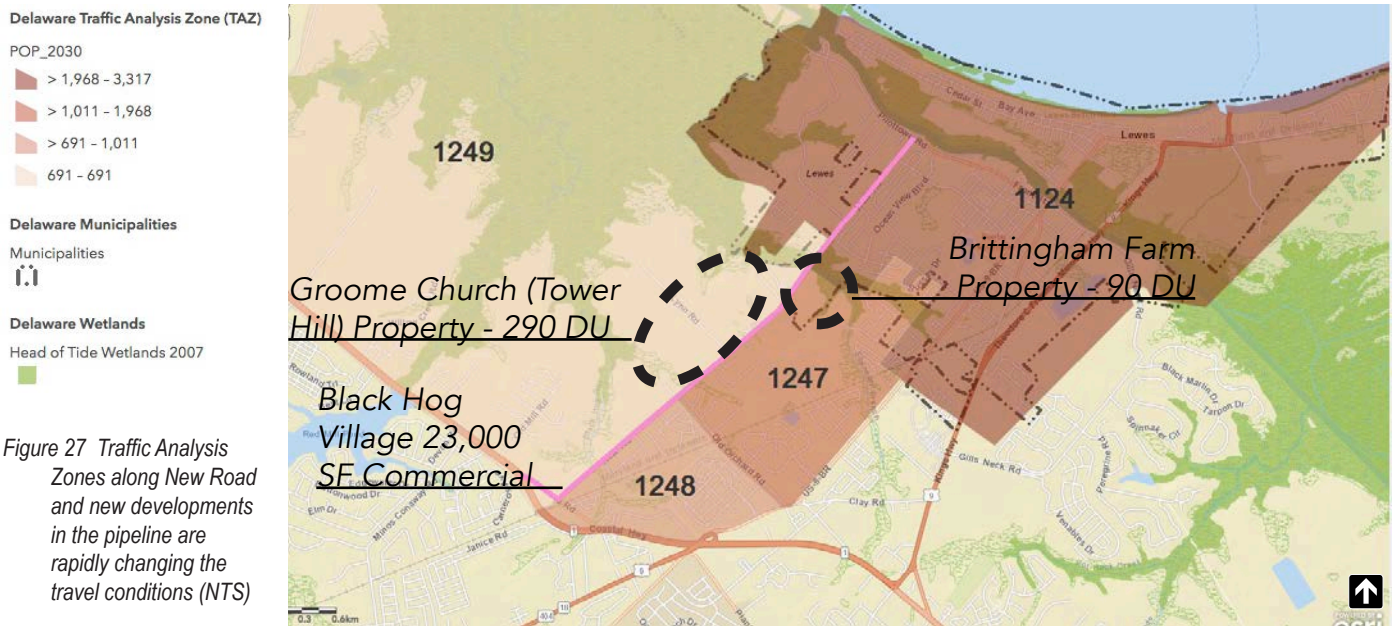


Figure 27 Traffic Analysis Zones along New Road and new developments in the pipeline are rapidly changing the travel conditions (NTS)

New Road can no longer be treated as a rural area from a transportation perspective. Free flowing traffic at 40 mph operating speeds can no longer be sustained. The urbanized area surrounding Lewes along New Road will be extending out to Old Orchard Road. A traffic study is being prepared by DelDOT at the request of the City of Lewes to comprehensively evaluate the changing travel patterns that arise out of projected land use changes and transportation projects.

New Road stakeholders identified higher operating speeds as one of their biggest concerns with regard to the safety of travel along the route, along with limited bicycle and pedestrian facilities. Traffic calming concepts are needed to allow vehicular traffic to slow from the higher operating speeds of the Coastal Highway and transition to the slower operating speeds associated with a rapidly urbanizing travel corridor—one of three entrances to the City of Lewes and an integral part of state designated Historic Lewes Byway.

Traffic Calming Concepts

Traffic calming measures are needed to more closely match the physical design of the road with the desired operating speeds. As New Road becomes more urban, travel patterns will shift away from current levels of relatively high mobility towards meeting future needs for more local access from neighborhood streets. Driver expectations of a high speed through route from Coastal Highway to the Pilottown Road destinations, or as a way to avoid congestion on Coastal Highway, Savannah Road or Kings Highway, need to be managed to avoid the wide range of operating speeds found on New Road today. Residents noted that it is impossible to travel on New Road at the posted speed. Additional speed studies are recommended to confirm the observations recorded in the field.

Three primary traffic calming concepts are recommended to help change driver expectations:

- **Establish New Speed Zones** - initiate required speed studies and DelDOT engineering evaluations to determine appropriate speed zones[5], addressing actual changes in rural to urban land use patterns (approved development projects), the recent City of Lewes annexation of the Brittingham Farm and the overall community goals for speed management and safety on New Road. The Master Plan recommends considering changes to posted speed limits from 40 mph to 35 mph (between Coastal Highway and Lynn Road) and to 25 mph from Lynn Road to the existing City Limits where the exiting speed limit changes to 25 (just east of Canary Creek). After the recent annexation, the new City Limit is at approximately Schaffer Lane, a

5 *Speed zone changes to be developed comprehensively based upon results of required traffic study and in tandem with the installation of traffic calming measures*

Historic Lewes Byway Corridor Management Plan Transportation Recommendations

The Historic Lewes Byway CMP outlined specific strategies to address traffic issues. The following have been adapted to New Road specifically and are advancing towards implementation. These include (with status noted):

1. Manage Development Traffic
   - Improved Coordination among the City, County and Developers
   - Establish a Traffic Improvement District (Under Discussion)
2. Develop a Traffic Management Plan
   - Dynamic Message Signing, Smart Phone App, WTMC Radio, Information Kiosks
   - Coordinate Special Events: Stagger Times/Days, Develop Parking and Routing Plans, Remote Parking
   - Manage Beach Parking: Variable Rates, Season Passes (Underway)
   - Manage Visitation to Cape Henlopen State Park: Reservation System, E-Z pass, Express Lanes
3. Improve Transit and Establish a Jitney Service
   - A detailed feasibility study needs to evaluate the number of routes, frequency and time span of service and stop locations as well as whether the service should be provided by DART, partnered with DRBA, businesses, the City, or is a private Jitney
4. Reduce Vehicular Demand
   - Build the Trails! (Underway)
5. Improve Wayfinding and Visitor Information Services
   - Visitor Information Center at Park and Ride at Five Points
   - Smart Phone App tying the Byway to traffic conditions and event information (DelDOT App serves some of this function)
   - On-street wayfinding system for autos and bikes (Plan in Place)
   - Use Traffic Calming to Manage Travel Speed

Figure 28 Transverse markings used to induce slower operating speeds (Source: FHWA)

Figure 29 Multiple studies have shown that radar activated speed limit signs with changeable message reflecting actual speed are effective means of slowing operating speeds of between 3-8 mph (Source: FHWA)

Figure 30 A splitter island combined with landscape roadside plantings effectively reduce operating speeds on U.S. Route 50 in Virginia (see Figure 33)

Figure 31 Combined splitter island and gateway approaching Centreville, DE on the Brandywine Valley National Scenic Byway and Harriet Tubman Underground Railroad slows traffic while increasing visual appeal, as noted in the visual preference survey

distance of approximately 2000' to the intersection of Lynn Road, the access point for 292 planned and approved single family lots.

- **Reinforce desired operating speeds with roadway and roadside design** - Insert traffic calming measures suitable for use on a major collector at a distance apart of between 1200 and 1800 feet (every 25-35 seconds of travel time).
- Treat future **access management** needs consistently with the roadway's function as an urban major collector rather than a rural high speed roadway.

Reinforce Desired Operating Speeds

There are no magic solutions that can be applied to every byway community in the same way. Instead, applying a context sensitive design process and approach, as described in the Historic Lewes Byway CMP, to speed reduction and safety related projects along the Byway can help to increase the safety of the travel experience while at the same time maintaining character-defining features.

Traditional traffic calming solutions (sometimes referred to as "humps and bumps") to achieve speed reduction are typically not appropriate for major collector roads. Instead, a number of tools can be considered to change driver perception as they approach the desired slow down points. These include the following (noted here from a range of less aggressive to more aggressive measures):

- **Low cost transverse markings** painted along the edge line (with spacing that gets closer and closer together) in advance of the slow point warns drivers that they need to slow down (Figure 28);
- **Radar activated speed limit warning signs** work to slow drivers in advance of the desired slow point (Figure 29)[6];
- **Textured pavement strips** (Figure 35 on page 33) placed in advance of the slow point at more closely spaced intervals to induce speed reduction (more permanent and visually appealing than the transverse markings noted above);
- **Horizontal alignment shift** using a splitter island in combination with narrowed travel lanes to break up excessively long sight lines and force drivers to slow down to navigate around the splitter island (Figure 30);
- **Roadside treatments increasing the visual friction** along roadside areas induce speed reduction through the use of landscape clusters, tinted shoulders, entry signs, or gateways (Figure 31); and
- **Roundabouts** are becoming the preferred approach for intersections when both roundabouts and a traffic signal are each warranted. A roundabout has to work from a capacity standpoint. They have the added benefit of requiring slower operating speeds and for eliminating vehicular acceleration to "beat the light".

6 *Radar speed signs follow a specific policy (https://deldot.gov/Publications/manuals/de_mutcd/pdfs/Radar_Speed_Policy_Update-2015.pdf)*

- **A consistent surface treatment** for crosswalks, sidewalks gore areas of medians, and turn lanes reinforce driver's perception that they are entering an area frequented by pedestrians and should slow down. Tinted and/or stamped concrete or thermoplastic patterns with a brick appearance, among other techniques, can be utilized to establish a consistent appearance throughout (Figure 31 on page 30 and Figure 69 on page 54).

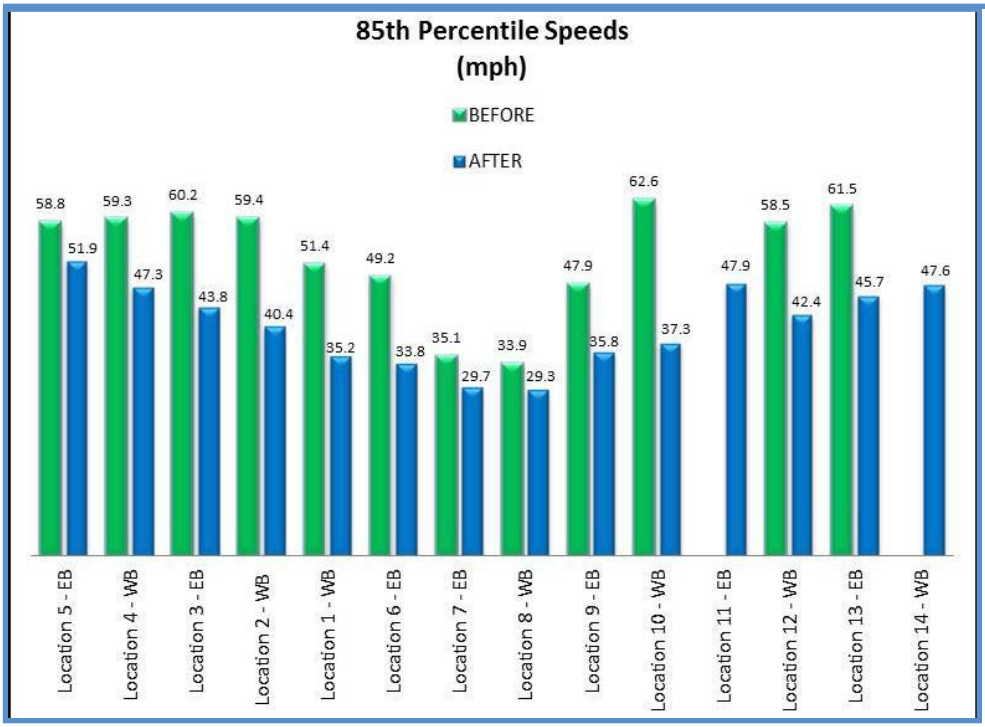


Figure 32 Route 50 Traffic Calming post occupancy research results of before and after speed studies of installed calming measures in Upperville, Virginia, 2007-2009. The graph depicts locations starting with the outskirts of town (west to east) where speed limits transition from 45 mph (locations 3-5 and 11-14) to 35 mph (locations 1-2 and 9-10) to 25 mph (locations 7-8)

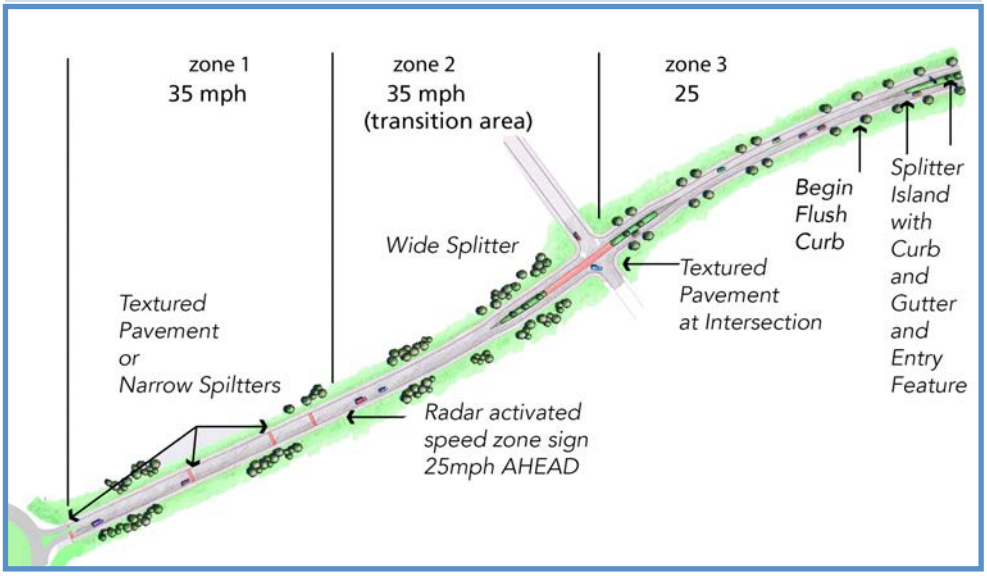


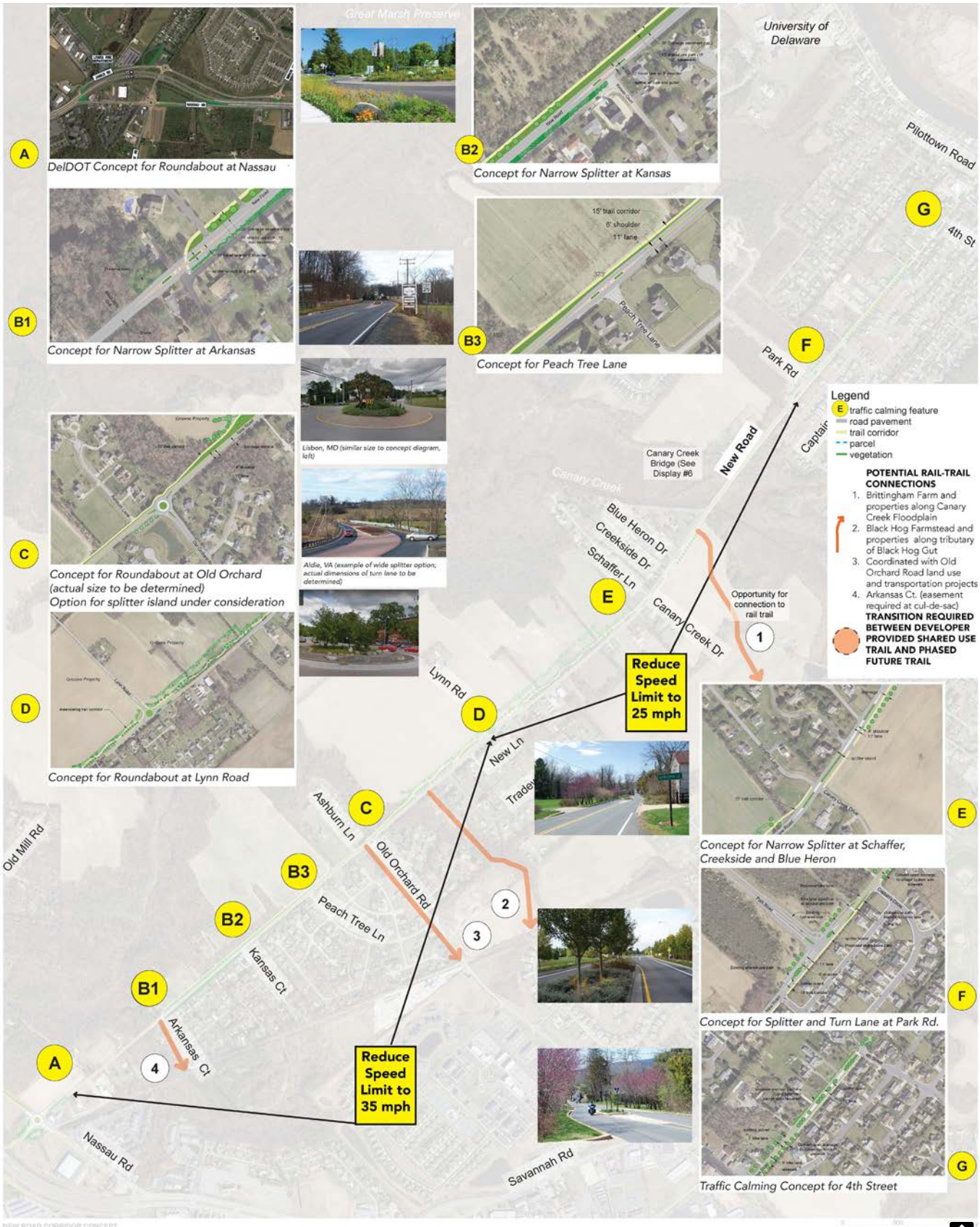
Figure 33 Diagram illustrating traffic calming as a coordinated system using measures at intervals appropriate to the desired speed of the road starting with initial cues (zone 1) as the driver transitions from the 35 mph to 25 mph speed zone (zone 2), and then establishing a clear point of entry for the 25 mph speed zone (zone 3) in advance of the developed town, neighborhood or village (adapted from Route 50 Traffic Calming Program Design Memorandum)

Route 50 Traffic Calming National Demonstration Project

A fifteen year national demonstration project for context sensitive traffic calming was conducted between 2001 and 2016 along US Route 50 in the towns of Upperville, Middleburg, and Aldie, Virginia 50 miles west of the District of Columbia.

Traffic calming measures were inserted at regular intervals approaching each of the three towns. The first project was built in Upperville and completed in 2008. Measures included flush curbs and textured warning strips outside of town, splitter islands reinforced by landscape approaching town, and narrower splitter islands with texture pavements at intersections within town.

Speed studies were conducted before and after construction to test the effects of the measures. Speed reductions between 12 and 25 mph were achieved at the outskirts and transition areas into town where the highest operating speeds were observed prior to the installation.



For location only, see Chapter 4 for enlargements of each concept

Figure 34 Overall Corridor Transportation Concepts for New Road

Traffic Calming Measures

Figure 33 on page 31 illustrates the general concept for using traffic calming measures to reinforce desired operating speeds through placement of traffic calming measures. For New Road, recommended traffic calming measures primarily include speed activated radar signs, edge treatment, narrow splitter islands, wide splitter islands and other horizontal alignment shifts, coupled with roundabouts. Locations for recommended measures are shown in Figure 34 on page 32:

A. **Nassau** - landscaped roundabout constructed as part of the Minos Conaway Project (DelDOT Capital Improvement Project)
B1. **Arkansas Court** - narrow, landscaped splitter island with trail crossing (future capital project)
B2. **Kansas Court** - narrow landscaped splitter island coordinated with Sand Dunes Village residents within existing grass island (future Capital Project)
B3. **Peach Tree Lane** - narrow landscaped splitter islands with space for left turns
C. **Old Orchard** - options under consideration if a traffic signal and/or roundabout are warranted include a roundabout or wide splitter island (with or without a signal) implemented as a future capital project and/or through developer contributions.
D. **Lynn Road** - landscaped roundabout plus roadside landscape plantings (developer has agreed to landscape)
E. **Brittingham Farm** - multiple narrow splitter islands with flush median turn lane (sized as required for development access) and coordinated with existing private roads (Schaffer, Creekside and Blue Heron), related landscape planting (developer funded)
F. **Park Road** - a landscaped splitter island with left turn lane and alignment shift is needed to improve safety and slow traffic continuing eastward on New Road prior to entering more urban, city neighborhood (future capital project)
G. **4th Street** - narrow landscaped splitter islands approaching 4th Street (future capital project)

Each of the recommended measures and context sensitive design approaches for those measures are discussed in more detail in Chapter 4.

