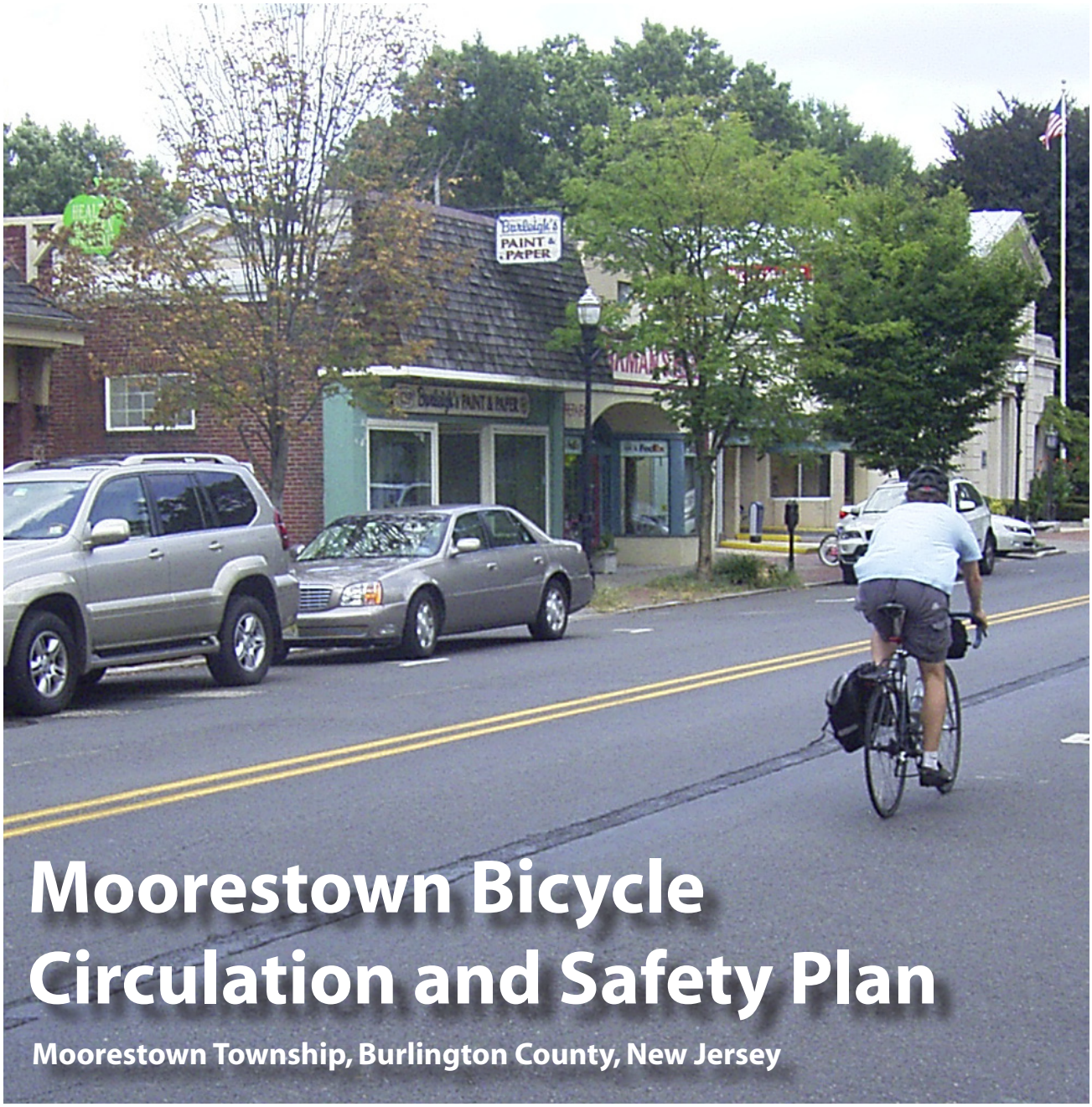

Moorestown Bicycle Circulation and Safety Plan

Moorestown Township, Burlington County, New Jersey

Prepared for:
Moorestown Township &
The New Jersey Department of Transportation

December 2010

Toole Design Group

URBAN

Moorestown Bicycle Circulation and Safety Plan

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Contents

Acknowledgements

This plan was developed under the guidance of Moorestown Township. Support for the development of the Plan was provided by a Steering Committee of stakeholders. Funding was provided by a Local Bicycle/Pedestrian Planning Assistance grant from the New Jersey Department of Transportation - Office of Bicycle and Pedestrian Programs (NJDOT-OBPP).

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The Township of Moorestown would like to thank the following individuals for serving on the Steering Committee for the Moorestown Bicycle Circulation and Safety Plan:

Richard Calhoun	Moorestown Bicycle Safety Task Force
Pete Sklarow	Moorestown Bicycle Safety Task Force
Bonnie MacMillan	Moorestown Bicycle Safety Task Force
Mike Zickler	Moorestown Bicycle Safety Task Force
Sgt. Randy Pugh	Moorestown Police Department
John Boyle	Bicycle Coalition of Greater Philadelphia
Greg McCarty	Moorestown School District
Martin Livingston	Burlington County Traffic Engineer
Michael Nei	Burlington County Engineering
Harry Klatt	Burlington County Engineering

Executive Summary

The Moorestown Bicycle Circulation and Safety Plan is a coordinated and strategic effort to develop a comfortable, safe and accessible network of bicycle facilities throughout Moorestown, New Jersey. This Plan builds on existing assets in the Township, including the existing bicycle community, existing bicycle facilities and opportunities to improve bicycling. It addresses many of the challenges that bicyclists face in Moorestown, such as access, connectivity and safety. It strives to improve bicycle conditions and identify appropriate bicycle facilities, while also addressing issues such education and awareness, driver behavior, and maintenance of bicycle facilities.

The planning process for this Plan included extensive local participation, including two public meetings, an online interactive map and three meetings with a Steering Committee comprised of local stakeholders. Community input serves as the foundation for the goals and recommendations in this Plan.

The following goals build on the strengths of the study area and are designed to help achieve the vision for improving pedestrian and bicycle connections:

- Improve bicycle mobility and circulation by creating a bicycle network that links attractions within the Township of Moorestown and to regional destinations outside of Moorestown
- Promote bicycle safety
- Accommodate varying skill levels of bicyclists, from inexperienced to advanced

The Plan is intended to serve as the framework needed to improve bicycling conditions in Moorestown. To make the development of these routes practical and implementable, this Plan builds on existing trail and sidewalk systems and utilizes the full range of on- and off-road options available from bicycle lanes trails to multi-use. It highlights opportunities for bicycle connections that can be installed today with simple striping and signage, constructed as part of future development, or constructed as stand-alone projects.

The Proposed Bicycle Network and Action Maps

Implementation of this Plan will establish an 87-mile network of bicycle facilities. The actions recommended in this plan create approximately 75 miles of additional facilities, which would complement the existing 12 miles of Multi-Use Paths. The complete bicycle network is shown on the Bicycle Facilities Plan (**Figure 9** in **Chapter 3)**, which includes both existing and proposed bicycle facilities, and is quantified down in the chart below:

Facility Type	Length (miles)	Percent of Total
Bike Lanes	7.6	10%
Bikeable Shoulders	15.6	21%
Bikeable Shoulders with Parking	4.1	6%
Shared Lane Markings	5.2	7%
Local Routes	16.5	22%
Shared Roadways	3.1	4%
Multi-Use Path	22.2	30%
Total	**74.8**	**100%**

The range of actions necessary to implement the Bicycle Facilities Plan is dependent on the facility type and the character of the existing road. Improvements may be as simple as adding pavement markings or signage, or may require more complex actions such as expanding the pavement width or constructing new off-road facilities. Specific actions are shown in the On-Road and Multi-Use Path Action Plans (**Figures 10-11** in **Chapter 3**). The

timeframes for implementation identified in this section are based on stakeholder input, estimated cost, relative difficulty of implementation, and how the facility would help achieve the following project goals:

Immediate Actions

This Plan recommends the construction of a physical network of bicycle facilities (**Chapter 3**), as well as a variety of programs and policies (**Chapter 5**) that are needed to achieve the goals identified above. Several of the project and program recommendations in this Plan should be implemented soon after it is adopted. These immediate action projects will improve bicycle conditions in specific areas, creating early successes. These immediate action projects will also build momentum for the other recommendations and establish essential links in a connected network of bicycle facilities for Moorestown.

Immediate Actions: Bicycle Facilities Improvements

- Add Shared Lane Markings (Sharrows) to Main Street
- Add signage for all Shared Roadways

Immediate Actions: Programs and Policies

- Adopt this Plan through the local master planning process as an updated Circulation Element
- Use this Plan as a basis for future Safe Routes to School applications (the next being Spring 2011)
- Consider adopting a Complete Streets policy for Moorestown Township
- Partner with neighboring municipalities to explore cross-jurisdictional elements and pursue joint funding
- Create a volunteer position for a dedicated pedestrian/bicycle coordinator
- Distribute copies of this plan to local law enforcement officers and educate them on the enforcement programs identified in this plan for Moorestown
- Pursue posted speed limit reductions along the routes shown in the On-Road Actions map
- Begin the process required to integrate consultation of this plan as a required part of the development review process
- Create and distribute an informative bicycle map for Moorestown focusing on the existing bicycle facilities and Local Routes that are connected by the necessary Neighborhood Connections

Conclusion

The Bicycle Circulation and Safety Plan is a coordinated and strategic effort to develop a comfortable, safe and accessible network of bicycle facilities throughout the Township of Moorestown. By building on significant local assets and pursuing ongoing collaborative efforts amongst all stakeholders, including citizens, the Township, Burlington County, and the NJDOT Division Office, Moorestown can over time develop a network of bicycle facilities that is functional and connected. This network will provide the option of bicycling as a practical and convenient mode of transportation and recreation for the full range of bicyclists in Moorestown.

Chapter 1: Introduction

The *Moorestown Bicycle Circulation and Safety Plan* (Plan) is a coordinated and strategic effort to develop a comfortable, safe and accessible network of bicycle facilities throughout Moorestown, New Jersey. This Plan builds on existing assets in the Township, including the existing bicycle community, existing bicycle facilities and opportunities to improve bicycling throughout the Township. It addresses many of the challenges that bicyclists face in Moorestown, such as access, connectivity and safety. It strives to improve bicycle conditions and identify appropriate bicycle facilities, while also addressing issues such education and awareness, driver behavior and maintenance of bicycle facilities.

The planning process for this Plan included extensive local participation, including two public meetings, an online interactive map and three meetings with a Steering Committee comprised of local stakeholders. Community input serves as the foundation for the goals and recommendations in this Plan. The planning effort was funded through the New Jersey Department of Transportation – Office of Bicycle and Pedestrian Programs (NJDOT-OBPP) Local Bicycle/Pedestrian Planning Assistance program.

The following goals were developed by the Steering Committee to guide the development of the Plan.

- Improve bicycle mobility and circulation by creating a bicycle network that links attractions within the Township of Moorestown and to regional destinations outside of Moorestown
- Promote bicycle safety
- Accommodate varying skill levels of bicyclists, from inexperienced to advanced

The Plan is intended to serve as the framework needed to improve bicycling conditions in Moorestown. To make the development of these routes practical and implementable, this Plan builds on existing trail and sidewalk systems and utilizes the full range of on- and off-road options available, from bicycle lanes to multi-use trails. It highlights opportunities for bicycle connections that can be installed today with simple striping and signage, or constructed as part of future development or stand-alone projects.

Why Plan for Bicycle Connections in Moorestown?

There are many benefits to be gained from bicycling, including environmentally-sound transportation, safer and more vibrant communities, and improvements in health and fitness. As cities across the country grow, bicycling is becoming an important quality of life factor residents consider in choosing where to live. Being able to bike from one place to another safely and conveniently can help define the quality of a person's experience in a community. The health benefits of regular physical activity are far-reaching, including reduced risk of coronary heart disease, stroke and other chronic diseases, lower health care costs and improved quality of life for people of all ages.

Bikable cities include vibrant and active streets that promote commercial and social exchange. A high quality bicycle environment will become increasingly important in the future given a range of trends including fluctuating gas prices, increasing roadway maintenance costs, rising obesity rates, and the increasing prominence of global climate change issues. For these reasons, it is in the Township's interest to increase the number of people riding bicycles for recreation and transportation.

The growing movement towards designing and building "Complete Streets" is another reason for Moorestown to plan for bicyclists. The Complete Streets philosophy starts with the notion that roadways should incorporate the needs of all users, from bicyclists to pedestrians to motorists. At the state level, NJDOT has adopted a Complete Streets policy that addresses the needs of non-motorized users in the planning and design of state facilities. NJDOT has also developed the *State-wide Bicycle and Pedestrian Master Plan*, which establishes a vision for New Jersey as a place where people choose to walk or bicycle with confidence and a sense of security.

Additional reasons to plan for and bicycle connections in Moorestown are noted below:

- Bicycling and walking are important for the health of Moorestown youth. According to a report by the U.S. Centers for Disease Control and Prevention, in 2001, 16 percent of children 5 to 18 years of age walked or bicycled to school.[1] There are approximately 4,500 elementary, middle, and high school students in the Moorestown Public School System. There are also around 800 students attending private schools in Moorestown. Providing safe, convenient and comfortable pedestrian and bicycle routes is important for this population. As they utilize these options, the entire community can realize other benefits such as reduced congestion and lower health care costs.

- For young people, walking and bicycling afford a sense of independence, and for seniors, walking is an effective means to stay active both physically and socially. According to the 2000 U.S. Census, in both Moorestown and Burlington County, approximately 26% of the population is under the legal driving age of 18 in the state of New Jersey. In addition, more than 16% of the population is 65 years or older. This proportion is likely to rise with the aging of the "baby boomer" generation.

- Traffic has a direct effect on walking and bicycling conditions, pedestrian safety, and quality of life for local residents. Converting motor vehicle trips into walking and bicycling trips (or walking/biking and transit trips) can reduce the use of the automobile, reduce congestion and maintenance costs on Township and County streets, and improve climate and population health. This is especially important as the area continues to grow and develop.

- Studies have shown that proximity to greenways and trails can have a positive effect on property values. A study by the Center for Urban Policy and the Environment focusing on the Indianapolis, IN housing market found that "proximity to greenways generally has positive, statistically significant effects on property values and that, when summed across the Township, these effects may be in the millions of dollars."[2] Additionally, in a 2002 survey of recent home buyers sponsored by the National Association of Realtors and the National Association of Home Builders, trails ranked as the second most important community amenity out of a list of 18 choices.[3]

- Greenways can provide a significant boost to the local economy. According to a 1998 study, the direct economic impacts of the Great Allegheny Passage trail in Maryland and Pennsylvania exceeded $14 million a year, even though the trail was only half finished at that time.[4] Other economic impact studies of trails in the Mid-Atlantic have shown that multi-use trails bring significant revenue to local small businesses and Towns. A 2004 study of the Northern Central Rail Trail (a 21-mile unpaved trail in Maryland) found that annual revenues from the purchase of hard goods, soft goods and accommodations were approximately $10.3 million.

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[1] *Kids Walk-to-School: Then and Now—Barrier and Solutions*. U.S. Centers for Disease Control and Prevention, accessed May 12, 2009.

[2] Greg Lindsey, *Public Choices and Property Values: Evidence from Greenways in Indianapolis*, Center for Urban Policy and the Environment, December 2003, 1.

[3] *Consumer's Survey on Smart Choices for Home Buyers, National Association of Realtors and the National Association of Home Builders, April 2002.*

[4] Stephen Farber, *An Economic Impact Study for the Allegheny Trail Alliance*, University of Pittsburgh and Pennsylvania Economic League, Inc., January 1999, i-ii.

The Planning Process

The planning process for this study involved a number of different activities and outreach efforts. Several iterations of the recommended bicycle network and this plan document were developed, reviewed, and vetted by the stakeholder team and at the public meetings. The process is briefly outlined below.

The Project Team

Urban Engineers, Inc. and Toole Design Group comprised the Project Team for this study.

Background Data Collection

Information was gathered from previous plans and studies, existing GIS data and maps, interviews with local, county, and regional government staff and stakeholders. Fieldwork was conducted covering the entire study area to document existing conditions for bicycling and to identify opportunities to improve bicycle facilities. The data used for this plan includes the following sources:

- Aerial & GIS Basemap Layers
- Bus Routes, NJ Transit (2010)
- Bicycling Attractions, Moorestown Township
- Bicycle Routes from the Circulation Element, Moorestown Township Master Plan (2002)
- Bicycle Routes from the Bicycle Safety Task Force's Recommendations (2009)
- County Sidewalk Inventory, NJDOT (2006-2007)
- Roadway Characteristics, Urban Engineers/Toole Design Group (2010)
- Pedestrian and Bicycle Crashes, Moorestown Police Department (2004-2008)
- Photograph Inventory, Urban Engineers/Toole Design Group (2010)
- Open Space and Future Development, Moorestown Township (2010)
- Straight Line Diagrams, NJDOT (2010) http://www.state.nj.us/transportation/refdata/sldiag/

Bicycle Safety Task Force

In January 2009, the Moorestown Township Council created the Bicycle Safety Task Force in response to two traffic-related bike fatalities that occurred in 2008. This Task Force, comprised of four Township residents and a full-time bicycle advocate employed by the Bicycle Coalition of Greater Philadelphia, was charged with making recommendations on ways to implement bicycle safety initiatives in the Township. The Task Force was also a key element of the Township's application to NJDOT for bicycle planning assistance in September 2009, which resulted in this study.

The Township's last Circulation Element of its Master Plan was prepared in 2002 and included a Bicycle Routes Map (**Figure 1**). In 2009, the Bicycle Safety Task Force reviewed this map and recommended changes, which are shown in **Figure 2**. Both of these maps were reviewed and evaluated as part of this current study.

Steering Committee

A Steering Committee provided guidance and input throughout the planning process. This committee was comprised of community and staff representatives including the Bicycle Safety Task Force, Moorestown Township, Moorestown Police Department, Moorestown School District, Burlington County Engineering, and the Bicycle Coalition of Greater Philadelphia. Three meetings were held with the Steering Committee to guide the development of this plan's goals, recommendations, and priorities (March 17, July 13, and October 26, 2010). The Project Team also met with the Headmaster of the Moorestown Friends School on May 17, 2010 to discuss bicycling issues specific to that school. Minutes from these meetings are included in **Appendix A**.

December 2010

TooleDesignGroup

This map was re-created from the Bicycle Routes Map in the Township's 2002 Master Plan Circulation Element

Figure 1:
2002 Circulation Element

CINNAMINSON TWP

DELRAN TWP

WILLINGBORO TWP

MAPLE SHADE TWP

MOUNT LAUREL TWP

NIXON

GLEN
LENOX ROAD
CHURCH
GEORGIAN
WHITTENDALE
CRIDER
GLEN
NEW ALBANY
RIVERTON
TOM BROWN
HAINES MILL
BRIDGEBORO
IRON POST
CHESTER
GOLF VIEW
STANWICK
SENTINEL
WESTFIELD
GARWOOD
HARTFORD
COX
CREEK
MCELWEE
KENDLES RUN
SALEM
BORTON LANDING
SHEFFIELD
CENTERTON
MAPLE
CENTRAL
THIRD
MAIN
CAMDEN
FLYNN
PARK
KINGS HIGHWAY
PLEASANT VALLEY
SOMERS
CHURCH
HIGH
MT LAUREL
MARTER
YOUNG
MARNE
HAINES
HARPER
FELLOWSHIP

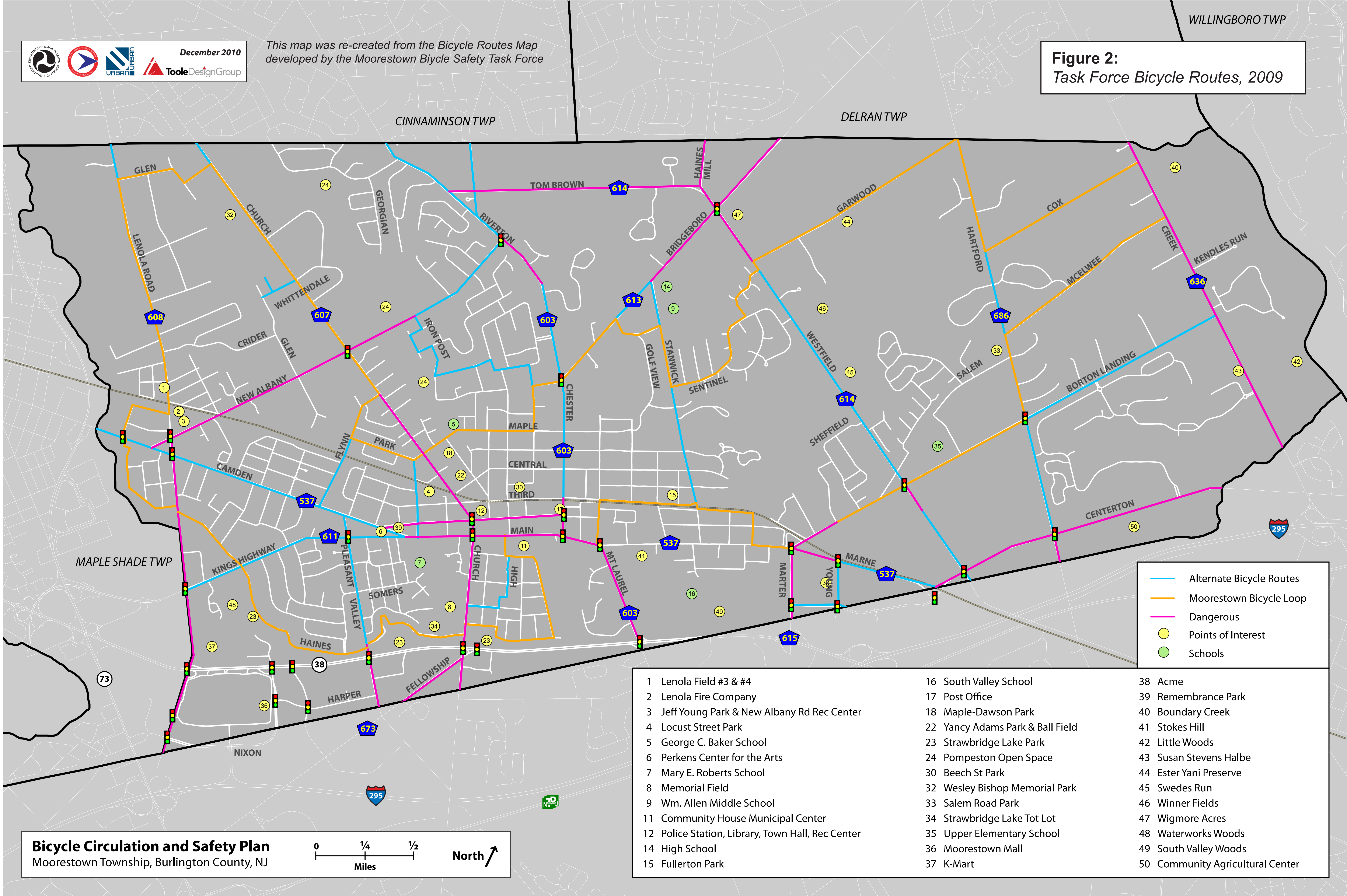
608 607 603 613 614 636 686 537 611 615 673 295 38 73

Bicycle Circulation and Safety Plan
Moorestown Township, Burlington County, NJ

0 ¼ ½
Miles

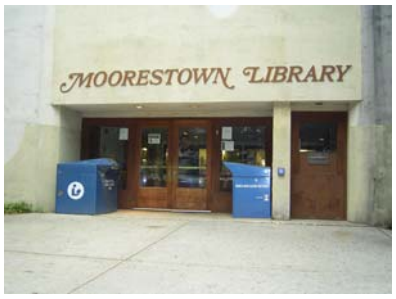
North

- Existing Class 1 Bike Route
- Proposed Class 1 Bike Route
- Planned Class 1 Bike Route
- Existing Class 3 Bike Route
- Proposed Class 3 Bike Route


December 2010
Toole Design Group
This map was re-created from the Bicycle Routes Map developed by the Moorestown Biycle Safety Task Force
Figure 2:
Task Force Bicycle Routes, 2009
WILLINGBORO TWP
CINNAMINSON TWP
DELRAN TWP
MAPLE SHADE TWP
GLEN
CHURCH
GEORGIAN
TOM BROWN
HAINES MILL
RIVERTON
BRIDGEBORO
GARWOOD
COX
HARTFORD
CREEK
KENDLES RUN
MCELWEE
LENOLA ROAD
WHITTENDALE
IRON POST
CRIDER
NEW ALBANY
GOLF VIEW
STANWICK
SENTINEL
WESTFIELD
SALEM
BORTON LANDING
SHEFFIELD
FLYNN
PARK
MAPLE
CHESTER
CENTRAL
THIRD
CAMDEN
MAIN
KINGS HIGHWAY
PLEASANT
VALLEY
SOMERS
HIGH
MT LAUREL
MARTER
YOUNG
MARNE
CENTERTON
HAINES
HARPER
FELLOWSHIP
NIXON
Alternate Bicycle Routes
Moorestown Bicycle Loop
Dangerous
Points of Interest
Schools
1 Lenola Field #3 & #4
2 Lenola Fire Company
3 Jeff Young Park & New Albany Rd Rec Center
4 Locust Street Park
5 George C. Baker School
6 Perkens Center for the Arts
7 Mary E. Roberts School
8 Memorial Field
9 Wm. Allen Middle School
11 Community House Municipal Center
12 Police Station, Library, Town Hall, Rec Center
14 High School
15 Fullerton Park
16 South Valley School
17 Post Office
18 Maple-Dawson Park
22 Yancy Adams Park & Ball Field
23 Strawbridge Lake Park
24 Pompeston Open Space
30 Beech St Park
32 Wesley Bishop Memorial Park
33 Salem Road Park
34 Strawbridge Lake Tot Lot
35 Upper Elementary School
36 Moorestown Mall
37 K-Mart
38 Acme
39 Remembrance Park
40 Boundary Creek
41 Stokes Hill
42 Little Woods
43 Susan Stevens Halbe
44 Ester Yani Preserve
45 Swedes Run
46 Winner Fields
47 Wigmore Acres
48 Waterworks Woods
49 South Valley Woods
50 Community Agricultural Center
Bicycle Circulation and Safety Plan
Moorestown Township, Burlington County, NJ
0 ¼ ½
Miles
North

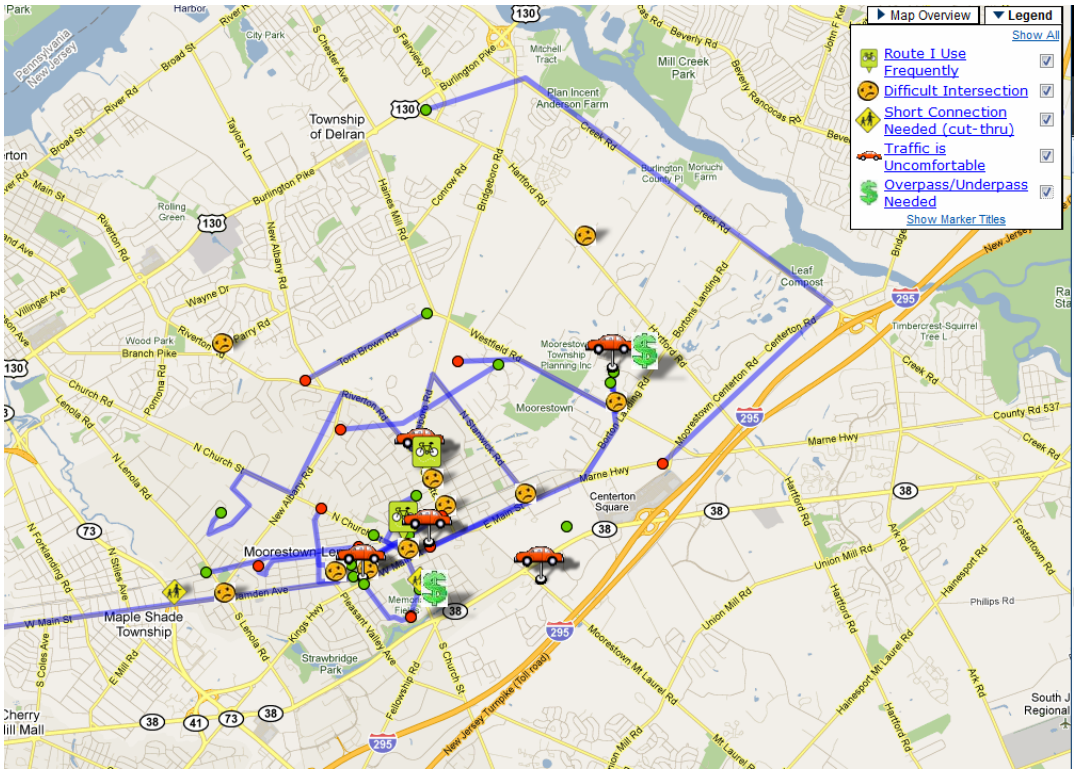
Public Meetings

As part of this effort, Public Information Centers were held on May 11 and September 21, 2010 at the Moorestown Public Library. These meetings were advertised through newspaper coverage, the Bicycle Coalition of Greater Philadelphia's website, the Township website, and via printed flyers. At these meetings, citizens reviewed maps documenting existing bicycling conditions, commented on draft recommendations, and made recommendations for additional improvements through a questionnaire. Input from the meetings was used to assist the team in developing this plan's recommendations and is further described in **Chapter 2**. Details of the meetings including meeting notes, flyers, sign-ins, and questionnaire results can be found in **Appendix A**.



Interactive Online Map

The Project Team also used an interactive online mapping tool as part of an effort to collect public input on locations in the Township that may be problematic, or opportunities for bicycle facility improvements. Categories available for input included frequently used routes, difficult intersections, and areas where traffic is uncomfortable. Along with the public meetings, input from the mapping tool was used to assist the team in developing this plan's recommendations.



Interactive online map screen shot

Field Verification

Extensive field work was conducted across Moorestown over multiple dates. Each recommendation was field verified as a part of the recommended network of bicycle facilities, whether it was initially identified via the Steering Committee, public meetings, or the online interactive map.

Plan Overview

- Chapter 2 outlines existing conditions for bicycling in the study area.
- Chapter 3 provides recommendations to improve bicycle connections throughout the study area.
- Chapter 4 discusses the methods and analysis undertaken as part of the study process and presents an overview of the bicycle facility types that are recommended.
- Chapter 5 includes recommendations for programs that will support the infrastructure improvements.
- Chapter 6 discusses strategies for implementation.

Chapter 2: Existing Conditions

This chapter outlines existing conditions for bicycling in Moorestown, including the Township's destinations, unique assets, and existing bicycle facilities. Critical barriers and challenges to bicycling are also identified. This information was gathered from the Steering Committee, public meetings, the online interactive map, and through field analysis.

Key Destinations & Unique Assets

Main Street between Church Street and Chester Avenue forms the social and entertainment core of Moorestown. The active business district and schools surrounding Main Street were the focus of stakeholder interest, and more bicycling was observed here than any other area. Surrounding the downtown is a well-developed roadway grid connecting key destinations such as the post office, municipal complex, public works department, and several neighborhood parks. This area also contains several schools, including the South Valley, George Baker, and Mary Roberts Elementary Schools (Grades K-3) and the Moorestown Friends School (Grades K-12). A freight rail line running parallel to Main Street along 3rd Street handles occasional rail freight traffic.

The western side of Moorestown features older residential neighborhoods, and includes a proposed neighborhood commercial center at the intersection of Lenola Road, Camden Ave, and New Albany Road. The Moorestown Mall is located in southwest Moorestown, separated from the rest of the community by the popular Strawbridge Lake Park and State Road 38. The mall contains an indoor skateboard and BMX facility that is popular with local youths, and also acts as the Township's transit hub with bus service from three NJ Transit lines and a park'n'ride lot. Park-and-Ride facilities are also located in the vicinity of Moorestown Mall. Bicyclists are known to head from this area west towards Philadelphia or north to the Palmyra and Riverton train stations.

