

JANUARY 2015

CAMDEN COUNTY

BICYCLING & MULTI-USE TRAILS PLAN



Prepared by:



Prepared for:





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We serve a diverse region of nine counties: Bucks, Chester, Delaware, Montgomery, and Philadelphia in Pennsylvania; and Burlington, Camden, Gloucester, and Mercer in New Jersey. DVRPC is the federally designated Metropolitan Planning Organization for the Greater Philadelphia Region — leading the way to a better future.



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CAMDEN COUNTY Plan

Adopted: October 28, 2014

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10/28/14

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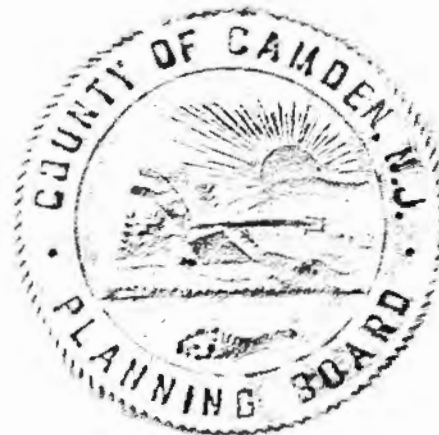


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Chapter 1

PLAN PURPOSE AND EXISTING INITIATIVES

INTRODUCTION

The Camden County Bicycling and Multi-Use Trails Plan began in 2008 as an effort to connect bicyclists and other non-motorized users to attractions in Camden County, such as open space, schools, universities, train stations, shopping destinations, and employment.

Developed by the Delaware Valley Regional Planning Commission (DVRPC), with the assistance of the Camden County Improvement Authority and Camden County Division of Open Space and Farmland Preservation, as well as with input from municipal stakeholders and the public, this network will enhance travel for pedestrians and bicyclists of all levels and improve the quality of life for everyone who lives and works in the county.

Project Goals

The overarching purpose of this plan is to serve as a guidance document to the County and municipalities who are seeking to enhance local mobility and accessibility throughout the county. This means increasing opportunities for people to walk and bicycle for short trips to school, parks, shopping destinations, and train stations. To achieve this objective, this plan has the following goals:

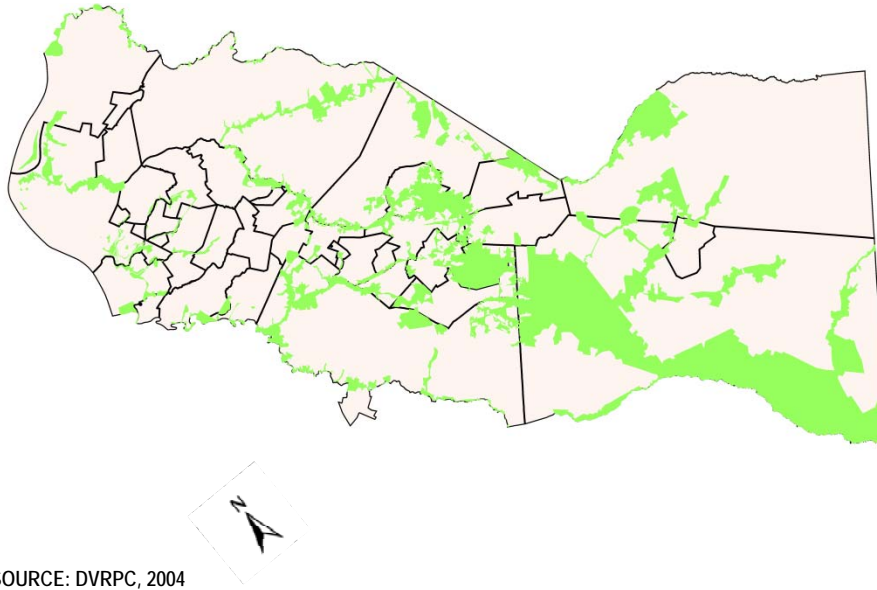
- **Improve connections** to important local destinations such as schools, transit, commercial districts, and employment centers.
- **Define spaces** and bring awareness to local points of interest.
- **Provide additional recreation opportunities** by linking pedestrians and bicyclists to parks and open space, bodies of water, and other outdoor amenities.
- **Increase safety for all users** by using uniform signage and identifying standards for facility design and maintenance.

This report details the evolution of this project, the methods used to develop the network, the types of facilities being recommended in the plan, and the network itself. Policy recommendations are also included.

EVOLUTION OF THE PLAN

This project builds on another DVRPC project, the *Camden County Open Space and Farmland Preservation Plan*, which in 2004 laid out a strategy for protecting open space in Camden County. One key objective of the Open Space Plan was to: **Establish a network of greenways that interconnects public open space and contributes to the conservation and public enjoyment of the county's environment.**

FIGURE 1: PROPOSED GREENWAYS FROM THE 2004 DVRPC PLAN



SOURCE: DVRPC, 2004

The greenways recommended in the open space plan became the jumping-off point for the *Central Camden County Bicycling and Multi-Use Trails Plan*, funded by the Association of New Jersey Environmental Commissions (ANJEC). This report sketched out a network of trails and on-road bicycle facilities throughout the county. The central portion of the county was selected for Phase I because of the presence of existing bicycle facilities, particularly in Gibbsboro Borough and Voorhees Township.

The Central Camden County plan recommended constructing multi-use trails along the recreational greenways

proposed in the open space plan and supplementing them with on- and off-road bicycle facilities that connect residents to schools, train stations, shopping destinations, and employment centers. Bicycle-friendly policies and potential funding sources were also highlighted.

The Camden County Improvement Authority (CCIA) authored Phase II of the project. This phase was also funded by ANJEC and focused on municipalities in the southeast and south-central part of the county, such as Gloucester Township, Haddon Heights Borough, and Magnolia Borough.

In 2011, DVRPC resumed work on Phases III and IV of the project. Phase III focused on the City of Camden, Cherry Hill Township, Gloucester City, and other municipalities in the western portion of the county. Phase IV included Chesilhurst and Pine Hill Boroughs, Waterford Township, and Winslow Township.

The final plan includes earlier phases of the project, updated as necessary. Drafts of the entire county network were shared with county and municipal stakeholders via memos and with the general public at outreach meetings.

TABLE 1: MUNICIPALITIES BY THEIR INITIAL PLAN PHASE

Phase 1	Phase 2	Phase 3	Phase 4
Berlin Borough	Audubon Borough	Audubon Park Borough	Chesilhurst Borough
Berlin Township	Barrington Borough	Camden City	Pine Hill Borough
Clementon Borough	Bellmawr Borough	Cherry Hill Township	Waterford Township
Gibbsboro Borough	Brooklawn Borough	Collingswood Borough	Winslow Township
Hi-Nella Borough	Gloucester Township	Gloucester City	
Laurel Springs Borough	Haddon Township	Merchantville Borough	
Lindenwold Borough	Haddon Heights Borough	Oaklyn Borough	
Pine Valley Borough	Haddonfield Borough	Pennsauken Township	
Somerdale Borough	Lawnside Borough	Woodlynne Borough	
Stratford Borough	Magnolia Borough		
Voorhees Township	Mt. Ephraim Borough		
	Runnemede Borough		
	Tavistock Borough		

SOURCE: DVRPC, 2008

OTHER PROJECTS AND INITIATIVES

To the benefit of this project and others, a number of other agencies and advocacy groups in the DVRPC region engage in bicycle and trail planning. Their work was crucial in the development of this plan and was incorporated where applicable. Some of these projects and initiatives are:

Regional Projects

- **The Circuit**

The Circuit is the prioritized regional trail network in the DVRPC region. In 2010 DVRPC received a generous grant from the William Penn Foundation to jump-start regional trail construction. Through that grant, a regional trails advisory committee came into being, and the Circuit was created.

County Projects

- **Cross County Connection TMA Bicycle Inventories**

Cross County Connection, the transportation management association for southern New Jersey (including Camden County), regularly surveys municipalities on the locations of existing and proposed on- and off-road bicycle facilities. These inventories were used in the creation of base maps and other materials important to this project.

Local Projects

■ Camden GreenWay

A project managed by the Coopers Ferry Partnership, the Camden GreenWay is a proposed network of trails in the City of Camden and its immediate suburbs.

■ Municipal Bicycle and Pedestrian Plans

Several Camden County municipalities, including Cherry Hill Township and Gibbsboro Borough, have developed their own plans for on- and off-road bicycle facilities. The recommendations in this plan follow those made in these other documents.

Chapter 2

PLAN DEVELOPMENT

The development of the Camden County Bicycling and Multi-Use Trails Plan required the consideration of various factors. This section details the steps involved in determining the types of on- and off-road facilities that the network would require, as well as the local attractors that should determine the locations of those facilities. DVRPC hosted a series of meetings and workshops with each municipality and local stakeholders to determine proper configurations, and also organized multiple public events that allowed for comments and final edits. The facilities proposed in this report are recommendations, and if, in the future, parallel facilities are deemed more suitable for inclusion in the network, then those should be used.

TASK 1: INVENTORY EXISTING FACILITIES

The first step in the creation of the Camden County network was to inventory the existing bicycle facilities. The two types of existing facilities are bicycle lanes and multi-use trails. Bicycle lanes are on-road facilities delineated by striping and are typically located on wider roads with higher speeds and traffic volumes. Multi-use trails are physically separated from vehicular traffic, giving bicyclists and other users their own right-of-way. These trails can be located in parks or other recreation facilities as well as adjacent to existing roadways. These trails can also be used by joggers, walkers, and other recreational users.

There are already a number of roadways with bicycle lanes in the county, but they are dispersed and disconnected. For example, Voorhees Township has a number of roadways already striped with bicycle lanes, but no municipality has a full bicycle network.

Several multi-use trails are also present in the county, including the Cooper River Trail and trails through New Brooklyn and Berlin Parks. However, it is important that these trails are connected to each other, the surrounding municipalities, and local attractors, when possible.

The designations for existing facilities were as follows:

- **Bicycle Lanes**

A bicycle lane is a portion of a roadway that has been designated by striping, signing, and pavement markings for the preferential or exclusive use of bicyclists. Bike lanes are intended to delineate the right-of-way assigned to bicyclists and motorists and to provide for more predictable movements by each. They typically are not required for low-volume, low-speed streets and roads where most bicyclists can already ride comfortably.

- **Existing Multi-Use Trails**

The primary trails in the bicycle network are off-road, multi-use facilities serving regional functions as non-motorized transportation corridors as well as recreational destinations for bicyclists, joggers, and other users. Existing trails are divided into two categories: Circuit Trails and Other Trails.

TASK 2: LOCATE COUNTY ATTRACTORS AND SCHOOLS

To determine locations where people may want to bike or walk to, a number of county attractions were mapped. These were:

- Schools (elementary and secondary)
- Colleges and universities
- Parks and open space
- Bodies of water (lakes and rivers)
- Train stations (PATCO, RiverLINE, and Atlantic City Line)
- Retail districts
- Employment centers

As noted previously, one of the primary goals of the Camden County Bicycling and Multi-Use Trails Plan is to provide area residents with better bicycle access to local attractors within the county. If access to these points is not available via bicycle or foot, few area residents will have the opportunity to bicycle or walk to work, school, or shopping, and bicycling and walking will remain primarily a recreational activity.

County attractors selected for inclusion in the plan are schools and colleges, train stations, retail districts, recreational facilities and open space, and large employers (500 or more employees). Existing bicycle facilities already provide some access to these attractors in some areas of the county. There is, however, little connection between most residential neighborhoods in the county and the local attractors.

Although there are many shopping centers and malls dispersed throughout the county, for this plan, only traditional downtown retail districts were included. These development patterns are more conducive to walk up and bike up traffic and therefore were reasoned to be the most significant commercial areas to make accessible. The retail districts that were used for this plan are the ones identified in the 2013 DVRPC publication *Revitalizing Suburban Downtown Retail Districts* (publication number 13070). As part of this study, DVRPC staff identified and mapped thriving suburban centers that have the land use patterns of traditional downtown development.

All of the New Jersey stations on the PATCO line are located within Camden County and provide important connections to intra-county destinations, as well as Philadelphia. Lindenwold Station is both the terminus of the PATCO line and a stop on the NJ Transit Atlantic City Line. Additionally, Atco Station and Cherry Hill Station, also on the NJ Transit Atlantic City Line, are located in Waterford Township and Cherry Hill, respectively. The new Pennsauken Transit Center, with RiverLINE and Atlantic City Line service, as well as several other RiverLINE stations, are located in Pennsauken and Camden City. The connectivity these train lines provide is further boosted by PATCO and NJ Transit bicycle policies. Bicycles are permitted on all PATCO trains, NJ Transit trains, and RiverLINE trains. PATCO provides bicycle parking at all stations, and NJ Transit is also working to outfit all buses with front-end bicycle racks.

Making sure that local schools are accessible via the proposed network was also an important component of the plan. Currently, there is poor connectivity between residential neighborhoods and their schools, making it difficult and potentially dangerous for children to walk or bicycle to school. This forces school districts to provide buses to students who live in close proximity to the school. The lack of connectivity also leads many parents to choose to drive their children to school if buses are not provided.

TASK 3: IDENTIFY TRAIL ALIGNMENTS ALONG PROPOSED GREENWAYS

Using the proposed greenways as a guide, stakeholders sketched trail alignments to better connect the vast array of green space available in the study area. These trails and alignments largely come from existing plans and proposals or have already been constructed and once entirely completed, will serve as important spines of the active transportation network and create the bones of the network that on-road connections were developed around. The following is a description of some of the most prominent existing and proposed trail alignments.

Cooper River Park – Existing

Cooper River Park is one of the major recreational attractions in Camden County. It was created in 1935 and today encompasses over 345 acres across five municipalities. In 2013, the American Planning Association–New Jersey Chapter named Cooper River Park a “Great Place in New Jersey,” an award that recognizes what an important asset it is. The importance of the park’s trails is further signified by the fact that the Cooper River trails are a part of the regional Circuit network.

The county continues to work on improving the park and drawing even more visitors. In 2012 the county worked with a consultant to create a vision plan for the park that will lead future investments and improvements. The main trail facility in the park is an asphalt multi-use path that rings the outer edge of the park, adjacent to North and South Park drives. Improving access to, and within, the park is a goal of this plan and of the park’s vision plan.

Camden GreenWay – Existing and Proposed

Spearheaded by Camden County, Cooper’s Ferry Partnership, and Camden Greenways, Inc., the Camden GreenWay connects the Benjamin Franklin Bridge from Philadelphia, through the City of Camden, to adjacent suburbs and Cooper River Park. The GreenWay provides important access to the Delaware River and Newton Creek and provides additional access to Cooper River Park, as well as other parks and open space in the city. The GreenWay is composed of over 128 miles of multi-use trails and on-street facilities and is incorporated into the Circuit.

East Atlantic Avenue Bikeway – Proposed

This proposed facility would begin in Oaklyn and run along East Atlantic Avenue to Chews Landing Road in Clementon, where it would terminate. This 8.5 mile corridor would be an alternative route to the White Horse Pike (US 30) that would be more hospitable to non-motorized users. The bikeway could potentially be built as an on-road or off-road facility. Paralleling Atlantic Avenue is a Conrail right-of-way that has one active track and additional unused space that is kept mowed and sometimes used by residents for parking. If Conrail was not open to considering sharing or relinquishing this right-of-way, an on-road facility could be pursued instead. This bikeway is also included in the Circuit trail network.

Big Timber Greenway – Proposed

The Big Timber Greenway forms a boundary between Camden and Gloucester counties, from Big Timber Creek’s mouth at a cove in the Delaware River to where the north and south branches fork near Clements Bridge Road. Aerial photography indicates that development has been built right up to the creek’s edge in many cases. The New Jersey Turnpike, NJ 42, Interstate 295, and US 130 all cross the creek at different locations, further breaking up the continuity of the greenway. With proper environmental controls, however, the landfill areas in Bellmawr and Runnemede could be reused as greenway lands. Efforts by bordering Gloucester County municipalities would also be needed to create the greenway. The greenway terminates at the Delaware River, providing an opportunity to increase access to the riverfront, especially if the waterfront promenade is built in Gloucester City.

The Big Timber Greenway traverses many municipalities, including Somerdale, Hi-Nella, Stratford, Laurel Springs, Lindenwold, and Clementon boroughs. Several pieces of the greenway have already been protected by the Camden County Open Space Preservation Trust Fund.

River to Bay Greenway - Proposed

The Trust for Public Land, a national non-profit land conservancy organization, is spearheading efforts to create the River to Bay Greenway, linking the Delaware River in Camden City to the Barnegat Bay. This initiative involves the acquisition of properties in Camden County, as well as Burlington and Ocean counties. The greenway will enhance and connect recreational areas and link many important natural and historical resources as well. A framework for implementation, including a guide for land acquisition and planning activities, was prepared by consultants for the Trust in 2001.

Great Egg Harbor Greenway - Proposed

This greenway links Berlin Park to New Brooklyn Park and continues through the Winslow Wildlife Management Area toward the Atlantic County border. Most of these lands are currently publicly owned either by Camden County, the state of New Jersey, or Winslow Township, with additional land owned by PSE&G.

In 2012 Camden County completed a trail feasibility study (Key Engineers) for the area between Berlin and New Brooklyn Parks.

TASK 4: DETERMINE APPROPRIATE ON-ROAD FACILITIES

In this plan **there are three types of proposed on-road bicycle facilities**, which are referred to as **recommended routes, mixed treatments, and bicycle facilities**. All links in the plan play an important role in creating a meaningful network of bicycle facilities in the county. However, road characteristics vary considerably in terms of cross-sections, speeds, widths, and so forth, and therefore require different approaches that respond to these characteristics. **More information about on-road facility types is provided in Chapter 3.**

Recommended routes are defined as roadways that, due to lower speeds and traffic volumes, do not require bicycle lanes (and in some cases, adding bicycle lanes would not be feasible) but would require consistent signage to announce them as part of the bicycle network and direct users to local attractors. In some cases, shared lane pavement markings (sharrows) would also be warranted.

The second category of facilities is **mixed treatments**. These links are important, but because of road characteristics, additional design is required to choose the most appropriate facilities and treatments. These road segments are generally more constrained, and innovative options are encouraged. Appropriate treatments for these facilities could run the gamut from sharrows to bicycle lanes, depending on the cross-section and available right-of-way. County and municipal engineers and staff will work together to determine what treatments are appropriate where.

The final category is **bicycle facilities**. These facilities are recommended for roadways that have higher speeds and traffic volumes, and the necessary cartway width to stripe bicycle lanes or even buffered bicycle lanes, where possible. These roads are important components of the bicycle network as they will serve as the primary on-road connections. In some cases, the roadways recommended for retrofit would be extensions of already-existing bicycle lanes, closing existing gaps. Many of the roadways recommended for bicycle lanes are county roads, meaning that the local municipality would work with the county on lane maintenance and upkeep.

On the map panels, all facilities are labeled “to be considered” because final engineering and approvals will be necessary for all facilities. Similarly, all facilities on state roads are subject to state approval

and will be implemented and maintained by the state. The facilities recommended for state routes are important components of the bicycle network as presented and the county will work with the state toward implementation, but decision making for these roads lies with NJ DOT.

TASK 5: GATHER STAKEHOLDER AND PUBLIC INPUT

Each phase of the project had its own steering committee, including county and municipal representatives, representatives from Cross County Connection TMA, environmental groups, and bicycling advocates. Steering committees were shown maps of county attractions and existing bicycling facilities and asked to sketch on- and off-road connections. They were also asked to comment on missing attractions and any significant barriers to non-motorized use (such as highway interchanges, for example). Steering committees were also asked to comment on drafts of the plan.