Figure 35 Brick and cobble details (top, Greenville, DE), shoulder treatment using euro-cobble (middle) or less expensive painted transverse road markings (bottom, FHWA) are all used to increase visual friction as drivers approach changing speed zones as a way to reduce operating speeds

Consistency in Materials

The recommended materials and details for the traffic calming measures should be consistent throughout to provide for better recognition of traffic calming measures. Textured or colored materials can be used that might include brick or various concrete pavers and other materials for outlining and accenting features. Materials will be selected that are ADA compliant and consistent with the Lewes area's character-defining features.

In-Between Areas

Landscape design and/or pavement markings should be used between traffic calming measures to establish a rhythm that gets closer together as the traveler approaches the slow point. Figure 34 illustrates methods for achieving this kind of visual friction to provide clues to drivers that they are entering a different driving condition and to increase driver perception of operating speed.

Access Management

Traffic calming measures are proposed for specific locations throughout the corridor to reinforce the desired operating speeds utilizing horizontal alignment shifts and roadside landscape treatments. Most locations are tied to existing intersections. As more property is developed over time, requests will be made for access to the state controlled highway. Some access points may be between the traffic calming measures. For larger projects, the development review process provides an opportunity for DelDOT to coordinate access with the traffic calming system. The following corridor planning principles can be utilized to ensure that future access is well coordinated and reinforces the overall goals of the Master Plan:

- **Development Access Reviews:** The Master Plan must be considered at the PLUS review stage of the land development process, at the scoping meeting and all subsequent meetings regarding the traffic impact studies and in the final roadside frontage and off-site improvements along the corridor.
- **Intersections:** Future developments with internal street networks should be coordinated in such a manner as to distribute turning movements to multiple locations or existing roads so as to create a network of neighborhood streets connected together. The south/east side of New Road has greater potential for establishing connectivity in the future. The north/west side land bays are limited by inlets from the Great Marsh, Canary Creek and Black Hog Gut. All tie in points to New Road should be coordinated with existing street intersections. Should future development warrant a traffic signal, multiple access points and a grid or parallel road network (considered as part of the extension of the Lewes street grid) should be utilized to spread out access so that signals or roundabouts are not warranted at one concentrated location.
- **Bypass Lanes:** A bypass lane is a paved shoulder that permits through traffic to bypass a left-turning vehicle that is stopped in the travel lane. They are intended to reduce delay, rear end collisions, and continue the movement of through traffic at T- intersections. While bypass lanes exist on New Road, alternatives should be considered in the future.

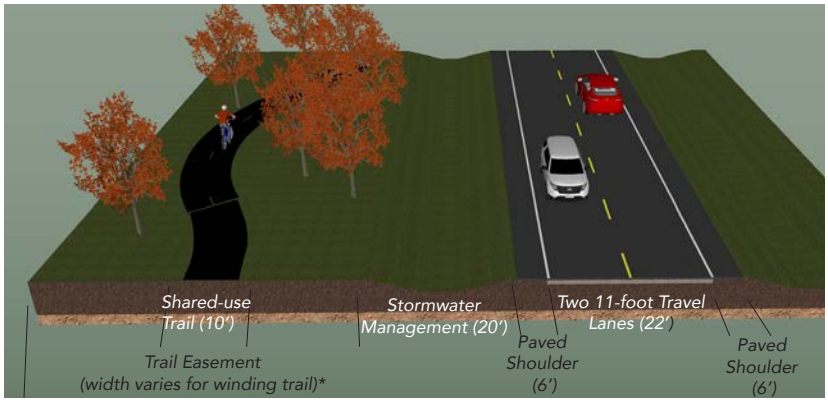


Figure 36 Typical section for segments of New Road where open drainage will remain (west of Canary Creek). Dimensions shown are for typical conditions but specific constraints such as wetlands, impact to adjoining properties, preservation of existing drainage or stormwater facilities, or other natural and cultural resource preservation may require narrower pavement widths, alternative drainage practices, or a narrower trail section. Meandering trail as shown requires cooperation with developer. Shallower curves are applicable where constraints limit trail corridor.

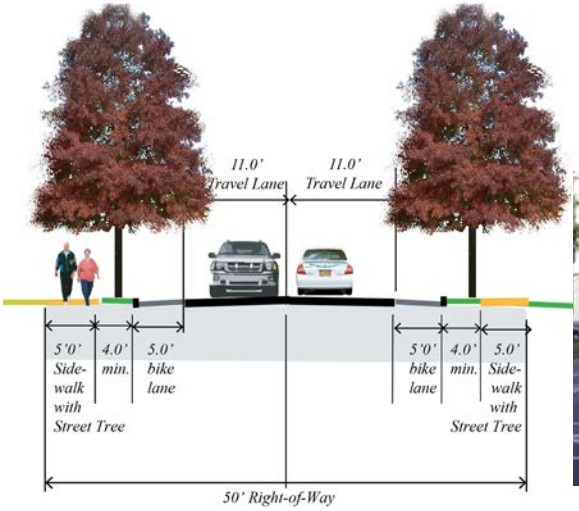


Figure 37 City of Lewes section applies to any newly constructed, closed drainage section (curb and gutter) only; section does not apply to existing open drainage. The recommended section reflects the availability of a 50' right-of-way. Where that R/W narrows to 40' east of 4th Street, and utilities or stormwater compete for available space, pedestrian facilities and street trees will need to be removed from one side of the street and/or bike lanes replaced with shared roadway.

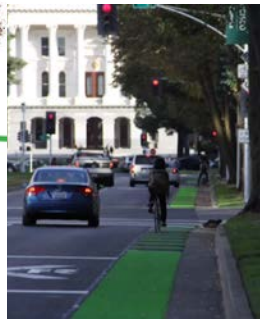


Figure 38 Bike lanes within the City of Lewes should be tinted to reduce the perception of wide pavement widths and provide more clarity for cyclists and drivers

- **Roadway Widths:** DelDOT has recommended that all future changes to New Road, whether constructed as part of a Capital Improvement Project, or as part of transportation improvements associated with a development project utilize the cross section as shown in Figure 36. Within the City of Lewes, a closed section is recommended (Figure 37). Preliminary design and engineering undertaken for future Capital Projects will determine actual right-of-way needs. The application of clear zone requirements, utility impacts and relocations, and drainage and stormwater management design will all play a role in determining if and where pedestrian and bicycle facilities, trees, or open buffer space can be accommodated.

Bicycling and Walking Goal: *Expand bicycle and pedestrian trail network along the entire length of New Road and connecting to the Georgetown to Lewes Rail-Trail.*

Bicycling and Walking

The following bicycle and pedestrian facilities are recommended along New Road to meet the intent of the State of Delaware Complete Streets Policy and the Historic Lewes Byway Corridor Management Plan goal of providing for recreational trail facilities along the New Road corridor.

The evolving trail system along New Road serves both the needs of adjoining residents and is part of the region's evolving recreational trail network (Figure 39).

Figure 39 New Road (red) in relation to existing off-road shared-use trail system (Map source: DNREC "Delaware Play Outside")

Bicycle and pedestrian facilities will be built out over time utilizing the following four implementation mechanisms:

- **Developer Coordination (pipeline):** Portions of the trail system, crossings, and the typical roadway cross section will be undertaken by developers as part of development projects.
- **Capital Improvement (funding in current CTP):** Portions of the trail system will be built as part of transportation projects already funded in the CTP (Minos Conaway Project and the proposed Bridge over Canary Creek).
- **Capital Improvement Program (long range):** Several projects are slated for future capital improvements but they are not yet funded, such as anticipated safety and capacity improvements between Old Orchard and Nassau.
- **Urban Bike-Ped Facilities Coordinated Capital Improvement (long range):** The urban sections of the trail will need to be funded as part of other capital improvement projects not yet identified (coordinated with flood risk reduction, stormwater management, or flood mitigation projects, for example).

Given that the different segments will be built out over a considerable period of time, each specific segment that terminates prior to construction of the next segment will need to provide a transition between the off-road shared-use trail facility and on-road facility (either share the road or bicycle lanes). An example of one way to accomplish this (of many options) is shown in Figure 40.

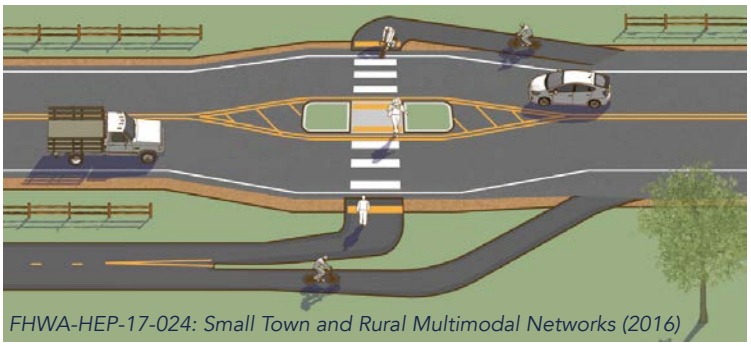


Figure 40 Diagram illustrating prototypical transition from off-road facility and on-road facility (FHWA)

FHWA-HEP-17-024: Small Town and Rural Multimodal Networks (2016)

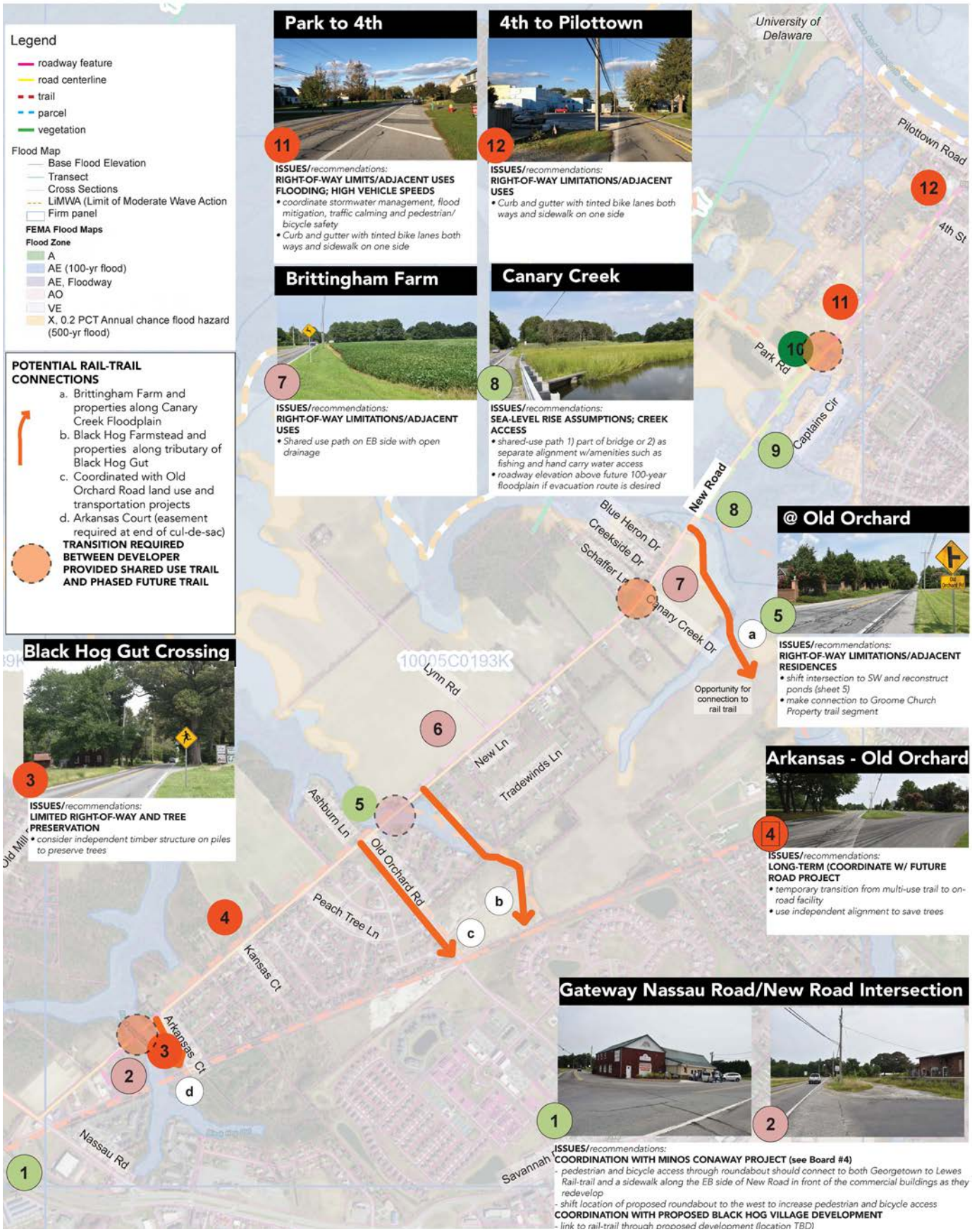


Figure 41 Pedestrian and Bicycle Facilities

Trail Alignment

Figure 41 and the table below provide a segment by segment breakdown of the trail system. The table serves as the guidepost for coordination with both development projects and transportation-related capital improvements. The shared-use trail would start on the EB side of New Road at Nassau, linking directly with the Georgetown to Lewes Rail-Trail at the proposed Black Hog Village. The trail would either stay on the rail-trail to Old Orchard if farmland is preserved on the WB side of New Road, or cross at Arkansas and stay on the WB side through Old Orchard to Schaffer Lane, where it switches to the EB side, coordinated with new development at Brittingham Farm. At Park Road, the off-road shared-use facility would convert to a combination of bicycle lanes/sidewalk (s) configuration to Pilottown Road.

	Type of Project
	Existing Trail
	Developer Coordination (pipeline)
	Capital Improvement (in CTP)
	Capital Improvement (long range)
	Urban Bike-Ped Facilities Capital Improvement (long range)

#	Side	DIST (MI)	From	To	Implementation
1.	EB	0.0	Minos Conaway Project		Bicycle and Pedestrian connections to Rail-Trail and sidewalk connections to business
2.	EB	.16	Connection to Rail-Trail	Black Hog Gut	Developer provided connection to Rail-Trail extending to Black Hog Gut
3.	EB	.07	Black Hog Gut Crossing	Arkansas	Consider separate trail bridge over Black Hog Gut on EB side to preserve trees
4.	WB	.52	Arkansas Court	Old Orchard	Capital improvement (no development pending)
5.	WB	.11	Old Orchard Intersection	Connection to Groome Church (Tower Hill)	Capital Improvement (part of future intersection modifications)
6.	WB	.70	Groome Church (Tower Hill) Property	Shaffer Lane	Developer provided trail on independent alignment with landscape screening (approved by Sussex County)
7.	EB	.14	Brittingham Farm Property	Canary Creek	Crossing to EB side at Shaffer Lane; Developer provided trail constructed to work with traffic calming or provided as Capital Project tied to future traffic calming
8.	EB	.00	Canary Creek Bridge		Construct trail on EB side of a single road with trail structure over Canary Creek as part of Capital Improvement Project including considerations for incorporating fishing access, soft landing or other amenities (location/design TBD, possibly coordinated with development or sewer line)
9.	EB	.38	Canary Creek Bridge	West of Park Road	Part of capital improvement project for bridge – extend trail to crossing west of Park Road
10.	WB	.12	West of Park Road	East of Park Road	Existing trail and crosswalk
11.	TBD	.37	East of Park Road	4th Street	50' right-of-way: use bike lanes and sidewalk on both sides (or sidewalk on one side if bioswale implemented)
12.	TBD	.15	4th Street	Pilottown Road	40' R/W or less – same options as above but use bike lanes on both sides and sidewalk only on one side
		2.72			

Figure 42 Diagram illustrating potential location of Canary Creek linkage trail to the Georgetown to Lewes Rail -Trail

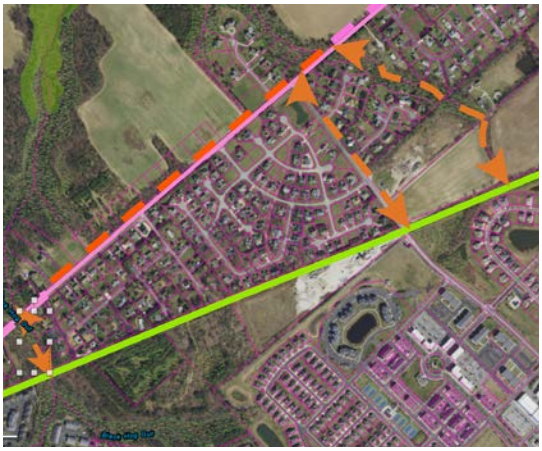


Figure 43 Diagram illustrating potential linkages to the Georgetown to Lewes Rail -Trail at Black Hog Gut (tributary), Old Orchard, and Black Hog Gut (main stem)

Figure 44 Elevated boardwalk may be needed to preserve trees and cross wetland areas associated with Canary Creek and Black Hog Gut. Photo: Gordon Pond Trail (source: Flickr/ Mike Mahaffie)

Linkages to Georgetown to Lewes Rail-Trail

Providing direct trail connections to the Georgetown to Lewes Rail-Trail from New Road neighborhoods would provide recreational and health benefits to residents, as well as increase travel choices between downtown Lewes and the Coastal Highway. Four connection opportunities should be considered further and monitored (letters correspond to Figure 41 on page 36):

a. **Brittingham Farm along Canary Creek**: An easement is under consideration as part of the development plans for Brittingham Farm for a future trail connection (in addition to the New Road bicycle and pedestrian facilities along the frontage). The connection can continue along Canary Creek across two privately owned parcels as shown in Figure 42. Easements would be required from the property owners on a willing seller basis.
b. **Black Hog Gut Tributary:** Along a tributary to Black Hog Gut would require easements from two privately owned parcels including the farmstead property that, at the time of this Master Plan, is for sale. Development is under consideration for the 2nd parcel (Old Orchard Ventures, see Figure 14 on page 15). Work with county development review process to secure easements.
c. **Old Orchard Road**: Could serve as a linkage constructed as part of future capital improvement projects that may be needed to address roadway safety and capacity issues, or coordinated through ongoing development activities
d. **Black Hog Gut**: A linkage to the rail-trail is secure and should be as part of development plans for Black Hog Village. A sidewalk along the EB side of New Road in front of the commercial buildings is under consideration as they redevelop.

Linkage along Canary Creek and Black Hog Gut may be more suitable as footpaths or require boardwalk construction crossing or parallel to wetland areas to support shared-use trails.

Corridor Landscape Concepts

In addition to preserving wetlands and floodplains and maintaining and/or enhancing existing riparian areas and tree canopy, new plantings are needed to expand riparian corridors and establish new roadside woodlands and landscapes in developing areas. The following is intended to support the work of the Historic Lewes Byway Committee who has a Design Guidelines team working on corridor landscape concepts for all Byway roads, including New Road.

New landscape installations should be selected and designed to replicate the function of the existing landscape structure,

as shown on Figure 45 on page 40. The landscape structure should also reflect features associated with the identified character areas (Figure 23 on page 24). It should be noted that in areas where no landscaping exists today, the goal of the Byway is to landscape these areas as well.

All landscape agreements made through the development project approval process must later be incorporated into HOA agreements. The City or County must require as a condition of approval, that the developer will provide legal documentation that the approved landscape agreements will carry forward to the HOA. HOA documents are often drawn up after the final site plan approval and not at the time of City or County development approval.

Goal:
Work with homeowners associations and developers to establish a coordinated landscape treatment along frontage areas.

The following corridor-wide landscape concepts are recommended.

Expand Riparian Areas

According to DNREC's publication "Green Infrastructure Fact Sheet: Riparian Buffers," riparian buffers are vegetated areas adjacent to waterways that help filter rainfall and runoff, absorb and retain high stream flows, and provide important wildlife habitat. Buffers link terrestrial uplands to stream, river, or wetland ecosystems. Buffers include a variety of planted, restored, or enhanced natural habitats, hosting different types of vegetation."[7]

Riparian buffers serve as a type of "green infrastructure" with functions that often replace more costly "grey infrastructure" in developing areas. According to the study, "The Economic Value of Riparian Buffers in the Delaware River Basin" , prepared by ECONorthwest for the Delaware Riverkeeper Network, riparian buffers provide monetized economic value to the communities and regions that preserve them in the areas of water quality, carbon storage, air quality, flood prevention, property values, wildlife habitat, and outdoor recreation.