The eastern side of Moorestown is a mix of rural and recent suburban-style developments, terminating at the Rancocas Creek natural area that forms the eastern boundary of the Township. Boundary Creek Park along Creek Road is a popular recreational destination in this part of town, while the Centerton Square shopping area and the Burlington County Community Agricultural Center Farmer's Market are other major destinations. There are also several schools and an extensive Lockheed Martin campus in this area. Both the Middle School (Grades 7-8) and High School (Grades 9-12) are on Bridgeboro Road, while Upper Elementary School (Grades 4-6) is located on Borton Landing Road.

Key attractions within the Township are shown in **Figure 3,** while parks and open space are shown in **Figure 4**.

December 2010

Toole Design Group

Figure 3:
Key Attractions

CINNAMINSON TWP

DELRAN TWP

WILLINGBORO TWP

MAPLE SHADE TWP

MOUNT LAUREL TWP

GLEN

LENOLA ROAD

CHURCH

GEORGIAN

WHITTENDALE

CRIDER

GLEN

NEW ALBANY

PARK

CAMDEN

RYAN

IRON POST

RIVERTON

TOM BROWN

614

HAINES MILL

BRIDGEBORO

GARWOOD

HARTFORD

COX

CREEK

KENDLES RUN

MCELWEE

636

686

608

607

603

613

CHESTER

GOLFVIEW

STANWICK

SENTINEL

WESTFIELD

SALEM

BORTON LANDING

SHEFFIELD

614

MAPLE

CENTRAL

THIRD

MAIN

603

537

611

KINGS HIGHWAY

PLEASANT VALLEY

SOMERS

CHURCH

HIGH

MT LAUREL

537

603

MARTER

MARNE

537

615

CENTERTON

295

295

HAINES

FELLOWSHIP

HARPER

NIXON

673

38

73

Wesley Bishop Park

Pompestown Creek Park

Lenola Fields

New Albany Center

Sunnybrook Swim Club

George Baker School

Maple Dawson Park

Yancy Adams Park

Locust St Park

Beech St Park

Post Office

Fullerton Park

Public Works Department

Perkins Memorial

Municipal Complex

Mary Roberts School

Friends School

Main Street

Memorial Field

South Valley School

Strawbridge Park

Strawbridge Park

K-Mart

Moorestown Mall

NJ Transit Park n' Ride

Moorestown High School

William Allen Middle School

Boundary Creek Park

Salem Road Park

Upper Elementary School

New Laurel Creek Country Club

Rancocas Creek Trail

Lockheed Martin

Acme

Centerton Square

Burlington County Farmers Market

Bicycle Circulation and Safety Plan
Moorestown Township, Burlington County, NJ

0 ¼ ½
Miles

North

December 2010

TooleDesignGroup

Figure 4:
Parks, Streams and Open Space

CINNAMINSON TWP

DELRAN TWP

WILLINGBORO TWP

MAPLE SHADE TWP

MOUNT LAUREL TWP

NIXON

Pompeston Creek

Swede Run

Pennsauken Creek

Kendles Run

Parker Creek

Rancocas Creek

GLEN

LENOLA ROAD

CHURCH

WHITTENDALE

CRIDER

NEW ALBANY

GEORGIAN

IRON POST

TOM BROWN

RIVERTON

HAINES MILL

BRIDGEBORO

GOLF VIEW

STANWICK

SENTINEL

WESTFIELD

SHEFFIELD

GARWOOD

HARTFORD

COX

MCELWEE

CREEK

KENDLES RUN

SALEM

BORTON LANDING

CHESTER

MAPLE

CENTRAL

THIRD

MAIN

FLYNN

PARK

CAMDEN

KINGS HIGHWAY

PLEASANT VALLEY

SOMERS

HIGH

MT LAUREL

MARTER

YOUNG

MARNE

CENTERTON

HAINES

FELLOWSHIP

HARPER

Municipal

Wesley Bishop Park

Pompeston Creek Park

Lenola Athletic Fields

New Albany Center

Maple Dawson Park

Locust St. Park

Perkins Memorial

Memorial Field

Strawbridge Park

Friends School

Field Club

School Athletic Fields

Fullerton Park

Public Works Department

Residential

Willowbrook Amy Farms

Non-Profit

Private

Affordable Housing

New Laurel Creek Country Club

Muni

County

Leaf Compost

Preserved Fee Simple

608

607

603

613

614

686

636

537

611

615

673

295

73

38

Description (Owner)

- Easements (Municipal)
- Park - Recreational Land (Municipal)
- Park - School Athletic Fields (Municipal)
- Other Facilities (Municipal)
- Preserved Open Space (Mixed, as noted)
- Farm Preservation (County, as noted)

Bicycle Circulation and Safety Plan
Moorestown Township, Burlington County, NJ

0 ¼ ½
Miles

North

Existing Bicycle Facilities

The Urban Team conducted multiple site visits to inventory the locations and conditions of bicycle facilities in and adjacent to Moorestown Township and explore opportunities for improvements to the bicycle network. Roadway data including traffic characteristics, on-street parking, curb-to-curb width, speed limit, and presence of shoulders was recorded for State, County, and major local roads. The presence of off-road facilities, such as sidewalks and multi-use paths, and conditions at intersections and mid-block crossings were also recorded. These categories are shown in **Figures 5 and 6** and described in more detail below:

On-Road Facilities

Currently, there are no marked on-road bicycle facilities such as bike lanes or shared lane markings in Moorestown. The roadway networks in the areas north, south, and west of Main Street are generally bicycle compatible due to relatively low vehicle speeds, distributed traffic volumes, and a reasonably developed grid. Major roadways, including State and County routes, can be uncomfortable for all but the most experienced bicyclists due to higher motor vehicle speeds, higher traffic volumes, and a lack of dedicated bicycle space. Most of the roads on the east side of the Township lack consistent shoulders, including Westfield, Hartford, Borton Landing, and Creek Roads. The rural and suburban character of the eastern end of town results in higher traffic speeds and fewer route choices.

Off-Road Facilities

The eastern side of the Township features an extensive system of off-road paths; however, there are notable gaps in the path network along Westfield, Borton Landing, Riverton, and Creek Roads. Several un-signalized crossings are necessary because the paths are not continuous on the same side of the road. The paths range from 6' to 10' wide and in some cases are deteriorated and/or overgrown with vegetation, particularly along Borton Landing Road. Moorestown also has several parks and recreational facilities that contain existing off-road trails and/or present opportunities for future trails, notably along both the rail line and Rancocas Creek.

Intersections/Crossings

Most intersections in the Township are less comfortable for bicyclists due to vehicle turning lanes, which often reduce or eliminate the shoulder in both directions. Mid-block pedestrian crosswalks along Main Street appear to work well, and this treatment could be applied in additional locations. At the Chester Avenue/2nd Street intersection, the allowance of Right Turn On Red (RTOR) creates conflicts between pedestrians and vehicles, while the nearby Chester Avenue/3rd Street intersection does not provide any accommodations for pedestrians.

Outside of the Main Street area, intersections generally lack crosswalks, curb ramps, and ADA-compatible landings. The intersections of multi-use paths with side streets are not marked with crosswalks. Due to relatively high motor vehicle speeds, the uncontrolled crossings along Westfield, Hartford, and Borton Landing Roads would benefit from a higher level of treatment that offers additional protections for bicyclists and pedestrians crossing the roadway.

Conflicts at 2nd and Chester Intersection

December 2010

Figure 5:
Roadway Characteristics

CINNAMINSON TWP

DELRAN TWP

WILLINGBORO TWP

MAPLE SHADE TWP

MOUNT LAUREL TWP

NIXON

8,736 (2006)

9,613 (2007)

10,149 (2001)

110 (2008)

10,376 (2006)

44,418 (2005)

48,109 (1998)

44,493 (1999)

(2008)

9,254 (2007)

GLEN

3-Lanes

LENOLA ROAD

CHURCH

GEORGIAN

TOM BROWN

614

HAINES MILL

RIVERTON

BRIDGEBORO

GARWOOD

HARTFORD

COX

CREEK

KENDLES RUN

636

WHITTENDALE

608

607

603

613

CRIDER

GLEN

IRON POST

GOLF VIEW

STANWICK

SENTINEL

WESTFIELD

686

SALEM

BORTON LANDING

NEW ALBANY

CHESTER

MAPLE

SHEFFIELD

CENTRAL

THIRD

MAIN

CAMDEN

FLYNN

PARK

537

2-Lanes

611

KINGS HIGHWAY

PLEASANT VALLEY

SOMERS

CHURCH

HIGH

MT LAUREL

MARTER

YOUNG

MARNE

CENTERTON

295

HAINES

4-Lanes

38

FELLOWSHIP

HARPER

673

615

73

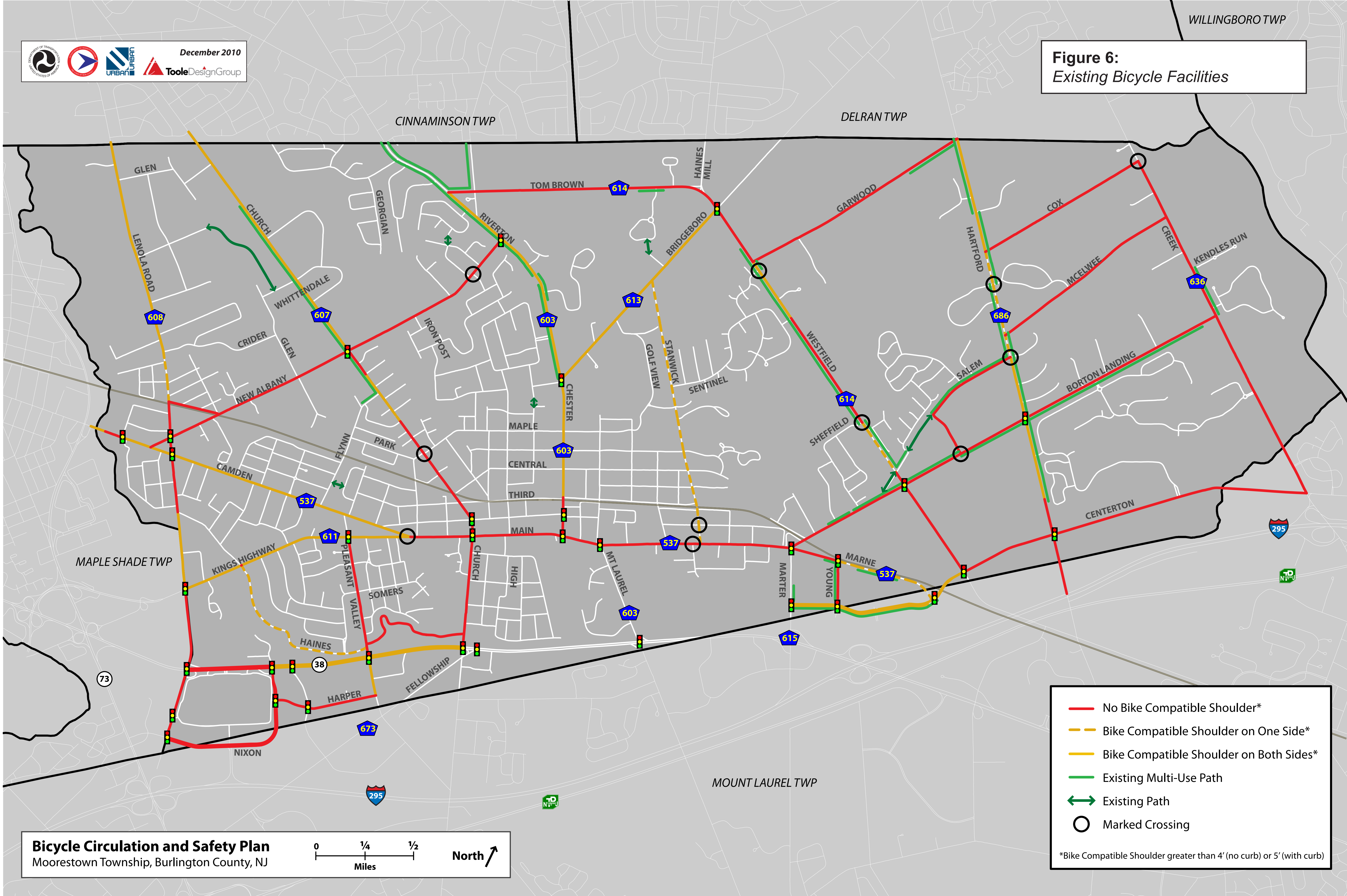
25 mph Speed Limit
30 mph Speed Limit
35 mph Speed Limit
40 mph Speed Limit
45 mph Speed Limit
50 mph Speed Limit
One-way Streets
Two-way AADT (year)
Intersection Counts (year)

Note: All roadways are 2-lanes, unless noted

Bicycle Circulation and Safety Plan
Moorestown Township, Burlington County, NJ

0 ¼ ½
Miles

North


December 2010
TooleDesignGroup
URBAN
Figure 6:
Existing Bicycle Facilities
WILLINGBORO TWP
CINNAMINSON TWP
DELRAN TWP
MAPLE SHADE TWP
MOUNT LAUREL TWP
GLEN
CHURCH
GEORGIAN
RIVERTON
TOM BROWN
HAINES MILL
BRIDGEBORO
GARWOOD
COX
HARTFORD
CREEK
KENDLES RUN
MCELWEE
LENOLA ROAD
WHITTENDALE
CRIDER
NEW ALBANY
IRON POST
CHESTER
GOLF VIEW
STANWICK
SENTINEL
WESTFIELD
SHEFFIELD
SALEM
BORTON LANDING
MAPLE
CENTRAL
THIRD
MAIN
PARK
FLYNN
CAMDEN
KINGS HIGHWAY
PLEASANT
VALLEY
SOMERS
HIGH
MT LAUREL
MARTER
YOUNG
MARNE
CENTERTON
HAINES
HARPER
FELLOWSHIP
NIXON
608
607
603
613
614
636
686
537
611
615
673
38
73
295
No Bike Compatible Shoulder*
Bike Compatible Shoulder on One Side*
Bike Compatible Shoulder on Both Sides*
Existing Multi-Use Path
Existing Path
Marked Crossing
*Bike Compatible Shoulder greater than 4' (no curb) or 5' (with curb)
Bicycle Circulation and Safety Plan
Moorestown Township, Burlington County, NJ
0
¼
½
Miles
North

Crash Analysis

Pedestrian and bicycle crash data for Moorestown Township was obtained from NJDOT for years 2004 through 2008. A total of 69 pedestrian and bicycle crashes were reported Township-wide during this period, including two bicycle fatalities. In addition to mapping the individual crash locations, crash clusters were identified and mapped (shown in **Figure 7**). Crashes were also evaluated by type, age distribution, and contributing factors. Both categories are described in more detail below.

Crash Clusters

The highest number of crashes occurred at the signalized intersection of Main Street (CR 537) and Church Street (CR 607), with a total of six collisions. Four of the crashes took place in 2004-5, and the intersection appears to have been upgraded since then with textured crosswalks, pedestrian push-buttons, and pedestrian signal heads. Two crashes occurred just west of Church Street (CR 607) near Union Street, both during attempted crossings of Main Street. This could indicate a potential need for an additional protected crossing of Main Street west of Church Street. Currently, no pedestrian crossing opportunities are available on Main Street west of Church Street until Camden Avenue, a distance of nearly 1/3 of a mile.

Crash clusters were also present at the Route 38 and Lenola Road intersection (four crashes) and the Chester Avenue intersection with Second Street (three crashes). Another crash cluster was identified in the area around Moorestown High School and Middle School, with three pedestrian crashes. Two of these crashes involved students that were struck by vehicles while attempting to cross Stanwick Road. Currently, there are uncontrolled crossings of Stanwick Road near the school at Westover Road and at Bridgeboro Road (CR 613).

Common Crash Types

Collisions with pedestrians or cyclists that were age 21 or under accounted for 32 crashes, or 46% of the total. Twenty of these crashes involved cyclists, representing the majority (63%) of the total bike crashes, and 15 were with cyclists within the 13 - 21 age range. Nine of the bicycle crashes with cyclists 21 and under involved wrong-way riding and three of the crashes involved cyclists on the sidewalk. Considering the age of the cyclists, the reasons for traveling improperly may be the result of simply being unaware of proper bicycle operations. Educational efforts, both in schools and along roadways through signage or pavement markings, could help inform cyclists to minimize improper riding behavior.

Another common crash type involved pedestrians and bicycles crossing intersections, with 16 bicycle crashes and nine pedestrian crashes. Driver error, such as careless driving or failure to yield, was cited in three of the pedestrian crashes. At both signalized and un-signalized locations, most of the crashes involved right-turning or left-turning vehicles striking pedestrians. Crashes at uncontrolled mid-block crossings were another common crash type, with one bicycle crash and thirteen pedestrian crashes. In some cases, pedestrians crossed between stopped or parked vehicles and may not have been visible to the vehicles that struck them.

NJDOT Bicycle Master Plan Analysis

The bicycle analytical tool was developed by NJDOT as part of the Statewide Bicycle and Pedestrian Master Plan – Phase 2. NJDOT has used the analytical tool on a statewide level to assess both demand and suitability for bicycle facilities. Route 38 is the only state route that traverses Moorestown and thus was the only route evaluated.

Priority levels represent a combination of demand and suitability, so that places with the greatest potential demand and poorest facilities are given the highest priority. For Bicycle Priority, the western links of Route 38 near the Moorestown Mall have a medium priority because the demand is medium, while the eastern links have a low priority because the demand is low. For Pedestrian Priority, the entire length of Route 38 through Moorestown has a medium priority because demand is moderate and suitability is medium for all five links. The full results from this analysis, including figures and tables, are included in **Appendix B**.

December 2010

Figure 7:
Pedestrian and Bicycle Crashes

CINNAMINSON TWP

DELRAN TWP

WILLINGBORO TWP

MAPLE SHADE TWP

MOUNT LAUREL TWP

GLEN
LENOLA ROAD
CHURCH
GEORGIAN
TOM BROWN
614
HAINES MILL
RIVERTON
BRIDGEBORO
GARWOOD
HARTFORD
COX
CREEK
KENDLES RUN
636
MCELWEE
608
WHITTENDALE
607
CRIDER
GLEN
IRON POST
603
613
school drop off
GOLF VIEW
STANWICK
SENTINEL
WESTFIELD
614
686
SALEM
BORTON LANDING
NEW ALBANY
CHESTER
MAPLE
CENTRAL
THIRD
MAIN
chester corridor
SHEFFIELD
CENTERTON
295
CAMDEN
FLYNN
PARK
537
611
KINGS HIGHWAY
PLEASANT VALLEY
SOMERS
union crossing
CHURCH
HIGH
church crossing
MT LAUREL
603
537
MARTER
YOUNG
MARNE
537
615
HAINES
38
73
route 38 crossing
HARPER
FELLOWSHIP
673
NIXON
295

Age Range	Pedestrian Crashes	Cyclist Crashes
0-12	2 (5%)	5 (16%)
13-21	10 (27%)	15 (47%)
22-64	20 (54%)	9 (28%)
65+	5 (14%)	1 (3%)
Unk	0 (0%)	2 (6%)
Total	37 (100%)	32 (100%)

- crash clusters
- Pedestrian Crash (37)
- Bicycle Crash (32)
- Fatal Bicycle Crash (2)

Bicycle Circulation and Safety Plan
Moorestown Township, Burlington County, NJ

0 ¼ ½
Miles

North

Opportunities and Constraints to Bicycle Access and Mobility

Several key challenges and barriers, as well as opportunities, were identified through the public process (also shown in **Figure 8**):

- Main Street is a key destination for bicyclists and is also the site of occasionally contentious interactions between bicyclists, pedestrians, and vehicles. There is concern over bicyclists riding on the sidewalks downtown, and Township ordinance currently prohibits anyone 12 years or older from riding bicycles on the sidewalk township-wide. This condition needs to be addressed with improved signage, education, and enforcement, in addition to any other facility recommendations.
- There have been several high profile accidents, including two fatalities, which have raised the level of concern for bicycling safety in Moorestown.
- East-west travel from the core of Moorestown to the east is impeded by the lack of comfortable options. The right-of-way for Linden Street and the land to the north of the Public Works facility provide an opportunity to greatly improve connectivity between the downtown core and neighborhoods to the east with multi-use paths.
- There are several notable barriers between key destinations with Moorestown and to the surrounding communities. These include:
    - The complex interchanges between State Roads 73, 38, and 41 on the western edge of town
    - State Road 38 and the Moorestown Mall
    - Accessing the Centerton Road shopping area from the neighborhoods to the north and east.
    - I-295 and the New Jersey Turnpike along the southern edge of the Township
- There is no consistent provision of sufficient bicycle parking at key destinations throughout Moorestown
- There is a need to incorporate bicycle and pedestrian facilities, including bicycle parking, into new developments. This includes connecting these new facilities into adjacent areas.
- Maintenance of bicycle facilities is a critical issue as indicated by the overgrown and damaged condition of existing multi-use paths such as those along Borton Landing Road. Maintenance responsibilities vary between the Township, the County, NJDOT and adjacent property owners. The provision of dedicated funding for maintenance costs needs to be a consideration of this plan and any new bicycle facilities that are constructed.

Conclusion

Moorestown has a mix of opportunities and challenges to bicycling. Progress to improve future connectivity will depend on the Township's ability to capitalize on its existing facilities, assets and unique strengths. The following chapters provide recommendations for achieving the Township's goals for improving bicycling in Moorestown.

December 2010

Figure 8:
Opportunities and Constraints

CINNAMINSON TWP

DELRAN TWP

MAPLE SHADE TWP

MOORESTOWN TWP

MOUNT LAUREL TWP

Pompeston Creek

Swede Run

Pennsauken Creek

Parker Creek

Kendles Run

Rancocas Creek

TOM BROWN

RIVERTON

HAINES MILL

BRIDGEBORO

GARWOOD

COX

HARTFORD

MCELWEE

CREEK

KENDLES RUN

LENOLA ROAD

CHURCH

GEORGIAN

WHITTENDALE

CRIDER

GLEN

NEW ALBANY

FLYNN

CAMDEN

CHESTER

GOLF VIEW

STANWICK

SENTINEL

WESTFIELD

BORTON LANDING

MAPLE

CENTRAL

THIRD

MAIN

LINDEN

KINGS HIGHWAY

PLEASANT VALLEY

CHURCH

MT LAUREL

MARNE

MARTER

FELLOWSHIP

CENTERTON

608 607 603 613 614 686 636 537 611 673 615 73 38 295

Municipal

Wesley Bishop Park

Pompeston Creek Park

Lenola Athletic Fields

New Albany Center

Maple Dawson Park

Locust St. Park

Perkins Memorial

Memorial Field

Strawbridge Park

Field Club

School Athletic Fields

Friends School

Residential

Willowbrook Amy Farms

Non-Profit

Private

Public Works Department

Fullerton Park

Affordable Housing

Health Facility

Commercial

Muni

County

Leaf Compost

New Laurel Creek Country Club

Age-Restricted Residential

Preserved Fee Simple

Opportunities

- Easements (Municipal)
- Park - Recreational Land (Municipal)
- Park - School Athletic Fields (Municipal)
- Other Facilities (Municipal)
- Preserved Open Space (Mixed, as noted)
- Farm Preservation (County, as noted)
- Proposed Development

Constraints

- Roadways with No Shoulders
- Wetlands

Bicycle Circulation and Safety Plan
Moorestown Township, Burlington County, NJ

0 ¼ ½
Miles

North

Prepared by: URBAN URBAN, Toole Design Group

Chapter 3: Bicycle System Plan

The recommendations in this section are aimed at creating a network of bicycle facilities in Moorestown to achieve the goals laid out in this plan: an interconnected network that enhances mobility, improves safety and comfort for all transportation modes, and accommodates all bicycling skill levels.

The Bicycle Facilities Plan (**Figure 9**) shows the full build-out condition, which integrates both existing and proposed bicycle facilities. This vision of a completed network has been developed to identify the appropriate bicycle facility for each location based on roadway characteristics, stakeholder input, surrounding land uses, the locations of major destinations, and accommodation for all user types. This plan also shows potential bicycle parking locations.

The following facility types are addressed in this plan:

On-Street Bicycle Facilities	*Bike Lanes* *Shared Lane Markings ("Sharrows")* *Shared Roadways* *Bikeable Shoulders (with and without parking)* *Local Routes*
Off-Street Bicycle Facilities	*Multi-use Paths* *Neighborhood Connections*
Spot Improvements	*Intersection Improvements* *Un-signalized Crossings* *Bike Parking*

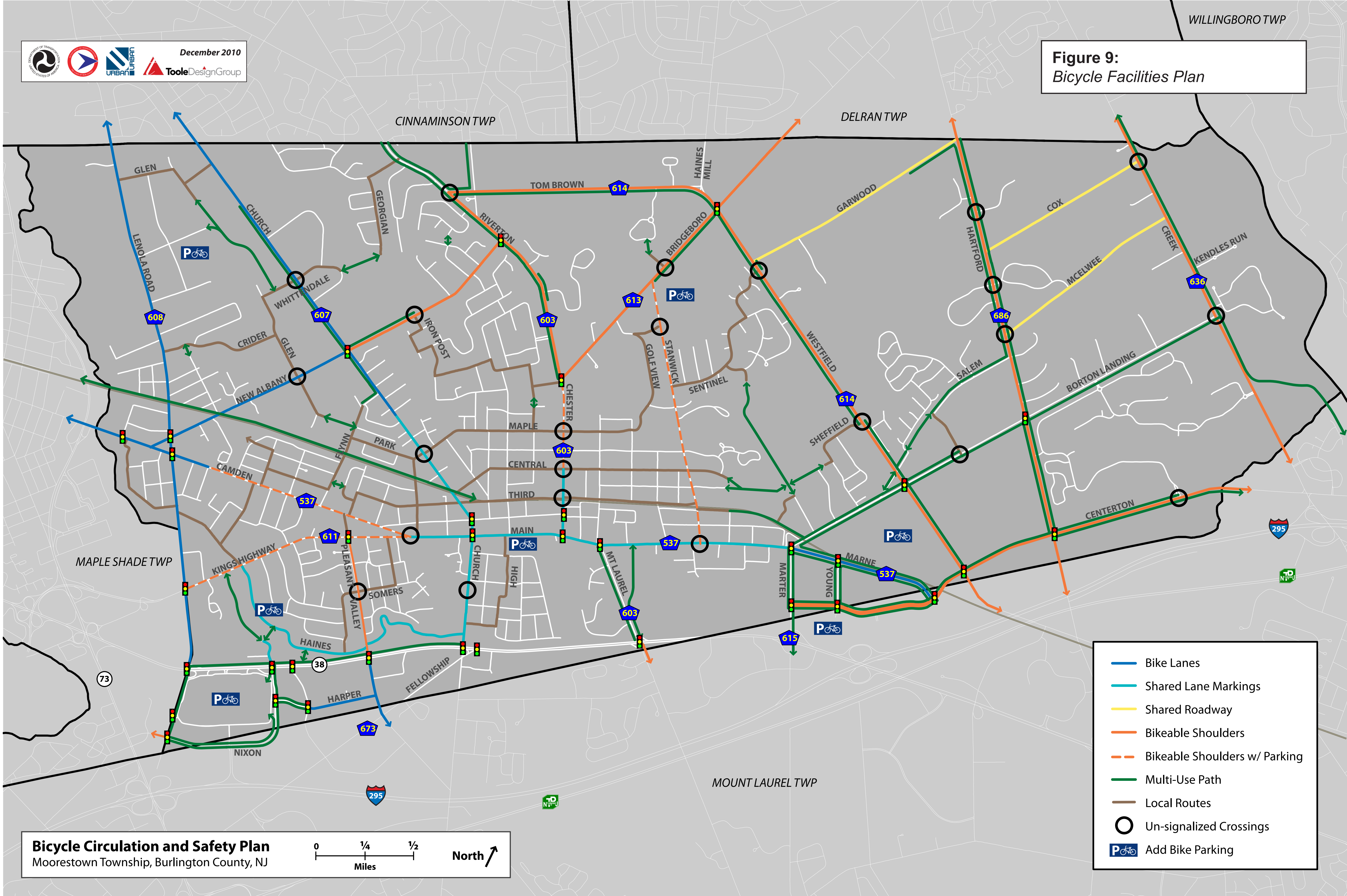
Descriptions and guidance for each facility type are provided in **Chapter 4**.

Recommendations near the center and western parts of the Township build on the well-developed roadway grid emanating from Main Street. Shared lane markings, shoulder striping, and bike lanes are recommended to create bicycle compatible routes along major roads. Neighborhood roads, combined with existing and new neighborhood connections, would then provide local access to these routes. With the exception of Lenola Road and New Albany Road, recommendations in this area of town can fit within the existing cartway.

The eastern side of town already has a well established multi-use path network, although there are notable gaps. Recommendations in this area are focused on filling in these gaps, improving crossing opportunities, and expanding the multi-use path network to reach additional destinations such as Boundary Creek Park, Moorestown High School, and the Centerton shopping area. Roadway improvements are recommended on major roads such as Westfield, Hartford, and Creek to create consistent bicycle-compatible shoulders that accommodate more experienced riders.

Area Concept Plans

Several prominent areas have been identified as priorities that need particular attention and design detail. As described in **Chapter 2**, these areas provide connections to key destinations such as shopping, schools, and regional transportation connections. These areas are briefly described in the following section.


December 2010
TooleDesignGroup
Figure 9:
Bicycle Facilities Plan
WILLINGBORO TWP
CINNAMINSON TWP
DELRAN TWP
MAPLE SHADE TWP
MOUNT LAUREL TWP
GLEN
LENOLA ROAD
CHURCH
GEORGIAN
TOM BROWN
RIVERTON
HAINES MILL
BRIDGEBORO
GARWOOD
HARTFORD
COX
CREEK
KENDLES RUN
MCELWEE
WHITTENDALE
CRIDER
NEW ALBANY
IRON POST
GOLF VIEW
STANWICK
SENTINEL
WESTFIELD
SALEM
BORTON LANDING
SHEFFIELD
CHESTER
MAPLE
CENTRAL
THIRD
MAIN
PARK
FLYNN
CAMDEN
KINGS HIGHWAY
PLEASANT VALLEY
SOMERS
HIGH
MT LAUREL
MARTER
YOUNG
MARNE
CENTERTON
HAINES
HARPER
FELLOWSHIP
NIXON
608
607
614
603
613
686
636
537
611
615
673
38
73
295
Bike Lanes
Shared Lane Markings
Shared Roadway
Bikeable Shoulders
Bikeable Shoulders w/ Parking
Multi-Use Path
Local Routes
Un-signalized Crossings
Add Bike Parking
Bicycle Circulation and Safety Plan
Moorestown Township, Burlington County, NJ
0
¼
½
Miles
North

Main Street

Main Street between Church Street and Chester Avenue forms the social and entertainment core of Moorestown, and is a key destination for both bicyclists and pedestrians. Main Street is also occasionally the site of contentious interactions between bicyclists, pedestrians, and vehicles, resulting in pedestrian concerns over bicyclists riding on the sidewalks and bicycle concerns about riding with traffic in the roadway.

Recommendations for Main Street are shown in **Figure 10.** To improve on-street bicycling conditions, the plan proposes adding shared lane markings (sharrows) to the roadway, reducing the posted speed limit from 25mph to 20mph, and installing new "Share the Road" signage. To enhance the pedestrian environment, the plan calls for expanding sidewalk space using curb extensions, reducing the number of curb cuts/driveways, and adding three mid-block crossings. Recommendations in this area also include new bike parking and signage to encourage bicyclists to dismount and walk instead of riding on the sidewalk.

Curb Extension Example

Opportunity to Widen the Sidewalk on Main Street

Centerton Square Area

The shopping area along Centerton Road, along with the extensive Lockheed Martin campus along Borton Landing Road, are major destinations on the east side of town. However, a combination of relatively wide roads and large intersections in this area creates difficult bicycling conditions due to higher vehicles speeds and greater conflicts with turning movements.

A concept plan for the Centerton area is shown in **Figure 11.** A lane diet is proposed along Marne Avenue as a way to create bike lanes for on-road cyclists, while an expansion of the multi-use path network is recommended to accommodate bicyclists who prefer not to ride with traffic. Bicycle parking is proposed at all major shopping locations and on Lockheed Martin's campus to allow bicyclists to securely park their bicycle as they shop or work.

