City Of Dover
Bicycle Plan

#1 Goal - Implement The Senator Bikeway
Pages 35 - 51

March 2015

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Introduction

The *City of Dover Bicycle Plan* is the product of a planning process that was initiated by public interest and support. The City of Dover, Delaware has had a long interest in promoting safe and convenient transportation alternatives such as walking and biking. In 1997, the City developed its first *Bicycle and Pedestrian Transportation Plan*, which was incorporated into the City's Comprehensive Plan. Through extensive public involvement, this initial plan provided an assessment of existing conditions for biking and walking in the City, as well as developed specific recommendations, an implementation strategy, and potential funding sources.

Since the adoption of the first plan, there have been numerous changes in the way that biking is viewed as a mode of transportation. Biking has taken on a new level of importance at the Federal, State and local levels, as transportation agencies have realized the effectiveness of this mode as an alternative to the motor vehicle. In addition to the transportation benefits, biking provides measurable health, quality of life, environmental, and economic benefits to the local community. The graphic on page 3 describes these benefits in more detail.

The benefits of biking have been recognized by the U.S. Department of Transportation through the creation of funding sources dedicated to transportation alternatives (such as the original Transportation Enhancement Program, now known as the Transportation Alternatives Program). In addition, the Delaware Department of Transportation (DelDOT) has long recognized the importance of biking as a viable transportation mode, and has established a full-time Bicycle Coordinator position to ensure that biking needs are incorporated into DelDOT projects throughout the state.

In the current *City of Dover 2008 Comprehensive Plan*, bicycling is described in the Transportation chapter. Existing conditions for bicyclists are noted in the *Comprehensive Plan*. The report indicated that a large majority of public respondents believed there are an insufficient number of sidewalks within the City, and a higher number felt that more bike paths should be built.

In addition, the *Comprehensive Plan* established specific recommendations for developing and expanding alternate modes of transportation. These recommendations are listed below:

- Update and implement the Bicycle and Pedestrian Transportation Plan
- Review the bicycle and pedestrian transportation network to identify gaps and important segments needed to provide a continuous network
- Develop an implementation plan to complete this network
- Amend the *Zoning Ordinance* to require bicycle parking for new non-residential development and multi-family development

The *Comprehensive Plan* also establishes "support for pedestrian, bikeway, and public transit facilities in subdivisions and site plan applications."

Finally, the *Comprehensive Plan* notes that "the City of Dover is committed to working with the Dover/Kent County Metropolitan Planning Organization (MPO) to reduce the air quality impact of auto emissions through sound land use planning, enhancing the bicycle and pedestrian network in Dover, and encouraging increased use of public transit."

Specific recommendations relating to clean air goals identified in the *Comprehensive Plan* are noted below:

- Update and implement the Bicycle and Pedestrian Transportation Plan of 1997
- Encourage and support the installation of multi-modal paths alongside street frontages where appropriate
- Improve and widen sidewalks for bicycle and pedestrian use
- Encourage DelDOT to increase bicycle paths along major routes within the City

Goals and Objectives

The City of Dover Bicycle and Pedestrian Subcommittee has established the following goals and objectives as part of the update to the Bicycle Plan:

Vision - "Dover is a place where people of all ages and abilities bicycle conveniently, comfortably and safely for all purposes."

Goal 1 - Improve the bicycle transportation network

- Consider needs of all user groups.
- Identify key gaps in the network, and areas of safety concern.
- Develop project ideas for gaps where solutions are not immediately obvious. Seek the advice of creative and experienced professionals.
- Prioritize project requests and advocate for funding.
- Track projects from planning through completion.
- Seek especially to produce low-traffic, low-stress routes that are continuous.
- **# 1 goal - Create the Senator Bikeway (see pages 35 - 51)**

Goal 2 - Coordinate regular bicycle-route maintenance (surface cleaning & repair)

- Identify maintenance responsibility for all bike routes
- Encourage responsible parties to schedule regular maintenance
- Develop communication system for reporting maintenance needs

Goal 3 - Incorporate bicycle elements into land-use and development planning

- Review local land-use and development ordinances, and recommend the incorporation of bicycle accommodations.
- Seek requirement of “back exits” in single-entrance developments.

Goal 4 - Encourage adequate and secure bicycle parking

- Identify locations where bicycle parking is especially needed.
- Review bicycle parking requirements in zoning codes and recommend revisions as needed.
- Develop programs to encourage installation of bike parking facilities where zoning requirements are not effective. (e.g. bike rack contest)
- Require larger proposed businesses to incorporate showers into their facility design

Goal 5 - Utilize educational programs for encouraging bicycle use and safety

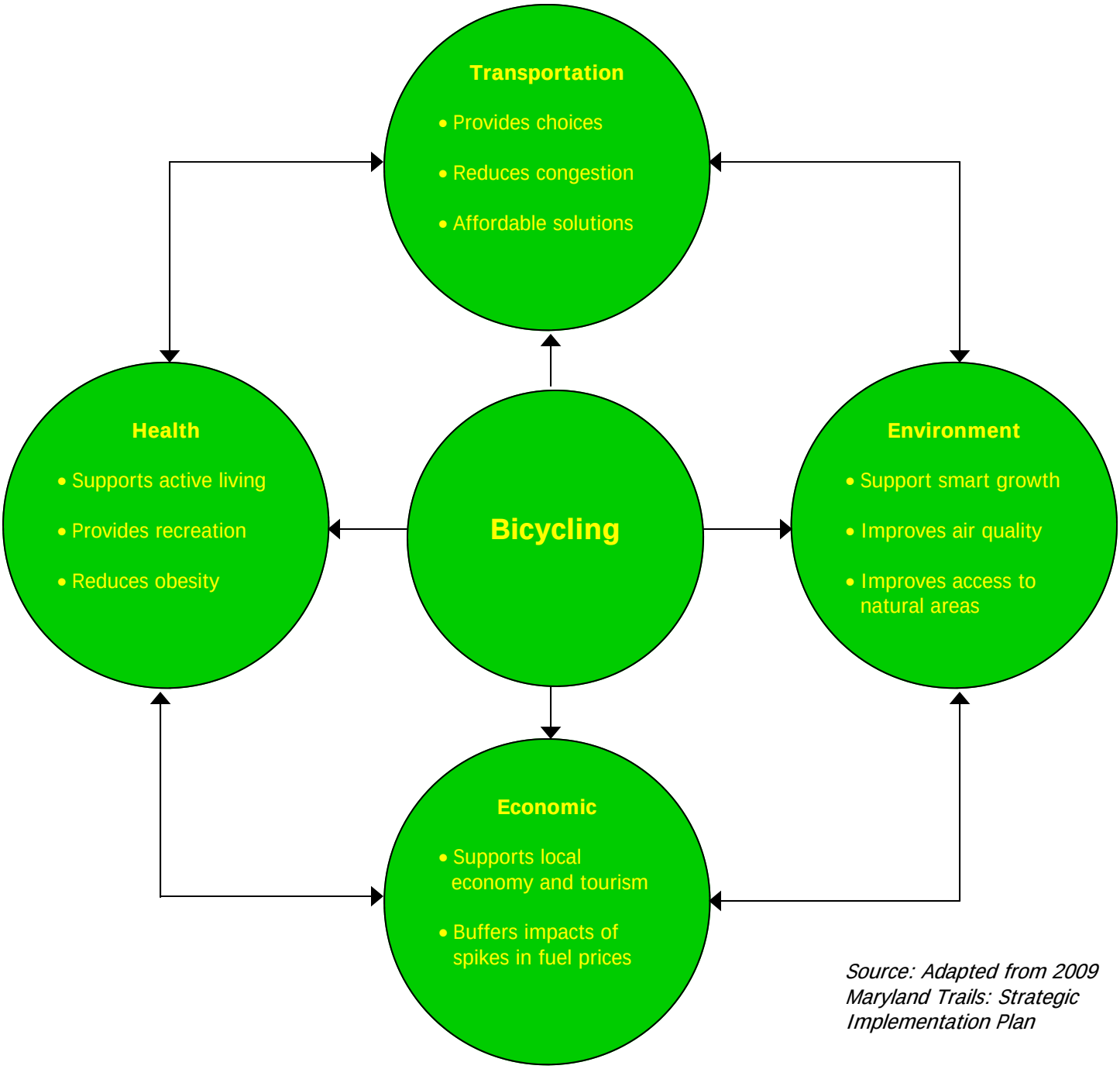
- Bike-to-Work Day
- Bike-to-School Day
- Traffic Skills 101 (League of American Bicyclists)
- Develop signage and maps for low-traffic, low-stress bicycle routes.

Goal 6 - Monitor use of bicycle facilities

- Select bicycle survey tools for counting cyclists.
- Schedule regular and repeating counts to detect changes.
- Survey bicyclists of all ages and abilities for unmet facility needs.
- Regularly report trends in commute, utility, recreational, and school cycling.

Benefits of Bicycling

As noted below, bicycling provides a multitude of low-cost benefits to a community.



Source: Adapted from 2009 Maryland Trails: Strategic Implementation Plan

Bicycling Facts:

The cost of operating a car for a year is approximately $10,300…the cost of operating a bicycle for a year is $308.

A couple who lives in a walkable/bikeable community saves over $850 per year in fuel savings.

Short car trips (which could be made by bike) are more polluting per mile than longer car trips.

The majority of women (64%) get less than 10 minutes of vigorous exercise per week, contributing to health problems.

Source: Pedestrian and Bicycle Information Center

Accomplishments

Since 1997, the City of Dover has made great strides in creating a more bicycle-friendly city. Listed below are examples of some of the accomplishments that have occurred within the City since the previous Plan adoption:

- Completion of the Capital City Trail (2014)
- Establishing a Bicycle and Pedestrian Subcommittee (2013)
- Adding designated bicycle lanes to portions of South Governors Avenue and portions of U.S. 13 (2012)
- Construction of new trail systems within Silver Lake Park and Schutte Park
- Construction of the Isaac Branch Trail, part of the St. Jones River Greenway (2007)
- Requiring developers to incorporate bicycle facilities into their projects
- Holding community events such as the Amish Country Bike Tour and Bike To Work Day

Amish Country Bike Tour

- Incorporating bicycle lanes into DelDOT improvement projects along major routes such as College Road, Walker Road, and East Loockerman Street

In July 2013, the City's Bicycle and Pedestrian Subcommittee submitted an application to the League of American Bicyclists for designation as a "Bicycle Friendly Community". The League awards communities who apply for this designation after a detailed evaluation, and based on criteria that include engineering, education, encouragement, enforcement, evaluation & planning. Using these criteria, the League further ranks an awarded community as to its level of bike-friendliness with a Bronze, Silver, Gold or Platinum ranking. Standards are high, and across the U.S., less than 300 cities have achieved Bicycle Friendly Community awards, with only 4 of them achieving Platinum status. In 2013 Dover's application was thoroughly evaluated and declined by the League, who gave Dover an "Honorable Mention" for coming close to the required standards. The League further provided the city with numerous recommendations for improving conditions for bicycling, encouraging the City to reapply as soon as conditions improve.

Silver Lake Park

One of the key recommendations from the League was to "update the Bicycle Plan in close collaboration with the community to ensure public involvement, information, and ownership." Related to the Bike Plan update, other key points include:

- Focus on developing a seamless cycling network, creating short distances between residential areas and schools, recreational areas, commercial areas, etc.
- Increase usage through encouragement, education, and enforcement programs
- Set ambitious but attainable targets
- Ensure that there is dedicated funding
- Primary goal: encourage residents to bike more often for recreation and transportation

Existing Conditions - Bicycle Facilities

As part of the update to the Bicycle Plan, an inventory of existing bicycle facilities within City limits was conducted. The inventory evaluated the following components:

- Off-road trails and pathways
- On-road designated bicycle lanes
- Bicycle parking (racks)
- Sharrow locations

Bike Rack at Dover Transit Center

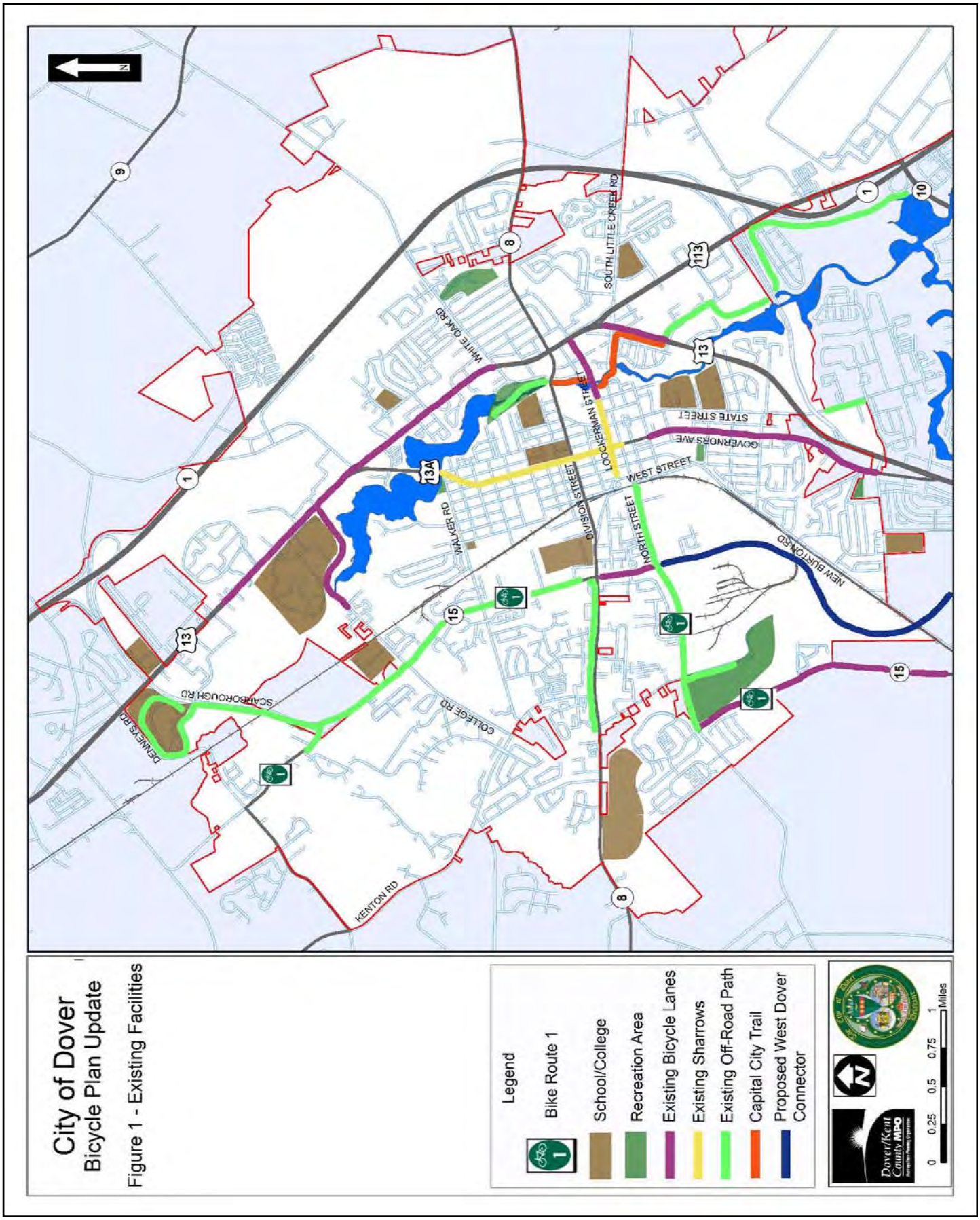
Figure 1 displays the results of the inventory, with the exception of the bike rack locations. Listed below is a summary of the key findings from the bicycle inventory:

- There are approximately 9.0 centerline miles of off-road trails and pathways within the City.
- There are approximately 9.0 miles of designated on-road bicycle lanes within the City.
- There are approximately 600 bicycle parking spaces within the City. With the exception of 8 bicycle locker storage units located on the DelDOT campus, all of the bicycle parking spaces consist of bicycle racks.
- There are approximately 1.9 roadway miles with sharrows. In 2013, DelDOT installed sharrows along portions of Loockerman Street, Division Street, and North Governors Avenue as part of a pavement rehabilitation project.

East Loockerman Street

South Governors Avenue

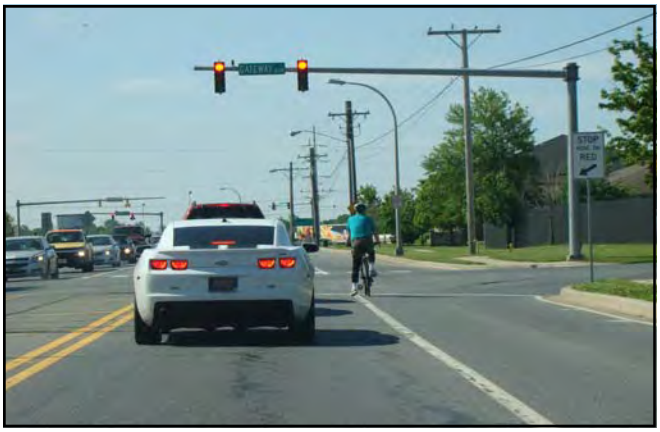
Existing Conditions - Bicycle Facilities



Existing Conditions - Bicycle Facilities

Despite the accomplishments that have been made in recent years to enhance the bicycling network and improve connectivity in the City, there are still numerous areas that are difficult for bicycle travel. These areas are marked by high vehicular speeds, high traffic volumes, lack of shoulders, lack of designated bike lanes though intersections, and the presence of on-street parking. Generally, areas that are difficult for bicycle travel are located along the more densely developed areas of Dover, particularly near the downtown where the predominant function of the roadway system is geared towards the motor vehicle. A railroad line, a waterway, and a divided highway all cut north-to-south through Dover, limiting east-west travel to only three or four routes. Autos and trucks are all concentrated onto these few, heavily traveled roads, leaving little or no room for bicycle travel.

Through the development of this Bicycle Plan update, with input from the City's Bicycle and Pedestrian Subcommittee and the public, the areas listed in the table on the following page have been identified as impediments to safe bicycle travel in the City. In addition, these areas generally lack safe, attractive alternative routes. For a cyclist, these roads often offer the only means of traveling to and from a destination, despite the barriers that exist along these routes. The primary areas that lack adequate bicycle facilities are shown on Figure 2.



Saulsbury Road

Route 8

North State Street

Division Street

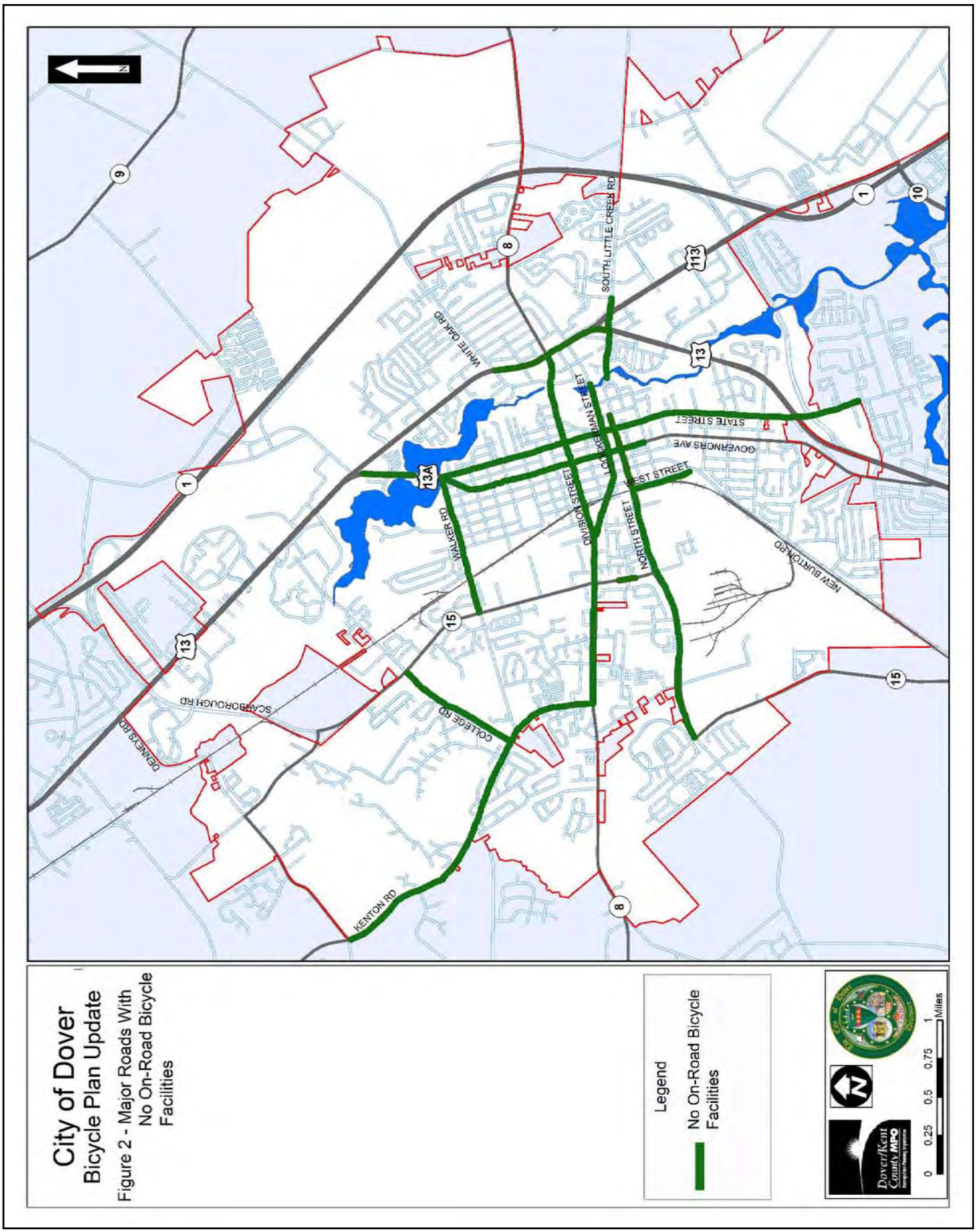
- Route 8/Division Street between U.S. 13 and Saulsbury Road is designated as a Regional Bicycle Route, yet lacks bike lanes or striped shoulders or a designated off-road path.

- North State Street provides the only north-south access over Silver Lake from downtown Dover to U.S. 13. The high - traffic road lacks shoulders and is a major impediment to bicycle travel to north Dover.