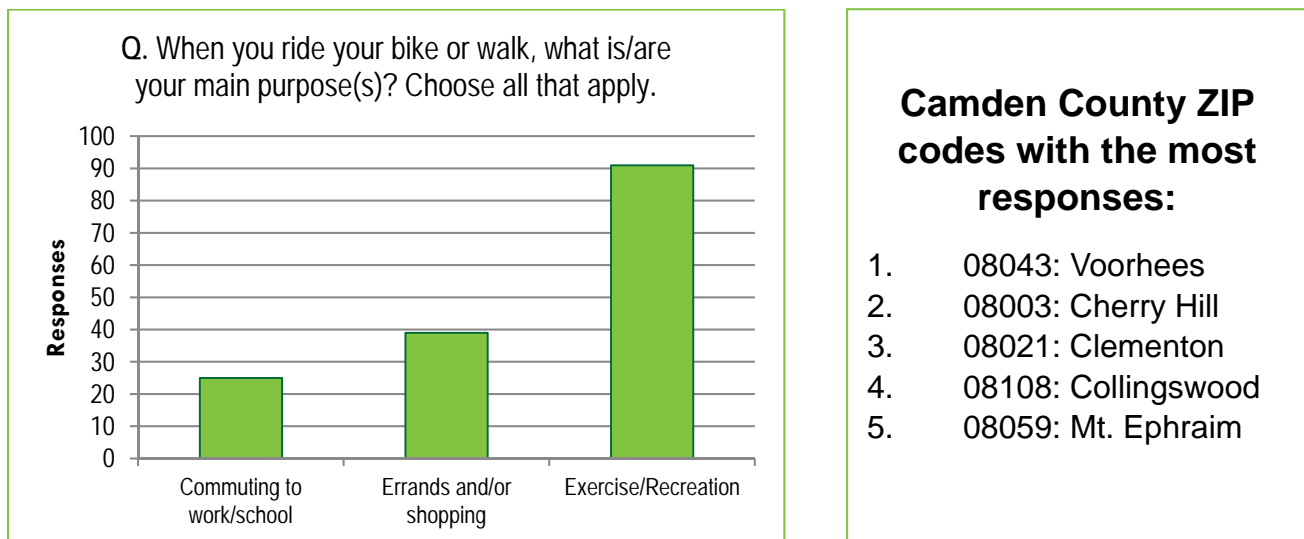
For all phases, public meetings were held so that people could view drafts of the plan network and give comments on the proposed facilities.

Additionally, at the start of Phases III and IV, the public was asked to comment on bicycling, identify attractions and suggest ways to improve conditions for bicyclists and walkers in Camden County using a web-based survey. 108 people completed the survey. Responses were received from 31 different New Jersey ZIP codes. The chart below shows the top five ZIP codes in terms of number of responses received. The ZIP code 08043, located in Voorhees, had the most responses, with eight.

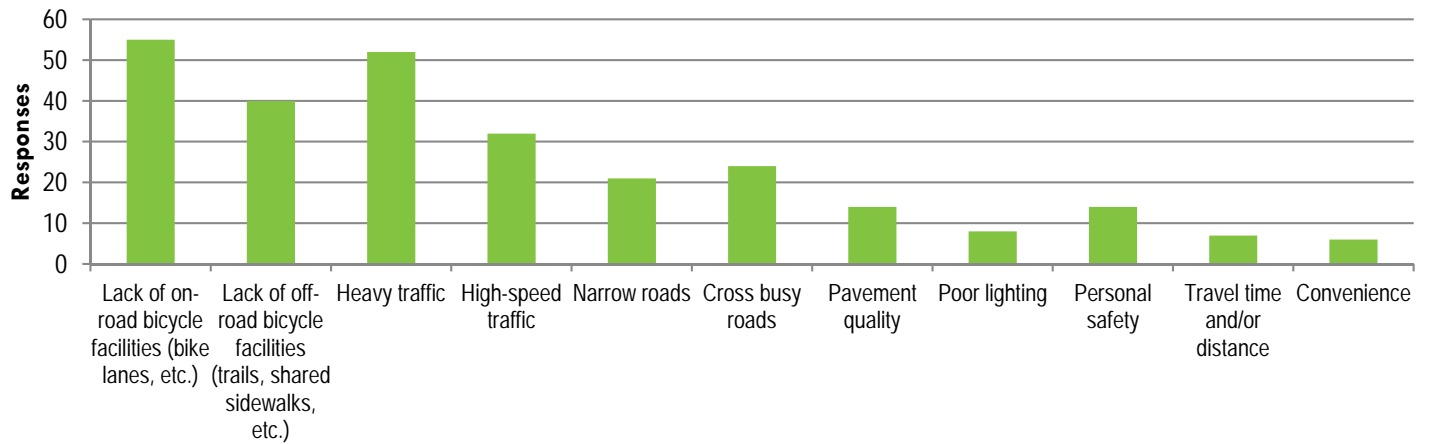
The survey asked respondents to identify locations to where they do, or would like to, walk or bike. This was to ensure that the plan was providing access to the places where users would like to go. Next, the survey asked respondents to indicate their main activity when riding their bike or walking. This multiple-choice question offered five responses: commuting to work/school, errands and/or shopping, exercise/recreation, I don't ride a bike, and other (please specify). The breakdown of responses is shown below.

Finally, respondents were asked to pick the three factors that limited their walking or biking the most, and then to choose the three improvements that would most increase their amount of walking and bicycling. A summary of responses to these questions is shown in Figure 2.

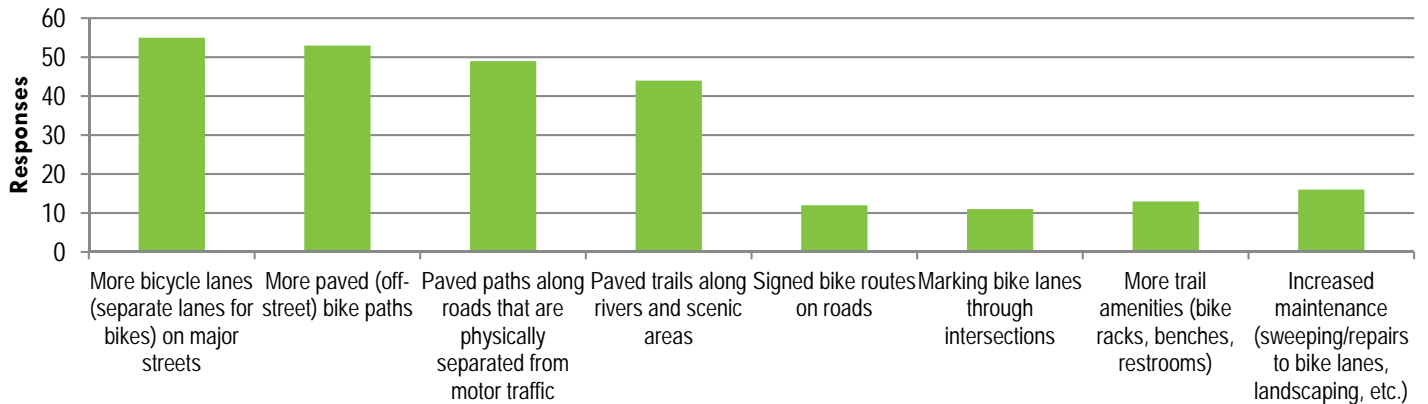
FIGURE 2: WEB SURVEY RESULTS SUMMARY



Q. Which factors prevent you from bicycling or walking more? Pick the three most limiting factors.



Q. Please pick the three improvements which would most influence you to bicycle or walk more often.



SOURCE: DVRPC, 2012

The last public meeting was held in May of 2013 to share a final draft network with the public and solicit a final round of feedback before the plan was finished. This meeting was attended by 50 residents and stakeholders.

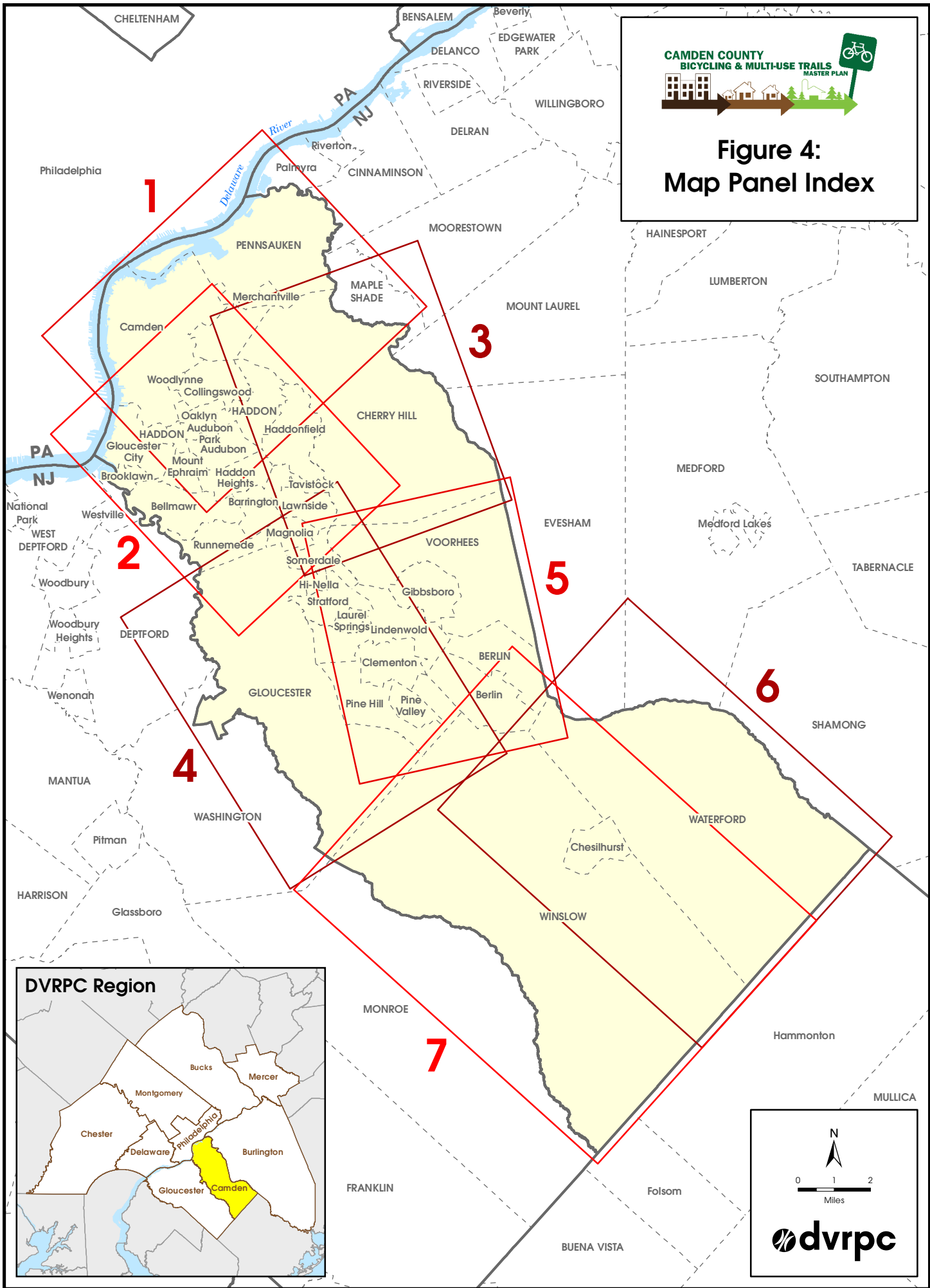
FIGURE 3: GATHERING INPUT AT THE FINAL PUBLIC MEETING



SOURCE: DVRPC, 2013

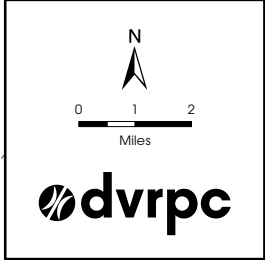
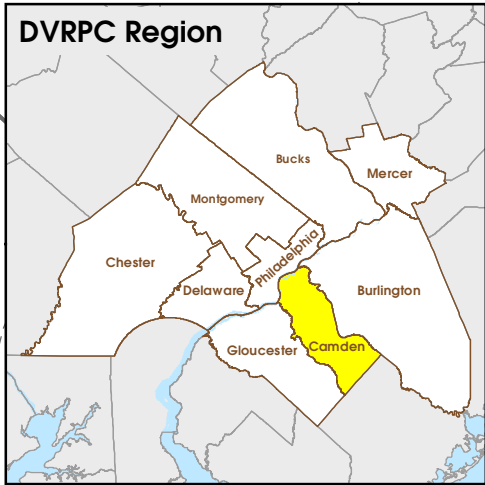
TASK 6: FINALIZE EXISTING AND PROPOSED NETWORKS

Using existing geographic information system (GIS) data and information provided by the public and stakeholders at outreach meetings and through the survey, DVRPC staff mapped the existing bicycle and multi-use facilities, along with county attractions, as described above. This mapping of existing conditions is displayed in Figures 5–11, which show the county divided over seven panels. The first figure, Figure 4, is the map panel index, which shows the geographic area covered by each panel. Detailed mapping of the proposed network is presented in Chapter 3.



**CAMDEN COUNTY
BICYCLING & MULTI-USE TRAILS
MASTER PLAN**

**Figure 4:
Map Panel Index**



**Figure 5:
Existing Facilities
Map Panel 1**

Off-Road Multi-Use Facilities:

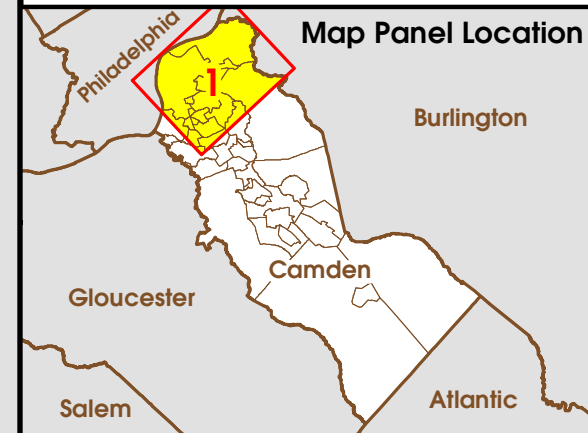
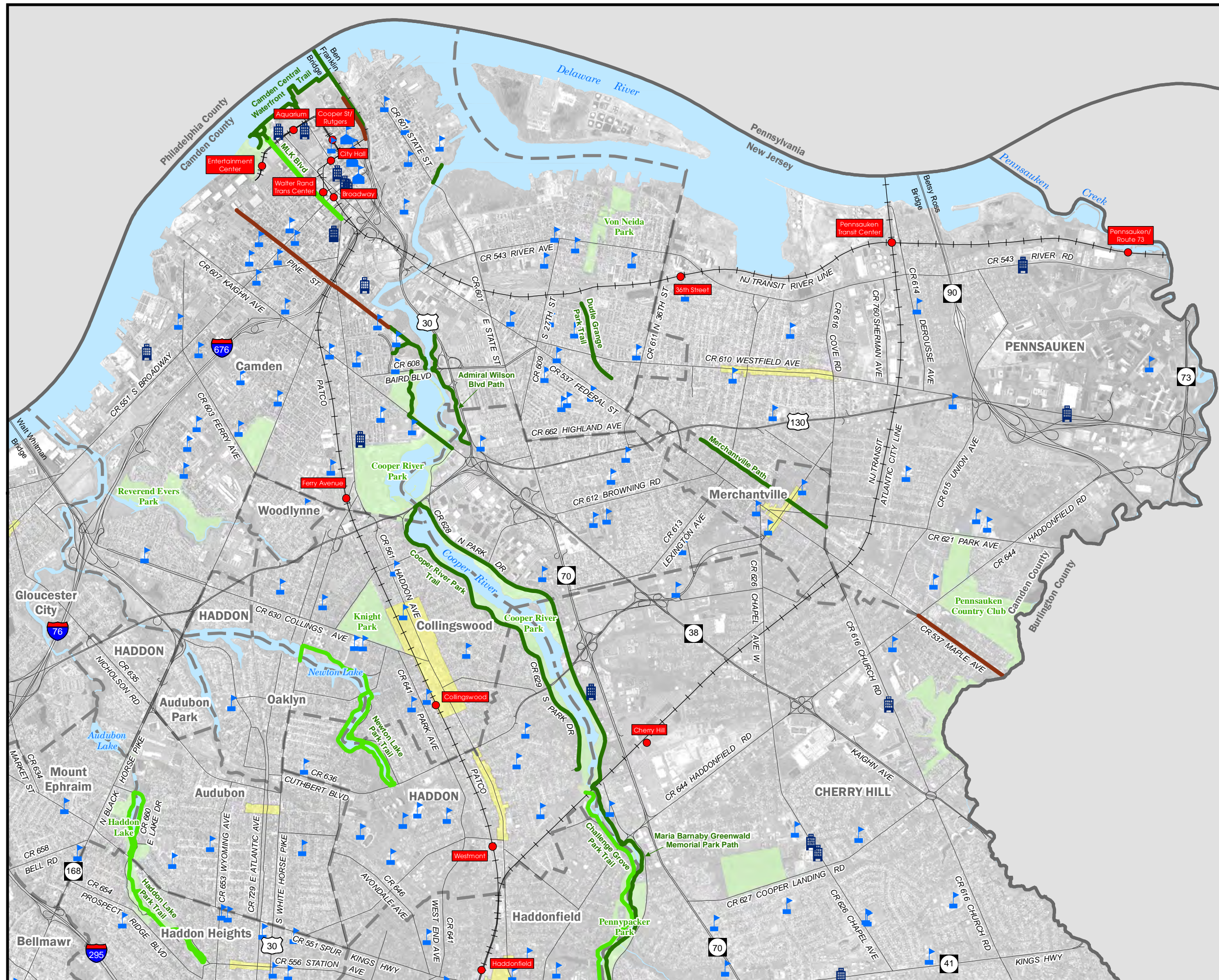
- Circuit Trail
- Other Route

On-Road Facilities:

- Bicycle Lane

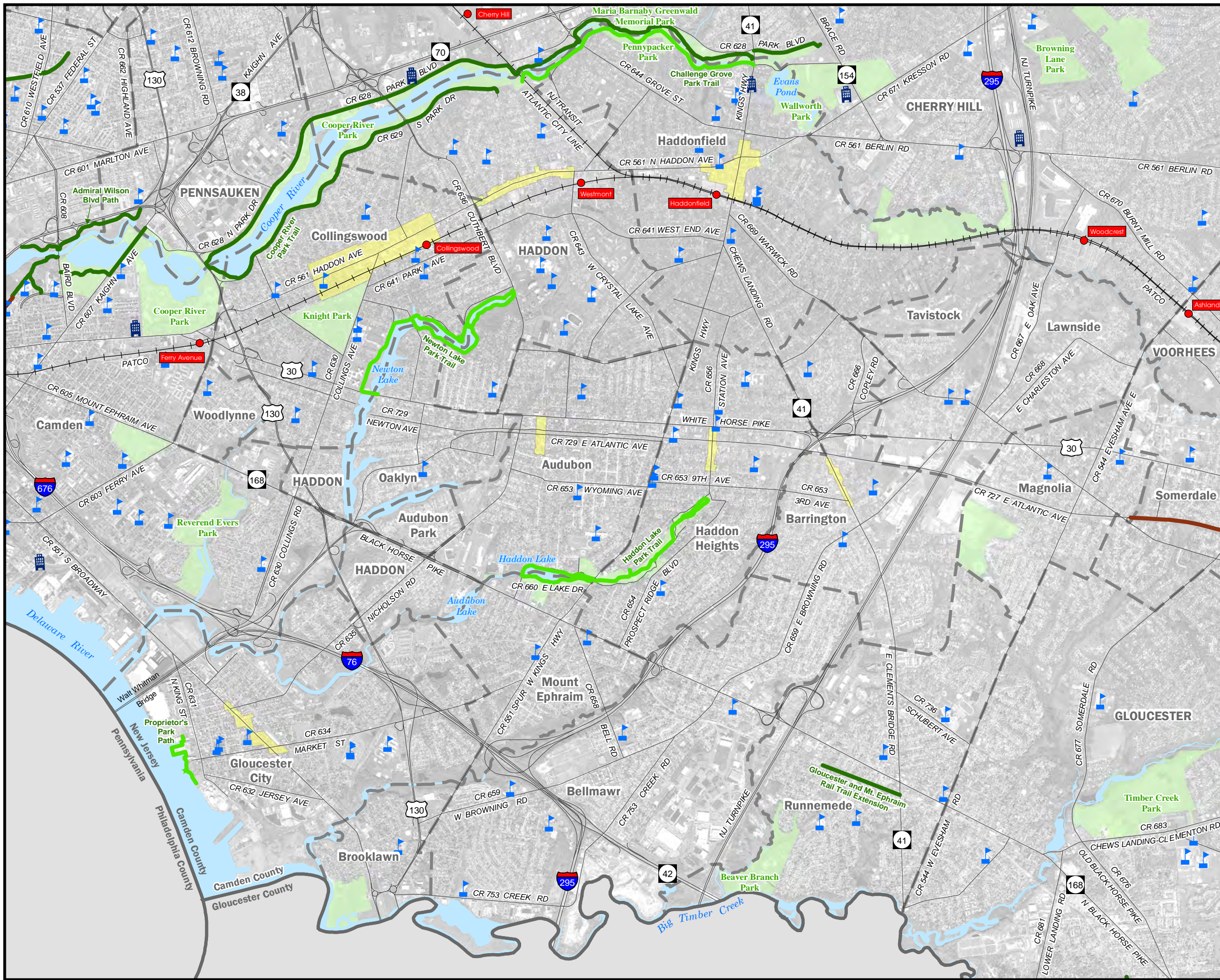
Other Features:

- Ashland
- Passenger Rail Station
- Employer (with 500 or more employees)
- College/University
- Elementary/Secondary School (public & private)
- Downtown Retail District
- Protected Open Space/Park (larger than 25 acres)