Existing Multi-Use Path along Borton Landing Road

Existing Marne Highway

Moorestown Mall Area

The Moorestown Mall is located in southwest Moorestown, separated from the rest of the community by Strawbridge Lake Park and State Road 38. The mall contains an indoor skateboard and BMX facility that is popular with local youths, and also acts as the Township's transit hub with bus service from three NJ Transit lines and a park'n'ride lot.

A concept plan for the mall area is presented in **Figure 12.** Three alternative access routes to the mall were developed. For bicyclists proceeding south on Lenola Road, bike lanes can be created by narrowing the existing lanes. After crossing Route 38, these lanes would then transition to a new multi-use path network encircling and leading into the mall. Bicycle access from the east would be provided by creating new bike lanes along Pleasant Valley Avenue and Harper Drive, which would transition at the signalized intersection with East Gate Drive to a new multi-use path leading into the mall.

A third access route could be achieved by installing a "floating" bridge across Strawbridge Lake. The bridge could be relatively narrow since it only would carry bicycles and pedestrians, and there may be opportunities to use existing abutments at the dam. The route would lead out to the signalized intersection of Route 38 and Nixon Drive. Pedestrian upgrades such as countdown signal heads and crosswalks are recommended at all traffic signal locations, and bicycle parking is proposed near each of the mall's main entrances.

Potential Alignment for Multi-Use Path

Dam at Strawbridge Lake

December 2010

Figure 10:
Main Street Concept Plan

- Install shared lane markings (Sharrows)
- Sign "bicycles may use full lane"
- Reduce posted speed
- Reduce number of curb cuts/driveways
- Create bike corrals in unused street space
- Add mid-block crossings (3)
- Add gateway features

Sample bike corrals

2nd Street

Church Street

Mill Street

Chester Avenue

One Way

Add gateway feature

Add on-street parking

Widen sidewalk to match adjacent curbline

Add gateway feature

Main Street

10

10

18

20

10

10

390′

410′

170′

440′

360′

310′

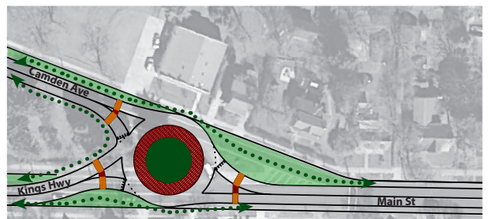
260′

Church Street

High Street

Prospect Avenue

Camden/Main Intersection



Roundabout concept with gateway feature

Main/Union Intersection

Legend

- Existing Bike Parking
- Candidate Bike Parking
- Proposed Crosswalk
- Proposed Curb Extensions
- Proposed Sidewalk

Bike Parking in Business District

Approximate Vehicle Spaces	700
Sample Bike Parking Ratio (1 bike/10 vehicles)	70
Existing Bike Parking (off-street)	12
Candidate Bike Parking (on-street)	78

Moorestown Bicycle Circulation and Safety Plan

0′ 80′ 160′ 240′ 320′ 400′ North

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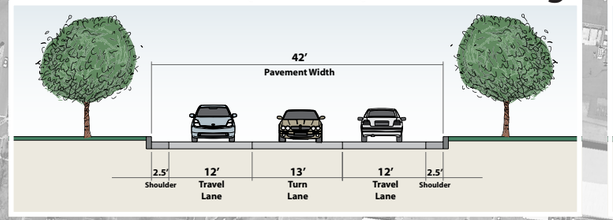
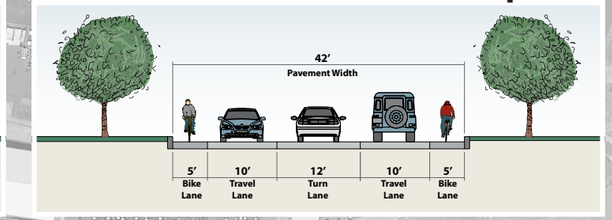
Figure 11:
Centerton Area Concept Plan

Marne Avenue (CR 537) Existing



Proposed



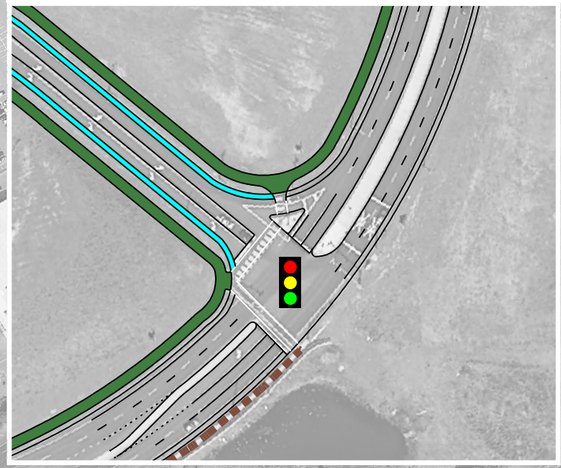
Marne Avenue (CR 537)

Young Avenue

Marter Avenue (CR 615)

Centerton Road

Marne/Centerton Intersection



Legend

- Existing Multi-Use Path
- Proposed Multi-Use Path
- Proposed Crossing
- Proposed Bike Lane
- Proposed Bike Lane Buffer
- Candidate Bike Parking

Moorestown Bicycle Circulation and Safety Plan

0′ 150′ 300′ 450′ 600′ 750′ North

December 2010

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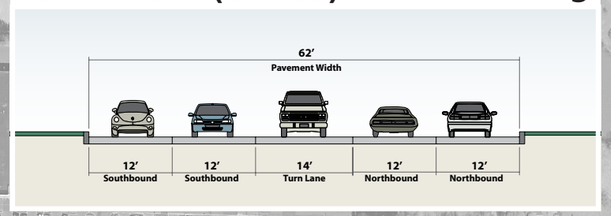
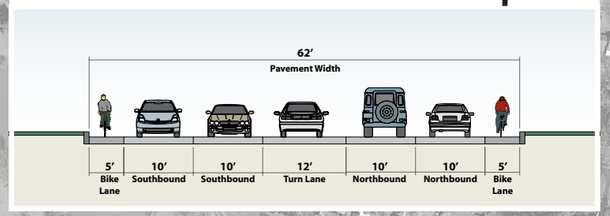
Figure 12:
Mall Area Concept Plan

Lenola Road (CR 608) — Existing



Proposed



See Adjacent Cross-Section

Candidate bridges

On structure

Candidate bike path

State Route 38

East Gate Drive

Pleasant Valley Avenue

Lenola Road

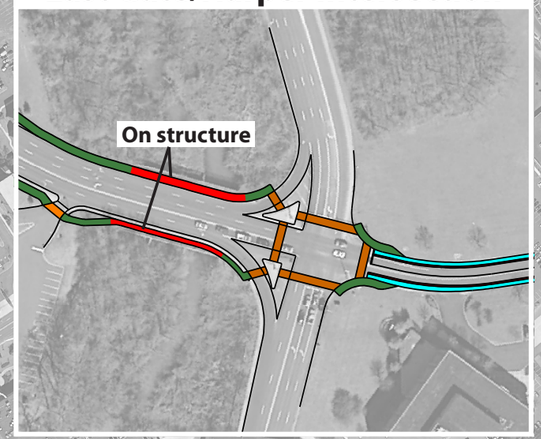
On structure

Harper Drive

NJ Transit Park 'n' Ride

Nixon Drive

East Gate/Harper Intersection



Legend

- Existing Multi-Use Path
- Proposed Multi-Use Path
- Proposed Crossing
- Proposed Bike Lane
- Proposed Bike Lane Buffer
- Candidate Bike Parking

Upgrade signal equipment with pedestrian assemblies and countdown signal heads at all signals as needed

Moorestown Bicycle Circulation and Safety Plan

0′ 175′ 350′ 525′ 700′ 875′

North

Action Plans

The On-Road Actions (**Figure 13**) and Multi-Use Path Actions (**Figure 14**) maps identify the specific steps necessary to achieve the vision of a connected network identified in the Bicycle Facilities Network Plan and the Area Concept Plans. These actions could be implemented over the next twenty years, and range from short-term projects such as adding pavement markings or signage to long-term projects that will require new construction, funding, and partnerships. A detailed plan for implementation, including preliminary cost estimates, is provided in **Chapter 6**.

On-Road Actions

The following table provides an overview of each of the On-Road Action categories:

Action	Description
Construct	The proposed facility would be created through wholly new construction
Repave	The proposed facility would be created by reconstructing a section of roadway
Lane Diet	The proposed facility would be created on the existing roadway by narrowing the existing vehicle lane widths and adding bicycle lane striping
Add Striping/Marking	The proposed facility would be created on the existing roadway by simply adding roadway markings
Make Shoulders Consistent	This action would add width to the existing shoulders only in the sections where the width is insufficient
Shift Striping	The proposed facility would be created on the existing roadway by re-allocating the lane markings to be more evenly distributed across the roadway
Intersection Upgrades	These are spot improvements to provide appropriate transitions between the bicycle facilities from each approach through the intersections
Lower Speed Limit	These are sections of roadway where lowering the posted speed limit should be evaluated

Multi-Use Path Actions

The following table provides an overview of each of the Multi-Use Path Action categories:

Action	Description
New Sidewalk	This action would construct new sidewalk to fill existing gaps in the sidewalk network
New Multi-Use Path	The proposed facility would be created adjacent to the existing roadway where sidewalk is normally located
New Crossing	Crossing treatments would be added where none currently exist
Enhanced Crossing	Existing crossing treatments would be upgraded to provide a higher level of visibility and safety

December 2010

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Figure 13:
On-Road Actions

CINNAMINSON TWP

DELRAN TWP

WILLINGBORO TWP

MAPLE SHADE TWP

MOUNT LAUREL TWP

GLEN
LENOLA ROAD
CHURCH
GEORGIAN
WHITTENDALE
CRIDER
GLEN
NEW ALBANY
IRON POST
RIVERTON
TOM BROWN
614
HAINES MILL
BRIDGEBORO
613
603
GOLF VIEW
STANWICK
SENTINEL
CHESTER
MAPLE
CENTRAL
THIRD
MAIN
PARK
FLYNN
CAMDEN
537
611
KINGS HIGHWAY
PLEASANT VALLEY
SOMERS
CHURCH
HIGH
MT LAUREL
HAINES
FELLOWSHIP
HARPER
38
73
673
NIXON
295
GARWOOD
COX
MCELWEE
HARTFORD
686
SALEM
WESTFIELD
SHEFFIELD
BORTON LANDING
CREEK
KENDLES RUN
636
CENTERTON
MARNE
MARTER
YOUNG
615

Bicycle Circulation and Safety Plan
Moorestown Township, Burlington County, NJ

0 ¼ ½
Miles

North

- Construct
- Repave
- Lane Diet
- Add Striping/Marking
- Make Shoulders Consistent
- Shift Striping
- Sign for Share the Road
- Intersection Upgrades
- Lower Speed Limit

December 2010

TooleDesignGroup

Figure 14:
Multi-Use Path Actions

CINNAMINSON TWP

DELRAN TWP

WILLINGBORO TWP

MAPLE SHADE TWP

MOUNT LAUREL TWP

GLEN

LENOLA ROAD

CHURCH

GEORGIAN

WHITTENDALE

608

607

CRIDER

GLEN

NEW ALBANY

IRON POST

RIVERTON

TOM BROWN

614

603

HAINES MILL

BRIDGEBORO

613

GOLF VIEW

STANWICK

SENTINEL

CHESTER

MAPLE

CENTRAL

THIRD

MAIN

PARK

PARK

CAMDEN

537

611

KINGS HIGHWAY

PLEASANT VALLEY

SOMERS

HAINES

38

73

HARPER

FELLOWSHIP

673

NIXON

295

CHURCH

HIGH

MT LAUREL

603

GARWOOD

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YOUNG

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HARTFORD

686

COX

MCELWEE

CREEK

SALEM

BORTON LANDING

KENDLES RUN

636

CENTERTON

295

Bicycle Circulation and Safety Plan
Moorestown Township, Burlington County, NJ

0 ¼ ½
Miles

North

- Existing Sidewalk
- Existing Multi-Use Path
- Existing Path
- New Sidewalk
- New Multi-Use Path
- New Crossing
- Enhanced Crossing

Chapter 4: Facility Descriptions

A goal of the Bicycle Plan is to provide functional, safe and accessible multi-modal connections throughout Moorestown. It is critical that facilities and design solutions are chosen that are appropriate for the type of user and existing space. This chapter provides detail and general guidance on design solutions to accompany the specific recommendations for improving bicycling conditions in Moorestown presented in **Chapter 3**.

All pedestrian and bicycle facilities should be designed to meet current State and Federal design guidance and standards, as defined by NJDOT, the American Association of State Highway Transportation Officials (AASHTO), the Americans with Disabilities Act, and the Manual on Uniform Traffic Control Devices (MUTCD). If the national standards are revised in the future, the updated standards should be followed.

The following publications should be referenced for greater detail on the design of bicycle facilities:

- ***Guide to the Development of Bicycle Facilities*.** The American Association of State Highway Transportation Officials (AASHTO), Updated in 1999. Available from AASHTO at www.aashto.org/bookstore/abs.html.

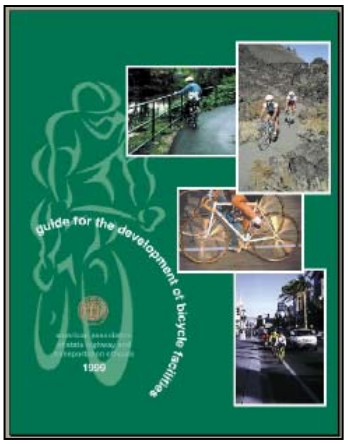
- ***NJDOT Bicycle-Compatible Roadways and Bikeways*.** Published by NJDOT and available at http://www.state.nj.us/transportation/publicat

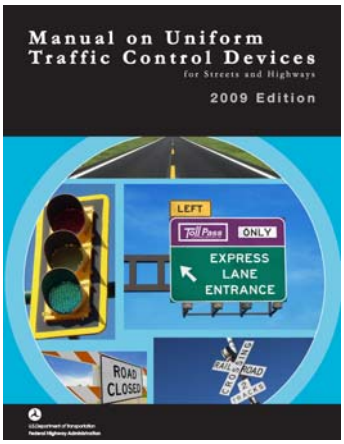
- ***Manual on Uniform Traffic Control Devices (MUTCD)***. Published by the U. S. Department of Transportation, Washington, DC, 2001. The manual is available at http://mutcd.fhwa.dot.gov.

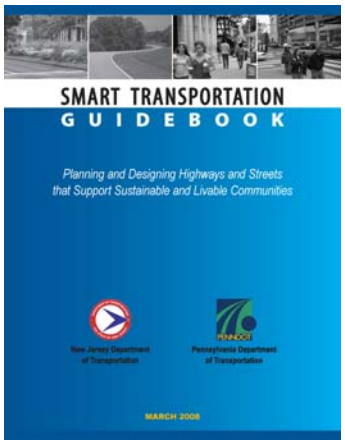
- ***Americans with Disabilities Act Accessibility Guidelines (ADAAG)*.** U.S. Department of Justice, United States Access Board. Guidelines are available at http://www.access-board.gov/adaag/html/adaag.htm

- ***Designing Sidewalks and Trails for Access: Part Two - Best Practices Design Guide***. Published by U.S. Department of Transportation, Washington, DC, 2001

- ***Smart Transportation Guidebook*** | *Planning and Designing Highways and Streets that Support Sustainable and Livable Communities*. Published by NJDOT and PennDOT, March 2008.







On-Street Bicycle Facilities

On-street bicycle facilities can include a range of design treatments such as bike lanes, striped shoulders, shared lane markings and signed routes. The goal of on-street facilities is to improve bicycling conditions on roadways while providing a visible reminder for motorists to share the road with bicyclists. On busy streets, an important purpose of these facilities is to provide lateral separation between bicyclists and motor vehicles and to encourage proper behavior among bicyclists and motorists. Another purpose and use of on-street bicycle facilities is to establish an interconnected bicycle network. It is important to note that many of Moorestown's roads with relatively low speeds and volumes do not require any new treatments.

Factors that impact safety and comfort for on-street facilities include:

- Amount of lateral separation between bicycles and motor vehicles (more space is needed when traffic speeds increase)
- Motor vehicle traffic volumes on the roadway
- Speed of the vehicle traffic on the roadway
- Percent of heavy vehicles on the roadway
- Presence and occupancy rates of on-street parking
- Pavement surface condition

Bicycle Lanes

Bicycle lanes are portions of the roadway that have been designated for the preferential or exclusive use of bicyclists through striping, signage and other pavement markings. On two-way streets, bike lanes should be provided on both sides of the road so that bicyclists can ride in the same direction as adjacent motor vehicle traffic. Bike lanes should be at least 4 feet wide on roadways with open shoulders and 5 feet wide on roadways with curb and gutter. Five foot bicycle lanes are typical, but wider lanes (i.e. 6 feet) are often used on roadways with high motor vehicle traffic volumes. Bicyclists still have the right to use the travel lanes on streets with bicycle lanes to avoid obstacles, such as open car doors. It is important to note that many cars can park in lanes that are striped at 7 feet or wider, which can raise unintended enforcement issues.

Bicycle lanes can provide the following benefits:

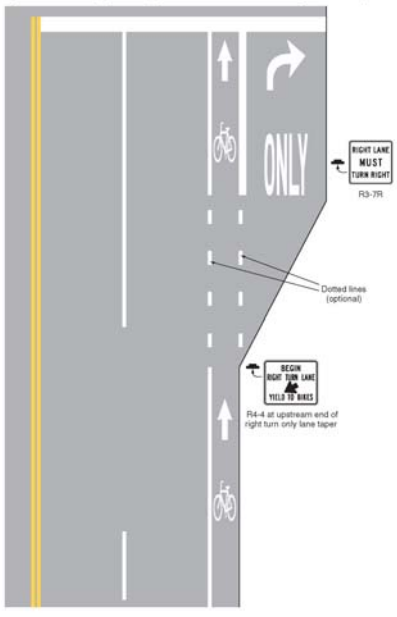
- Increase the comfort of bicyclists on roadways
- Increase the amount of lateral separation between motor vehicles and bicycles
- Indicate the appropriate location to ride on the roadway with respect to moving traffic and parked cars, both at mid-block locations and approaching intersections
- Increase the capacity of roadways that carry mixed bicycle and motor vehicle traffic
- Increase predictability of bicyclist and motorist movements
- Increase driver awareness of bicyclists while driving or opening doors from an on-street parking space

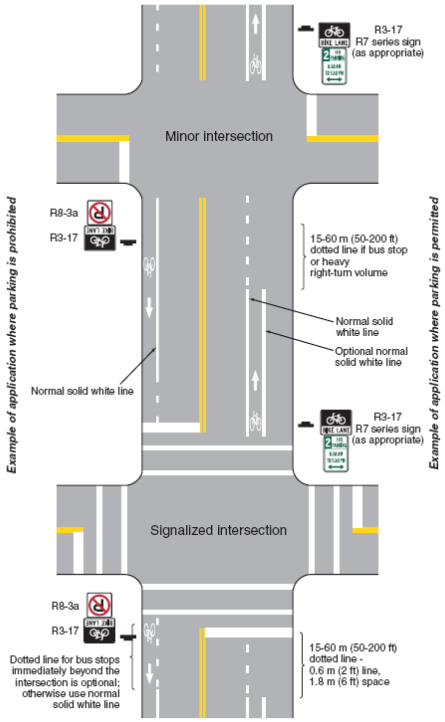
The MUTCD offers the following guidance on making and signing bike lanes:

- If used, the bicycle lane symbol marking shall be placed immediately after an intersection and at other locations as needed.
- The bicycle lane symbol marking shall be white.
- If the bicycle lane symbol marking is used in conjunction with other word or symbol messages, it shall precede them.
- If the word or symbol pavement markings are used, Bicycle Lane signs shall also be used, but the signs need not be adjacent to every symbol to avoid overuse of the signs.

- A through bicycle lane shall not be positioned to the right of a right turn only lane.
- When the right-through lane is dropped to become a right-turn only lane, the bicycle lane markings should stop at least 100 feet before the beginning of the right-turn lane. Through bicycle lane markings should resume to the left of the right-turn only lane.
- An optional through-right turn lane next to a right-turn only lane should not be used where there is a through bicycle lane. If a capacity analysis indicates the need for an optional through-right turn lane, the bicycle lane should be discontinued at the intersection approach.
- Posts or raised pavement markers should not be used to separate bicycle lanes from adjacent travel lanes.

Bike Lanes on Multi-Lane Arterials





Example of Pavement Markings for Bicycle Lanes on a Two-Way Street

Source: Manual of Uniform Traffic Control Devices for Street and Highways, 2009 Edition

Bikeable Shoulders

Bikeable/striped shoulders are another treatment that can be considered for roads in Moorestown with higher traffic volumes and speeds. The provision of shoulders on roadways has benefits to all roadway users. These facilities increase the comfort of bicyclists by providing greater lateral separation between automobiles and bicycles, provide additional clear zone and recovery areas for vehicles, and provide additional buffer or space for pedestrians in rural areas where sidewalks may not exist. Maintenance to keep shoulder areas free of debris to maintain bicycle compatibility.

Bikeable shoulders should be at least 4 feet wide on roadways with open drainage and 5 feet wide on roadways with curb and gutter. Additional shoulder width may be desirable on roadways with high motor vehicle traffic volumes, high vehicular speeds, or a high percentage of trucks, buses, and recreational vehicles. It is important to note that at intersections, additional symbols, signage, arrows, or short sections of bike lanes may be needed to provide direction to bicyclists and reduce potential conflicts between bicyclists and turning cars.

There are two types of bikeable shoulders identified for Moorestown, with the difference being whether parking is allowed on the shoulder. In rural areas, no parking is allowed and shoulders should be provided as discussed above. The existing shoulders in residential areas of Moorestown, however, often function as a parking lane as well. Low occupancy rates of parking have been observed on most of these roads, which renders the shoulder as functional and bikeable space the majority of the time. In these instances, there is no need to provide an additional dedicated bicycle facility, and bicyclists should proceed with caution when overtaking parked vehicles. It should be noted that this situation should be regularly re-evaluated if on-street parking occupancy rates increase, with the addition of sharrows as location-specific guidance to bicyclists and motorists.

Debris in shoulder areas can present hazards to bicyclists; maintenance of shoulder areas is critical

Bikeable Shoulders on Church Street

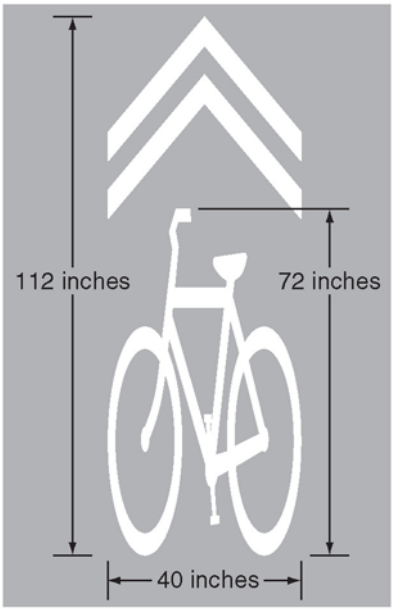
Shared Lane Markings

Shared lane markings ("sharrows") placed on the pavement provide guidance to bicyclists on the safest location to ride. Sharrows alert automobile drivers to the presence of bicyclists and encourage bicyclists to ride outside of the "door zone" of parked cars. They reduce wrong-way bicycling and tend to increase the distance between bicyclists and passing cars. Shared lane markings are generally used where there is not enough space for separate bicycle lanes and cyclists should be encouraged to use the full traffic lane.

Typical Sharrow Marking

Shared lane markings have the following benefits:

- Provide a visible cue to bicyclists and motorists that bicycles are expected and welcomed on the roadway
- Indicate the most appropriate location to ride on the roadway with respect to moving traffic and parked cars
- Can be used on roadways where there is not enough space for standard width bicycle lanes
- Connect gaps between other bicycle facilities, such as a narrow section of roadway between road segments with bicycle lanes
- Complement wayfinding and point out difficult sections on signed routes



Typical Sharrow Dimensions

Source: Maryland SHA Bicycle and Pedestrian Design Guidelines

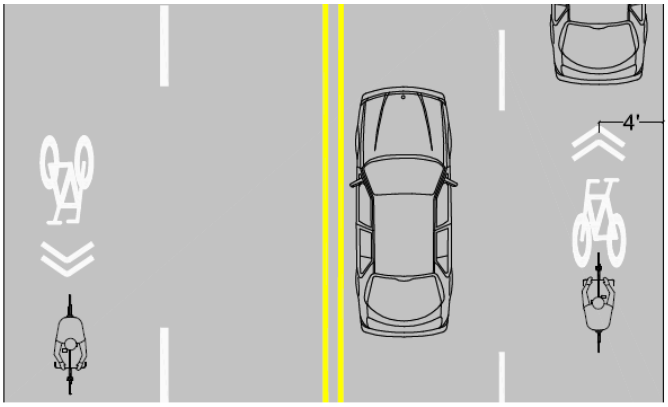
The shared lane pavement marking should be placed:

- A minimum of 11 feet from the face of the curb when used adjacent to a parking lane;
- A minimum of 4 feet from the face of curb or roadway edge when not used adjacent to a parking lane; and
- Immediately following intersections and spaced at intervals up to 250 feet thereafter;

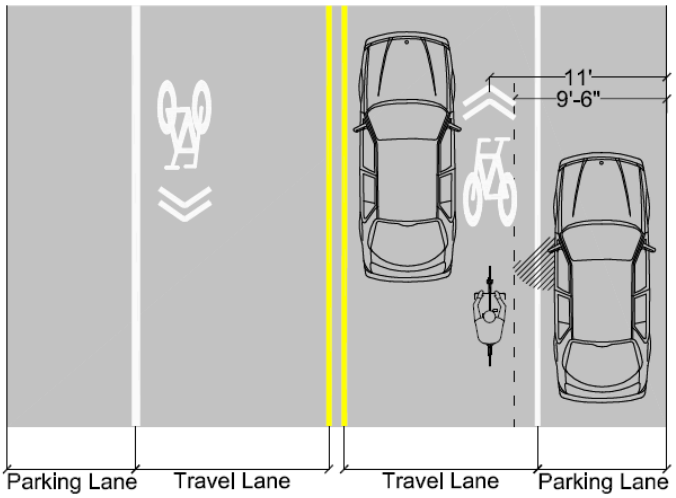
The shared lane pavement marking should not be placed in bicycle lanes or roadways with speed limits posted above 35 mph. Sharrows should also not be used as the primary means of wayfinding or identifying routes if guidance on appropriate lane position is not warranted.

Example of Sharrows adjacent to Parking

SYMBOL PLACEMENT - NO PARKING:



SYMBOL PLACEMENT - PARKING:



Sharrow Placement Example
Source: Maryland SHA Bicycle and Pedestrian Design Guidelines

Local Routes

Local routes are identified as streets and roads where bicyclists can be served by sharing the travel lanes with motor vehicles. Usually, these are local streets with relatively low traffic volumes and/or low speeds, which do not need special bicycle accommodations in order to be bicycle-friendly. There are many low-volume local streets in Moorestown that are excellent for bicycling in their current condition and need no further street improvements to be bicycle compatible. These Local Routes form essential links in a connected bicycle network for Moorestown and can be identified as preferred routes for bicycle use.

Local routes can be identified on bicycle maps that are produced to educate the community about these preferred routes. Bike route wayfinding signs can also be posted on local routes to indicate the particular advantages of using these routes instead of others. Additional information on bicycle route maps and wayfinding systems are provided later in this chapter.

Maple Avenue and Flynn Avenue are Good Examples of Local Routes

Shared Roadways

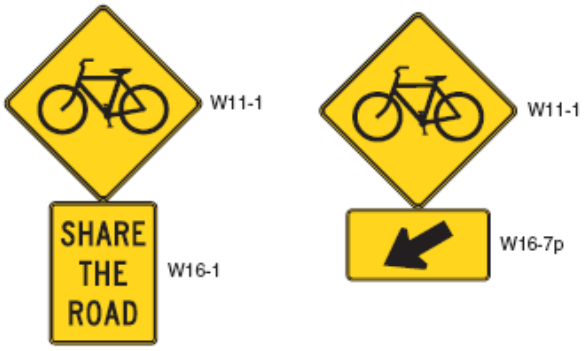
Shared roadways are a treatment that can be considered for rural roads in Moorestown that may not warrant a dedicated facility or detailed wayfinding, but make important recreational connections.

Roads that should be considered for shared roadways typically include the following characteristics:

- One lane in each direction
- Open drainage
- Relatively narrow lane widths (less than 12 feet wide)
- Low traffic volume
- Higher traffic speed than local roads

Shared roadways are similar to local routes because bicyclists share the travel lanes with motor vehicles. These routes are often be used by faster-moving bicyclists for recreational purposes. "Share the Road" signs that remind motorists to share the road with bicyclists should be installed along shared roadways. These signs can increase awareness of bicyclists, especially in areas where bicyclists may not be expected or where many drivers are not local. A new fluorescent yellow/green color has been approved in the Manual on Uniform Traffic Control Devices and can be used on these signs. Signs should be used judiciously, as too many signs can cause visual clutter and lead to non-compliance. Note that the "Share the Road" sign is a warning and should not be used for directional signing of a bicycle route.

Example of MUTCD Signs for Designating Shared Roadways



Off-Road Facilities

Multi-Use Paths

Multi-use paths provide a high-quality walking and bicycling experience that is separated from vehicle traffic. These paths should be a minimum of 10 feet wide for bi-directional traffic and should be paved. Multi-use paths can be constructed along a roadway corridor, in their own corridor (such as a greenway trail or rail-trail), or a combination of both.

On high-speed roadways, there may be a need for multi-use paths in addition to bicycle lanes or shoulders. Multi-use paths should not be used to preclude on-road bicycling, but rather to supplement a system of on-road bicycle facilities for less experienced bicyclists. Multi-use paths also provide essential facilities and connections for pedestrians where they may not already exist.

***Considerations for pathways parallel to roadways**:* Ideally, multi-use paths are provided on both sides of the roadway and bicyclists use the paths as one-way facilities (traveling in the same direction as adjacent motor vehicle traffic). Due to right-of-way and budget constraints, though, they are often provided only on one side of the roadway. Multi-use paths should be designed to reduce conflicts between pedestrians and bicyclists. They can function well if the following key design features are achieved:

- A minimum 5 foot buffer between the outside travel lane and edge of pathway can be built (a 42-inch vertical barrier is also acceptable).
- Conflicts with intersecting roadways and driveways (which may or may not be signalized) should be minimized. Paths work particularly well where they are parallel to expressways and railroad rights-of-way because they are limited access in nature. However, paths parallel to divided highways such as Route 38 must be designed carefully, especially near crossings of high speed ramps.
- Visibility of cyclists at all crossings
- Street trees are recommended where possible (30-60' on center)
- Crossings of free flow ramps should be avoided, or minimized and made sufficiently safe
- Conflicts between pedestrians and bicyclists are minimized by having adequate width, clear space at the side of the path, and sight distance at locations where pedestrians cross or enter the facility.
- Berms and/or vegetation can be used to separate paths from adjacent areas; however, it is not desirable to place the pathway in a narrow corridor between two barriers (such as fences, bollards, or a knee-wall) for long distances. This prevents path users from leaving the path in the event of an emergency, and creates an uncomfortable experience for the user.

Existing Multi-use Path along Hartford Road

Potential Multi-Use Path Treatment at Intersection

***Considerations for trails and greenways*:** The clear zone of trees, signs and other objects near trails is an important issue to consider in trail design. Information on clear zone requirements from the *1999 AASHTO Guide for the Development of Bicycle Facilities* is included below.

A minimum 2-foot wide graded area with a maximum 1:6 slope should be maintained adjacent to both sides of the path; however, 3 feet or more is desirable to provide clearance from trees, poles, walls, fences, guardrails or other lateral obstructions. Where the path is adjacent to canals, ditches or slopes down steeper than 1:3, a wider separation should be considered. A minimum 5-foot separation from the edge of the path pavement to the top of the slope is desirable. Depending on the height of embankment and condition at the bottom, a physical barrier, such as dense shrubbery, railing or chain link fence, may need to be provided.