The report links the known environmental values of riparian buffers (referred to as ecosystem services) to economic values (related to the costs of replacing the same function if the buffers are converted to urban or agricultural land cover). The report estimates the value of riparian buffers at "over $10,000 per acre per year in monetized benefits, with additional non-monetized benefits expected to increase this total."[8]

Of particular importance to the rapidly urbanizing area along New Road are the functions that address the following:

- Reduce damage from flooding by providing increased flood storage capacity and slowing the velocity of floodwaters, allowing for more water to infiltrate through soil, more particulate matter in runoff to settle out, more opportunity for plants to take up water and nutrients, and less erosion.
- Filter stormwater pollutants through the ability of vegetation to effectively remove contaminants from runoff through nutrient uptake and soil filtration.
- Shade surface water to help maintain a safe water temperature range for aquatic life.
- Stabilize banks using the deep root systems of trees and shrubs
- Provide wildlife habitat (food, shelter, and close proximity to water) associated with

7 *DNREC, Green Infrastructure Fact Sheet: Riparian Buffers.* http://www.dnrec.delaware.gov/GI/Documents/Green%20Infrastructure/Riparian%20FS_04-1.pdf *accessed on 4/14/19*
8 *ECONorthwest, The Economic Value of Riparian Buffers in the Delaware River Basin, August 2018.*

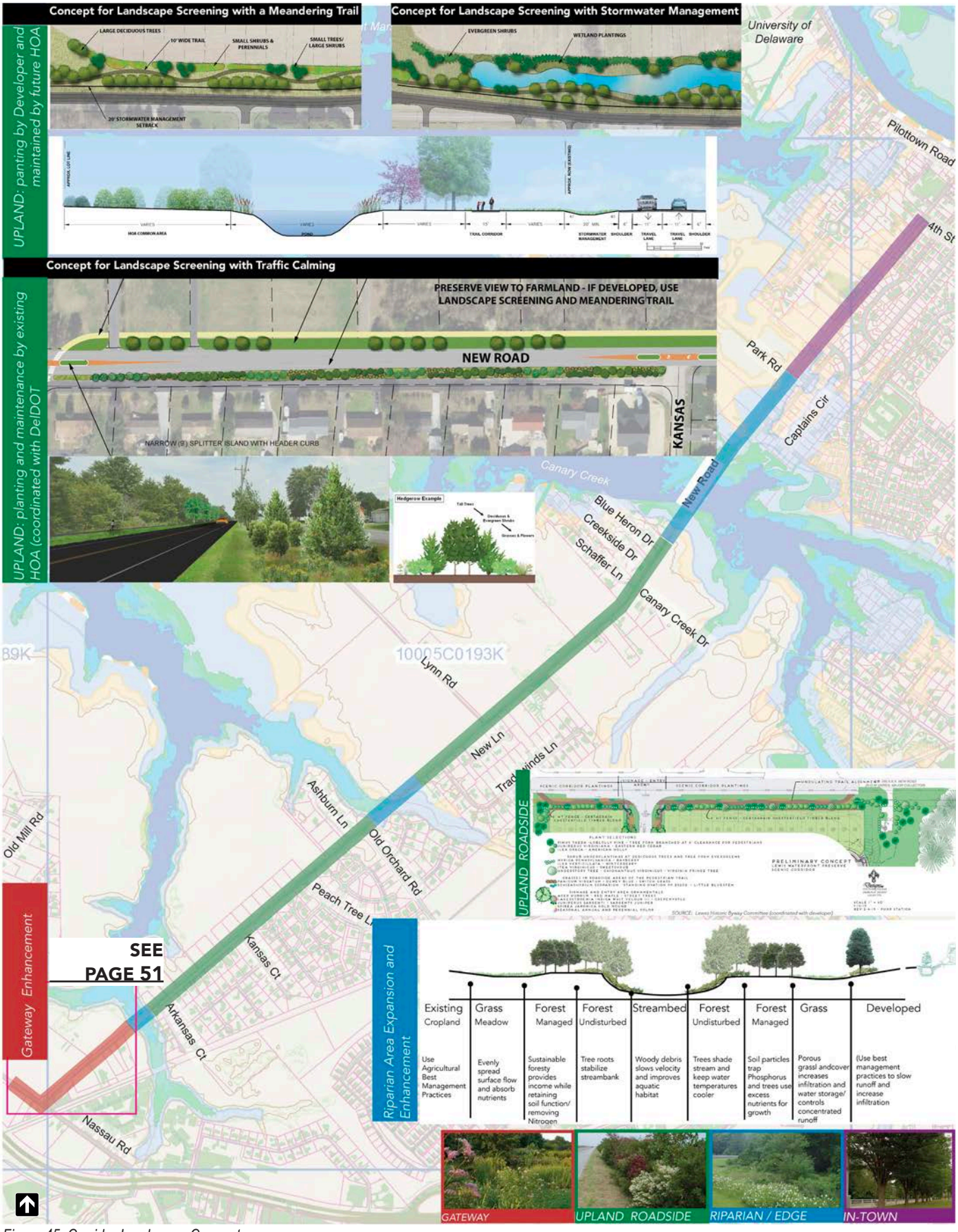


Figure 45 Corridor Landscape Concepts

riparian buffers as well as provide organic matter for the aquatic food chain
- Connect habitat along the stream corridors that link diverse habitat types, allowing animals to move along them and utilize much larger habitats
- Provide recreational opportunities through the role played as part of New Road's scenic qualities and as noted on page 37, they provide opportunities for access to natural areas utilizing environmentally sensitive trail designs

Figure 46 Planting along the edge of a riparian area can incorporate native grasses and perennials planted in mass to create an attractive view for adjoining residences

Riparian buffer widths vary by function desired. Incentives are needed to encourage private landowners to preserve lands within the riparian corridor within today's 500-year floodplain (the equivalent of the future 100-year floodplain under a moderate risk scenario (see Figure 17 on page 18). Incentives could include technical and financial assistance funded through floodplain and watershed management programs (Figure 24 on page 26).

When factored into development site plans, riparian buffers can help to meet stormwater management requirements (for both water quality and quantity). Preserving existing riparian vegetation provides the most values for stormwater management. Establishing new forested buffers along riparian corridors can reduce stormwater management costs and provide enhanced value for those lots that are adjacent to the buffer with permanently protected views of natural areas.

Figure 47 illustrates the various landscape types within a typical riparian corridor. New planting, including installation of vegetated filter strips for stormwater management, would be located in the managed forest areas at the edge of existing undisturbed forest. Suitable plant types are included in .

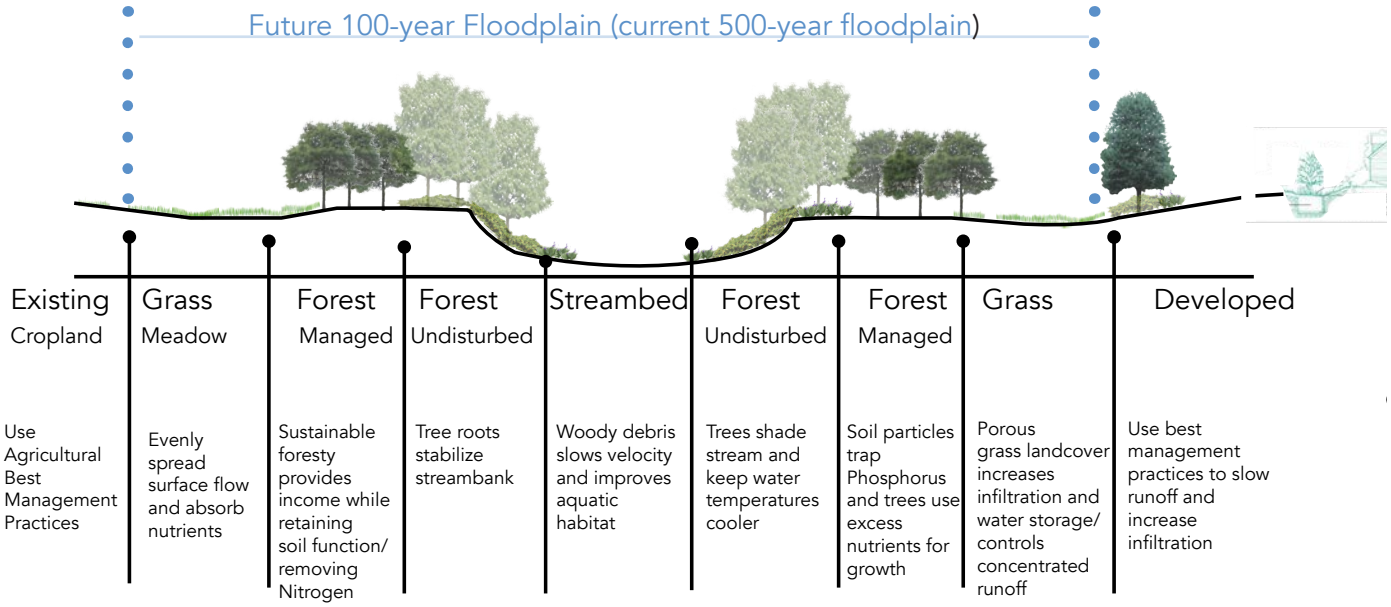


Figure 47 Conceptual diagram illustrating riparian corridor management concepts.

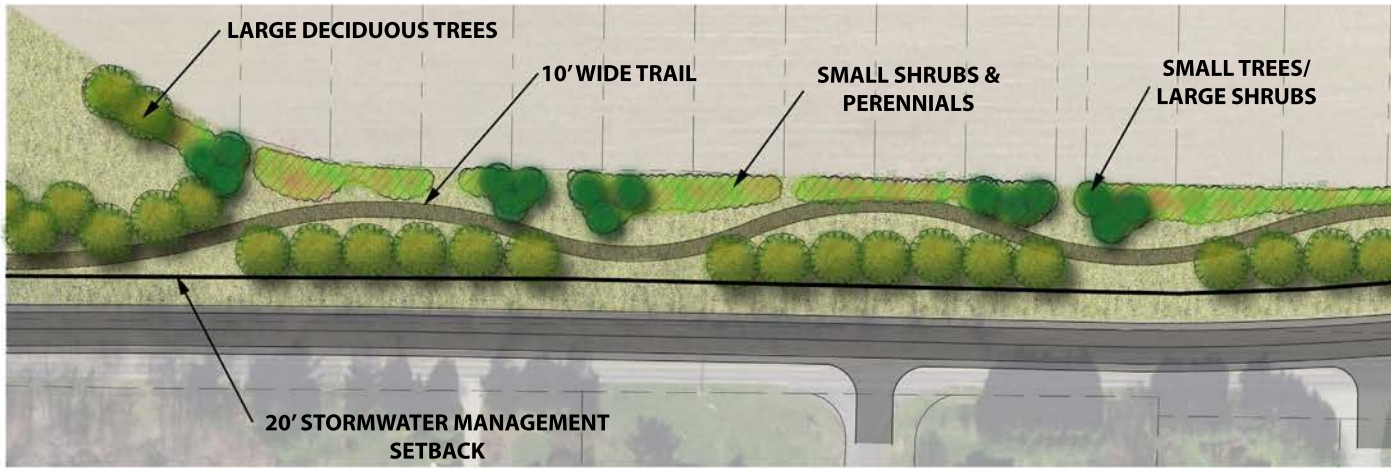


Figure 48 Concept for Landscape Screening with a Meandering Trail

Roadside Landscape Treatment

As the New Road corridor develops over time, the importance of coordinating the design and function of the roadside areas increases exponentially. Coordination would provide the following benefits relative to achieving the desired vision for the New Road corridor:

- Can be designed to **reinforce traffic calming goals** by establishing rhythmic spacing of planting between small groupings of trees
- Can **restore function of hedgerows for both screening and wildlife** by maintaining at least a 20' width, planting at least two species that are native to Delaware, and selecting species to provide food, nesting cover, and/or protective cover for the desired wildlife species
- Can provide a **more attractive shared-use pathway experience** by using planting design to reinforce trail alignment, frame positive views, screen contrasting views and provide shade for trail users
- Can **support pollinators** by selecting multiple plant species with different flower colors and blooming periods from early spring through early fall

Prototypes

The concepts presented within this Master Plan are based upon and developed cooperatively with the developer of Groome Church/Tower Hill. The resulting concepts serve as a model for future roadside landscape treatment on a similar cooperative approach. Future developers or other property owners may wish to voluntarily apply the concepts to other locations. Concepts presented in the Master Plan require more detailed preliminary engineering and design work that is developed at the same time as roadside landscape concepts so that drainage/stormwater management, utility work, roadway clear areas, sight distance triangles, and other factors can be incorporated into the design in a comprehensive and holistic manner.

The concepts on these pages reflect a desire to integrate the design of the trail, stormwater management and landscape in a cohesive manner. Existing utility lines must be factored into the equation and the design developed in such a way that the overall contrast of the (often straight line) clearing requirements are blended more carefully into the overall landscape composition. Underground utilities may also have a similar effect due to surface maintenance requirements and they too can be blended into the overall composition.

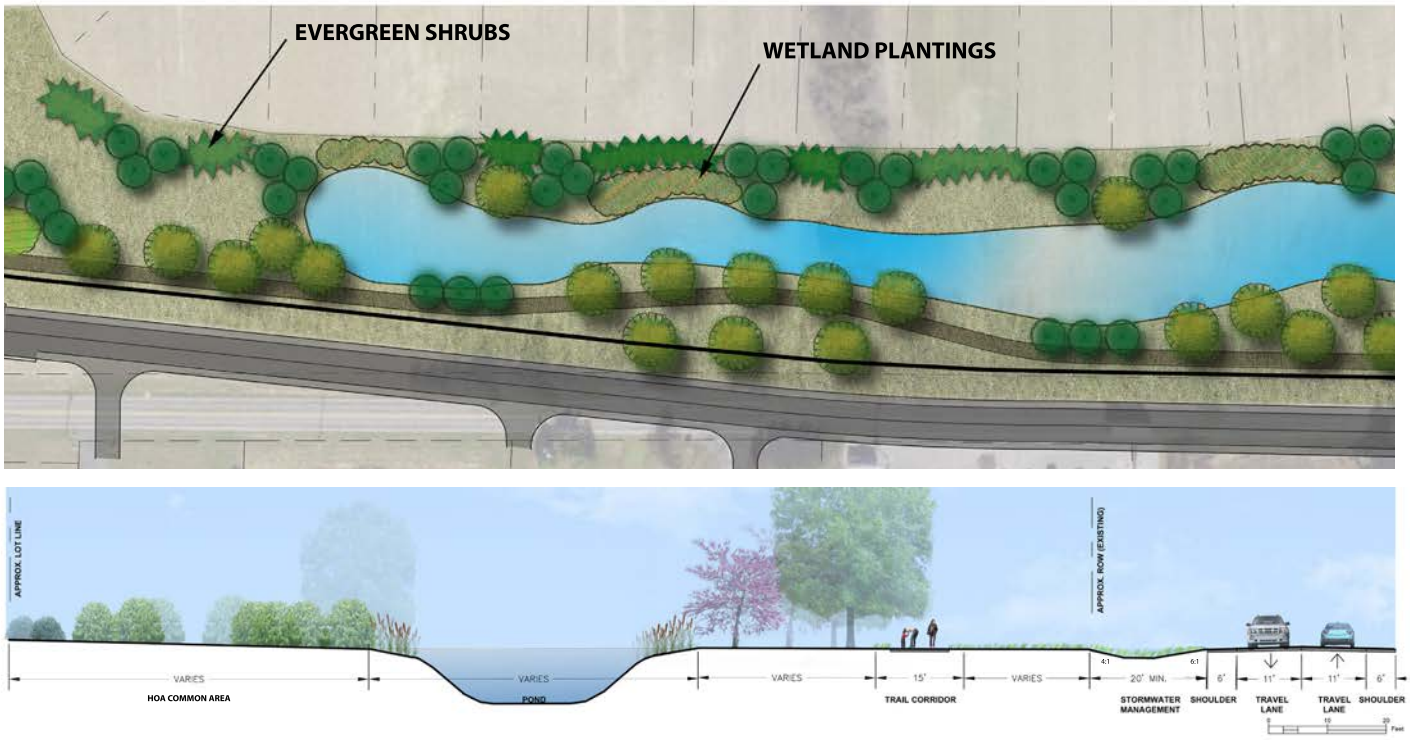


Figure 49 Concept for landscape screening with stormwater management and meandering trail

As a general set of planting design principles:

- Use massing of similar plants and groupings as smaller groupings or individual specimens will get lost in the background and not be effective screening
- Use native plants in all areas where practical at entry area. Well adapted and appropriate flowering trees can be selected to achieve the desired effect
- Specify a mix of plant sizes and types to promote healthy plant groupings
- To establish meadows, assure an adequate establishment period for initial maintenance (3 year establishment period). Once established, they will require little maintenance except pulling out bird dropped plant seedlings
- For wet areas, similarly, assure an adequate establishment period (3 years) and use a mix of plugs and pots to achieve the desired effect. Once established they will require limited maintenance
- For species selection consult, "Enhancing Delaware Highways," a DelDOT publication produced by the University of Delaware, the Delaware Center for Horticulture and Rick Darke. Appendix B of this report includes a planting design matrix with recommendations by landscape type based upon the document.

Figure 50 Example of meandering trail mixed with groves of trees along curving portion of pathway

Meandering Trail with Landscape Screening and Traffic Calming

Effective landscape screening can be combined with an independent and meandering trail alignment (where possible) to create an attractive frontage area serving multiple functions:

- The trail alignment should incorporate long curves with short tangents, where possible, resulting in an enjoyable trail experience (avoid short and sharp curves which may be both dangerous and unattractive).
- Use a planting design concept that accommodates the curving pathway, using the geometry of the curves and a rhythmic planting spacing that gets closer

together approaching the desired slow point or intersection.

- Alternate groupings of mass plantings between the roadway side and the property owners side so that there is a continuous attractive screening for the drivers looking toward the development, and privacy for the adjacent owners, while allowing for framed long views of the wet ponds as an amenity.

Figure 51 Example of a stormwater management facility designed to reinforced the natural character of local wetlands through the use of native wetland plant species

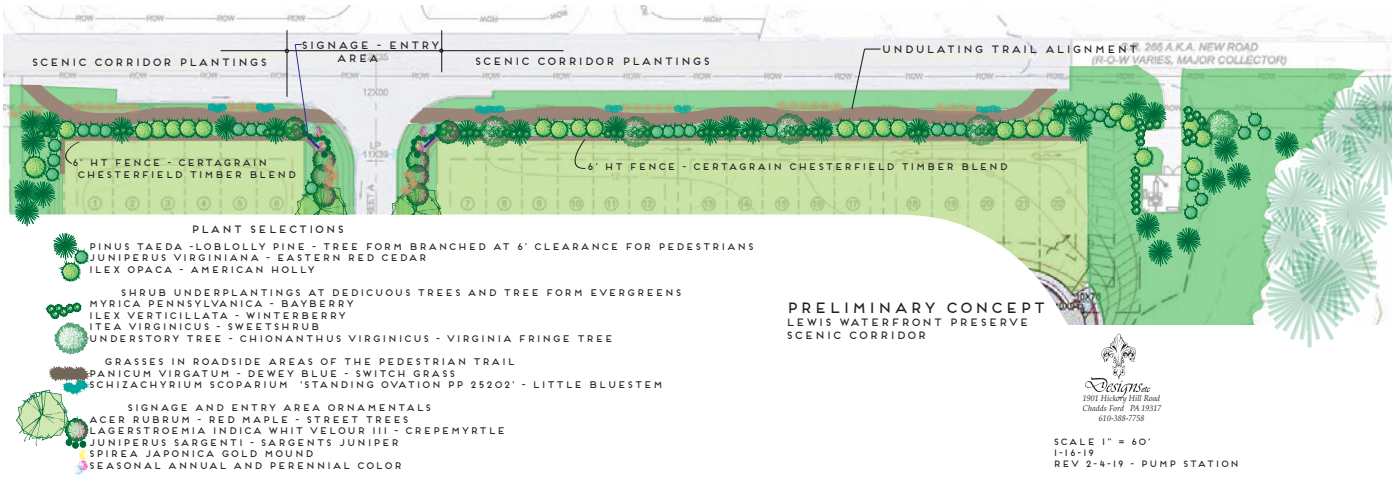
Meandering Trail with Stormwater Management Pond and Screening

Most developments require stormwater management facilities to treat both the quantity and quality of runoff generated by the site, meeting or exceeding pre-development conditions. Stormwater management is often proposed as wet ponds, creating an amenity for the development, or as wetlands that can also serve as an amenity if appropriately located and designed.