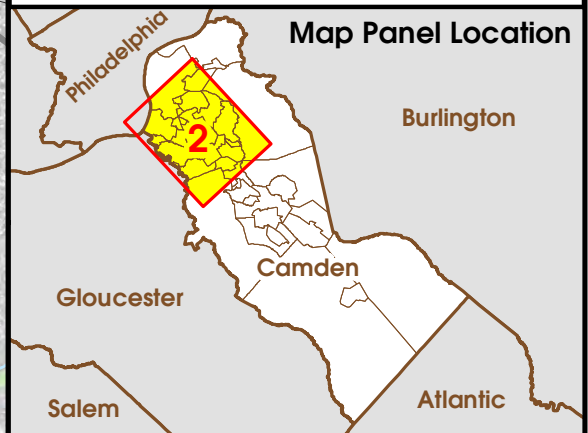
Sources:
 Multi-Use Facilities: DVRPC/Camden County
 Downtown Retail Districts: DVRPC
 Parks: DVRPC Protected Open Space, 2011
 Employer with 500 or more employees: NETS Database, 2010
 Elementary/Secondary Schools: National Center for Education Statistics



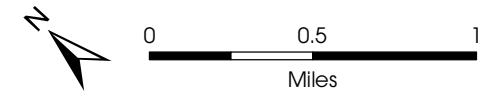


**Figure 6:
Existing Facilities
Map Panel 2**

- Off-Road Multi-Use Facilities:**
- Circuit Trail
 - Other Route
- On-Road Facilities:**
- Bicycle Lane
- Other Features:**
- Passenger Rail Station
 - Employer (with 500 or more employees)
 - College/University
 - Elementary/Secondary School (public & private)
 - Downtown Retail District
 - Protected Open Space/Park (larger than 25 acres)



Sources:
 Multi-Use Facilities: DVRPC/Camden County
 Downtown Retail Districts: DVRPC
 Parks: DVRPC Protected Open Space, 2011
 Employers with 500 or more employees: NETS Database, 2010
 Elementary/Secondary Schools: National Center for Education Statistics



**Figure 7:
Existing Facilities
Map Panel 3**

Off-Road Multi-Use Facilities:

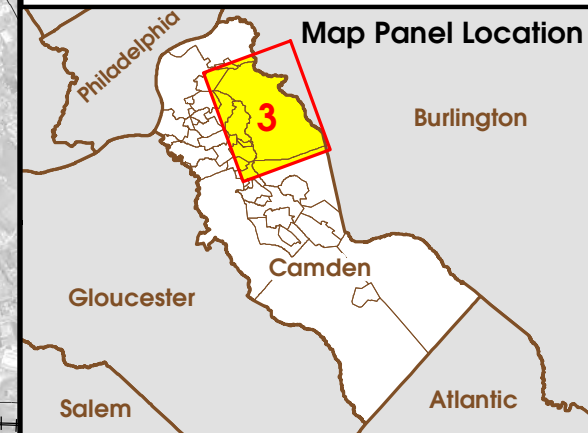
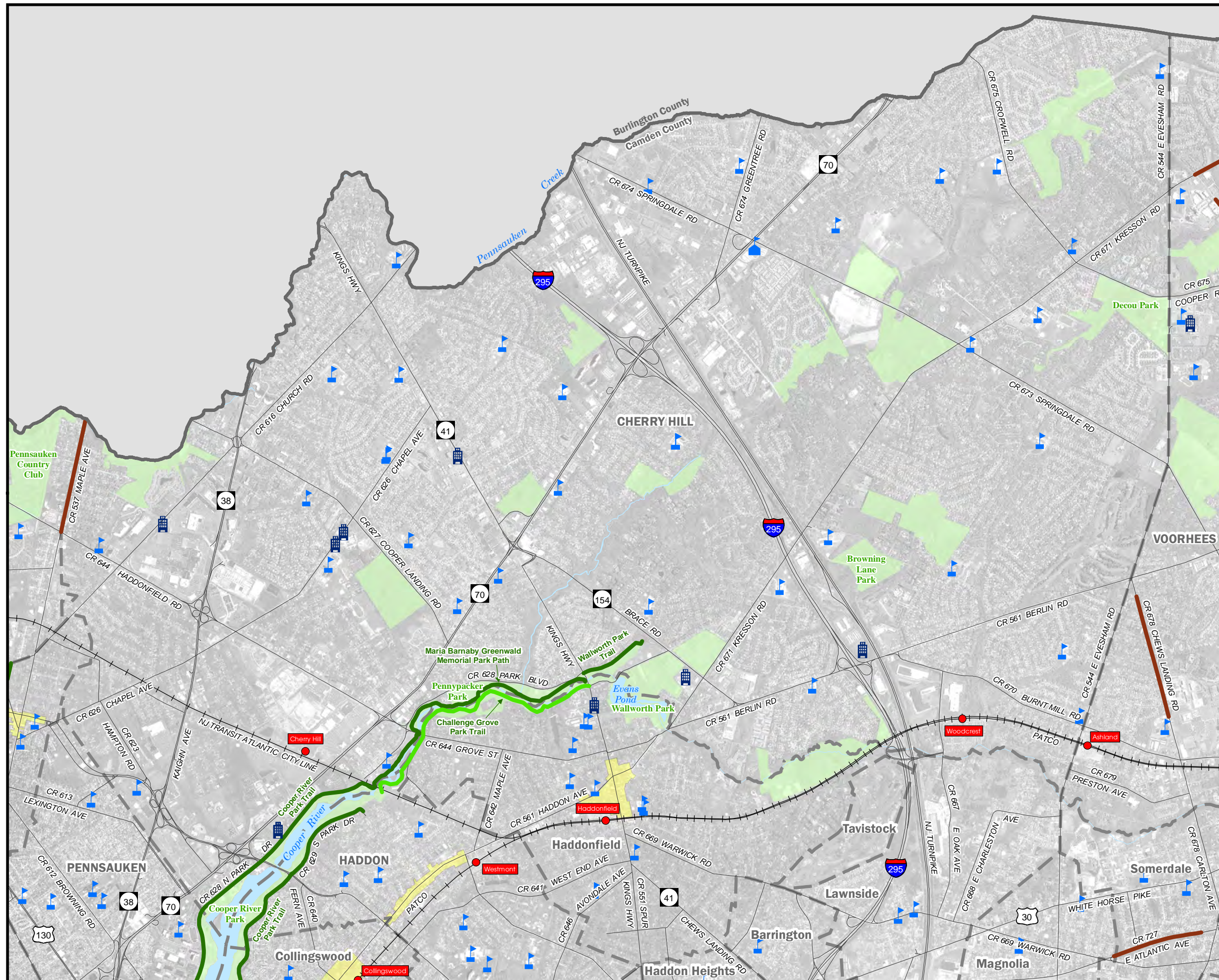
- Circuit Trail
- Other Route

On-Road Facilities:

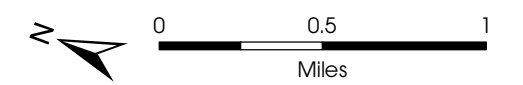
- Bicycle Lane

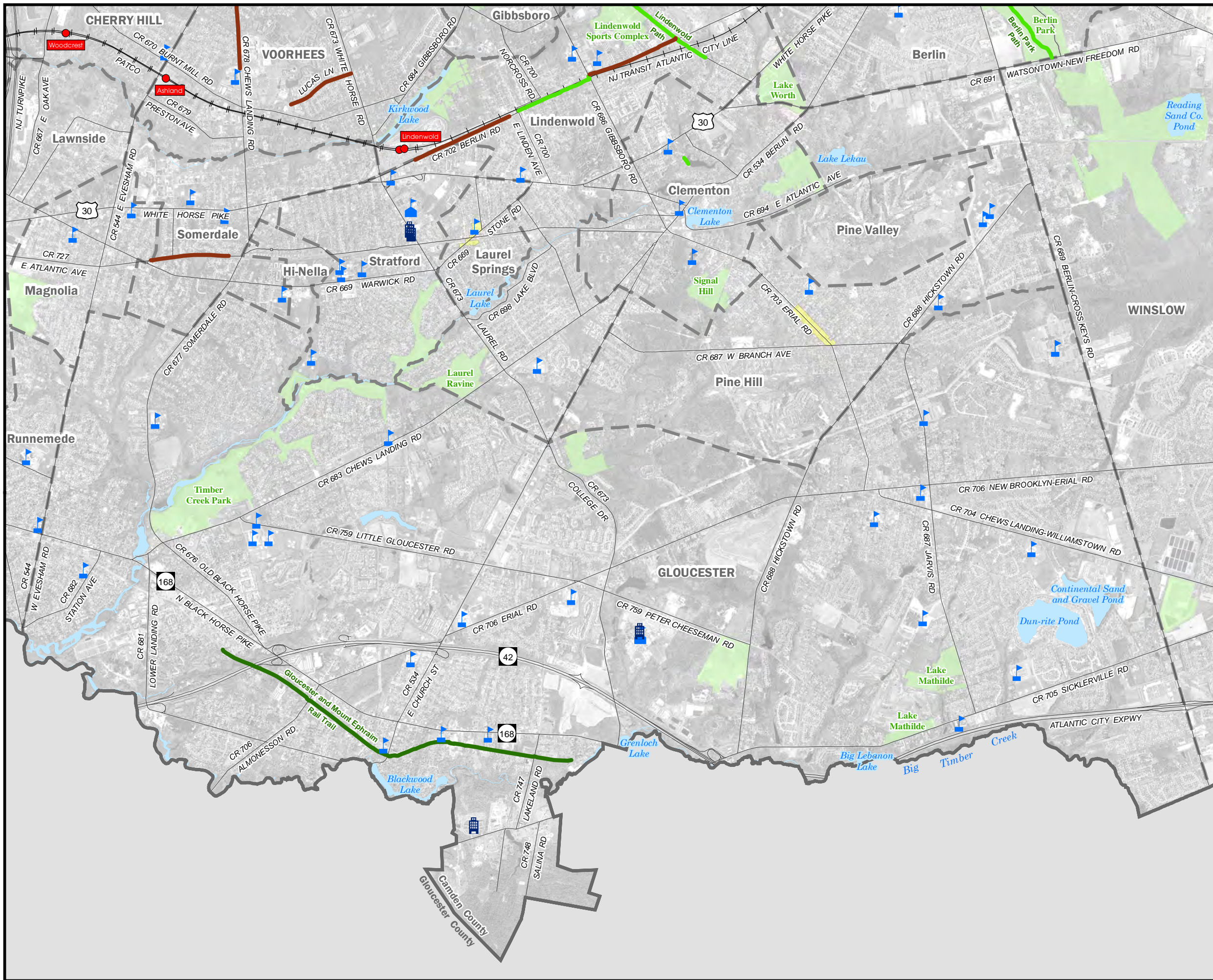
Other Features:

- Passenger Rail Station
- Employer (with 500 or more employees)
- College/University
- Elementary/Secondary School (public & private)
- Downtown Retail District
- Protected Open Space/Park (larger than 25 acres)



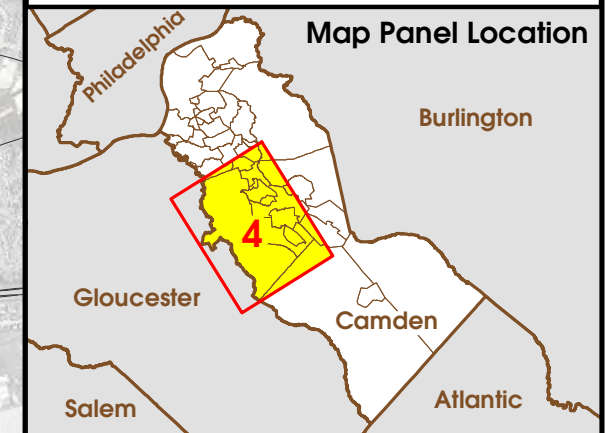
Sources:
 Multi-Use Facilities: DVRPC/Camden County
 Downtown Retail Districts: DVRPC
 Parks: DVRPC Protected Open Space, 2011
 Employer with 500 or more employees: NETS Database, 2010
 Elementary/Secondary Schools: National Center for Education Statistics





**Figure 8:
Existing Facilities
Map Panel 4**

- Off-Road Multi-Use Facilities:**
- Circuit Trail
 - Other Route
- On-Road Facilities:**
- Bicycle Lane
- Other Features:**
- Ashland Passenger Rail Station
 - Employer (with 500 or more employees)
 - College/University
 - Elementary/Secondary School (public & private)
 - Downtown Retail District
 - Protected Open Space/Park (larger than 25 acres)



Sources:
 Multi-Use Facilities: DVRPC/Camden County
 Downtown Retail Districts: DVRPC
 Parks: DVRPC Protected Open Space, 2011
 Employers with 500 or more employees: NETS Database, 2010
 Elementary/Secondary Schools: National Center for Education Statistics



**Figure 9:
Existing Facilities
Map Panel 5**

Off-Road Multi-Use Facilities:

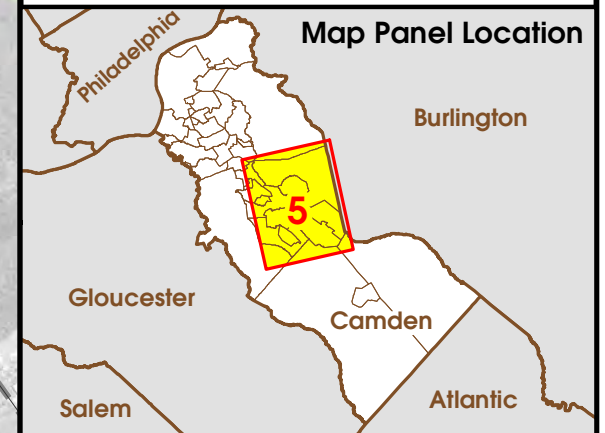
- Circuit Trail
- Other Route

On-Road Facilities:

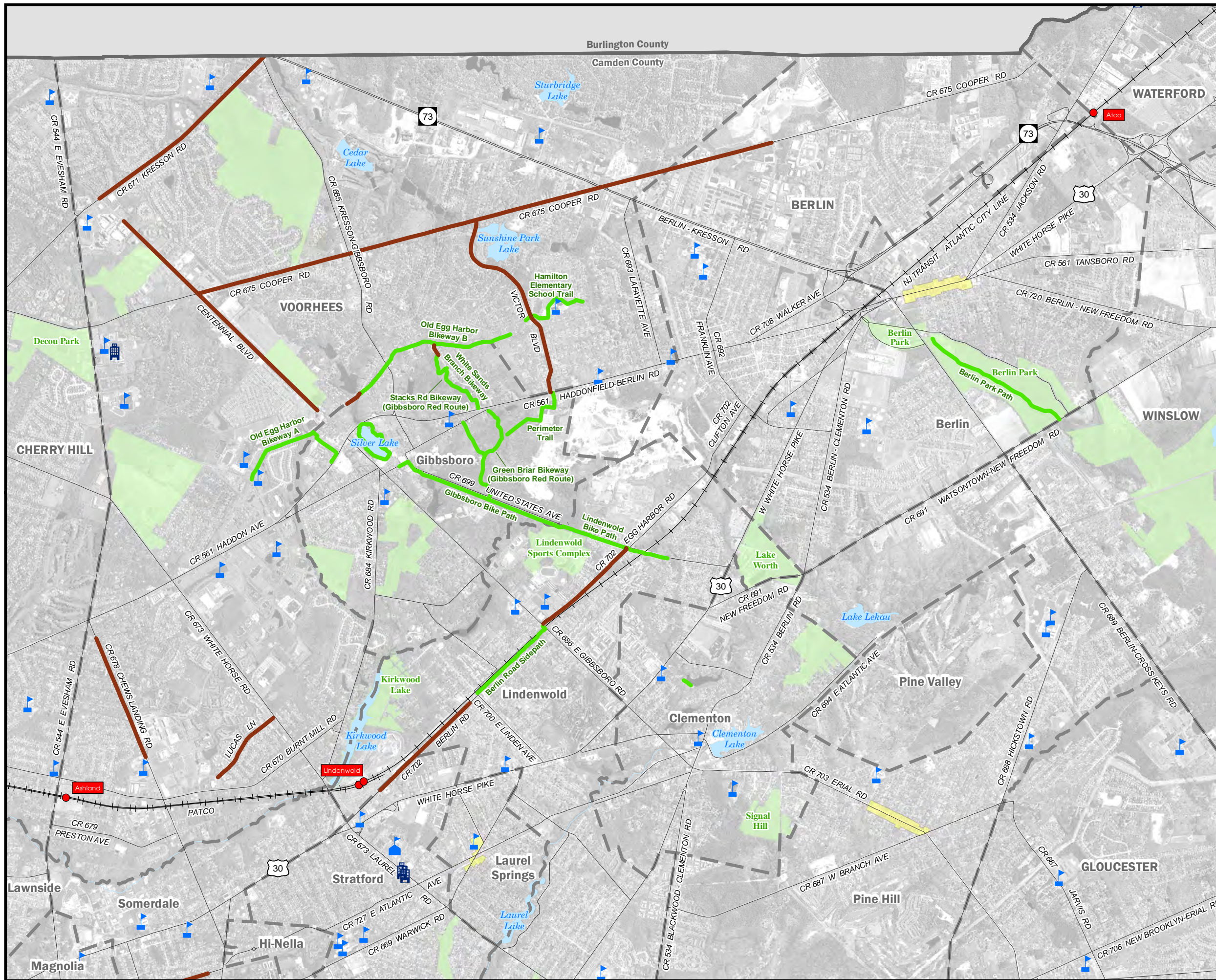
- Bicycle Lane

Other Features:

- Passenger Rail Station
- Employer (with 500 or more employees)
- College/University
- Elementary/Secondary School (public & private)
- Downtown Retail District
- Protected Open Space/Park (larger than 25 acres)



Sources:
 Multi-Use Facilities: DVRPC/Camden County
 Downtown Retail Districts: DVRPC
 Parks: DVRPC Protected Open Space, 2011
 Employers with 500 or more employees: NETS Database, 2010
 Elementary/Secondary Schools: National Center for Education Statistics



**Figure 10:
Existing Facilities
Map Panel 6**

Off-Road Multi-Use Facilities:

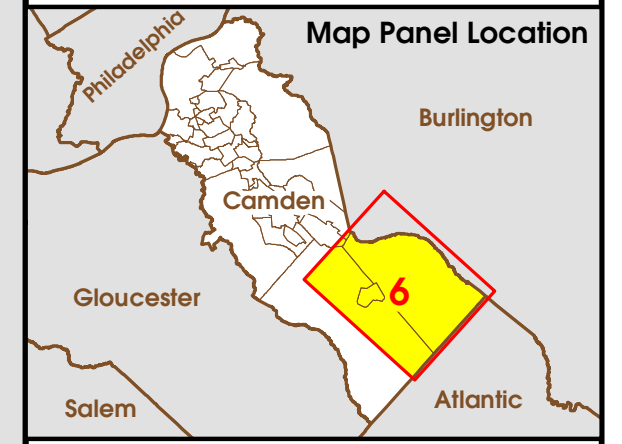
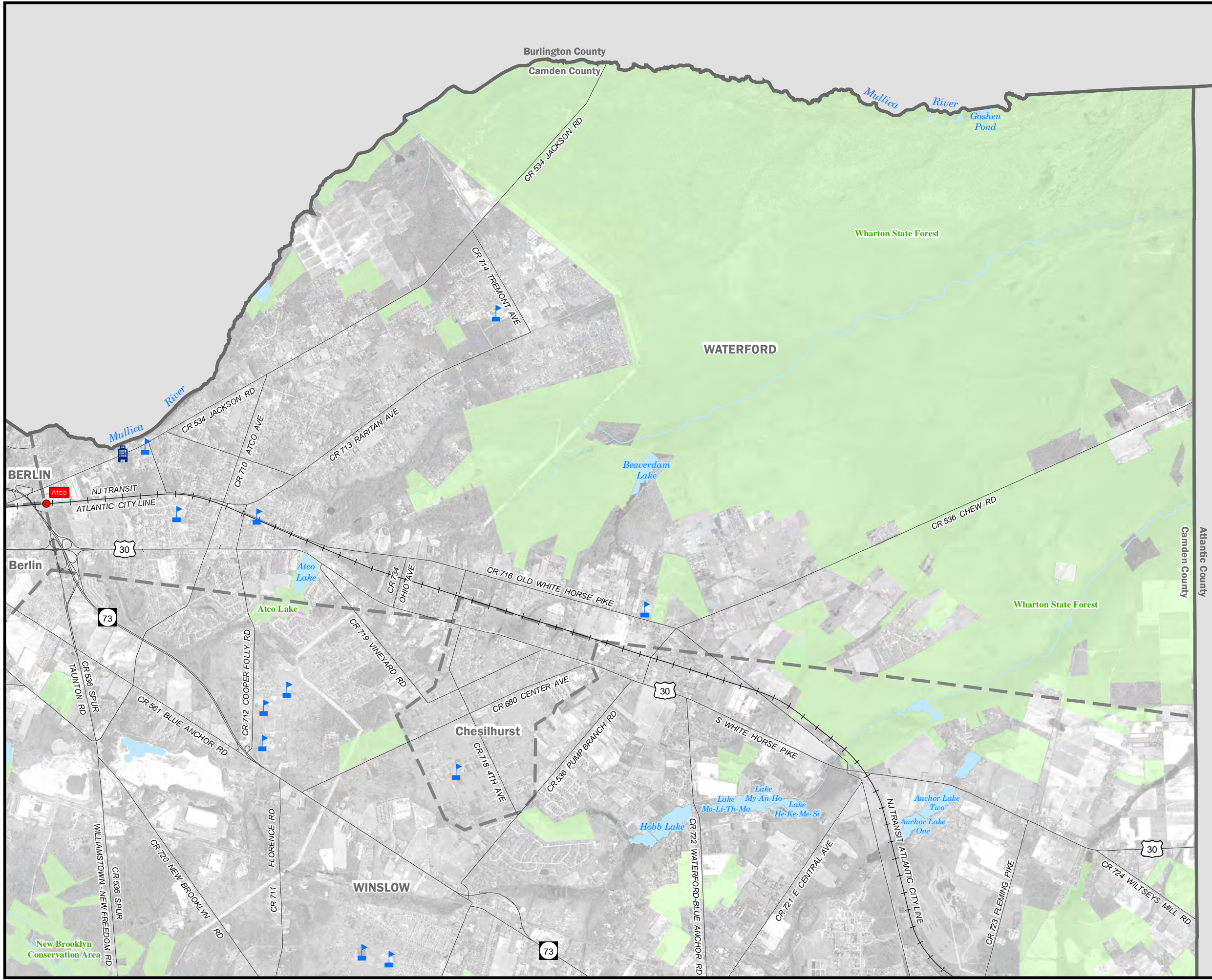
- Circuit Trail
- Other Route