Neighborhood Connections

Neighborhood connections expand the network for non-motorized users by creating short connecting trail segments between sections of the roadway grid that are currently closed to all traffic. These connections provide the key benefit of shortening travel distances and times, which greatly increases the possibility of choosing to walk or bike for short trips. These short connections can also help bicyclists bypass high volume or difficult roadway sections.

Many such connections have already been established throughout Moorestown, including paths off of Flynn Avenue, Salem Drive, Lippincott Avenue, Bridgeboro Road. These connections have become valued community and neighborhood amenities, and provide important links in the connected bicycle network for Moorestown. While many existing connections have been implemented through the development process, retrofitting existing areas often requires the establishment of access easements or the purchase of right of way. These connections should be viewed as potential longer-term improvements to address any concerns that may arise from current property owners.

Neighborhood Connections in Moorestown

Other Facilities and Treatments

Intersection Treatments

In general, there are two types of intersections to consider in Moorestown: signalized and un-signalized. Signalized intersections can present major barriers to bicyclists when dedicated bicycle facilities are sacrificed for vehicle turning lanes. Therefore, it is essential to continue bicycle facilities through intersections and provide the transitions between facilities as they change. Detailed design is needed so that proper facility transitions are included in each intersection. Pedestrian crossing features such as crosswalks, countdown pedestrian signal heads, and push buttons are also recommended, as they can be especially useful for bicyclists that are more comfortable navigating the intersection as a pedestrian.

Un-signalized intersections and mid-block crossings can also be intimidating for both pedestrians and bicyclists. Factors that influence the crossing's real or perceived safety include width of the road, speed of traffic, and tendency for vehicles to yield. Crossings on Hartford, Westfield, Borton Landing, and several other roads exhibit characteristics that can be uncomfortable for those looking to cross.

Several measures can be used to improve safety at un-signalized crossings, ranging from high-visibility crosswalk striping and signage to higher-level treatments such as textured crosswalks, curb extensions ("bumpouts"), median refuge islands (curbed or uncurbed), in-road lighting, overhead lighting, High Intensity Activated Crosswalks (HAWKs) and Rectangular Rapid Flashing Beacons (RRFBs). In-road lighting, HAWKS and RRFBs are typically pedestrian-actuated, and help to increase the visibility of bicyclists and pedestrians to oncoming motorists. Curb extensions and median refuge islands improve crossing conditions by shortening the crossing length, increasing visibility, and acting as a traffic calming feature. Median refuge islands should be sized to accommodate a full bicycle length waiting in the median.

Existing Crosswalk at the Intersection of Westfield and Sheffield

Examples of Median Refuge Islands

Bicycle Safe Drainage Grates

Storm grates pose a hazard for bicyclists when the openings are parallel to the bicyclists' direction of travel. Bicycle tires can get caught between the bars of these grates, and cause bicyclists to crash. Unsafe drainage grates should be replaced with grates that are of a bicycle-safe design. The photos below show examples of bicycle-safe and non bicycle-safe drainage grates.

Bicycle-Safe Grate

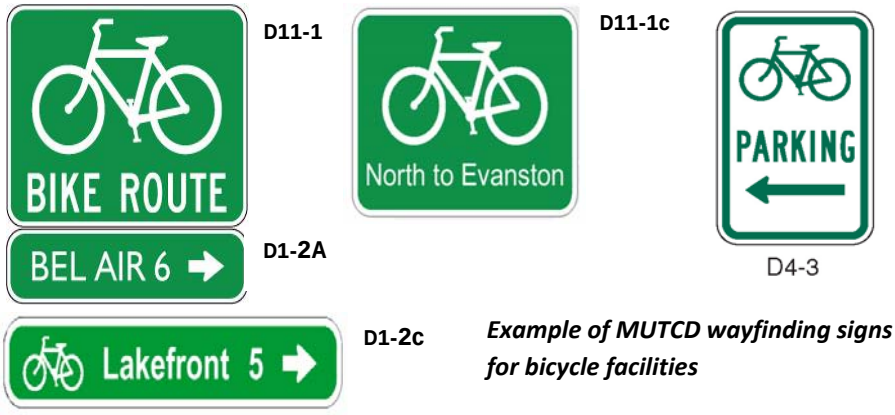
Conventional Bicycle Grate

Wayfinding

A comprehensive set of bicycle route wayfinding signs should be developed to connect destinations in Moorestown and indicate to bicyclists that particular advantages exist to using certain routes compared with alternatives. The bicycle route signs, as shown below, should be created as a part of a comprehensive wayfinding system for the larger region and oriented to key destinations.

Key Regional Destinations could include: Philadelphia, Camden, Cherry Hill Mall, River Line stops, Rancocas State Park, and Burlington County College - Mt. Laurel Campus

Key Local Destinations could include: Main Street, Municipal Complex, Centerton Square, Farmer's Market, Moorestown Mall, local parks and schools



Example of MUTCD wayfinding signs for bicycle facilities

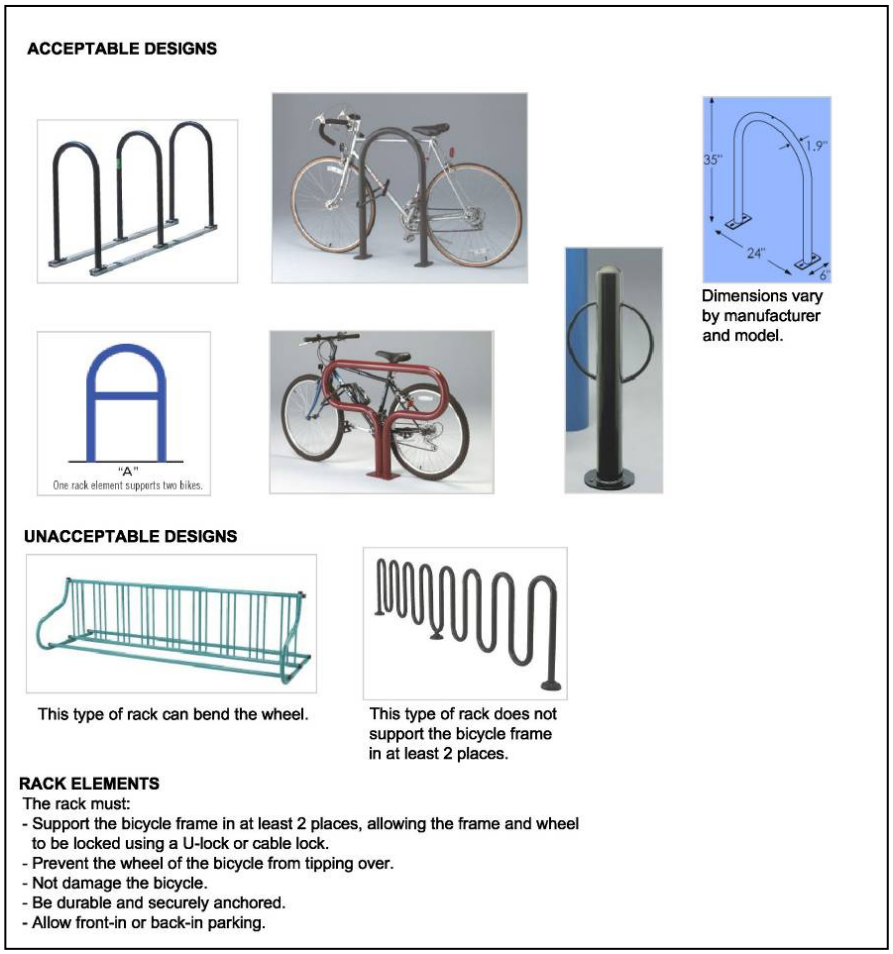
An optional treatment for signed bicycle routes is custom pavement markings to enhance wayfinding. The "bike dot" used in Seattle is a good example.

Example of a "Bike Dot" In Seattle

Bicycle Parking

Bike parking is important at destinations such as town centers, historic sites, transit stations and park-and-ride lots. It is also important to provide bike parking near entrances to business, schools, and libraries and at employment centers. Secure, well-lit bicycle parking located close to building entrances and transit entry points can make bicycling more attractive. It also reduces the risk of bicycle damage or theft.

Bike parking can be provided in the form of bike racks, or more secure facilities such as bike lockers. Bike racks are relatively low cost, have a small footprint, and can be customized to match or enhance local aesthetics. Bike lockers provide added protection from theft and weather by providing an enclosed storage space. Bike rack design and site location are discussed in detail in the *Bicycle Parking Guidelines*, developed by the Association of Pedestrian and Bicycle Professionals (available on the resources page at **www.apbp.org)**.

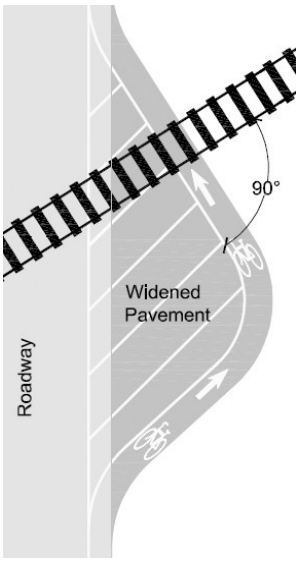


Bicycle Parking Guidelines

Source: Bicycle Parking Guidelines, Association of Pedestrian and Bicycle Professionals

Railroad Crossings

Under certain circumstances, railroad tracks crossing the road can present a dangerous condition for bicyclists. At diagonal at-grade crossings, the gap next to the rail can trap the front wheel of a bicycle causing the bicyclist to crash. To prevent this from happening, the bicycle lane or shoulder should be designed to enable the bicyclist to approach the track at an angle closer to 90 degrees (but not less than 60 degrees) without having to swerve into motor vehicle travel lanes.



Skewed Railroad Crossing in Madison, Wisconsin

Recommended Design Treatment at Diagonal Railroad Crossings

There are several locations in Moorestown where this condition is present, including New Albany Road, Church Street, Flynn Avenue, and Borton Landing Road. In these cases, the bicycle lane or shoulder should be designed so as to enable the bicyclist to approach the track at an angle closer to 90 degrees. The width of the dimensions of the widened area will be dependent upon the skew of the railroad tracks relative to the bicyclist crossing point. It is important that the bicyclist is given sufficient space on the approach and the departure of the crossing to safely transition back to the traveled way. An example of this widening treatment is shown in the figures above.

In locations where a retrofit may not be feasible or where the retrofit may not occur for a period of time, the *Manual on Uniform Traffic Control Devices* (MUTCD) includes the W10-12 warning sign which should be used to warn bicyclists of skewed railroad crossings. A filled or rubberized flangeway can also help to reduce, but not eliminate the risk of a trapped wheel.

W10-12

Bicycles on Bridges

Federal law, as established in the Transportation Equity Act for the 21st Century (TEA-21), makes the following statements with respect to bridges:

"In any case where a highway bridge deck is being replaced or rehabilitated with Federal financial participation, and bicyclists are permitted on facilities at or near each end of such bridge, and the safe accommodation of bicyclists can be provided at reasonable cost as part of such replacement or rehabilitation, then such bridge shall be so replaced or rehabilitated as to provide such safe accommodations." (23 U.S.C. Section 217)

For bridges that have an existing or proposed multi-use path approaching one side, the bridge should be constructed with a shared use path on that side, separated from traffic by a concrete barrier. Use of the concrete barrier requires a crash cushion, or should otherwise be designed so that it does not pose a hazard to errant vehicles. The pathway should be a minimum of 12' wide, and should not be less than 10' wide. The barrier between the pathway and the shoulder should be a uni-directional concrete barrier with a minimum height of 42" from the surface of the pathway. The railing on the other side of the pathway is not required to be crashworthy, but should also be a minimum height of 42" from the surface of the pathway (48" is recommended to provide an added measure of safety for bicyclists) . Transitions at the bridge approaches should enable access to the pathway on the bridge by bicyclists who may be riding on the paved shoulder rather than on the pathway. It is important to also consider how the "shy distance" affects a bicyclist or pedestrian when walking along vertical objects. This distance is usually assumed to be 2 feet from the edge of a persons arm to the edge of the vertical object.

The provision of a pathway on one side requires that safe crossings (grade separated, if necessary) be provided on each end of the bridge so as to allow access to the other side of the road. The determination of the appropriate treatment should be based on the following factors:

- ***Land Uses and Destinations***: In an urban area with destinations in close proximity to the bridge on both sides of the road, pedestrians need access on both sides of the bridge
- ***Cost*:** The cost of providing sidewalks on both sides of the bridge should be weighed against the cost of providing safe crossings (grade separated, if necessary) on either end of the bridge to enable bicyclists to access the other side of the road.

The following guidelines apply to bridge replacement projects on rural roadways with open sections. These bridges should be constructed with 10' wide shoulders on both sides. Roadway shoulder improvements associated with bridge replacement projects should include 4' wide (minimum) paved shoulders for bicycle use on approaches. Pedestrians who occasionally use rural bridges will share the shoulder space with bicycles – sidewalks generally are not required on rural bridges. However, on bridge replacement projects that are near points of community development such as schools, shopping centers, local businesses, tourism attractions, or other land uses that result in pedestrian concentrations along the highway, a curb and sidewalk cross section should be used in conjunction with 4' paved shoulders on each side of the road to accommodate bicyclists.

Bridges can be retrofitted to better accommodate bicyclists and pedestrians. There are a variety of ways of accomplishing this:

- Reducing the width and/or number of travel lanes to create more space for bicycles and/or pedestrians. For example, a narrow sidewalk can be widened to provide for a more comfortable pedestrian environment, while maintaining adequate shoulder width for bicycling.

- Adding a new bicycle and pedestrian structure to the existing bridge structure. In some cases, bridge footings may have been constructed in anticipation of a future roadway widening, or it may otherwise be possible to add an additional structure for pedestrians and bicyclists. Bridge retrofit solutions require detailed structural analysis to determine if the bridge can accommodate the additional weight of new facilities without compromising its structural integrity.

Chapter 5: Program Recommendations

The connected bicycle network laid out in this plan is designed to provide safe, convenient access for bicyclists throughout Moorestown. Similar to facilities for other transportation modes, this network of bicycle facilities must be used appropriately to be effective; it is not acceptable for bicyclists or motorists to disregard traffic rules. Breaking these laws puts bicyclists and other roadway users at risk and is inconsistent with Moorestown's overarching goal of increasing safety. Efforts must be made to educate and encourage, among motorists and bicyclists alike, a culture of respect and shared usage that welcomes new riders to Moorestown's roads.

Bicycle education, enforcement and encouragement programs have been an important part of the bicycling experience in Moorestown for many years. Programs have been implemented by various organizations and agencies in order to improve bicycle safety and encourage more people to ride bicycles. For example, summer bicycle courses for kids, Safe Routes to School programs, and recent police-conducted crossing stings are several of many initiatives undertaken to promote safe conditions for bicyclists and pedestrians in Moorestown.

The actions listed below are recommended in an effort to provide a range of programs to establish and promote bicycling as a viable, safe, healthy, and fun form of transportation in the Township.

Education

As the bicycle network is built and more people are encouraged to ride, new programs will be needed to educate bicyclists and motorists about how to co-exist safely in the roadway environment. Drivers should be taught to treat bicyclists as legitimate users of the road and operate safely around bicyclists. Unsafe behavior by either bicyclists or drivers should be targeted through education and enforcement efforts.

Pedestrian and Bicycle Website

The Township should further develop its website to facilitate and encourage more bicycle activity in Moorestown. The website should include maps of on-and off-road bicycling facilities, recommended bicycle touring routes that provide access to historic and cultural sites, and public water access points. Information should also be provided on pedestrian, bicycle, and driver safety tips. It should include resources such as bicycle shops, bicycle clubs, a calendar of events with information about events such as organized rides and walking tours, and links to other websites with information about bicycling, and related health issues. The Township's website should link to the NJDOT's Division of Bicycle and Pedestrian Transportation's website for information on events, maps, laws, safety tips, etc.: http://www.state.nj.us/transportation/commuter/bike/

Potential website materials could include:

- New Jersey Bike/Pedestrian Master Plan http://www.bikemap.com/RBA/ (1995)
- SRTS success story Burlington County http://www.state.nj.us/transportation/community/srts/pdf/ss_burlington.pdf (Pemberton and Mount Laurel Township)
- Burlington County
    - Bikeways map/guide http://www.state.nj.us/transportation/commuter/bike/pdf/burlington.pdf

- Countywide-transportation Plan http://www.co.burlington.nj.us/upload/Transportation/Images/Community_Transportation_Plan.pdf
- BurLink = Burlington County Transit (allows bikes on buses)
- Cross County Connection: *Improving the quality of life in southern New Jersey through transportation solutions. Carpooling, vanpooling, Mass Transit, Telecommuting, Flex Scheduling, Walk & Bike to Work*. Interactive Map http://www.driveless.com/googlemap.html

Bicycle Safety Education for Adults

The Township should develop and distribute bicycle safety materials. Potential materials include safety tips on the Township's website, brochures, handouts, and public safety messages. These materials can be provided at local businesses, schools, and public buildings. Information should be targeted at bicyclists as well as drivers. Important safety topics that should be discussed include:

- Laws
- Rules of the road
- Road crossing safety
- Proper location and direction for bicycling on the roadway
- Bicyclist visibility to drivers at night
- Yielding to bicyclists at road crossings and giving bicyclists enough space when riding on the roadway
- The relationship between vehicle speeds and the severity of bicycle injuries

Moorestown Bicycle Maps and Brochures

The Township should work to develop maps and brochures to identify existing facilities and show residents and visitors preferred routes for bicycling. These materials should provide information about the benefits of non-motorized transportation and physical activity, pedestrian and bicycle safety tips, bicycling rules, bicycle parking, and information about local bicycling organizations.

Brochures about individual bicycle routes, greenway trails and mountain bike trails should be developed to target specific users. These brochures should show the bicycle routes in significant detail, including written directions. They should also include information about historic sites, restaurants, shops and other attractions along or close to the route. This type of brochure would be an excellent resource for residents and visitors.

These maps and brochures should be distributed through a wide variety of outlets, including:

- Visitors centers
- Bicycle shops
- Libraries
- Gyms/YMCAs
- Schools
- Police Department
- Online
- Other organizations, such as bicycle clubs, businesses, and realtors

Educational Campaign on the Benefits of Bicycling

Many people are aware of the environmental benefits of bicycling instead of driving an automobile; however, they may not fully realize the health benefits that bicycling provides. An educational campaign could encourage the development of bikeways and trails as a way to promote physical activity and wellness for people of all ages in Moorestown. The initiative should emphasize the links between walking and bicycling and weight loss, disease prevention, lower health care costs, and longer lives for all members of the community. Targeted audiences for this outreach effort should include:

- Community-based health improvement partnerships
- Elder care facilities
- Hospitals
- Schools

While specific projects can be targeted based on local needs and ideas, a key component of each project should be a community outreach and promotion effort. This effort should highlight the health benefits of walking and bicycling and provide practical advice about where to walk or bicycle in the community.

Educate Moorestown Residents about New Bicycle Facilities

The Township should provide residents with information about the purpose of new bicycle facility treatments (e.g., bicycle lanes, shared lane markings, etc.) and safe behaviors for using these facilities.

- Develop web pages and disseminate information about each treatment.
- Install temporary orange warning flags, flashing lights, or cones at locations where new facilities are installed, where appropriate.
- Increase police patrols for a period of time as roadway users adjust their behavior after a new facility is installed.

Pedestrian and Bicycle Safety Education for Children

The Township should work with local schools to implement a bicycle safety education curriculum in elementary and middle schools. There are a number of existing sources for funding and assistance in integrating bicycle safety education into schools. The curriculum should cover topics such as bicycle safety and laws and can include helmet promotions and other activities.

Bicycling Rodeos

The Township should work with the Police Department and other local organizations to expand and continue organizing bicycling rodeos for kids. Rodeos are an opportunity for Township staff, police, and other leaders to teach safe bicycling behaviors and give children hands-on experience to improve their bicycling skills. The rodeo site can be set up with mock streets, intersections, and houses/stores for the walking course and cones, stop signs, and play vehicles for a bicycle course. These rodeos should be offered several times each year, and could be coordinated with other Township events.

Safe Routes to School

The Township should build on NJDOT's existing Safe Routes to School (SRTS) program, and the already large numbers of students biking to elementary schools in Moorestown. For example, Steering Committee members indicated that approximately 100 students typically ride their bicycle to the Upper Elementary School.

By expanding its efforts to work with the Moorestown Public Schools, public health organizations, parent associations, and local walking and bicycling advocacy groups, the Township can further develop safe bicycle and pedestrian routes to Moorestown schools. These routes should be improved in conjunction with the implementation of this Plan and the Moorestown Pedestrian Master Plan. Bicycle facilities included within this Plan that are within a 2-mile radius of schools should be considered for potential SRTS funding.

The Township should work with local schools to increase participation in International Walk and Bicycle to School Day, which is held each year in October. Walk and Bicycle to School days have been instituted at many schools throughout the country over the past decade. They increase awareness of bicycling and walking as fun, healthy transportation choices that can reduce automobile congestion and pollution near schools.

Encouragement

Encouragement is not simply casting bicycle travel in a positive light. Encouragement promotes awareness about bicycling as a form of transportation, showing that it is not only achievable but also enjoyable. Encouragement programs also build upon and enhance the Education programs and resources identified in the last section.

Employee Bicycle Commuting Incentive Programs

The Township should encourage bicycle commuting by providing information about economic benefits, health benefits, and potential commuting routes to employers and employees. A good resource for information on this topic is the *Bicycle Commuter Guide*.

Public agencies can be model employers by considering the following actions:

- Offering monetary incentives for employees who bicycle to work
- Providing showers and lockers for employees
- Working with local bicycling groups to provide “bicycle mentors” to demonstrate to employees who have always driven to work how it may be possible to bicycle to work
- Establishing “Guaranteed Ride Home” programs for people who do not bring a car to work but need a car in case of emergencies or inclement weather.

One encouragement program that tends to be very popular and well attended across the country is Bike-to-Work Day. This encourages employees who live in locations that are safe and convenient for bicycling to work to participate in the event as a demonstration for how it can be done regularly. Many communities choose to build on Bike-to-Work Day and use it as the centerpiece of a larger community event focused on the local bicycling community.

Arlington, VA's alternative commute program is another example. Employees who walk or bike to work at least 50% of the days in any given month receive a $35 per month stipend. The stipend is paid out in a lump sum twice a year. Arlington County also offers a "Guaranteed Ride Home" program and actively promotes Bicycle-to-Work Day.

Cycling Tours/Clubs

People tend to avoid what is unknown and unfamiliar. If a person drives for all of their trips, that person may be hesitant to find ways to bike to the same destinations. The routes are unknown, so it is much easier to keep the habit of driving. In a group setting, though, it is easier and more comfortable to explore the bicycling environment.

Cycling clubs are community organized groups that regularly bike throughout the community for recreation and/or transportation. They can have basic purposes for social and exercise outlets. Alternatively, they can have more complex tasks such as surveying existing conditions to determine maintenance needs and providing neighborhood surveillance. The clubs do not need to participate in the maintenance and policing duties, but just identifying and reporting problematic conditions can be very helpful to the responsible agencies. Some groups even serve as a "bicycle train" that follows the same route at the same time of day so that people can bike to work and school in larger groups.

These clubs are helpful for the cyclist transportation network for several additional reasons. Even if conditions are not ideal for biking, it is often safer to bike in a group. These groups also make new and untried routes familiar quickly; with the group testing biking routes that individuals can later choose to take on their own. Biking in groups also makes the cyclists more visible to drivers. The more often drivers see groups of people biking the more likely it is that the drivers will anticipate cyclists along the road in the future.

There are several existing cycling club group rides in the Moorestown area. The Outdoor Club of South Jersey conducts lunchtime recreation rides on Westfield and Mount Laurel Roads and Saturday rides on Pleasant Valley, Centerton, and Creek roads. The group typically rides out of the 7-11 convenience store on Lenola Road. Promoting these group rides through social networking, the Township website, and even local newspapers may help to increase participation and get more new cyclists involved with group rides.

Enforcement

Enforcement can be a tricky aspect of a program. To be effective, the enforcement program should focus on awareness and education, rather than punishment. If people start to vilify the enforcer, the program may actually result in an increase of the undesired activity. It should be noted that enforcement alone does not usually achieve long-term effects. Enforcement needs to be partnered with strong education and encouragement efforts as well as physical improvements where necessary.

A major issue with enforcement policies is that one party will be labeled the enemy and the other the victim, without any regard for either party's behavior. It is important to treat all parties fairly and consistently. For this plan it is important to address both vehicular and bicycle offenders. There must be consequences for all infractions. Consequences should include warnings with short explanations and then a gradual increase in penalization.

Also, the entire jurisdiction must support the enforcement program. Enforcers should not enforce differing rule sets in different parts of the Township as this can result in a "zone" mentality where people will not exercise the same consideration Township-wide. Following the institution of increased penalties, progressive ticketing is recommended as it increases contact between motorists, bicyclists and police.

PROGRESSIVE TICKETING

1. **Educating —** Establish community awareness of the problem. The public needs to understand the rights and responsibilities of both motorists and bicyclists. Raising awareness about the problem will change some behaviors and create public support for the enforcement efforts to follow.
2. **Warning —** Announce what action will be taken and why. Give the public time to change behaviors before ticketing starts. Fliers, signs, newspaper stories and official warnings from officers can all serve as reminders.
3. **Ticketing —** Finally, after the warning time expires, hold a press conference announcing when and where the police operations will occur. If offenders continue their unsafe behaviors, officers issue tickets.

Source: Pedestrian and Bicycle Information Center. www.walkinginfo.org

Another important aspect of a successful enforcement program is to recognize the nature of the problem. If the majority of users practice unsafe behavior, there may be a problem with the physical design and it would be ineffective to station an officer at the site and issue citations. When the vast majority of users are breaking the law, it may be necessary to change the physical environment first.

Cities throughout the country often require offenders (both drivers and bicyclists) to take a course on specific laws that relate to pedestrian and vehicular safety. It is beneficial for students to learn from people directly involved with enforcement process. Instructors of the course can include emergency trauma and medical staff, police offers, transportation advocates and even judges. In some communities the citation is removed after the offender take this course. It would be advantageous to create a publicly accessible Township-wide policy that explains when offenders have the option or are required to enroll in the course. This should be made available in Spanish as well as English.

Increase Enforcement of Bicyclist and Motorist Behavior

The Township should work with the Police Department to develop an enforcement program to reduce bicycle and motor vehicle crashes. This should take a balanced approach to improving behaviors of both bicyclists and motorists. Motorist behaviors that should be targeted include:

- Turning left and right in front of bicyclists
- Passing too close to bicyclists
- Speeding
- Parking in bicycle lanes
- Opening doors of parked vehicles in front of bicyclists
- Rolling through stop signs or disobeying traffic signals
- Harassment or assault of bicyclists

Bicyclist behaviors that should be targeted include:

- Ignoring traffic control (particularly traffic signals)
- Riding the wrong way or against traffic on a street
- Riding on sidewalks illegally
- Riding with no lights at night
- Riding without helmets (only for children)

The NJDOT Biking Website (http://www.state.nj.us/transportation/commuter/bike/) contains additional information on bicycle laws of New Jersey. Bicyclist safety is a shared responsibility between all roadway users. Enforcement priorities should be established through a collaborative process. Additional enforcement programs include:

Bicycle Education for Law Enforcement Officers

The Police Department should offer educational training to officers about bicyclist rights and responsibilities as well as aggressive motor vehicle behavior toward bicyclists. For example, the Maryland Office of Highway Safety organizes safety training events for officers to raise awareness about rights, rules, and appropriate responses to incidents involving conflicts between motor vehicles, bicycles and pedestrians. The Federal Highway Administration offers a DVD that is an excellent training tool.

Police Bicycle Patrols

The Township and the Police Department can work together to apply for grants and other resources to establish a bike patrol. Police Bicycle Patrols establish visibility of law enforcement as well as bicycling in general. This will also help involve law enforcement more extensively in bicycling issues. Bicycle squad members should work with the Township and other local organizations to provide bike safety education through youth groups and schools, and talking with residents on their beats. Professional law enforcement can also be supplemented with volunteer and community-based patrols. This approach can be used with great success on multi-use trails and along biking routes to school.

Police offers monitoring the trails can be equipped with maps, brochures and other informational materials to give out to trail users. To encourage safe riding, police officers can partner with bicycle advocates to give away helmets and lights. These can be especially timely when people turn back their clocks for daylight savings time.

Speed Feedback Signs

Speed feedback signs are portable devices that show motorists their speed in real time as they drive past the device. The sign also shows the posted speed limit for the road. Motorists have a tendency to coast on roads that they drive regularly. The feedback signs remind motorists how fast they are traveling. These signs can also be complimented with other signs that remind motorists that they are driving through a school zone, or a pedestrian crossing area.

Speed Cameras

The purpose of speed cameras is to condition people to drive at slower speeds in specific areas. The greatest benefit of speed cameras is that they enforce traffic speeds automatically. The computer inside the camera calculates the speed of every car that passes. If the car is traveling at speeds that are higher than the designated range above the speed limit (usually nine miles or more), the camera takes a photo of the car and its license plate. That car is then issued a speeding ticket. These enforcement devices have been proven to be effective in Maryland and the District of Columbia because they enforce speed consistently. Speed cameras can be permanent fixtures or can be moved throughout the area using utility vans.

Pace Car Program

Schools use pace car programs to control traffic speeds around schools. The premise of the program is that traffic can only move as quickly as the car in front. If parents pledge to drive the speed limit, it can force traffic to maintain safe speeds around the school. This program can be implemented without external resources, although some schools have chosen to distribute bumper stickers to parents who pledge to show that they are deliberately driving the speed limit in the school zone to ensure safe traffic speeds.

Bumper Sticker from Washington, DC Pace Car Program.

Source: Washington Area Bicyclist Association (WABA)

Partnership Strategies

The Township should work with a team of organizations and individuals to offer bicycle education and encouragement programs in the region and state. While bicycle safety issues are important, these programs must also focus on pedestrian safety, including pedestrian interactions with bicyclists and motor vehicle drivers. These programs can be offered at community centers, libraries, schools, community festivals, and other public venues. For programs that target children, youth specific curricula and age-appropriate language should be used to explain concepts and safety issues. Potential partnership activities to promote bicycling in Moorestown are described below. The Township should seek to partner with a wide range of groups including media outlets, schools, advocacy groups, and all levels of government to integrate bicycling into their programs.

Additional examples of bicycle-related programs that could be offered in partnership with other stakeholder groups include:

- Bicycle commuter classes
- Helmet promotions
- University-based programs
- Bicycle "ambassadors" in all parts of Moorestown who can provide helmets and bicycle lights, assist with bicycle maintenance, and remind bicyclists about laws and safe behaviors (see Chicago's Bicycle Ambassador Program: http://bicyclingambassadors.org/)
- Media outreach to promote bicycling and increase awareness of bicycle safety, including billboards, direct mail, television and radio advertisements, etc.
- A "Share the Road" campaign to increase safe travel behavior and respect between all types of roadway users
- Community rides in all parts of Moorestown that are comfortable for less-experienced bicyclists
- Outreach to lower-income and minority populations that are typically under-represented in the Moorestown bicycle community
- "Drive with Care" campaign targeted to improve motorist behavior around bicyclists
- Work with businesses to develop programs that encourage their employees and customers to bicycle

Moorestown has a strong and vibrant bicycle community, which is an important resource in its efforts to become a more bicycle-friendly Township. The Township should fully utilize this important asset, while also collaborating with other constituencies in the area. The Township should also facilitate and encourage the efforts of local bicycle shops to lead bicycle education and encourage activities.

Consider Developing a Corridors-to-Campus Initiative Focused on Nearby School Campuses

As one example of potential partnerships, the Township should work with the Burlington County College Mount Laurel Campus and other local schools to identify, evaluate and prioritize the most cost effective strategies to support bicycling to and from campus. These schools generate a substantial number of vehicle trips and many of their students live in close proximity. This captive student population presents an enormous opportunity to reduce congestion and increase student health by replacing vehicle trips with bicycling trips.