Existing Conditions - Bicycle Facilities

Roadway Segments With Conditions That Discourage Bicycle Use			
Rank	**Road**	**Limits**	**Issues**
1A	Route 8/Forrest Avenue	Weston Drive to Saulsbury Road	High traffic volumes (18,000/day) 4 - 6 lane highway, No shoulders
1B	Route 8/Division Street	U.S. 13 to Weston Drive	High traffic volumes (13,000/day) On-street parking No bike lanes
2	North State Street	Walker Road to U.S. 13	High traffic volumes (14,000/day) 4 lane highway, No shoulders
3	College Road	McKee Road to Kenton Road	High traffic volumes (11,000/day) Only available east-west route No shoulders
4	West Street	North Street to Queen Street	High traffic volumes (9,000/day) No bike lanes or shoulders
5	Walker Road	State Street to Saulsbury Road	High traffic volumes (11,000/day) No bike lanes, minimal shoulders
6	Saulsbury Road	North Street to Route 8	High traffic volumes (17,000/day) Bike lane not continuous
7	MLK Boulevard/ South Little Creek Road	Babb Drive to Legislative Hall	High traffic volumes (10,000/day) No bike lanes or shoulders
8	U.S. 13	Puncheon Run to Scarborough Road	4 - 6 lane, high-speed highway Very high traffic volumes (40,000 - 60,000/day)
9	Mifflin Road	Route 8 to Hazlettville Road	High traffic volumes (15,000/day) Mini-roundabout
10	Kenton Road	Denneys Road to Route 8	Minimal shoulders High speeds
11	North Street	Federal Street to Commerce Way	No continuous bike lanes/shoulders

Existing Conditions - Bicycle Facilities



Existing Conditions - Land Use

The City of Dover has a diverse mixture of land uses within its 22.7 square mile area. The City, with an estimated 2012 population of 37,090, has the second largest municipal population in Delaware. Dover is also the largest municipality in the state in terms of land area.

Based on data provided by the City of Dover Planning Department, listed below is a breakdown of the land uses within the City limits, as of 2013. Existing land uses are also shown on Figure 3.

Land Use Category	Amount
Agriculture/Open Space	38.5%
Residential	19.1%
Dover Air Force Base	18.0%
Other	17.4%
Institutional	8.7%
Commercial	8.3%

Residential

As noted in the table, the predominant land use within City limits is agricultural and open space. Residential land use is also a primary use. High density residential is located in the downtown core (roughly a square mile area), while lower density, single-family residential land use composes the majority of the land use in the surrounding suburbs.

Commercial

U.S. 13 is by far the primary commercial corridor throughout the entire City limits, as well as the Kent County region. This roadway facilitates a wide variety of traditional highway commercial uses, ranging from offices to restaurants to regional malls (Dover Mall). Other corridors with a high concentration of commercial uses include Bay Road, Route 8 (west of Saulsbury Road), and Loockerman Street in downtown Dover.

Loockerman Street

Educational

There are 4 universities and college within City limits - Delaware State University, Wilmington University, Delaware Technical and Community College, and Wesley College. In addition, there are 11 public schools in the City of Dover, 8 of which are elementary schools. All of these facilities are shown on Figure 1.

Institutional

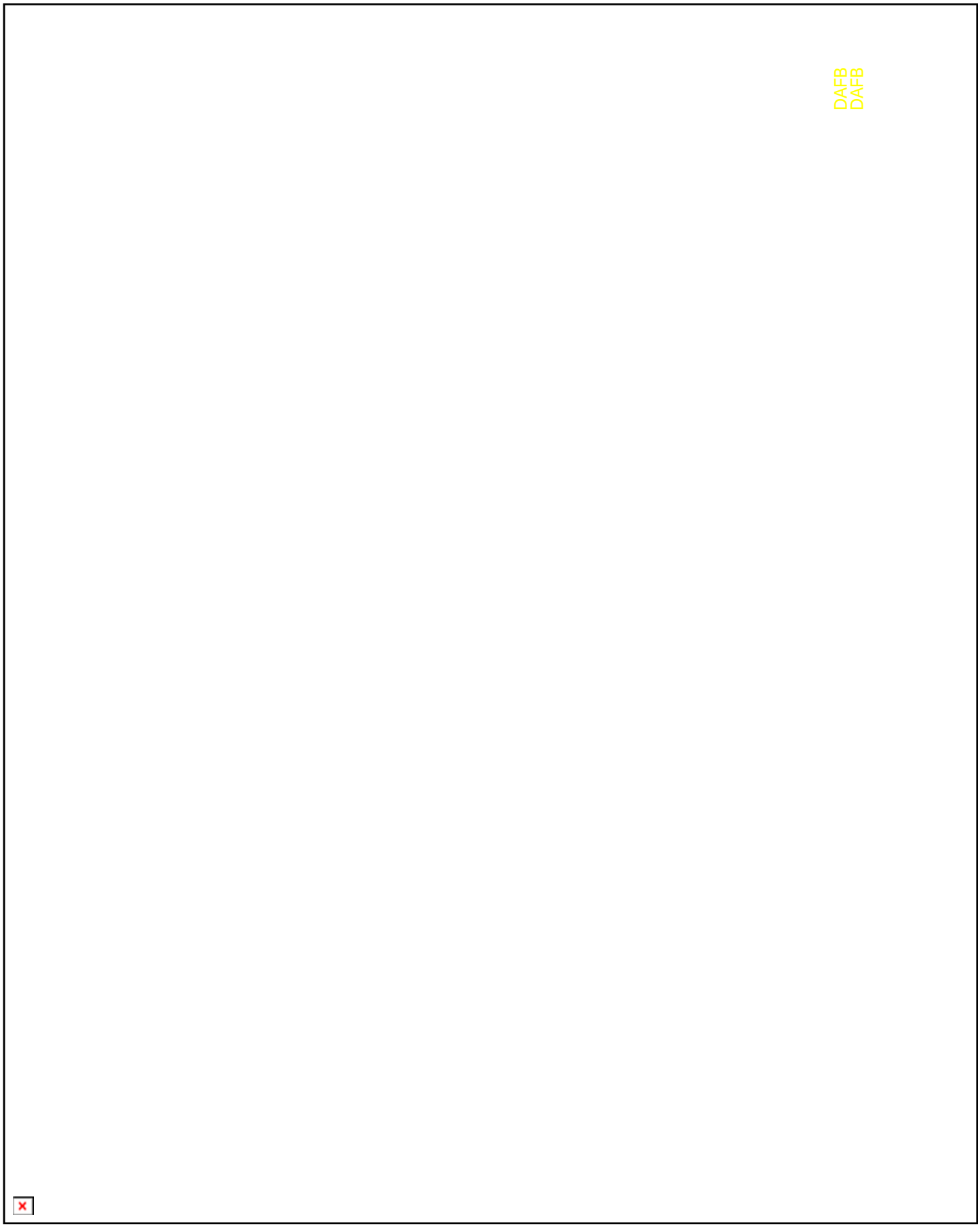
The State of Delaware owns a variety of government buildings in Dover, including Legislative Hall, the State Archives, and the Kent County Courthouse. The downtown area also houses City Hall, a new library, the regional hospital, several museums, a vibrant historic district, and the Kent County transit hub.

Open Space/Parks

There are 24 City-maintained parks in Dover. Most of these are small parks located within subdivisions or on small lots in the downtown. There are several parks that are able to provide active recreational opportunities for large numbers of residents, including Schutte Park, Silver Lake Park, and Dover Park. In addition, The Green was recently incorporated into the National Park System as a National Monument.

The Green

Existing Conditions - Land Use



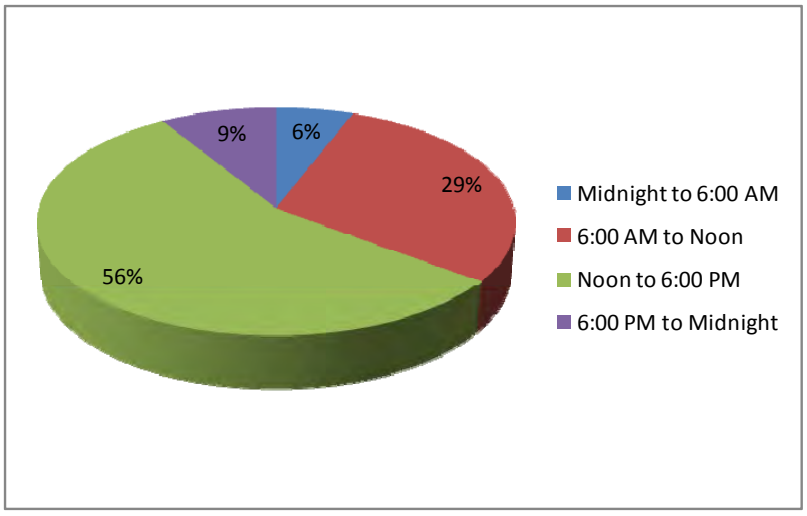
Bicycle Crash Analysis

As part of the assessment of biking conditions within the City, crash data from 2011 to 2013 was analyzed to determine the number and severity of bicycle crashes that occurred during the 3-year period. In addition, the analysis was used to determine if there were any concentrated areas of bicycle or pedestrian crashes, in an effort to identify future engineering or enforcement solutions that could potentially address the crash history.

Figure 4 shows the location of all reported bicycle crashes that occurred within City limits from 2011 to 2013, as compiled by the City of Dover Police Department. Listed below is a summary of the crash data:

- There were 34 reported bicycle crashes between 2011 and 2013.
- Personal injuries were involved in 22 crashes (65%).
- There were no fatal crashes reported during the 3 year period.
- There were no high concentrations of bicycle crash areas identified throughout the City. However, nearly 1/3 of the crashes (10) occurred at various locations along U.S. 13.
- As noted in the chart below, the majority of the bicycle crashes (19) occurred between noon and 6:00 PM.

Year	Bicycle Crashes (2011 - 2013)
2011	7
2012	14
2013	13
Total	**34**

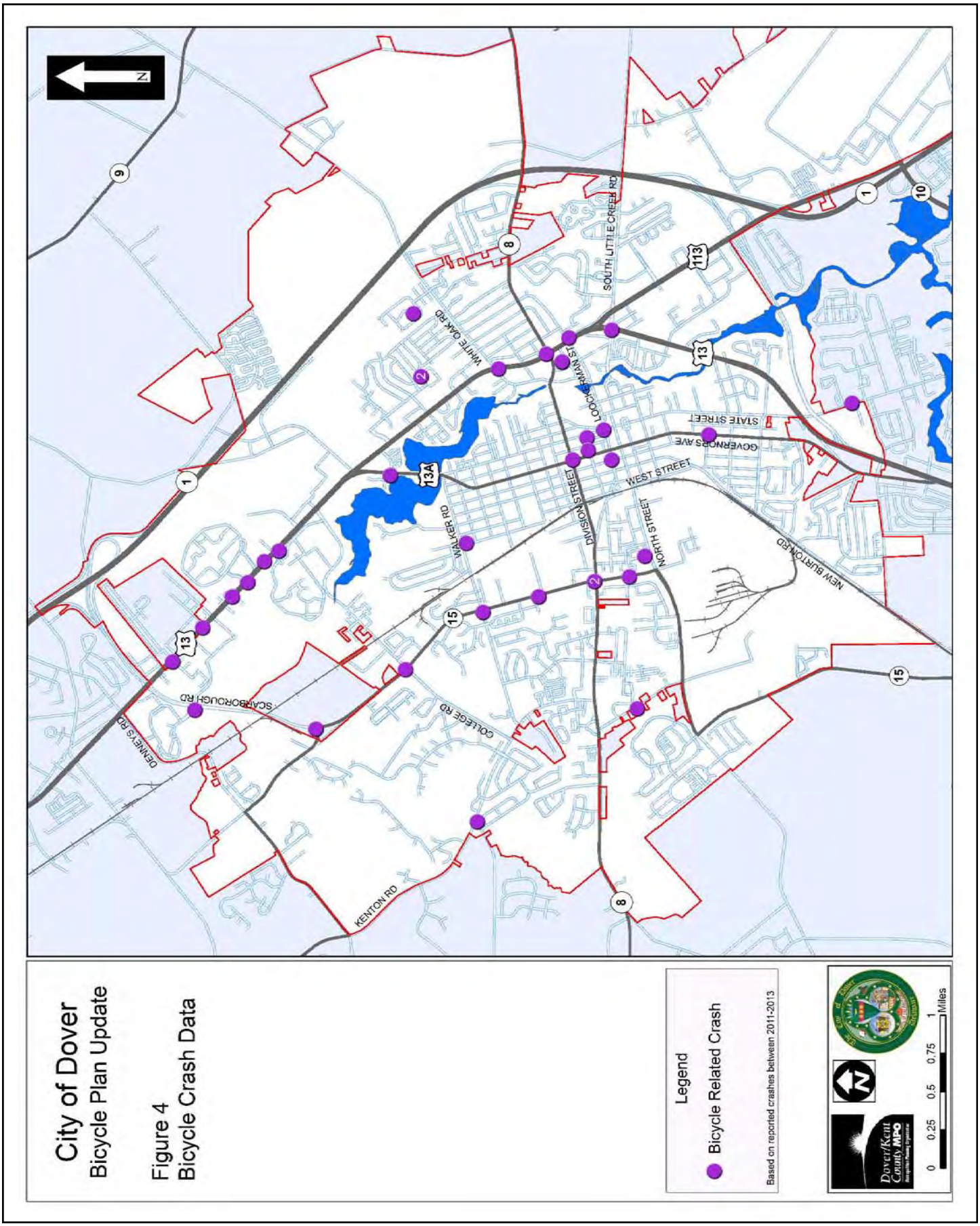


Bicycle Crashes - Time of Day

In the fall of 2012, as part of a DelDOT pavement rehabilitation project, bicycle lanes were installed on U.S. 13 from the former Sheraton Hotel (now Delaware State University Commons) to Kings Highway/White Oak Road (2.6 miles) and from Martin Luther King Boulevard to River Road/Public Safety Boulevard (0.3 miles). There were 9 crashes that involved a bicycle crash within these limits. The results are shown in the chart below.

Time	U.S. 13 Crashes (2011 - 2013)
Before Bike Lane Project	3
During Bike Lane Project	1
After Bike Lane Project	5

U.S. 13 Bike Lane


City of Dover
Bicycle Plan Update
Figure 4
Bicycle Crash Data
Legend
Bicycle Related Crash
Based on reported crashes between 2011-2013
Miles
0
0.25
0.5
0.75
1
N
WHITE OAK RD
SOUTH LITTLE CREEK RD
LOCKERMAN ST
STATE STREET
GOVERNORS AVE
WEST STREET
DIVISION STREET
NORTH STREET
NEW BURTON RD
WALKER RD
SCARBOROUGH RD
DENNEYS RD
COLLEGE RD
KENTON RD

City of Dover Bicycle and Pedestrian Transportation Plan (1997)

As noted, the City of Dover's previous Bicycle and Pedestrian Plan was adopted in 1997. The 1997 Plan details engineering, education, encouragement, and enforcement goals as they relate to biking and walking. The Plan presents a detailed assessment of specific bicycling needs throughout the City of Dover, based on a rating system of roadway conditions known as Bicycle Level of Service. In addition, the Plan details potential pedestrian needs based upon a Pedestrian Index evaluation. The Plan also identifies short-term and long-term actions designed to make the City of Dover more bicycle and pedestrian friendly. The top ten recommended projects are listed below, with an accompanying status.

Project	Status
1. Schutte Park Off-Road Connection	Not implemented
2. New Burton Road Pedestrian Crossing	Not implemented
3. Path between Del Tech and Del State	To be accommodated by Crawford Carroll Road Extension (2019)
4. Sidewalk Inventory/Spot Improvements	To be completed as part of current Bicycle and Pedestrian Plan update
5. Establish Gateway Treatments	Not implemented
6. Designate Commercial Corridors	Not implemented
7. Walker Road Bike/Ped Improvements	Partially Implemented
8. Improve Delaware Bicycle Route 1	Not implemented
9. Establish Dover Area Greenways	Not implemented
10. Mifflin Road/Hazlettville Road	Partially implemented

Bike Route 1

Walker Road

City of Dover Code of Ordinances

The City of Dover Code of Ordinances has several references to bicycle amenities that are required as part of large-scale development projects. As noted in the Code, "bicycle parking shall be provided for parking spaces at a rate of one bicycle parking space for every 20 vehicular parking spaces."

In an effort to enhance and promote bicycle-friendly communities, the City has two additional categories that provide developers with flexibility and incentives to address biking needs through land use design. The categories are the Corridor Overlay Zone and the Traditional Neighborhood Design (TND), a zoning designation.

The City of Dover has established a Corridor Overlay Zone along two roads in the northwestern part of the City:

- Route 8 (Railroad tracks to western City limits)
- McKee Road/Saulsbury Road (Denneys Road to North Street)

McKee Road Path

The Corridor Overlay Zone has several primary purposes:

- Promote superior urban design
- Foster connections among adjacent properties
- Preserve the function and efficiency of the roadway
- Achieve a balanced streetscape which is friendly to the pedestrian and motorist alike

By Code reference, superior urban design includes "transportation amenities for bicycles, pedestrians, and transit that exceed those required by the zoning ordinance."

As stated in the Code, "the intent of the TND zone is to create a walkable and pedestrian-friendly, economically viable professional, commercial and mixed use residential neighborhood for people of different ages and incomes that draw from the best architectural and community design features of Delaware and the Delmarva Peninsula from its colonial past to the mid 20th century. Its intent is also to preserve and enhance the natural landscape, celebrate the history of the site, and buffer the development from adverse external influences. The provisions of this section are intended to encourage greater integration of land-uses and diversity of lot sizes than is permitted under other provisions of the Land Subdivision Regulations and Zoning Ordinance of the City of Dover. Lastly, it may provide locations for other uses that will aid in the fulfillment of the City of Dover's Comprehensive Plan and allow people to live near their work."

"The TND shall have a pedestrian walkway and/or bicycle system through the open spaces that connect to the street system or connects a series of open spaces. Bicycle parking and locking facilities should be provided in public spaces..."

One of the first communities being developed under the TND zoning category is the Eden Hill Farm, a 265-acre mixed use development along North Street. The community, which is currently under construction, provides a mixture of commercial, residential, institutional, and open space located in close proximity to each other. The land use, combined with wide sidewalks, interconnections, and an internal trail network, creates a true bicycle-friendly new community in the heart of Dover.

First State Trails and Pathways Initiative

The First State Trails and Pathways Initiative is a program managed by the State of Delaware whose primary goal is to "create a world-class statewide network of pathways and trails for Delaware's citizens and visitors, to promote biking, hiking, walking, and active living." The Initiative is managed in partnership by DelDOT and the Department of Natural Resources and Environmental Control (DNREC).

The program was initiated in 2012 by Governor Jack Markell, in an effort to address the following goals:

- Establish Delaware as a Top Ten Bicycle Friendly State (as designated by the League of American Bicyclists).
- Support the creation of jobs resulting from investments in biking and walking
- Create/expand community connections
- Create healthy and active communities
- Provide safe, affordable transportation and recreational choices
- Incorporate environmentally-friendly practices into trail projects

In Fiscal Years 2012 and 2013, the State of Delaware allocated $20 million towards this program. Since the program was initiated, numerous trails and pathways projects have been planned, designed, and constructed throughout the state. In addition, Delaware has improved its ranking as a Bicycle Friendly State, jumping from a national ranking of #10 in 2012 to #4 in 2014. Delaware is designated by the League of American Bicyclists as the most Bicycle Friendly State east of the Mississippi River.

The City of Dover has been a direct beneficiary of the First State Trails and Pathways Program, as evidenced by the completion of the Capital City Trail in 2014. As noted on the map below, the Capital City Trail is a shared-use pathway that provides a direct connection from Silver Lake Park to the Isaac Branch Trail (a 2.6-mile greenway that connects U.S. 13 and Route 10). The Capital City Trail was completed through a combination of widening existing sidewalks and installing new pathways to create an important pedestrian and biking facility in the heart of downtown Dover. The Capital City Trail also provides an enhanced gateway into the Legislative Hall complex, as well as improves pedestrian and bicycle safety along East Loockerman Street and MLK Boulevard.

Capital City Trail

DelDOT Complete Streets Policy

Within the City of Dover, the Department of Transportation is responsible for the maintenance of all State roads within City limits. These include arterial routes such as U.S. 13, U.S. 13A (Governors Avenue), Delaware Route 8, Delaware Route 15, and State Street. Collector routes such as White Oak Road, New Burton Road, and Walker Road are also maintained by DelDOT. The vast majority of the roads in the City of Dover are maintained by the State.

The City of Dover provides maintenance responsibilities for all City streets. Examples of City-maintained streets primarily include streets in the urban downtown core, such as Bradford Street and Kirkwood Street.

In 2010, DelDOT adopted its Complete Streets Policy. As noted in the Policy, "the term Complete Street means a roadway that accommodates all travelers, particularly public transit users, bicyclists, pedestrians, and motorists, to enable all travelers to use the roadway safely and efficiently." The purpose of the Complete Streets Policy is "to ensure that the DelDOT system modifications are routinely planned, designed, constructed, operated, and maintained in a way that enables safe and efficient access for all users. The result should be a system for all users that is comprehensive, integrated, connected, safe, and efficient allowing users to choose among different transportation modes, both motorized and non-motorized."

A primary objective of the Policy is "to define and implement changes to the project development process that will value all transportation modes during the project scoping phase and enhance currently used design practices through updates to DelDOT subdivision and design manuals, design memoranda, and policies."

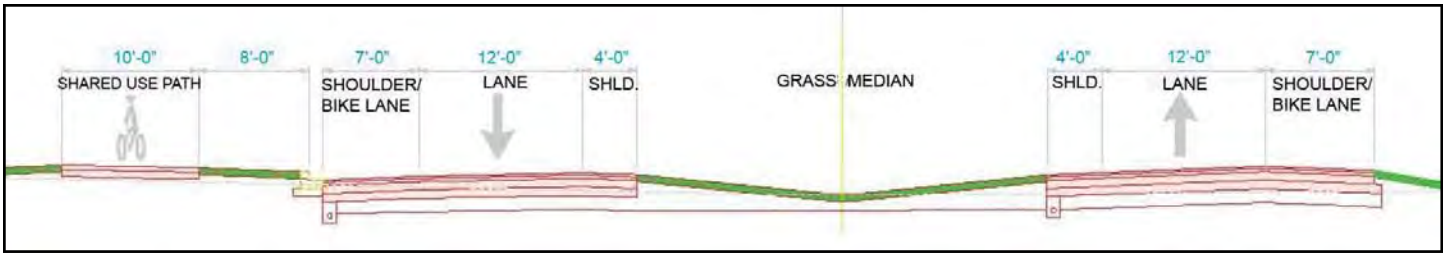
The DelDOT Complete Streets Policy indicates that "all projects in the state right-of-way that are considered road reconstruction, widens the pavement width, or allows for the inclusion of facilities for all users, shall consider all transportation modes and accommodate accordingly."

Since its adoption, DelDOT has incorporated elements of the Complete Streets Policy into several projects in Dover, including the South Governors Avenue improvement project, which added continuous 5-foot striped bicycle lanes throughout the project limits (Water Street to Webbs Lane). As part of a recent pavement rehabilitation project along U.S. 13 through Dover, DelDOT reduced the existing lane widths from 12 feet to 11 feet, in order to provide a 5-foot wide bicycle lane in accordance with the Policy.