Figure 49 on page 43 illustrates how a wet pond can be shaped and designed in such a way as to achieve effective screening while also incorporating a meandering trail along the frontage. The wet pond creates a series of concave and convex shapes which provide specific planting environments:

- For the concave shapes (typically associated with the stormwater outfalls feeding into the pond) use wetland plants (such as cattails) grouped as a large mass along the shoreline and coupled with wet tolerant shrubs and small trees.
- Consider aesthetic treatment for outfalls, since these will be visible (stone facing or use form liner that will create a grain similar to horizontal wood planking).
- For convex shorelines associated with what would be drier more upland portions of the stormwater pond, use a combination of a dense but mixed evergreen and deciduous screen along the back coupled with a mix of small and large trees to break up the "green wall" effect that typical evergreen screen plantings create.
- For the sunnier shoreline areas use planted meadows with native grasses grouped as a large mass planting (meadow should be designed for four season interest).
- Between the trail and New Road, the convex shorelines should be planted as dense woodland thickets with a mix of large canopy trees, smaller trees and shrubs and some evergreen understory. These should line up opposite the concave shaped spaces across the pond to increase effective screening.
- Areas between pond and path should be lined with large canopy shade trees.

Figure 52 Planting concept developed for the Brittingham Farm property with coordination from the Historic Lewes Byway Committee



Meandering Trail with Narrower Widths for Landscape Screening

Where less space is available, some screening and a more undulating trail design can still be achieved using carefully chosen plants and by modulating the plant types in association with the curves in the trail. The spacing can also be utilized to establish a rhythm to the planting for traffic calming benefits.

Working with HOA's to Enhance Existing Roadside Open Spaces

There are a limited number of Homeowners Associations (HOAs) that own and maintain property and riparian buffers along New Road. These include:

- Reserves of Nassau
- New Road Estates
- Orchard Homeowners Association
- Nassau Station HOA
- Pilottown Reserve HOA

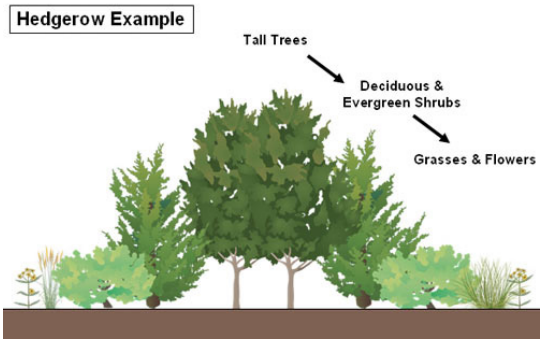


Figure 53 Hedgerow planting concept (Source: Maryland DNR)

Sand Dunes Village residents mow the grassy median between Arkansas and Kansas. New developments will have common areas that are likely to become part of an HOA.

For the grassy median in front of Sand Dunes Village, residents attending meetings expressed an interest in planting trees and shrubs to provide additional privacy and to reduce maintenance.

This area represents an excellent opportunity to adapt the hedgerow concept to provide both screening and roadside planting that support pollinators.

Frontage Areas for Commercial Properties

Except for the former Nassau Station buildings at the corner of Nassau and New Road,

Figure 54 Plan (above) and rendering (left) illustrating design concept for planting in grassy median at Sand Dunes Village

Figure 55 Narrower roadside hedge (Enhancing Delaware's Highways)

there are only a few individual lots used for commercial purposes. As with HOAs the Lewes Historic Byway Committee can work with owners on a cooperative basis to develop ideas for screening utilitarian areas while preserving open views to business signage, entrances, and other ways in which businesses wish to maintain visibility with the traveling public along New Road. The following general guidance should be considered by any property owner or business owner wishing to install screening:

- Use planting design to frame desirable views
- When sufficient space exists (minium of 20'), use the hedgerow concept for effective screening (see"Preserve and Restore Hedgerows and Tree Canopy" on page 28)
- With less available space, consider a combination of a more tightly spaced hedge with a semi-transparent fence
- Avoid using opaque fences for screening

Figure 56 Example of narrow planted median in Greenville, DE that could also be used to help screen parking areas while preserving views of the buildings

Use of Native Plants

The Master Plan recommends utilizing the concepts and plant lists offered in DelDOT's "Enhancing Delaware Highways: Roadside Vegetation Concept and Planning Manual (https://www.deldot.gov/Programs/edh/index.shtml). The native trees, shrubs, groundcovers and grasses are not only more consistent with the desired character as expressed through the public outreach conducted for this Master Plan, but also contribute to good habitat for animals and birds, reduce maintenance requirements, and are generally more sustainable and disease resistant.

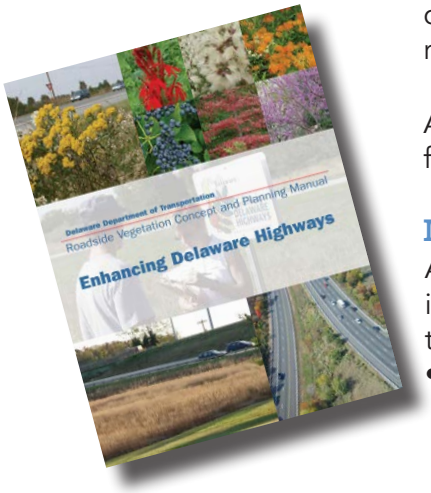


Figure 57 DelDOT's Enhancing Delaware Highways: Roadside Vegetation Concept and Planning Manual

Appendix B includes a matrix showing representative types of native plants for use as appropriate for the conditions found in the New Road corridor.

Maintenance

A critical factor in the long term sustainability for the corridor is the importance of factoring maintenance into the landscape design concepts as they are applied to the corridor. For state maintained roadways:

- DelDOT is responsible for mowing within the right-of-way. According to the DelDOT mowing policy, residential quality turf is mowed to a height of 3 inches routinely while utility turf (medians and roadsides) is mowed to a height of 6 inches. Planting beds should be designed with long curves and short tangents so that a mower can easily navigate around the beds.
- Unless other arrangements are first determined, DelDOT must maintain the stormwater management facilities that are installed as part of its transportation facilities. Normally they are not outlined or complemented with any other landscaping components – i.e. trees, shrubs, bushes, pollinators. While the function of the stormwater maintenance continues to be DelDOT, opportunities may evolve, pending agreements, for landscaping enhancements by others.
- Planting areas within the right-of-way or stormwater facilities will need to be sponsored to ensure that they receive the appropriate maintenance. A sample agreement is contained in Appendix C.
- Outside of the public right-of-way, developers are initially responsible for maintenance of landscaped areas including stormwater management facilities, eventually turning those over to the Homeowners Association (HOA).

Application of the planning and design concepts follow in Chapter 4, based upon stakeholder input from public meetings (visual preferences) and relationship to other goals such as screening and traffic calming.

Lighting

Currently, roadway lighting along New Road is limited to the section of New Road between 4th Street (one light extends west of intersection) and Pilottown Road. Pedestrian lights were installed along the short section of shared use pathway on the WB side of New Road at the Park Road intersection.

Street lighting may be required along New Road where necessary at major intersections, where there is poor vertical and horizontal alignments or when traffic accident data or traffic volumes warrant street light installation.

Street lighting may be required along New Road where necessary at major intersections, where there are security problems or poor vertical and horizontal alignments or when traffic accident data or traffic volumes warrant street light installation. Street lighting where installed along New Road should minimize glare and light pollution. Light standards should be compatible with the character of the area being served and be scaled to serve project goals, whether for pedestrian or vehicular use. The following general guidance should be considered when designing roadway and pedestrian lighting along New Road[9]:

- Illumination should be concealed and mounted on poles that are color galvanized with a brown or black finish.
- For roundabouts, under consideration at the intersections of New Road and Nassau, New Road and Old Orchard and New Road and Lynn, best practices for roundabout lighting should be considered, an example of which is shown below. Consideration should be given to experimental and more sustainable approaches to roundabout lighting. As an example, ecoluminance is an approach to roundabout lighting that uses lower light mounting heights, retroreflective elements and light reflected from plants to illuminate a roundabout while reducing power consumption (Figure 60).
- Pole heights should be proportional to roadway width, but more fixtures at lower heights are preferred over fewer fixtures at higher heights.
- Where heavy pedestrian use is anticipated, street lighting should be combined with sidewalk lighting to enhance

Figure 58 Existing roadway lighting on New Road is limited to the section between 4th Street and Pilottown Road (including approach to 4th Street shown above)

Figure 59 Existing trail lighting at Park Road intersection with partial cut-off fixture that hides the light source and a pole with duplex finish (color applied)

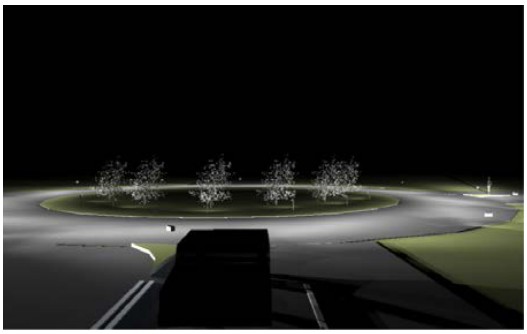


Figure 60 Conceptual illustration of "ecoluminance" approach to roundabout lighting (MNDOT) - note that landscape elements for roundabouts may be different on New Road than example above

Figure 61 Pedestrian-scaled street lighting similar to that used at Port Penn along the Delaware Bayshore Byway may be appropriate for the section of New Road east of 4th Street as part of a future enhancement project

9 *Changes to the standard DelDOT and/or utility company designs may be considered a betterment and additional costs and maintenance requirements over and above those standards may require a MOA outlining responsibilities for those costs and maintenance requirements. DelDOT also continues to strive with innovation and sustainable applications when it can. Transportation safety and consistency to modify or adopt a national or local standard would have to be determined later in time.*

Figure 62 Excessive signage, such as the multiple sign panels on Delaware's Bayshore Byway at Port Penn should be avoided by coordinating directional signage and wayfinding, as well as keeping regulatory and advisory warnings to the minimum required

Figure 63 Where bicycle lanes are added on New Road to meet the requirements of Delaware's Complete Street Policy, green painted lane markings should be considered to differentiate between the travel lane and bicycle lane especially approaching the more urban sections with many intersections and driveways

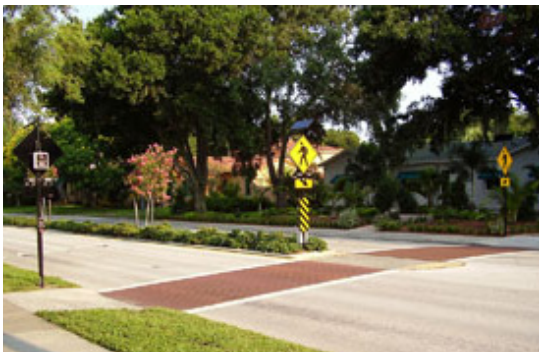


Figure 64 Example of a flash beacon installed with a pedestrian refuge median (FHWA)

safety (Figure 61).

Signage

The 2015 CMP recommendations for signage and wayfinding should continue to provide guidance for signage in the corridor. Directional signage and wayfinding should be coordinated as spelled out in the 2015 CMP document. As projects advance through the design process and more detailed planning and engineering recommendations emerge, the following guidance should be considered in addition to the guidance provided by the 2015 CMP:

- The Signage within the DelDOT right-of-way must be compliant with the Manual of Uniform Traffic Control Devices (MUTCD) and DelDOT policies.
- Development entry signage is regulated by DelDOT and is limited to approved signage.
- Private signage (outside the right-of-way) is regulated by City and County zoning regulations.
- In general, signs along the roadway should be limited to the minimum practical or required under MUTCD guidance.

Pedestrian and Bicycle Signs and Route Markings

Two trail crossings included in the Master Plan (at Schaffer Lane and at either Old Orchard or Arkansas) may require (if warranted) advance warning and crosswalk signs in accordance with MUTCD. A HAWK beacon (high-intensity activated crosswalk) is used in many places for mid-block or non-signalized intersections with minor streets and driveways (where a warrant can be demonstrated through MUTCD guidance). A smaller, post-mounted "Rectangular Rapid Flashing Beacon (RRFB)" may be more appropriate than the HAWK beacon for New Road crossings, especially if incorporated into the splitter islands, which can also act as a pedestrian refuge.

Bicycle lanes are under consideration throughout the corridor as noted in the project assumptions and shown in Figure 37 and Figure 38 on page 34. Use of green tinting on lanes also helps to call attention to intersecting cross streets and entrances, improving the overall safety for both bicyclists and drivers.

The 2015 CMP calls for a single Gateway Sign that should be kept simple and that excessive signage should be avoided. With the advancement of the Minos Conaway project, the gateway sign can be placed either in the roundabout or on the face of the west side of the bridge modified as part of the Minos Conaway Project (see page 52 for considerations).

04 Application of Design Concepts

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Figure 66 Existing view looking eastward toward New Road

The following pages illustrate the application of design concepts for selected areas along the corridor. The areas selected primarily correspond to the recommended locations for traffic calming interventions as shown in Figure 34 on page 32. For those areas not represented by these more detailed design concepts, reference should be made back to the overall concepts for Transportation (Figure 34), Pedestrian and Bicycle Facilities (Figure 41 on page 36) and Corridor Landscape Concepts (Figure 45 on page 40). For example, if a property is redeveloped on the EB side of New Road between Brittingham Farm and Lynn Road at some future date, then the overall concepts and guidance regarding traffic calming, trail connections, and corridor landscape can be applied. Failure to include more detail does not imply that the overall planning and design concepts do not apply.

More immediate attention is being paid to the traffic calming and intersection measures due to the immediate coordination needs of pipeline projects - both land development and transportation.

New Road Gateway (Nassau to Black Hog Gut)

The intersection of New Road at Nassau serves as the gateway to the New Road segment of the Historic Lewes Byway. The 2015 CMP recognizes that gateways provide an important function of introducing the traveler to the Byway and changing the overall perception of the route upon which they are about embark. This type of transition is important for both new visitors unfamiliar with the area and lifelong residents or employees that may have used the road for many years.

The 2015 CMP also notes that New Road gateway should be low key in reflecting its context. Visual preferences expressed at the November 2018 public meeting reflect a simple landscape oriented treatment as the best approach for the gateway. The coastal/farm context itself is the most important part of this gateway. The following recommendations apply specifically to the gateway:

Snohomish, WA

Planiavagen, Stockholm, SE

Figure 65 Images of different types of roundabouts were shown to participants at the first public meetings and these two roundabouts exhibit the preferred characteristics of those that participated

Gateway Design Concepts

The gateway starts with the new underpass that is being built as part of the Minos Conaway Project and continues through and includes the roundabout. The farm field and commercial buildings are an important part of this context. The gateway design will be considered as a cohesive whole, not as many different parts, based upon:

- Support efforts to preserve Knapp Family Farm and minimize encroachments onto the property
- Coordinate with adjacent property owners to develop comprehensive planting program (orchard restoration, roadside pollinators)

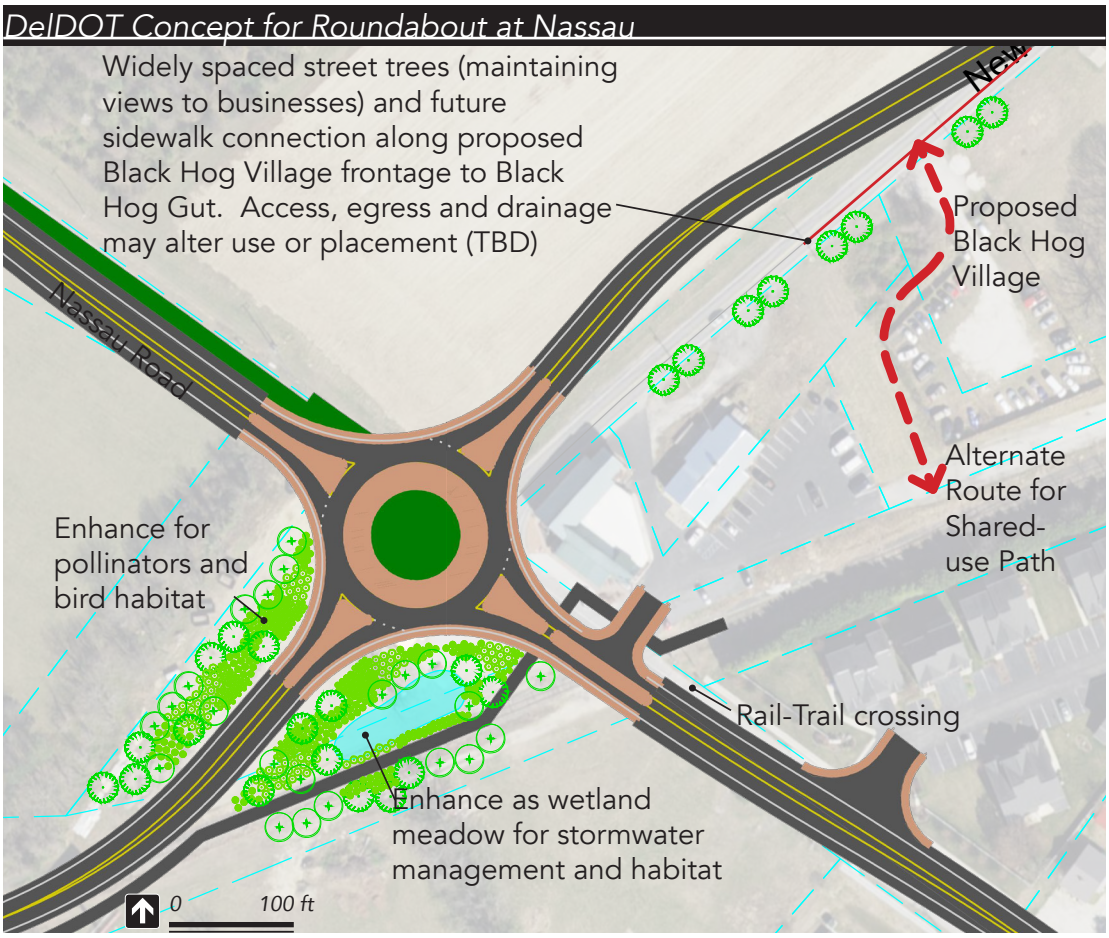
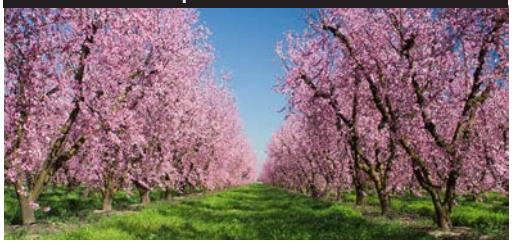


Figure 67 DelDOT concept includes a roundabout at Nassau. This illustrated landscape concept contains elements that should be considered including pollinator gardens, habitat, and wetland meadow/stormwater management as shown.

Landscape Treatment Ideas



Pollinator/Butterfly/Bird Habitat

Eutrochium fistulosum
(Hollow-stem Joe-pye-weed)

Asclepias incarnata
(Swamp Milkweed)

Quercus bicolor
(Swamp White Oak)

- Coordinate with DelDOT to ensure that the design for the Minos Conaway Project will contribute/enhance the New Road Corridor Gateway
- Coordinate with DelDOT on stormwater management and look for ways to implement recent advanced practices to enhance stormwater management design to fit the context

Coordinate with Minos Conaway Project

When DelDOT advances the preliminary concept they will consider the following in response to issues raised during the planning process:

- DelDOT will consider design minimization or refinements to reduce impact on the adjoining farm, adjoining commercial buildings and the approach transition speed into the roundabout (45-25 mph transition).
- DelDOT will work with the Byway Committee and the public to incorporate context sensitive gateway design landscape treatments consistent with state and federal design standards to the roundabout and adjoining areas using guidance provided by the Corridor Master Plan. Maintenance agreements will also be discussed and considered in the final level of effort.
- DelDOT will investigate the viability of context sensitive design treatments to any required modifications to the underpass

DelDOT Concept for Minos Conaway Project Underpass of Route 1

Figure 68 DelDOT concept utilizes the existing bridge parapet and bridge columns without modification. The rail-trail, relocated to the outside of the existing columns, will require a low retaining wall

(the existing embankment will need a low retaining wall to accommodate the full width of the trail and roadway).