Working with administrative officials, the Township should launch a corridors-to-campus initiative designed to identify, evaluate and prioritize the most cost effective strategies to support walking and bicycling. As an example, the University of Florida, in cooperation with the Township of Gainesville, conducted such an effort in 1998 as part of an overall mobility management effort. The study entailed intercept questionnaires and ranking of routes from surrounding neighborhoods and apartment complexes that would benefit from specific bicycle and pedestrian improvements. The results were programmed into the MPO's Transportation Improvement Program as well as University capital investment and program budgets.

Chapter 6: Implementing the Plan

This chapter describes how the recommendations for establishing a network of safe bicycle facilities can be achieved in Moorestown. The first section of this chapter breaks the phasing of recommendations into Immediate Actions, Short-Term Items (1-5 years), Medium-Term Recommendations (5-10 years), and Long-Term Recommendations (10-15 years). The phasing of recommendations is followed by a discussion of possible funding sources to create the recommended infrastructure. Detailed cost estimates broken down by facility type, action, and location in **Appendix C**.

Implementation of this Plan will establish an 87-mile network of bicycle facilities. The actions recommended in this plan create approximately 75 miles of additional facilities, which would complement the existing 12 miles of Multi-Use Paths. The complete bicycle network is shown on the Bicycle Facilities Plan (**Figure 9** in **Chapter 3)**, which includes both existing and proposed bicycle facilities, and is quantified down in the chart below:

Facility Type	Length (miles)	Percent of Total
Bike Lanes	7.6	10%
Bikeable Shoulders	15.6	21%
Bikeable Shoulders with Parking	4.1	6%
Shared Lane Markings	5.2	7%
Local Routes	16.5	22%
Shared Roadways	3.1	4%
Multi-Use Path	22.2	30%
Total	**74.8**	**100%**

The range of actions necessary to implement the Bicycle Facilities Plan is dependent on the facility type and the character of the existing road. Improvements may be as simple as adding pavement markings or signage, or may require more complex actions such as expanding the pavement width or constructing new off-road facilities. Specific actions are shown in the On-Road and Multi-Use Path Action Plans (**Figures 10-11** in **Chapter 3**). The timeframes for implementation identified in this section are based on stakeholder input, estimated cost, relative difficulty of implementation, and how the facility would help achieve the following project goals:

- Improve bicycle mobility and circulation by creating a bicycle network that links attractions within the Township of Moorestown and to regional destinations outside of Moorestown
- Promote bicycle safety
- Accommodate varying skill levels of bicyclists, from inexperienced to advanced

Cost Methodology

Preliminary cost estimates were developed by calculating the quantities for each facility and then applying unit costs, and are included in **Appendix C**. Unit cost data was obtained from available NJDOT sources or estimates from similar projects. In some cases, such as roadway striping, the unit costs incorporate a high-level treatment such as thermoplastic striping. There may be opportunities to reduce the costs shown in this report by applying less-costly materials.

Project Phasing

Since the bicycle projects and programs presented in this plan would be developed over the next 20 years, phasing of the recommendations is an important consideration. Recommended timeframes for major plan elements are described below, and listed with an approximate cost and jurisdiction in the tables that follow.

Immediate Actions

Several of the project and program recommendations in this Plan should be implemented soon after it is adopted. These immediate action projects will improve bicycle conditions in specific areas, creating early successes. These immediate action projects will also build momentum for the other recommendations and establish essential links in a connected network of bicycle facilities for Moorestown.

Immediate Action: Bicycle Facilities Improvements

- Add Shared Lane Markings (Sharrows) to Main Street ($21,000)
- Sign all Shared Roadways ($9,000)

Immediate Action: Programs and Policies

- Adopt this Plan through the local master planning process as an updated Circulation Element
- Use this Plan as a basis for future Safe Routes to School applications (the next being Spring 2011)
- Consider adopting a "Complete Streets" policy for Moorestown Township (NJDOT's policy is attached as **Appendix D** as an example)
- Partner with neighboring municipalities to explore cross-jurisdictional elements and pursue joint funding
- Create a volunteer position for a dedicated pedestrian/bicycle coordinator
- Distribute copies of this plan to local law enforcement officers and educate them on the enforcement programs identified in this plan for Moorestown
- Pursue posted speed limit reductions along the routes shown in the On-Road Actions map
- Begin the process required to integrate consultation of this plan as a required part of the development review process
- Create and distribute an informative bicycle map for Moorestown focusing on the existing bicycle facilities and Local Routes that are connected by the necessary Neighborhood Connections

	Length (miles)	Approximate Cost	Jurisdiction
Shared Roadway			
COX RD	0.90	$2,523	Township
GARWOOD RD	1.21	$3,392	Township
MCELWEE RD	1.02	$2,846	Township
Shared Lane Markings (Sharrows)			
MAIN ST	1.94	$21,000	Township

Short-Term Recommendations (1-5 years)

A number of projects could be implemented within 1 to 5 years after the Plan is adopted. These short-term recommendations are outlined below.

- Complete the remaining Sharrow network
- Install the Bikeable Shoulders with Parking elements
- Improve connections to Moorestown Mall and Park-and-Ride
  - Pleasant Valley Avenue - Bike Lanes & Bikeable Shoulders
  - Harper Drive - Bike Lanes
- Connect Moorestown to communities to the north and the River Line light rail stations
  - Church Street - Bike Lanes
- Expand connections to the high school and middle school with Multi-Use Paths and shoulders on Bridgeboro Road from Chester Road to the Township limits
- Implement new and enhanced crossings related to the above facilities
- Complete signalized intersection improvements related to the above facilities

Planning and coordination for the following programs and projects may begin in the short-term, even though they may not be implemented during this period:

- Continue expansion of education, encouragement, and enforcement programs
- Start planning for a wayfinding system for Moorestown as a part of the larger region
- Start planning for Neighborhood Connections that have the most community interest and support
- Encourage private development of key Multi-Use Path connections on private right-of-way to Moorestown Mall:
  - Harper Drive from E. Gate Drive to Nixon Drive
  - Nixon Drive from Harper Drive to the Park-and-Ride facilities at Moorestown Mall
- Encourage private development of key Multi-Use Path connections on private right-of-way to the Centerton shopping area:
  - Marter Avenue from Main Street/Borton Landing Road to across State Road 38
  - Centerton Road from Marter Avenue to Westfield Road
  - Young Avenue from Marne Highway to Centerton Road
  - Westfield Road from Salem Road to Centerton Road
- Encourage private development of key Multi-Use Path connections on private right-of-way between the west and east areas of town, specifically: Borton Landing from Main St/Marter Avenue to Salem Crossing
- Pursue national recognition through the following programs:
  - League of American Bicyclists – Bicycle Friendly Communities (www.bikeleague.org)
  - Pedestrian and Bicycling Information Center – Walk Friendly Communities (www.bicyclinginfo.org)

	Length (miles)	Approximate Cost	Jurisdiction
Bike Lanes			
CHURCH ST	1.86	$110,691	County
HARPER DR	0.35	$20,882	Township
PLEASANT VALLEY AV	0.19	$11,490	Township
Bikeable Shoulders			
BRIDGEBORO RD	1.69	$174,986	County
PLEASANT VALLEY AV	0.62	$27,011	Township

Bikeable Shoulders w/ Parking			
CAMDEN AV	1.09	$3,039	County
CHESTER AV	0.44	$1,234	County
KINGS HWY	1.20	$3,349	County/Township
STANWICK RD	1.36	$66,332	Township
Sharrows (Shared Lane Markings)			
CHESTER AV	0.34	$3,687	County
CHURCH ST	1.22	$13,206	County
HAINES DR	1.57	$16,955	Township
NIXON DR	0.14	$1,553	Township
Multi Use Path			
BORTON LANDING RD	1.38	$379,117	Private
E MAIN ST	0.47	$128,761	Private
HARPER DR	0.34	$92,963	Private
MARTER AV	0.28	$77,954	Private
MERION AV	0.25	$69,942	Private
WESTFIELD RD	0.73	$199,837	Private
YOUNG AV	0.22	$61,520	Private
BRIDGEBORO RD	0.47	$129,253	Public
CENTERTON RD	0.11	$29,613	Public

Medium-Term Recommendations (5-10 years)

In the medium-term, Moorestown should seek to enhance bicycle connections established in the first five years, paying special attention to furthering connections to and between the primary destinations. The following projects are identified for the medium-term timeframe of 5-10 years:

- Expand the network of facility connections between the Centerton shopping plaza and surrounding neighborhoods along:
  - Marne Highway from Borton Landing Road to Centerton Road
  - Centerton Road from Marter Avenue to the Township limits beyond the Burlington County Farmers Market
  - Westfield Road from Salem Rd to Bridgeboro Road
  - Hartford Road from Centerton Road to Garwood Road
- Expand Multi-Use Path connections to Moorestown Mall on:
  - State Road 38 from Lenola Rd to Church St
  - Nixon Dr surrounding the mall
  - Lenola Road from Nixon Dr to State Road 38
- Establish a bicycle link connecting the east and west parts of the city on a new corridor that is separated but parallel to Main Street
  - Mixed-Use Path connecting E & W Third St from Borton Landing Road to Poplar Avenue through the Township Public Works yards
- Create a Multi-Use Path connection along Creek Road between Borton Landing Road and Cox Road, including connections to Boundary Creek Park

- Add wayfinding signage to all the identified Local Routes as a part of a larger wayfinding plan and system for the larger region
- Construct the remaining intersection improvements and new or enhanced crossings
- Construct Neighborhood Connections that have reached agreements with the private landowners

The following are recommendations for projects to start or continue planning and coordination in the medium-term:

- Continue to encourage private development of key Multi-Use Path connections on private right-of-way
- Continue planning for additional Neighborhood Connections
- Initiate planning for a set of trail connections through the core of Moorestown
    - Rail Corridor Trail: expand the E. Third Street and Public Works facility trail along the railroad tracks to both the east and west to the Township limits
    - Public Works Trails: create a network of trail connections between properties to the north of the Rail Corridor Trail at the Township Public Works facility
    - Expand the Rancocas Creek Trail north into Moorestown

	Length (miles)	Approximate Cost	Jurisdiction
Bike Lanes			
MAIN ST	0.25	$15,008	County
MARNE HWY	0.52	$49,607	County
Bikeable Shoulders			
CENTERTON RD	2.44	$413,569	County/Township
HARTFORD RD	2.73	$396,091	County
MARNE HWY	0.29	$2,174	County
WESTFIELD RD	2.25	$371,633	County
Local Routes			
WAYFINDING SYSTEM	16.50	$46,000	Township
Multi Use Path			
CENTERTON RD	2.98	$819,575	Private
CREEK RD	1.22	$335,862	Private
E THIRD ST	0.17	$46,534	Private
HARTFORD RD	1.64	$451,240	Private
HWY 38	0.43	$118,370	Private
MARNE HWY	0.75	$204,960	Private
NIXON DR	1.64	$451,072	Private
S LENOLA RD	0.35	$97,161	Private
HARTFORD RD	0.14	$37,496	Public
HWY 38	0.49	$134,716	Public
MARNE HWY	0.28	$76,030	Public
N CHURCH ST	0.21	$58,243	Public
PUBLIC WORKS TRAILS	0.22	$60,485	Public
E THIRD ST	0.25	$69,687	Public

Long-Term Recommendations (10-20 years)

The remaining projects in this plan should be considered for implementation in 10-20 years. The quantity of each facility type depends on the progress made and projects developed in the preceding 10 years. Although the remaining recommendations are designed for a longer timeframe, the Township should take advantage of opportunities that may arise to implement any of the remaining projects in the short-term or medium-term timeframes. Approximately $6 million in public and private funding will be required to complete the remaining bicycle facilities identified in this plan.

- Complete the remaining projects
- Continue creation of Neighborhood Connections
- Encourage private development of remaining Multi-Use Path connections on private right-of-way, and pursue additional funds for the purchase of right-of-way or easements to complete infrastructure where necessary
- Continue development of major trail corridors
    - Rail Corridor Trail
    - Rancocas Creek Trail
    - Public Works Trails
- Initiate the process to revise this plan, update the inventory of existing and completed facilities, confirm the goals for Moorestown's bicycle system, and re-evaluate priorities

	Length (miles)	Approximate Cost	Jurisdiction
Bike Lanes			
CAMDEN AV	0.63	$37,607	County
LENOLA RD	2.71	$611,065	County
NEW ALBANY RD	1.11	$66,441	Township
Bikeable Shoulders			
CREEK RD	1.87	$485,050	County/Private
MT LAUREL RD	0.10	$266	County
NEW ALBANY RD	0.98	$254,385	Township
RIVERTON RD	1.16	$56,699	County
TOM BROWN RD	1.46	$13,960	County
Multi Use Path			
MT LAUREL RD	0.63	$172,713	Private
NEW ALBANY RD	0.38	$104,242	Private
TOM BROWN RD	1.29	$354,500	Private
PUBLIC WORKS TRAILS	3.00	$824,797	Public
RAIL CORRIDOR TRAIL	1.85	$508,296	Public

Project Funding

The Bicycle Facilities Plan will likely be developed through a combination of different funding sources and project leadership, including the Township of Moorestown, Burlington County, NJDOT, and landowners/developers. A detailed compilation of funding sources compiled by the New Jersey Bicycle and Pedestrian Research Center in March of 2009 is included in **Appendix E**. Below is a truncated list of potential funding sources relevant to this plan

State Programs

State Aid for Municipalities (Municipal Aid and Urban Aid)

The New Jersey Transportation Trust Fund Authority Act provides funding to municipalities for municipal road and bridge projects. Funds are appropriated on the formula contained in the legislation which gives equal consideration to municipal road mileage in a county and population. The Division of Local Aid and Economic Development administers the annual program. In the past, NJDOT has set goal to award a certain amount of funding to projects such as pedestrian safety improvements, bikeways, and streetscapes. For example, in FY 2011, this funding goal was up to 10% of the Municipal Aid Program funds.

NJDOT Problem Statements

A problem statement document can be submitted directly to NJDOT for specific areas of concern. NJDOT evaluates these problem statements and decides whether or not they will be pursued at the state level. This course of action is particularly effective with short term and/or low cost projects that lend themselves to rapid design.

NJDOT Centers of Place Program

At the state level, NJDOT's Centers of Place program assists municipalities who have participated in implementing the New Jersey State Development and Redevelopment Plan (SDRP). Eligibility for this program is a benefit of becoming plan endorsed by the Office of Smart Growth. The program provides an opportunity to apply for funds to support non-traditional transportation improvements that advance municipal growth management objectives. Eligible projects include pedestrian and bicycle facilities, restoration or historic aesthetic treatment of transportation, traffic calming, signage, parking and circulation management, landscaping/beautification of transportation related facilities, and rehabilitation of structures.

NJ Bikeways Grant Program

This grant provides funds to counties and municipalities to promote bicycling as an alternate mode of transportation in New Jersey. Selection criteria is based on factors including new bikeway mileage, safety, connectivity to regional systems, improved access to centers of activity, construction-readiness, if the bike network is identified in a municipal plan, and applicants past performance. Designated Transit Villages, communities formally participating in the State Development and Redevelopment Plan (SDRP), and Urban Coordinating Council (UCC) communities receive special consideration. Allowable costs include construction costs and preliminary and final design for municipalities eligible for Urban Aid or depressed rural centers.

NJDOT Safe Streets to Transit

The Safe Streets to Transit program promotes walking to transit stations by funding projects that make important feeder trips easier, faster, and safer. Transit stations could consist of either rail lines or bus routes. Projects within ½ mile from stops receive priority, but all projects within one mile are considered. Eligible projects include intersection safety improvements, new sidewalks, curb ramps, sidewalk widening, safety enhancements for pedestrian access to transit stops, traffic control devices that benefit pedestrians, traffic calming, pedestrian signals and push buttons, pedestrian lighting, and major sidewalk reconstruction. It does not cover education or enforcement, planning studies, transit/shuttle services, shelters, maintenance, or bicycle projects.

NJDEP Green Acres

This program provides assistance to municipalities in preparing an Open Space and Recreation Plans (OSRP). Municipalities that have an approved OSRP and adopt an open space tax and are eligible for Green Acres Planning Incentive (PI) which provides 50% matching grants to preserve lands identified in the OSRP. The PI only funds land acquisition of land for recreation and conservation purposes.

NJDEP Blue Acres Program /Coastal Blue Acres Program

The Blue Acres Program provides funding for land in the floodplains of the Delaware, Passaic, or Raritan Rivers and their tributaries for recreation and conservation purposes. The Coastal Blue Acres Program funds acquisition of land in coastal areas that are prone to storm damage.

NJDOT Local Technical Planning Assistance (LTPA)

This program provides municipalities with consultant expertise to address transportation and quality of life issues. Technical Assistance is provided to local governments to advance, support, and promote the State's Smart Growth policies, and to manage their own resources more effectively. NJDOT administers and funds this program.

NJ Division of Highway Traffic Safety (NJDHTS) Grants

The NJ Division of Highway Traffic Safety offers, on an annual basis, federal grant funding to agencies that wish to undertake programs designed to reduce crashes, injuries, and fatalities on the roads of New Jersey. These grants help fund numerous different tasks and strategies to enhance driver, pedestrian, and bike safety that include enforcement, education, and engineering. Some specific grants that are applicable include the Comprehensive Traffic Safety Programs (CTSP) grants, Pedestrian Safety grants, and other programs that involve bicycling safety, crash investigations, speeding, and engineering.

Federal Programs

TIGER Grants

The Transportation Investments Generating Economic Recovery (TIGER) grant program is an extremely competitive transportation infrastructure funding program. In FY 2010, $19 billion was requested, of which $600 million was awarded, in the form of both planning and capital grants. The grants are administered by the USDOT and are prioritized based on projects that can have a significant impact on several long-term outcomes including improving existing facilities, economic competitiveness, fostering livable communities, sustainability, safety, job creation and economic stimulus, innovation, and partnership among a broad range of participants.

Community Development Block Grant (CDBG)

These federally funded grants intended to benefit low- to moderate-income families or aid in the prevention or elimination of slums and blight. Funds can be used to acquire land, construct streets, pedestrian/bicycle facilities such as sidewalks, and planning activities. In order to be eligible to receive CDBG grants, a community must develop and submit to HUD its Consolidated Plan. This plan must identify goals of the community and is used by HUD to evaluate the jurisdiction's performance under the plan, including the allocation of at least 70% of the funds to benefit low- to moderate-income families.

Federal Programs under SAFETEA-LU

The Division of Local Aid and Economic Development oversees the development and authorization of funds in the Capital Program, Statewide Transportation Improvement Program, and Study and Development Program. The division also manages problem statements for NJDOT. Staff members work with county and municipal government officials to improve the efficiency and effectiveness of the state's transportation system. The Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) legislation has provided funding assistance to local governments for roads, bridges, and other transportation projects.

National Recreational Trails Program

The National Trails System Act of 1968 (Public Law 90-543) authorized creation of a national trail system comprised of National Recreation Trails, National Scenic Trails and National Historic Trails. The National Recreational Trails Program, a part of SAFETEA-LU, provides monies to states for developing trails and trail facilities. It is the only funding available wholly for the use of trail projects. At the federal level, the program is administered by the Federal Highway Administration, and originates from federal gas taxes attributed to off-highway vehicle use. New Jersey's program is administered by the Office of Natural Lands Management in the Division of Parks and Forestry.

Surface Transportation Program (STP) Funds

This program is broadly defined and gives states flexibility to invest in a wide variety of transportation activities. Bicycle and pedestrian facilities and walkways are specifically listed as eligible activities under this program. As with NHS, pedestrian and bicycle improvements may be incidental improvements within larger projects which establish bicycle compatibility or designated bicycle and pedestrian accommodations. The funds can also be used for independent bicycle and pedestrian projects along or in the vicinity of roadways. Projects could include shoulder paving, bicycle safe drainage grates, construction of sidewalks or bikeways, installation of pedestrian signals, crosswalks or overpasses.

Safe Routes to School Program

Safe Routes to School (SRTS) is a federal, state and local effort to enable and encourage children primary and secondary school children (grades K-8), including those with disabilities, to walk and bike to school. This program sponsors infrastructure and non-infrastructure projects. Infrastructure-related and behavioral projects will be geared toward providing a safe, appealing environment for walking and biking to improve the quality of children's lives and support national health objectives by reducing traffic, fuel consumption, and air pollution near schools. Some criteria include being within 2 miles of a school, part of an established comprehensive travel plan, and construction-ready.

Transportation Enhancement (TE) Program

The objectives of this program are to foster non-traditional transportation projects whose objectives are to foster more livable communities, enhance the travel experience and promote new transportation investment partnerships. Its focus is on transportation projects designed to preserve and protect environmental and cultural resources and promote alternative transportation modes. Pedestrian and bicycle improvements can be funded with these grants, directly and indirectly. Projects related directly to pedestrian and bicycles that can be funded include "provision of facilities for pedestrians and bicycles" and "provision of safety and educational activities for pedestrians and bicyclists." Indirectly related projects to pedestrian and bicyclists include the "acquisition of scenic easements and scenic or historic sites," which could be used to enhance the pedestrian experience, "landscaping and other scenic beautification", such as part of a streetscape project, and "preservation of abandoned railway corridors" which could be part of a "Rails to Trails" project. The sponsor is responsible for preparing the environmental documentation for the project, generally a Categorical Exclusion (CE).

County Programs

Open Space, Recreation, Farmland and Historic Preservation Program

This county program offers grants from a county trust fund to municipalities for the conservation and development of open space, farmland, and historic properties. Grants can be used for a variety of purposes including:

- Acquisition of lands for recreation and conservation purposes
- Development of lands acquired for recreation and conservation purposes
- Maintenance of land acquired for recreation and conservation purposes
- Acquisition of farmland for farmland preservation purposes
- Preservation and acquisition of historic properties
- Payment of debt service associated with acquisition and development

Delaware Valley Regional Planning Commission (DVRPC)

Transportation and Community Development Initiative (TCDI)

The TCDI program targets transportation investments in a sustainable way. Federal transportation funds are used to provide planning grants to local governments and select non-profit organizations to create plans linking transportation improvements with land use strategies, enhance established communities, and build upon existing public and private assets. Projects are selected on a competitive basis and require a 20% match.

Other Sources

Bikes Belong

Bikes belong is funded by the American bicycle industry and provides grants to encourage and promote cycling across the country. Among their programs is a grant program that awards funds (generally under $10,000) to agencies and bicycle advocacy groups. These grants can be used for many purposes including "bike paths, rail trails, big-city cycling initiatives, and innovative, high-profile bicycling projects that serve as national models."

General Mills Fund – Champions for Healthy Kids Grant Program

The General Mills Foundation, in partnership with the American Dietetic Association Foundation and the President's Council on Physical Fitness, developed the Champions for Healthy Kids grant program in 2002. Each year, the General Mills Foundation awards grants of $10,000 each to community-based groups that develop creative ways to help youth adopt a balanced diet and physically active lifestyle.

Safe Kids, USA

This international non-profit organization is dedicated to improving the safety of children worldwide. They sponsor the International Walk to School Day and last year awarded $400,000 in grants to improve pedestrian safety. They have local coalitions in several areas in New Jersey.

Local Cost-Sharing

At the local level, cost-sharing with developers interested in development or redevelopment is another potential means to realize portions of the plan. As properties develop or redevelop, developers should be encouraged to make access management, site circulation, and pedestrian improvements in accordance with the plan. Local ordinances should be modified to require the installation of sidewalk along road frontage for new projects.

Appendix A

Public Involvement Materials

Moorestown Bicycle Safety and Circulation Plan

Steering Committee Meeting #1
Summary of Discussion

Date: March 17th, 2010

Attendees:

Joe Powell	NJDOT-OBPP
Chris Schultz	Moorestown Township Manager
Sgt. Randy Pugh	Moorestown Police Department
Richard Calhoun	Moorestown Bicycle Task Force
Pete Sklarow	Moorestown Bicycle Task Force
John Boyle	Bicycle Coalition of Greater Philadelphia
Greg McCarty	Moorestown School District
Lucas Cruse	Toole Design Group
RJ Eldridge	Toole Design Group
Dave Cox	Urban Engineers, Inc.
John Federico	Urban Engineers, Inc.
Dave Schwartz	Urban Engineers, Inc.

Introduction

The meeting began with brief introductions, followed by an explanation of the Local Bicycle/Pedestrian Planning Assistance project process by Joe Powell of the New Jersey Department of Transportation – Office of Bicycle and Pedestrian Projects (NJDOT-OBPP). These projects encourage the local governments, stakeholders, and residents to act as "local experts" and be closely involved in the planning efforts.

Dave Cox of Urban Engineers then explained the project and schedule. Urban Engineers is teamed with Toole Design Group on the project. The project is expected to take 8 months to complete and be finished by October. The Steering Committee's role is to help guide the project and provide input on the needs of the community, and will meet three times over the course of the project. Two public events, one "Public Listening Event" and one "Public Information Center (PIC)," will be held in the upcoming months to solicit ideas from area residents and stakeholders. The first public event will be a visioning exercise and was tentatively scheduled for sometime in early May at a location and time that would garner the maximum publicity and attendance.

John Federico presented an overview of Urban's data collection and analysis efforts to date. The following maps have been developed based on available data, including GIS layers:

- Aerial/Parcel Basemaps
- Roadway Characteristics (Speed Limit, Count Locations, Circulation)
- Bicycle Routes from 2002 Circulation Element
- Bicycle Routes from 2009 Bicycle Safety Task Force

- Pedestrian and Bicycle Crashes, 2004-2009
- County Sidewalk Inventory
- Bus Routes

These maps will be provided to Moorestown for public display on both the Township's website and at the public library.

General Discussion
The meeting was opened to general discussion by members. Discussion covered a multitude of topics, as well as specific areas of concern. These topics are summarized below:

- There are many different types of cyclists in Moorestown, ranging from enthusiastic cyclists (such as the Outdoor Club), commuters, and casual cyclists to children going to and from school. Attention should be focused on providing for the most inexperienced riders.

- Relation to area schools:
    - School-age children bike ridership (approximate):
        - Upper Elementary School ~ 100
        - Middle School ~ 50-60
        - High School ~ 20
    - Education efforts for children consist of a summer course on bicycle safety training, but no required courses are in the curriculum.
    - Golf View Road acts as a connector to the High School and Middle School and should be considered as a priority safety improvement area. The Township has prepared a Safe Routes To Schools (SRTS) program, which includes sidewalks for Golf View Road.

- Critical cyclist routes include:
    - Bike travel to the Moorestown Mall is limited due to its relative bike inaccessibility. A potential route to the Mall would be Pleasant Valley Avenue to Harper Drive. While a traffic signal exists at Pleasant Valley and Route 38, there is no way for a bicycle to trip the signal. Harper Road is not bicycle-friendly west of East Gate Drive approaching mall. Minimal bicycle parking is available at the Mall. The Mall serves as a park and ride location.
    - Main Street was identified as an important bicycle link due to high traffic volumes and its function as a shopping and civic destination. Bikes on the sidewalk can pose a problem on the north side of the street due to numerous curb cuts and high pedestrian activity. Potential parallel routes should be examined, along with connections to Main Street.
    - Westfield, Mount Laurel, Main Street, Lenola, Centerton, Creek Road, and Pleasant Valley are popular routes for bike enthusiasts. Lenola Road is narrow and not bike-friendly south of Camden Avenue, but is much better north of Camden Avenue.
    - Linden Street is a "paper street" that the fire department has pushed to construct for many years. It would provide connections between Stanwick Road, Borton's

Landing Road and Westfield Road. Borton's Landing and Westfield Roads are viewed as barriers to having more kids bike to school.
    - Potential connections to neighboring municipalities should be considered – coordinate with the County and the CCC-TMA.

- Pedestrian Crossing Locations:
    - Three un-signalized locations were identified as candidates for upgrades. These include: Creek Road near Cox Road, Westfield Road north of Borton's Landing Road, and Borton's Landing Road in front of Upper Elementary School.
    - Un-signalized crossings on Main Street are working very well due to increased enforcement efforts
    - Several signalized intersections were noted as lacking pedestrian push-buttons, countdown signal heads, and crosswalks

- Maintenance is a critical issue for the existing multi-use paths, as many have deteriorated or become overgrown with vegetation over the years. Maintenance responsibilities vary between the Township and adjacent property owners. Maintenance costs need to be a consideration in the plan.

- It will be important to address bicycle use on Main Street. Currently, there are "no bicycle" signs located on the sidewalks approaching the Main Street business area. Bike racks are located in several spots along Main Street. A parking study sponsored by a DVRPC grant will begin in the coming year, and should include a bicycle parking component.

- The Outdoor Club of South Jersey conducts lunchtime recreation rides on Westfield and Mount Laurel Roads and Saturday rides on Pleasant Valley, Centerton, and Creek Roads. The group typically rides out of the 7-11 on Lenola Road.

Action Items
As a result of the meeting discussion, the following actions will be taken:

Item	Activity	Action
1.	Activate the "Community Walks" website • Urban to provide write up • Moorestown to activate	Urban / Moorestown
2.	Schedule the Public Visioning Meeting	Urban/ Moorestown
3.	Prepare and distribute Meeting Minutes	Urban

This summarizes our understanding of the topics discussed at the Moorestown Bicycle Circulation and Safety Study stakeholders meeting held on March 17th, 2010. Please contact Dave Schwartz at Urban Engineers with any errors or omissions at (215) 922-8081 (x1216).

Moorestown Bicycle Safety and Circulation Plan

Steering Committee Meeting #2
Summary of Discussion

Date: July 13th, 2010

Attendees:

Joe Powell	NJDOT-OBPP
Chris Schultz	Moorestown Township Manager
Richard Calhoun	Moorestown Bicycle Task Force
Pete Sklarow	Moorestown Bicycle Task Force
John Boyle	Bicycle Coalition of Greater Philadelphia
Martin Livingston	Burlington County Traffic Engineer
RJ Eldridge	Toole Design Group
Dave Cox	Urban Engineers, Inc.
John Federico	Urban Engineers, Inc.

Introduction
The meeting began with introductions, followed by a progress update by Joe Powell of the New Jersey Department of Transportation – Office of Bicycle and Pedestrian Projects (NJDOT-OBPP). Joe then turned the meeting over to the consultants for a brief presentation.

John Federico of Urban Engineers presented a recap of the Public Information Center (PIC) on May 11 and distributed a packet of materials summarizing input from both the meeting and the Community Walk website. He also described the data collection and analysis efforts since the PIC, which included mapping of existing facilities, analysis of crash clusters and patterns, and identification of problem areas. Richard Calhoun noted that turning vehicles at the intersection of 2nd and Chester can present a safety issue for bicyclists, especially since RTOR is allowed.

RJ Eldridge of Toole Design Group then discussed the objectives of the bicycle plan and explained the "5 E's" concept using a slideshow presentation. The presentation contained a general discussion of bicycle planning concepts and treatments, including shared lane markings, paved shoulders, bike lanes, cycle tracks, and multi-use-paths. John Boyle noted that one of the plan's objectives should be to provide dedicated space for bicyclists at intersections. Following the presentation, the initial recommendations were discussed. The discussion focused on a general theme of maximizing safety and convenience for bicyclists of varying skill levels. Specific comments are categorized below based on the "5 E's":

Education/Enforcement
- The issue of teenagers riding illegally on the sidewalk along Main Street has been a hot topic recently in Moorestown. The Township has received complaints related to conflicts between bicyclists on the sidewalk and newly established sidewalk cafes. In response, the Township

has diverted police resources to Main Street to better enforce the ordinance that prohibits sidewalk riding for those 12 years and older; however, this has resulted in some criticism.
- The Township's Safe Routes to School application is still under consideration by NJDOT
- The Township does not have the manpower to support full-time bike cops, except at special events
- Several attendees thought that a Traffic Complaint Hotline could be useful
- John Boyle mentioned an education program in Philadelphia where 2nd graders receive pedestrian safety training and 5th graders receive bicycle safety training. The program is funded by a Center for Disease Control (CDC) grant. Stakeholders expressed interest in a similar program in Moorestown.
- Group rides through Moorestown were mentioned as a way to help novice riders better understand the rules of the road for bicycling
- John Boyle mentioned that DVRPC has new bicycle counting equipment and will consider conducting bicycle counts upon request

Engineering – Multi-use Path Network
- Toll Brothers owns the land on the east side of Hartford Road between Centerton and Bortons Landing where a multi-use path extension is shown
- Lockheed Martin has applied to the County to develop a parcel on Centerton between Hartford and Westfield. This presents an opportunity for the County to request the installation of a multi-use path along the parcel frontage, or preserve ROW for future installation. The group's preference was for installation of the path.
- Burlington County's Resource Conservation Division, through Matt Johnson, is currently exploring the feasibility of extending the multi-use path along the east side of Creek Road north to Boundary Creek Park and beyond
- Burlington County owns the property on the south side of Centerton Road between Hartford Road and the Burlington County Farmer's Market. This stretch is being considered for an extension of the multi-use path network.
- Efforts in past years by the Township to install an emergency access road along the Linden Street right-of-way were contested by neighbors and ultimately unsuccessful. A multi-use path along this corridor may face less opposition than the roadway.
- Look into building a multi-use path on the west side of Marter south of Marne, extending south to the traffic signal at the entrance to Centerton Square. The property is currently being used for farming; however, there is a real estate office located close to the roadway which may present challenges.
- Explore improving the existing sidepath segments on the west side of Mount Laurel to create a functional multi-use path between Main Street and Route 38 (and possibly beyond Route 38 to the south).
- Debris that accumulates at the intersection of side streets and the multi-use path network is an on-going safety and maintenance issue. John Boyle suggested that raised crosswalks at these intersections would improve safety for bicyclists by making them more visible to motorists and slowing down turning vehicles. Drainage design would be a consideration.