East Loockerman Street

As part of a recent pavement rehabilitation project along East Loockerman Street, DelDOT re-striped an existing shoulder to provide a 5-foot wide bicycle lane. This improvement facilitates bicycle mobility from downtown Dover to U.S. 13.

In addition, DelDOT is including a 10-foot wide shared use path and 7-foot wide striped bike lanes into the design of the West Dover Connector, a 3.2-mile long new roadway that will provide a direct connection between Saulsbury Road and U.S. 13. This project will significantly improve bicycle access from the south part of Dover (as well as Brecknock Park in Camden) to west Dover, including Schutte Park and the existing path along Saulsbury Road.



Proposed Typical Section - West Dover Connector
(North of Charles Polk Road and South of Puncheon Run)

DelDOT Statewide Bicycle Plan

The Delaware Bicycle Facility Master Plan was adopted in October 2005. As noted in the document, "the Master Plan was developed in order to define and implement a statewide system of designated, on-road bicycle routes. The Master Plan provides specific guidance as to the location and nature of appropriate accommodations along DelDOT-maintained roadways."

There were two primary goals established in the Master Plan:

- Integrate existing bicycle routes and trails into a larger statewide bicycle network
- Establish bicycle routes between municipalities, activity centers, and recreational areas

The Master Plan developed a statewide network of on-road bikeways (known as Statewide Routes, Regional Routes, and Recreational Connector Routes) and a corresponding set of design recommendations for each type of bikeway. The bikeway designations noted in the Master Plan include:

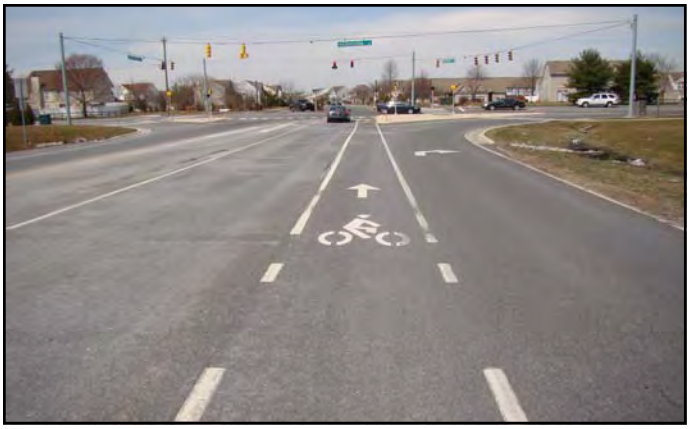
- Bike Lanes (5-foot minimum width)
- Shared Shoulders (5-foot minimum width)
- Wide Outside Travel Lane (14-foot minimum width)

In 2011, DelDOT updated the Bicycle Maps for each county, which can be found on the DelDOT web site at http://deldot.gov/information/community_programs_and_services/bike/. Examples of several bicycle route categories are shown in the photos below. It is important to note that many of the DelDOT designated "Bicycle Routes" have limited bicycle facilities, and some segments of these routes are considered challenging for bicycle users. These Bicycle Routes were chosen based on their location, not necessarily on the presence of bike facilities. The expectation was that a road so designated might, at some future time, be more likely to be provided with bicycle facilities.

Statewide Bicycle Route: provides north-south connections between New Castle, Kent, and Sussex Counties (Bike Route 1 runs on the west side of Dover).

Regional Bicycle Route: provides direct connections between municipalities and activity centers.

Connector Bicycle Route: provides connections between local activity/recreational centers to the larger bicycle network.



Statewide Bicycle Route - Wyoming Mill Road

Regional Bicycle Route - East Division Street

DelDOT Safe Routes to School Program

The Safe Routes to School (SRTS) Program is a DelDOT program whose primary purpose is to facilitate and encourage children to walk and bike to school safely. The State program was established in 2002, and the corresponding Federal SRTS program was initiated in 2005. Any public, private or charter schools are eligible to participate in the program, provided the projects benefit elementary and middle school age children. The SRTS program is divided into 5 components (the 5E's): Engineering, Education, Enforcement, Encouragement, and Evaluation. DelDOT works with each school in the program to develop a Safe Routes to School Plan that incorporates each of these five elements into a comprehensive program. Examples of eligible infrastructure and non-infrastructure costs are listed below.

Infrastructure	Non-infrastructure
Sidewalk improvements	Traffic education and enforcement
Traffic calming	Student sessions on safety
Pedestrian signals	Parent education materials
Bicycle parking	Evaluation and data gathering

Four SRTS projects have been completed in the City of Dover, which consisted of improvements along routes to two elementary schools (Booker T. Washington and Towne Point) and two middle schools (William Henry and Central Middle) in the Capital School District. These improvements were completed in 2010 and 2011. The Capital School District was one of the first school districts in the state to take advantage of the Safe Routes to School funding.

Central Middle School

William Henry Middle School

In addition, one SRTS project is currently in design, a project to enhance bicycle and pedestrian access to W. Reilly Brown Elementary School on Webbs Lane. The project, which consists of new bulb outs, signals, and sidewalk upgrades, is scheduled for construction in the summer of 2015. There are currently no other SRTS projects proposed in the City of Dover.

Webbs Lane at W. Reilly Brown School

MPO 2030 Regional Bicycle Plan

In the fall of 2011, the Dover/Kent County MPO completed the 2030 Regional Bicycle Plan for Kent County, Delaware. The Regional Bicycle Plan was completed after nearly two years of effort involving DelDOT, the Department of Natural Resources and Environmental Control, Kent County Planning, the City of Dover and other municipalities, and bicycle advocates throughout the county.

The MPO Regional Bicycle Plan identifies the following six objectives:

- Create an effective and safe bicycle transportation system
- Increase the number of local trips made by bicycle
- Increase the number of students biking to school
- Increase the number of people biking to work
- Increase recreational and fitness riding
- Create an environment where all bicyclists and motorists follow the rules of the road

Performance measures (such as increasing the amount of multi-use paths to 40 miles by 2030) are also included for each of the Plan's objectives.

As noted in the document, "the Regional Bicycle Plan outlines four new policies...that will serve as guidance to cities and towns and/or for implementation by DelDOT on projects undertaken in the region." These policies are listed below.

Policy 1: Selecting Appropriate On Road Bicycle Facilities

Policy 2: Bicycle Facilities at Intersections

Policy 3: Bicycle Parking

Policy 4: Education and Enforcement

In terms of physical improvements, the Regional Bicycle Plan recommended 18 on-road improvement locations and 7 off-road improvement locations throughout Kent County. On-road improvements consist of measures such as shoulder widening, lane width reallocation, signing, striping, and other pavement markings. Off-road recommendations include new shared-use trails and pathways.

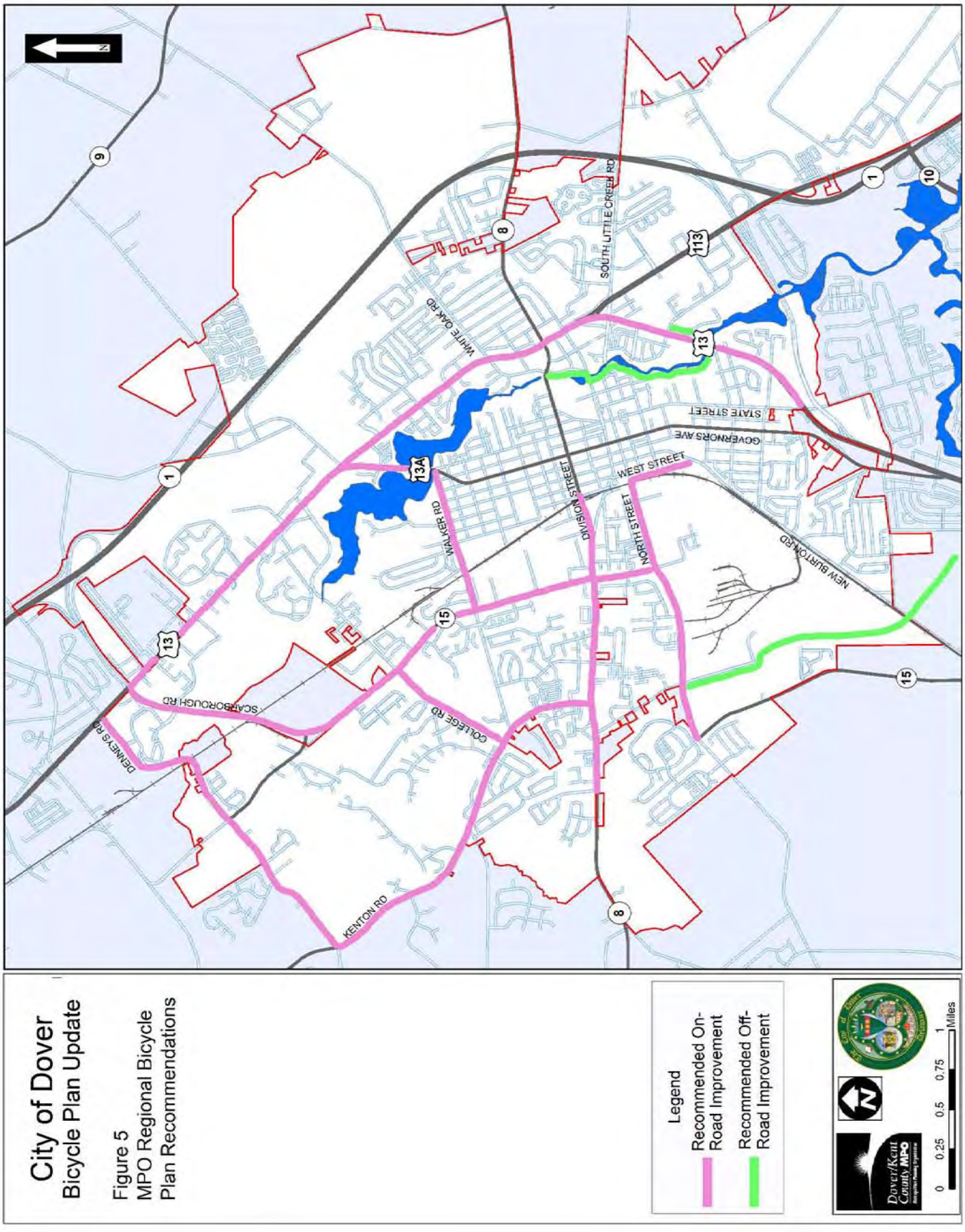
As Kent County's largest urban area, the City of Dover is a primary focus of the Regional Bicycle Plan's recommendations. Ten of the eighteen recommended on-road improvements are located within Dover, while 4 of the 7 recommended off-road trails are also located within or adjacent to City limits.

Since its adoption in the fall of 2011, the Regional Bicycle Plan has been used by DelDOT to implement several of the top priority projects recommended in the Plan, including all 3 phases of the Capital City Trail. In addition, conceptual planning has been initiated on West Street, another highly ranked project.

Figure 5 shows the on-road and off-road bicycle improvement recommendations that are located within the city limits of Dover, as noted in the MPO Regional Bicycle Plan.

Existing Plans, Policies, and Programs

MPO Regional Bicycle Plan Recommendations (On-Road)				
Rank	**Project**	**Limits**	**Description**	**Status**
1	West Street	North Street to Queen Street	Widen road to provide bike lanes	Conceptual design
2	U.S. 13	Scarborough Road to Puncheon Run	Add striped bicycle lanes	Partially complete
3	Denneys Road	U.S. 13 to Kenton Road	Widen road to provide bike lanes	N/A
4	North State Street	U.S. 13 to Walker Road	Reallocate lane width to add bike lanes	N/A
5	Route 8	Railroad to Heatherfield Way	Reallocate lane width to add bike lanes	N/A
6	Walker Road	State Street to Saulsbury Road	Reallocate lane width to add bike lanes	N/A
7	North Street	Wyoming Mill Road to West Street	Add a westbound bike lane	N/A
8	College Road	Saulsbury Road to Kenton Road	Widen road to provide bike lanes	N/A
11	Saulsbury Rd	U.S. 13 to North Street	Provide continuous bike lanes	N/A
13	Kenton Road	Route 8 to Denneys Road	Widen road to provide bike lanes	Design (FY 2016)
MPO Regional Bicycle Plan Recommendations (Off-Road)				
1	Dover Greenway	Silver Lake to St. Jones River	Construct trail along the St. Jones River	Capital City Trail
2	Camden to Dover Trail	Schutte Park to Brecknock Park	Construct new trail to connect the parks	N/A
3	DAFB Trail	Route 10 to Route 9	Construct new trail along DAFB	N/A
4	Route 10	U.S. 13 to Isaac Branch Trail	Construct new trail	Planning study


City of Dover
Bicycle Plan Update
Figure 5
MPO Regional Bicycle
Plan Recommendations
Legend
Recommended On-Road Improvement
Recommended Off-Road Improvement
Dover/Kent County MPO
0 0.25 0.5 0.75 1 Miles
N
WHITE OAK RD
SOUTH LITTLE CREEK RD
STATE STREET
GOVERNORS AVE
WEST STREET
DIVISION STREET
NORTH STREET
WALKER RD
NEW BURTON RD
SCARBOROUGH RD
DENNEYS RD
COLLEGE RD
KENTON RD
1
8
9
10
13
13A
15
113

Advocacy and Interest Groups

In Delaware, there are two primary organizations that are advocates for bicycling interests throughout the state, the Delaware Bicycle Council and Bike Delaware. The Delaware Bicycle Council consists of 15 members who represent various government agencies (public safety, transportation, education, recreation, public health), as well as citizen representatives from each county. The primary purpose of the Delaware Bicycle Council is to "consider, review, and work on matters pertaining to bicycling, bicycle safety, and bicycle education, and to make recommendations to various state agencies." The Delaware Bicycle Council serves as a resource in policy-making and legislative issues, in order to ultimately increase facilities and opportunities for bicyclists in Delaware.

Bike Delaware is an independent, non-government advocacy organization that is supported solely by its membership. Its mission "is to make bicycling a safe, convenient, and fun transportation option in Delaware by working in partnership with government, business, and community groups." Bike Delaware, based in New Castle County, has a 7-member Board of Directors and is staffed by an Executive Director who lobbies for cycling interests throughout the state.

The Downstate Delaware Striders and Riders is a group of bicyclists and runners who regularly hold events in and around the Dover area. The group holds weekly trail runs, in addition to regularly participating in running and bicycling events such as the Buffalo Stampede in the nearby Town of Wyoming. The group includes both recreational and competitive cyclists and runners.

Maintenance

Maintenance-related components are identified as one of the six primary Goals to be addressed by the City of Dover Bicycle Plan. The following specific maintenance objectives were identified by the Bicycle and Pedestrian Subcommittee:

- Identify maintenance responsibility for all bike routes
- Encourage responsible parties to schedule regular maintenance
- Develop communication system for reporting maintenance needs

With regards to maintenance responsibilities, there are two different entities that play a role in the maintenance of bicycle facilities: DelDOT and the City of Dover. Listed below is a synopsis of the existing maintenance responsibilities of each entity, based on current policies and procedures.

DelDOT Maintenance Responsibilities

In accordance with a long-standing municipal agreement between the Department of Transportation and the City of Dover, DelDOT provides maintenance on state roads from curb to curb. Based on the town agreement between the 2 entities, the City is responsible for maintenance on any transportation facilities beyond the curb line. This would include sidewalks and shared-use pathways.

DelDOT adopted its Sidewalk and Multi-Use Path Maintenance Policy in 2013. As stated in the Policy, DelDOT does not maintain sidewalks owned or maintained by municipalities, located in subdivisions, privately owned, or maintained by others through a written agreement.

Route 8 (Near Modern Maturity Center)

With regards to snow removal of sidewalks and pathways, the Policy specifies the following:

- ◊ In conjunction with established priorities for snow removal on roadways, snow removal for sidewalks and multi-use paths will commence immediately after completion of roads classified as "local" and subdivision
- ◊ Sidewalks and multi-use paths will be prioritized based on pedestrian traffic, high densities of elderly and disabled, schools, transit routes, and other high volume pedestrian facilities

Maintenance of any bicycle facilities within the curb limits of the State's right-of-way, including re-striping of bike lanes, debris removal, resurfacing, etc. is the responsibility of the Department of Transportation.

As stated in the Policy, "all other maintenance, such as sweeping and trash removal, will be performed as resources are available within the Department." With regards to street sweeping, in August 2014, DelDOT submitted its final Stormwater Management Plan for DNREC and Environmental Protection Agency review. The sweeping plan was required to be a science-based strategy targeting pollutant removal from state-owned roads before it enters the storm sewer system, and ultimately into rivers, lakes and streams. The "targeted" approach means that DelDOT is focusing on roads that have direct connections to the storm sewer system in areas that have the greatest potential to produce harmful pollutants (i.e. high traffic, commercial, industrial, residential). Each of these road types is swept at a frequency that maximizes DelDOT resources (manpower, equipment, budget) while meeting the terms of the National Pollutant Discharge Elimination System (NPDES) permit, which is to effectively prohibit the discharge of material other than stormwater. Because these road sections fall under different roadway categories, sweeping frequency will vary, but all will be swept at a frequency greater than the previous plan. Once the sweeping plan has been approved by DNREC and EPA, the exact frequency for each road will be known.

Maintenance

Adopt A Bikeway Program

The Department of Transportation has a program that enables volunteers to "adopt" a state-owned bike path. Initiated in 2004, the Program is a partnership between DelDOT and volunteers to care for a designated bike path a minimum of three times a year. Volunteers remove debris, trash, etc. in an effort to make the bike path safer for cyclists, as well as keeping the bike path and surrounding area cleaner. Currently, there are no bike paths that have been "adopted" in the City of Dover.

City of Dover Maintenance Responsibilities

The Dover Code of Ordinances contains several references to the maintenance responsibilities for sidewalks. However, maintenance of bike paths and shared-use facilities is not referenced in the Code. As a result, it is recommended that the term "shared-use facility" be added to any sidewalk maintenance reference in the City's Code. This would require a revision to the Code of Ordinances, to be adopted by City Council.

The City currently provides maintenance on bike paths located within the City's park system, such as the trails within Schutte Park and Silver Lake Park. In addition, the City is currently providing maintenance on the U.S. 13 portion of the Capital City Trail, between the Thomas Collins Building and MLK Boulevard. The City will also be providing maintenance along Park Drive, once Phase III of the Capital City Trail is completed in 2014.

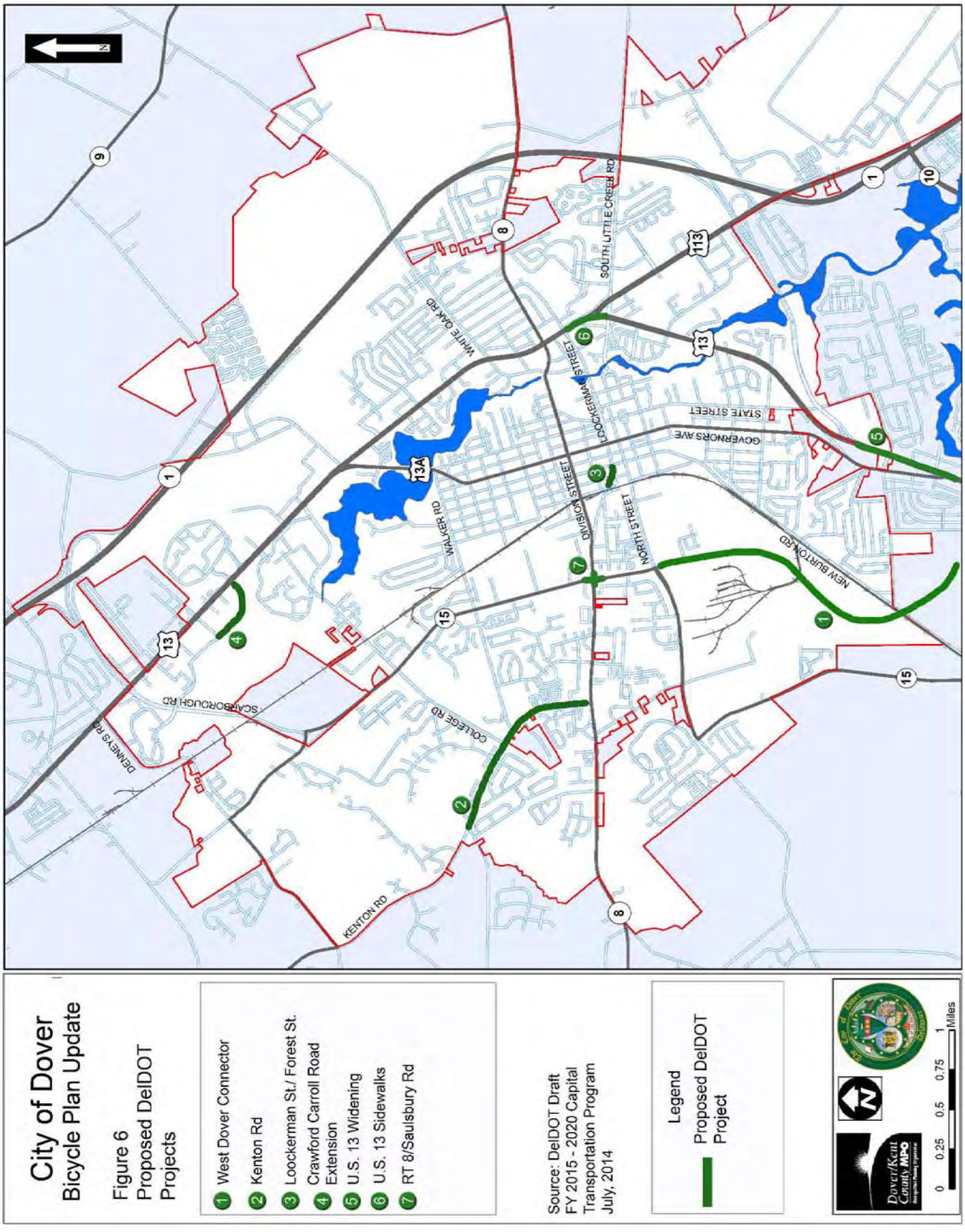
Silver Lake Park

Planned DelDOT Projects

DelDOT has numerous projects planned in the City of Dover that will enhance mobility and safety for bicyclists. Listed below is a preliminary schedule for each proposed project, based on the DelDOT Fiscal Year 2015 - 2020 Capital Transportation Plan, as published in July 2014. The proposed DelDOT projects are also shown on Figure 6. Only one project is currently funded for construction - the West Dover Connector.