On-Road Facilities:

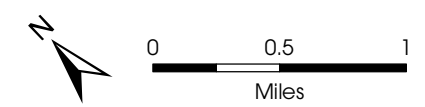
- Bicycle Lane

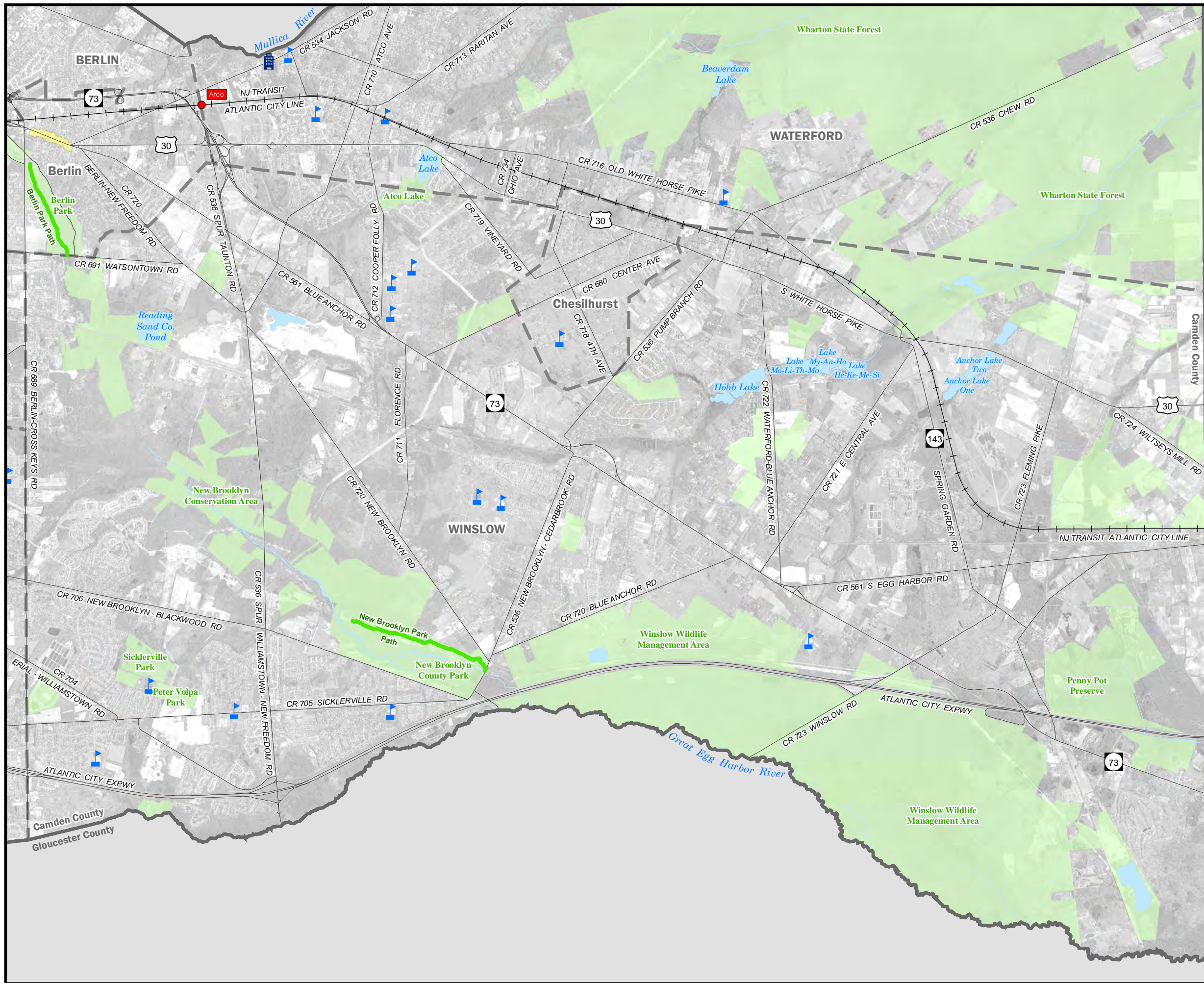
Other Features:

- Ashland
- Passenger Rail Station
- Employer (with 500 or more employees)
- College/University
- Elementary/Secondary School (public & private)
- Downtown Retail District
- Protected Open Space/Park (larger than 25 acres)



Sources:
 Multi-Use Facilities: DVRPC/Camden County
 Downtown Retail Districts: DVRPC
 Parks: DVRPC Protected Open Space, 2011
 Employers with 500 or more employees: NETS Database, 2010
 Elementary/Secondary Schools: National Center for Education Statistics





**Figure 11:
Existing Facilities
Map Panel 7**

Off-Road Multi-Use Facilities:

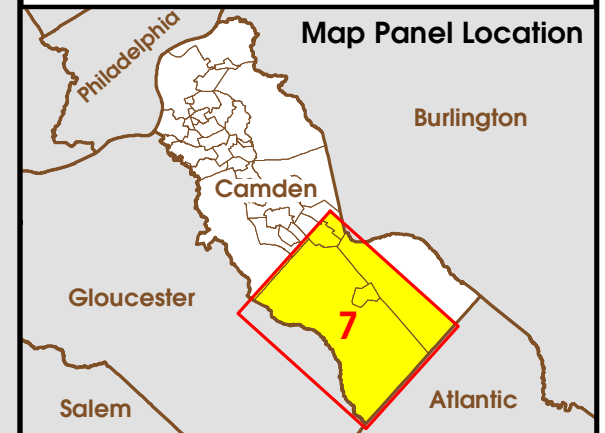
- Circuit Trail
- Other Route

On-Road Facilities:

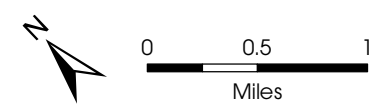
- Bicycle Lane

Other Features:

- Ashland
- Passenger Rail Station
- Employer (with 500 or more employees)
- College/University
- Elementary/Secondary School (public & private)
- Downtown Retail District
- Protected Open Space/Park (larger than 25 acres)



Sources:
 Multi-Use Facilities: DVRPC/Camden County
 Downtown Retail Districts: DVRPC
 Parks: DVRPC Protected Open Space, 2011
 Employers with 500 or more employees: NETS Database, 2010
 Elementary/Secondary Schools: National Center for Education Statistics



Chapter 3

NETWORK RECOMMENDATIONS

To provide the best access possible to attractions in the county and ensure usability for cyclists of all levels, the county's proposed bicycle and trail network consists of a variety of on- and off-road bicycle facilities.

ON-ROAD FACILITIES

Potential locations for on-road bicycle facilities were identified in other plans and by steering committees for each of the project phases. DVRPC staff evaluated these recommendations through fieldwork and technical analysis. As the planned network developed over time, the on-road network evolved to best connect users to attractions in the county.

Three different types of on-road facility categories are proposed for the Camden County network: **bicycle facilities**, **mixed treatments**, and **recommended routes**. Table 2 lists some general characteristics and differences between the highest and lowest categories of treatments. The middle category, mixed treatments, blends elements of both bicycle facilities and recommended routes in a context sensitive way.

TABLE 2: CHARACTERISTICS OF ON-ROAD BICYCLE FACILITIES

	Bicycle Facilities	Recommended Routes
Road ownership (generally)	County	Local
General road characteristics	Wide cartway, higher speeds and volumes	Narrow cartway, lower speeds and volumes
Separation from traffic	Separated from traffic by a six-inch white stripe	Cyclists ride with traffic
Pavement marking	Bicyclist with chevron	Not necessary, but shared lane marking, such as sharrow, may be used in certain situations
Signage	Clear start and end signs, other signage as necessary	Primarily wayfinding signage, some type of shared lane marking, if necessary

SOURCE: DVRPC, 2012

Bicycle Facilities

Road segments that are categorized as Bicycle Facilities are important links in the network and are more likely to have more available right-of-way for bicycle facilities. Therefore, a higher level treatment is desirable. Treatments for this category would most likely be a conventional bicycle lane or a buffered bicycle lane, depending on the road cross-section.

Network Recommendations

According to the *Guide for the Development of Bicycle Facilities* (American Association of State Highway Transportation Officials, 2012) bike lanes are defined as “...a portion of the roadway designated for preferential use by bicyclists.” There are already approximately 15 miles of bicycle lanes striped in Camden County. The vast majority of these are located in Voorhees Township, Camden City, Lindenwold Borough, and others (for a detailed tally, see Table 3 in Chapter 6).

Bike lanes can be used in different configurations, depending on the characteristics of the road such as whether or not there is on-street parking or the number of travel lanes. For on-road segments with sufficient width, buffers can be painted or constructed between the bicycle lane and the vehicle travel lanes.

As road segments recommended for bicycle facilities come up for restriping or resurfacing, the county (or other managing authority) should use the AASHTO guide or other references to determine which treatment is most appropriate.

FIGURE 12: STANDARD BICYCLE LANE DESIGN IN CAMDEN CITY



SOURCE: DVRPC, 2012

Mixed Treatments

The second class of bicycle facilities in this plan are still important links in the county network, but, because of narrower cartway widths or other design challenges, further design is required before determining the appropriate bicycle facility type. Therefore, these links require a set of mixed treatments. Since these roads are more constrained, additional review by county and municipal staff will determine the design treatment, but, generally, the smallest intervention would be painting sharrows and marking them for mixed traffic. At the highest level, bicycle lanes are warranted and may be possible within existing right-of-way. Because additional review and design will be necessary, innovative solutions may be used in response to the challenges presented by these roads. The National Association of City Transportation Officials (NACTO) *Urban Bikeway Design Guide* is an ever-evolving resource of creative treatments that are responsive to a variety of road configurations.

Recommended Routes

Many roads in the county are already attractive for bicycle use. Some of these are recommended for inclusion in the county plan because they play a strategic role in the network; either they provide access to an attraction or they present the best option to get around a barrier, such as crossing at a signalized intersection over a busy road.

In terms of treatments for these facilities, there are several different ways to designate these roadways as part of the network. One way is to use a “Share-the-Road” or a “Bicyclist May Use Full Lane” sign to indicate to drivers that bicyclists could be present and they have full authority to use the travel lane.

FIGURE 13: STANDARD SIGNS FOR ON-ROAD FACILITIES WITHOUT DEDICATED BICYCLE ROW



SOURCE: DVRPC, 2012

Alternatively, in some situations it may be desirable to use street markings to further indicate that bicyclists can use the full lane. Marked Shared Lanes (sometimes called sharrows) can be painted on the road to show all road users that cyclists can use the entire lane for traveling. Regionally, they are not very common, but they may be appropriate for commercial districts (such as Haddon Avenue through Collingswood Borough) where there are parking lanes and limited pavement width for full bike lanes. At minimum, wayfinding signage should be installed to direct network users to various facilities and attractors.

Generally, recommended routes and the use of sharrows or shared lane markings are only appropriate where the speed differential between bicyclists and vehicles is very low. They are also not a replacement for bicycle lanes or other separated, dedicated treatments when these treatments are otherwise warranted or where space permits.

FIGURE 14: A SHARROW, OR SHARED LANE MARKING, IN PHILADELPHIA



SOURCE: DVRPC, 2012

OFF-ROAD FACILITIES (TRAILS)

Off-road trails are a crucial component of bicycle use in the county and serve different types of users. Trails such as the Cooper River Trail can provide a safe means of transportation for commuting and recreational purposes, while others (such as park trails) serve more localized, casual needs.

As a way of distinguishing between different types of trails and to determine which trails are of higher significance, this plan puts each of the existing and proposed trails in Camden County into one of three categories, detailed below. This categorization does not necessarily indicate a difference in trail design, but it is indicative of a trail's reach and likelihood to draw users.

Circuit Trails (regional priority)

The Circuit is DVRPC's regional trail network as selected by a steering committee consisting of DVRPC's planning partners and other trail building and funding agencies throughout the Delaware Valley. Circuit trails have regional significance and provide important connections or are substantial destinations, in and of themselves.

County-Identified Trails (county priorities)

These trails are or will be within the county only and have been identified by the county as priorities for continued planning and implementation.

Other Trails (local priorities)

These trails often are contained within one municipality or park. They provide important connections for community residents but may not be a county or regional draw.

NETWORK RECOMMENDATIONS

On- and off-road facilities were sketched, categorized, and field verified with existing conditions for feasibility. These facilities were mapped to create the recommended county network. This network can be seen in Figures 16–22. The seven map panels show all existing bicycle and multi-use facilities, as well as the proposed trails and on-road routes.

Facilities Needing Additional Treatments

The plan network includes a number of on-road facilities that will exist on roads with speeds of 40 mph or higher. These facilities can be seen in Figures 23 and 24. In these locations, bicyclists would benefit from additional accommodations for safety and comfort. One option is to reduce roadway speeds on these segments. If that proves to be infeasible, the design of the bicycle lanes can be adjusted to provide for greater safety. Another option is to make the bicycle lane wider. According to the AASHTO guidelines, in circumstances where lanes are on roadways with high volumes or high speeds, bicycle lanes should be wider than the minimum recommended width of five feet. The lane can be striped to be larger or a painted buffer can be striped between the bicycle lane and the traffic lanes. An example of a painted buffer is shown in Figure 15. It is recommended that the county design bicycle facilities in one or more of the ways detailed above for these high-speed segments of roadway.

FIGURE 15: A BUFFERED BICYCLE LANE IN PHILADELPHIA

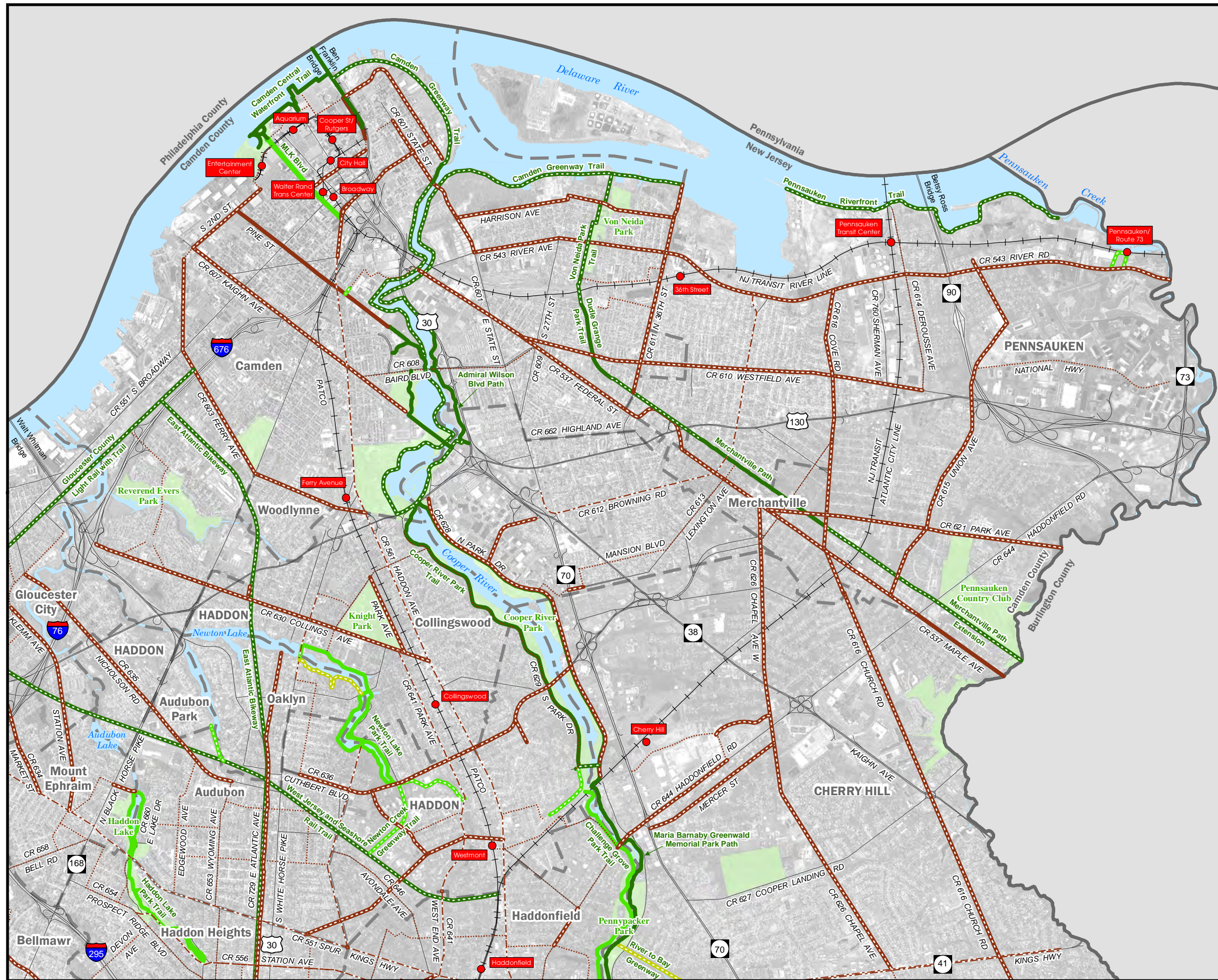


SOURCE: DVRPC, 2012

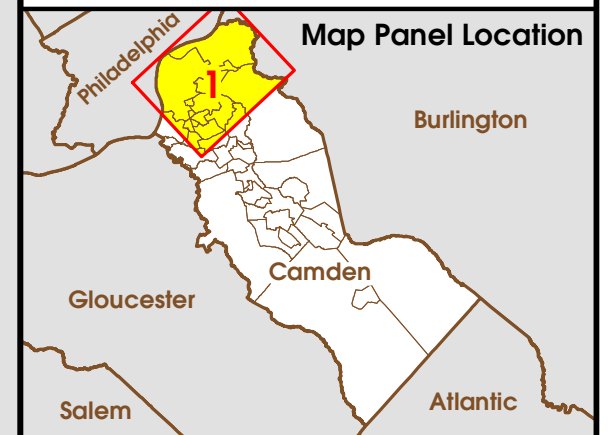
Intersection Treatments

Intersections are some of the hardest and the most critical areas to design for safe bicycle movements, since the safest and most appropriate path through may not be entirely clear. Proper intersection design should make it clear to both bicyclists and motorists how they traverse the intersection. A bicyclist's route through the intersection should be direct and logical, and generally follow the path of vehicle traffic. Lighting and signal timing that does not require bicyclists to wait an excessive amount of time are also important. Additional guidance can be found in the NACTO and AASHTO design guides.