Engineering – County Roadways
- Marne Avenue currently has a center turn lane and very narrow shoulders. Further study will be needed to determine if bicycle facilities can fit within the roadway cross-section.

- The parking lane on the west side of Lenola Road was recently widened to 8' due to complaints about mirrors getting hit. It may be difficult to fit a bike lane on Lenola given these dimensions. It was also noted that truck traffic is significant on Lenola Road.
- The County is using a minimum width of 8' for parking on all county roads.
- The County is scheduled to resurface (mill, repave, and restripe) the section of Lenola Road between Route 38 and Kings Highway in the near future. This could present an opportunity to fit bike lanes into the roadway. The section of Lenola Road south of Route 38 is owned by NJDOT.
- Mount Laurel Road is a difficult roadway for bicyclists due to the lack of shoulders, grade, and speed of auto traffic. The best option for bicyclists may be to widen and extend the multi-use path on the west side of the road, although the stretches near Route 38 and Main Street will present challenges.
- There was interest in having bike pockets at Camden and Lenola to carry bikes through the intersection. This treatment could be implemented in several other locations to enhance the safety and visibility of bicycles (e.g. Church Street and Main Street).

Engineering – Township Roadways

- Stanwick Avenue currently has a 10 foot wide parking lane in the southbound direction and two 12 foot travel lanes for a total width of 34 feet. The parking lane is signed for 2-hour parking near the schools and is primarily used by landscaping vehicles or other trucks during the day. It may be possible to create a northbound climbing lane for bikes by modifying the roadway cross-section to include a 9 foot parking lane, two 10 foot travel lanes, and a 5 foot bike lane. Shared lane markings would then be used in the southbound direction.

Engineering – Crossings

- The County installed a textured crosswalk at the intersection of Cox Road and Creek Road approximately 2 years ago
- Marty Livingston expressed a preference for using applied thermoplastic texturing to create pedestrian/bicycle refuge areas in the center lanes along Westfield and Hartford Roads. At approximately $20/sf, this type of treatment is much cheaper than installing a curbed island. The County used this treatment at several locations on the County road system.
- Marty Livingston expressed a preference for overhead flashing beacons instead of in-pavement lighting. It has been the County's experience that in-pavement lighting is expensive to install, expensive to maintain, and doesn't always work properly.
- Neighbors have noted that high school students are parking in the church parking lot on Bridgeboro across from the High School, and then crossing Bridgeboro midblock to access the main entrance. Marty Livingston mentioned this midblock crossing location as a potential candidate for a new crosswalk with flashing beacons, rapid flashing beacons, or a HAWK signal.
- There is a lack of pedestrian crossing opportunities on Main Street between Camden and Church. Dave Cox noted that the Township should consider extending the pedestrian treatments on Main Street to the west of Church Street. In particular, Union Street may be a good location for a marked crossing.
- Raised crossings should be a consideration on side streets that intersect multi-use paths and in other areas where enhanced crossing facilities are needed.

Engineering – Other Issues

- In general, shared lane markings and striped shoulders were identified as cost effective ways to establish bicycle facilities on roadways where it would be difficult to install bike lanes or multi-use paths due to right-of-way, utility, or other constraints.
- The Township has a policy that property owners need to upgrade their sidewalk to acceptable condition when transferring property; otherwise, the Township can assess the maintenance upgrade cost.
- The sidewalk along the east side of Church Street between Main and 2nd is in poor condition.
- The consultant team should contact Tom Ford, Community Development. He is a good source for background on development review decisions on pedestrian and bicycle elements.
- More bike parking is necessary along Main Street. Since the sidewalks along Main Street are fairly narrow, the bike racks may be best suited behind the buildings, although better lighting and access would be necessary. Another option is to convert a limited number of parking spaces along Main Street to bike parking areas, which could rotate among businesses.
- Curb extensions at the intersections along Main Street could be used to create bike parking areas and also improve the pedestrian environment.

Action Items

As a result of the meeting discussion, the following actions will be taken:

Item	Activity	Action
1.	Update bicycle facility recommendations maps	Urban
2.	Conduct follow up conference call with Chris Schultz	Urban
3.	Distribute PDF map of preliminary recommendations to John Boyle and discuss ways to advertise the next public meeting	Urban

This summarizes our understanding of the topics discussed at this meeting. Please contact John Federico at Urban Engineers with any errors or omissions at (215) 922-8081 (x1358).

Moorestown Bicycle Safety and Circulation Plan
Steering Committee Meeting #3
Summary of Discussion

Date: October 26, 2010

Attendees:

Joe Powell	NJDOT-OBPP
Chris Schultz	Moorestown Township Manager
Richard Calhoun	Moorestown Bicycle Task Force
Pete Sklarow	Moorestown Bicycle Task Force
Bonnie MacMillan	Moorestown Bicycle Task Force
Mike Zickler	Moorestown Bicycle Task Force
Harry Klatt	Burlington County Engineering
Michael Nei	Burlington County Engineering
Dave Cox	Urban Engineers, Inc.
John Federico	Urban Engineers, Inc.

Introduction

The purpose of this meeting was to recap input from the Public Information Center and review the draft recommendations prior to finalizing the plan. John Federico of Urban Engineers presented a recap of the Public Information Center (PIC) that was held on September 21 and distributed a packet of materials summarizing input from the meeting. He also reviewed input from the Community Walk website. John then presented concept plans for three areas within the Township, which was followed by a detailed discussion of the concepts. Specific comments from the discussion are listed below:

Concept Plan Comments

- *Moorestown Mall Concept Plan*: Chris Schultz mentioned an on-going corridor study of Route 38. This study is investigating the feasibility of adding WB left turns from Route 38 onto Lenola Road, along with other considerations. Urban should coordinate with Mark Remsa of the Burlington County Bridge Commission for more information on how the study is addressing bike/ped accommodation.
- *Main Street Concept Plan*: Attendees were generally in favor of the recommended concepts, including additional bike parking opportunities, bumpouts, and straightening the curb line near Starbucks to increase sidewalk space. A potential roundabout at the intersection of Main Street and Kings Highway was viewed favorably as a potential way to improve pedestrian crossings and create a gateway feature into the Main Street area. The Perkins Center is Township owned and the potential ROW impact may not be a significant issue.
- *Centerton Concept Plan*: The Virtua site along the east side of Young Avenue has an active site development plan, but attendees were not sure whether it includes sidewalk or multi-use path along the property frontage. Chris Schultz will follow up with Tom Ford to find out.

General Comments

- Pete Sklarow noted that Creek Road is an attractive route for biking within the Township and adjacent areas and consistent bike-compatible shoulders should be in the plan. Urban will revise the bike plan to reflect this improvement.

- Michael Nei mentioned that Urban should contact Matt Johnson with Burlington County's Department of Resource Conservation for information on the County's Creek Road – Rancocas Creek Bike Plan.
- Chris Schultz mentioned that an existing trail system exists on the west side of Westfield Avenue on Township property. There may be potential to connect this system with the proposed multi-use path system.
- Bonnie MacMillan asked if the plan incorporates any lighting recommendations. She noted dark/shadowed areas along Chester Avenue, particularly at intersections, where it is difficult for motorists to see bicyclists. Lighting is generally a municipal responsibility, although the County could get involved with installing lighting at signalized and mid-block crossing locations. Tree trimming may also help to improve visibility. Chris Schultz mentioned that the Township already has a hotline that residents can call to report areas that need trimming.
- A potential bridge over Strawbridge Lake could remain as part of the plan, but should be considered to have a long-term timeframe.
- Bonnie MacMillan said that a new pedestrian crossing along S. Church Street between Sutton and Harris Streets would provide better pedestrian access to the school fields on the west side of the street. Urban will investigate this suggestion.
- The Education/Enforcement component of this plan is important to the Township and should identify specific programs for the Township to consider.
- Dave Cox asked if the Township has considered a "Complete Streets" policy and Chris Schultz responded that they have not at this time.

Next Steps
- Chris Schultz agreed to post the preliminary Bicycle Facilities Plan on the Township's website for a 2-week public comment period. Comments will be directed to John Federico while questions will be directed to Chris Schultz. NJDOT and FHWA logos should be added to the plan.
- Urban is aiming to have a draft report ready by late November for review by the Steering Committee

Action Items
As a result of the meeting discussion, the following actions will be taken:

Item	Activity	Action
1.	Post preliminary Bicycle Facilities Plan on Township's website for public comment	Township
2.	Follow up with Tom Ford on the Virtua site plan	Township
3.	Prepare draft report for late November review	Urban
4.	Investigate pedestrian crossing along S. Church Street	Urban
5.	Add bikeable shoulder improvement along Creek Road	Urban
6.	Forward a copy of the bike plan to Matt Johnson for review	Urban/County

This summarizes our understanding of the topics discussed at this meeting. Please contact John Federico at Urban Engineers with any errors or omissions at (215) 922-8081 (x1358).

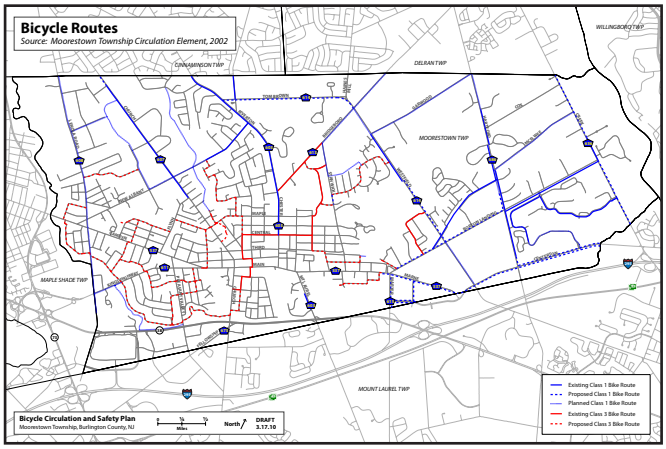
PUBLIC VISIONING OPEN HOUSE

for the
Moorestown Bicycle Circulation and Safety Plan

Date: Tuesday, May 11, 2010

Location: Moorestown Library
111 West 2nd Street
Moorestown, NJ 08057

Time: Stop by anytime between
3:30 pm and 7:30 pm



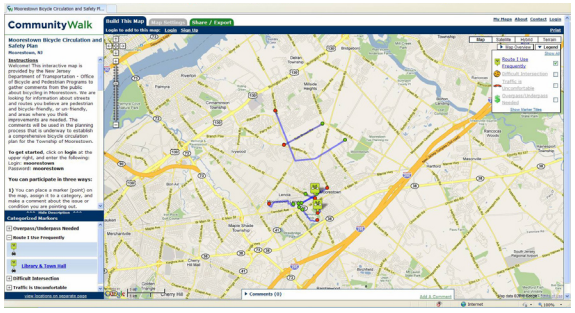
Please come to an Open House for the Moorestown Bicycle Circulation and Safety Plan project. Our objective is to establish a comprehensive bicycle circulation plan to improve bicycle safety and enhance non-motorized transportation opportunities to key destinations in the Township. The plan will also define a vision statement, goals, and objectives that will reflect the needs and desires of our community. Your participation and input are vital to a successful project! Please come and invite your neighbors!

Urban Engineers and Toole Design Group are the project consultants for this project, which is funded by the New Jersey Department of Transportation – Office of Bicycle and Pedestrian Programs (NJDOT-OBPP).

Community Walk Website

A user-friendly web-based interactive map of Moorestown has been provided to help solicit feedback. The link to the interactive web map for the Moorestown project can be found at:

http://www.communitywalk.com/MoorestownBikePlan



Questions? **Contact:** Christopher J. Schultz, Township Manager
cschultz@moorestown.nj.us or 856-235-0912 x3000

Summary of Public Visioning Meeting

Moorestown Bicycle Circulation and Safety Plan

The first public meeting for the Moorestown Bicycle Circulation and Safety Plan was held on Tuesday, May 11, 2010 at the Moorestown Library. The public was invited to stop by anytime between 3:30 and 7:30pm. The meeting was advertised through a flyer (attached) that was posted on the Township's website, posted on the Bicycle Coalition of Greater Philadelphia's website, and distributed to key facilities within the Township.

The meeting was held in an open house format, with display boards containing background information about the project area positioned around the room. The content of the boards included aerial photography of the study area, key attractions, roadway characteristics, bicycle and pedestrian crashes, open space, the Task Force's preliminary bicycle routes, and the Township's circulation element. Urban Engineers and Toole Design Group staff were positioned to assist visitors, answer questions, and promote the gathering of information.

Twenty-one (21) people attended the event (sign-in sheet is attached). A questionnaire (attached) was available for attendees to complete at the meeting or take with them and return. Overall, 16 questionnaires were completed and returned. Results from the questionnaire were recorded and tallied, and are summarized in the attached pages. An interactive web-based map was also available at the meeting for attendees to graphically enter input on bicycling conditions in Moorestown.

Moorestown Questionnaire Results

Please identify the locations/addresses of uncomfortable or missing facilities:

- The road where NJT 407 crosses over Rt. 38
- The lights should give bicyclists more time on Rt. 38, Kings Highway, and other major roads
- Church & Lenola
- New Albany Road/Tom Brown Road/Main Street
- Need a bike lane along Centerton, Hartford, and Westfield – try to link parks together
- No safe shoulder along Centerton for my ride to work
- No safe ways across major roadways such as Rt. 38, 73, 70 (all part of my commute)
- Anywhere on Chester is hard to cross on bike as volumes are high – most intersections are spacious
- Cyclists do not belong on Main Street sidewalks – almost got hit twice
- No public knowledge of NJ State Law (39:4-11) requiring audible warning devices for bikes
- No public knowledge of Moorestown Code 155-1 prohibiting bicyclists over 11 yrs old from operating on sidewalks – need for education and enforcement
- Sidewalks on Main St. between N. Stanwick and Chester
- Sidewalks on Third St. between Church and Chester
- The sidewalks on Main Street and 2nd are bumpy and extremely uncomfortable, but I don't feel safe on the streets
- Centerton Rd needs a walkway

Please identify the locations/addresses of desired bicycling origins and destinations:

- Church & Lenola
- Church to Route 130 is best access to train connecting to Philly
- Moorestown High School
- Middle School
- Shopping strip (Target, etc.)
- Main Street
- Main St. between Chester and Church for services
- Happy Hippo
- Starbucks
- 199 Borton Landing Road (Lockheed Martin)
- 760 Centerton Road (office complex near Creek Road)
- Moorestown Mall
- Township officer on Lenola Road
- Moorestown Mall and Centerton Square offer good services for residents but need better bicycle access

Questionnaire Results

Moorestown Bicycle Circulation and Safety Plan
Distributed at Public Visioning Open House on Tuesday, May 11, 2010

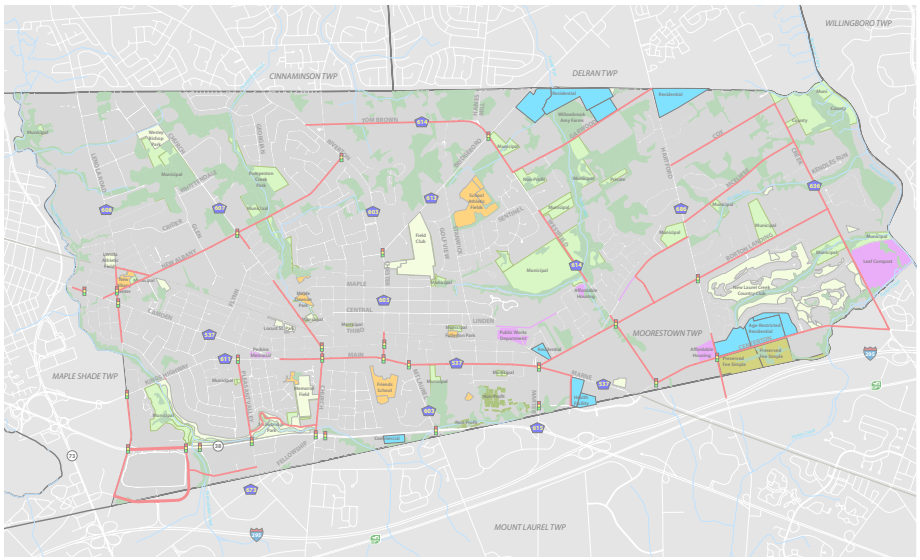
	Tallies from Returned Questionnaires						
How would these improvements affect your decision to bike more?	*Not at All* **1**	**2**	*Somewhat* **3**	**4**	*Greatly* **5**	**Average**	**Rank**
Bike lanes painted on roadways	0	0	0	4	6	**4.6**	**1**
Enforcement of laws that apply to motorists and cyclists	0	0	2	2	6	**4.4**	**2**
Multi-use trails through parks and open space	0	0	2	3	5	**4.3**	**3**
Fill in gaps in the bicycle facilities network	0	0	3	1	6	**4.3**	**4**
Maintenance along routes to remove potholes and debris	1	0	0	4	5	**4.2**	**5**
Wide shoulders or outside curb lanes	0	0	3	4	4	**4.1**	**6**
Emphasize safe routes to schools and to local parks	0	1	1	5	3	**4.0**	**7**
Bicycle parking at major destinations, commercial buildings, and public facilities	0	1	2	3	4	**4.0**	**8**
Public education of motorists with an emphasis on sharing the road with bikes	1	1	1	2	4	**3.8**	**9**
Fix intersections: bike loop detection systems for traffic signals	0	1	2	2	2	**3.7**	**10**
Fix intersections: lane coloring for improved visibility	0	1	3	3	2	**3.7**	**11**
Cycle Tracks along arterial roadways but separated from sidewalks	0	2	2	2	3	**3.7**	**12**
Sign safe routes on low volume / low speed streets	0	1	4	3	1	**3.4**	**13**
Fix intersections: bike boxes to provide space for bikes in front of cars	2	0	2	3	2	**3.3**	**14**
Public education of cyclists for obeying the rules of the road and riding safely	1	3	1	2	2	**3.1**	**15**
Bicycle parking at transit stations / stops	2	2	1	2	2	**3.0**	**16**

Public Information Center
for the
Moorestown Bicycle Circulation and Safety Plan

Date:
Tuesday, Sept. 21, 2010

Location:
Moorestown Library
111 West 2nd Street
Moorestown, NJ 08057

Time:
Stop by anytime between
3:00 pm and 7:00 pm



Please come to a Public Information Center for the **Moorestown Bicycle Circulation and Safety Plan**. A preliminary bicycle improvement plan has been developed at a Township-wide level and will be on display at this meeting. The plan is intended to improve bicycle safety and enhance non-motorized transportation opportunities to key destinations in the Township. Your participation and input are vital to a successful project! Please come and invite your neighbors!

Urban Engineers and Toole Design Group are the project consultants for this project, which is funded by the New Jersey Department of Transportation – Office of Bicycle and Pedestrian Programs (NJDOT-OBPP).

Questions?

Contact: Christopher J. Schultz, Township Manager
cschultz@moorestown.nj.us or 856-235-0912 x3000

Comment Form Responses

Moorestown Bicycle Safety and Circulation Plan
Distributed at Public Information Center on Tuesday, September 21, 2010
Total Number of Responses = 10

Question #3: Are there any routes or elements that are missing from the Bicycle Facilities Plan? Please describe below:

- There is a partial multi-use path along Marne Highway between Young and Centerton
- There is a little connector behind Lutheran Church connecting to Lippincott
- Need a cut-through between the end of Wagonbridge Drive and Route 38
- Yes, West Central along tracks route to Sunnybrook Swim Club
- Multi-use path is great proposal – would be huge asset for Moorestown. However, it seems like a shame to not connect 3rd with Borton Landing. Can't one side of the tracks become a devoted path? Either by making the north side 2-lanes (if possible) or making it one way. It's not really used by traffic, which sticks to 2nd, Central, or Main. Would not be a huge problem for residents – consider one way path on Strawbridge Lake. Huge success, not a problem that it's one way.

Question #4: Please use the space below to provide any additional comments related to the Bicycle Facilities Plan or suggested bicycling programs:

- It's extremely important that the speed limits be posted and enforced, especially in residential neighborhoods
- I love the idea of a bridge to at Strawbridge Lake from Haines to Rt. 38
- Marter Ave definitely needs a bike path to get to Centerton Square
- Cyclists should be in their proper lanes
- Cyclists should make their presence known before flying past people on the street or sidewalk
- The new bikes are soundless and fast
- Require a license for 12 and above
- Traffic complaint programs are basically asking for trouble – if a cyclist makes a complaint, the motorist is fined (sometimes), but the cyclist is now a retribution target. Use sting operations instead.
- The whole point of local routes is to guide bicycle traffic away from congested areas. "Sharrows" encourage unprepared cyclists and are in congested and inappropriate (too narrow) places.
- Bike lanes are great, but do not install them at the expense of prohibiting or impeding motor vehicle use of the roadway
- "Driver Education" programs for bicyclists: rules of the road need respect by young operators (keep right, pay attention, don't put yourself in target positions, use lights, etc.)
- Excellent ideas – education for all is the key + law enforcement
- Good work!
- Take opportunity to make bike parking artsy! I believe they installed bike parking stands in Philly on South Street, maybe also 2nd Street in Northern Liberties. Moorestown wants so desperately to have that vibrant Haddonfield-ish vibe. I think that this kind of touch (just on Main Street in center of town) would be a great functional, artistic asset an would be appreciated by the residents.

Comment Form Tally

Moorestown Bicycle Circulation and Safety Plan
Distributed at Public Information Center on Tuesday, September 21, 2010
Total Number of Responses = 10

Question #1:

Which elements of the Bicycle Facilities Plan would influence you or your children to bike more often? Please rate each element on a scale of 1 to 5 by likelihood of influencing you to bike more often (with 5 being most likely)	**Average (1-5)**	**Rank**
Bikeable Shoulders along Westfield, Hartford, etc.	**4.4**	**1**
Extension of **Multi-Use Path** network	**4.4**	**2**
Main Street Area Concept Plan	**4.4**	**3**
Bike Lanes along Lenola, Church, and New Albany	**4.3**	**4**
Designation of **Local Routes**	**4.3**	**5**
Moorestown Mall Area Concept Plan	**4.0**	**6**
Sharrows on Main, Church, and Chester	**3.7**	**7**
Centerton Square Area Concept Plan	**3.7**	**8**

Question #2:

Which of the following Education, Encouragement, and Enforcement events or actions would be most effective in promoting bicycling? Please rate each element on a scale of 1 to 5 by effectiveness in promoting bicycling (with 5 being most effective)	**Average (1-5)**	**Rank**
Safe Routes to School Initiatives	**4.8**	**1**
Bike Route Map & Guide	**4.6**	**2**
Bicycle Ambassadors Program	**4.5**	**3**
Employer Incentive Programs	**4.3**	**4**
Traffic Complaint Hotline	**4.2**	**5**
Bike Maintenance Classes/Workshop	**4.1**	**6**
Bike to Work Day	**4.0**	**7**
Bicycle Rodeos	**3.5**	**8**
Group Rides	**3.5**	**9**

Appendix B

NJDOT Bicycle Master Plan Analysis

NJDOT Bicycle and Pedestrian Master Plan Tool Analysis for Route 38

Overview

The bicycle/pedestrian analytical tool was developed by NJDOT as part of the Statewide Bicycle and Pedestrian Master Plan – Phase 2. NJDOT used the analytical tool on a statewide level to assess both demand and suitability for pedestrian and bicycle facilities.

1.) Demand Measures

Demand measures are based on year 2000 census tract data. Within Moorestown Township, Route 38 falls into two distinct Census Tracts: 700501 and 700504. Results show a medium to low demand for bicycle activity and a moderate demand for pedestrian activity along Route 38.

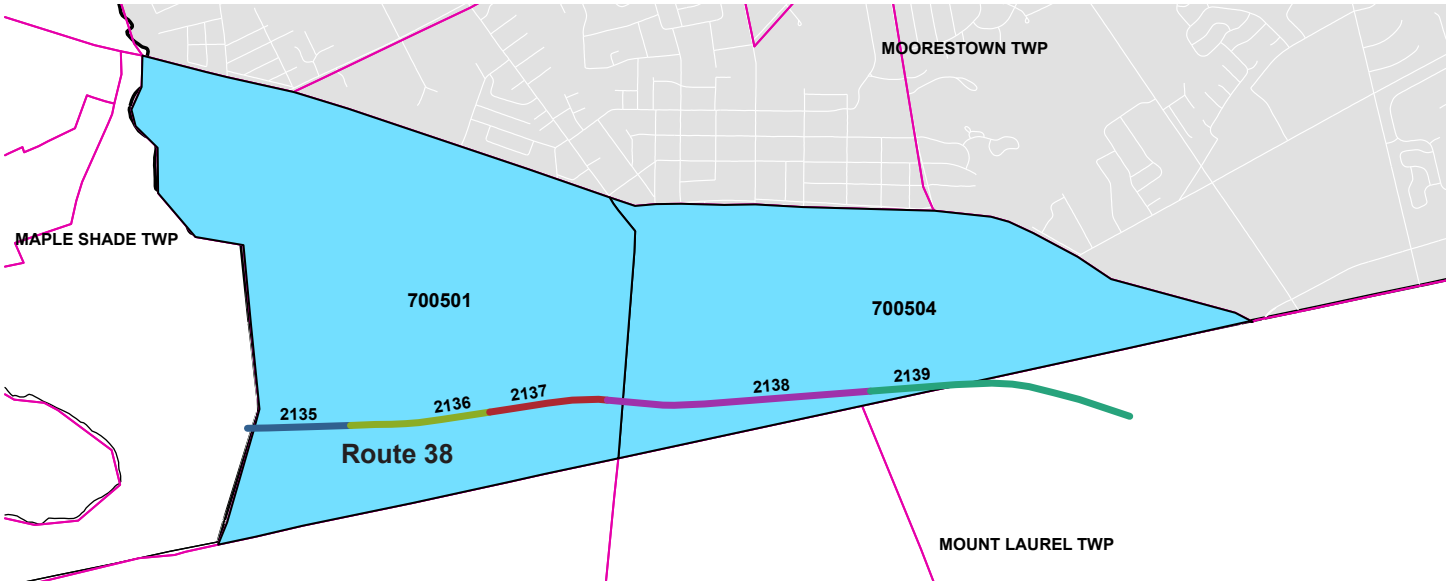
- **Bicycle Demand Model (BDM)**

Census Tract	Daily Trips	Demand
700501	541	Medium
700504	298	Low

- **Pedestrian Compatibility Index (PCI)**

Census Tract	PCI	Rank
700501	24	Moderate
700504	16	Moderate

- **Census Tract Map**



2.) Suitability Measures

Suitability measures are based on existing physical conditions along Route 38, including lane and shoulder widths, speed limit, traffic volumes, and functional classification. Route 38 is comprised of five Congestion Management System (CMS) links within Moorestown Township: 2135, 2136, 2137, 2138, and 2139. Level of Service, which is a performance-based rating system, is provided for each CMS link. Results show a medium-to-low suitability for bicycling along Route 38 and a medium rank for pedestrian crossability of Route 38.

- **Bicycle Compatibility Index (BCI)**

CMS Link	Level of Service	Rank
2135	C	Medium
2136	C	Low
2137	C	Low
2138	D	Low
2139	D	Medium

- **Pedestrian Crossability**

CMS Link	% of Time Road is Crossable	Rank
2135	51%	Medium
2136	37%	Medium
2137	41%	Medium
2138	37%	Medium
2139	39%	Medium

- **CMS LInk Map**

3.) Priority

Priority levels represent a combination of demand and suitability, so that places with the greatest potential demand and poorest facilities are given the highest priority. The overall priority level for each CMS link is shown below.

For Bicycle Priority, the western links of Route 38 near the Moorestown Mall have a medium priority because the demand is medium, while the eastern links have a low priority because the demand is low.

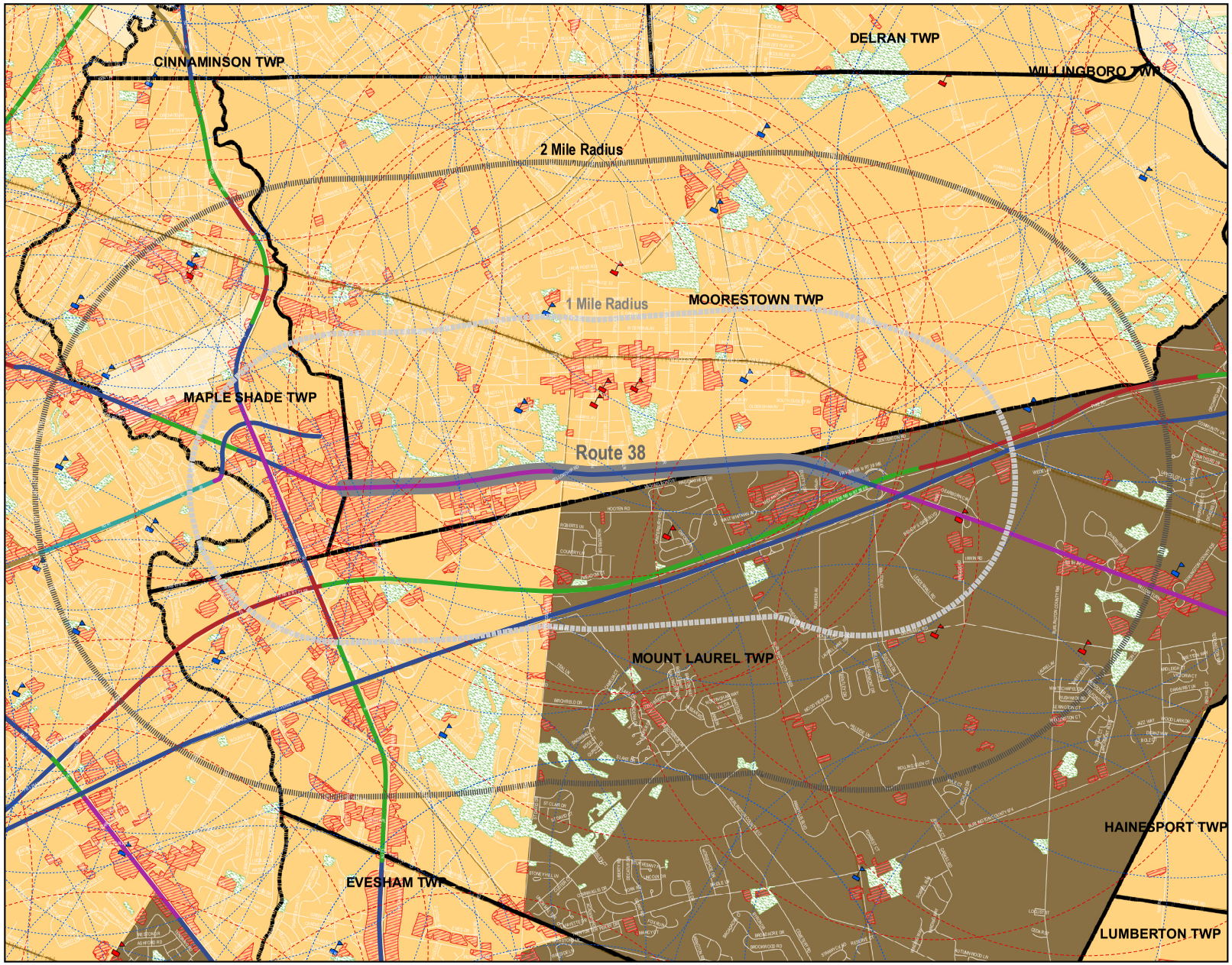
For Pedestrian Priority, the entire length of Route 38 through Moorestown has a medium priority because demand is moderate and suitability is medium for all five links.