Landscape Design Concept

At a master plan level, the design of the New Road Gateway should reflect the past history of the orchards that once graced this landscape (see Figure 25 on page 27)[10]. Should the property owner wish to pursue their interest in restoring the orchard, then the design of the gateway can consider that desire, including ensuring that pollinator plantings are compatible with any envisioned new orchard. The envisioned design concept includes incorporating a wetland design concept to address stormwater needs (SE quadrant) and a pollinator planting on the SW quadrant.

Coastal Highway Underpass

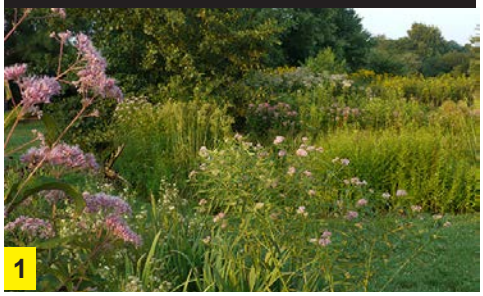
The Minos Conaway Project will require some modifications to the apron on the EB side (outside of the columns, area #3 in Figure 68). The Rail-Trail will need to be relocated to accommodate the roadway as shown. DelDOT should consider utilizing a low brick or brick pattern wall to retain the earth and wrap that wall around into the adjoining slope to create a planting area behind.

Coordinate with Black Hog Village Project

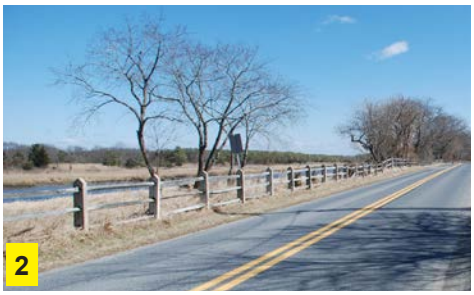
Commercial redevelopment of what will be called Black Hog Village (see Figure 14 on page 15 for location) will provide opportunities for coordination that should be pursued and further discussed. The following design concepts apply to reinforce the gateway concept:

- Incorporate landscape treatment along frontage area to function as a gateway and to meet traffic calming goals.
  - Plant street trees with a sidewalk along frontage area to frame view toward Black Hog Gut and the New Road Gateway.
  - Encourage DelDOT to shift roundabout towards Coastal Highway and use frontage area to create usable greenspace for outdoor use by adjoining businesses.
- Consider option of rail-trail connection through front or back of property to reduce right-of-way requirements on New Road including frontage along Black Hog Gut

Ideas for Bridge Abutments



Use Delaware coastal upland native trees, shrubs and wildflowers on embankments



Use historical post and rail fencing details and maintain open views to adjoining preserved farm

Use simple design and honest materials (real brick preferred if a maintenance agreement can be negotiated with responsible party, otherwise use of form liners or brick veneer patterns will need to be used)

10 *Landscape plantings or any other enhancements, including use of brick retaining wall, will meet all safety clear zone and sight distance requirements and have a maintenance agreement in place with DelDOT*

Narrow Splitter Ideas

Figure 69 Narrow median with textured pavement in crosswalk

Pioneer Valley Planning Commission

Figure 70 Median w/ trees/shrubs

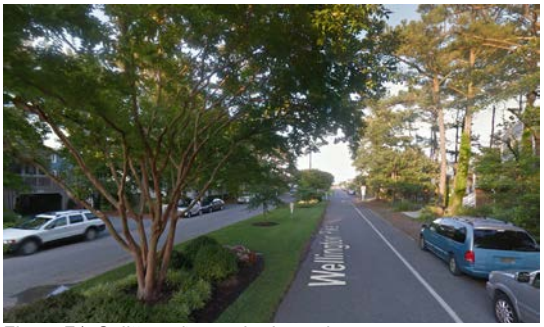


Figure 71 Splitter w/trees shrubs and grass

Google Earth

Wide Splitter Ideas

Figure 72 Splitter with pavers at intersection

- Use landscape design to frame views of historic buildings while screening views of parking and utilitarian functions.

Black Hog Gut to Old Orchard

Two narrow splitter islands are proposed at Arkansas Court and Kansas Court. The splitter islands would be designed to accommodate a left turn lane within the center median and incorporate vegetation or other measures in the median to break up the long sight line that induces high operating speeds. The splitter at Arkansas Court would also provide an opportunity for the shared-use trail to cross from the WB side to the EB side.

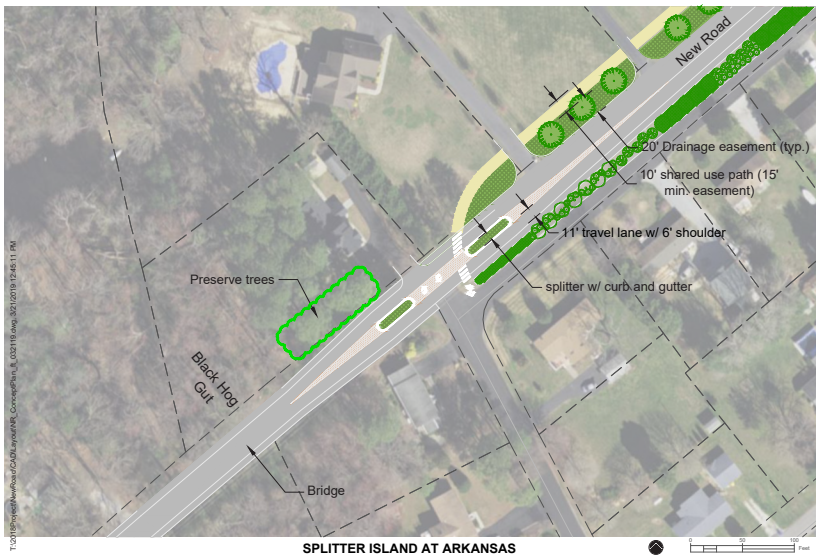
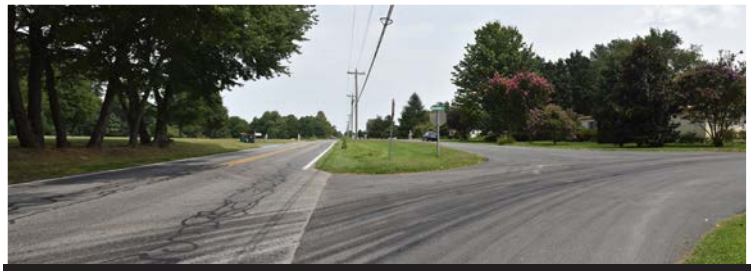
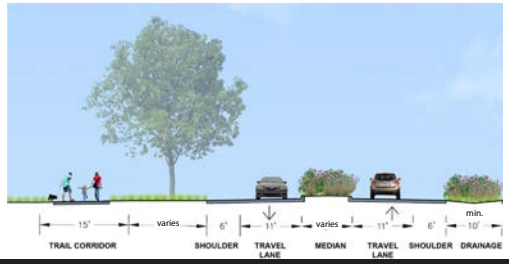


Figure 73 Splitter at Kansas Court (top) and Arkansas Court (bottom)

Section B - Splitter Island at Arkansas Court





NOTE: see page 57 for discussion of splitter island widths

Section B - Roundabout at Old Orchard

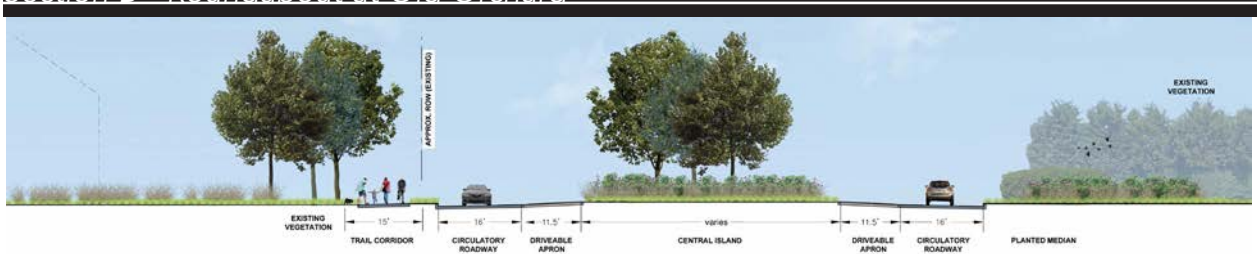


Figure 74 Sections illustrating splitter at Arkansas Court (top) and Roundabout at Old Orchard (bottom); dimensions for illustrative purposes only, actual dimensions TBD

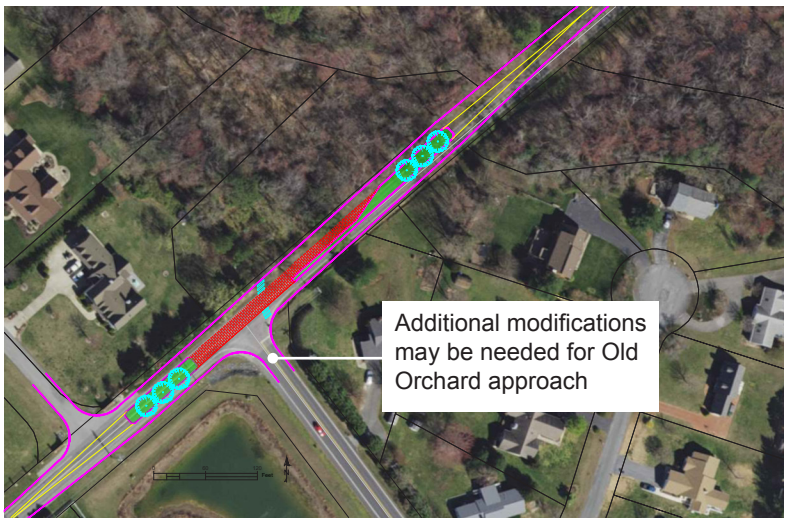


Figure 75 Roundabout Option (top) and Splitter Option (bottom) for Old Orchard

Old Orchard Intersection

Anticipating that additional traffic will be generated from new development on Old Orchard and New Road, along with the proposed modifications under consideration for the Minos Conaway Project, two alternative approaches are possible for increasing the intersections safety and capacity.

- **Roundabout Option:** should traffic studies warrant, an appropriately scaled roundabout could be considered in lieu of a signal.
- **Wide Splitter Option:** with appropriately scaled turn lanes.

The intersection design should consider the following issues, among others:

- Address the anticipated primary turning movements from EB New Road to SB Old Orchard, and NB Old Orchard to WB New Road.
- Minimize property impacts to Ashburn Lane lots to the north and an individual lot to the SE (including replacement of the hedge on the corner).
- The roundabout option shown would require partial reconstruction of the stormwater pond shoreline on the SW corner and additional utility relocations (TBD).
- Incorporate the trail on the EB side of New Road.

Figure 78 Plan and section illustrating winding trail at Groome Church Property

Figure 76 Pond (US 50, Queen Anne Co., MD)

Figure 77 Natural Area (Enhancing Delaware's Highways)

Old Orchard to Canary Creek

The coordinated landscape design for the frontage area of the Groome Church (Tower Hill) Property (integrating the shared-use trail, traffic calming landscape treatment, stormwater management as an amenity), and a developer provided roundabout at Lynn Rd. with the developer's interest in showcasing the property as a high quality place to live resulted in commitments established as part of the Master Plan's approval in Sussex County.

As site improvements move forward through the approval phase, additional coordination will be needed to achieve the desired character.

- DelDOT will review plans and concur to ensure adequate roadside drainage and safety.
- Landscape agreements will be needed for any plantings in center roundabout.
- Utility relocations and coordination will need to be evaluated and incorporated into the overall design concept.
- Stormwater management will need to be coordinated for maintenance responsibilities related to roadway runoff.
- Stormwater management for the agreed upon independent trail alignment will need to be confirmed.

Brittingham Farm Traffic Calming and Entrances

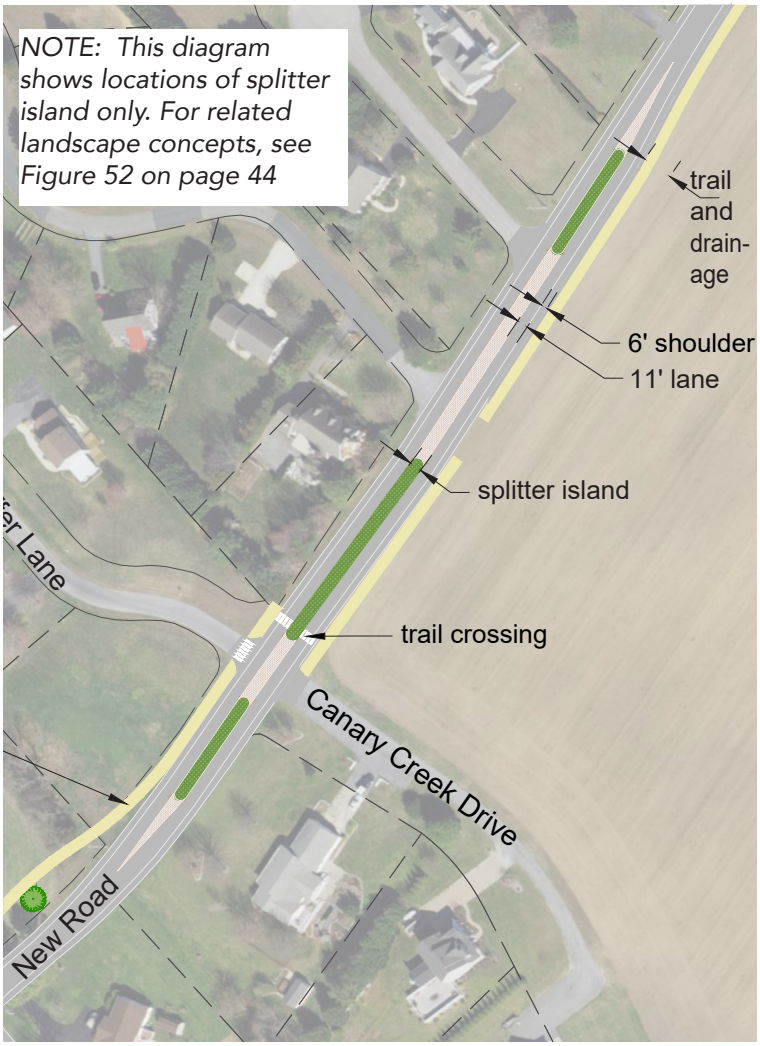


Figure 79 Concept Plan for New Road splitter islands at Brittingham Farm

Brittingham Farm

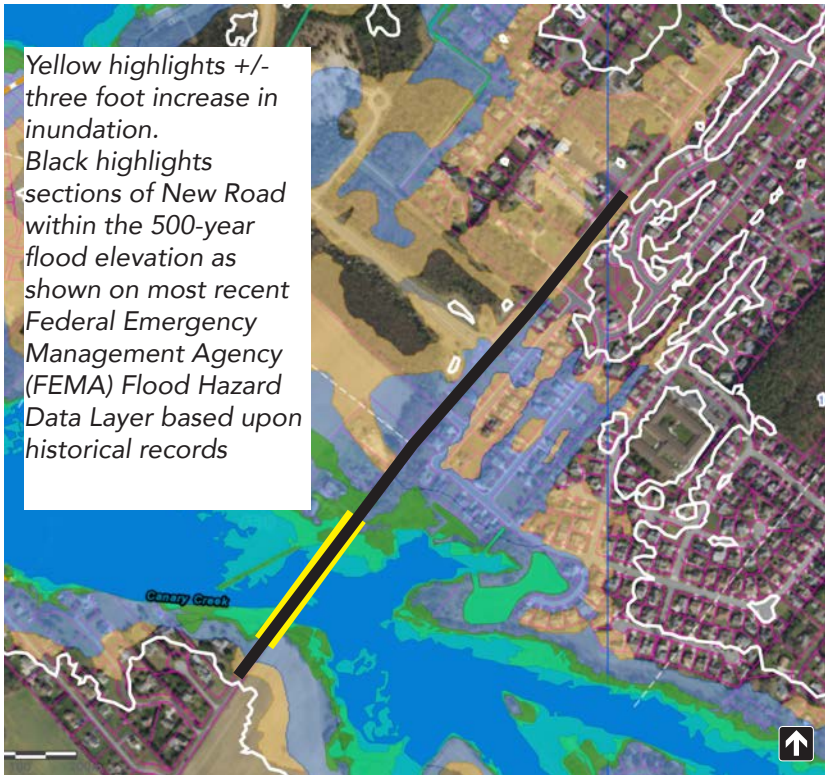
In addition to the landscape recommendations shown on page 44, a series of narrow splitter islands should be installed approaching Canary Creek Drive (EB) in between Canary Creek and Creekside (also the entrance to Brittingham Farm). A third splitter east of Blue Heron Lane should also be installed to slow outbound traffic. Splitter islands are needed to accomplish traffic calming objectives, slowing operating speeds through the rapidly urbanizing area. The design of splitter islands should consider the following:

- The center lane should be incorporate textured pavement to visually distinguish the turn lane from travel lanes.
- A trail crossing is needed between the end of the Groom Church property and the beginning of the Brittingham Farm (at Schaffer Lane/Canary Creek Drive).
- Splitter islands should be wide enough to adequately provide a horizontal alignment shift as a traffic calming measure.
- Splitters should be wide enough to protect left turning traffic in the center lane for the anticipated traffic volume (different at Arkansas or Kansas than at Brittingham Farm, for example).
- Splitters should be wide enough for planting; use of a barrier curb allows for shrubs and small trees (4" dbh at 25 years), or if constrained by right-if-way, environmental or other considerations, to support grasses and low shrubs.
- Splitters should be long enough and wide enough to allow for planting while maintaining all required sight distance triangles.

Figure 80 Narrow splitter island with crossover

Figure 81 12' splitter island with turn lane

Bridge Over Canary Creek and SLR



Yellow highlights +/- three foot increase in inundation. Black highlights sections of New Road within the 500-year flood elevation as shown on most recent Federal Emergency Management Agency (FEMA) Flood Hazard Data Layer based upon historical records

Figure 82 White contour line equals 10' above MSL; tan area shows current 500-yr flood elevation

Bridge Over Canary Creek

Executive Order 41 requires that state projects address the potential impacts of Sea-Level Rise (see page 17). Application of Executive Order 41 to the bridge over Canary Creek would suggest that transportation improvements for a potential evacuation route (whether designated officially or not) address effects of SLR on the 100-year floodplain based upon a "high confidence" level – meaning that there is a 95% confidence that SLR will not exceed a rise of +/- three feet. Such an increase in SLR would also increase the 100-year floodplain to that roughly equivalent of the current 500 year flood elevation by 2075 (Figure 82). Figure 83 illustrates the relationship of those flood elevations to existing terrain. Other factors, such as cost and property considerations and environmental impact will be factored into the design as it develops.

The State Complete Streets policy also requires that the width of bridge must accommodate bicycle and pedestrian uses or consideration should be given to an independent bridge alignment for bicycles and pedestrians.