Proposed DelDOT Projects				
Project	**Limits**	**Length (Miles)**	**Description**	**Anticipated Construction**
West Dover Connector	North Street to U.S. 13	3.2	Construct a new road, extending Saulsbury Road to U.S. 13. Incorporates sidewalks, bike lanes, and a shared use path. Project will connect Brecknock Park and Schutte Park, and will form part of a greater bike loop proposed around Dover.	FY 2015
Kenton Road	Route 8 to Chestnut Grove Road	1.2	Widen Kenton Road to include shoulders, bike lanes, and sidewalks	FY 2020+
Loockerman Street/ Forest Street	Intersection	0.1	Install a roundabout and create a pedestrian friendly gateway	FY 2020+
Crawford Carroll Road Extension	Lowes to U.S. 13	0.5	Extend existing road to U.S. 13 opposite Dover Mall, and include bike and pedestrian amenities	FY 2020+
U.S. 13 Widening	Puncheon Run to Walnut Shade Road	0.3	Add a third through lane and continuous sidewalks to U.S. 13.	FY 2020+
U.S. 13 Sidewalks	MLK Boulevard to Loockerman Street	0.3	Install new sidewalks on both northbound and southbound U.S. 13	FY 2020+
Route 8/ Saulsbury Road	Intersection	0.2	Install an additional through lane and left turn lane on NB and SB Saulsbury Road	FY 2020+

Planned DelDOT Projects



Areas of Opportunity

Despite the measurable and significant progress that has been made over the past 17 years since the initial Bicycle and Pedestrian Plan was developed, there are still many areas of opportunity to make the City of Dover a more bicycle-friendly city. In its Bicycle Friendly Community Feedback Report (Fall 2013), the League of American Bicyclists identified the following key measures to improve cycling in Dover:

- Appoint a staff member to become Bicycle and Pedestrian Coordinator
- Update the Bicycle Plan
- Continue to expand the bike network and increase network connectivity through the use of bike lanes, paths, and shared lane markings. Suggested improvements include:
    - ◊ Route 8 (Weston Drive to Saulsbury Road)
    - ◊ South West Street (North Street to Queen Street)
    - ◊ North State Street (Walker Road to U.S. 13)
    - ◊ Saulsbury Road (Gateway Boulevard to North Street)
    - ◊ College Road (McKee Road to Kenton Road)
- Increase the amount of high quality bicycle parking at popular destinations
- Increase maintenance of the city's off-road bicycle network
- Host a League Cycling Instructor seminar to increase the number of certified instructors in Dover

Bike to Work Day 2013

- Ensure that bicycle safety education is included in the local schools
- Expand encouragement efforts during Bike Month with local bicycle advocacy groups
- Encourage the colleges and universities to promote cycling and seek recognition through the Bicycle Friendly University program
- Conduct regular bicycle counts to determine bicycle usage and demand

The League of American Bicyclists also offered 49 other specific recommendations (short-term and long-term) to further promote bicycling in Dover, in the areas of Engineering, Education, Encouragement, Enforcement, and Evaluation. Examples of the short-term measures are listed below.

Engineering
Implement road diets in appropriate locations

Consider raised crossings or grade-separated crossings

Education
Offer bicycle education for youth outside of school

Create a Bicycle Ambassador program

Encouragement
Host or sponsor bicycle-themed community events

Set up a community celebration and social ride when a bike project is completed

Enforcement
Invite the police to the Bicycle/Pedestrian committee

Have police officers distribute helmets, lights, and locks to the community

Evaluation
Adopt a target level of bicycle use and collect data to monitor progress

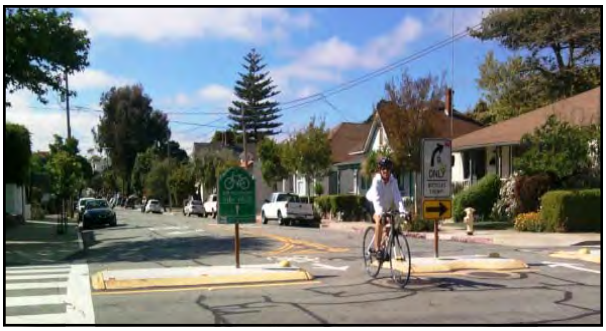
Identify the most appropriate routes for inclusion in the bike network, determine weak links, and prioritize improvements

Bicycle Facility Design

There are a wide variety of design techniques and facilities that have been used in Dover, as well as other areas throughout the world, that provide for safe and efficient bicycle travel. The table below and on the following page provides a summary of the different facilities commonly used today. These techniques are cited in publications such as the *DelDOT Road Design Manual*, the *Delaware Manual on Uniform Traffic Control Devices (MUTCD),* the American Association of State Highway and Transportation Officials (AASHTO) *Guide for the Development of Bicycle Facilities*, and the National Association of City Transportation Officials (NACTO) *Urban Bikeway Design Guide*.

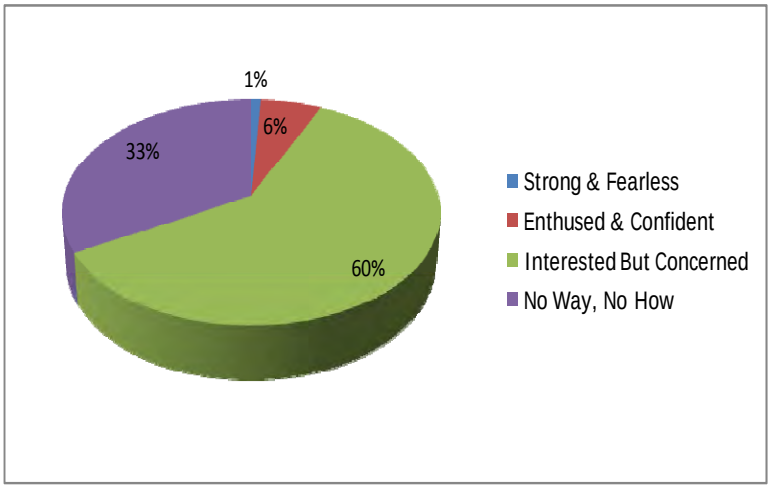
Type	Width	Use	Example
Bike Lane	4 - 6 ft.	Bicycle travel along the road	
Colored Bike Lane	4 - 6 ft.	Bicycle travel along the road	
Buffered Bike Lane	4 - 6 ft.	Bicycle travel along the road	
Sharrow	N/A	Low-volume, low-speed roads where bike lanes aren't practical	

Bicycle Facility Design

Type	Width	Use	Example
Pathway	8 - 10 ft.	Route separated from motor vehicles and shared with pedestrians. Often parallel to high-speed roads	
Cycle Track	10 - 16 ft.	Route within the road, separated from motor vehicles and pedestrians	
Bicycle Boulevard	N/A	Low-volume, low-speed roads where bicycle travel is given priority over motor vehicles	
Trail	8 - 10 ft.	Recreational route that connects with the overall bicycle network	

Low Stress Bicycling and Connectivity

In 2007, the City of Portland, Oregon developed a classification system of bicycle facilities based on a survey of resident's attitudes in general and towards bicycle travel. The system concluded that the population was divided into 4 classifications as they relate to a person's affinity for different types of bicycle facilities:



Portland's Classification System for Bicyclists

Based on Portland's research, characteristics of each classification are noted below:

Strong & fearless (1%) - respond well to riding in almost any traffic condition

Enthused & confident (6%) - respond well to riding in bike lanes along arterial roads and sharing smaller roads with traffic

Interested but concerned (60%) - uncomfortable with riding with traffic but respond well to off-road paths and low-volume, low-speed streets

No way, no how (33%) - no interest in riding a bicycle

Following up on Portland's initial research, the Mineta Transportation Institute (MTI) published a report in May 2012 entitled "*Low-Stress Bicycling and Network Connectivity*". This publication details a methodology used to evaluate low-stress bicycling and the network connectivity required to make that a reality.

Level of Traffic Stress	Example
LTS 1	
LTS 2	
LTS 3	
LTS 4	

As noted in the report abstract, ***"for a bicycling network to attract the widest possible segment of the population, its most fundamental attribute should be low-stress connectivity, providing routes between people's origins and destinations that do not require cyclists to use links that exceed their tolerance for traffic stress, and that do not involve undue level of detour."***

The primary objective of the study was to develop measures of low-stress connectivity that can be used to evaluate and guide bicycle network planning. The study classified road segments into 4 levels of traffic stress, based on traffic characteristics (road width, traffic speed, parking lane, etc.) and whether bikes are mixed with traffic, in bike lanes, or on separated paths.

In 2014, DelDOT hired Dr. Peter Furth, one of the authors of the *"Low-Stress Bicycling and Network Connectivity"* report, to provide training in developing low-stress bike routes throughout the state.

As part of Dr. Furth's study, it is recommended that Del DOT evaluate specific low-stress bike routes in the City of Dover as an early action item resulting from this Plan update. Based on the MTI study, identifying low-stress bike route connections can dramatically increase network connectivity and lead to measurable increases in bicycle usage, particularly for the 60% of the population that is interested in bicycling but concerned about safety.

Recommendations - Engineering

Based on the existing bicycle network, the mix of land uses, and potential bicycling destinations, there are ample opportunities to enhance bicycling as a mode of transportation in the City of Dover. This Plan provides recommendations that correspond with the 5 "E" categories of Engineering, Education, Encouragement, Enforcement, and Evaluation.

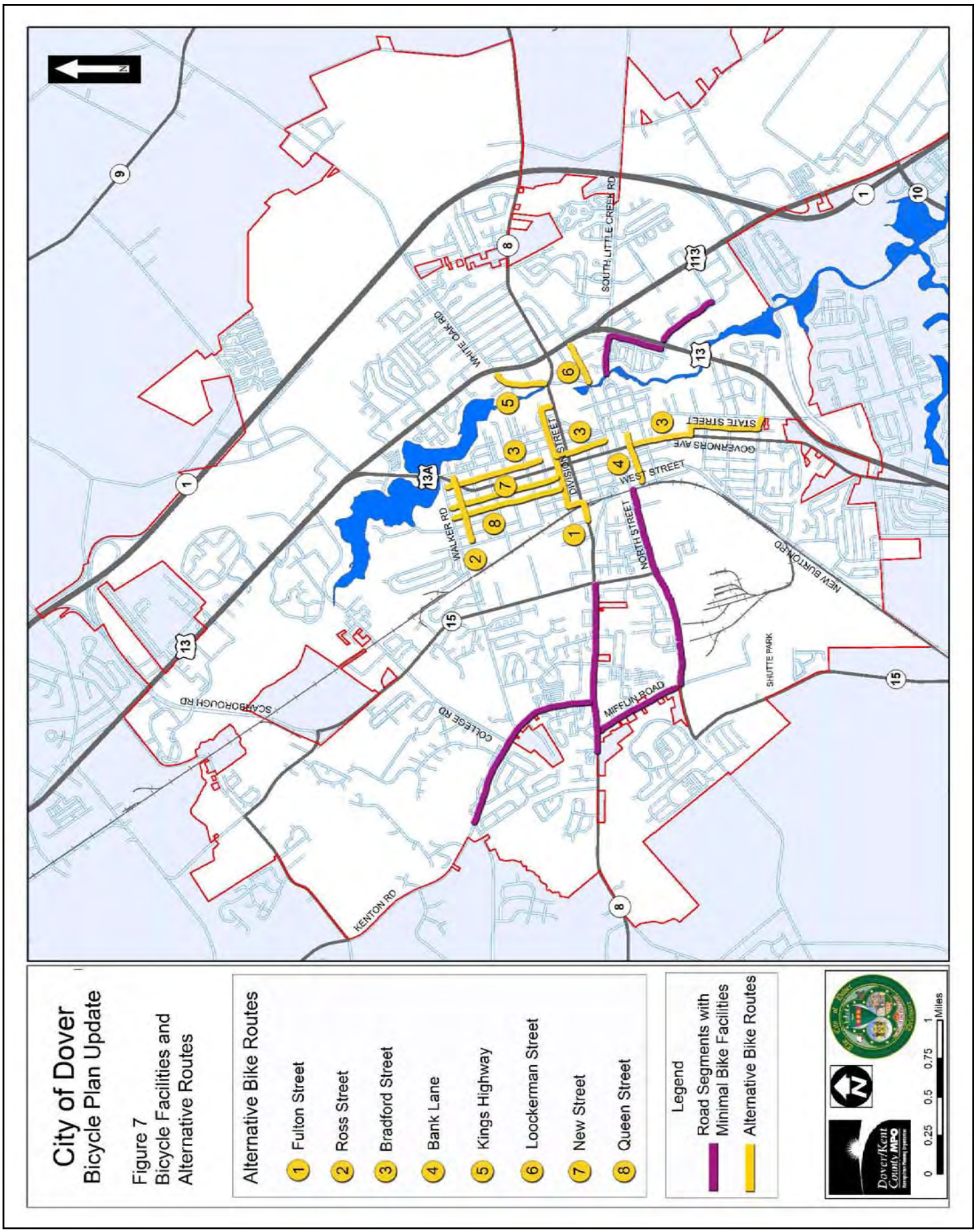
The Engineering recommendations are prioritized based on need, as identified by the Bicycle/Pedestrian Subcommittee in the summer of 2014. The Subcommittee developed a priority system for road segments based on the criteria listed below. The intent of the prioritization is to develop projects that produce the highest number of bicycle trips.

City of Dover Project Prioritization Criteria (On-Road Improvements):	
Criteria	**Description**
Traffic volumes	High-volume roads rank higher
Location	Roads in the downtown or urban areas that facilitate more connections rank higher
Existing bike facilities	Roads that lacked shoulders, bike lanes, or off-road paths rank higher
Alternate routes	Roads that had no nearby alternate routes for cyclists rank higher
Economic development	Projects that could facilitate bicycle access to local businesses/services rank higher
Vehicular speed	Higher speed roads rank higher

The Subcommittee also identified road segments that have a minimal level of bicycle facilities (typically shoulders or poorly-maintained off-road paths). These segments are not yet bicycle-friendly, but are not considered as hazardous as segments without any bicycle facilities. Some road segments without bicycle facilities were found to have a parallel low-stress street that can be used as an alternative route. These road segments are listed in the tables below and displayed on Figure 7.

Road Segments with Minimal Bike Facilities		
Road	**Limits**	**Facility**
Mifflin Road	Hazlettville Road to Route 8	Striped shoulder
Route 8	Saulsbury Road to Marsh Creek Lane	Off road path
North Street	Railroad Tracks to Schutte Park	Off road path
MLK Boulevard	Legislative Hall to U.S. 13	Off road path
Kenton Road	Chestnut Grove Road to Route 8	Striped shoulder

Road Segments with Alternative Routes		
Road	**Limits**	**Alternative**
Division Street	Weston Drive to Kent Avenue	Fulton Street Delaware Ave.
Walker Road	Pear Street to State Street	Ross Street
State Street	Walker Road to Water Street	Bradford St.
Governors Avenue	Legislative Hall to U.S. 13	Bradford St. New Street Queen Street
Loockerman Street	Chestnut Grove Road to Route 8	Bank Lane Reed Street
Division Street	Kent Avenue to U.S. 13	Kings Highway Loockerman Street


City of Dover
Bicycle Plan Update
Figure 7
Bicycle Facilities and Alternative Routes
Alternative Bike Routes
1 Fulton Street
2 Ross Street
3 Bradford Street
4 Bank Lane
5 Kings Highway
6 Loockerman Street
7 New Street
8 Queen Street
Legend
Road Segments with Minimal Bike Facilities
Alternative Bike Routes
N
0 0.25 0.5 0.75 1 Miles
Dover/Kent County MPO
SCARBOROUGH RD
KENTON RD
COLLEGE RD
WALKER RD
WHITE OAK RD
SOUTH LITTLE CREEK RD
DIVISION STREET
WEST STREET
NORTH STREET
MIFFLIN ROAD
STATE STREET
GOVERNORS AVE
NEW BURTON RD
SHUTTE PARK
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Recommendations - Engineering

Listed below is the prioritization ranking developed by the City's Bicycle and Pedestrian Subcommittee, for on-road improvements. Recommended off-road trails are also listed below. These projects are shown on Figure 9 (page 67).

Recommended On-Road and Off-Road Projects to Improve Citywide Bicycle Use			
Rank	**Road**	**Limits**	**Recommended Solution**
1	Route 8 (Forrest Avenue/Division Street)	Dover High School to South Edgehill Avenue	Implement an east-west bike corridor, the Senator Bikeway, as described in detail on pages 35 - 51
2	North State Street	Walker Road to U.S. 13	Widen existing sidewalk to provide a shared use path
3	College Road	McKee Road to Kenton Road	Add shoulders to provide bike lanes and/or provide a shared use path
4	West Street	North Street to Queen Street	Widen shoulders to provide continuous bike lanes
5	Walker Road	North State Street to Saulsbury Road	Provide striped shoulders through travel lane re-striping
6	Saulsbury Road	North Street to Route 8	Widen existing sidewalk on both sides to provide a shared use path
7	MLK Boulevard/ South Little Creek Road	Babb Drive to U.S. 13	Widen existing sidewalk to provide a shared use path

Recommended Off-Road Trail Projects		
Area	**Limits**	**Recommended Solution**
Schutte Park Trail	Schutte Park	Continue the internal trail network throughout Schutte Park
Fox Hall West to Route 8	Mallard Pond Park	Provide a new trail within Mallard Pond Park
St. Jones River (west side)	Silver Lake Park to Legislative Avenue	Provide a new trail on the west side of the St. Jones River
North Street Trail	Schutte Park to West Street	Resurface existing hot mix trail

The Senator Bikeway (#1 Ranked)

The concept for the Senator Bikeway arose from the need for a centrally-placed east-west bike route through Dover that is low-stress and safe for riders of all ages and abilities. This is the #1 identified bicycling need in the community. Currently Dover does not have a continuous east-west bike route at all. For automobile traffic, Route 8 serves this function, but, as detailed below, Route 8 presents challenges for east-west bicycle travel through central Dover.

Route 8 (known as Forrest Avenue and Division Street) provides the primary east-west access in the City, connecting the western portion of Kent County with U.S. 13. Route 8 is classified as a minor arterial, and is designated as a Regional Bicycle Route on the DelDOT Bicycle Map. Between the western City limits and U.S. 13 (a distance of 3.4 miles), the typical roadway section varies considerably, ranging from a 6-lane section at Saulsbury Road to a 2-lane section in the downtown core.

Route 8/Kent Avenue (looking east)

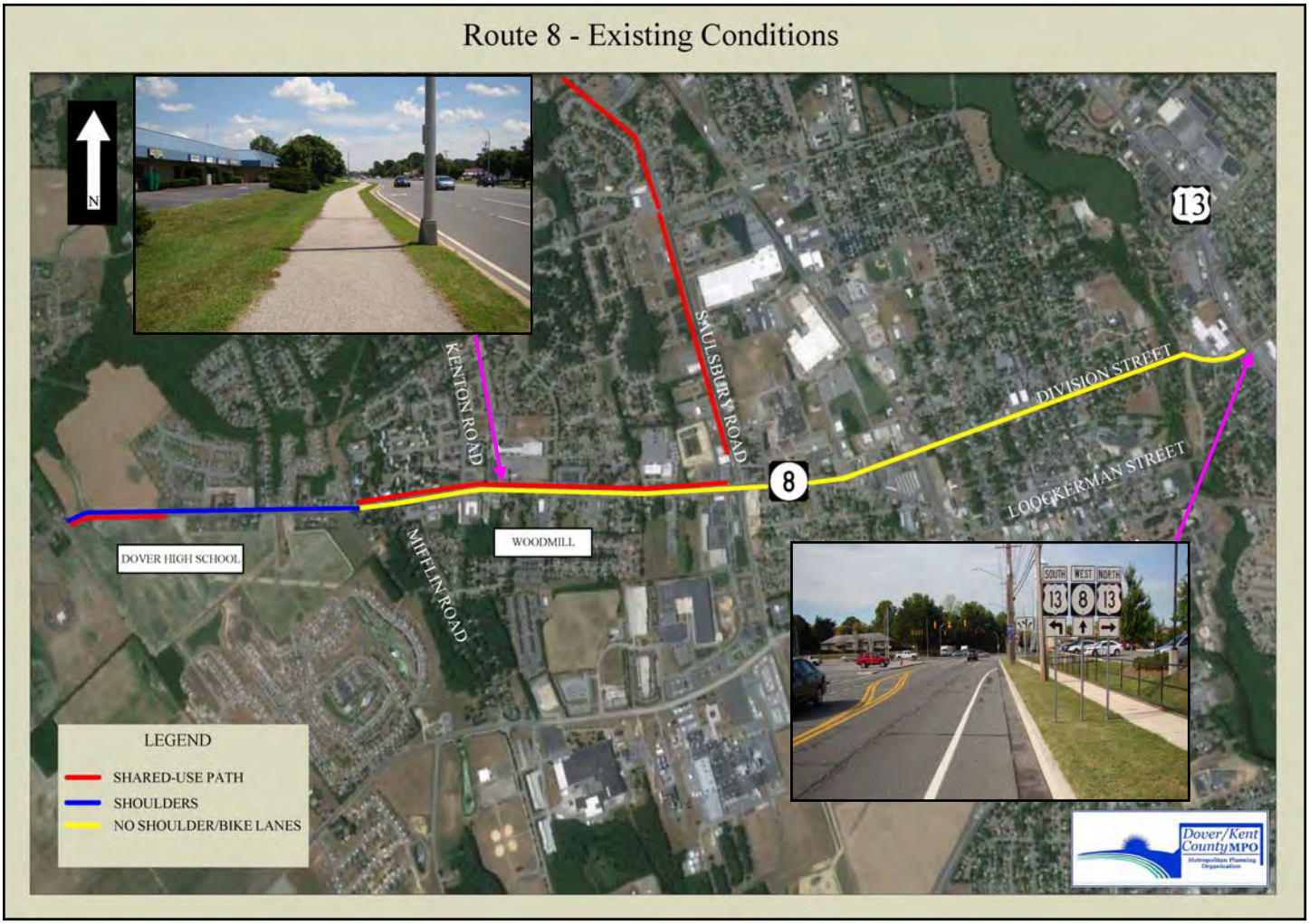
Within a relatively short distance, Route 8 transitions from a high-speed, rural roadway to a low-speed, urban arterial. Based on the lack of shoulders throughout much of the corridor, the high traffic volumes (which exceed 18,000 vehicles per day west of Saulsbury Road), the presence of on-street parking in the downtown, and the lack of a consistent off-road path, Route 8 has conditions that are challenging for bicycle travel. At this point, creating on-road bicycle facilities would be very difficult, due to limited road widths and competing automobile traffic needs. The City is therefore exploring opportunities for a mix of off-road paths and parallel roads to create a continuous east-west bicycle route.

Route 8 (looking east)

Division Street/Queen Street (looking west)

The Senator Bikeway (continued)

The graphic below displays the bicycle infrastructure that currently exists along Route 8, as well as the areas that lack shoulders or bike lanes.