- **Bicycle Priority**

CMS Link	Priority
2135	Medium
2136	Medium
2137	Medium
2138	Low
2139	Low

- **Pedestrian Priority**

CMS Link	Priority
2135	Medium
2136	Medium
2137	Medium
2138	Medium
2139	Medium



Bicycle Demand & Suitability Analysis

Bicycle Circulation & Safety Plan
Moorestown Township
Burlington County, NJ

N

1 0.5 0

Miles

LEGEND

- Route 38 Project Limit
- 1 Mile Project Radius
- 2 Mile Project Radius
- Municipal Boundary
- College
- School (Non-public)
- 2 Mile School Radius
- School (Public)
- 2 Mile School Radius
- Freight Rail
- Park Area
- Commercial Area

Bicycle Compatibility Index

LOS

- A
- B
- C
- D
- E
- F

Bicycle Demand (Daily Trips)

RANK

- High (Over 1000)
- Medium (201 - 1000)
- Low (0 - 200)

Appendix C

Preliminary Cost Estimates

On-Road Facilities by Location

(Table 1 of 2)

	Length (miles)	Approximate Cost	Jurisdiction
BRIDGEBORO RD			
Bikeable Shoulders	1.69	$174,986	County
CAMDEN AV			
Bike Lanes	0.63	$37,607	County
Bikeable Shoulders w/ Parking	1.09	$3,039	County
	1.72	$40,646	
CENTERTON RD			
Bikeable Shoulders	2.44	$413,569	County
CHESTER AV			
Bikeable Shoulders w/ Parking	0.44	$1,234	County
Sharrow	0.34	$3,687	County
	0.80	$4,922	
CHURCH ST			
Bike Lanes	1.86	$110,691	County
Sharrow	1.22	$13,206	County
	2.52	$123,897	
COX RD			
Shared Roadway	0.90	$2,523	Township
CREEK RD			
Bikeable Shoulders	1.87	$485,050	County/Private
GARWOOD RD			
Shared Roadway	1.21	$3,392	Township
HAINES DR			
Sharrow	1.57	$16,955	Township
HARPER DR			
Bike Lanes	0.35	$20,882	Township
HARTFORD RD			
Bikeable Shoulders	2.73	$396,091	County
KINGS HWY			
Bikeable Shoulders w/ Parking	1.20	$3,349	County/Township

On-Road Facilities by Location

(Table 2 of 2)

	Length (miles)	Approximate Cost	Jurisdiction
LENOLA RD			
Bike Lanes	2.71	$611,065	County
MAIN ST			
Bike Lanes	0.25	$15,008	County
Sharrow	1.94	$20,957	Township
	1.69	$35,964	
MARNE HWY			
Bike Lanes	0.52	$49,607	County
Bikeable Shoulders	0.29	$2,174	County
	0.81	$51,781	
MCELWEE RD			
Shared Roadway	1.02	$2,846	Township
MT LAUREL RD			
Bikeable Shoulders	0.10	$266	County
NEW ALBANY RD			
Bike Lanes	1.11	$66,441	Township
Bikeable Shoulders	0.98	$254,385	Township
	2.09	$320,826	
NIXON DR			
Sharrow	0.14	$1,553	Township
PLEASANT VALLEY AV			
Bike Lanes	0.19	$11,490	Township
Bikeable Shoulders	0.62	$27,011	Township
	0.81	$38,501	
RIVERTON RD			
Bikeable Shoulders	1.16	$56,699	County
STANWICK RD			
Bikeable Shoulders w/ Parking	1.36	$66,332	Township
TOM BROWN RD			
Bikeable Shoulders	1.46	$13,960	County
WESTFIELD RD			
Bikeable Shoulders	2.25	$371,633	County

Locations by Facility Type

(Table 1 of 3)

	Length (miles)	Approximate Cost	Jurisdiction
Bike Lanes			
CAMDEN AV	0.63	$37,607	County
CHURCH ST	1.86	$110,691	County
HARPER DR	0.35	$20,882	Township
LENOLA RD	2.71	$611,065	County
MAIN ST	0.25	$15,008	County
MARNE HWY	0.52	$49,607	County
NEW ALBANY RD	1.11	$66,441	Township
PLEASANT VALLEY AV	0.19	$11,490	Township
	7.6	$923,000	
Bikeable Shoulders			
BRIDGEBORO RD	1.69	$174,986	County
CENTERTON RD	2.44	$413,569	County/Township
CREEK RD	1.87	$485,050	County/Private
HARTFORD RD	2.73	$396,091	County
MARNE HWY	0.29	$2,174	County
MT LAUREL RD	0.10	$266	County
NEW ALBANY RD	0.98	$254,385	Township
PLEASANT VALLEY AV	0.62	$27,011	Township
RIVERTON RD	1.16	$56,699	County
TOM BROWN RD	1.46	$13,960	County
WESTFIELD RD	2.25	$371,633	County
	15.6	$2,196,000	
Bikeable Shoulders w/ Parking			
CAMDEN AV	1.09	$3,039	County
CHESTER AV	0.44	$1,234	County
KINGS HWY	1.20	$3,349	County/Township
STANWICK RD	1.36	$66,332	Township
	4.1	$74,000	

Locations by Facility Type

(Table 2 of 3)

	Length (miles)	Approximate Cost	Jurisdiction
Shared Roadway			
COX RD	0.90	$2,523	Township
GARWOOD RD	1.21	$3,392	Township
MCELWEE RD	1.02	$2,846	Township
	3.1	$9,000	
Sharrows (Shared Lane Markings)			
CHESTER AV	0.34	$3,687	County
CHURCH ST	1.22	$13,206	County
HAINES DR	1.57	$16,955	Township
MAIN ST	1.94	$20,957	Township
NIXON DR	0.14	$1,553	Township
	5.2	$56,000	
Multi Use Path - Private ROW			
BORTON LANDING RD	1.38	$379,117	Private
CENTERTON RD	2.98	$819,575	Private
CREEK RD	1.22	$335,862	Private
E MAIN ST	0.47	$128,761	Private
E THIRD ST	0.17	$46,534	Private
HARPER DR	0.34	$92,963	Private
HARTFORD RD	1.64	$451,240	Private
HWY 38	0.43	$118,370	Private
MARNE HWY	0.75	$204,960	Private
MARTER AV	0.28	$77,954	Private
MERION AV	0.25	$69,942	Private
MT LAUREL RD	0.63	$172,713	Private
NEW ALBANY RD	0.38	$104,242	Private
NIXON DR	1.64	$451,072	Private
S LENOLA RD	0.35	$97,161	Private
TOM BROWN RD	1.29	$354,500	Private
WESTFIELD RD	0.73	$199,837	Private
YOUNG AV	0.22	$61,520	Private
	15.2	$4,166,000	
Multi Use Path - Public ROW			
BRIDGEBORO RD	0.47	$129,253	Public
CENTERTON RD	0.11	$29,613	Public
HARTFORD RD	0.14	$37,496	Public
HWY 38	0.49	$134,716	Public
MARNE HWY	0.28	$76,030	Public
N CHURCH ST	0.21	$58,243	Public
PUBLIC WORKS TRAILS	3.22	$885,282	Public
RAIL CORRIDOR TRAIL	1.85	$508,296	Public
E THIRD ST	0.25	$69,687	Public
	7.0	$1,929,000	

Locations by Facility Type

(Table 3 of 3)

	Length (miles)	Approximate Cost	Jurisdiction
Local Routes			
ASHLEY CT	0.06	$178	Township
BARTRAM RD	0.08	$215	Township
BETH DR	0.18	$492	Township
BOWLING GREEN RD	0.35	$993	Township
CENTRAL AV	0.84	$2,357	Township
COLLINS AV	0.12	$349	Township
COLONIAL AV	0.25	$692	Township
COVINGTON TERR	0.10	$293	Township
CRIDER AV	0.60	$1,690	Township
E CENTRAL AV	0.37	$1,043	Township
E THIRD ST	0.83	$2,336	Township
E WALNUT AV	0.15	$418	Township
EAGLEBROOK DR	0.10	$293	Township
EVERGREEN DR	0.10	$291	Township
FLYNN AV	0.47	$1,327	Township
FOSTER RD	0.17	$484	Township
FRANKLIN AV	0.02	$54	Township
FULLERTON RD	0.14	$401	Township
GEORGIAN DR	0.40	$1,110	Township
GLEN AV	1.20	$3,359	Township
GOLF VIEW RD	0.55	$1,537	Township
GRANT AV	0.25	$700	Township
HIGH ST	0.49	$1,372	Township
IRON POST RD	0.24	$660	Township
LINDEN ST	0.04	$110	Township
LIPPINCOTT AV	0.30	$844	Township
LOCUST ST	0.45	$1,269	Township
MAPLE AV	1.08	$3,016	Township
MIDDLETON RD	0.30	$830	Township
MILL ST	0.09	$260	Township
MINDY DR	0.02	$43	Township
N SHIRLEY AV	0.19	$529	Township
PARK BLVD	0.34	$948	Township
PEPPERBUSH LN	0.09	$253	Township
PLEASANT VALLEY AV	0.12	$331	Township
PROSPECT AV	0.02	$49	Township
RIDING DR	0.18	$503	Township
S SHIRLEY AV	0.36	$1,003	Township
SALEM CROSSING RD	0.25	$691	Township
SENTINEL RD	0.60	$1,676	Township
SHEFFIELD DR	0.32	$903	Township
SOMERS AV	0.26	$733	Township
SPRINGHOUSE LN	0.31	$865	Township
W CENTRAL AV	0.22	$610	Township
W COOPER AV	0.16	$445	Township
W THIRD ST	1.06	$2,965	Township
WESTBROOK DR	0.43	$1,201	Township
WESTOVER RD	0.13	$368	Township
WHITTENDALE DR	0.45	$1,248	Township
WINDERMERE DR	0.04	$109	Township
WINDSOCK WY	0.30	$847	Township
WINTERBERRY RD	0.07	$191	Township
WINTHROP AV	0.27	$765	Township
	16.5	$46,000	

Actions by Facility Type

Action	Length (miles)	Approximate Cost
Bike Lanes		
Add Striping/Markings	5.1	$304,400
Construct New	1.2	$504,000
Lane Diet	0.4	$40,300
Make Shoulders Consistent	0.2	$27,500
Repave	0.2	$10,600
Shift Striping	0.6	$36,100
	7.6	$923,000
Bikeable Shoulders		
Add Striping/Markings	3.3	$9,200
Construct New	2.9	$744,700
Make Shoulders Consistent	4.1	$483,300
Repave	0.8	$152,500
Shift Striping	1.7	$83,500
Construct	2.5	$638,900
Add Bikeway with Road Reconst	0.3	$83,700
	15.6	$2,196,000
Bikeable Shoulders w/ Parking		
Add Striping/Markings	2.3	$6,400
Shift Striping	1.4	$66,332
Sign for Share the Road	0.4	$1,200
	4.1	$74,000
Shared Roadway		
Sign for Share the Road	3.1	$8,800
Sharrows (Shared Lane Markings)		
Add Striping/Markings	5.2	$56,000
Local Routes		
Add Striping/Markings	16.5	$46,000
Multi Use Path - Private		
Construct New	15.2	$4,166,000
Multi Use Path - Public		
Construct New	7.0	$1,929,000

Appendix D

NJDOT Complete Streets Policy

DEPARTMENT OF TRANSPORTATION
POLICY

Policy No. 703 Supersedes: 703 dated 8/7/89
Page 1 of 3

SUBJECT: Complete Streets Policy	Effective Date: 12/03/2009	Commissioner Approval: Sponsor Approval: Robert Miller Contact Telephone #: 530-3855

I. PURPOSE

To create and implement a Complete Streets Policy in New Jersey through the planning, design, construction, maintenance and operation of new and retrofit transportation facilities within public rights of way that are federally or state funded, including projects processed or administered through the Department's Capital Program.

II. DEFINITIONS

A Complete Street is defined as means to provide safe access for all users by designing and operating a comprehensive, integrated, connected multi-modal network of transportation options.

III. BACKGROUND

The benefits of Complete Streets are many and varied:

- Complete Streets improve safety for pedestrians, bicyclists, children, older citizens, non-drivers and the mobility challenged as well as those that cannot afford a car or choose to live car free.
- Provide connections to bicycling and walking trip generators such as employment, education, residential, recreation, retail centers and public facilities.
- Promote healthy lifestyles.
- Create more livable communities.
- Reduce traffic congestion and reliance on carbon fuels thereby reducing greenhouse gas emissions.
- Complete Streets make fiscal sense by incorporating sidewalks, bike lanes, safe crossings and transit amenities into the initial design of a project, thus sparing the expense of retrofits later.

IV. POLICY

The New Jersey Department of Transportation shall implement a Complete Streets policy though the planning, design, construction, maintenance and operation of new and retrofit transportation facilities, enabling safe access and mobility of pedestrians, bicyclists, transit users of all ages and abilities. This includes all projects funded through the Department's Capital Program. The Department strongly encourages the adoption of similar policies by regional and local jurisdictions who apply for funding through Local Aid programs.

SUBJECT: NJDOT Complete Streets Policy	Effective Date: 12/03/2009

1. Create a comprehensive, integrated, connected multi-modal network by providing connections to bicycling and walking trip generators such as employment, education, residential, recreational and public facilities, as well as retail and transit centers.

2. Provide safe and accessible accommodations for existing and future pedestrian, bicycle and transit facilities.

3. Establish a checklist of pedestrian, bicycle and transit accommodations such as accessible sidewalks curb ramps, crosswalks, countdown pedestrian signals, signs, median refuges, curb extensions, pedestrian scale lighting, bike lanes, shoulders and bus shelters with the presumption that they shall be included in each project unless supporting documentation against inclusion is provided and found to be justifiable.

4. Additionally, in rural areas, paved shoulders or a multi-use path shall be included in all new construction and reconstruction projects on roadways used by more than 1,000 vehicles per day. Paved shoulders provide safety and operational advantages for all road users. Shoulder rumble strips are not recommended when used by bicyclists, unless there is a minimum clear path of four feet in which a bicycle may safely operate. If there is evidence of heavy pedestrian usage then sidewalks shall be considered in the project.

5. Establish a procedure to evaluate resurfacing projects for complete streets inclusion according to length of project, local support, environmental constraints, right-of-way limitations, funding resources and bicycle and/or pedestrian compatibility.

6. Transportation facilities are long-term investments that shall anticipate likely future demand for bicycling and walking facilities and not preclude the provision of future improvements.

7. Address the need for bicyclists and pedestrians to cross corridors as well as travel along them. Even where bicyclists and pedestrians may not commonly use a particular travel corridor that is being improved or constructed, they will likely need to be able to cross that corridor safely and conveniently. Therefore, the design of intersections, interchanges and bridges shall accommodate bicyclists and pedestrians in a manner that is safe, accessible and convenient.

8. Design bicycle and pedestrian facilities to the best currently available standards and practices including the New Jersey Roadway Design Manual, the AASHTO Guide for the Development of Bicycle Facilities, AASHTO's Guide for the Planning, Design and Operation of Pedestrian Facilities, the Manual of Uniform Traffic Control Devices and others as related.

9. Research, develop and support new technologies in improving safety and mobility.

10. Make provisions for pedestrians and bicyclists when closing roads, bridges or sidewalks for construction projects as outlined in NJDOT Policy #705 – Accommodating Pedestrian and Bicycle Traffic During Construction.

11. Improvements should also consider connections for Safe Routes to Schools, Safe Routes to Transit, Transit Villages, trail crossings and areas or population groups with limited transportation options.

12. Establish an incentive within the Local Aid Program for municipalities and counties to develop and implement a Complete Streets policy.

13. Improvements must comply with Title VI/Environmental Justice, Americans with Disabilities Act (ADA) and should complement the context of the surrounding community.

14. Implement training for Engineers and Planners on Bicycle/Pedestrian/Transit policies and integration of non-motorized travel options into transportation systems.

15. Establish Performance Measures to gauge success.

V. EXEMPTIONS

Exemptions to the Complete Streets policy must be presented for final decision to the Capital Program Screening Committee in writing by the appropriate Assistant Commissioner and documented with supporting data that indicates the reason for the decision and are limited to the following:

1) Non-motorized users are prohibited on the roadway.
2) Scarcity of population, travel and attractors, both existing and future, indicate an absence of need for such accommodations.
3) Detrimental environmental or social impacts outweigh the need for these accommodations.
4) Cost of accommodations is excessively disproportionate to cost of project, more than twenty percent (20%) of total cost.
5) The safety or timing of a project is compromised by the inclusion of Complete Streets.

An exemption other than those listed above must be documented with supporting data and must be approved by the Capital Program Committee along with written approval by the Commissioner of Transportation.

VI. AUTHORITY

N.J.S.A. Title 27

Appendix E

Compilation of Funding Sources

Alan M. Voorhees Transportation Center

Funding Pedestrian and Bicycle Planning, Programs and Projects: A Compilation of Funding Sources

prepared by:
New Jersey Bicycle and Pedestrian Resource Center

prepared for:
New Jersey Department of Transportation

funded by:
Federal Highway Administration

March 2009

RUTGERS
Edward J. Bloustein School of Planning and Public Policy

Introduction/Acknowledgements

This paper presents a compilation and brief description of sources of funding that have been used, or could be, to fund pedestrian and bicycle improvements in New Jersey. The list is not exhaustive, but there has been an attempt to identify all major funding sources that can be utilized to fund bicycle and pedestrian planning and project development activities, as well as construction. In some cases these funds may also be used to fund programmatic activities. The paper emphasizes those funding sources that have been utilized in, or are unique to, New Jersey.

Much of the material for the original version of this paper was taken directly from a previous draft called, "Funding Pedestrian and Bicycle Planning, Programs and Projects" that was originally taken from both the "Memorandum on Funding Sources for Innovative Local Transportation Projects" prepared by the Tri-State Transportation Campaign, and a paper on bicycle and pedestrian funding within ISTEA prepared by the Bicycle Federation of America. Virtually all of the funding sources that were available for bicycle or pedestrian projects or planning under ISTEA and TEA-21 have been continued under the new federal transportation funding legislation, the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU). Additional material has been taken from the USDOT publication "A Summary: Bicycle and Pedestrian Provisions of the Federal-Aid Program" and from the Alan M. Voorhees Transportation Center "NJ Walks and Bikes!: A Partner's Guide to Who's Who in Walking and Biking in New Jersey."

This paper is a work in progress to be updated as new sources are identified.

Table of Contents

Funding of *Planning and Programmatic Activities*

Federal and/or State Funded Programs

Subregional Studies Program
This program provides federal grants for consultant-based planning, engineering, design, and evaluation of transportation projects. The funding is for studies, not capital improvements or operating costs. Applicants for grants can include state or local governmental entities. Funding can be, and has been, used to fund pedestrian and bicycle planning activities. For example, Monmouth County has received approval to carry out a planning study to address pedestrian needs and opportunities in several major corridors in the County. Additionally, Somerset County has received funding for a traffic calming study of selected locations in the county. Contact your regional MPO for more information. The North Jersey Transportation Planning Authority subregions served are the counties of Bergen, Essex, Hudson, Hunterdon, Middlesex, Monmouth, Morris, Ocean, Passaic, Somerset, Sussex, Union and Warren as well as Jersey City and Newark. More information is available at www.njtpa.org. The South Jersey Transportation Planning Authority serves Atlantic, Cape May, Cumberland and Salem counties and is available at www.sjtpo.org. The Delaware Valley Regional Planning Commission serves Burlington, Camden, Gloucester and Mercer counties and is available at www.dvrpc.org.

Supportive Task Grants
A portion of funds given to NJTPA to support planning activities are passed through to the sub-regions (counties) to fund staff planning activities. The Subregional Study Program funds studies assessing accessibility and mobility issues. For fiscal year 2008-2009 grants totaled approximately $2.4 million. Somerset County has used this to fund the "Somerset County Regional Center Pedestrian, Bicycle and Greenway Systems Connection Plan", intended to improve pedestrian, bike and greenway connections between community facilities.

Transportation Management Associations (TMAs)
In New Jersey, Transportation Management Associations receive substantial funding assistance through the Department of Transportation. In recent years, these funds have been from federal sources (CMAQ, or STP) although in the past, funding came from state sources. TMAs have considerable latitude in developing annual work programs to implement Travel Demand Management strategies. TMAs have carried out and are encouraged to continue to develop and undertake work program elements involving the promotion of bicycling and walking including development of bicycling suitability maps, promotional efforts aimed at increasing bicycling and walking, effective cycling presentations and other activities. For example, Keep Middlesex Moving sponsors the annual Bike to Work Week.

New Jersey TMA Contact Information

CROSS COUNTY CONNECTION TMA
Greentree Executive Campus
2002D Lincoln Drive West
Marlton, NJ 08053
Ph: 856-596-8228

Fax: 856-983-0388
Email: ccctma@driveless.com
www.driveless.com

GREATER MERCER TMA
15 Roszel Road South, Suite 101
Princeton, NJ 08540
Ph: 609-452-1491
Fax: 609-452-0028
www.gmtma.org

HUDSON TMA
574 Summit Avenue
5th Floor
Jersey City, NJ 07306
Ph: 201-792-2825
Fax: 201-795-0240
Email: info@hudsontma.org
www.hudsontma.org

HART COMMUTER INFORMATION SERVICES
84 Park Avenue, Suite E-104
Flemington, NJ 08822
Ph: 908-788-5553
Fax: 908-788-8583
Email: info@hart-tma.com
www.hart-tma.com

KEEP MIDDLESEX MOVING
100 Bayard Street, 2nd Floor, Suite 202
New Brunswick, NJ 08901
Ph: 732-745-4465
Fax: 732-745-7482
Email: kmm@kmm.org
www.kmm.org

MEADOWLINK RIDESHARING
C/O Meadowlands Regional Chamber of Commerce
201 Route 17 N
Rutherford, NJ 07070
Ph: 201-939-4242
Fax: 201-939-2630
Email: info@meadowlink.org
www.meadowlink.org

RIDEWISE OF RARITAN VALLEY
360 Grove Street
Bridgewater. NJ 08807
Ph: 908-704-1011
Email: staff@ridewise.org
www.ridewise.org

TRANSOPTIONS
2 Ridgedale Avenue, Suite 200
Cedar Knolls, NJ 07927
Ph: 973-267-7600
Fax: 973-267-6209
www.transoptions.org

Local Transportation Planning Assistance Program (LTPA)
This program makes professional transportation planning consultants available to municipalities wishing to implement the State's Smart Growth land use and transportation policies. The program is designed to help municipalities and counties with planning initiatives that will preserve the long term integrity of the state transportation system, as well as to enhance community quality of life objectives. Through the transportation and land use planning experts under contract with the Department, municipalities are able to develop or update local circulation elements, conduct downtown traffic calming and parking management studies, develop access management plans, and plan for improved bicycle, pedestrian and local transit services. Potential and designated Transit Villages, Transit Oriented Developments, and municipalities participating in the State's Office of Smart Growth Plan Endorsement Process receive highest priority.

The LTPA program is administered by the Division of Local Aid and Economic Development, Local Transportation Planning Assistance Unit. For more information please contact Helene Rubin, Section Chief, LTPA Unitat 609-530-2869, Helene.Rubin@dot.state.nj.us or Mike Russo, Director, Local Aid and Economic Development
at 609-530-3640, Michael.Russo@dot.state.nj.us.

Bicycle/Pedestrian Planning Assistance
This program provides NJDOT consultant support designed to develop local pedestrian/bicycle circulation plans and facility inventories. The program provides municipalities with consultant expertise in the professional disciplines of transportation and pedestrian/bicycle planning to develop local circulation elements and other transportation related planning initiatives. Potential and designated State Development and Redevelopment Plan Centers, target neighborhoods under the Urban Strategies Initiatives and improving bicycle and pedestrian access and safety locations receive priority. Assistance is to be provided under a partnership arrangement, and applicants must commit staff and or/financial resources to these efforts. All studies undertaken must have a public outreach aspect, including continuing involvement by both the official representatives of the municipality as well as participation by local citizens. This program is administered by the Division of Statewide Planning, Bureau of Commuter Mobility Strategies. For more information please contact Sheree Davis, Manager of Commuter Mobility Strategies via email at sheree.davis@dot.state.nj.us.

Smart Future Planning Grants
The Smart Future Planning grant program, formerly known as Planning Assistance for Counties and Local Agencies, is administered through the Department of Community Affairs, Office of Smart Growth. The program provides money for municipalities, counties and regional organizations to develop plans that lead to smart growth objectives and create investment opportunities for communities. The grants are designed to promote the principles of smart growth by providing funding and technical assistance so that a county or municipality can develop and implement plans that add to the overall value of their communities. The value added comes from coordinating land use, transportation, parks and recreation, environmental protection, farmland preservation, health, schools and other land uses, so that communities can deliver services more efficiently as well as take full advantage of their positions in the region. Hudson County received a Smart Future grant in 2001 to support a Regional Strategic and Open Space Action Plan to focus on construction of the Waterfront Walkway along the Hudson River through seven Hudson County towns. Similar planning projects to improve the pedestrian or bicycle environment could be proposed by other counties or municipalities.
Each year, our grant categories change. For more information, visit http://www.nj.gov/dca/divisions/osg/programs/grants.html; visit SAGE at https://njdcasage.state.nj.us/portal.asp or call 609-292-7156.

Small Cities Development Block Grant
This grant provides funds for economic development, housing rehabilitation, community revitalization, and public facilities designed to benefit people of low and moderate income or to address recent local needs for which no other source of funding is available. For further information, visit http://www.state.nj.us/dca/dcr/sccdbg/index.shtml or contact Richard Z. Osworth at rosworth@dca.state.nj.us or (609) 633-6263.

New Jersey Historic Trust
The Historic Trust provides matching grants, loans and protection for New Jersey's historic resources. Funding assistance is limited to certified nonprofit organizations and units of local or county governments. Funding programs include, the Garden State Historic Preservation Fund, Revolving loan fund and the Cultural Trust Capital Preservation Grant Program. Private owners of historic resources may benefit from the Trust's easement or New Jersey Legacies programs. For more information, visit: http://www.njht.org or telephone (609) 984-0473.

New Jersey Redevelopment Authority (NJRA)
The New Jersey Redevelopment Authority (NJRA) is committed to revitalizing urban New Jersey as demonstrated in Governor Jon S. Corzine's Economic Growth Strategy. This strategy ensures that economic growth benefits all cities and regions of the state creating new economic opportunities for New Jersey citizens.

The mission of the New Jersey Redevelopment Authority (NJRA) supports the Governor's goal to support the resurgence of the state's cities by providing the necessary financial and technical tools to grow and revitalize neighborhoods.

It is NJRA's unique approach to revitalization that allows for the creation of programs and resources that improve the quality of life by creating value in urban communities. NJRA makes

it mark in cities throughout the state by investing in comprehensive redevelopment projects that contribute to an improved quality of life.

The NJRA provides many resources, critical to the redevelopment process in the form of loans, loan guarantees, bond financing, and equity investments. The NJRA's remains flexible and responsive to ensure successful redevelopment throughout New Jersey. To date the NJRA has committed to invest more than $330 million in New Jersey's urban communities, leveraging over $2.9 billion in private sector investments.

Authority Resources

NJRA Pre-Development Fund ("NJRA PDF")
The NJRA PDF is a $2.5 million financing pool that provides funding to cover various predevelopment activities, including feasibility studies, architectural costs, environmental and engineering studies, legal and other related soft costs for development to occur. This program offers the flexibility to structure financing at the early stages of development. The NJRA PDF increases the availability of funding for community economic development projects within the NJRA's eligible municipalities.

New Jersey Urban Site Acquisition Program ("NJUSA")
The NJUSA Program is a $20 million revolving loan fund that facilitates the acquisition, site preparation and redevelopment of properties, which are components of an urban redevelopment plan in NJRA-eligible communities. Acting as a catalyst to jump-start urban revitalization efforts, the NJUSA Program provides for-profit and nonprofit developers and municipalities with a form of bridge financing to acquire title to property and for other acquisition-related costs.

NJRA Bond Program
The NJRA issues bonds at attractive interest rates to a broad range of qualified businesses and nonprofit organizations. The NJRA has the ability to issue both taxable and tax-exempt bonds to stimulate revitalization in New Jersey's urban areas.

New Jersey Redevelopment Investment Fund ("RIF")
The NJRA manages this flexible investment fund that provides debt and equity financing for business and real estate ventures. Through the RIF Program, the NJRA offers direct loans, real estate equity, loan guarantees and other forms of credit enhancements.

NJRA Environmental Equity Program ("E^2P")
The E^2P Program advances brownfields efforts by providing up-front capital to assist with the predevelopment stages of brownfields redevelopment projects. E^2P funds assist with site acquisition, remediation, planning, and demolition costs associated with brownfields redevelopment projects.

Working in Newark's Neighborhoods ("WINN")
WINN is a $10 million revolving loan program focused on redevelopment efforts in the City of Newark's neighborhoods. Funds from WINN can be used for commercial and mixed-use projects directly related to comprehensive redevelopment initiatives including: pre-development,

site preparation, acquisition, demolition, permanent financing, loan guarantees and construction financing.

NJRA Redevelopment Training Institute
The NJRA Redevelopment Training Institute (NJRA RTI) offers intensive intermediate-level training courses that focus on the redevelopment of New Jersey's communities. NJRA RTI is designed to provide nonprofit and for-profit developers, professional consultants, entrepreneurs and city/county staff with a body of knowledge of the redevelopment and real estate development process. The goal of NJRA RTI is to provide classroom instruction outlining the nuances of the redevelopment planning process in New Jersey, to focus on the real estate development process and to unlock the key to understanding real estate finance.

Contact: New Jersey Redevelopment Authority
150 West State Street, Second Floor
P.O. Box 790
Trenton, NJ 08625
Phone: 609-292-3739
Fax: 609-292-6070
Web site: www.njra.us
E-mail: njra@njra.state.nj.us

Freshwater Wetlands Mitigation Council
The Freshwater Wetlands Mitigation Council's role in the state's wetland mitigation program is to serve as a repository for land donations and monetary contribution collected as a result of freshwater wetlands/state open water impacts that cannot be mitigated for on-site, off-site, or at a wetland mitigation bank. The Council also reviews and approves freshwater wetland mitigation banks. Furthermore, the Council is responsible for the management and disbursement of dollars from the Wetland Mitigation Fund to finance mitigation projects. With those funds, the council has the power to purchase land to provide areas for enhancement or restoration of degraded freshwater wetlands, to engage in the enhancement or restoration of degraded freshwater wetlands and transition areas determined to be of critical importance in protecting freshwater wetlands. For more information, contact the council at (609)777-0454 or Jill.Aspinwall@dep.state.nj.us or visit www.nj.gov/dep/landuse/fww/mitigate/mcouncil.html.

Other sources of funding

Bicycle and pedestrian planning activities and programs can and have been funded through local funds budgeted through county and municipal budgets.

Funding of *Projects*

Federal Funding Under SAFETEA-LU

All the major funding programs under SAFETEA-LU include bicycle and pedestrian facilities and programs as eligible activities.

Division of Local Aid and Economic Development
The Division of Local Aid and Economic Development oversees the development and authorization of funds in the Capital Program, Statewide Transportation Improvement Program, and Study and Development Program. The division also manages problem statements for NJDOT. Staff members work with county and municipal government officials to improve the efficiency and effectiveness of the state's transportation system. The SAFETEA-LU legislation has provided funding assistance to local governments for roads, bridges, and other transportation projects. For more information, telephone (609) 530-3640 or visit http://www.state.nj.us/transportation/business/localaid/funding.shtm.