**Figure 16:
Network Recommendations
Map Panel 1**



- Off-Road Multi-Use Facilities:**
- Circuit Trail - Existing
 - Circuit Trail - To Be Considered
 - County-Identified Trail - To Be Considered
 - Other Trail - Existing
 - Other Trail - To Be Considered
- On-Road Facilities:**
- Bicycle Lane - Existing
 - Bicycle Facility - To Be Considered
 - Mixed Treatments - To Be Considered
 - Recommended Route - To Be Considered
- Other Features:**
- Ashland
 - Passenger Rail Station
 - Protected Open Space/Park (larger than 25 acres)

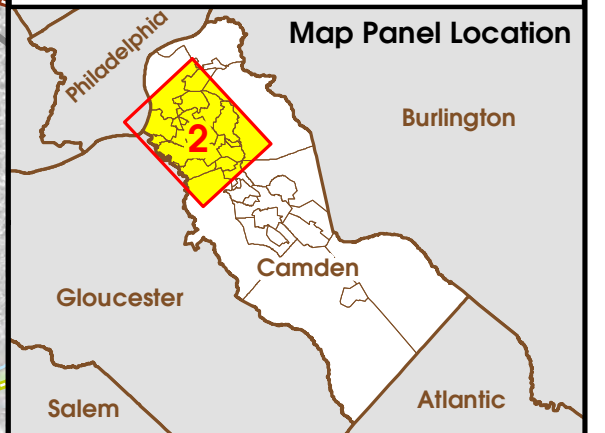


Sources:
Multi-Use Trails: DVRPC/Camden County
Parks: DVRPC Protected Open Space, 2011

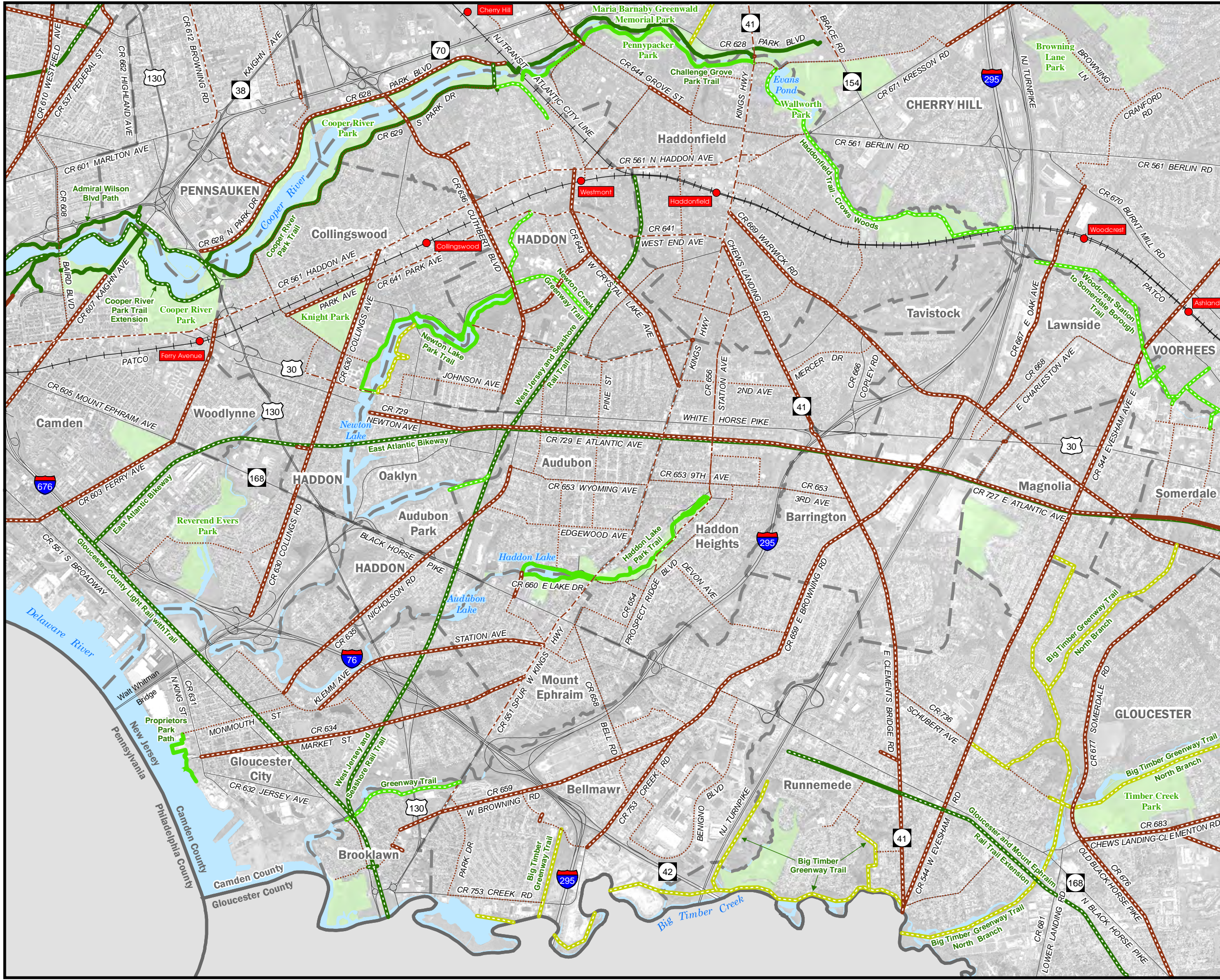
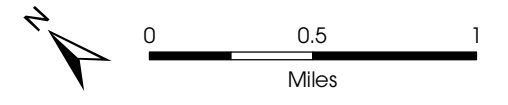


**Figure 17:
Network Recommendations
Map Panel 2**

- Off-Road Multi-Use Facilities:**
- Circuit Trail - Existing
 - Circuit Trail - To Be Considered
 - County-Identified Trail - To Be Considered
 - Other Trail - Existing
 - Other Trail - To Be Considered
- On-Road Facilities:**
- Bicycle Lane - Existing
 - Bicycle Facility - To Be Considered
 - Mixed Treatments - To Be Considered
 - Recommended Route - To Be Considered
- Other Features:**
- Passenger Rail Station
 - Protected Open Space/Park (larger than 25 acres)



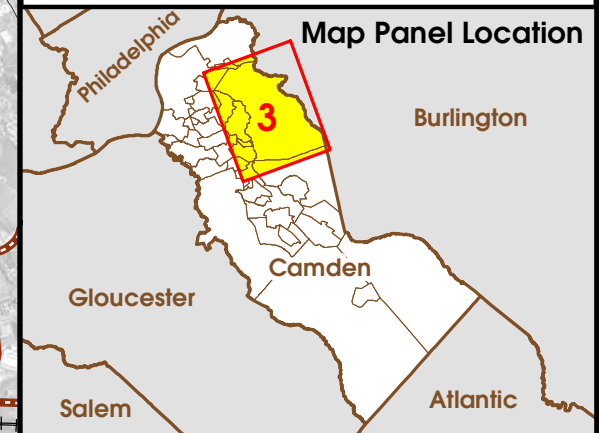
Sources:
Multi-Use Trails: DVRPC/Camden County
Parks: DVRPC Protected Open Space, 2011



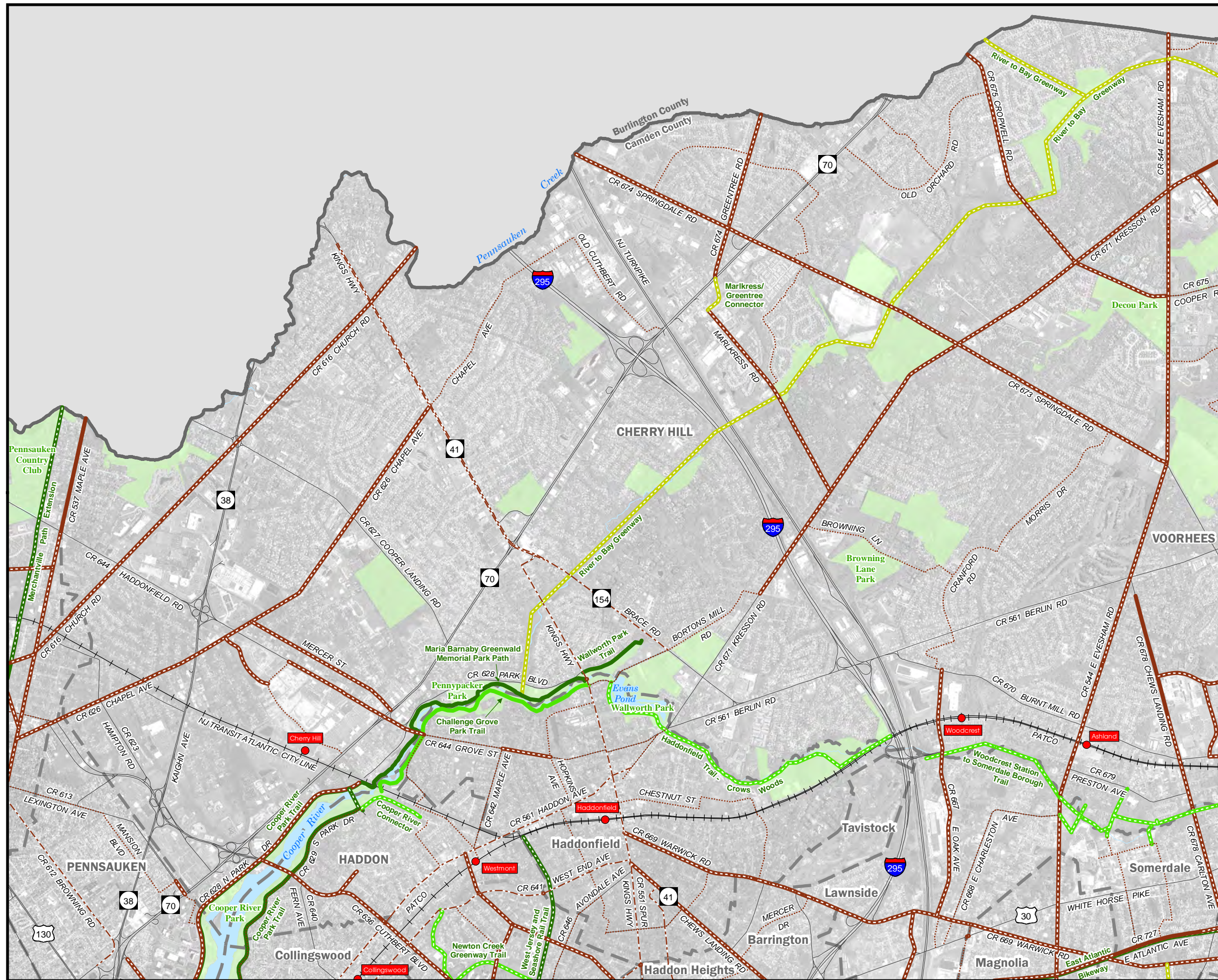
**Figure 18:
Network Recommendations
Map Panel 3**

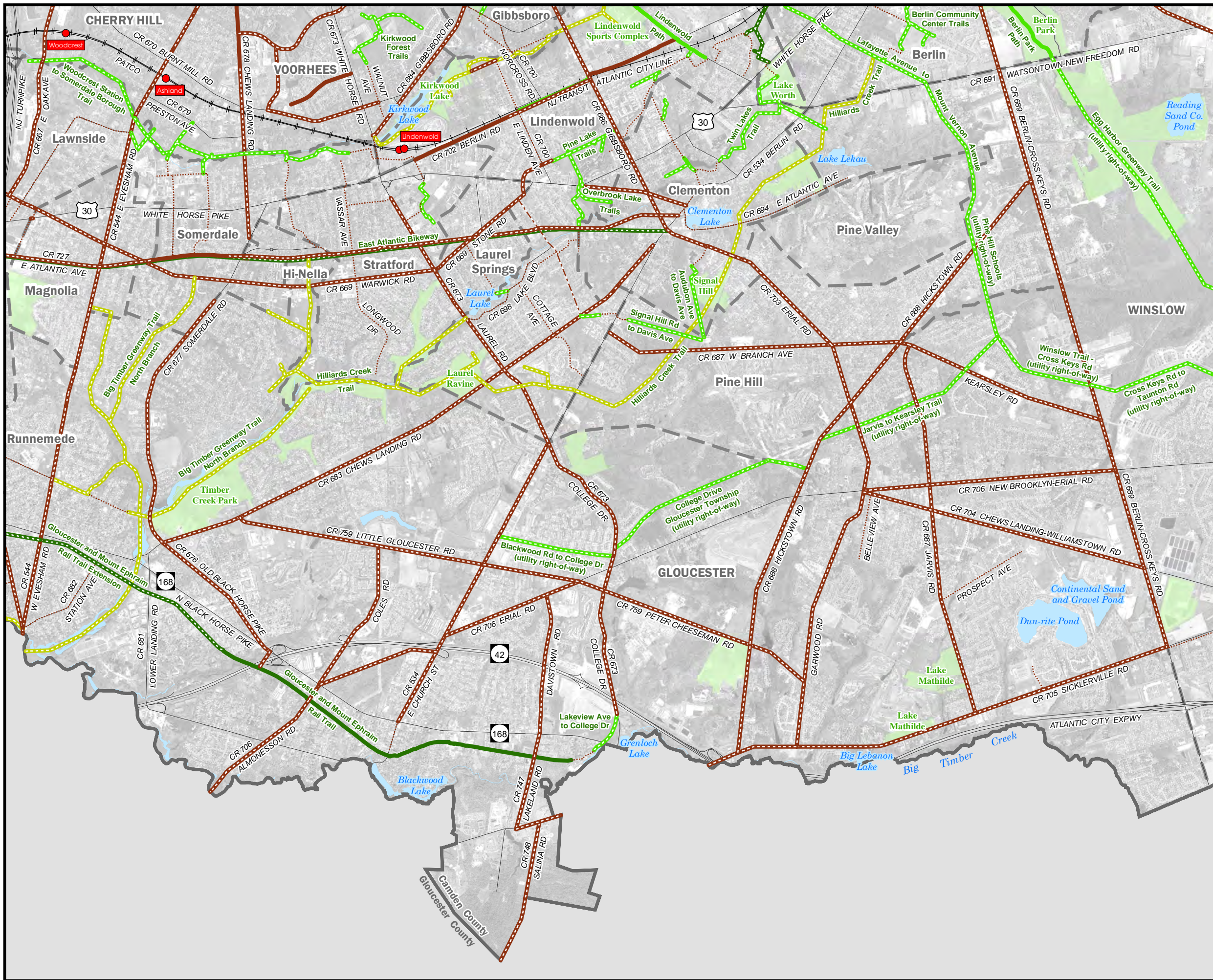
- Off-Road Multi-Use Facilities:**
- Circuit Trail - Existing
 - Circuit Trail - To Be Considered
 - County-Identified Trail - To Be Considered
 - Other Trail - Existing
 - Other Trail - To Be Considered
- On-Road Facilities:**
- Bicycle Lane - Existing
 - Bicycle Facility - To Be Considered
 - Mixed Treatments - To Be Considered
 - Recommended Route - To Be Considered

- Other Features:**
- Ashland
 - Passenger Rail Station
 - Protected Open Space/Park (larger than 25 acres)



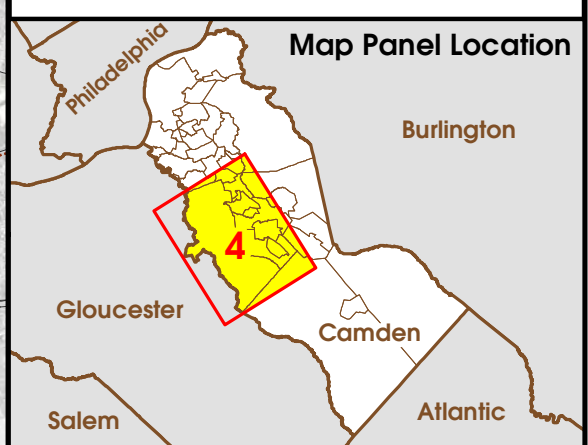
Sources:
Multi-Use Trails: DVRPC/Camden County
Parks: DVRPC Protected Open Space, 2011





**Figure 19:
Network Recommendations
Map Panel 4**

- Off-Road Multi-Use Facilities:**
- Circuit Trail - Existing
 - Circuit Trail - To Be Considered
 - County-Identified Trail - To Be Considered
 - Other Trail - Existing
 - Other Trail - To Be Considered
- On-Road Facilities:**
- Bicycle Lane - Existing
 - Bicycle Facility - To Be Considered
 - Mixed Treatments - To Be Considered
 - Recommended Route - To Be Considered
- Other Features:**
- Passenger Rail Station
 - Protected Open Space/Park (larger than 25 acres)

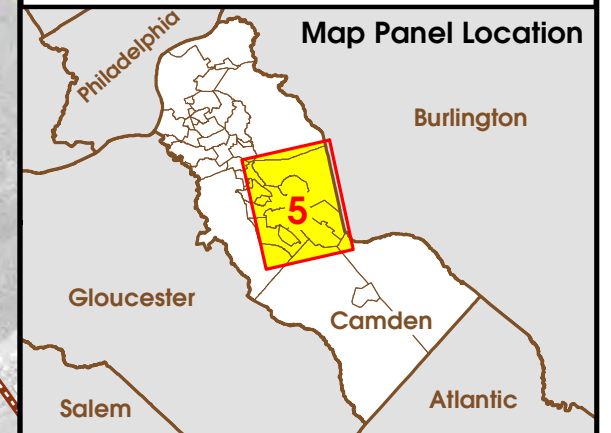


Sources:
Multi-Use Trails: DVRPC/Camden County
Parks: DVRPC Protected Open Space, 2011

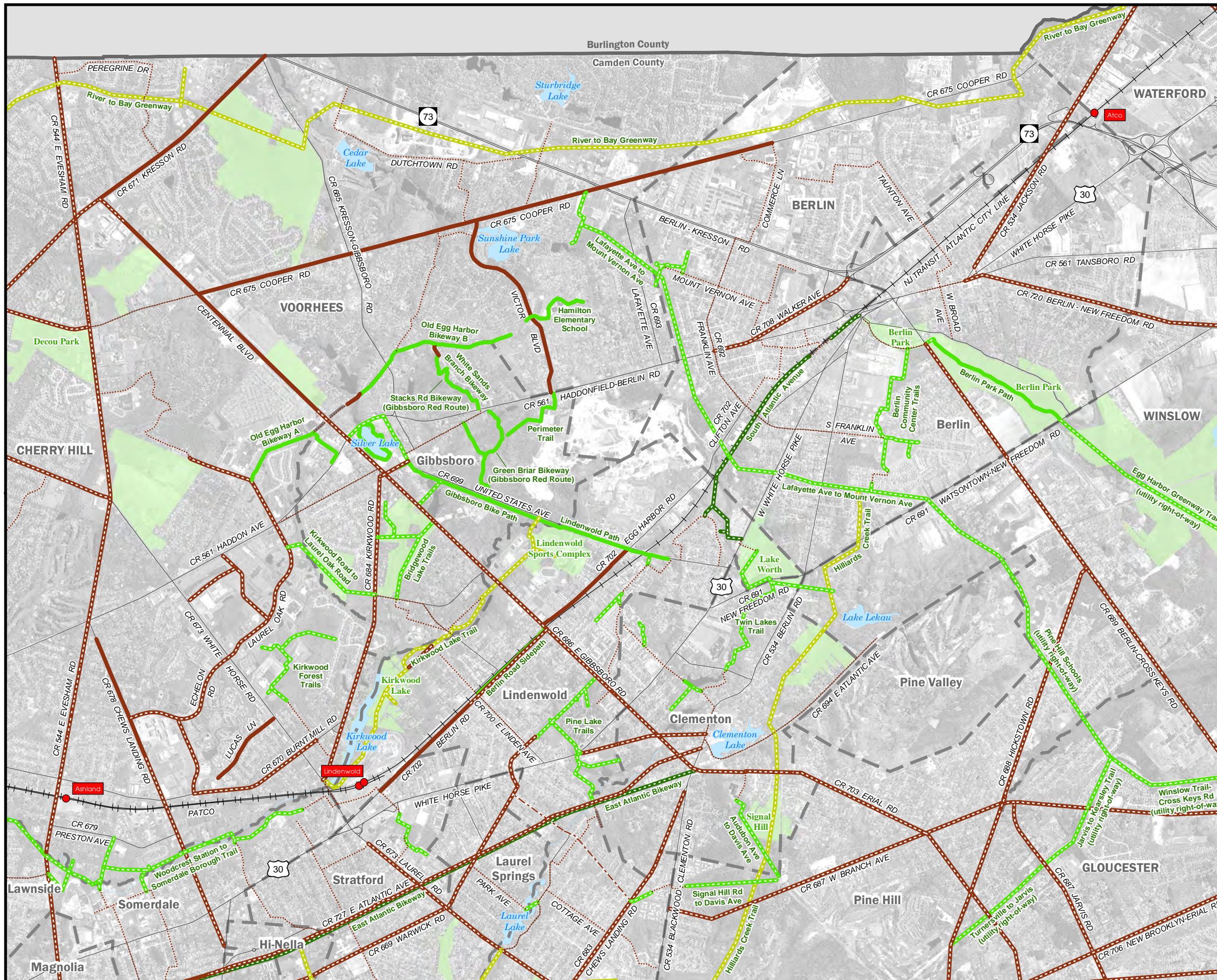
dvrpc

**Figure 20:
Network Recommendations
Map Panel 5**

- Off-Road Multi-Use Facilities:**
- Circuit Trail - Existing
 - Circuit Trail - To Be Considered
 - County-Identified Trail - To Be Considered
 - Other Trail - Existing
 - Other Trail - To Be Considered
- On-Road Facilities:**
- Bicycle Lane - Existing
 - Bicycle Facility - To Be Considered
 - Mixed Treatments - To Be Considered
 - Recommended Route - To Be Considered
- Other Features:**
- Ashland
 - Passenger Rail Station
 - Protected Open Space/Park (larger than 25 acres)