In creating low-stress bike routes, experienced bicycle planners stress, again and again, that the most important step to take is to "help people cross busy roads." Where a bike route crosses a road that has heavy automobile traffic, special measures need to be made to assist bicyclists in crossing. And while there may be a variety of ways to accomplish this in any particular situation, this step in the planning process must be given primary attention.

In the plan for the Senator Bikeway, the proposed route crosses many busy roads, including Kenton Road, Saulsbury Road, and busiest of all, U.S. 13. Planners therefore must pay special attention to creating the means for bicyclists to safely cross these roads. The question to ask is "would a parent be comfortable allowing their 12-year old child to ride by themselves across these intersections?"

There are a variety of enhancements that would be required to create a low-stress route for bicycling adjacent to Route 8, but the ultimate intent is to develop a safe, seamless route from east of U.S. 13 to Dover High School. The identified improvements that would be required to create this route, which would be known as the Senator Bikeway, are described in more detail on the following pages. The proposed improvements are shown in geographical order, traveling from west to east.

The Senator Bikeway (continued)

Dover High School to Mifflin Road

Currently, the 0.3-mile section of Route 8 between Dover High School and Mifflin Road is a 2-lane section with shoulders that converts into a 4-lane section with no shoulders just west of the Route 8/Mifflin Road intersection. The shoulders function as designated right-turn lanes west of the Mifflin Road intersection.

Along westbound Route 8, a shared-use path terminates near the Brandywine Court Apartments, and ties into a recently constructed 5-foot wide sidewalk as it heads west towards the east entrance of the high school.

Along eastbound Route 8, as a result of the loss of shoulders, there are no bike facilities (either on-road or off-road) along this portion of the roadway, forcing bicyclists to share the road with motorists.

Route 8/Mifflin Road (looking east)

With the 2014 opening of the high school, there has been a noticeable increase in the volume of pedestrians and bicyclists using Route 8 to and from the residential areas east of the school. The recent update of the Dover Pedestrian Plan has acknowledged the need to accommodate pedestrians walking to and from the school, as new sidewalk is being recommended along the south side of Route 8 between the high school and Mifflin Road. In addition, the City Council has recognized the importance of providing a safe route for bicyclists and pedestrians to and from the high school, as new sidewalk construction along the south side of Route 8 is the #2 ranked project in the City's 2014 transportation project prioritization list. It is recommended that a shared-use path be provided along the south side of Route 8, between the high school property and Mifflin Road. In addition, any properties that re-develop within these limits should be required to provide a 10-foot wide shared-use path along their frontage as part of the development approval process.

Route 8 (looking west)

Route 8 (looking east)

Recommendation: Provide a shared-use path on the south side of Route 8 between Dover High School and Mifflin Road

The Senator Bikeway (continued)

Mifflin Road to Saulsbury Road

Currently, the 1-mile section of Route 8 between Mifflin Road and Saulsbury Road is a 5-lane section that has no shoulders or bike lanes. At key intersections, the section becomes wider with the addition of turn lanes. There is a shared-use path along the north side of the road, while the south side of Route 8 has continuous 5-foot wide sidewalks but no shared-use pathway, as noted in the photos below.

Route 8 (north side)

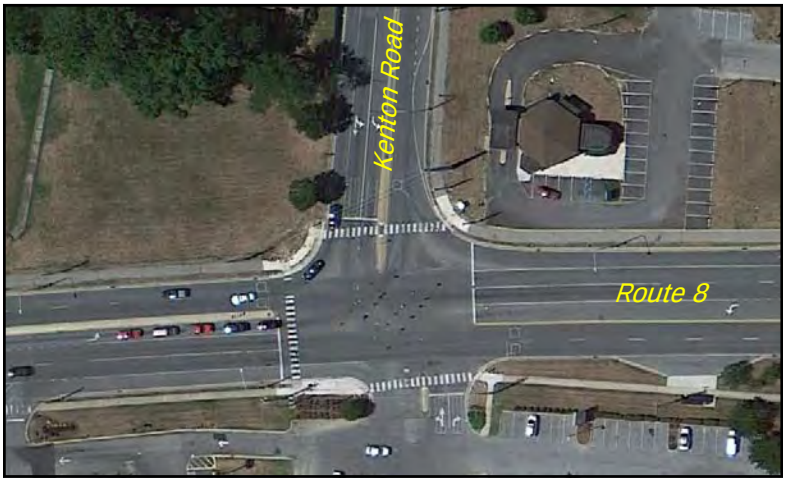
Route 8 (south side)

Based on the existing pavement width along Route 8, there are not any opportunities to reduce lane widths to provide for a bike lane. As a result, it is recommended that the existing sidewalk on the south side of Route 8 be widened to accommodate a 10-foot wide shared-use path. Most of the sidewalk appears to be located within the existing right-of-way. A sidewalk widening would likely involve utility relocations, drainage modifications, and stormwater management considerations, all of which would be evaluated during engineering design.

Recommendations: Widen the existing sidewalk on the south side of Route 8 between Mifflin Road and Saulsbury Road to provide a shared-use path.

Resurface the existing shared-use path along the north side of Route 8, between Marsh Creek Lane and Saulsbury Road.

There are two major intersections located within these limits - Route 8/Kenton Road and Route 8/Saulsbury Road.



Route 8/Kenton Road

Route 8/Saulsbury Road (looking east)

The Senator Bikeway (continued)

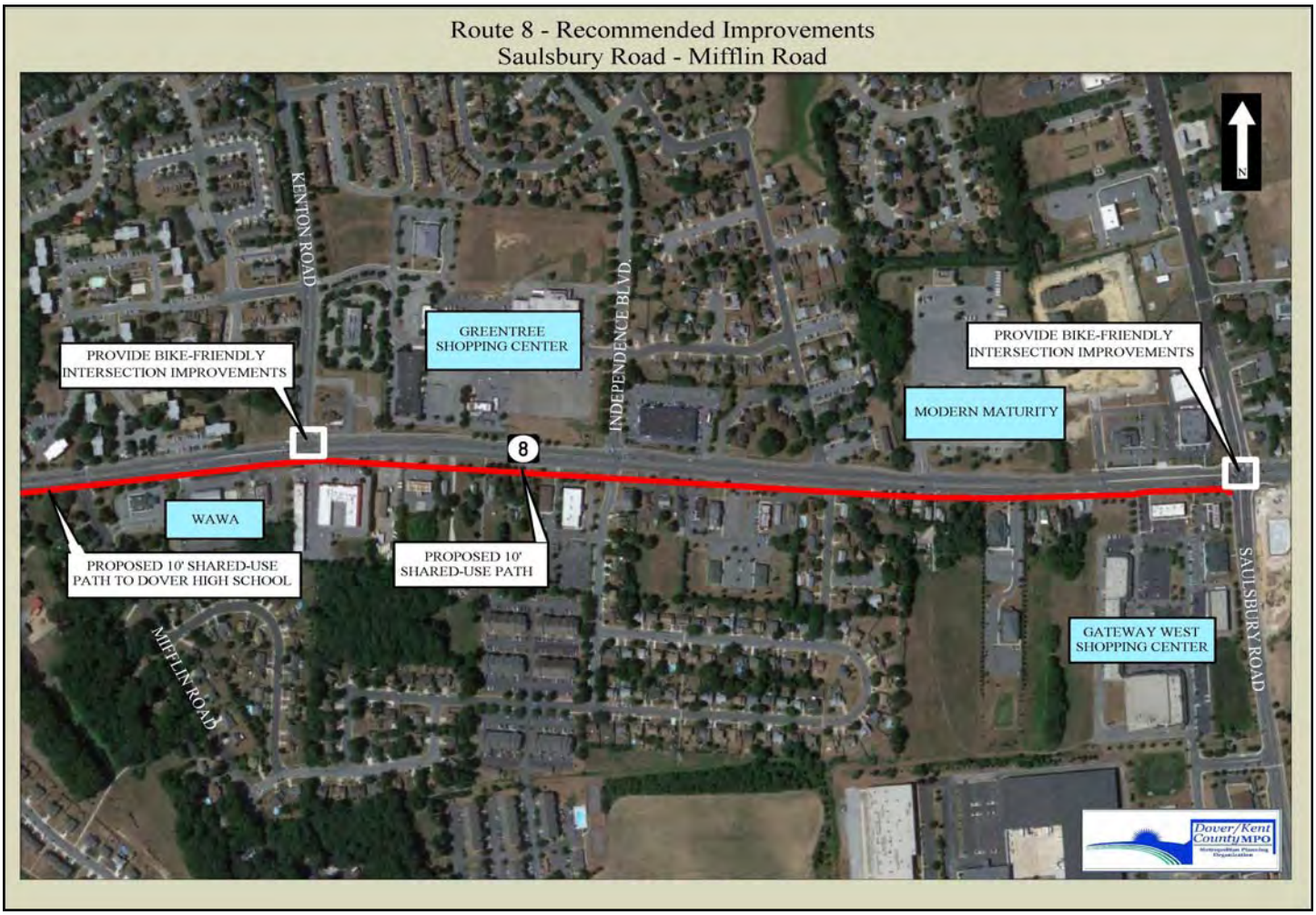
Mifflin Road to Saulsbury Road

The Route 8/Saulsbury Road intersection has bike lanes on the Saulsbury Road approaches through the intersection, but there are no bike lanes along Route 8, so cyclists traveling eastbound or westbound must either share the road or use the sidewalks/pathways located along Route 8. There is a shared-use pathway that runs along the north side of Route 8. However, in front of the Walgreen's store, the pathway shrinks to a 5-foot wide sidewalk along their entire frontage.

Recommendation: Widen the existing sidewalk on the north side of Route 8 and west side of Saulsbury Road (in front of the Walgreens) to provide for a shared-use path

As noted, the key to a successful bicycle boulevard is to provide safe crossings at primary intersections, such as the Route 8/Kenton Road and Route 8/Saulsbury Road intersections. Both of these locations have recently appeared in DelDOT's Capital Transportation Program (CTP). In the most current draft, the FY 2016 - 2021 CTP, Kenton Road is listed with design funding being available in FY 2016. This project will add continuous sidewalks and consistent shoulders along Kenton Road, between Route 8 and Chestnut Grove Road. It is likely that bicycle improvements, such as bike lanes and enlarged right turn islands, will be implemented at the Route 8 intersection as part of that project.

The draft CTP also shows design will start in FY 2019 for improvements to the Route 8/Saulsbury Road intersection. This safety project will add an additional through lane to Saulsbury Road. As part of its Complete Streets Policy, DelDOT is required to ensure that bicycle safety and mobility are incorporated into its intersection projects. As part of the design, DelDOT could potentially evaluate improvements such as enlarged right turn islands to ensure that bicycle safety is included as part of the proposed Route 8/Saulsbury Road widening project.



The Senator Bikeway (continued)

Saulsbury Road to West Street

The City's Bicycle and Pedestrian Subcommittee identified the segment of Route 8 between Saulsbury Road and West Street as their top priority need for bicycling, based on the prioritization criteria noted on page 32. This majority of this segment of Route 8 is a 5-lane section (2 through lanes in each direction and a center turn lane), with no shoulders and no bike lanes. The speed limit is 25 MPH, which increases to 35 MPH just east of Saulsbury Road.

The land use along Route 8 in this area consists of a wide variety of uses, including residential, commercial, office, and institutional. Route 8 is one of the City's primary commercial areas, particularly west of Saulsbury Road. There are 2 schools located between Saulsbury Road and Weston Drive, the William Henry Middle School and the Booker T. Washington Elementary School. In addition, the Norfolk Southern railroad line runs north to south just east of Weston Drive.

A primary benefit of improving bicycle mobility along this section of Route 8 is that it would connect west Dover neighborhoods and commercial areas with residential areas and commercial areas in the central portion of the city.

Recognizing that widening Route 8 or reducing lane widths are not feasible options to provide on-road bike lanes, the Subcommittee recommended that a shared-use pathway be implemented along the north side of Route 8 between Saulsbury Road and Weston Drive. This improvement would provide a linkage to the existing off-road paths located along Route 8 and Saulsbury Road, as noted on page 36. There is currently sidewalk present throughout these limits. Along the frontage of the Booker T. Washington Elementary School, there appears to be sufficient room to provide for an 8- to 10-foot wide shared use path without significant property impacts.

Route 8 (Looking West)

Route 8 (Looking East)

Recommendation: Provide a shared use path on the north side of Route 8 between Saulsbury Road and Weston Drive

There are areas along the corridor (east of the school) where right-of-way impacts may affect the ability to provide a continuous shared-use path. An example is shown in the photo to the right.

Should right-of-way impacts be deemed too extensive, accommodations for bike lanes could be made within the existing roadway. However, this would require the removal of on-street parking between Weston Drive and the railroad tracks. There are several small businesses located in this area, and any parking alterations would have to be discussed with the businesses as well as the City of Dover.

Division Street (Near Ridgely Street)

The Senator Bikeway (continued)

Bicycle Boulevard Concept (Fulton Street, Delaware Avenue, Kent Avenue)

Due to the difficulty in providing bike lanes within the existing roadway along Division Street (based on the significant use of on-street parking and lack of roadway width at the intersections), it is recommended that a "bicycle boulevard" be created on parallel streets to the north (Kent Avenue, Delaware Avenue, and Fulton Street).

According to the *Bicycle Boulevard Planning and Design Guide Book*, published by Portland State University, "bicycle boulevards are low-volume and low-speed streets that have been optimized for bicycle travel through treatments such as traffic calming and traffic reduction, signage and pavement markings, and intersection crossing treatments. These treatments allow through movements for cyclists while discouraging similar through trips by nonlocal motorized traffic. Motor vehicle access to properties along the route is maintained."

Delaware Avenue

Kent Avenue, Delaware Avenue, and Fulton Street are all very low-volume residential streets, with a posted speed limit of 25 MPH. As shown on the following page, Central Middle School and Wesley College are both located along the proposed bike boulevard. Based on the current roadway width, the low volumes, and the residential character of the streets, there may be little physical roadway improvements required to designate these 3 streets as a bicycle boulevard. Signing and sharrows would be required to guide cyclists to these streets. A sample artist rendering of bikeway signing is shown in the photo below.

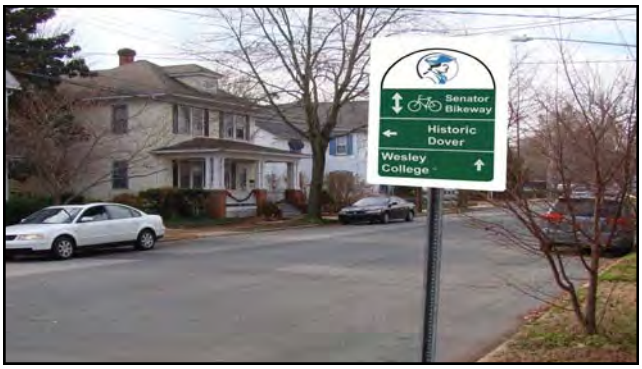
In order to tie the bicycle boulevard into the surrounding roadway network and create a lower-stress bike route, however, improvements should be further evaluated throughout the local roadway system, including Division Street, Fulton Street and the Booker T. Washington Elementary School. Recommended improvements to these areas are detailed on the following pages.

The portion of Fulton Street that runs through the Wesley College campus is closed to vehicular traffic, but allows for bike and pedestrian traffic, as shown in the photo below.

The proposed bike boulevard would intersect two major north-south roads - Governors Avenue and State Street. These intersections would have to be further evaluated for additional safety improvements related to bike crossings of these routes.

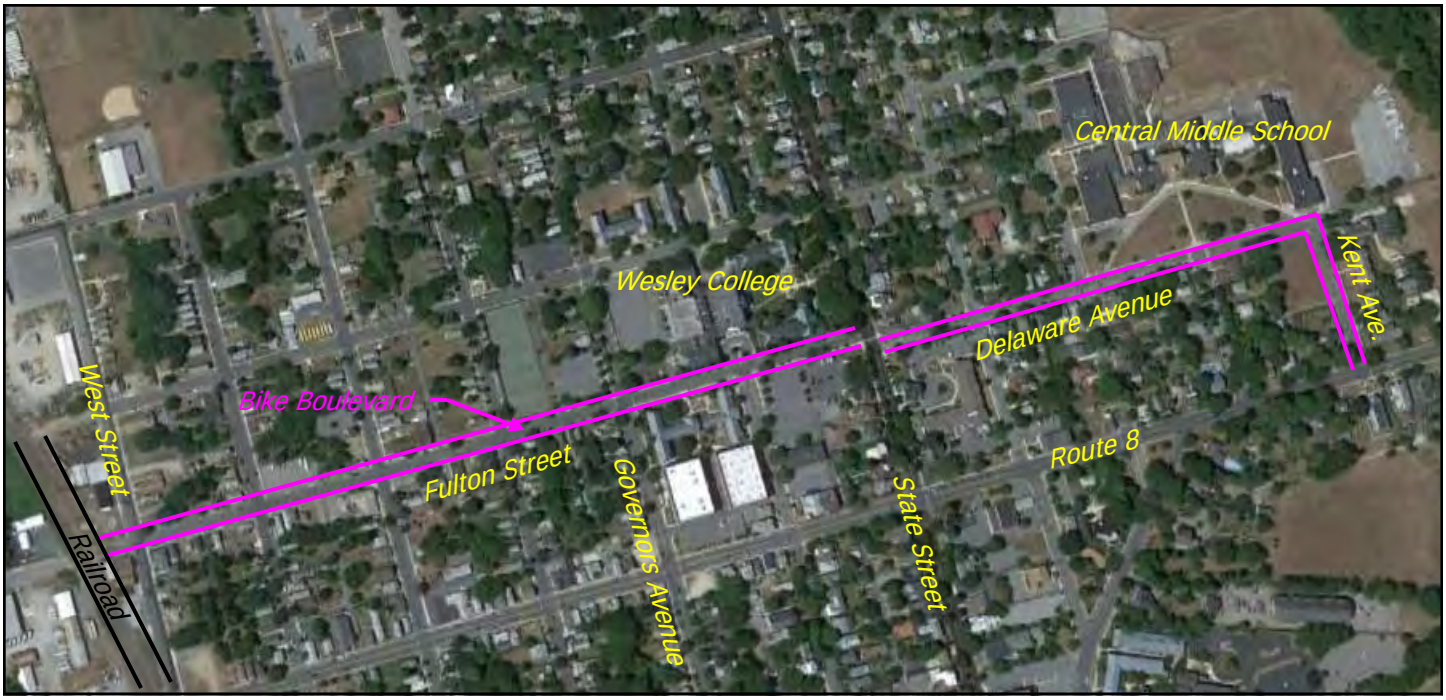
Recommendation: Implement a bike boulevard along Fulton Street, Delaware Avenue, and Kent Avenue, through signage, pavement markings, and intersection improvements

Wesley College (looking west)



Proposed Senator Bikeway Sign (Delaware Ave.)

The Senator Bikeway (continued)



Fulton Street/Norfolk Southern Railroad/West Street

Fulton Street, part of the proposed bicycle boulevard, is traversed by the Norfolk Southern railroad, which runs north to south through the city. There are two potential options for continuing the Senator Bikeway west of the railroad:

- Create a new bicycle/pedestrian-only crossing of the railroad, and continue the Bikeway west to the rear of the Booker T. Washington Elementary School and points west, as detailed on page 43. Extensive coordination with Norfolk Southern would be required to obtain approval for an additional at-grade rail crossing, even if restricted to non-motorized uses.

- Direct cyclists along West Street to Division Street. As noted on page 40, this would require either a widening of the existing sidewalk along the north side of Division Street to provide for a shared-use path, or a removal of on-street parking along both sides of Division Street. From West Street to the Booker T. Washington School, there are 8 businesses and homes on the north side of Division Street, while there are 7 businesses and homes on the south side, so extensive coordination would be required for any plan that involved removal of on-street parking.

Fulton Street (looking west)

Recommendation: Provide a bicycle/pedestrian-only crossing of the Norfolk Southern Railroad at Fulton Street

The Senator Bikeway (continued)

Booker T. Washington Elementary School

The Booker T. Washington Elementary School is located along the north side of Route 8, between Carver Road and Weston Drive as shown on the map below. In order to provide a low-stress alternative to Route 8, a bike route should be developed through the school property to connect Fulton Street and Carver Road. The bike route could be aligned through the rear parking lot of the school, without the need for constructing additional paved surfaces. The rear parking lot serves as the primary parking area for the school, which includes school bus traffic. It is recommended that the City coordinate with the Capital School District to determine the feasibility of extending the Senator Bikeway into the Booker T. Washington school property, for an eventual tie-in to Carver Road and ultimately Saulsbury Road.

Recommendation: Coordinate with the Capital School District to provide a bike route through the Booker T. Washington Elementary School, utilizing the existing parking lot

Extension of Fulton Street

The improved portion of Fulton Street currently terminates at Ridgely Street. In order to provide a continuous low-stress bike route, thus avoiding the challenges associated with Route 8, Fulton Street would have to be extended to Weston Drive, a distance of approximately 500 feet. Based on current tax maps, Fulton Street is an unimproved "paper" street for approximately 375 feet west of Ridgely Street. Right-of-way or an easement would have to be acquired from a private property owner on the east side of Weston Drive for the remaining 125 feet required to extend Fulton Street to Weston Drive. The photo to the right shows the private property.

Weston Drive (looking east)

Recommendation: Extend Fulton Street 500 feet to Weston Drive, to connect to the schools and provide a continuous bike boulevard north of Route 8

The Senator Bikeway (continued)

Saulsbury Road to Forest Street

East of Saulsbury Road, Route 8 (Forrest Avenue) continues as a 5-lane roadway with no shoulders or bike lanes. Sidewalks are present throughout the corridor on the south side of Forrest Avenue. However, based on the proximity of homes and potential right-of-way impacts, widening the sidewalk to provide for a 10-foot wide shared-use path is likely not a feasible option.

Lincoln Street at CVS Pharmacy

South of Forrest Avenue, Lincoln Street is a parallel east-west street that provides access to Forest Street and Loockerman Street in downtown Dover. Lincoln Street is a residential, low-speed street with very low volumes. It does not connect, however, with Saulsbury Road. As noted in the photo, Lincoln Street (as well as Bedford Street) terminates at the CVS Pharmacy property. There is currently a sidewalk connecting Bedford Street to the CVS property, to facilitate pedestrian access. In order to improve east-west bicycle mobility and provide an alternative route to Forrest Avenue between Saulsbury Road and downtown Dover, a new bicycle/pedestrian connection through the CVS property should be evaluated. This would provide a direct low-stress connection from Saulsbury Road to the downtown, without having to travel along Route 8, which lacks adequate bicycle facilities.

Recommendation: Provide a bicycle/pedestrian connection from Lincoln Street to the CVS Pharmacy located at the southeast corner of Route 8 and Saulsbury Road

The Senator Bikeway (continued)

Kent Avenue to Park Drive

Between Kent Avenue and Park Drive, Route 8 (Division Street) is about 37 feet wide. The road has enough width for the travel lanes and shoulders. At the St. Jones River bridge, the shoulder converts into a right turn lane in the east-bound direction, which forces bicyclists into the traveled way (see photo below).