National Highway System (NHS)
The NHS is comprised of the 42,000-mile Interstate system and another 113,000 miles of roads identified by the states based on their importance to the national and regional economy, defense and mobility. NHS funding for projects on NHS roadways can be used for bicycle and pedestrian improvements on NHS systems highways, or on land adjacent to any NHS system highway, including interstate highways. This includes incidental improvements within larger projects which enable bicycle compatibility such as paved shoulders and bicycle safe drainage grates, designated bicycle facilities such as bikeways, signed routes, bike lanes and paths, and pedestrian accommodations such as sidewalks, signals, overpasses and crosswalks. It also includes funding of independent bicycle and pedestrian projects (projects that are initiated primarily to benefit bicycle and pedestrian travel) along or in the vicinity of NHS roadways. Projects could include shoulder paving, bicycle safe drainage grates, construction of sidewalks or bikeways, installation of pedestrian signals, crosswalks or overpasses.

Surface Transportation Program (STP) Funds
The program is broadly defined and gives states flexibility to invest in a wide variety of transportation activities. Bicycle and pedestrian facilities and walkways are specifically listed as eligible activities under this program. As with NHS, pedestrian and bicycle improvements may be incidental improvements within larger projects which establish bicycle compatibility or designated bicycle and pedestrian accommodations. The funds can also be used for independent bicycle and pedestrian projects along or in the vicinity of roadways. Projects could include shoulder paving, bicycle safe drainage grates, construction of sidewalks or bikeways, installation of pedestrian signals, crosswalks or overpasses. Under SAFETEA-LU, it is specified that these funds may be used for the modification of sidewalks to comply with the Americans with Disabilities Act.

It should be noted that STP funds may be used for non-construction projects (such as maps, brochures and public service announcements) related to safe bicycle use and walking. These

funds are administered partially through NJDOT and partially through the state's Metropolitan Planning Organizations (MPOs).

STP Resources

Local Scoping and Local Lead Projects
The Local Scoping program (in the MPOs) provides a set aside of federal (STP) funds directly to the sub regions for the advancement of project proposals through the NEPA process, ultimately making that project eligible for inclusion in the Statewide Transportation Improvement Program, STIP (as a Local Lead project). The Local Lead Program provides funding to move projects from final design to construction. Local Scoping and Lead projects are selected via a competitive selection process.

Municipalities are eligible for the Local Scoping Program but must work through their appropriate sub region. Projects must be part of the National Highway System or be designated a Federal Aid route. A project is considered to be "Scoped" when it has received an approved environmental document, and a scoping Report including any design exceptions and that the preliminary engineering is completed. An important aspect of Scoping is the public involvement process that is required under NEPA. A decision to either advance a project for inclusion in the STIP and an eventual final design, right-of-way purchase and construction, or a decision to discontinue the project will be the result of the Scoping process. If a decision is made to advance the project to construction, funding will be provided either through the Local Lead Program, the New Jersey Department of Transportation, or other sources. A completed Scoping project does not guarantee construction funding.

The Local Lead program is an opportunity for sub regions to apply for federal funding for the advancement of projects through final design, right-of-way, and/or construction. This is a highly competitive program. The MPOs select the projects for inclusion in the Program. Applications are evaluated on a myriad of factors including but not limited to whether the project improves air quality, reduces travel time, reduces congestion, optimizes capacity, creates a community of place, etc.

Each of these sources of funds can be used to advance bicycle or pedestrian projects. As yet, only a handful of Local Scoping/Local Lead projects have directly addressed non-motorized needs as independent projects. Local Scoping/Local Lead projects can also benefit the non-motorized modes if they incorporate, incidentally, features that address bicycle and pedestrian travel needs. Contact your MPO for more information.

Transportation Enhancement Program
Ten percent of annual STP funds are set aside to support non-traditional transportation projects whose objectives support more livable communities, enhance the travel experience, and promote new transportation investment partnerships. The Transportation Enhancement Program links state and federal policy. It focuses on transportation projects designed to preserve and protect environmental and cultural resources, and to promote alternative modes of transportation.

The grants are used to help local governments creatively integrate transportation facilities into their local surroundings. Two of the possible kinds of projects that can be funded with these grants are directly related to pedestrian and bicycle facilities and activities, and several others are indirectly related. The types of projects that can qualify include "provision of facilities for pedestrians and bicycles" and "provision of safety and educational activities for pedestrians and bicyclists." Others include "acquisition of scenic easements and scenic or historic sites," which could be used to enhance the pedestrian experience, "landscaping and other scenic beautification", which might be part of a streetscape project that can be beneficial to pedestrians and "preservation of abandoned railway corridors (including the conversion and use thereof for pedestrian and bicycle trails)." The grants can also be used for other types of projects, which may have a more indirect or secondary benefit for bicyclists and pedestrians.

Several restrictions apply to the grants. Proposals must be for a complete, identifiable, and usable facility or activity. Funds are used for design, property acquisition or construction of projects. The proposed bicycle and pedestrian facilities cannot be solely for recreation; they must be proposed as transportation facilities. The projects must be ready for implementation or construction within two years after the project is selected for a grant. The proposal must also show, through an attached resolution or letter, that the facility or project will be maintained for at least 20 years. The proposal should show that the entire project would be wholly funded, either in combination with other funding sources, or solely through this grant program. Grants from this program can be used as matching funds; projects with supplemental funding will be given higher priority. Work that is performed before the project is formally approved by the Federal Highway Administration (FHWA), such as surveys, preliminary engineering or final design, will not be funded through the program.

Additionally, NJDOT analyzes user impact when evaluating proposals. Especially helpful to communities that are trying to make their environments more pedestrian and bicyclist friendly is the fact that NJDOT takes into consideration how the project would promote the use of non-automotive forms of transportation. Furthermore, the projects' urgency will be taken into consideration, such as a project that will lose other funding sources should it not receive matching funds. Finally, Urban Aid communities, proposals that include letters of community support and projects that have an economic benefit or have value as a cultural resource will also be given additional consideration.

Local agencies and non-profit groups can also apply for grants, but they need to have their projects endorsed by the governing board in the municipality in the form of a resolution. Regional projects must have both municipal and county endorsement. The projects must also conform to the National Environmental Policy Act, the National Historic Preservation Act and the Department of Transportation Act, Section 4(f). The projects must also be designed to meet American Association of State Highway and Transportation Officials (AASHTO) standards and NJDOT's Planning and Design Guidelines for Bicycle and Pedestrian Facilities, the American Disabilities Act, state and local building codes, and other applicable professional design standards. All projects funded through this program are subject to the NJDOT policy requiring that bicycle and

pedestrian traffic should be incorporated into the planning, design, construction and operation of all projects and programs funded or processed by the NJDOT.

These grants are funded through the federal SAFETEA-LU Act. Applications are submitted to the New Jersey Department of Transportation (DOT) and reviewed by several state agencies, including the DOT and the Department of Environmental Protection, as well as the Metropolitan Planning Organizations (MPOs) and representatives from outside the traditional transportation group. This committee reviews the applications and creates a short list to be submitted to the Commissioner of Transportation. Those applications that pass the basic eligibility part of the screening process are sent to the county planning department for the county perspective. Applicants should notify the county planning department about the proposed project. The funds are distributed on a reimbursement basis.

Hazard Elimination Program

Ten percent of the STP program is to be used to fund safety projects. The Local Safety Program provides $3 M ($1 M per MPO) annually to counties and municipalities for the improvement of known safety hazards on local and county roadways. Projects will focus on crash prone locations and may include but not be limited to intersections and other road improvements including installation and replacement of guide rail and pavement markings to enhance pedestrian and vehicular safety. These safety improvements are construction ready and can be delivered in a short period of time. Funding is provided for safety-oriented improvements. Improvements that either directly or indirectly improve conditions for pedestrians can be funded. In New Jersey, the program is administered by the NJDOT Bureau of Traffic Engineering and Safety (in the near future it will be transferred to a new Bureau of Safety Programs). In general, projects are selected on the basis of excessive occurrence of a particular accident type at a given location. This often involves some sort of intersection modification, such as resurfacing with a skid resistant pavement surface. In some cases safety improvements have included the installation of pedestrian signal heads. NJDOT is revising its project selection process. The new process will include specific accident categories for which projects are to be funded. One of these categories will be pedestrian-related accidents.

Sources: "Funding Bicycle and Pedestrian Projects in New Jersey: A guide for Citizens, Cities and Towns" by the Tri-State Transportation Campaign- October 1999;
http://www.fhwa.dot.gov/environment/bikeped/bp-broch.htm

Safe Routes to School
Safe Routes to School (SRTS) is a Federal-Aid program created in SAFETEA-LU and administered by State Departments of Transportation. The program provides funds to the States to substantially improve the ability of primary and middle school students to walk and bicycle to school safely. The purposes of the program are to enable and encourage children to walk and bicycle to school, to make bicycling and walking to school a safer and more appealing transportation alternative, thereby encouraging a healthy and active lifestyle from an early age; and to facilitate the planning, development, and implementation of projects and activities that will improve safety and reduce traffic, fuel consumption, and air pollution in the vicinity (approximately 2 miles) of primary and middle schools (Grades K-8). The program encompasses a comprehensive approach that includes the five E's: Engineering, Education, Enforcement, Encouragement, and Evaluation. Counties and municipalities, school districts, and non-profit organizations will be eligible to apply. The New Jersey Department of Transportation awarded the first SRTS grants in July 2007 and announced the second round of grant applications in January 2008. For more information, contact Elise Bremer-Nei, New Jersey Safe Routes to School Coordinator, at (609) 530-2765.

Local Aid for Designated Transit Villages
NJDOT and NJ TRANSIT spearhead a multi-agency Smart Growth partnership known as the Transit Village Initiative. The Transit Village Initiative helps to redevelop and revitalize communities around transit facilities to make them an appealing choice for people to live, work and play, thereby reducing reliance on the automobile. The Transit Village Initiative is an excellent model for Smart Growth because it encourages growth in New Jersey where infrastructure and public transit already exist. Aside from Smart Growth community revitalization, two other goals of the Transit Village Initiative are to reduce traffic congestion and improve air quality by increasing transit riders.

Studies have shown that an increase in residential housing options within walking distance of a transit facility, typically a one quarter to one half mile radius, does more to increase transit ridership than any other type of development. Therefore, it is a goal of the Transit Village Initiative to bring more housing, more businesses and more people into communities with transit facilities. Programs include bicycle/pedestrian paths, bike routes signs, bicycle parking, and storage and bicycle/pedestrian safety education program. For more information, visit http://www.state.nj.us/transportation/community/village or contact Monica Etz at (609) 530-5957.

The Congestion Mitigation and Air Quality Improvement Program (CMAQ*)*
Authorized by SAFETEA-LU, The Congestion Mitigation and Air Quality Improvement Program provides funds for surface transportation and other projects that help to reduce congestion and improve air quality. The funds are mainly used to help communities in non-attainment areas and maintenance areas to reduce emissions. Non-attainment areas are those areas designated by the Environmental Protection Agency as not meeting the National Ambient Air Quality Standards (NAAQS). A maintenance area was once a non-attainment area but has now reached NAAQS. The SAFETEA-LU CMAQ program provides more than $8.6 billion in funds to State Departments of Transportation (DOT), Metropolitan Planning Organizations (MPO), and transit agencies to invest in emissions-reducing projects. Pedestrian and Bicycle

Programs are two kinds of many programs that can be funded using CMAQ funds.

Bicycle and pedestrian programs that can be funded under this program can come in one of many forms. Some include creating trails or storage facilities or marketing efforts designed to encourage bike riding and walking as forms of transportation. Education and outreach programs are also eligible for CMAQ funds and could be used to increase public knowledge about the benefits of biking and walking.

The funds are made available through the MPOs and NJDOT to local governments and non-profit organizations, as well as to private organizations as part of a public-private partnership CMAQ funds are only released as reimbursement payments for completed work. CMAQ funds require a state or local match. Usually, this breaks to 80% federal funding, subject to sliding scale, and 20% state or local funding.
Source: "The Congestion Mitigation and Air Quality Improvement Program" by the U.S. Department of Transportation, FHWA, Federal Transit Administration

National Recreational Trails Program (Symms Trails System Act)
An annual sum is apportioned to the states for use in developing trails related projects, many of which benefit bicyclists and pedestrians. Funding is from federal motor fuels taxes collected on sale of fuel for motorized recreational vehicles (ATVs, off road motorcycles, snowmobiles) and is administered through the Federal Highway Administration. In New Jersey, the program, including solicitation of projects and project selection, is administered by the Office of Natural Lands Management in the Division of Parks and Forestry. State, county, and local governments and non-profit organizations are eligible for funds.

In 2008, New Jersey will receive approximately $1,000,000 for trail projects. The deadline for submitting applications for 2008 was December 15, 2007. Next year's application and additional information can be obtained from Larry Miller at 609-984-1339, larry.miller@dep.state.nj.us or http://www.state.nj.us/dep/parksandforests/natural/njtrails.html.

Scenic Byways
This program recognizes roads having outstanding scenic, historic, cultural, natural, recreational, and archaeological qualities and provides for designation of these roads as National Scenic Byways, All-American Roads or America's Byways. Funds for this program can also be used in the development and provision of tourist implementation; and construction of bicycle and pedestrian facilities, interpretive facilities, overlooks and other enhancements for byway travelers. Designation of the scenic byway must be in accordance with a Scenic Byways program developed and adopted by the state.

Benefits of adoption as a Scenic Byway under the Program could include direct funding of projects and preferential treatment in the funding/selection process for other funding sources administered by the Department.

Section 402 Safety Funds
These funds are administered jointly by the National Highway Traffic Safety Administration (NHTSA) and the Federal Highway Administration (FHWA) to be spent on non-construction activities to improve the safety of the traveling public. Pedestrian and bicycle projects are on the

NHTSA priority list. In each state, the program is administered by a designated Highway Safety representative. In New Jersey, the designated representative is the Director of the Division of Highway Traffic Safety in the Department of Law and Public Safety.

Federal Transit Administration Funds
Title 49 U.S.C. (as amended by TEA-21) allows the Urbanized Area Formula Grants, Capital Investment Grants and Loans, and Formula Program for Other than Urbanized Area transit funds to be used for improving bicycle and pedestrian access to transit facilities and vehicles.

SAFETEA-LU continues the Transit Enhancement Activity program with a 1% set-aside of Urbanized Area Formula Grant funds designated for, among other things, pedestrian access and walkways and bicycle access, including storage equipment and installing equipment for transporting bicycles on mass transit vehicles.

Federal Community Development Block Grant (CDBG) Program

Community Development Block Grants (CDBG) are for the use of local communities serving low- to moderate-income people. These grants are funded through the U.S. Department of Housing and Urban Development and administered by the Office of Block Grant Assistance in HUD's Office of Community Planning and Development (CPD). The grants are most often used for projects such as rehabilitating or constructing affordable housing or for job-creating economic development, but they can also be used for projects that would benefit low- and moderate- income pedestrians and bicyclists. Several of the types of projects that can be funded with these grants could be used for pedestrian and bicycle activities. These include acquisition of land for some public purpose, building public improvements or facilities, including sidewalks and recreational facilities, and also the costs associated with administrating or planning these projects.

Not all local governments are eligible to apply for CDBG. The local government must have at least 50,000 residents or be designated a central city of a metropolitan area. Urban counties with at least 200,000 residents may also apply (these local governments are called entitlement communities). The local governments can spend the money themselves or distribute it to local non-profit or for-profit organizations or entities. Additionally, a portion of the funds is distributed to states, which can then distribute the funds as they see fit, including to non-entitlement communities. The most central restriction on the use of CDBG funds is that at least 70% of the money must be used for activities that primarily benefit low- to moderate-income people. In the case of building sidewalks or other pedestrian facilities, this usually means that these funds can only be used in areas where at least 70% of the residents have low to moderate incomes.

Importantly, a community must also prepare a Consolidated Plan in order to be eligible for the funds. This plan contains an action plan, which specifies how the community will use the funds, as well as fulfills the reporting and application requirements for entitlement communities.

For more information on the federal CDBG program contact Kathleen Naymola of HUD at 973-

776-7288 or kathleen_a._naymola@hud.gov. For information on New Jersey's Small Cities CDBG program please contact Richard Osworth at (609) 633-6263 or rosworth@dca.state.nj.us

Fairview, in Bergen County, used $449,000 in CDBG funds to make sidewalk and intersection improvements, including crosswalk striping and Guttenberg, in Hudson County, used $234,770 in CDBG funds for the Bergenline Avenue streetscape project and sidewalk improvements. Several other New Jersey communities have used the funds in a similar fashion.
Sources: http://www.hud.gov/offices/cpd/communitydevelopment/programs/cdbg.cfm *and Pedestrian and Bicycle Resource Project database.*

State Funding

Local Aid for Centers of Place

Currently, the Centers of Place program is designed to assist municipalities that have formally participated in implementation of the New Jersey State Development and Redevelopment Plan (SDRP). The program provides funds to non-traditional transportation improvements that advance municipal growth management objectives. NJDOT notifies eligible municipalities about the application process.

The funding from this program is meant to help communities in New Jersey make non-traditional transportation improvements that are meant to aid in managing growth. The funds can only be used by those communities that have formally participated in implementing the New Jersey State Development and Redevelopment Plan (SDRP). The State Planning Commission designates these communities as Centers (Urban, Regional, Town, or Village Center) as part of this process and the Centers prepare a Strategic Revitalization Plan and Program, approved by the Commissioner of Transportation or enter into an officially recognized Urban Complex. If a project is selected for funding, it must follow certain standards, including the NJDOT Bicycle Compatible Roadways Planning and Design Guidelines and the AASHTO Guide for the Development of New Bicycle Facilities.

The current categories of projects include, pedestrian and bicycle facilities, scenic or historic transportation programs, parking and circulation management, landscaping/beautification of transportation related facilities, and rehabilitation of transportation structures. Eligible pedestrian and bicycling projects include strategies which enable mixed use of a "Main Street" as both a public space and a transportation link, traffic calming improvements, bicycle lockers at transportation facilities, retail complexes, public buildings and public and mid-block connections/paths to ease bicycle and pedestrian circulation

The grants can be used for project-related activities including preliminary or final design (for Urban Aid or Depressed Rural Centers according to the Transportation Trust Fund Authority Act) and/or construction, including construction inspection and material testing according to the Transportation Trust Fund Authority Act. These grants cannot be used for roadway projects that are eligible for funding though NJDOT's State Aid to Counties and Municipalities Program, such as resurfacing, rehabilitation or reconstruction, and signalization. They also cannot be used for right-of-way purchases or for operating costs associated with any project.

Priority is given to projects that meet several criteria, including that the project is transportation related, construction ready, compatible with the State Development and Redevelopment Plan, located in an Urban Coordinating Council target area, has local commitment, has supplemental funds, has community support and is coordinated with other funding sources or programs. Form SA-96 must be submitted to the Division of Local Government Services District Office to apply for funding. Supplemental materials, including photographs and maps, are encouraged.

Municipalities that want to make improvements on county or state roads must have the appropriate resolution or permission to proceed. Applications are evaluated by the Centers of Place Review Committee, which includes representatives from several state offices, including the DOT, the Office of State Planning, the Economic Development Authority and Downtown New Jersey. This committee makes recommendations to the Commissioner of Transportation.

Several New Jersey communities have received funding from NJDOT through this program for local pedestrian- and bicycle-oriented projects. 2007-2008 grant recipients include Palmyra Burrough of Burlington County which received $90,000 for their Palmyra Pathway Project. North Bergen Township of Hudson county received $400,000 for their JFK Boulevard East Streetscape while ten other municipalities received from $150,000 and $400,000 for a myriad of projects.

Contact your local Division of Local Government Services District Office for additional information. Visit http://www.state.nj.us/transportation/business/localaid/office.shtm.
Sources: "New Jersey Department of Transportation Centers of Place Handbook: Procedures for Local Aid for Centers of Place Program, November 1998" and http://www.state.nj.us/transportation/lgs/.

County Aid Program
Currently, County Aid is used for the improvement of public roads and bridges under county jurisdiction. Public transportation, bicycle and pedestrian projects, and other transportation initiatives are eligible for funds.

This program provides funding to counties for transportation projects. These funds are allocated to New Jersey's 21 counties by a formula that takes into account road mileage and population. Annually, each county develops an Annual Transportation Program that identifies all projects to be undertaken and their estimated cost. Projects may include improvements to public roads and bridges under county jurisdiction, public transportation or other transportation related work. Funding can be used for design, ROW, and construction.

Independent pedestrian and bicycle projects can be funded under the County Aid program; however, few independent pedestrian and bicycle projects have been funded.

As state funded projects, all projects funded under the county aid program are subject to the NJDOT policy that requires that all bicycle and pedestrian traffic should be incorporated into the planning, design, construction and operation of all projects and programs funded or processed by the NJDOT. The Department of Transportation will continue efforts to encourage counties to comply with this policy mandate. For more information, visit their website at http://www.state.nj.us/transportation/business/localaid/countyaid.shtm.

Municipal Aid Program
Currently, funds are appropriated by the legislature for municipalities in each county based on a formula contained in legislation. These funds can be used for a variety of transportation projects including bicycle and pedestrian related projects. Additional funds are allotted for municipalities that qualify for Urban Aid.

The Municipal Aid program provides funding to municipalities for transportation projects. Funding is made available for municipalities in each county based on a formula that takes into account municipal road mileage within the county and municipal population. These funds are allocated to individual projects within various municipalities through a competitive process. Funding is allotted to municipalities that qualify for Urban Aid under N.J.S.A. 52:D-178 et seq. All 566 municipalities may apply. Projects may be improvements to public roads and bridges under municipal jurisdiction. Applications are submitted to the Division of Local Aid and Economic Development District Office. The results are presented to a Screening Committee comprised of Municipal Engineers and NJDOT staff, appointed by the Commissioner. The Committee evaluates the projects and makes recommendations to the Commissioner for approval.

NJDOT will pay 75% of the award amount at the time that the award of construction is approved by the NJDOT. The remaining amount is paid upon project completion.

As is the case with the County Aid program, independent pedestrian and bicycle projects can be funded under the Municipal Aid program; however, few if any independent pedestrian and bicycle projects have been funded through this program.

As with county aid projects, all projects funded under the Municipal Aid program are subject to NJDOT policy that requires that all bicycle and pedestrian traffic be incorporated into the planning, design, construction and operation of all projects and programs funded or processed by the NJDOT. More information is located at http://www.state.nj.us/transportation/business/localaid/municaid.shtm.

Discretionary Funding/Local Aid Infrastructure Fund
Currently, subject to funding appropriations, a discretionary fund is established to address emergencies and regional needs throughout the state. Any county or municipality may apply at any time. Under this program, a county or municipality may apply for funding for pedestrian safety and bikeway projects.

The Discretionary Aid program provides funding to address emergency or regional needs throughout the state. Any county or municipality may apply at any time. These projects are approved at the discretion of the Commissioner.

As state funded projects, all projects funded under the discretionary aid program are subject to NJDOT policy which requires that all bicycle and pedestrian traffic should be incorporated into the planning, design, construction and operation of all projects and programs funded or processed by NJDOT.

NJDOT will pay 75% of the award amount at the time of the award of construction with the remaining amount to be paid upon project completion. To gain more information, visit their website at http://www.state.nj.us/transportation/business/localaid/descrfunding.shtm.

Safe Routes to School
This program is funded at $612 million over federal fiscal years 2005-2009 to fund projects that improve safety for school children walking or bicycling to school. New Jersey will receive approximately $15 million for fiscal years 2005-2009. It focuses on projects that create safer walkwats and bikeways, safer street crossings, and improve motorists' awareness of school children. For more information visit their website at www.state.nj.us/transportation/community/srts.

Bikeways Projects
This program provides funds for municipalities and counties for the construction of bicycle projects. These could include roadway improvements, which enable a roadway or street to safely accommodate bicycle traffic, or designated bikeways (signed bike routes, bike lanes or multi-use trails). The solicitation for project applications occurs at the same time as the solicitation for municipal aid projects. Special consideration will be given to bikeways that are physically separated from motorized vehicle traffic by an open space or barrier. 2008 recipients included Bordentown Township in Burlington County for the Joseph Lawrence Park Pedestrian/Bike Path as well as Princeton Township in Mercer County for their Stony Brook Regional Bicycle and Pedestrian Pathway. The program is administered by NJDOT's Division of Local Government Services. For more information, their website is http://www.state.nj.us/transportation/business/localaid/bikewaysf.shtm

Urban Enterprise Zones (UEZ)
Several communities in New Jersey have used Urban Enterprise Zones to fund pedestrian and bicycle facilities. The Urban Enterprise Zone Program (UEZ), enacted by the State Legislature in 1983, is meant to revitalize the State's most distressed urban communities through the creation of private sector jobs and public and private investment in targeted areas within these communities. The UEZ Authority usually designates around 30% of a city as a UEZ. New Jersey has established 32 UEZs covering 37 economically distressed cities.

More information is available at http://www.newjerseycommerce.org/about_uez_program.shtml or by calling (609) 777-0885.

Office of Green Acres
The Green Acres program provides loans and grants to counties, towns and nonprofit land trusts to preserve land and develop parks for recreation and conservation purposes. (In a separate part of the program, Green Acres also directly purchases land for the state to increase the state's ownership of open space). The open space land that is purchased by the local government or nonprofit can be used for outdoor recreation, which is why the program is important for funding pedestrian and bicycle projects. The development of bikeways, trails, and other outdoor recreation is eligible for Green Acres funding.

Currently, the mission of the Office of Green Acres is to achieve, in partnership with others, a system of interconnected open spaces that protect, preserve, and enhance New Jersey's natural environment, which serves the historic, scenic, and recreational needs of the public through use and enjoyment. Green Acres' primary focus is acquiring land that creates linkages between existing protected lands to form open space corridors. These corridors provide linear habitat for wildlife to move through, parkland for recreation, and areas of scenic beauty between towns and urban centers. Recreation needs are as diverse as the people who play. To meet these needs, Green Acres funds different types of parks in a variety of settings. Whether in rural, suburban, or urban areas, parks play an important role in sustaining New Jersey's high quality of life. Increasingly, Green Acres gathers other public and private partners together to assist in buying and managing open space. The Program works with municipal and county governments, nonprofit organizations, and the state Farmland Preservation Program to meet compatible conservation goals. To gather more information, visit http://www.nj.gov/dep/greenacres/ or call Deputy Administrator Gary M. Rice at 609-984-0500.

County or Municipal Capital (Public Works) Funding

County or municipal funding can be used to fund pedestrian improvements including sidewalks, trails, crosswalks signals, traffic calming and other projects on rights of way under county or municipal jurisdiction, by including the project in the municipal (or county) budget, or bonding for it in the same way bonds are used to fund the construction and rehabilitation of roadway improvements for cars. Pedestrian improvements can be fully or partially assessed against the property owners along whose frontage the improvement (most commonly, a sidewalk) is placed. As with other categories of funding, bicycle and pedestrian improvements may be incidental to larger roadway projects, or they can be independent.

Even small amounts of funding from the county or municipality can be very important since they may be used to leverage or show local commitment in applications for other funding sources (e.g., TE, Local Aid For Centers, etc.).

Special Improvement Districts (SIDs)

Another form of municipal funding is through the creation of a local Special Improvement District. The funding is used for infrastructure improvements, including pedestrian improvements within the district. This form of funding can be used to leverage or show local commitment in applications for other funding sources. Impetus for SID usually comes from business and property owners hoping to attract new customers by cleaning up sidewalks, improving parks, etc. Property owners within the District are assessed a special fee to cover the cost of the improvements.

Transportation Development Districts (TDD)

TDDs are joint state/county programs in New Jersey in which transportation improvements within a defined growth area are funded through a combination of public funding and developer

contributions (for new developments) within the district. Independent pedestrian improvements can be included in the infrastructure improvement plan developed through a joint planning process for the district, and funded through the TDD. TDDs must have a plan of development consistent with other land use and development plans. They are a convenient and lawful method by which municipalities and counties can agree together on methods to raise revenue to fund infrastructure and other development related costs.

Developer Provided Facilities

The Residential Site Improvement Standards currently in effect in New Jersey require new residential developments to include sidewalks.

Other municipal and state zoning or access code regulations have been used to require developers to provide both onsite and offsite improvements to benefit bicycle and pedestrian traffic.

Open Space Trust Funds

Many counties have established open space trust funds, which can be used to purchase land for bicycle and pedestrian facilities. For example, Atlantic County used $459,000 from the Atlantic County Open Space Trust Fund to help pay for the Atlantic County Bikeway East. Other counties also have open space trust funds or an open space tax, including Bergen, Burlington, Camden, Cape May, Cumberland, Essex, Gloucester, Hunterdon, Mercer, Middlesex, Morris, Ocean, Passaic, Somerset, Sussex, Union and Warren.

The Bergen County Open Space, Recreation, Farmland and Historic Preservation Trust fund is funded through an annual property tax assessment and is used to preserve land, improve and develop outdoor recreation opportunities, preserve farmland, and improve historic areas. At least thirty percent of the money is distributed to municipalities to support their efforts in these areas. Additional information can be obtained from Mr. Robert Abbatomarco at 201-336-6446, rabbatomarco@co.bergen.nj.us, or Open Space, Recreation, Farmland & Historic Preservation Trust Fund, Bergen County Department of Planning & Economic Development, ONE Bergen County Plaza, Fourth Floor, Hackensack, New Jersey 07601-7000.

The Hunterdon County Open Space, Farmland and Historic Preservation Trust Fund is funded through property taxes and funds the preservation of lands for many purposes, including recreation, conservation, farmland and general open space and historic preservation. The funds can also be distributed to municipalities or charitable organizations for similar preservation purposes. The current fund does not provide for development of any facilities. Additional information about this fund can be obtained at www.co.hunterdon.nj.us/openspachtm, the Planning Board at (908)788-1490 , or Hunterdon County Open Space Trust Fund Program, Route 12 County Complex, Building #1, PO Box 2900, Flemington, New Jersey, 08822-2900.

Many municipal governments also have open space funding programs. Counties and

municipalities with open space taxes can receive more money in matching grants than local governments that do not, as described in the Green Acres section of this document above. Manalapan is one of many townships with an open space tax and an open space element in their comprehensive plan. The open space element lays out the properties that the township hopes to acquire. Part of the open space element includes an "Action Plan" to apply for funds from the Green Acres program to buy their proposed open space lands.

Some private organizations also have established open space trust funds, including the Passaic River Coalition, which has established a Land Trust. Among other activities, the Land Trust acquires land for recreation.
Source: Pedestrian Bicycle Resource Project database; municipal and county websites; Passaic River Coalition website.

Other Funding Sources

Bicycles Belong
The Bicycles Belong Coalition is sponsored by member companies of the American bicycle industry. The Coalition's stated goal is to put more people on bikes more often through the implementation of TEA-21. One of the Coalition's primary activities is the funding of local bicycle advocacy organizations that are trying to ensure that TEA-21-funded bicycle or trail facilities get built. They concentrate efforts in 4 areas: federal policy, national partnerships, community grants and promoting bicycling. Grants are awarded for up to $10,000 on a rolling basis. Between 2002 and 2005, bicycles belong invested $1 million in a lobbying effort that involved several national bicycle advocacy groups. Information about the Coalition, including grant applications and related information, is on the web at www.bikesbelong.org. They can also be contacted at:

Bikes Belong
1368 Beacon Street, Suite 102
Brookline, MA 02446-2800
617-734-2800 Fax: 617-734-2810

Local School Districts
Local communities with bicycle/pedestrian plans that effect schools or will serve schools can approach local school districts or private schools about funding those projects. The Phillipsburg Board of Education in Lopatcong Township, Warren County, has pledged to build trails near a proposed new high school, which would be built adjacent to a Lopatcong Township recreation center. As part of the discussions with the Board of Education concerning the new high school, the Board agreed to construct part of a proposed bikeway on the Board of Education property. Another example is in Hightstown, in Mercer County. The borough, the county, the state and the Peddie School are sharing the costs of engineering and constructing pedestrian improvements to a bridge that, in part, connects faculty housing to the school.