Sources:
Multi-Use Trails: DVRPC/Camden County
Parks: DVRPC Protected Open Space, 2011



**Figure 21:
Network Recommendations
Map Panel 6**

Off-Road Multi-Use Facilities:

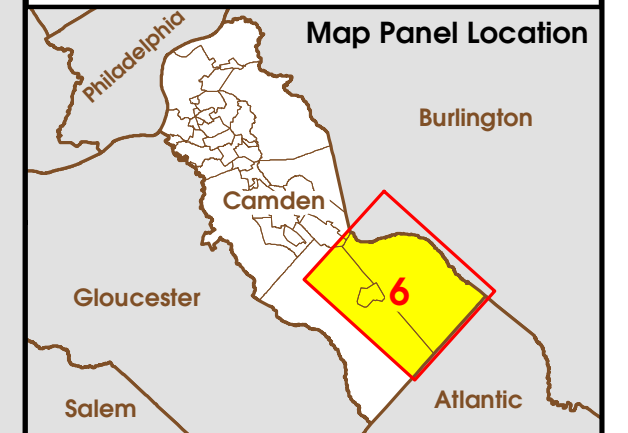
- Circuit Trail - Existing
- Circuit Trail - To Be Considered
- County-Identified Trail - To Be Considered
- Other Trail - Existing
- Other Trail - To Be Considered

On-Road Facilities:

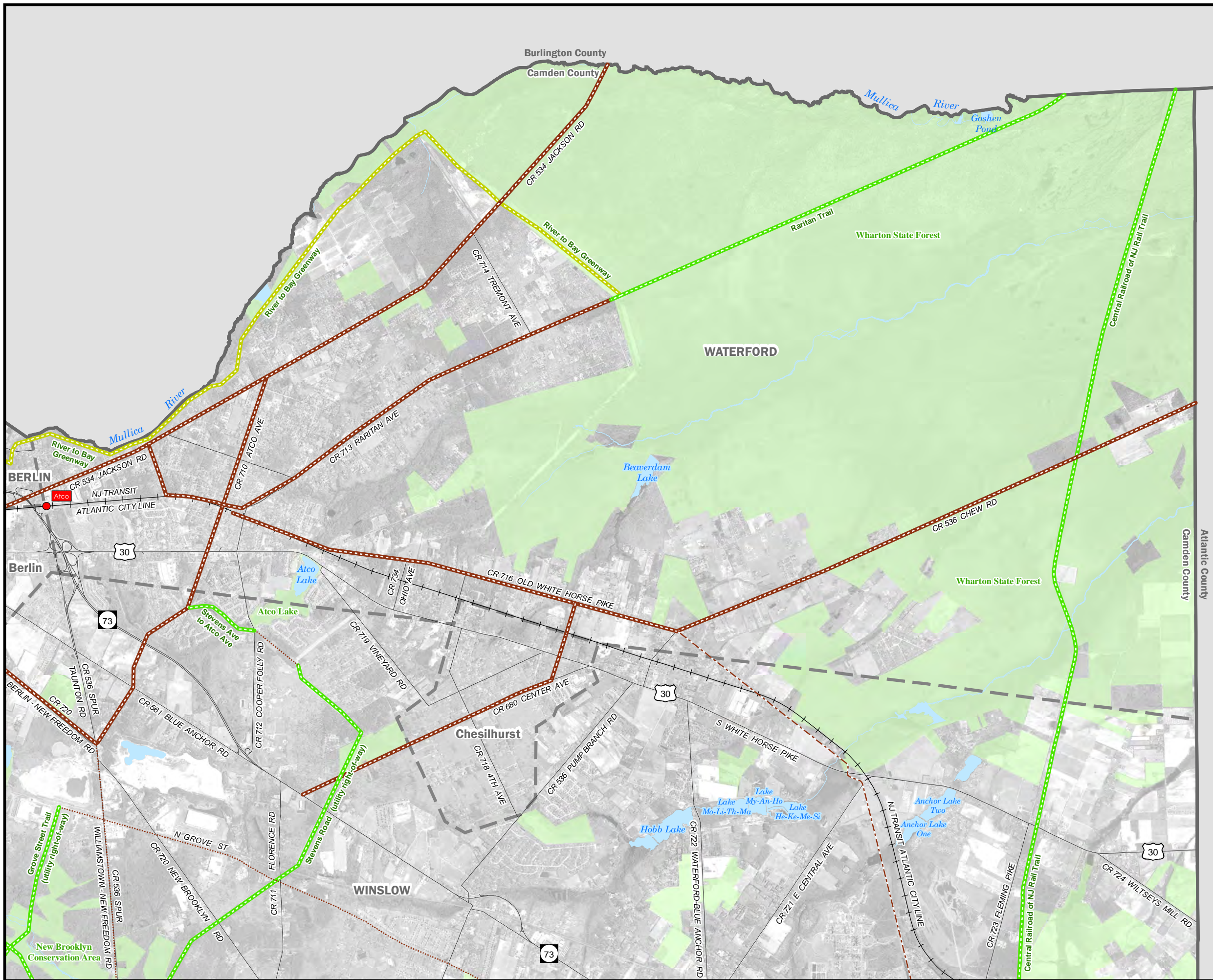
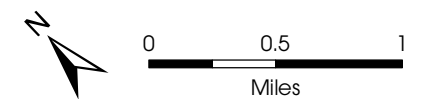
- Bicycle Lane - Existing
- Bicycle Facility - To Be Considered
- Mixed Treatments - To Be Considered
- Recommended Route - To Be Considered

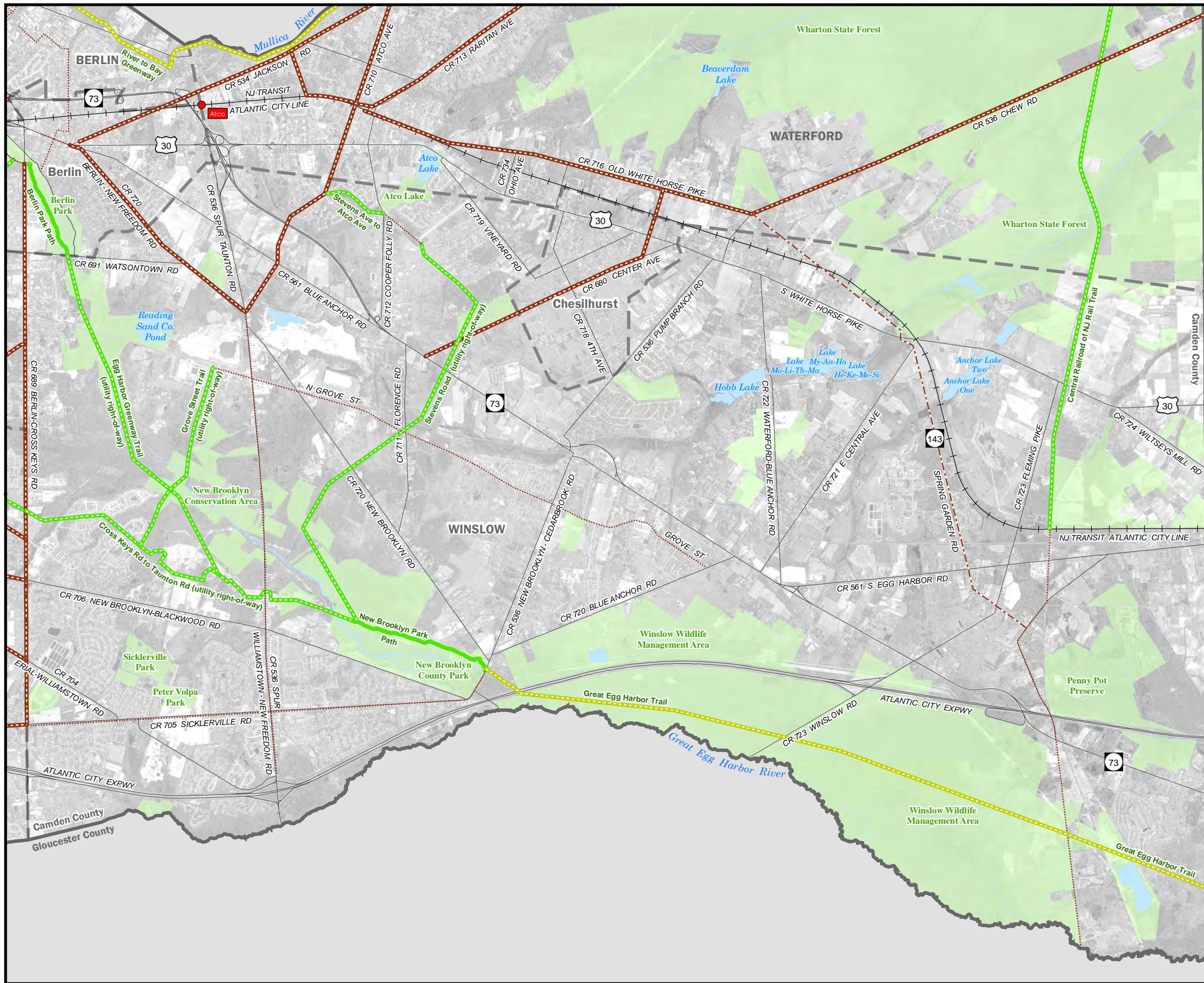
Other Features:

- Ashland
- Passenger Rail Station
- Protected Open Space/Park (larger than 25 acres)



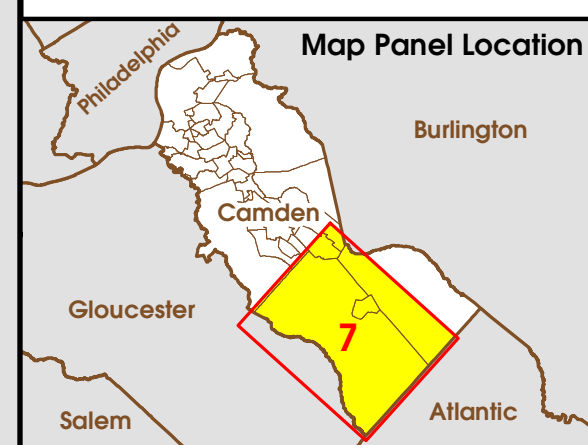
Sources:
Multi-Use Trails: DVRPC/Camden County
Parks: DVRPC Protected Open Space, 2011



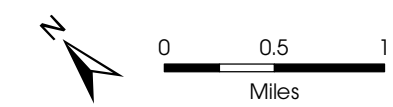


**Figure 22:
Network Recommendations
Map Panel 7**


- Off-Road Multi-Use Facilities:**
- Circuit Trail - Existing
 - Circuit Trail - To Be Considered
 - County-Identified Trail - To Be Considered
 - Other Trail - Existing
 - Other Trail - To Be Considered
- On-Road Facilities:**
- Bicycle Lane - Existing
 - Bicycle Facility - To Be Considered
 - Mixed Treatments - To Be Considered
 - Recommended Route - To Be Considered
- Other Features:**
- Ashland
 - Passenger Rail Station
 - Protected Open Space/Park (larger than 25 acres)

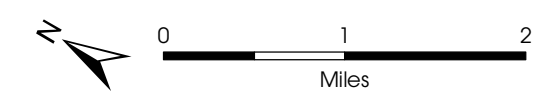
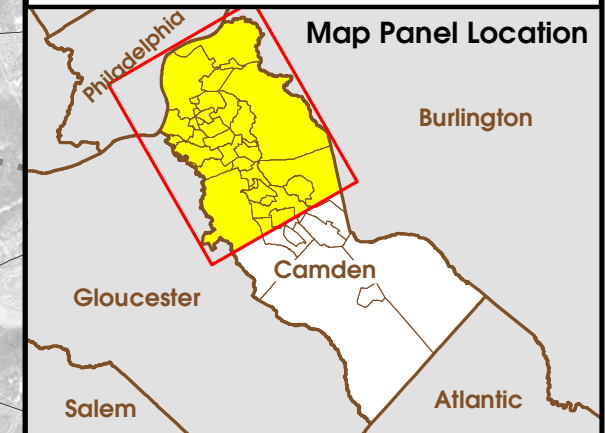
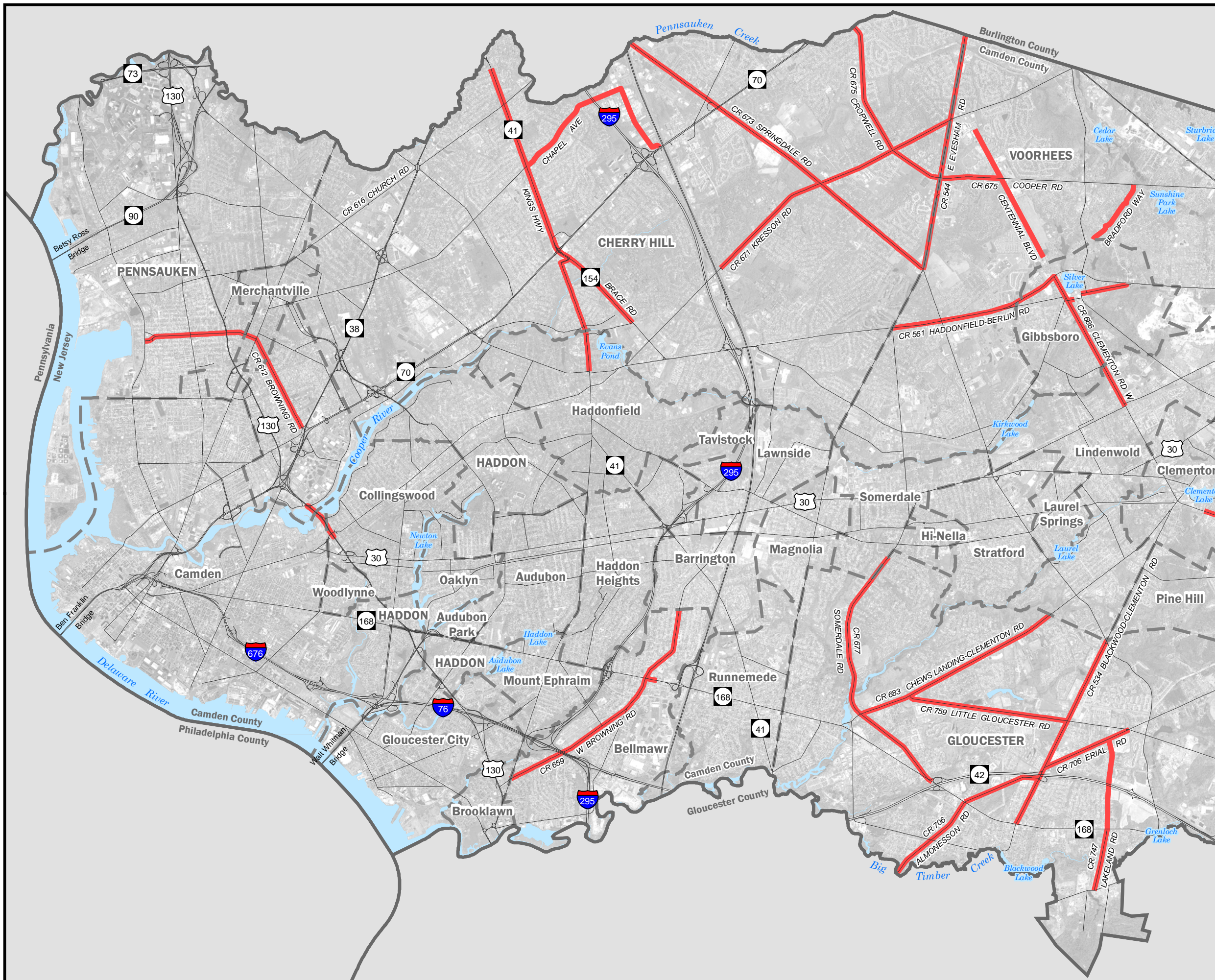


Sources:
Multi-Use Trails: DVRPC/Camden County
Parks: DVRPC Protected Open Space, 2011




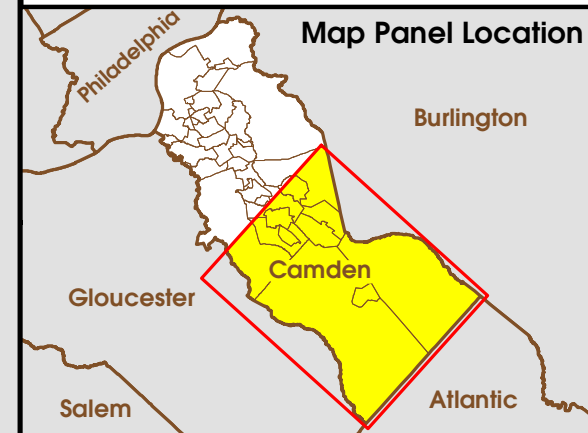
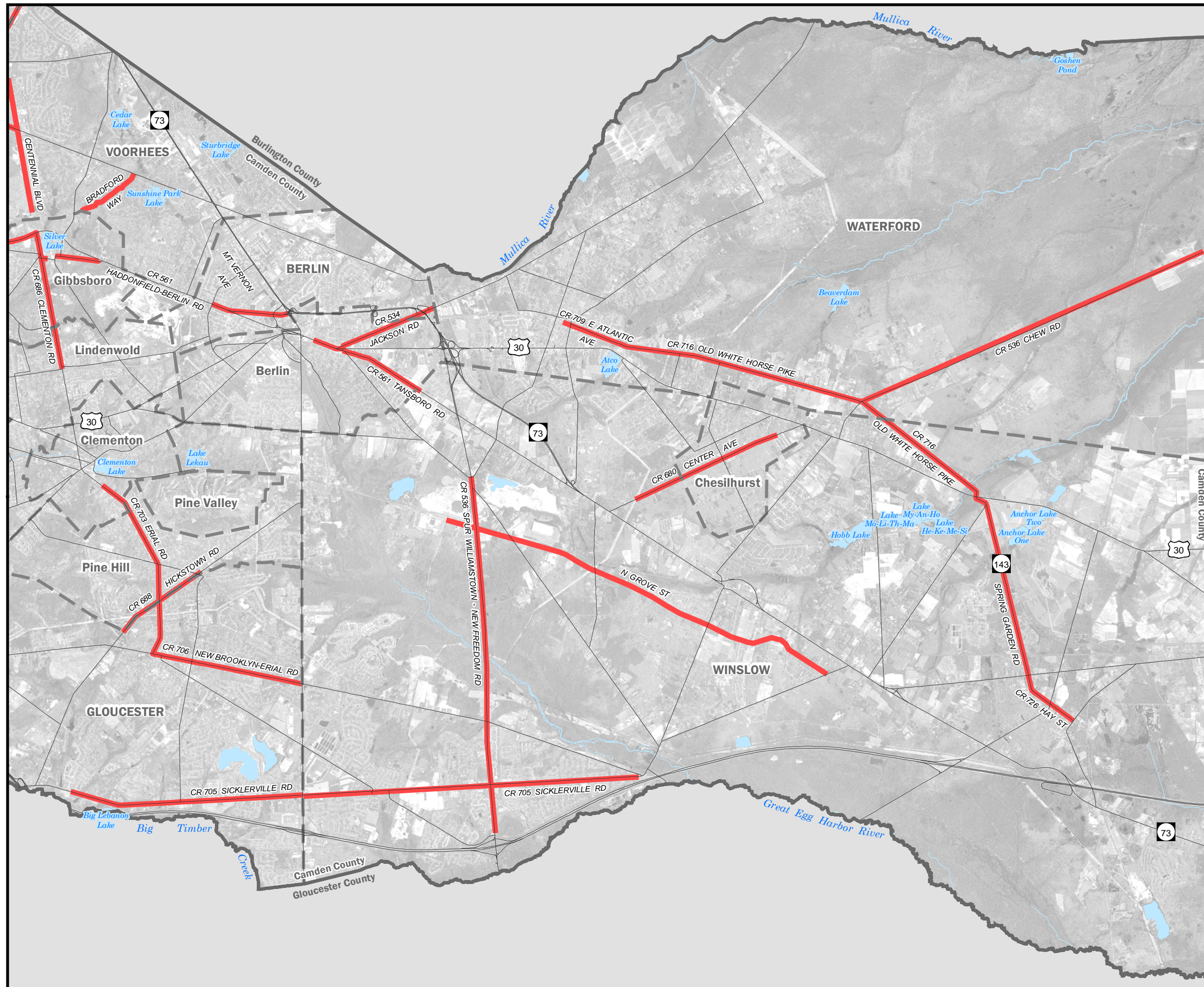
**Figure 23:
Proposed Facilities on
Roads with a Speed
Limit of 40 MPH or More
(Northern Portion of County)**

 Proposed Facility on a Road with a Speed Limit of 40 MPH or More



**Figure 24:
Proposed Facilities on
Roads with a Speed
Limit of 40 MPH or More
(Southern Portion of County)**

 Proposed Facility on a Road with a Speed Limit of 40 MPH or More



Chapter 4

COUNTY-WIDE DESIGN GUIDELINES

This chapter makes general recommendations in regard to bicycle parking, facility signage, and trail standards, as well as recommendations related to the roles that education and enforcement play in safer bicycling and walking. These recommendations represent network-wide policies that could increase bicycle usage in the county and ensure that the network is working at an optimal level. It will be necessary for the municipalities to work together to meet the needs of the proposed network as well as the area's cycling community. Adopting county-wide policies will aid in making the plan become an on-the-ground reality. A set of recommendations for municipalities is included at the end of this chapter.