Division Street (looking east)

Utility Bridge over the St. Jones River

In order to provide a seamless Senator Bikeway in both the eastbound and westbound directions, a new bike/pedestrian bridge over the St. Jones River should be provided on the north side of Division Street. There is an existing utility bridge that could possibly be used and improved to facilitate this (see photo above). The existing dirt foot path that goes from the river to Division Street could also be improved into a formal, accessible pathway.

Recommendation: Provide a new bicycle/pedestrian bridge over the St. Jones River on the north side of Division Street, as well as a shared-use path along the north side of Division Street (between the St. Jones River and Kent Avenue)

The Senator Bikeway (continued)

Park Drive to U.S. 13

Between Park Drive and U.S. 13, Route 8 (Division Street) is a 4 lane section with no shoulders or bike lanes. At the U.S. 13 intersection, the pavement width increases to include a right turn lane onto southbound U.S. 13. Based on the current road width and lane usage, there are no opportunities to provide a bike lane within the existing pavement.

There is sidewalk located along both sides of Route 8. Given the potential for adverse impacts to the residential properties located along the south side of Route 8, it is recommended that the sidewalk along the north side of the road be widened to provided for a shared-use path. There are 2 properties located on the north side of Route 8, an electric substation owned by the City of Dover and a former industrial plant owned by Playtex Manufacturing.

The property located at the northwest corner of U.S. 13 and Division Street (former Playtex plant) is proposed for redevelopment, with commercial uses planned. The City Planning Commission granted site plan approval in April 2014. As of March 2015, the developer was working on submitting final plans as part of the development approval process. Should the project be too far along in the approval process, and the City not able to require a shared-use path on the north side of Division Street as part of the proposed re-development, the installation of a shared-use path would have to be funded as part of a future DelDOT project.

Division Street (looking west)

U.S. 13/Division Street (looking east)

Recommendation: Provide a shared-use path on the north side of Division Street between Park Drive and U.S. 13 by widening the existing sidewalk

The Senator Bikeway (continued)

U.S. 13 to Edgehill Shopping Center

Division Street (looking west)

East of U.S. 13, there are no bike lanes along Division Street between U.S. 13 and the entrance to the Edgehill Shopping Center. Based on the existing lane configurations, there is no opportunity to provide a bike lane along Division Street within the existing pavement width. There is a narrow shoulder along this portion of Division Street, with the exception of the westbound right turn lane approaching U.S. 13. There is a sidewalk on the north side of Division Street (along the CVS property) that could potentially be widened to provide for a shared-use path. This would provide a direct tie-in to any future shared-use path provided on the north side of Division Street west of U.S. 13.
As shown in the graphic below, there are a variety of alleys and local streets that can provide low-stress bicycle connections from the major commercial centers (including the Target and Safeway stores) to surrounding residences, without the need to use the heavily-traveled U.S. 13 (which also lacks bike lanes at Division Street). An example is highlighted in the aerial below, using a combination of a U.S. 13 service road, a low-speed road (East Loockerman Street) and an alley as an alternative to traveling along U.S. 13.

Recommendation: Widen the existing sidewalk on the north side of Division Street between an unnamed alley east of CVS Pharmacy and U.S. 13, to provide a shared-use path

The Senator Bikeway (continued)

U.S. 13 Crossings

U.S. 13 is the primary north-south route within the City of Dover, as it provides access to the numerous commercial establishments that are located along the roadway. At its intersection with Route 8, U.S. 13 is a 6-lane divided highway that carries an average of over 45,000 vehicles per day, which includes thousands of large commercial vehicles.

In order to provide an effective and seamless Senator Bikeway, the crossing of U.S. 13 is a key component that must be evaluated to ensure that bicyclist mobility and safety are incorporated into any future bikeway improvements. There are 3 potential options for crossing U.S. 13:

1). U.S. 13/White Oak Road/Kings Highway
2). U.S. 13/Maple Parkway
3). U.S. 13/Route 8

The U.S. 13/White Oak Road/Kings Highway intersection does provide refuge islands for cyclists, has pedestrian signals, and has lower traffic volumes on the side streets than Route 8. However, there are no bike lanes provided on White Oak Road or Kings Highway. In addition, there are no shoulders along Kings Highway to access Silver Lake Park and points within the City, so shoulders would have to be provided, which would require extensive right-of-way acquisition.

The U.S. 13/Maple Parkway intersection is an unsignalized intersection located between Division Street and White Oak Road. Providing a bike/pedestrian only connection here would require extensive modifications to U.S. 13, and due to the extremely heavy traffic volumes along U.S. 13, an unsignalized crossing would not be permitted by DelDOT. A signalized crossing would have to be evaluated, which could potentially lead to significant vehicular queues along U.S. 13.

It is recommended that the Route 8 intersection be the preferred location for providing a safe bicycle crossing of U.S. 13. This intersection has high traffic volumes and significant turning traffic. However, as noted on pages 46 and 47, this Plan recommends that the sidewalk on the north side of Division Street (on each road approaching U.S. 13) be widened to provide a shared-use path as part of the Senator Bikeway concept. The U.S. 13/Route 8 intersection currently has pedestrian signals and crosswalks on 3 of the 4 intersection legs (though none on the northern leg). The median and right turn islands do not provide sufficient area for bicyclists, and would have to be improved to provide a safer refuge area for cyclists crossing U.S. 13.

U.S. 13/Division Street (looking east)

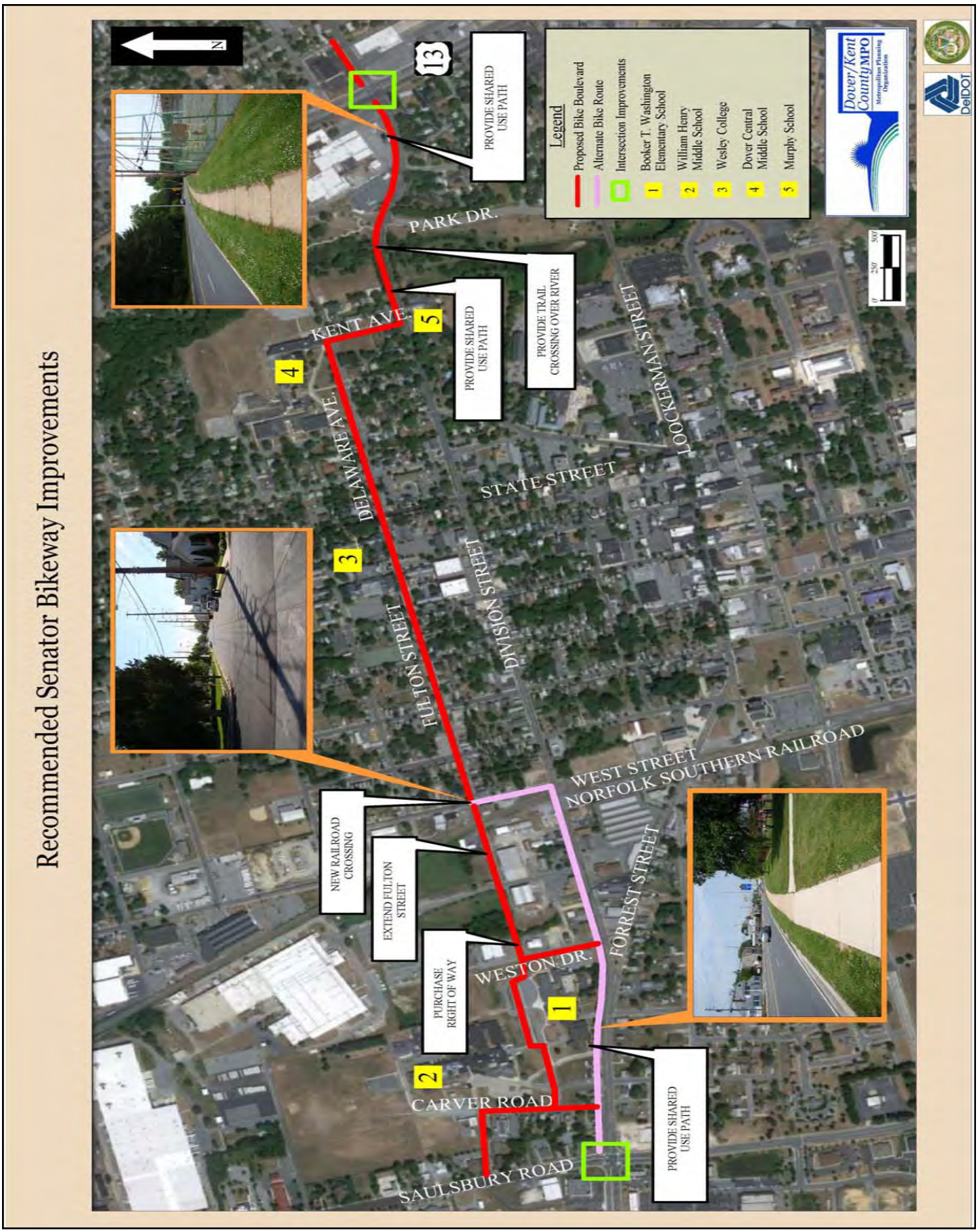
U.S. 13/Division Street (looking north)

Recommendation: Provide improvements at the U.S. 13/Route 8 intersection (including wider refuge islands, pedestrian signals and crosswalks, and signal timing modifications) to facilitate a safe crossing for bicyclists

The Senator Bikeway (continued)

Based on conceptual level planning, the table below lists some of the improvements that would be required to fully implement the Senator Bikeway from U.S. 13 to Dover High School. These recommendations are also noted in the graphics on pages 50 and 51.

Recommended Senator Bikeway Improvements	
Corridor	**Recommendation**
Route 8	◊ Upgrade the sidewalk along the southeast corner of Route 8/Saulsbury Road (current CVS) to a shared-use path ◊ Create a safe bike/pedestrian crossing of U.S. 13 ◊ Provide a shared use path along the northwest corner of U.S. 13/Route 8 (former Playtex property) ◊ Create a safe bike/pedestrian crossing of Kings Highway at Route 8 ◊ Provide a new trail crossing over the St. Jones River ◊ Create a safe bike/pedestrian crossing at Saulsbury Road (in both directions) ◊ Upgrade the sidewalk along the northwest corner of Route 8/Saulsbury Road (current Walgreens) to a shared-use path ◊ Resurface/repair the asphalt on the existing shared-use path along the north side of Route 8 ◊ Create a safe bike/pedestrian crossing of Kenton Road at Route 8 ◊ Install a shared-use path on the south side of Route 8, between Dover High School and Mifflin Road <u>Optional:</u> ◊ Re-stripe Division Street near Kent Avenue to provide bike lanes ◊ Widen the existing sidewalk along Booker T. Washington School to provide a shared use path ◊ Eliminate on-street parking between Weston Drive and the Railroad
Fulton Street	◊ Provide a new bike/ped crossing of the Norfolk Southern Railroad ◊ Extend Fulton Street to Weston Drive ◊ Provide bike lanes through the rear parking lot of the Booker T. Washington School


Recommended Senator Bikeway Improvements
N
Legend
Proposed Bike Boulevard
Alternate Bike Route
Intersection Improvements
1 Booker T. Washington Elementary School
2 William Henry Middle School
3 Wesley College
4 Dover Central Middle School
5 Murphy School
Dover/Kent County MPO
Metropolitan Planning Organization
DelDOT
0 250 500
PROVIDE SHARED USE PATH
PROVIDE TRAIL CROSSING OVER RIVER
PROVIDE SHARED USE PATH
NEW RAILROAD CROSSING
EXTEND FULTON STREET
PURCHASE RIGHT OF WAY
PROVIDE SHARED USE PATH
PARK DR.
KENT AVE.
DELAWARE AVE.
FULTON STREET
DIVISION STREET
STATE STREET
LOOCKERMAN STREET
WEST STREET
NORFOLK SOUTHERN RAILROAD
FORREST STREET
WESTON DR.
CARVER ROAD
SAULSBURY ROAD
13
1
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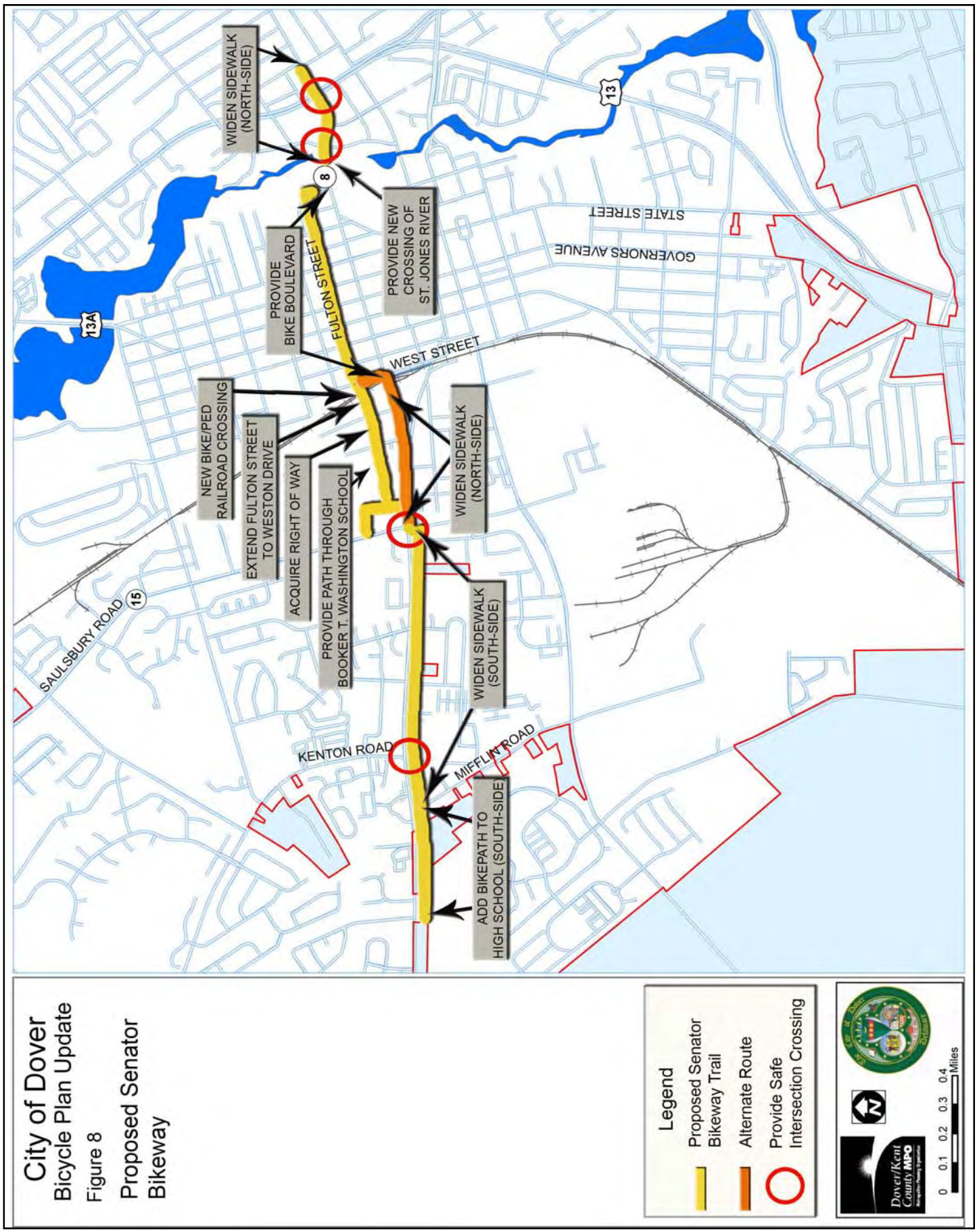

City of Dover
Bicycle Plan Update
Figure 8
Proposed Senator Bikeway
Legend
Proposed Senator Bikeway Trail
Alternate Route
Provide Safe Intersection Crossing
Dover/Kent County MPO
0 0.1 0.2 0.3 0.4 Miles
WIDEN SIDEWALK (NORTH-SIDE)
PROVIDE BIKE BOULEVARD
FULTON STREET
PROVIDE NEW CROSSING OF ST. JONES RIVER
STATE STREET
GOVERNORS AVENUE
WEST STREET
NEW BIKE/PED RAILROAD CROSSING
EXTEND FULTON STREET TO WESTON DRIVE
ACQUIRE RIGHT OF WAY
PROVIDE PATH THROUGH BOOKER T. WASHINGTON SCHOOL
WIDEN SIDEWALK (NORTH-SIDE)
WIDEN SIDEWALK (SOUTH-SIDE)
SALISBURY ROAD
KENTON ROAD
MIFFLIN ROAD
ADD BIKEPATH TO HIGH SCHOOL (SOUTH-SIDE)
13A
13
8
15

Recommendations - Engineering (On Road)

North State Street (#2 Ranked)

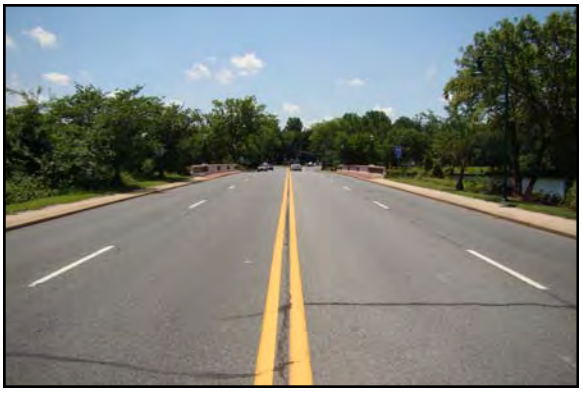
North State Street between Walker Road and U.S. 13 is a 4-lane undivided roadway that provides the only access over Silver Lake between downtown Dover and U.S. 13. The road, which carries over 14,000 vehicles per day, has a speed limit of 35 MPH. There are sidewalks throughout much of the corridor, with the exception of several properties near Lepore Drive. There are no shoulders or bike lanes along the roadway. A pavement width of about 45 feet accommodates the 4 travel lanes.

Given the relatively high average daily traffic volumes, and the lack of additional pavement width, it is not feasible to reallocate existing pavement width to accommodate a bicycle lane in each direction. The travel lanes are currently 11 feet wide, which is the DelDOT minimum for this roadway classification.

A long-term solution would be to construct a new bridge for bicyclists and pedestrians over Silver Lake, which combined with widening the existing sidewalk to at least 8 feet, would provide for a separated off-road area for bicyclists, one that is currently non-existent. This would fulfill the need to provide a bicycle connection between downtown Dover and U.S. 13, alleviating the challenging conditions that currently exist.

A shorter-term solution is to widen the existing sidewalks north and south of the Silver Lake Bridge to 8 feet, to provide for the minimum width required for a shared-use path. Due to its proximity to a side slope going into Silver Lake, this would likely require a retaining wall. There are currently 4-foot wide sidewalks that traverse the Silver Lake Bridge. This bridge is classified by DelDOT as a historic structure, and any modifications to the aesthetics or functionality of the existing structure are unlikely, so the 4-foot wide sidewalks would remain. Widening of the sidewalks would also require the removal of existing landscaping as well as potential utility relocations.

Recommendation (short-term): Widen the existing sidewalks to provide a shared-use path
Recommendation (long-term): Construct a new bridge over Silver Lake for bicyclists



North State Street (looking south)

North State Street (looking south)

North State Street (looking north)

North State Street (looking north)

Recommendations - Engineering (On Road)

College Road (#3 Ranked)

College Road is a 2-lane road that provides access from Kenton Road on the west side of Dover ultimately to U.S. 13. The portion of College Road between Kenton Road and McKee Road (0.8 mile) lacks continuous sidewalks, has no shoulders, and does not have bike lanes at any intersections. As a result, bicyclists must share the road with motor vehicles. The posted speed limit is 35 MPH, and traffic volumes average over 8,000 vehicles per day. College Road provides an important link between the western limits of Dover towards Delaware State University and U.S. 13. There are currently striped bike lanes on the eastern limits of College Road, between the University Garden apartment complex and U.S. 13.

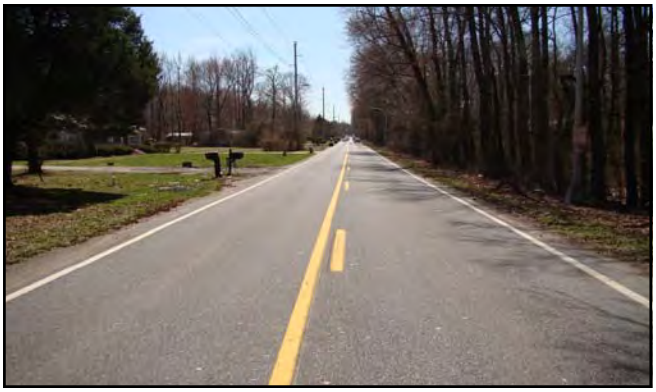
College Road (looking west)

College Road at Delaware State University

Recommendation: Provide continuous bike facilities on College Road from McKee Road to Kenton Road, by adding shoulders or a shared-use path

Given the lack of bicycle (and pedestrian) amenities along this road, and the potential importance in providing improved transportation access to Delaware State University and the North Dover Elementary School, it is recommended that a College Road improvement project be initiated by DelDOT. In the 2011 MPO Regional Bicycle Plan, College Road was the 8th ranked project in Kent County. In addition, the Dover City Council included College Road as their #10-ranked project on their 2014 Transportation Project Prioritization list. The City's Pedestrian Plan update, completed in 2014, also includes College Road as the 6th-ranked project in the City.

College Road (looking west)



College Road (looking west)

Recommendations - Engineering (On Road)

South West Street (#4 Ranked)

South West Street is a State-maintained road that connects North Street and Queen Street near downtown Dover, a distance of about 0.4 mile. The land use along the west side of the corridor is dominated by the Norfolk Southern railroad. There are several businesses located near the West Street/Queen Street intersection. Along the east side, there are primarily government buildings or utility companies, including the J.P. Court, Chesapeake Utilities, and the Dover Police Department. The Dover Transit Center, which is the transit hub for all of DART's Kent County routes, is located at the intersection of West Street, Water Street, and Queen Street. Fourteen local bus routes travel to and from the Transit Center every weekday, as well as several inter-county bus routes.

The existing shared-use trail that runs along North Street from Schutte Park in the west, terminates at the railroad tracks just west of the West Street/North Street intersection, leaving bicyclists and pedestrians with no suitable route to proceed eastbound into downtown Dover. West Street has no shoulders and lacks sidewalks for most of its length. Sidewalks exist along the east side of the road between Bank Lane and Water Street, and along the perimeter of the Transit Center.