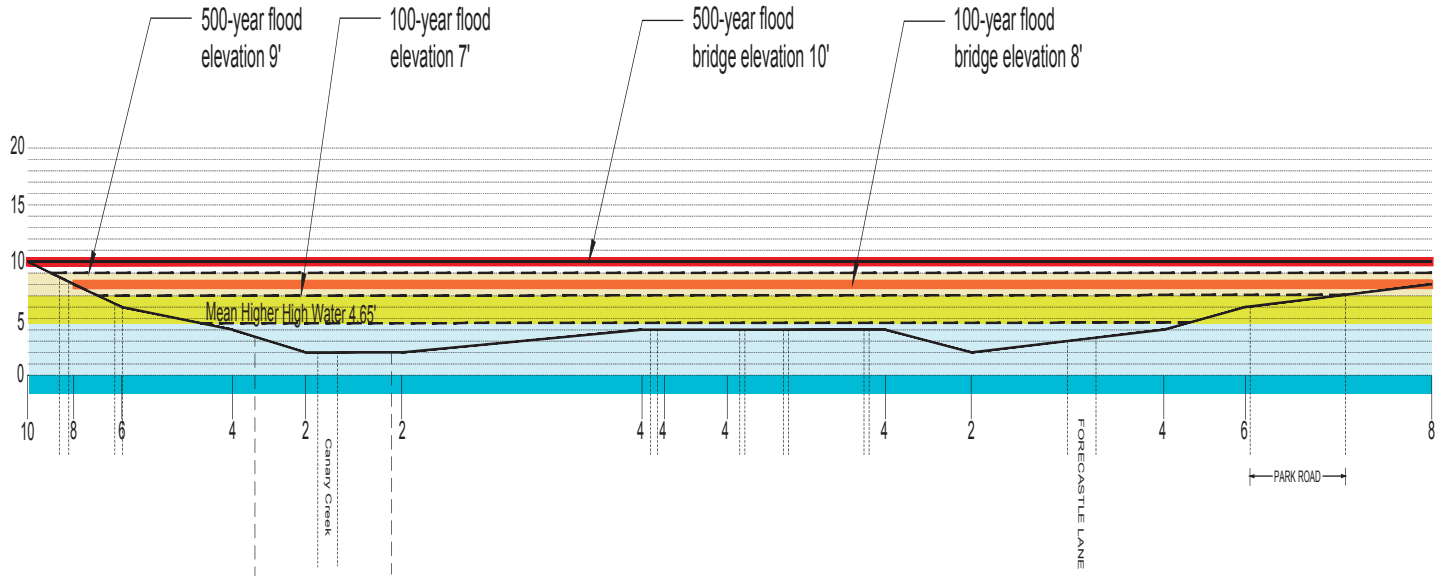


Figure 83 Bridge elevations in relationship to current and projected 100-year flood elevations (elevations shown are one-foot above estimated flood elevation)

Bridge Over Canary Creek: CMP Alignment (2015)

Figure 87 Illustrative concept showing a combined structure used to accommodate both the vehicular travel lanes and the shared use pathway with an overlook to Canary Creek

Bridge Over Canary Creek: suggested profile and details

Figure 84 Bridges of Nordward (West 8) exemplify the preferred "thin" bridge with sleek profile

Figure 85 Box beam (inside) and pedestrian railing exemplify the preferred railing type

Figure 86 Example of CalTrans Rail Type 10 (left) and 20 (at bicycle pedestrian height of 54") approved for use at Test Level 4

The 2015 Historic Lewes Byway CMP recommended that a separate alignment be constructed on the EB side. However, that assumed a timeline for bridge construction much farther into the future. With the design and construction now identified as part of DelDOT's bridge replacement capital programming, the general sense of the stakeholders regarding guidance for the design of the new bridge incorporate the bicycle and pedestrian facilities as part of the bridge structure rather than as an independent alignment. DelDOT's preference for initial cost and long-term inspection and maintenance is also single structure. The following additional Master Plan recommendations apply to the bridge design and trail alignment:

- Preference for "thin" bridge with sleek profile (Figure 84) and transparent railings/parapet (Figure 85 and Figure 86)
- Width of shared use pathway must accommodate all users
- Work with local and state interests to explore the viability and MOAs required to establish a soft landing for hand carry boats (e.g. kayak launch), fishing access or other amenities such as a small parking area or pull-off coordinated with bridge construction (see page 75)
- Consider the use of textured concrete on the abutments using a formliner to simulate wood (similar to existing wooden abutments)




courtesy of Marta Nammack

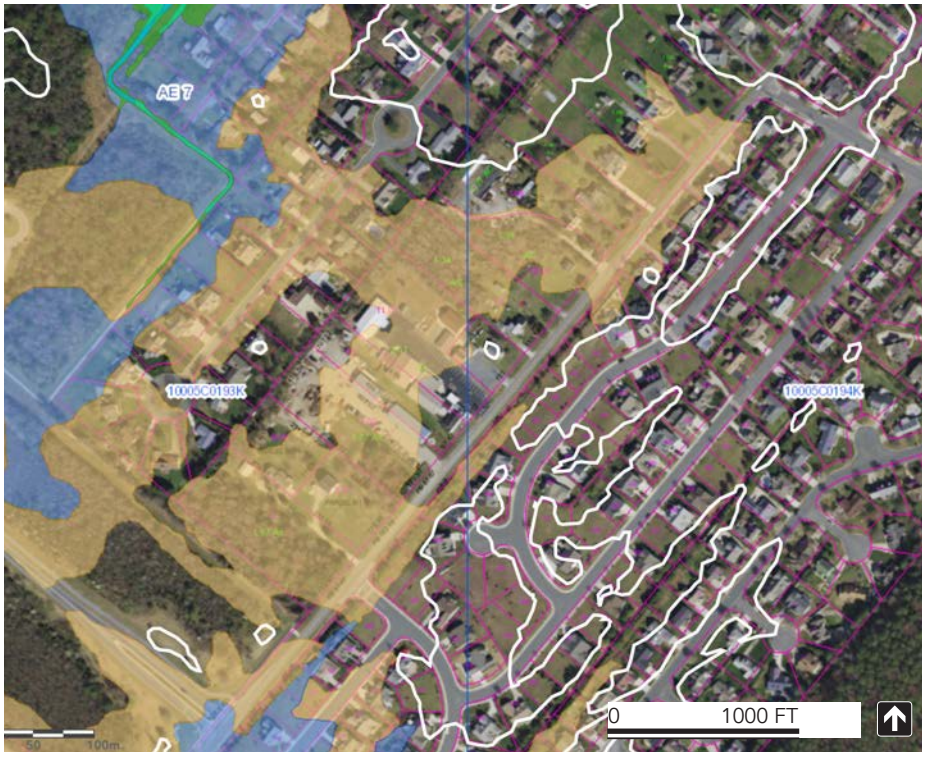


Figure 88 4th Street Vicinity Flood Risk (White contour line equals 10' above MSL; tan area shows current 500-yr flood elevation)

Park Road to Pilottown Road

This section of New Road faces a very complex set of issues:

- The area is susceptible to nuisance flooding that will only get exacerbated with sea level rise
- The ditch lines, across a nearly flat landscape, need constant maintenance, but is not widely undertaken
- Motorists travel at a high rate of speed through the neighborhood
- There are no sidewalks and the pavement is narrow, leaving bicyclists and pedestrians to compete for space with the fast moving automobiles

Traffic Calming Concept at Park Road

12' splitter island with turn lane

12' splitter with gore area pavers

Figure 89 Concept plan or recommended modifications to the Park Road intersection with splitter island examples

Park Road

Park Road represents the first location where horizontal alignment shifts can be introduced to slow EB traffic on New Road. A turn lane is proposed for Park Road coupled with an alignment shift just east of the intersection.

Figure 90 Catchment Area for the WB side of New Road feeds to culverts (blue circles)- NTS

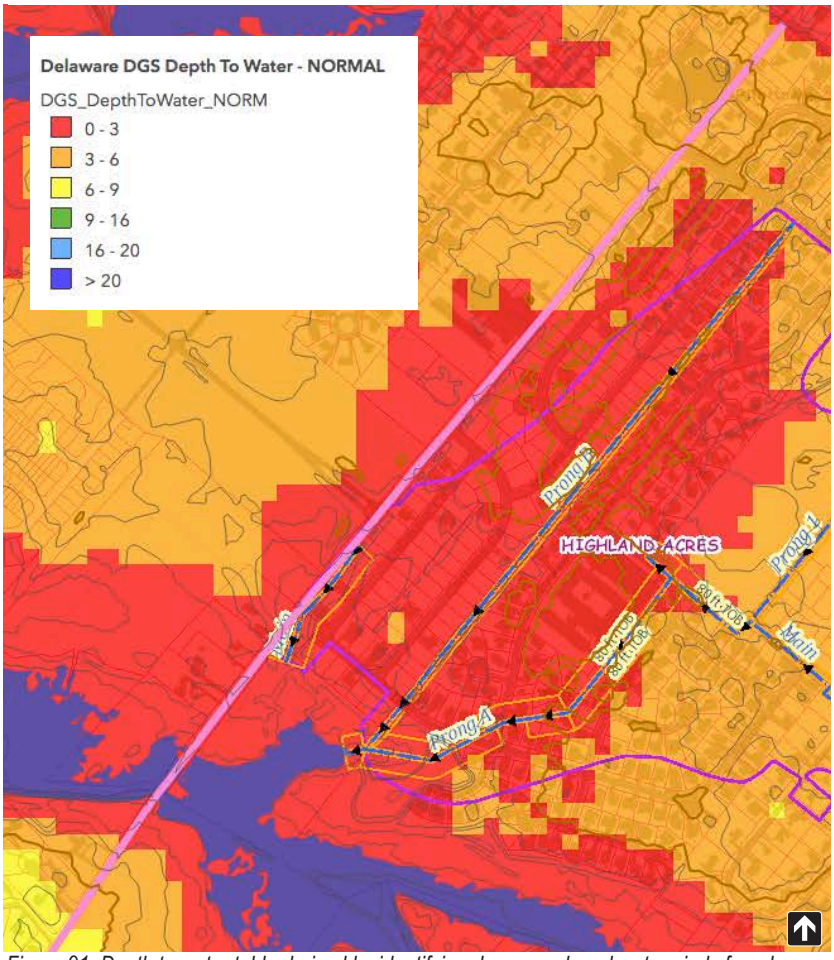


Figure 91 Depth to water table derived by identifying dry, normal, and wet periods from long-term observation well data (DNREC/DGS) - (NTS)

Figure 92 Ditchline on WB side of New Road leading to outlet on EB side (inset)

Existing Conditions

The area between Canary Creek and Pilottown is relatively flat and prone to nuisance flooding as waters flow from the north and west of New Road between houses towards three inlets on the northwest side of the road as shown in Figure 90. The culvert that collects water from the Le Briton subdivision (120-132 New Road) is shown in the inset photo above.

Drainage from the SW side of New Road flows directly into the ditch on the SW (EB lane) side of the road. The Highland Acres tax ditch system collects surface runoff from the catchment area shown in purple (Figure 90), with a portion of the catchment area feeding into the New Road Ditch in the vicinity of Park Road.

During a flood event, water backs up on the WB side of New Road unable to cross through the culvert to the ditch on the EB lane.

A third factor affecting runoff is the depth to water table which is between zero and three feet during normal periods for the area roughly southwest of 4th Street (Figure 91). A ridge just east of 4th Street is the primary divide between waters draining towards Canary Creek and waters draining toward the Delaware Bay.

Neighborhood Stormwater Ideas

Figure 93 Roadside bioswale

Figure 94 Median bioswale

After extensive discussion with neighboring residences, a three step approach, in order of implementation, is recommended with all three requiring more detailed studies that is beyond the scope of a master plan.

- Step One: Continue to work on maintaining and restoring the ditch line that carries water on the southeast side of New Road towards Canary Creek, including the potential of expanding the undersized culverts.
- Step Two: Adjacent property owners on the northwest side (generally between 120 and 132 New Road) expressed a willingness to maintain a roadside bioswale and/or rain garden to treat the quality of runoff and quantity that enters the ditch system (Figure 93) if constructed as part of any road re-configuration and stormwater management effort. This will have the added benefit of trapping sediments before they enter the ditch system.
- Step Three: Work with DelDOT, the City, Board of Public Works and the Highland Acres tax ditch representatives to develop an overall "grey-green" infrastructure enhancement plan that would combine a closed drainage system with infiltration swales and/or median swales (to be designed at a future date) to increase the sustainability of the stormwater management system at least through the next 20-30 year period of climate change and sea-level rise. Shallow groundwater depths may limit future infiltration capacity, especially as sea levels rise. This technique could be applied at the upper reach of the catchment area near 4th Street, provided that subsurface testing is completed to determine actual depth to water table. A minimum of 2' separation is required between the bottom of the bioswale and the water table; more is desirable.

Traffic Calming and Pedestrian Safety

Splitter islands are recommended approaching 4th Street in the area where the asphalt pavement has been widened. The splitter islands are needed to introduce a horizontal shift in the vehicular path and to block the long distance sight lines. Figure 95 illustrates how the splitter islands would work within the available right-of-way and how a median bioswale could be installed with soil cells to help improve water quality and slow the pace at which water is released into the ditches.[11]

The typical section in this area would shift towards closed drainage for the roadway, bike lanes, and a sidewalk on one side with the rain gardens/bioswales on the northwest side, or if rain gardens are infeasible, then sidewalks on both sides. (See Figure 38 on page 34). Bike lanes should be tinted green to reduce the overall perceived width of the roadway and to discourage drivers from using the bike lanes as a bypass lane.

11 *Small strips of right-of-way may be required in the event that this initial recommendation does not conform. This can also be explored with greater public input.*

Traffic Calming Concept Approaching 4th Street (w/infiltration)

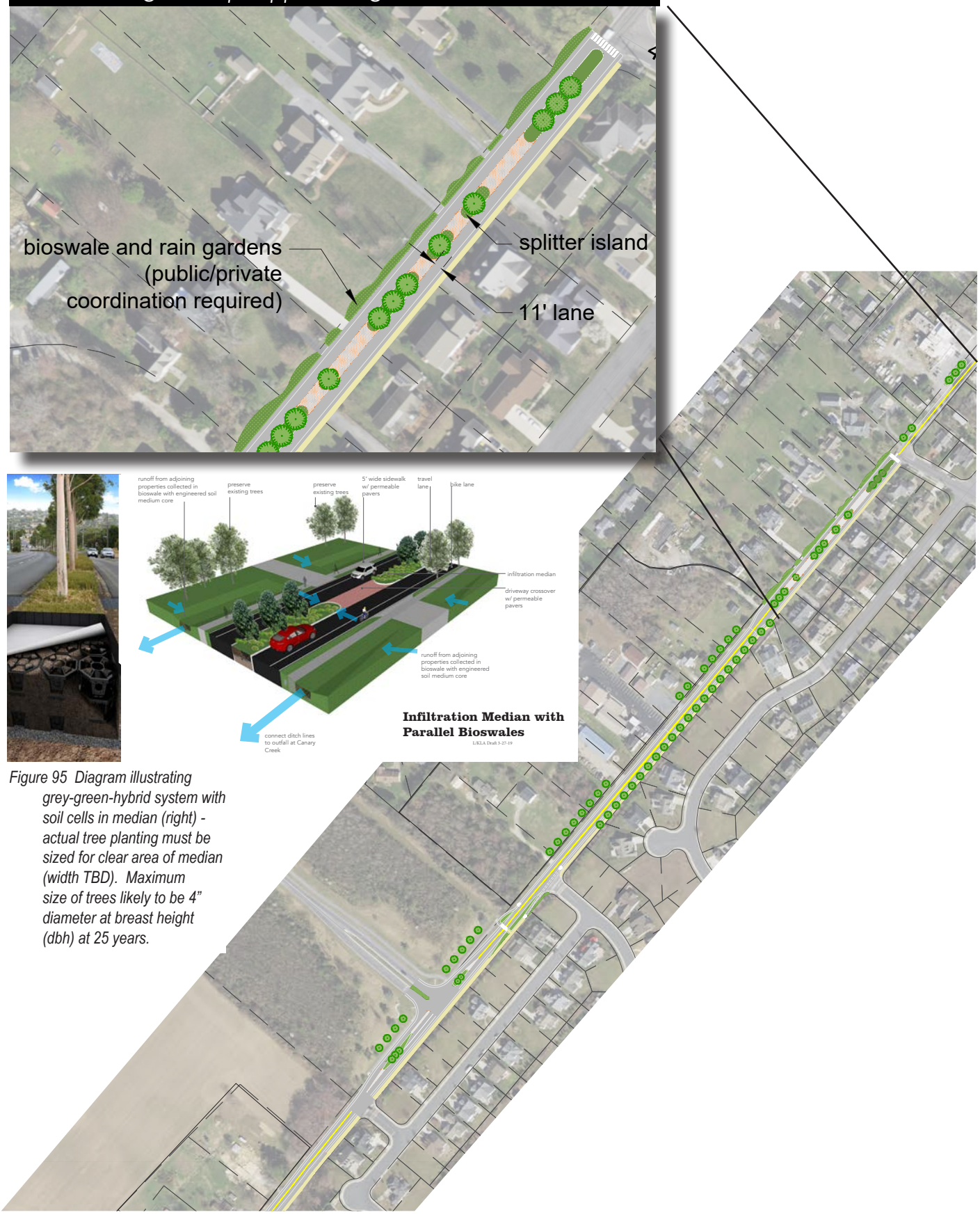


Figure 95 Diagram illustrating grey-green-hybrid system with soil cells in median (right) - actual tree planting must be sized for clear area of median (width TBD). Maximum size of trees likely to be 4" diameter at breast height (dbh) at 25 years.

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05 Implementation

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How Will This Plan Be Implemented?

As stated in the Preface, the Master Plan puts forth a vision, shows examples of how that vision can be achieved and offers guidance to the development community, the City of Lewes, Sussex County, DelDOT, the Historic Lewes Byway Committee and the public, as to how the recommendations originally contained in the Corridor Management Plan for the Historic Lewes Byway can be implemented.

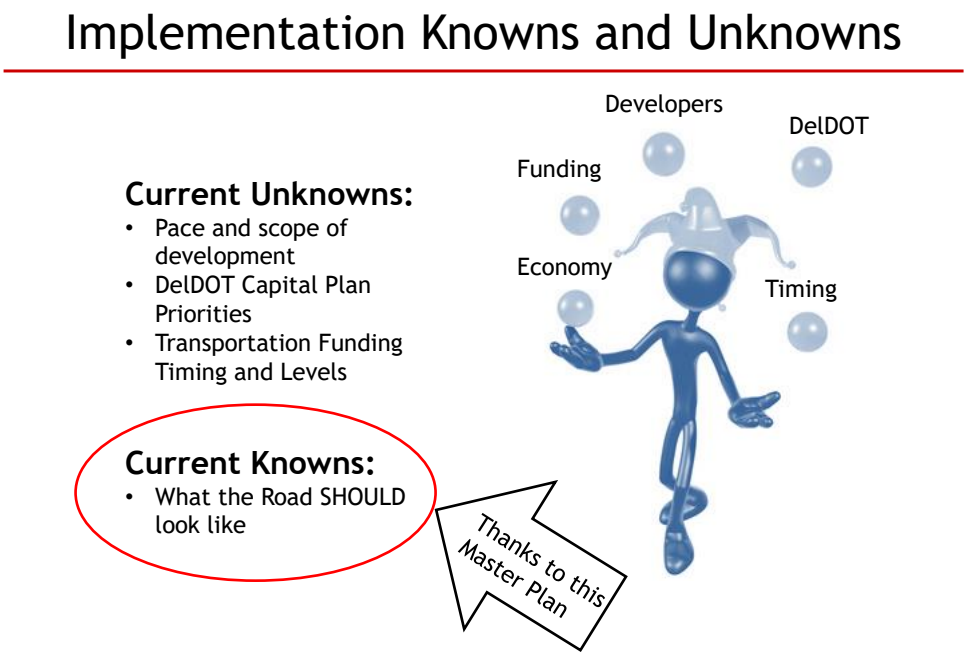

Figure 96 Diagram on "Implementation" from Lewes Scenic and Historic Byway meeting presentation, June 29th, 2016

This New Road Corridor Master Plan report is intended to supplement the Corridor Management Plan to add specificity to the recommendations in a rapidly changing portion of the Lewes Scenic and Historic Byway. It is designed to be used as a policy reference by the State Agencies (DelDOT and the State Office of Planning and Coordination), charged with coordinating land development and transportation through the PLUS Process; the Subdivision Review Process and the Capital Transportation Improvement Process. It is also to be used by Sussex County and by the City of Lewes to coordinate transportation improvements with land use recommendations through the Comprehensive Planning and Zoning Process. The Master Plan is also designed to be used by developers and land owners as they improve and develop their properties. Finally, it is designed to be used by the Historic Lewes Byway Committee as a tool to manage the day to day affairs of the Byway. This will enable the byways committee and others to help broker and promote landscape needs, environmental stewardship and other maintenance agreements. The plan hopes to educate current and future residents and businesses to foster the preservation and enhancement of the byway that so many worked so hard to establish.