DESIGN STANDARDS

The past decade has seen the development and refinement of new standards and guidelines for bicycle facilities. The *Guide for the Development of Bicycle Facilities*, authored by the American Association of State Highway and Transportation Officials (AASHTO) and most recently updated in 2012, remains the principal reference. The Manual on Uniform Traffic Control Devices (MUTCD) also stipulates guidelines for the planning and design of bicycle facilities. NJ DOT published its own design guidance, *Bicycle Compatible Roadways and Bikeways Planning and Design Guidance* (April, 1996), largely based on earlier versions of the aforementioned manuals. The operation of bicycles is covered under New Jersey's vehicle code. With several exceptions, bicyclists are governed by the same rules as motor vehicle operators, including operation on the right side of the road, stopping, yielding, safe passing distance, and roadway position. Motorists are required to yield to bicyclists in the same way they yield to other motorists, and both motorists and cyclists alike must yield to pedestrians.

The design of safe bicycle facilities is always based on the assumption that a bicycle is considered a vehicle. Facilities that require, encourage, or lead bicyclists to contravene the rules of the road, such as failing to stop at a red light or riding against traffic, are more dangerous than no facility at all, and they expose the roadway agency to legal liability. The best protection against damages and injury is a facility designed according to accepted guidelines and standards.

Each type of facility recommended in this plan will have different requirements related to their design and construction. Network-wide standards must be put into place to ensure that the facilities are safe for bicycle travel and can be properly maintained as easily as possible. Maintenance issues should be considered in the design process. Design standards should be considered not only for the facilities recommended in this report but also for any other roads that cyclists may use.

Proper maintenance (such as making sure that shoulders remain clear of debris) is integral to making these recommended routes accessible to bicycles. Incorporating these recommended roadways into the overall bicycle network would also require consistent signage on documentation (i.e., maps) and along roadways, so users know that these routes are safe for bicycle travel even without separated bicycle facilities, and drivers know to be aware of the presence of bicyclists.

Specific recommendations for some of the facility types discussed in this report are:

■ Recommended routes

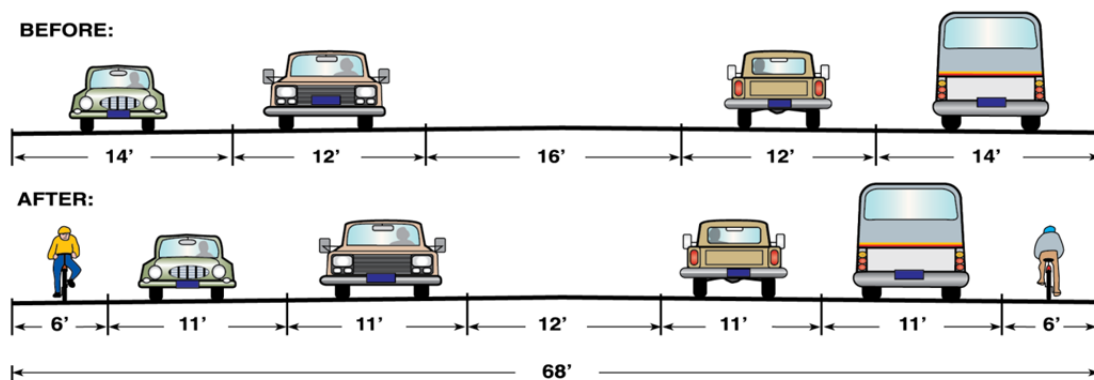
- Provisions for a smooth surface have been made (utility covers to grade, bicycle-safe drainage grates, potholes are filled, etc.);
- Signs are visible to cyclists, motorists, and pedestrians;
- Maintenance of the route will be sufficient to prevent the accumulation of debris;
- Street parking has been removed or restricted in areas of critical width to improve safety;
- Shoulder or curb lane widths are sufficient.

■ Roads with conventional bicycle lanes

- The recommended minimum width of a bicycle lane is 5 feet from the edge of the curb to the lane stripe.
- The pavement surface should be smooth and free of structures.
- Bicycle lane markings should clearly delineate the bicycle lane from the traffic lane as well as the parking lane (if present). A wide (six- to eight-inch) solid white line is used to mark the edge adjacent to the vehicle travel lane.
- Bicycle lanes should be placed on the right side of the street on both sides of the street whenever possible. Left-side bicycle lanes are appropriate in some circumstances, such as on one-way streets shared with transit.
- Bicycle traffic should move in the same direction as vehicular traffic.
- Striping should not traverse pedestrian crosswalks.

A recommended design for adding bicycle lanes to an existing multi-lane roadway is shown in Figure 25. This design is consistent with American Association of State Highway and Transportation Officials (AASHTO) guidance.

FIGURE 25: AN EXAMPLE OF NARROWING TRAVEL LANES TO ACCOMMODATE STRIPING BICYCLE LANES



SOURCE: OREGON DEPARTMENT OF TRANSPORTATION, 2011

■ Roads with buffered bicycle lanes

- A painted buffer should be a minimum of 18 inches. The combined width of the buffer and the bike lane are considered the “bike lane width” in respect to other guidance.
- The buffer shall be marked with two solid white lines that indicate that crossing is discouraged.
- The interior of the buffer area shall be marked with cross hatching or chevron markings if it is wider than three feet.

■ Multi-Use Trails and Connectors

- The minimum recommended width for a two-directional shared-use path is 10 feet. Eight feet can be adequate in special circumstances. A one-directional path should be six feet wide.
- A minimum 2-foot wide graded area should be maintained adjacent to both sides of the path. If the path is adjacent to canals, ditches, or slopes, a wider separation or protective barrier should be considered.
- Vertical clearance should be at least 8 feet, greater if need be to permit passage of maintenance vehicles.
- Multi-Use Trails must be built to meet the requirements of the Americans with Disabilities Act (ADA). Particular attention should be paid to alignment and grade.

Other factors that should be considered in the design process are traffic signals, approach treatments, pedestrian/bicycle refuges on busy streets, and railroad crossings. As new facilities are considered, different types of design issues and treatment types may manifest themselves. For more information, it is useful to examine FHWA's publications on bicycle and pedestrian safety, AASHTO's *Guide for the Development of Bicycle Facilities*, and NACTO's *Urban Bikeway Design Guide*.

Chapter 5

IMPLEMENTATION STRATEGIES AND TOOLS

Improving the bicycling environment across Camden County has been and will continue to be an ongoing process. Building the plan network will require ongoing collaboration and incremental actions by Camden County, each municipality, private developers, and other planning partners. This chapter summarizes a variety of steps that each of these parties can take to advance the plan over time, lane by lane and project by project.

ROUTINE COUNTY WORK

Camden County staff are working on an ongoing basis to improve mobility by all modes of transportation, including bicycling and walking. As opportunities emerge to build this plan's facility network through things such as routine county road resurfacing projects, Camden County Planning Division will work to make those investments in consultation with engineers in the county's Department of Public Works.

FORMING A BICYCLE AND PEDESTRIAN TECHNICAL ADVISORY COMMITTEE

To guide ongoing implementation, **the county shall form a bicycle and pedestrian advisory committee**. Led by the county's Department of Public Works and the Planning Division, this group can provide important input on plan and facility implementation and on any other programs or projects that relate to non-motorized transportation. The committee can help establish implementation priorities or provide technical expertise about active transportation's incorporation into projects and can ensure that the county's Complete Streets policy is being followed. Members should have bicycle and trails knowledge and experience related to pedestrian, bicycle, health, recreation and open space, and Americans with Disabilities Act (ADA) issues.

MUNICIPAL ORDINANCES, PLANS, AND DEVELOPMENT REGULATIONS

There are a variety of things municipalities can incorporate into their zoning and development regulations to enhance bicycle and pedestrian comfort and mobility. This section summarizes a few of these.

Bicycle parking

In commercial districts, it is important to provide enough parking to prevent cyclists from locking bikes to traffic signs and street trees. Parking should also be supplied at shopping centers, office parks, and in parking garages for people to use when running errands and commuting. **The volume and placement of bicycle parking should be monitored and regulated** to ensure that it is adequate, secure, and accessible to cyclists.

FIGURE 26: TWO TYPES OF BIKE PARKING AT A NJ TRANSIT STATION IN MERCER COUNTY: REGULAR “U” LOCKS AND ENCLOSED LOCKERS



SOURCE: GMTMA, 2013

FIGURE 27: LOW-COST IN-STREET “BIKE CORRAL” IN PHILADELPHIA



SOURCE: DVRPC, 2013

One local example of bicycle parking requirements’ codification in a local parking ordinance can be found in the City of Philadelphia, which requires bicycle parking as a condition of approval for certain types of development:

[City of Philadelphia, The Philadelphia Code, Title 14: Zoning and Planning, Chapter 14-1400—Parking and Loading Facilities](#)

Required Bicycle Parking Spaces. Bicycle parking spaces shall be provided in accordance with the following tables:

- (.1) For all uses except single and multiple family dwellings, public parking lots, and low occupancy facilities:

Gross Floor Area	Required Minimum Number of Bicycle Parking Spaces
0–7,500 square feet	0
7,501–20,000 square feet	2
Over 20,000 square feet	1 per every 10,000 square feet or fraction

Model bicycle parking ordinance language has also been developed locally by the Chester County (Pennsylvania) Planning Commission and included in the Central Chester County Bicycle and Pedestrian Circulation Plan:

Bike racks shall be required as an integral component to the pedestrian orientation of the [zoning district/other designation] and shall be installed and maintained accordance with the following:

1. One (1) bike rack, [x] in color, with a capability of holding up to ten (10) bicycles shall be required for every thirty thousand (30,000) square feet of gross leasable area.
2. Bike racks shall be permanently anchored or in a concrete footing to promote stability and security.
3. Bike racks shall be located near building entrances, in a visible area, and major areas of pedestrian activity.
4. If and as possible, bike racks may be located under a shelter or a building overhang or inset to provide shelter for bicycles.

Camden County municipalities should consider incorporating bicycle parking provisions such as these into their own development regulations, with specifics depending on local preference.

Construction of bicycle and pedestrian facilities

Municipalities often share a desire to enhance bicycle and pedestrian infrastructure, but financing the construction of new facilities can be challenging. While there are federal and state programs to assist with the construction of bike facilities or sidewalks (see Chapter 6), receiving this funding can be a long, difficult process. There may be more immediate alternatives available if municipal codes reflect the desire of a community to supply these facilities and require developers to provide them. For example, Gibbsboro Borough has a strong ordinance that requires developers to build, according to borough standards, a sidewalk or bikeway alongside new developments. Establishing these responsibilities through municipal ordinances has provided Gibbsboro the opportunity to enhance accommodations for bicyclists and pedestrians and improve the appearance of the borough's streets through streetscaping. Similar ordinance language could also be used to require bikeway or trail connections.

Borough of Gibbsboro Municipal Code, Chapter 358 Subdivision of Land, Article VII: Design Standards Sidewalks and bikeway

- (1) Concrete sidewalks, four inches thick, Class B, shall be constructed along the entire frontage of all commercial, residential, industrial, or park land sites as part of any site plan, use variance, or Zoning Board approval.
- (2) Concrete sidewalk shall be four feet wide and shall be constructed at an offset from the center line of the right-of-way as determined by the Municipal Engineer or County Engineer.
- (3) If concrete sidewalk currently exists on a site, but is in poor deteriorated condition, the sidewalk shall be removed and replaced to the specifications described above.
- (4) If the Planning Board or Zoning Board should determine that it is not necessary to construct sidewalk as part of an application, the applicant shall make a contribution to the Borough calculated as follows: length of the frontage of the property times four feet divided by nine square feet per one square yard. The number of square yards calculated, times \$65 per square yard, shall be the required value of the contribution.
- (5) If the Planning Board or Zoning Board make a determination that concrete sidewalk is not required and a bituminous bikeway would be more appropriate, the applicant shall be required to construct a bituminous path to serve as such.
- (6) Bituminous bikeways shall be eight feet wide and shall be constructed along the frontage of the subject property at an offset to be determined by the County Engineer or Municipal Engineer.
- (7) Bituminous bikeways shall be bituminous surface course, FABC-1, Mix I-5, two inches thick over dense graded aggregate, four inches thick over a well-compacted subgrade.
- (8) If the Planning Board or Zoning Board should determine that it is not necessary to construct a bike path, then the applicant shall make a contribution to the Borough calculated as follows: length of frontage of the property times eight feet divided by nine square feet per square yard. The number of square yards calculated, times \$55 per square yard, shall be the required value of the contribution.

Another example of suggested ordinance language, with additional detail on ensuring facility network connectivity, is as follows (adapted from language in The Central Chester County Bicycle and Pedestrian Circulation Plan [Chester County, PA]):

Bicycle and pedestrian circulation. The following regulations shall apply to all uses:

1. The developer shall preserve existing trails or install trails and paths devoted to pedestrian and bicycle use or other pedestrian facilities as necessary and desirable to achieve the following:
 - a. Logically continue, link, or expand existing bicycle and pedestrian facilities on, across, and abutting the site consistent with the [Official Map, Municipal Master Plan, etc.]. The applicant may be requested to provide an easement dedicated to the municipality with connections to abutting properties that will enable the future continuation of the bicycle and pedestrian network.
 - b. Alter the course of a trail within the tract for which development is proposed provided the proposed alteration exhibits quality trail design according to generally accepted principles of trail design. The municipality recommends the guidelines in the AASHTO Bikeway Design Guide (2012).
 - c. Provide bicycle and pedestrian access to existing or anticipated public bus or train transportation pickup points, public parks, community facilities, commercial areas, or higher density residential developments.
 - d. Implement the bicycle and pedestrian circulation plan identified on Map [x] of the [Municipal Master Plan, Official Map, etc.].
 - e. Identify existing and proposed trails and paths during the site development process and install them prior to the construction of buildings and other structures.
 - f. As appropriate, provide for the continued ownership and maintenance of trails and trail easements by having them dedicated to the public sector, donated to a private conservation organization, or placed under the care of a community association.

In addition to language requiring facility provision, municipalities can also take steps to ensure that all transportation facilities at minimum accommodate bicyclists' safely, by requiring things such as bicycle-safe grates and drains on all roadways.

Municipal master plans

Including and prioritizing bicycle and pedestrian facility networks and policies in the transportation element of the municipal master plan is one of the most significant steps municipalities can take to ensure the provision of higher-quality facilities over time. Municipalities are encouraged to incorporate this plan's network of bicycle facilities (and any additional facilities they prioritize) into their own transportation elements.

Complete Streets policies

Complete Streets policies serve to make explicit a municipality's intention to make sure that funding, planning, design, and construction decisions about the street network accommodate all anticipated users. Complete Streets policies formalize this intention through policies and processes and can include things such as check-lists to make expectations about road design clear. Currently, NJ DOT and Camden County have Complete Streets policies, and local

municipalities can adopt these policies as well, to make sure local streets are designed for a similar level of inclusion. Camden City and Gloucester Township have Complete Streets policies currently, and other examples of best practice policies can be found on the NJ Bicycle and Pedestrian Resource Center website (www.njbikeped.org). Complete Streets policies can be adopted through several mechanisms, including resolution or ordinance, executive orders, or department policies, plans, and design guidelines.

EXISTING FACILITY MAINTENANCE

Keeping facilities already in Camden County in a state of good repair is paramount to the creation of the broader bicycle and multi-use trail network outlined in this report. Developing a clear method of identifying maintenance issues and prioritizing their repair will be necessary, especially as the network grows and there are more facilities to manage. Since the network consists of both on- and off-road facilities, the municipalities, Camden County, and the New Jersey Department of Transportation will have to work together to develop a way to respond to network maintenance issues.

Some general recommendations are:

- **Maintain roadways and bikeways to a relatively hazard-free standard. This can be accomplished by:**
 - Sweeping pavement edges and paved shoulders with sufficient care;
 - Patching surfaces as smoothly as possible and requiring other agencies or private companies to do likewise whenever they dig up a road or trail;
 - Making sure pavement overlay projects feather the new surface into the existing one or otherwise do not create new linear joints;
 - Replacing such hazards as dangerous grates or utility covers as the opportunity arises;
 - Patching potholes in an expeditious manner;
 - Routinely cutting back all encroaching vegetation, especially on trails or popular bike routes.
- **Encourage bicyclists to report maintenance problems and hazards. This can be accomplished by:**
 - Developing a bicycle spot improvement form and distributing copies throughout the bicycling community;
 - Making sure returned forms are acted on in a timely fashion.
- **Design and build new roadways and bikeways in such a way as to reduce the potential for accumulating debris. This can be accomplished by:**
 - Using edge treatments, shoulder surfaces, and access controls that reduce the potential for accumulation of debris;
 - Using materials and construction techniques that increase the longevity of new trail surfaces.
- **Include maintenance costs and clearly spelled-out maintenance procedures in all bicycle facility projects. This can be accomplished by:**
 - Including reasonable estimates of the maintenance costs in the project budget;
 - Establishing clear maintenance responsibilities in advance of construction.

Current policies used by any agency involved in the maintenance of bicycle and trail facilities should be reviewed. If necessary, changes should be made to normalize the process of reporting and making repairs. As new facilities are considered, designers should look at low-maintenance options, if possible. Policies must be comprehensive and cover everything from pothole repair to sign location and visibility.

NETWORK SIGNAGE

Clear, consistent signage throughout the entire network is an important component of implementing this plan. The same type of on-street signage should be present in all maps and other documents relating to the bicycle network. Signage should be simple and direct so as not to mar the landscape and to minimize cost. Signs should be color-coded according to facility type and should be clearly visible to cyclists and pedestrians, as well as drivers. Signs should also point users in the direction of regional attractors, such as schools and transit stations, and let them know the distance to these attractors as well as other network facilities. If the network is to grow, it may make sense to number the facilities and have them correspond to any maps created for the network.

Since some of the bicycle facilities in the network are already in place, development of a system of network signage is something that the municipalities can begin coordinating immediately. There are already some wayfinding signs located in the county. Figures 28 and 29 depict some of the signage already being used in several Camden County municipalities.

FIGURE 28: EXISTING WAYFINDING SIGNAGE



SOURCE: DVRPC, 2008

FIGURE 29: EXISTING FACILITY AND WARNING SIGNAGE



SOURCE: DVRPC, 2008

Signs such as these, along with those recommended in the *Manual on Uniform Traffic Control Devices* (MUTCD), are located throughout the study area. This report does not recommend replacing existing signage. Whenever possible, however, new signs should reflect those currently in place to avoid confusion and inconsistency. Existing signage could also be made more consistent with the addition of a shared decal, for example.

The overall design of the network signage is not as important as having it be consistent and legible. This will make it easier for users to navigate the bicycle and multi-use trail network and will get drivers used to seeing the new signs and more cyclists on the road.

EDUCATION, ENCOURAGEMENT, AND ENFORCEMENT

The physical implementation of the bicycle and multi-use trail network must be complemented by educational programs, projects, programs, and events that encourage people to bike and walk and more stringent enforcement that provides for safer bicycling and walking conditions.