Based on studies conducted by the MPO in 2013, West Street is heavily used by pedestrians walking from the downtown to the Transit Center. As a result of the MPO study, DelDOT is proposing to provide a 10-foot wide pathway between North Street and the Transit Center, constructing new sidewalk where it currently doesn't exist (as shown in the photo below) and widening the existing sidewalk to provide for a shared-use facility. Bicyclists would be able to use the off-road path as well. Conceptual design has been completed on this section, however, there is currently no design funding programmed for these proposed improvements.

Recommendation: Provide bike facilities on West Street from North Street to Queen Street, through a shared use path and/or through the addition of shoulders.

West Street (looking north)

West Street (looking south)

West Street (looking north)

West Street/Water Street (looking east)

Recommendations - Engineering (On Road)

Walker Road (#5 Ranked)

Walker Road between North State Street and Saulsbury Road is a 0.9-mile roadway that accommodates over 11,000 vehicles per day. Between North State Street and Silver Lake Boulevard, the roadway consists of a two-lane roadway section, with partially designated shoulders and no bike lanes through the intersections. The curb to curb width is about 35 feet (wider at the intersections). On-street parking is permitted on a portion of the south side of this section of Walker Road.

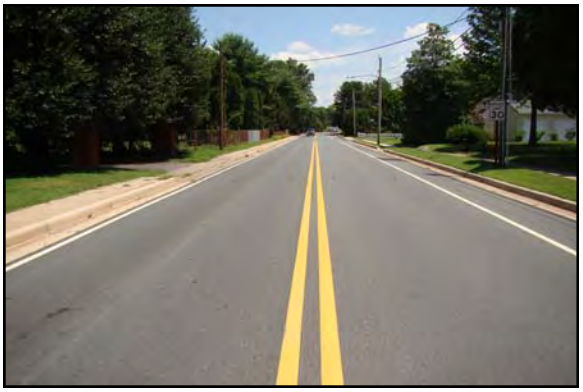
Between Silver Lake Boulevard and Saulsbury Road, the typical section converts into a 3-lane roadway (2 thru lanes and a continuous center turn lane). There are minimal shoulders (less than 4 feet), no bike lanes, and no on-street parking in this section as well. The curb to curb width between Silver Lake Boulevard and Saulsbury Road is about 44 feet.

Given the lack of available pavement width along Walker Road, there is not sufficient width to accommodate a continuous bicycle lane throughout the existing corridor. Between North State Street and Silver Lane Boulevard, there is likely enough pavement width to provide for a 4-foot wide bicycle lane in each direction. However, this would not provide bicycle lanes through the intersections of:

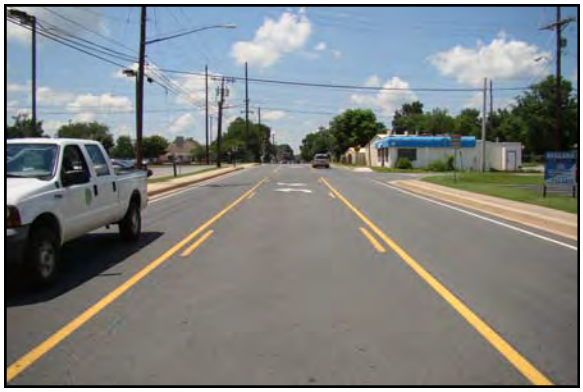
- Walker Road/Silver Lake Boulevard/Carol Street
- Walker Road/Pat Lynn Drive/Pear Street

West of Silver Lake Boulevard, there may be an opportunity to reduce the lane widths slightly, to provide for a 4-foot wide shoulder. This improvement could be done through a future re-surfacing and/or re-striping project.

Recommendation: Provide bike lanes on Walker Road from Saulsbury Road to North State Street, through pavement re-striping



Walker Road (Looking East)



Walker Road (Looking West)

Walker Road (Looking East)

Walker Road (Looking East)

Saulsbury Road (#6 Ranked)

Saulsbury Road (also designated as Delaware Route 15) is a major north-south route in the west part of Dover. Between Route 8 and North Street, the road currently has average daily traffic volumes that exceed 18,000 vehicles per day, with volumes expected to increase once the West Dover Connector is completed in 2017.

The surrounding land use consists of significant commercial uses (Gateway West shopping center, Royal Farms, several pharmacies), office space on the western side, and residential on the eastern side. Kraft Foods and Procter & Gamble, which are two large industries located along North Street, generate significant truck traffic that consistently utilizes Saulsbury Road. A small City-owned park is also located on the east side of the road. The typical roadway section along Saulsbury Road consists of a through lane in each direction, turn lanes at the intersections, and shoulders throughout the corridor (with the exception of the intersections with Route 8 and North Street).

Saulsbury Road is designated as Bicycle Route 1 and is considered a Statewide Bicycle Route. Saulsbury Road is a vital connection for bicycle travel in this part of the City, as there are no other north-south connectors between Mifflin Road and downtown Dover. The road provides an important link between Route 8 bike routes (and points to the north) with the North Street bikeway (and points to the south). As noted in the graphic below, bike lanes and/or 8-foot wide shoulders are provided throughout the entire corridor in the northbound direction. However, in the southbound direction, bike lanes are not continuous and are not provided at the Saulsbury Road/Gateway Boulevard intersection or the Saulsbury Road/North Street intersection. As shown below, a shared-use path is present along much of the east side of Saulsbury Road, with the exception of a portion adjacent to the Dover Housing Authority property.

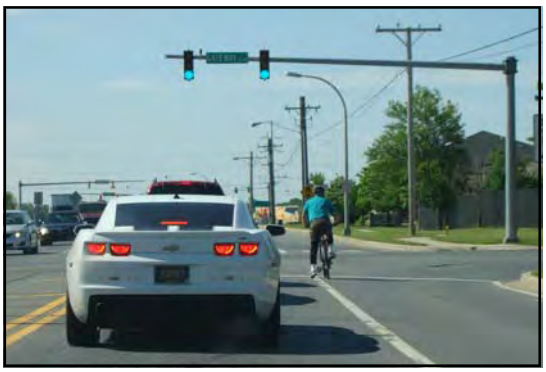
Saulsbury Road (continued)

As noted on page 56, Saulsbury Road has several locations that present challenges to bicyclists - the intersections with Gateway Boulevard and North Street, neither of which have bicycle lanes in the southbound direction.

Saulsbury Road/Gateway Boulevard

Along southbound Saulsbury Road, the existing striped shoulder, which provides an area for bicyclists, converts into a right turn lane at the Gateway Boulevard intersection. As noted in the photo below on the left, there is no bike lane through this intersection in the southbound direction, forcing bicyclists to share space with motorists in both the through lane and the turn lane (as evidenced in the photo to the right). DelDOT's Manual on Uniform Traffic Control Devices (MUTCD) does not permit striping a bike lane through a right turn lane unless there is space dedicated solely for bicyclists. DelDOT, in conjunction with the University of Delaware, is currently evaluating several shared bike lane/right turn lane striping alternatives that could eventually be approved, to provide bike facilities through existing turn lanes.

Saulsbury Road /Gateway Boulevard



Saulsbury Road /Gateway Boulevard

In order to facilitate bicycle travel in this important corridor, and eliminate the challenges that exist at the Saulsbury Road/Gateway Boulevard intersection, it is recommended that the existing sidewalk on the west side of Saulsbury Road be widened to provide a shared-use path between Route 8 and North Street. Five-foot wide sidewalk is present along the entire west side of Saulsbury Road.

In addition, on the east side of Saulsbury Road, there is a shared-use path (8 to 10 feet wide) that covers nearly 75% of the corridor between Route 8 and North Street. It is recommended that approximately 550 feet of existing 5-foot wide sidewalk between Royal Farms and Saulsbury Road Park (adjacent to the Dover Housing Authority property) be widened to provide a continuous shared-use path on the east side of the road.

Recommendation: Widen the existing sidewalk on both sides of Saulsbury Road from Route 8 to North Street, to provide a continuous 8-foot wide shared-use path

Saulsbury Road (west side)

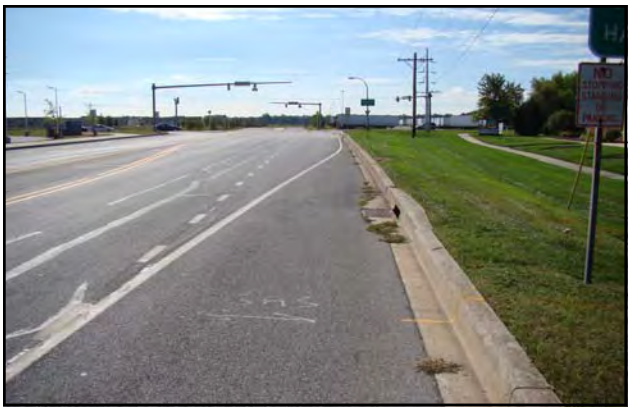
Saulsbury Road (east side)

Saulsbury Road (continued)

Saulsbury Road/North Street

Currently, there are no bike lanes on southbound Saulsbury Road at its intersection with North Street. The intersection currently consists of a through lane, a right turn lane, and a left turn lane in the southbound direction. Along northbound Saulsbury Road, bike lanes were recently installed as part of the Royal Farms development. However, as noted in the photo below, the striping creates confusion for motorists and bicyclists alike. Bike lanes are also present in the westbound direction along North Street through the intersection. As previously noted, there is an existing bike trail located on the south side of North Street, which runs east to west through the Saulsbury Road intersection.

Saulsbury Road (at Royal Farms)



Saulsbury Road /North Street

With the construction of the West Dover Connector (scheduled for completion in 2017), Saulsbury Road will be extended 3.2 miles to the south to connect with U.S. 13. The West Dover Connector will have extensive facilities for bicycle travel, including a shared-use path, shoulders, and bike lanes. It is anticipated that bicycle travel in the area will increase with the opening of this new road.

As part of the West Dover Connector project, the Saulsbury Road/North Street intersection will have bike lanes through the intersection in both the northbound and southbound directions. Bike lanes will also be maintained along westbound North Street through the intersection as part of this project. The existing bike trail located on the south side of North Street will remain intact and continue to provide for bicycle mobility in the eastbound direction.

The photos below show the existing conditions along Saulsbury Road in the northbound direction, as well as an artist rendering of the proposed configuration to be completed as part of the West Dover Connector.

Saulsbury Road /North Street (existing)

Saulsbury Road /North Street (proposed)

MLK Boulevard/South Little Creek Road (#7 Ranked)

Martin Luther King Boulevard/South Little Creek Road are two roads that compose a primary east-west route connecting the central part of Dover with residential and commercial areas on the eastern limits of the city. Between Babb Drive and U.S. 13, the roads cross Bay Road, one of the primary north-south routes in Kent County. Bay Road is the dividing line between the road names, as South Little Creek Road begins on the east side of Bay Road. In addition, U.S. 13, a major 4-lane highway, runs north to south within the limits.

As noted in the photo below, the area is predominantly urban, with a wide variety of commercial land uses adjacent to the roads. These commercial uses include major traffic generators such as Safeway, Target, Royal Farms, and Wawa. MLK Boulevard also provides direct access to the government facilities located along the Legislative Mall area. Residential areas are present on the east and west side of Babb Drive and U.S. 13, respectively.

Road	2013 Traffic Volume
U.S. 13	29,100
Bay Road	27,300
South Little Creek Road	1,190
MLK Blvd.	10,400

Source: 2013 DelDOT Traffic Summary

There is a bike lane on westbound South Little Creek Road, between Babb Drive and Bay Road. However, as noted in the photo below, there is currently no space available for bicyclists within the existing pavement between Bay Road and U.S. 13, either eastbound or westbound. In addition, there are no bicycle lanes on eastbound South Little Creek Road. Sidewalks are present throughout the corridor but are only 5 feet wide. The Capital City Trail, a 10-foot wide shared-use path, is located along U.S. 13 and MLK Boulevard and facilitates bicycle access into downtown Dover. However, the 0.2-mile stretch between Babb Drive and U.S. 13 provides a significant challenge for bicycle mobility from the areas east of Bay Road (including South Little Creek Road) to access this new trail.

MLK Boulevard (Looking West)

It is recommended that the existing sidewalk between Bay Road and U.S. 13 be widened to facilitate a 10-foot wide shared use path. Widening the sidewalk on either the north side or the south side of MLK Boulevard would be determined as part of the final design process, and would take into consideration such items as utilities, right-of-way, drainage, and con nectivity to other bike facilities in the area (such as the Capital City Trail and the bike lanes on South Little Creek Road). A 10-foot wide shared use pathway would facilitate 2-way bicycle traffic.

Recommendation: Widen the existing sidewalk along MLK Boulevard between Bay Road and U.S. 13 to provide a shared-use path

Recommendations - Engineering (On Road)

Listed below are the recommended on-road improvements, as developed by the Bicycle and Pedestrian Subcommittee. These projects are also shown on Figure 9.

Recommended On-Road Projects to Improve Citywide Bicycle Use			
Rank	**Road**	**Limits**	**Recommended Solution**
1	Route 8 (Forrest Avenue/ Division Street)	Dover High School to South Edgehill Avenue	Implement the "Senator Bikeway", through widening existing sidewalks, creating new trail connections, providing a bicycle boulevard
2	North State Street	Walker Road to U.S. 13	Widen existing sidewalk to provide a shared use path
3	College Road	McKee Road to Kenton Road	Add shoulders to provide bike lanes and/or provide a shared use path
4	West Street	North Street to Queen Street	Add shoulders and/or install a shared use path to provide continuous bike lanes
5	Walker Road	North State Street to Saulsbury Road	Provide bike lanes through re-striping
6	Saulsbury Road	North Street to Route 8	Widen sidewalk on both sides to provide a shared use path
7	MLK Boulevard/ South Little Creek Road	Babb Drive to U.S. 13	Widen sidewalks to provide a shared use path

Recommendations - Engineering (Planning Studies)

Based on feedback received from the Bicycle and Pedestrian Subcommittee, there are several areas within the City that are recommended for future detailed planning studies. These areas are described in more detail below.

New Burton Road

New Burton Road is a 2-lane local road that provides direct access from Camden and Wyoming to Dover, a distance of nearly 2 miles. North of Webbs Lane, all of New Burton Road lies within City limits. South of Webbs Lane, only the west side of the road lies within the City's boundaries. The Norfolk Southern Railroad lies on the west side of the road.

In the northbound direction, New Burton Road has continuous shoulders throughout the entire City limits. However, in the southbound direction, there are no shoulders from Webbs Lane to north of Kesselring Avenue, forcing bicyclists to share the travel lane with motor vehicles in this 0.5-mile segment.

New Burton Road (looking south)

The proposed West Dover Connector will tie into Webbs Lane near New Burton Road. Once the West Dover Connector is completed in 2017, it is likely that there will be additional bicycle traffic along New Burton Road, as the new connector will provide significantly improved bicycle access to the west part of Dover. It is recommended that DelDOT Planning further evaluate potential improvements along New Burton Road, as it relates to the anticipated increase in bicycle volumes resulting from the West Dover Connector. An analysis of the speed limit along New Burton Road should also be included in the study, to determine if a speed limit reduction would make conditions more conducive for bicycling. The current speed limit is 45 MPH.

Recommendation: Conduct a planning study of New Burton Road, to determine if additional improvements (such as shoulder installation and speed limit reduction) are warranted.

Dover Downs

Dover Downs hosts several large-scale events throughout the year at its facilities on the north side of Dover. NASCAR races are annually held in the late spring and early fall at Dover Downs, bringing between 70,000 and 80,000 fans to the event. The Firefly Music Festival, held at the Woodlands of Dover International Speedway, topped 85,000 attendees in 2014, with more anticipated in 2015. Finally, the initial Big Barrel Country Music Festival will be held in 2015, with an anticipated crowd of over 30,000 people expected to attend.

These events bring a significant volume of pedestrian traffic along U.S. 13 and Leipsic Road in the vicinity of Dover Downs. There is also the potential for a large increase in bicycle travel along these routes, particularly for local residents who want to use their bicycle to access the events as opposed to their car.

The Subcommittee is recommending that DelDOT, Dover Downs, and the event organizers continue to ensure that bicycle travel is incorporated into the traffic and access plans developed for each event. The Subcommittee also wishes to encourage every effort to increase bicycle access to these events, through education and public awareness campaigns.

Recommendations - Engineering (Off Road)

Schutte Park Trail

Schutte Park, a City-owned park located at the intersection of Hazlettville Road/Mifflin Road/Wyoming Mill Road, is one of the Dover's largest parks. The Schutte Park complex consists of several parcels of land, including 57 acres dedicated to active recreation, soccer fields, and 4 softball fields. In addition, the Dover Little League fields are located on the south end of the property, consisting of about 107 acres. The John Pitts Recreation Center, which provides indoor recreational and fitness facilities, is also located within the Park.

A 10-foot wide concrete trail is located along the entire Hazlettville Road frontage of the Park. Along the park entrance road, the trail heads south for about 1/3 mile and terminates in a parking lot, as shown on the map below.

In order to provide additional recreational and fitness opportunities for walkers and bicyclists, it is recommended that the City evaluate extending the existing trail network to the south. The trail network could be extended into the wooded areas of the park to provide a natural setting for area walkers, similar to the trail network that Kent County has successfully installed at Brecknock Park in Camden. A soft surface (stone dust) could be used in the wooded areas.

As of fall 2014, the City was in the process of updating its Parks and Recreation Plan, and it is recommended that the feasibility of a Schutte Park trail extension be evaluated as part of that Plan update. In the spring of 2014, the City initiated a topographic survey of the property to determine the potential for future park amenities such as additional trails.

Recommendation: Extend the existing Schutte Park trail to the Dover Little League and around the perimeter of the Park, including the wooded areas of the Park

Recommendations - Engineering (Off Road)

Fox Hall West / Mallard Pond / Route 8 Connector

Fox Hall West and Mallard Pond are residential communities in the west part of Dover, comprising over 200 single-family lots. The communities only have access from Kenton Road.

As shown on the map on the following page, Fox Hall West is only about 1/4 mile north of Route 8. However, the community does not have vehicular or pedestrian access to Route 8, so all trips traveling to Route 8 must be made via Kenton Road. Due to the lack of sidewalks and shoulders along Kenton Road, it can be safely assumed that these trips are almost exclusively done with a motor vehicle, as opposed to walking or riding a bike.

The new Dover High School, which opened in August 2014, is located along Route 8 in close proximity to these communities. However, due to the lack of pedestrian access to Route 8, a trip from the southern end of Fox Hall West to the new school is 2.2 miles, traveling along Kenton Road. If there were direct pedestrian access to Route 8 though, this trip would be reduced to 0.8 mile.

The City of Dover owns 2 parcels of land in between Route 8 and Fox Hall West, comprising 8.7 acres of open space (including Mallard Pond Park). It is recommended that the City of Dover evaluate the feasibility of constructing a bicycle/pedestrian trail connection from Fox Hall West (via Pebble Valley Drive) to Marsh Creek Lane, as a means of providing a direct non-motorized connection to Route 8. A trail connection could also be made to an existing sidewalk that connects the Mallard Pond community with the Mallard Pond Park. Providing direct pedestrian access to Route 8 would eliminate vehicular trips along Kenton Road, provide additional recreational access for area residents, and improve access to the new high school. Marsh Creek Lane is just east of the HAWK pedestrian-activated traffic signal that was installed in the summer of 2014. Marsh Creek Lane has sidewalks along its entire length.

In July 2014, the City held a public workshop to discuss the proposed trail concept with neighboring residents.

Recommendation: Construct a trail from Fox Hall West and Mallard Pond communities to Route 8, through Mallard Pond Park

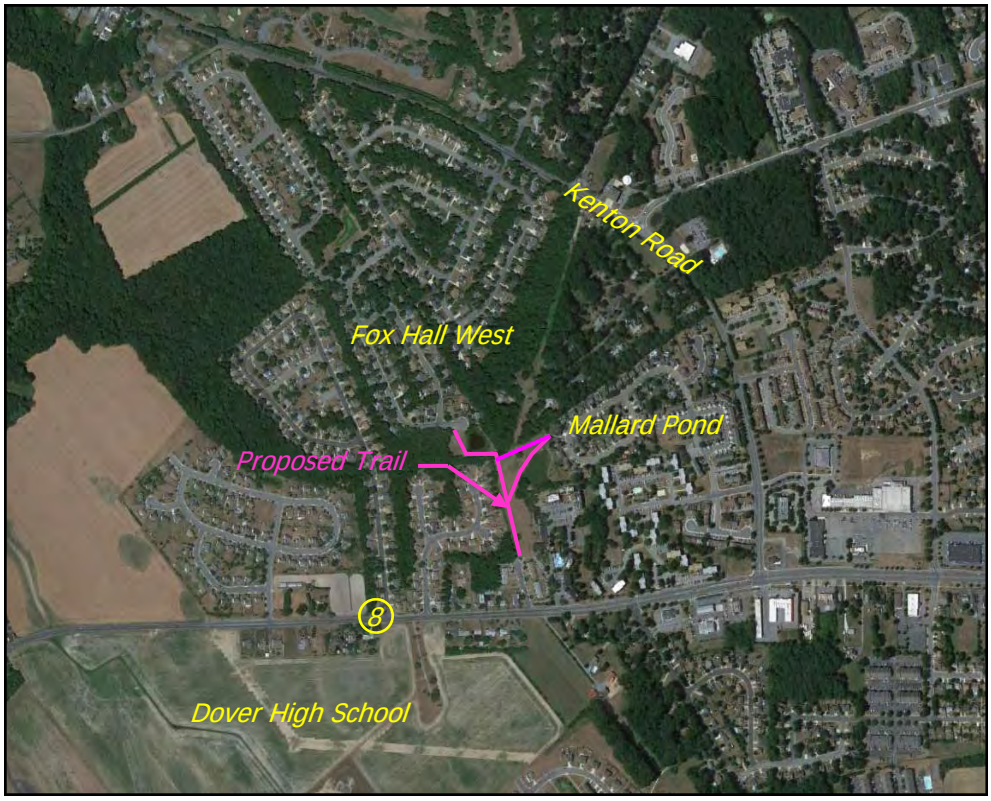
Mallard Pond Park (Existing)

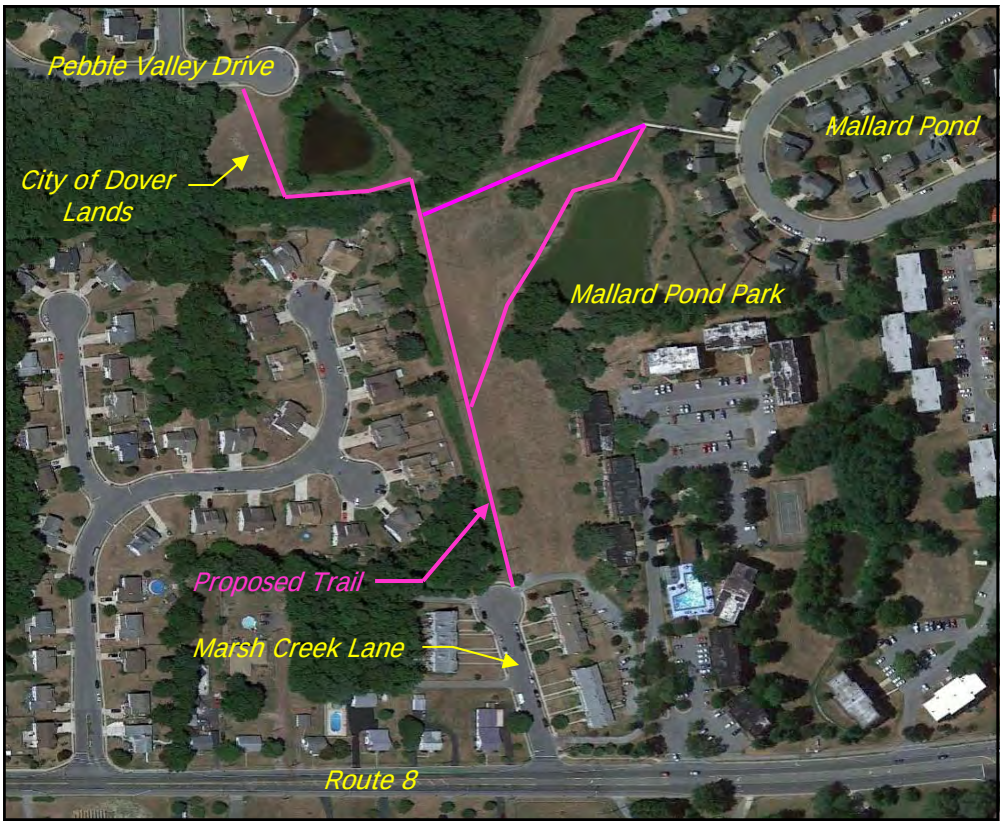
Mallard Pond Park (Proposed)

Pebble Valley Drive (Existing)

Pebble Valley Drive (Proposed)

Fox Hall West / Mallard Pond / Route 8 Connector (Continued)





Recommendations - Engineering (Off Road)

North Street Trail

The North Street Trail is an 8-foot wide, off-road facility that runs along the south side of North Street. The trail runs between Schutte Park and West Street, a distance of about 1.3 miles. The pathway ties into the existing trail network at Eden Hill Farm, including the Medical Center, and is used regularly by pedestrians, joggers, and bicyclists for recreation as well as transportation purposes. The pathway is adjacent to an industrial complex consisting of Kraft Foods and Proctor & Gamble, and is often used by employees for recreation. The North Street Trail will likely gain additional bicyclist volumes in the future, as DelDOT is currently exploring ways to connect this facility with the recently-constructed Capital City Trail in downtown Dover.