Specifically, there are four distinct ways in which the New Road Corridor Master Plan will be implemented:

1) Capital Projects and DelDOT State Funded Programs

The Capital Transportation Program (CTP) process is best explained as shown on the brochure found at https://www.deldot.gov/Publications/brochures/pdfs/CTPBrochure2013-01-17.pdf. The current CTP (2019-2024) is found at https://deldot.gov/Publications/reports/CTP/. The following summarizes currently funded CTP projects:

- **Minos Conaway Project** – This project provides a grade separated intersection to separate through movements along SR 1 and turning movements to and from Minos Conaway Road, Nassau Road and Old Mill Road. A shared-use path would also be constructed to accommodate pedestrians and bicyclists. The purpose of the project is to maintain capacity of the SR 1 corridor and improve safety at the unsignalized intersection of SR 1 and Minos Conaway while improving mobility and access for local

traffic. The project is in preliminary design (Spring 2019) with a second public meeting scheduled for summer 2019.

- **BR 3-714 on S266 New Road over Canary Creek** - The purpose of the project is to replace Bridge 3 -714 and raise approach roadway above flood elevation. Bridge 3 -714 was identified by DelDOT's Bridge Management System for replacement. The roadway and bridge floods frequently and should be considered as part of an evacuation route for the City of Lewes and area wide residents and visitors. The project is in the beginning part of the planning and design phase and is scheduled to start construction in Winter 2022/2023 and after completion of the Realignment of Old Orchard Road at Wescoats Corner.
- **Realignment of Old Orchard Road at Wescoats Corner** - This project will realign Old Orchard Road (S269A) to intersect Savannah Road (Route 9) and Rd 268A. Pedestrian and Bicycle facilities will be incorporated. Construction anticipated in Fall 2021 and continue through Fall 2022.

In addition to the 2019-2024 CTP noted above, DelDOT is has established a placeholder for future CTP funded projects for work along **New Road between Old Orchard and Nassau,** especially as it may apply to increased traffic generated on this segment of New Road after completion of the projects and developments described above (see "Active Land Use and Transportation Projects" on page 13).

2) Land Use/Transportation Improvements Coordinated Through Development Review

The active development projects along New Road have been through or are in the process of undergoing review by DelDOT and the State Office of Planning through the PLUS Process and the Subdivision Review Process. In addition, they are reviewed by Sussex County and/or the City of Lewes.

The Master Plan will serve as reference guide for coordinated development review for future development projects – although many of the larger parcels are now under development. The largest tracts are the lands to the north and west of Old Orchard currently in agricultural use and the lands north and west of the Groome Church (Tower Hill) property accessed at Lynn Road. Smaller tracts, especially those not associated with a previous residential subdivision may get redeveloped for infill development at higher densities.

The following elements have a bearing on how the Master Plan could be implemented through the state and local government review process:

1. Developers are typically required to mitigate traffic impact (often resulting in added roadway capacity. These projects should be vetted through the Byway Committee in relation to the recommendations of the Master Plan (starting on page 28, and as detailed in Chapter 4).
2. Developers may, when seeking access to a state highway, be asked to provide adequate pedestrian and bicycle facilities as part of any modification to that state highway as required by Delaware's Complete Streets Policy. The pedestrian and bicycle facilities should be coordinated through the recommendations found on page 35 and as detailed in the more detailed concepts in Chapter 4.
3. Frontage area landscape enhancements - Unless asking for a rezoning or access to a state highway, this will be accomplished through voluntary actions by the developer and therefore a positive relationship building process will be needed early and often. Coordination with developers will be needed early to establish a cooperative relationship with the Historic Lewes Byway Committee and under the local land use authority in establishing an attractive landscape treatment. Guidance is provided starting on page 38 and as detailed in Chapter 4.

For smaller scale projects where neither rezoning is requested nor a PLUS review is triggered, the Master Plan can be used by the property owner to coordinate their investments in stormwater management, pedestrian and bicycle facilities, planting or other plan elements.

3) Locally Initiated Projects

The City of Lewes and Sussex County, as well as the Byway committee and others seeking outside funding to implement smaller projects, can implement those projects utilizing two familiar state and federal programs.

- The primary federally funded program that is often used for the types of projects anticipated in the master plan is the **Transportation Alternatives program (TAP).** TAP provides funding for programs and projects defined as transportation alternatives, which include on- and off-road facilities for pedestrians and bicyclists, infrastructure projects for improving non-driver access to public transportation and enhanced mobility, community improvement activities including streetscape projects, and environmental mitigation. The program also covers recreational trail projects, safe routes to school, and projects for planning, designing, or constructing boulevards and other roadways largely in the right-of-way of former divided highways. DelDOT primarily uses the program to support pedestrian and bicycle projects, spending about 80 percent of program funds on these types of projects. DNREC is responsible for implementing the Recreational Trails program (funded through USDOT) and participates in the TAP program as a sponsoring agency. Recreational Trails funding is more limited in budget, but could support smaller sections of trail and linkages.
- Pave and Rehab project efforts may also achieve striping and traffic calming – not widening. Pave and rehab projects may put patterns in the road or median too. Pave and Rehab projects do not include landscape in the median as this has to be done by other forces.
- The issues of stormwater management, water quality, sea level rise and coastal resiliency are front and center and have been major issues throughout the planning process both for New Road and the entire Byway. Past conservation efforts have focused on the lands surrounding the Great Marsh on the WB side of New Road. Future conservation efforts should still move forward working with the Nature Conservancy and other partners to preserve remaining farms, to buffer development and to preserve riparian areas for floodplain management and sea level rise mitigation. The **Community Water Quality Improvement Grant** (DNREC) is intended for projects to improve water quality as part of specific watershed improvement plans. It is meant for "programs and projects that demonstrate innovative and sustainable methods, techniques, and/or practices for water quality improvements with cost effective and measurable results".[12] At a neighborhood scale, this fund may be a potential source for addressing the stormwater management and nuisance flooding issues between Park Road and Pilottown Road.

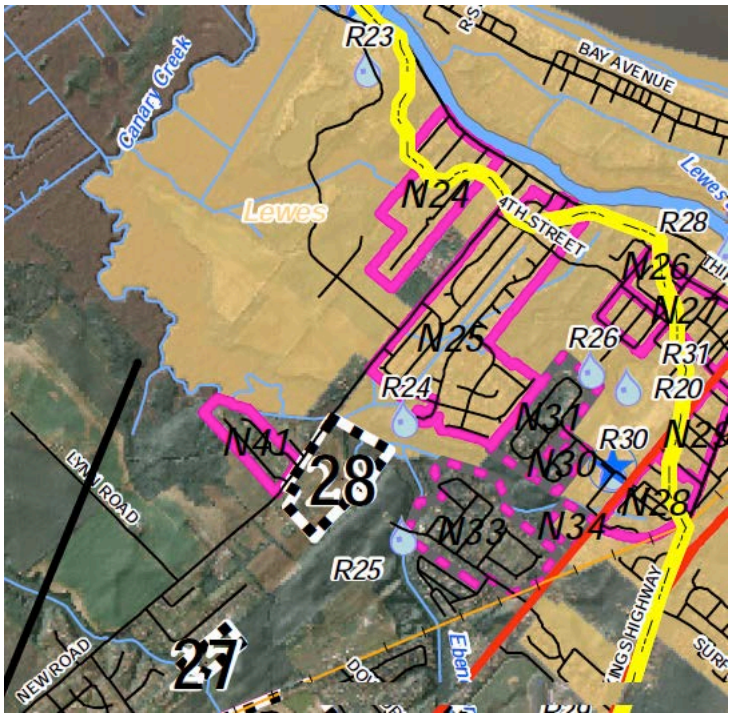

Figure 97 Excerpt from Broadkill River Watershed Implementation Plan (2009) noting opportunities for neighborhood scale water quality opportunities. The entire west side of New Road is also identified as a potential conservation corridor. Funds from DNREC's Community Water Quality Improvement Grant Program could be used to implement projects in this plan (as updated since 2009).

12 *See:* https://dnrec.alpha.delaware.gov/environmental-finance/community-water-quality-improvement/

4) Maintenance

DelDOT is interested in working with qualified local organizations to adopt an area for various types of landscape enhancements, tree planting and other landscape management practices. Going beyond standard design practices for state projects can also be implemented through sponsorships/ partnerships by local organizations—including adoption by civic groups for gateways and other key spots. Homeowners Associations (HOAs) also can take the lead in reforesting community open spaces to reduce maintenance costs and improve water quality (an eligible category for the **Community Water Quality Improvement Grant** noted above), especially in tree canopy enhancements to preserve and expand the riparian corridors along Black Hog Gut.

DelDOT is reluctant to approve any project that calls for landscaping that requires maintenance beyond periodic mowing. New HOAs are anticipated to take on maintenance responsibilities at Tower Hill and Lewes Waterfront Preserve as stated by the developers of those properties. Cape Shores is an example of an HOA that has taken on the responsibility and supported it through their own budget with resident contributions and volunteer work. The Historic Lewes Byway Committee has chosen to work with property owners and DelDOT to encourage landowners by highlighting the value of landscaping and the benefits of it. The Committee requests that DelDOT and the local land use agency share plans and provisions for the purpose of attempting to achieve the general conformance of this New Road Corridor Master Plan regarding landscape recommendations and any other studies and coordination. Reference has been made for various features or landscape enhancements where maintenance responsibilities need to be spelled out in an MOA. The MOA also needs to spell out what happens if the maintenance responsibilities are not met. For example if landscape areas are not maintained as spelled out in the MOA, then DelDOT would have the authority to revert to mowed grass or trees.

Funding Status

The following projects have been identified in the master plan but are not currently funded through any of the four approaches noted above. The Lewes Historic Byway Committee will generally be responsible for monitoring these projects and working with the many partners needed to ensure that the projects are implemented as envisioned in the Master Plan.

Gateway

Within the gateway area the following enhancements, betterments and/or context sensitive design as appropriate for a Delaware Scenic and Historic Byway are proposed and may need additional funding sources and/or MOAs.

The following master plan elements need to be coordinated with development of the Minos Conaway Project:

- Landscaped welcome signage in place of a standard byway sign
- Brick faced retaining wall as part of the widening require to accommodate the trail under Route 1
- Concealed fixtures and context sensitive light standards (poles) coordinated with DelDOT/Utility
- Enhancements to the roundabout design to include textured pavement or pavers on the aprons and gore areas, central island landscaping (beyond just grass and trees)
- Gateway area landscape enhancements to be included in the design including appropriate planting design for stormwater management areas and landscape buffer areas between the roundabout and adjoining properties

The following master plan elements need to be coordinated with the redevelopment of Black Hog Village

- Nassau Station Preservation – Byway Committee advocacy for preservation of character defining features and historic qualities of buildings associated with the Nassau Station area
- Connecting trail and/or sidewalk areas leading to the New Road shared use pathway and/or rail trail

- Frontage and other egress needs that affect drainage, buffer areas, sidewalk placement, added vegetation or possible minimization of impacts across the corridor with the Knapp Farm

Black Hog Gut to Old Orchard

The following master plan recommendations are currently not specifically identified as part of a capital improvement program[13] or linked to a specific development activity[14]:

- Traffic calming measures (three splitter islands and related landscape to reinforce visibility of alignment shift at splitters)
- Shared use pathway between Old Orchard and Black Hog Gut
- Boardwalk crossing of Black Hog Gut as part of shared use pathway crossing from WB to EB side of New Road
- Sand Dune Villages landscape enhancements
- Old Orchard intersection modifications (roundabout or median w/turn lanes)

Old Orchard to Canary Creek.

Within this area, the majority of the recommendations are incorporated into the development plans for the Groome Church property (Tower Hill) and Brittingham Farm (Lewes Waterfront Preserve). The following master plan recommendations need to be monitored by the Lewes Historic Byway Committee for consistency with the Master Plan:

- Monitor agreed upon developer contributions at Tower Hill (shared use path, roundabout, frontage areas, buffers)
- Ongoing negotiations regarding Brittingham Farm with DelDOT and the City of Lewes (traffic calming/ splitter islands, frontage area, buffers, trail along New Road)
- Opportunities for a connection to the rail-trail along Canary Creek (trail easement negotiated as part of Brittingham Farm development)

The following master plan recommendations need to be coordinated with DelDOT, current and/or future development projects, or added as a future CTP project:

- Trail connections from Tower Hill to Old Orchard intersection and from Tower Hill to Schaffer Lane crossing, Schaffer Lane crossing to Brittingham at Canary Creek Drive
- Those portions of the traffic calming measures that are not incorporated into the Brittingham Farm entrance requirements

The following master plan recommendations need to be coordinated with the Canary Creek Bridge project (additional funding if needed, and MOA agreements for future maintenance and operations):

- Betterments associated with Canary Creek access as part of bridge construction (for fishing access, hand carry boat launch or other measures)
- Provision of pedestrian and bicycle facilities as part of the bridge design as required by state policy
- Context sensitive design treatments for the bridge project consistent with its designation as a State Scenic and Historic Byway

Canary Creek to Pilottown Road

The following master plan recommendations are not currently funded or related to an ongoing development or transportation project and will require additional CTP funding and/or sponsored program (grant) funding:

- Traffic calming and left turn lane at Park Road to address vehicular operating speeds and directing boat trailer traffic to use Park Road

13 *CTP includes undefined funding for Old Orchard to Nassau section of New Road that could be considered for any or all of these recommendation*

14 *If farmland on westbound side of New Road is preserved in perpetuity, then the shared use trail will not be built on WB side and pedestrian and bicycle facilities will be shifted to EB side and emphasize connectivity to rail trail and Old Orchard. The WB to EB Crossing may occur at one of the three splitter islands as determined by future design and engineering studies*

- Flood mitigation/adaptation, stormwater management, traffic calming and pedestrian and bicycle safety approaching and at 4th Street
- Stormwater management (replace ditch with curb and gutter), pedestrian and bicycle accommodations and related streetscape enhancements between 4th Street and Pilottown Road

The List

The following table is a compilation of implementation projects organized geographically by character area. If a project or program is not listed here, that does NOT mean that it is not included in the Master Plan. The projects noted here have been discussed throughout the planning process and this list is intended as a tool for ensuring that these priority areas are regularly monitored and the appropriate input is provided in a timely fashion.

Area	Issues	Actions Needed
A. New Road at Nassau	• Gateway Treatment (context sensitive design input) • Byway signage at gateway • Preservation of adjacent farm (Nassau Orchards) • Retain/Enhance historic red barn commercial buildings as a contributing factor to the New Road corridor • Enhance access to existing and future retail uses (Nassau Orchards and retail businesses in historic barns) • Safety of rail-trail crossing with Nassau Road and Driveway entrance • Slow traffic prior to intersection • Right-of-way required, possible property purchase required • DelDOT is beginning to review preliminary design drawings (approx. 20%) and would like to keep the roundabout concept as is, recognizing changes are being considered to address issues noted, as well as to enable them to work with the adjacent property owners to identify the design that works best for them.	• DelDOT will continue to consider design minimization or refinements to reduce impact on the adjoining farm, adjoining commercial buildings and the approach transition speed into the roundabout (45-25 mph transition). • DelDOT will work with the Byway Committee and the public to incorporate context sensitive gateway design landscape treatments consistent with state and federal design standards to the roundabout and adjoining areas using guidance provided by the Corridor Master Plan. Maintenance agreements will also be discussed and considered in the final level of effort. • DelDOT will investigate the viability of context sensitive design treatments to any required modifications to the underpass.

Area	Issues	Actions Needed
B. Traffic calming east of Black Hog Gut	• Design narrow splitter islands to minimize impact on trees • Adjoining residents requested tree planting on grassy area	• Coordinate with future CTP project on New Road to ensure that traffic calming is included in the funding request. • Future access, if required from parcels on the WB side of New Road should be lined up with splitter openings at Kansas and Arkansas Courts. • Validate and support any HOA efforts to replant Hedgerow concept on the grassy median in front of Sand Dune Village. • Retain or replace black iron fence/ work with property owners as part of any future roadway modifications.
C. Old Orchard	• Concerns raised about traffic from Minos Conaway Project (desire to direct that traffic to Five Points rather than down New Road) • Concerns raised about property impacts (brick wall at Ashburn Lane, wetlands on NW side, hedge and residence on NE side and stormwater pond on SE side) • Need traffic study to determine intersection capacity	Keep both options as part of Master Plan as appropriate for Byway and provide Master Plan level guidance. Both options need to be refined and evaluated based upon: • Results of traffic study • Impact to adjoining properties • Need to direct non-local traffic to Five Points using wayfinding and GPS technologies • Need to retain traffic calming objectives for New Road • Need to accommodate trail and pedestrian crossings If the traffic model, safety, or future AADT results in the warrant for a traffic signal or roundabout, then a roundabout will be the initial preferred treatment to accommodate the northbound left turn between Old Orchard Road and New Road. Further study is needed to evaluate both the roundabout and the traffic signal to select a preferred option. Monitor design of shared-use pathway from Groome Church Property to ensure that extension can be coordinated and carried through the Old Orchard intersection. Include a temporary transition from the shared-use trail constructed by the developer to on-road use if intersection improvements occur after the developer contributed trail.

Area	Issues	Actions Needed
D. Tower Hill/Lynn Dr.	Follow-up with developer • Trail with independent alignment to be constructed to Schaffer Lane • Landscape of frontage area to reinforce traffic calming and screen new homes • Stormwater inspections/DNREC to minimize impacts on Great Marsh • Archeological artifacts to be preserved as per PLUS review and developer agreement	DelDOT will review plans and concur to ensure adequate roadside drainage safety. Landscape agreements will be needed for any plantings in center roundabout (coordinated with developer and future HOA maintenance). Final Landscape plans to be included in HOA agreements after final engineering and site plan review approved by County as per developer agreements filed with Sussex County as part of approval process.
E. Brittingham Farm	• Issues raised about extent of frontage area landscape treatment • Traffic calming and coordination needed on narrow splitter islands • Coordination needed on 10' multi-use trail (would require trail crossing to meet up with Groome Church (Tower Hill) property trail	Recommend adding splitter islands for traffic calming benefit and potential trail crossing need (see trail discussion below). DelDOT, developer, and City of Lewes coordination and follow-up required: • Agree upon location and design of splitter island including left turn storage and planting options for medians • Design trail crossing at Schaffer Lane intersection • Monitor options for Canary Creek path connection to Rail-Trail (acquire developer easement donation through development review process) • Review location, function and appearance of related drainage modifications (existing ditch, proposed pump station and pump station maintenance access)

Area	Issues	Actions Needed
E/F. New Road Bridge Over Canary Creek and Access to Canary Creek	• Design assumptions needed for future bridge elevation that address State Policy on Sea-Level Rise • Complete streets policy (width of bridge accommodates bicycle and pedestrian uses or independent bridge alignment) • Accommodate fishing uses • Accommodate soft landing for hand carry boats (e.g. kayak launch) and accompanying parking (by others) for fishing and hand carry launch • Extensive concerns raised about design of bridge (clear preference for "thin" bridge with sleek profile and transparent railings/parapet)	• Accommodations for Sea-Level Rise (addressed by DelDOT) - assumptions about future bridge elevation will affect adjoining neighborhood access and use of New Road as evacuation route. • Context sensitive design principles for bridge based upon community input ("slim" bridge profile, see through railings, etc.). • Multi-use Pathway (on EB side of bridge connecting with Brittingham Farm trail approach). • Further explore the master plan recommendations of other elements and amenities around the new bridge and corridor under design engineering criteria. There are impact trade-offs and DelDOT limits participation to transportation. • Initiate a working group to discuss viability of recommendations and expectations. Based on results, develop the necessary partnership and coordination efforts to potentially incorporate water access (fishing, soft landing for hand carry boats and a small parking or pull-off area) as a public betterment into the design of the Canary Creek Bridge (to include representatives from DNREC, DelDOT, City of Lewes, Lewes Historic Byway, adjoining property owners, and potential users) and formed with enough lead time to determine potential funding for any betterment work included as part of the project scope. • The working group will identify specific sources and/or responsibilities for funding, timing of construction, transfer of ownership or interest, maintenance, use rules and regulations, and enforcement. Consideration will be given to converting the construction access and/or staging areas for use as water access (or other areas as deemed appropriate), provided that it will serve as a public benefit and not interfere with the workflow, construction and operation of the bridge project. • Assuming satisfactory agreements or phasing can be made, the results of effort will be incorporated as a betterment into the final design of the Bridge project and coordinated as such between DelDOT and the responsible parties as determined by the working group or other authorities.