Educational programs can be geared toward children and parents as a way to increase walking and bicycling to school. School assemblies that discuss bicycle and pedestrian safety as well as bicycle riding lessons for children should be considered and can be paired with other Safe Routes to School efforts. Procuring helmets for schoolchildren at a low cost should also be explored. Classes for adults in proper bicycle-riding etiquette that may be taught at area recreation centers are also a way to foster bicycling in the county. Drivers must also be educated in the rights of cyclists and pedestrians. Using the driver's education curriculum and producing a brochure explaining these rights will assist in this capacity.

Encouraging people to walk or bicycle can take several forms. For children, special events such as walk/ride to school days and bicycle rodeos increase interest in walking and bicycling. County officials can work with local businesses to offer benefits to workers who choose to bicycle or walk to work. Other events such as group rides and "open streets" or "ciclovía"-type events can be organized by the county and provide safe spaces for people and families to ride and walk. Having clear route information available online could also encourage local residents to walk and bicycle more frequently. Working with local police to enforce traffic laws also may encourage more bicycling and walking.

Designing, engineering, and building the Camden County Bicycling and Multi-Use Trail Plan must be complemented by policies that create a strong environment for bicycling and walking. By educating the public about the benefits of bicycling and walking, encouraging users of all ages to do so, and enforcing laws to create a safe environment, more and more people will choose to walk and bicycle.

Chapter 6

COSTS AND FUNDING

As the design and construction of the different facilities proposed in this plan are considered, the issue of project costs comes to the forefront. Building trails and striping bicycle lanes can be expensive, and having a strong mechanism for estimating the costs of these facilities can assist in project prioritization as well as planning future additions to the network.

This chapter outlines the costs that may be incurred by implementing the different facilities that constitute this plan. The second part of the chapter highlights some potential funding sources that can be used on project design, engineering, and construction.

COST ESTIMATES

Table 3 compiles the total number of miles of proposed facilities that comprise the Camden County Bicycling and Multi-Use Trails Plan. The mileage values of existing facilities are also included because maintenance is required to keep facilities in a state of good repair.

As evidenced in Table 3, there are approximately **553 miles of existing and proposed facilities outlined in this plan**. Roughly 10 percent of these facilities are currently in place. Of the proposed facilities, 112 miles are proposed recommended routes and 235 miles are proposed bicycle facilities and mixed treatments. Together these facilities account for 63 percent of the proposed facilities. The other 37 percent of proposed facilities are off-road trails.

The cost of different on- and off-road bicycle facilities can vary greatly. All bicycle facilities, both on- and off-road are vulnerable to variations in location, materials, and length. That being said, a recent publication by the UNC Highway Safety Research Center titled *Costs for Pedestrian and Bicyclists Infrastructure Improvements* surveyed cities and states across the country on project and improvement costs to produce a database that could help decision makers, planners, researchers, and others estimate the costs of proposals and plans. For each type of improvement, the report states the minimum, maximum, median, and average cost for that item along with the number of sources and data points.

Information from the report was used to estimate the costs of implementing the entire plan, below. For this analysis, the median value provided in the report was used.

Bicycle Lanes

For a bicycle lane, the median cost is \$89,470 per mile, with the minimum cost of \$5,360 and the maximum cost of \$536,680 per mile. These costs (all approximate) include roadway preparation, which consists of any necessary excavation (\$55 per foot), grading (\$2,000 per acre), curb/gutter removal (\$5 per linear foot), and clearing and grubbing (removing vegetation and roots) (\$2,000 to \$15,000 per acre). It is most cost-efficient to construct bicycle lanes during street reconstruction, street resurfacing, or at the time of original construction when roadway preparation is already necessary.

Recommended Routes

Recommended routes do not require any type of engineering or design work. They do, however, require signage, shared lane markings, if deemed necessary, and routine maintenance to ensure safe passage for cyclists. The cost of the bicycle signs depend on the frequency of the signs as well as whether or not they will feature some level of wayfinding information. *Costs for Pedestrian and Bicyclists Infrastructure Improvements* estimates that **bicycle route signs cost roughly \$160 per sign**. The cost of planning and producing a specialized sign system is estimated to be \$85,000, but ostensibly that would cover not only the recommended routes but the signage on all facilities as well. Network signs would have to be complemented by more traditional safety and warning signage to ensure legibility. Wayfinding and informational signage also improve the usability of the network and help walkers and bikers find important community landmarks such as schools and train stations. Wayfinding signage for on-road facilities and trails ranges from \$530 to \$2,150 per sign.

The median price **of a shared lane marking, or sharrow, is \$160 each**, with a minimum of \$22 and a maximum of \$600. The cost of marking an entire route is determined by the spacing of markings. According to the National Association of City Transportation Officials (NACTO)'s *Urban Bikeway Design Guide*, along busier streets and discontinuous facilities, markings should be placed about every 50 to 100 feet. For routes with lower traffic volumes, markings can be placed up to every 250 feet.

For the purpose of the cost analysis, all recommended routes are assumed to have shared lane markings and route signage of some kind. Since recommended routes are only suggested for lower-volume streets, it is assumed that on average shared lane markings will be painted every 250 feet, or about 21 markings per mile. Therefore, **the cost of pavement markings per mile is \$3,360**. NACTO guidance for bicycle route signage is one sign every 2–3 blocks and a sign on the far side of major intersections. For the cost estimates below, it is assumed that a block is about 750 feet, so a sign would be placed about every 1,500 feet. For ease of conceptualization, it is assumed that a sign would be placed every ¼ mile or four per mile at a total cost of \$640 per mile. Therefore, **the total cost of a recommend route is estimated to be \$4,000 per mile**.

Multi-Use Trails

Off-road trails are the most expensive component of this plan. A variety of factors can influence costs. These include land acquisition, length, location, and materials, as well as the amount of work that needs to be done to make the trail secure for cyclists and pedestrians. As some of the proposed trail alignments are located adjacent to protected lands, it will be necessary to ensure that trail users don't encroach on these sensitive areas. According to *Costs for Pedestrian and Bicyclists Infrastructure Improvements*, **the average cost for paved multi-use trails per mile is \$481,140**, with a minimum of \$64,710 and a maximum of \$4,288,520.¹ This value can be used for all three categories of trails in the plan, as there is no difference between them in terms of standard design practices. Camden County must take the lead on assembling the money necessary to build these trails, but the municipalities will be important, particularly when land acquisition is involved.

The costs outlined above are estimates based on present-day figures. As different facilities are added to the network, a clearer picture of the long-term costs of implementing this plan will come into focus. The costs do not include routine maintenance of the facilities.

¹ The average cost (rather than the median) is used in this instance because it is closer to the costs in other parts of the Delaware Valley region and reflects the higher costs associated with developing trails in more urban environments.

TABLE 3: FACILITY TYPE AND COST SUMMARY BY MUNICIPALITY

Municipality	Existing Facilities (in miles)				Proposed Facilities (in miles)							Cost Off-Road Facilities	Cost On-Road Facilities	Total Costs
	Circuit Trails	Other Trails	Bicycle Lanes	Total	Circuit Trails	County- Identified Trails	Other Trails	Bicycle Facilities	Mixed Treatments ²	Recommended Routes	Total			
Audubon	-	0.5	-	0.5	2.04	-	0.24	2.35	1.35	4.37	10.35	\$1,097,000	\$290,827	\$1,387,827
Barrington	-	-	-	-	0.58	-	-	3.17	-	1.01	4.76	\$279,062	\$287,660	\$566,722
Bellmawr	-	-	-	-	-	1.97	-	3.81	0.22	5.95	11.95	\$947,846	\$374,962	\$1,332,808
Berlin Borough	-	0.93	-	0.93	1.17	0.32	2.59	2.7	-	2.83	9.61	\$1,963,052	\$252,889	\$2,215,941
Berlin Township	-	-	0.65	0.65	-	2.3	1.64	1.15	-	5.57	10.66	\$1,895,692	\$125,171	\$2,020,863
Brooklawn	-	-	-	-	0.81	-	0.8	0.35	-	0.82	2.78	\$774,635	\$34,595	\$809,230
Camden City	11.64	1.53	1.63	14.8	19.26	-	0.05	16.24	1.78	5.67	43.0	\$9,290,813	\$1,558,861	\$10,849,674
Cherry Hill	3.65	-	0.67	4.32	0.05	7.16	0.59	26.45	6.75	12.12	53.12	\$3,752,892	\$2,730,423	\$6,483,315
Chesilhurst	-	-	-	-	-	-	-	1.66	-	-	1.66	-	\$148,520	\$148,520
Clementon	-	-	-	-	0.64	1.59	1.87	2.95	-	2.55	9.60	\$1,972,674	\$274,137	\$2,246,811
Collingswood	1.12	1.13	-	2.25	0.19	-	-	2.07	2.28	2.34	6.88	\$91,417	\$301,119	\$392,536
Gibbsboro	-	4.79	0.16	4.95	-	0.55	2.45	2.59	-	2.64	8.23	\$1,443,420	\$242,287	\$1,685,707
Gloucester City	-	0.56	-	0.56	3.1	-	-	3.31	-	1.83	8.24	\$1,491,534	\$303,466	\$1,795,000
Gloucester Township	2.81	-	-	2.81	1.57	7.54	5.33	39.93	-	2.84	57.21	\$6,947,662	\$3,583,897	\$10,531,559
Haddon Heights	-	1.24	-	1.24	1.03	-	-	1.53	3.93	4.6	11.09	\$495,574	\$338,958	\$834,532
Haddon Township	1.19	1.43	-	2.62	1.53	-	1.54	4.79	2.98	4.01	14.85	\$1,477,100	\$583,872	\$2,060,972
Haddonfield	-	1.57	-	1.57	0.46	-	2.13	2.04	3.83	6.94	15.40	\$1,246,153	\$389,274	\$1,635,427
Hi Nella	-	-	-	-	0.34	0.71	-	0.81	-	0.19	2.05	\$505,197	\$73,231	\$578,428
Laurel Springs	-	-	-	-	0.55	-	-	1.35	-	0.42	2.32	\$264,627	\$122,465	\$387,092

² To calculate the cost of a mile of Mixed Treatments, an average of the cost of bicycle lanes and sharrows was used (\$46,735 per mile), assuming that implementation of mixed treatments will be some combination of the two general types of facilities.

Costs and Funding

Municipality	Existing Facilities (in miles)				Proposed Facilities (in miles)							Cost Off-Road Facilities	Cost On-Road Facilities	Total Costs
	Circuit Trails	Other Trails	Bicycle Lanes	Total	Circuit Trails	County- Identified Trails	Other Trails	Bicycle Facilities	Mixed Treatments ²	Recommended Routes	Total			
Lawnside	-	-	-	-	0.38	-	0.49	3.62	-	1.56	6.05	\$418,592	\$330,121	\$748,713
Lindenwold	-	1.3	1.16	2.46	0.99	3.84	2.48	5.52	0.97	5.57	19.37	\$3,517,133	\$561,487	\$4,078,620
Magnolia	-	-	-	-	0.95	0.19	-	3.40	-	0.32	4.86	\$548,500	\$305,478	\$853,978
Merchantville	1.02	-	-	1.02	0.1	-	-	2.22	0.39	0.98	3.69	\$48,114	\$220,770	\$268,884
Mt. Ephraim	-	0.48	-	0.48	-	-	-	1.09	1.21	1.52	3.82	-	\$160,152	\$160,152
Oaklyn	-	0.22	-	0.22	1.46	-	-	0.9	0.17	0.37	2.90	\$702,464	\$89,948	\$792,412
Pennsauken	2.01	-	-	2.01	4.83	-	0.28	15.63	2.24	4.35	27.33	\$2,458,625	\$1,520,503	\$3,979,128
Pine Hill	-	-	-	-	-	1.78	2.39	7.76	-	0.28	12.21	\$2,006,354	\$695,407	\$2,701,761
Pine Valley	-	-	-	-	-	-	0.12	-	-	-	0.12	\$57,737	-	\$57,737
Runnemede	0.52	-	-	0.52	0.52	2.57	-	2.8	-	1.36	7.25	\$1,486,723	\$255,956	\$1,742,679
Somerdale	-	-	0.56	0.56	1.03	0.61	1.31	2.17	-	2.60	7.72	\$1,419,363	\$204,550	\$1,623,913
Stratford	-	-	0.29	0.29	0.84	0.83	0.38	2.70	-	2.60	7.35	\$986,337	\$251,969	\$1,238,306
Voorhees	-	1.17	8.47	9.64	-	4.47	3.27	7.95	-	7.13	22.82	\$3,724,024	\$739,807	\$4,463,831
Waterford	-	-	-	-	-	6.5	9.13	20.87	0.35	-	36.85	\$7,520,218	\$1,883,596	\$9,403,814
Winslow	-	1.41	-	1.41	-	7.03	16.35	5.78	4.55	17.88	51.59	\$11,249,053	\$801,301	\$12,050,354
Woodlynne	-	-	-	-	0.28	-	-	0.19	-	-	0.47	\$134,719	\$16,999	\$151,718
Grand Totals	23.96 miles	18.26 miles	13.59 miles	55.81 miles	44.7 miles	49.96 miles	55.43 miles	201.85 miles	33.0 miles	111.91 miles	496.85 miles	\$72,214,306	\$20,054,658	\$92,268,964

SOURCE: DVRPC, 2014

FUNDING STREAMS

A number of funding sources can help in the design and construction of the projects. This section details several of those sources and who the awarding agency is.

The major sources of funds for the projects in the region's Transportation Improvement Program (TIP) are the United States Department of Transportation's Federal Highway Administration (FHWA) and the Federal Transit Administration (FTA). In addition, monies are made available by the state of New Jersey to match federal funding in varying ratios or to provide 100 percent financing for selected projects on the state highway systems. Counties, municipalities, and private developers or toll authorities, as well as transit operators, may also participate in providing matching funds for federal aid. Federal funding programs for which bicycle facilities are explicitly made eligible are described below.

National Highway System (NHS) – Awarding Agency: NJ DOT

NHS is a federal highway designation that provides separate funding and oversight for an interconnected system of major roads. This system serves population centers, ports, airports, public transportation, and other intermodal facilities. The construction of bicycle facilities within NHS rights-of-way, interstate highways included, is explicitly stated as eligible for funding under this program.

Surface Transportation Program (STP) – Awarding Agency: NJ DOT

STP is a block grant program that may be used for many types of transportation projects. Projects on roads functionally classified as local or rural minor collector are ineligible for funding under this program. Of the STP funds apportioned to a state, 10 percent must be set aside for safety construction activities.

Transportation Alternatives Program (TAP) – Awarding Agency: DVRPC/NJ DOT

Moving Ahead for Progress in the 21st Century (MAP-21), the current federal transportation authorizing legislation, consolidated three programs that have historically been sources of funding for bicycle and pedestrian projects (Transportation Enhancements, Safe Routes to School, and Recreational Trails) into a single program: Transportation Alternatives.

While many types of projects are eligible, bicycle and pedestrian project eligibility is summarized as follows:

Construction, planning, and design of on-road and off-road trail facilities for pedestrians, bicyclists, and other nonmotorized forms of transportation, including sidewalks, bicycle infrastructure, pedestrian and bicycle signals, traffic-calming techniques, lighting and other safety-related infrastructure, and transportation projects to achieve compliance with the Americans with Disabilities Act of 1990.

- Construction, planning, and design of infrastructure-related projects and systems that will provide safe routes for non-drivers, including children, older adults, and individuals with disabilities to access daily needs;
- Conversion and use of abandoned railroad corridors for trails for pedestrians, bicyclists, or other nonmotorized transportation users;
- Construction of turnouts, overlooks, and viewing areas.

For the most current information on TAP funding availability and application rounds, please visit the DVRPC website: <http://www.dvrpc.org/TAP>.

The Congestion Mitigation and Air Quality (CMAQ) Improvement Program – Awarding Agency: DVRPC

CMAQ provides funding for transportation control measures and other projects that will improve air quality and contribute to the attainment of the Clean Air Act standards by reducing highway source emissions.

Hazard Elimination Program (Section 1112) – Awarding Agency: NJ DOT

Bicycling and walking hazards are now specifically included in the list of eligible activities for this program. In addition, the definition of a public road now includes a publicly owned bicycle or pedestrian pathway or trail and traffic calming measures.

Transit Enhancement Activity (Section 3003) – Awarding Agency: NJ Transit

This funding program, created with a one percent set-aside of Urban Area Formula transit grants (Section 3007) can be used for, among other things, bicycle and pedestrian access to mass transportation, including bicycle carriage facilities on buses and trains, and storage facilities at stations and bus stops. However, historically, NJ Transit has used these funds to build and maintain its bus shelters.

Green Acres – Awarding Agency: NJ DEP

The Green Acres program was created by a ballot initiative in 1961 and subsequently renewed through 12 additional ballot measures. The program funds a range of activities through its five program areas: State Park and Open Space Acquisition, Local and Nonprofit Funding, Stewardship and Legal Service, Planning and Information Management, and Office of Natural Resource Restoration. Generally, all Green Acres funding is for the support of outdoor recreation and conservation and must provide public access to these resources.

Recreational Trails Program – Awarding Agency: NJ DEP

This program is funded through the Federal Highway Administration's Recreational Trails Program (RTP) and provides funding specifically for acquisition for, and construction of, trails as well as ongoing maintenance of trails and trail facilities. The maximum grant award for non-motorized projects is \$24,000.

Cross County Connection Transportation Management Association (CCCTMA) TDM Reimbursements – Awarding Agency: CCCTMA

This program makes available monies to member organizations to reward them for expanding their use of Transportation Demand Management (TDM) strategies. This money can be used for the purchase and installation of pedestrian and bicycle-related enhancements such as bicycle racks, crosswalks to enhance safety and visibility, and other improvements.

Private foundation funding – Awarding Agency: Various

In recent years, regional philanthropic organizations such as the William Penn Foundation have been both generous and ambitious in providing financial support for building the regional trails network. This has occurred both through the creation of new, temporary discretionary funding programs such as the DVRPC-facilitated Regional Trails Program, and on an individual basis to specific grantees in response to individual project proposals. Sponsors with project ideas should consider reaching out to the William Penn Foundation and others to explore funding opportunities that may become available from time to time.

Other Sources – Awarding Agency: Various

Bicycle and pedestrian projects are eligible for other funds, including scenic byways, bridge, transit, safety (non-construction), and federal lands programs.

There are also some non-federal programs that supply smaller grants to the planning and design of bicycle facilities. These include Bikes Belong grants, Kodak American Greenway Awards, and People for Bikes' Community Grant Program. Additionally, as the connection between health outcomes and the ability to walk and bike becomes more visible, a number of health foundations and public health agencies, such as the Robert Wood Johnson Foundation and Shaping NJ, have become emerging sources of funding for completing projects that expand the options for active transportation.

Chapter 7

CONCLUSION

This report outlines plans for a comprehensive bicycle and multi-use trail network throughout Camden County, New Jersey. The plan includes both on- and off-road facilities and pays particular attention to increasing mobility so that area residents have the option of walking and bicycling to work, school, and other local destinations.

Through a series of workshops with county stakeholders, existing facilities and trails were inventoried and a set of regional attractors were chosen. The road network was evaluated to determine where bicycle lanes would be appropriate as well as what local roads should be included in the plan as recommended routes. Figures 16–22 depict the entire network as agreed upon by county stakeholders.

Network-wide recommendations include design standards for the various types of facilities as well as recommendations for encouraging bicycling and walking throughout the study area. While the individual municipalities will be responsible (along with Camden County) for the network within their boundaries, facility standards should be consistent throughout the municipalities, as should network signage and bicycle parking requirements.

Implementing this network will increase transportation options as well as the number of people who walk and bicycle as a means of transportation. It will connect residential areas to regional destinations and allow for greater access to the parks and recreational opportunities that exist throughout the study area. It will also promote regional cooperation, as neighboring municipalities work together to create uniform signage and clear standards for trail design.

This network will not be built in a day. Moving the Camden County Bicycling and Multi-Use Trails Plan beyond a set of recommendations will take a coordinated effort from both public and private interests. The implementation of a full network that is accessible to users of all levels will require cooperation between the municipalities and with county officials, environmental groups, and residents of the various municipalities involved in this study.

PUBLICATION TITLE: Camden County Bicycling and Multi-Use Trails Plan

PUBLICATION NUMBER: 13036

DATE PUBLISHED: January 2015

GEOGRAPHIC AREA COVERED: Camden County, New Jersey

KEY WORDS: Bicycling, bicycle facilities, bicycle lanes, trails, multi-use trails

ABSTRACT: This plan is the bicycling and multi-use trails plan for Camden County, New Jersey. The plan identifies a network of trails and bicycle facilities that will connect bicyclists and other non-motorized users to attractions in Camden County, such as open space, schools, universities, train stations, shopping destinations, and employment. The plan is a guidance document to the county and municipalities who are seeking to enhance local mobility and accessibility throughout the county. The plan maps existing facilities and lays out a network of facilities to be considered for future implementation.

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