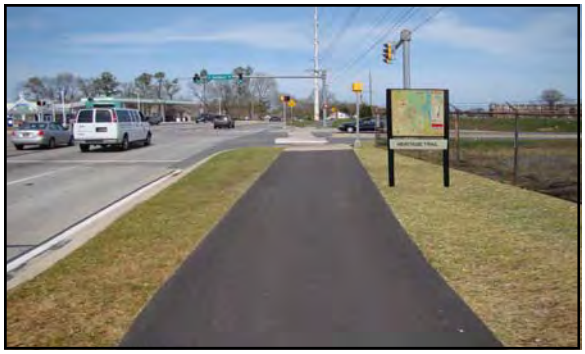
Given its location and the mixture of land uses that it connects, particularly the recreational opportunities afforded by Schutte Park, the North Street Trail could provide an important bicycling link in this part of Dover. However, the trail's asphalt surface is currently in poor condition, and maintenance is non-existent. Based on the DelDOT Sidewalk and Multi-Use Path Maintenance Policy, DelDOT is responsible for maintenance between West Street and the Proctor & Gamble facility (1.0 mile), as this portion lies within the State right-of-way. However, along the Proctor & Gamble frontage, the trail lies outside of the State right-of-way and maintenance would be the responsibility of the property owner (Proctor & Gamble).

In order to further promote the use of this important bicycling connection between downtown Dover, the Eden Hill Farm community, and Schutte Park, it is recommended that the existing surface be re-paved, and trail signs installed. There are currently no signs that indicate the presence of a trail. This trail could also provide a multi-modal connection to the First State Heritage Trail, which consists of a variety of historic resources and destinations in downtown Dover.

The artist renderings below show the current path with a new hot mix surface and decorative trail signs. Naming the trail would provide a sense of place and could potentially increase its use. An improved trail would also facilitate two-way bicycle travel, as westbound North Street lacks shoulders for much of its length and provides a challenging environment for cyclists.

Recommendation: Resurface the North Street trail from Schutte Park to West Street and add signage

North Street Trail (Existing)



North Street Trail (Proposed)

North Street Trail (Existing)

North Street Trail (Proposed)

Recommendations - Engineering (Off Road)

St. Jones River Trail

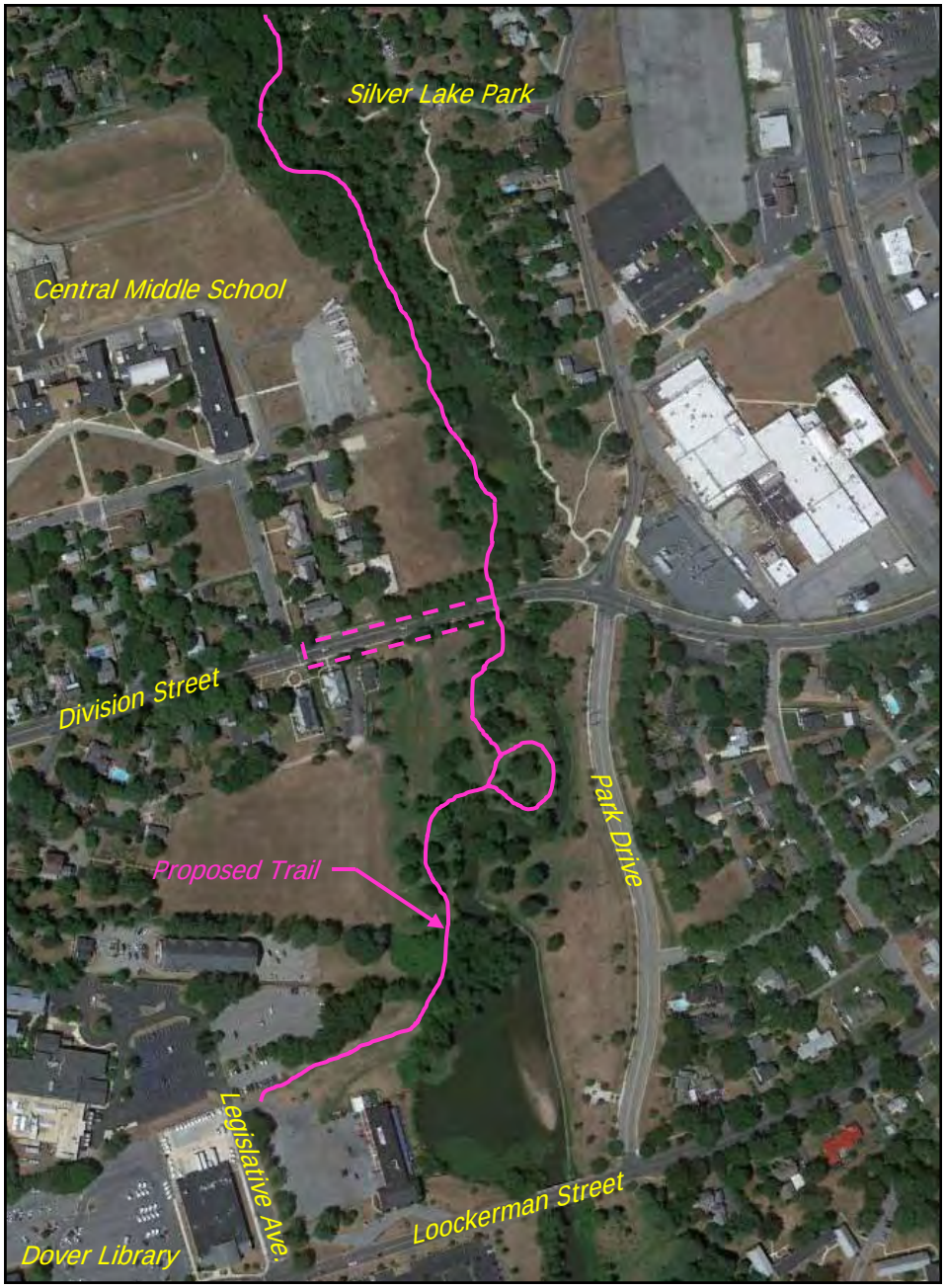
As part of the plan's public involvement effort, the City of Dover's Silver Lake Commission requested that a new trail be constructed on the west side of the St. Jones River, from Silver Lake Park to Legislative Avenue near the Dover Post Office. This trail would provide recreational access to Silver Lake Park from a wide variety of uses in downtown Dover, including the Post Office, the Dover Library, the Department of Natural Resources and Environmental Control (DNREC) complex, and Fraizer's restaurant.

According to the Silver Lake Commission's request, "the Commission seeks these trail improvements, predominantly from the standpoint of improving outdoor amenities within Silver Lake Park and along the St. Jones River though we are quite cognizant of the economic benefits it would provide downtown Dover and the health and quality of life benefits it would provide our residents and visitors."

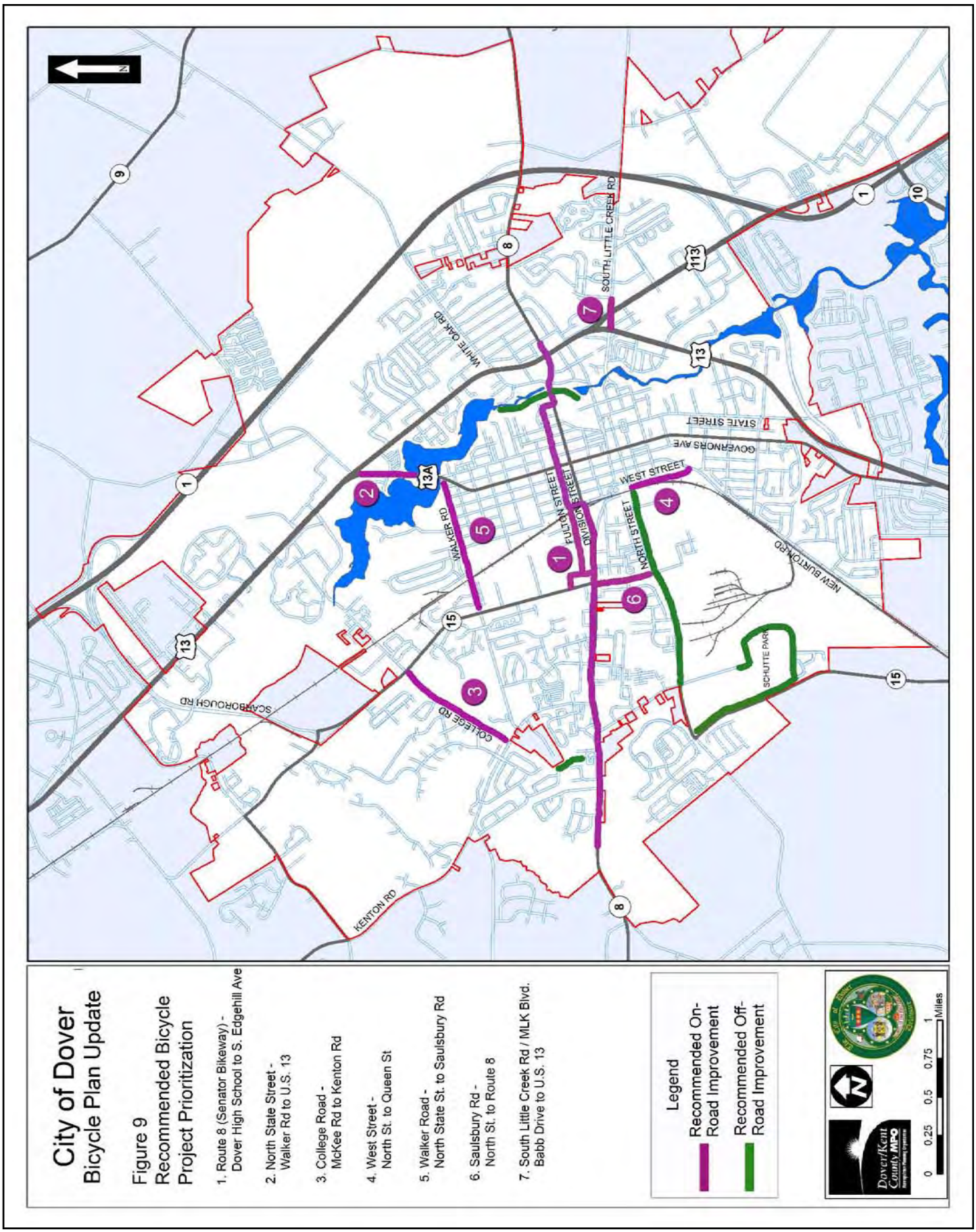
As shown on the adjacent graphic, the trail would complete a loop network around the St. Jones River by connecting Silver Lake Park with the existing sidewalks near the Post Office, Library, and DNREC facilities. Sidewalks are currently located only on the east side of the St. Jones River, along Park Drive.

Phase III of the Capital City Trail, completed in the fall of 2014, widened the existing sidewalks to provide for a 10-foot wide shared use path on the east side of the river.

This proposal would require the acquisition of right-of-way from about 5 property owners. Environmental permits would likely be required due to its location within the floodplain and proximity to existing wetlands. In addition, a new mid-block trail crossing of Division Street would have to be evaluated by DelDOT.



Recommendation: Provide a new trail on the west side of the St. Jones River between Silver Lake Park and Legislative Avenue


City of Dover
Bicycle Plan Update
Figure 9
Recommended Bicycle
Project Prioritization
1. Route 8 (Senator Bikeway) - Dover High School to S. Edgehill Ave
2. North State Street - Walker Rd to U.S. 13
3. College Road - McKee Rd to Kenton Rd
4. West Street - North St. to Queen St
5. Walker Road - North State St. to Saulsbury Rd
6. Saulsbury Rd - North St. to Route 8
7. South Little Creek Rd / MLK Blvd. Babb Drive to U.S. 13
Legend
Recommended On-Road Improvement
Recommended Off-Road Improvement
Dover/Kent County MPO
0 0.25 0.5 0.75 1 Miles
N
WHITE OAK RD
SOUTH LITTLE CREEK RD
STATE STREET
GOVERNORS AVE
WEST STREET
FULTON STREET
DIVISION STREET
NORTH STREET
WALKER RD
NEW BURTON RD
SCHUTTE PARK
COLLEGE RD
SCARBOROUGH RD
KENTON RD
13A
1
2
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8
9
10
13
15
113

Recommendations - Education

This community will undertake the following actions, once in each of the years indicated:

1.	**Classes:**	League-Certified Instructor Seminar	2015, 2018
		Traffic Skills 101	2015, 2016, 2017, 2018, 2019, 2020
		Traffic Skills 201	2016, 2018, 2020

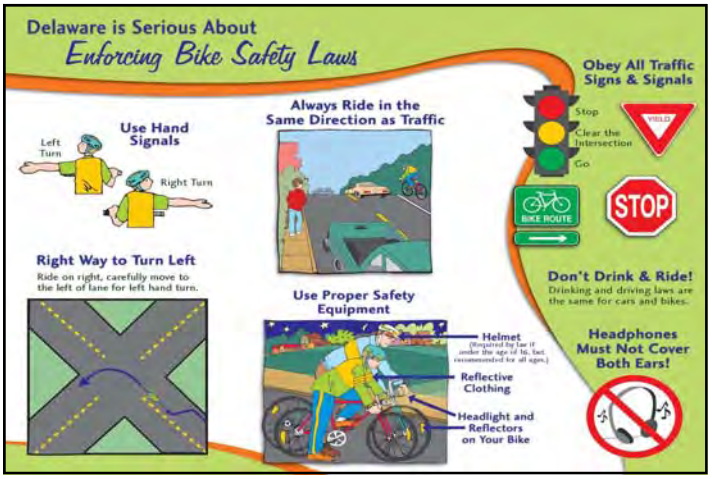
The League-Certified Instructor (LCI) Seminar is not offered in any nearby state, so our offering will be advertised in all neighboring states, facilitating the development of bicycle education programs in other states as well as in our own. Members of our own community who complete the League-Certified Instructor Seminar will then be able to lead the Traffic Skills 101 classes that will be offered annually, and the Traffic Skills 201 classes that will be offered biannually. It is anticipated that DelDOT would be the host and sponsor of the classes, given the fact that they currently sponsor LCI classes.

2.	**Workshops:**	Bicycle Maintenance	2015, 2016, 2017, 2018, 2019, 2020
		Bicycle Safety Workshop	2015, 2016, 2017, 2018, 2019, 2020
		Multi-Sport Clinic	2015, 2016, 2017, 2018, 2019, 2020

The Bicycle Maintenance Workshops will be hosted by the partnership of two local businesses - Dave's Road Bikes and Bike Werx Bike Shop. It is anticipated that the workshops will be 1 to 2 hours in length, with a nominal fee. The registration will be coordinated through the City's Parks and Recreation Department.

3. Educational Support:

Support the Delaware Bicycle Council in having driver's education programs include information on bicyclist's right to use the road in Delaware, including the 3-foot passing law.



Delaware Bicycle Safety Brochure

League of American Bicyclists Safety Shirt

Recommendations - Encouragement

This community will undertake the following actions to further encourage cycling awareness within the City:

1. **Amish Country Bike Tour** - Annually, first Saturday in September

Over 2,000 cyclists participate in this event, which offers distances from 15 to 100 miles. The tour starts and ends at Legislative Mall in the center of Dover. The Tour is organized by Kent County Tourism, and the City of Dover provides assistance in the form of public safety, trash pickup, etc.

2. **Ride of Silence** - Annually, beginning in 2015, on Wednesday May 20, 2015

Inaugural ride will be one mile in length, through downtown Dover. The event will be organized by the City of Dover, and it is anticipated that the police department will assist with traffic management as required.

3. **Capital City Trail Inaugural Ride** - April 2015

This event celebrates the completion of the newly constructed multi-use path that runs through downtown Dover, connecting Silver Lake Park with the St. Jones River Bikeway.

4. **Bike Rack Contest** - Spring 2015

The Subcommittee will solicit bike rack designs from schools throughout the state, for installation in the City. The Subcommittee will judge the design based on factors such as functionality, uniqueness, and constructability.

5. **Mayor's Bicycle & Fun Ride** - Summer

Hosted by our Mayor once a year, beginning in 2015, we encourage children and parents to ride their bikes with our Chief Executive in a procession that circles through Dover.

6. **Bicycle Rodeo** - Spring

In conjunction with the YMCA, we host a minimum of 3 bike rodeos for kids, supporting them in developing their bicycle skills. It is anticipated that one will be held at the YMCA Swim Club and one at the Police Department. The City anticipates holding the bike rodeos before the Ride of Silence, before the Capital City Trail Grand Opening, and prior to the Mayor's Bike Ride. An additional rodeo could be held before one of the City's Thursday Night Concerts on the Green.

7. **DU - Dover** - April 2016

This annual duathlon event, in which participants run and bicycle in a format similar to a triathlon, begins at a City park and winds its way throughout the streets of Dover.

Capital City Trail Ribbon Cutting

DelDOT Bicycle Rodeo

Recommendations - Enforcement

The City of Dover Police Department currently has police officers patrolling on bicycles in the downtown area. It is strongly recommended that this presence be continued.

In addition, the Bicycle & Pedestrian subcommittee strongly encourages the enforcement of existing traffic laws for both motorists and bicyclists.

The subcommittee recommends that the City Planning Department, as well as members of the subcommittee, meet with the Dover Police Department to discuss potential enforcement issues and actions. These could include the following:

- Ensure that the police officers are aware of the proposed 3-foot passing law
- Use targeted information and enforcement to encourage motorists and cyclists to share the road safely
- Use positive enforcement ticketing
- Appoint a law-enforcement contact person to interact with the local bicycling community

Recommendations - Evaluation & Planning

To determine the usage of bike facilities in Dover, and to monitor the growth in popularity of bicycling as a mode of transportation, the following actions will be undertaken:

1. Using a pedestrian/bicycle counter, monitor use of the following off-road trails, at least once every season (4 times a year):

   A. Capital City Trail
   B. Isaac's Branch of the St. Jones River Trail
   C. North Street bike trail
   D. Route 8 shared-use trail

2. Make live counts of cyclists using:

   A. The new Senator Bikeway and bicycle boulevard
   B. State Street
   C. Loockerman Street
   D. South Governors Avenue

Bicycle Counter Loop

To continue with the progress and development of our Bicycle-Friendly Community, we will take the following actions:

- Update the Bicycle Plan every five years. The next update will be published in 2020, thus the production of that update will begin no later than the beginning of 2019.
- Incorporate this Bicycle Plan into the City of Dover Comprehensive Plan.
- Continue to hold monthly public meetings of the Bicycle and Pedestrian Subcommittee to assess conditions and address problems pertaining to bicycling in our community.

In late 2014, the City of Dover received an active living grant from Nemours, to provide additional bike racks throughout the City. It is anticipated that the additional bike racks will be installed near Loockerman Street and State Street in the downtown. It is recommended that the usage of the bike racks be monitored as part of the Evaluation component of this Bicycle Plan.

Bicycle/Pedestrian Counter

DelDOT has installed bicycle counters on several trail projects throughout the state, and in 2014 installed a bicycle/pedestrian counter as part of Phase II of the Capital City Trail project, as shown in the photo to the left.

Public Involvement

The City of Dover's Bicycle Plan was discussed and presented at the following public meetings:

Bicycle and Pedestrian Subcommittee

February 11, 2014	October 7, 2014	March 3, 2015
April 1, 2014	November 4, 2014	
July 1, 2014	December 9, 2014	
August 12, 2014	January 20, 2015	
September 2, 2014	February 3, 2015	

Public Workshops

June 26, 2014 - At the initial Public Workshop, held at the Dover Library, information regarding existing conditions/ facilities and identified pedestrian needs was presented to the public. Attendees were given the opportunity through a mapping exercise, questionnaires, and public comment forms to identify specific pedestrian needs and potential improvements throughout the City. Representatives from the City of Dover, DelDOT, and the MPO provided staff assistance.

January 20, 2015 - At the second Public Workshop, held at the Pitts Recreation Center, the final recommendations from the Plan were presented to the public. Attendees were given the opportunity to provide comments on the final recommendations, as well as identify additional pedestrian needs and potential improvements. Representatives from the City, DelDOT, and the MPO provided staff assistance.

Safety Advisory and Transportation Committee

City Council

Acknowledgements

The City of Dover Bicycle Plan was developed by the following individuals:

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