Area	Issues	Actions Needed
G. Park Road	• Concerns about boat trailers continuing on to New Road. Trailer traffic needs to be directed to turn left at Park Road for boat launch facility as Pilottown Road/New Road intersection is too narrow • Concerns about high operating speeds continuing through intersection • Developer already built bypass lane on EB New Road	• Consider relocation of radar activated sign and upgrading to capture actual operating speeds through intersection. • DelDOT or City will consider additional low cost traffic calming measures in future projects to address the speed issue in the short term, including relocating the radar activated speed sign on New Road to west of the Park Road intersection and upgrade the sign to one that collects traffic volume and speed data, if not already doing so. • If safety issues (left turning traffic and excessive operating speeds through the intersection continue), DelDOT or the City of Lewes will request a capital project in future to be developed to install intersection realignment consistent with the intent of the drawing (Figure 89 on page 60). • Consider relocating or enlarging the existing brown directional sign to the boat ramp and/or consider restricting trailer length at Pilottown Road intersection if warranted. • Consider a tracking confirmation study for the boat trailers that continue past Park Drive. Where are they going? Do other docking, boat ramp and storage facilities have an influence?

Area	Issues	Actions Needed
G. 4th Street	• High vehicle operating speeds • No pedestrian or bicycle safety facilities making it difficult to walk or ride a bike, cross the street • Limited right-of-way • Nuisance flooding – residents say ditches not connected to Canary Creek anymore • Shallow water table and poorly drained soils constrain options • Retain street trees	Additional detailed study required to address: - The need to work together within the catchment area to manage stormwater runoff (quality and quantity) and address sea-level rise issues (both private land owners and DelDOT/City of Lewes/ DNREC/ Sussex Conservation District) - What homeowners can do to reduce runoff (rain barrels, rain gardens, bioswales) - Verify their off-site drainage and improve their natural or engineered flow beyond the rights of way. - Examples of ways to increase storage and infiltration capacity along roadways Coordinate with City of Lewes hydrology study 1. Early action – clean out ditches and reconnect with Canary Creek 2. Long-term – combined need for splitter islands with more storage space for stormwater runoff by utilizing enhanced management practices for stormwater management 3. Consider narrower cross section and incorporate stormwater management into closed drainage section (combine stormwater storage with tree pits if no room for medians in this section)

Area	Issues	Actions Needed
Shared Use Trail	• Which side of New Road (especially from Canary Creek to Park Road and beyond) • How to address bike and pedestrian facilities east of Park Road (narrow right-of-way and existing residential area impacts) • 50' R/W is needed, minimally between Park and 4th, • 40' R/W is needed, minimally between 4th and Pilottown • Plan for future access to Georgetown to Lewes Rail-Trail from New Road neighborhoods and shared use path • Trail crossings of New Road as needed to accommodate shared use path	Assume the following trail alignment • Nassau to Black Hog Gut –EB side of New Road – note that "Black Hog Village" development project will include trail connection to Rail-Trail. • Black Hog Gut to Old Orchard – trail only to be constructed if farmland on WB side of New Road is developed in the future (TBD) with the linkage to the rail-trail along Old Orchard as the recommended route if the farmland uses are retained. If farmland on WB side is permanently preserved, and therefore no trail is constructed, then additional pedestrian and bicycle connections to Old Orchard will be needed on EB side. • Old Orchard – accommodations to be designed as part of future intersection modifications. • Old Orchard to Schaffer – WB side, winding trail built by developer. • Crossing to EB side at Schaffer using splitters at Brittingham – need to address crossing to avoid impacts to private drive/ residences. • Brittingham Farm – EB side built by developer with continual easement along Canary Creek for future trail connection to Rail-Trail. • New Road over Canary Creek – continue trail on EB side of future bridge. • Approaching Park – continue on EB side as part of New Road over Canary Creek Bridge project and/or as an independent project effort (TBD). • East of Park – transition to combined bike lanes and sidewalks up to 4th, and sidewalks only on one side northeast of 4th.

Area	Issues	Actions Needed
Corridor Landscape Design	• Type of plantings by type (Gateway, riparian area, screening/traffic calming, intersections, etc.) • Byway subcommittee working with property owners	• Byway Committee and DelDOT work together to address maintenance inside the DelDOT R/W. • Support Byway Committee Members developing design guidelines to include overall concepts and typologies. • Develop master maintenance agreement for use within DelDOT R/W. • Inventory tree species to determine preservation and enhancement needs for hedgerows, as applicable.

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06 Appendices

Appendix A: *Meeting Record*
Appendix B: *Recommended Plant Typologies*
Appendix C: *Sample Memorandum of Agreement*

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Appendix A: Meeting Record

The following files can be accessed on the project website
http://www.lardnerklein.com/new-road-corridor-master-plan.html

Public Meeting #2: June 20, 2019

PRESENTATION
MEETING SUMMARY

Lewes Ad Hoc Committee Meeting #4: May 7, 2019

PRESENTATION
MEETING SUMMARY (Coming Soon)

Lewes Historic Byway/Ad Hoc Committee Joint Meeting: March 27, 2019

Meeting sponsored by Lewes Byway Committee to gather additional input on proposed master plan concepts

PRESENTATION
UPDATED DISPLAYS (3-27-19)
Corridor Planning and Design Principles (19.9 MB)
New Road: Nassau to Black Hog Gut (3.5 MB)
New Road: Black Hog Gut to Old Orchard (8.9 MB)
New Road: Brittingham Farm/Canary Creek Bridge (7.7 MB)
New Road: Park Road to Pilottown Road (5.8 MB)
Bicycle and Pedestrian Facilities (12.5 MB)
Corridor Landscape Concepts (10.5 MB)
MEETING SUMMARY

Public Meeting #1: November 27, 2018

MEETING FLIER
PRESENTATION
HANDOUT- VISUAL PREFERENCE SURVEY COMMENT FORM (2 MB)
DISPLAYS
Welcome Board (3 MB)
1. Regional Context: Active Land use and Transportation Projects (16 MB)
2. Regional Context: Transportation Issues (1 MB)
3. Corridor Planning and Design Principles (13 MB)
4. New Road: Nassau to Black Hog Gut (4 MB)
5. New Road: Black Hog Gut to Old Orchard (12 MB)
6. New Road: Old Orchard to Canary Creek (including bridge) (16 MB)
7. New Road: Canary Creek to Pilottown Road (15 MB)
SUMMARY OF COMMENTS (Coming Soon)

Meeting #2: October 24, 2018

AGENDA
PRESENTATION
HANDOUT
MEETING NOTES

Meeting #1: August 22, 2018
PRESENTATION
HANDOUT (MAP)
PROJECT OVERVIEW HANDOUT
MEETING NOTES

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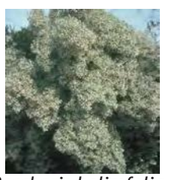
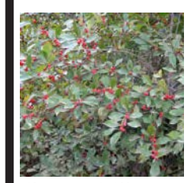
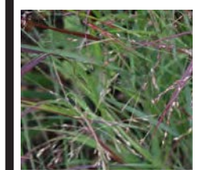
New Road Corridor Master Plan

Appendix B: Recommended Plant Typologies

L/KLA

	UPLAND	RIPARIAN/FLOODPRONE	GATEWAY/SEASONAL INTEREST	EFFECTIVE SCREENING
Trees	 *Tilia americana* (American Basswood/Linden)  *Quercus bicolor* (Swamp White Oak)  *Quercus phellos* (Willow Oak)	 *Taxodium distichum* (Bald Cypress)  *Betula nigra* (River Birch)  *Nyssa sylvatica* (Black Tupolo)	 *Acer rubrum* (Red Maple)  *Diospyros virginiana* (Persimmon)  *Magnoilalia virginiana* (Sweetbay Magnolia)	 *Ilex opaca* (American Holly)  *Pinus virginiana* (Virginia Pine)  *Magnoilalia grandiflora* (Southern Magnolia)
Large Shrubs/Small Trees	 *Carpinus caroliniana* (American Hornbeam)  *Ostrya virginiana* (Eastern Hop-hornbeam)  Rhus glabra (Smooth Sumac)	 *Asimina triloba* (Paw Paw)  *Alnus serrulata* (Smooth Alder)	 *Amelanchier arborea* (Downy Serviceberry)  *Cercis canadensis* (Eastern Redbud)	 *Juniperus virginiana* (Eastern Red Cedar)
Shrub Layer	 *Viburnum prinifolisum* (Blackhaw Viburnum)  *Myrica cyrifera,* (Southern Bayberry)  *Prunus maritima* (Beach Plum)	 *Rhododendron viscosum (Swamp Azalea)*  *Clethra alnafolia (Summersweet Clethra)*  *Lindera benzoin (Spicebush)*	 *Viburnum dentatum* (Southern arrow-wood Viburnum)  *Hamamelis virginiana* (Witch Hazel)  *Viburnum prunifolium* (Black-haw Viburnum)	 *Myrica pennsylvanica* (Northern Bayberry)  *Bacharis halimifolia* (Groundsel Bush)
	 *Viburnum cassanoides* (Witherrod Viburnum)  *Viburnum nudem* (Swamphaw Viburnum)	 *Aronia arbutifolia* (Chokeberry)  *Baccharis halimfolia (Groundselbush)*	 *Ilex verticillata* (Winterberry Holly)  *Ilex glabra* (Inkberry)  *Kalmia latifolia* (Mountain Laurel)
Herb Layer/ Grasses/	 *Solediago caesis* Bluestem Goldernrod)  *Lupinus pernenis* (Purple Lupine)  *Penstemon digitalis (Tall White Beard= toungue)*	 *Hibiscus moscheutos* (Eastern Rosemallow)  *Eutrochium fistulosum* (Hollow-stem Joe-pye-weed)  *Asclepias incarnata* (Swamp Milkweed)	 *Rudbeckia hirta* (Black-eyed Susan)  *Liatra spciata* (Blazing Start)  *Solidago puberula (Downy Goldenrod)*	 *Panicum virgatum (Switchgrass)*  *Juncus canadensis (Canada Rush)*  *Carex stricta (Tussock Sedge)*

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Appendix C: Sample Memorandum of Agreement for Betterments and Maintenance

City of Milford
SR1 Northeast Front Street Grade Separated Intersection
Contract Number T201112201

THIS AGREEMENT made this 2nd day of December, 2016, between the **STATE OF DELAWARE, DEPARTMENT OF TRANSPORTATION**, party of the first part, hereinafter referred to as the (**"STATE"**) and the **CITY OF MILFORD,** a municipal corporation of the State of Delaware, party of the second part, hereinafter referred to as (**"CITY "**).

WITNESSETH:

WHEREAS, the parties hereto have agreed to the construction, reconstruction, and/or other related improvements to SR1 Northeast Front Street Grade Separated Intersection, to be constructed as set forth in the contract documents for Contract T201112201, of the **STATE** which are/or will be on file in the Department of Transportation's Administration Center, Dover, Delaware, and are incorporated herein by reference and made a part of this Agreement, and as further described on EXHIBIT A, attached hereto and made part of this Agreement, herein referred to as the **"PROJECT"** and

WHEREAS, all work to be performed pursuant to this Agreement shall comply with the Specifications titled "Delaware Department of Highways and Transportation, Standard Specifications, August 2001", and all subsequent thereto, hereinafter referred to as Standard Specification, and

WHEREAS, the **CITY** intends by this Agreement to give such municipal consent, approval, and waiver as may be required by law, pursuant to Title 17, Section 134 of the Delaware Code, as amended, for the construction, reconstruction, improvements, and/or maintenance by the **STATE** of the above mentioned **PROJECT.**

NOW, THEREFORE, the **CITY** and the **STATE** for and in consideration of the mutual promises and benefits agrees, covenants, and promises with each other as follows:

1. CONSENT OF CITY

Pursuant to Title 17, Section 134 of the Delaware Code as amended, the **CITY** hereby grants, gives and surrenders to the **STATE** any and all such power, authority and jurisdiction over, in connection with or with respect to the proposed **PROJECT,** as may be necessary in the opinion of the **STATE** to enable the same to be constructed, reconstructed, and/or improved by the **STATE** as herein agreed in this Agreement.

2. CONSTRUCTION

The **STATE** agrees to construct, reconstruct and make other improvements as set forth in the contract documents of Contract T201112201 which is or will be on file in the Department of Transportation's Administration Center, Dover, Delaware.

The **CITY** agrees to pay the **STATE** the sum of Ten Thousand Dollars ($10,000.00) to include architectural treatments to the bridge abutment walls as shown in the Plans.

3. MAINTENANCE

Upon completion of the **PROJECT,** the **STATE** agrees to maintain by patching or reconstruction, as deemed necessary by the **STATE,** from face of curb to face of curb or edge of pavement to edge of pavement, the sections of SR1 Northeast Front Street Grade Separated Intersection to be resurfaced, constructed or reconstructed as part of the **PROJECT** and also BRIDGE 2-409B in its entirety, except painting of the architectural treatment on the bridge abutment wall.

All other maintenance shall be the sole responsibility of the **CITY.** Such maintenance includes, but is not limited to all curbs and sidewalks, existing or reconstructed under this **PROJECT,** cleaning, ice control, and policing of sidewalks, cleaning and policing of the travel ways resurfaced, or reconstructed as part of the **PROJECT,** and surface cleaning of the storm water installations. The **CITY** shall also be responsible for any repainting of the architectural treatment on the bridge abutment wall.

4. CURB OPENINGS

The **CITY** agrees that the number and length of curb openings for new and rebuilt entrances and exits to properties abutting the **PROJECT** area which are constructed, reconstructed, improved, or the like as part of the **PROJECT** shall meet the requirements of the **STATE's** then existing **"Policy and Standards for Access to State Highways."**

All curb openings for new or rebuilt entrances or exits to properties within or abutting the **PROJECT** area that are made upon or after completion of the **PROJECT** shall meet the requirements of the **STATE's** then existing **"DelDOT Development Coordination Manual."** All costs for any such openings shall be at the sole cost and expense of the **CITY**.

5. PERMITS FOR ROAD SURFACE OPENINGS

It is agreed that the **CITY** shall plan its future drainage and utility needs for a minimum of five (5) years after completion of the **PROJECT** in order to eliminate or minimize openings in the road surface within the **PROJECT** area. It is also agreed that whenever the **CITY** proposes to make or allow any openings to any road surface within the **PROJECT** area, the **CITY** shall first obtain the prior written permission of the **STATE,** which permission will not be unreasonably withheld. In case of emergency, within one working day, notice shall be given by the **CITY** to the **STATE** of any opening made in the road surface within the **PROJECT** area. Any and all openings and pavement replacement within the **PROJECT** area must conform to the **STATE's** then existing "Standard Specifications", must be subject to **STATE** inspection, and shall be made at the sole cost and expense of the **CITY.**

6. UTILITY ALTERATIONS

In accordance with Title 17, Section 143 of the Delaware Code as amended, the **STATE** agrees to make necessary and appropriate alterations and/or relocation of **CITY** owned public utilities. Any betterment to said **CITY** owned public utilities shall be made at the sole cost and expense of the **CITY.**

Betterment is defined in this Agreement as any upgrading or improvement to **CITY** owned public utilities made for the benefit of and/or at election of the **CITY** which is not due to the alteration and/or relocation of **CITY** owned public utilities necessitated by the **PROJECT.**

7. CONTROL OF TRAFFIC AND PARKING

The **CITY** will not enact or enforce an ordinance regulation or rule, which may affect or apply to all or any part of the **PROJECT** and/or **PROJECT** area, which the **STATE** deems, will adversely affect the traffic and parking control for the **PROJECT** and/or **PROJECT** area. The **CITY** hereby agrees to comply with Title 17, Section 147 and with Title 21, Chapter 41 of the Delaware Code, as amended, and with all requirements of law and any rules or regulations promulgated from time to time by the **STATE.** The **CITY** agrees specifically to comply with all State laws, rules and/or regulations concerning traffic and parking control in, along, and/or over the streets, roads and/or highways within the **PROJECT** area and particularly shall meet all requirements as found in the then existing **"Delaware Manual on Uniform Traffic Control Devices for Streets and Highways"** and any supplements and/or amendments thereto. For planned special events that have either a direct or indirect impact to the transportation system either through full roadway or lane closures or impacts to the normal traffic flow created by the crowds attracted to the special event through or around the **PROJECT** area**,** the **CITY** agrees to comply with the above requirements and to consult with the **STATE** ninety (90) days prior to approving the special event within the **PROJECT** area. All temporary traffic control for special events shall comply with the requirements of the then existing **"Delaware Manual on Uniform Traffic Control Devices for Streets and Highways."**

The **STATE** agrees to assume the responsibility of providing and erecting the necessary permanent traffic control devices for the **PROJECT** to ensure compliance with the parking and the traffic operation within the **PROJECT** area. The ownership, maintenance responsibilities, and responsibility for the replacement of all traffic signal devices are vested solely by the **STATE** within the **PROJECT** limits.

The associated costs for such traffic signal utility expenses are the sole responsibility of the **CITY** within the **PROJECT** limits. No alteration or modification of the operation of traffic signal devices will be made without prior consent of the **STATE**. The ownership, maintenance responsibilities, and replacement of route marker signs and guide signs erected as a result of the **PROJECT** are vested solely in the **STATE**. Ownership, maintenance responsibilities, and the replacement cost of all other traffic control devices/signage are the sole responsibility of the **CITY**.

8. RIGHT OF WAY

The **STATE** agrees to acquire at **STATE** expense the right of way necessary to construct improvements as set forth in the contract documents of Contract T201112201 SR1 Northeast Front Street Grade Separated Intersection.

Also the **CITY** agrees, by signature of this agreement, to allow the **STATE** the Right to Trespass on **CITY** maintained streets in order to construct improvements as set forth in the contract

documents for Contract T201112201 SR1 Northeast Front Street Grade Separated Intersection.

9. DAMAGE CLAIMS

The **STATE** agrees to include in the specifications for construction of the **PROJECT** the requirement that the **STATE's** contractor shall indemnify and save harmless the **CITY,** in addition to the **STATE,** from all suits, actions, or claims pursuant to the State of Delaware, Department of Transportation, Standard Specifications dated August 2001, as amended, which are hereby incorporated herein.

The **CITY** agrees to indemnify and save harmless the **STATE** consistent with the aforesaid Standard Specifications, which are expressly incorporated and made part hereof, or to include in its specifications for any work within the **PROJECT** area the same requirement for indemnifying and saving harmless the **STATE.** In addition, the **CITY** agrees to protect and save harmless the **STATE** from any claims or liability arising from questions of title, privilege or authority to use the present, or proposed rights of way for the **PROJECT** to the exclusion of rights of way specifically acquired by the **STATE** from the owners of land other than the **CITY.**

10. CHANGE IN AGREEMENT

The **STATE** and **CITY** agree that this Agreement is the entire and complete agreement between the parties and that no alterations, modifications, or amendments to this Agreement shall be made or deemed valid unless in writing and signed by both parties.

11. MANNER OF EXECUTION

This Agreement may be executed in counterparts, each of which shall be an original, and such counterparts shall be construed together as one instrument. Facsimile or pdf signatures shall be deemed original signatures.

12. REPRESENTATIVE CAPACITY

Each person executing this Agreement in a representative capacity represents and warrants that he or she is empowered to do so.

13. BACKGROUND

The background of this Agreement set forth above forms an integral part of this AGREEMENT and is hereby incorporated as if fully set forth herein.

14. SEVERABILITY

If any one or more of the provisions contained in this Agreement shall for any reason be held to be invalid, illegal or unenforceable in any respect, such invalidity, illegality, or unenforceability shall not affect any other provision hereof, and this Agreement shall be construed as if such invalid, illegal or unenforceable provision had never been contained herein.

IN WITNESS WHEREOF, the parties hereto have duly executed this AGREEMENT, in triplicate, under their respective seals, the day and year first above written.

STATE OF DELAWARE,
DEPARTMENT OF TRANSPORTATION

Attest: _____
Shanté Hastings
Acting Director, Finance

By: _____
Robert Cunningham
Chief of Right-of-Way

Date: 12/2/16

CITY OF MILFORD

Attest: _____

By: _____
Bryan W. Shupe
Mayor

Date: 11/14/2016

APPROVAL AS TO FORM:

_____
Ann C. Cordo
Deputy Attorney General

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