

PROJECT CONTEXT & BACKGROUND



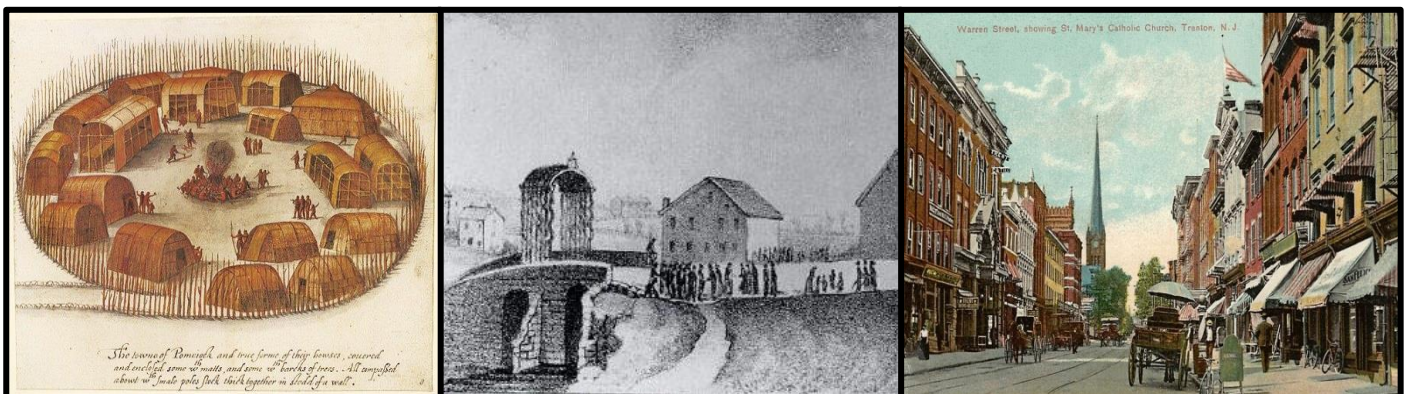
Introduction

Mercer County, prides itself as a center of commerce, education, healthcare and culture. Located in central New Jersey, roughly equidistant between New York City and Philadelphia, the County is home to nearly 400,000 residents within 226 square miles. Our County sits within one of the most densely developed regions in the nation with approximately 10% of the US population living within 75 miles.

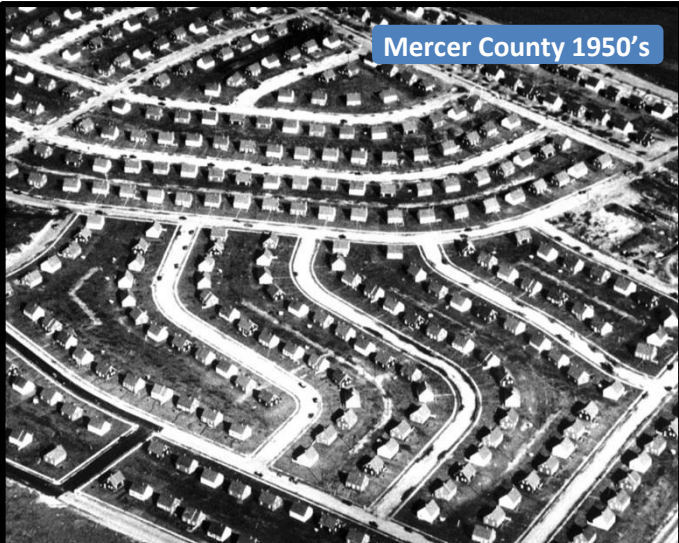
The County is home to the State Capital and many state offices as well as numerous fortune 500 corporations and prestigious medical and educational institutions. Along with its many assets, it is also blessed with a rich cultural history that dates back to Native American inhabitation and encompasses sites of original European settlements, vital Revolutionary War locations, industrial revolution factories, and more. The County is also home to a vast amount of preserved farmland and open space, home to numerous parks and a growing trail network.

As Mercer County evolved from a rural agricultural community to a mixed-economy with vast manufacturing in the City of Trenton, the County continued to grow organically. Starting in the post WWII era, we witnessed the first large scale suburban developments, which now form the backbone of our many communities and neighborhoods. During this time, our region witnessed a massive expansion of our highway networks. This network has been evolving to meet our community's needs and to make the County a strong, economically successful and socially vibrant area. Today, our transportation infrastructure is the skeleton on which our modern society is built upon. Without it, our modern society would grind to a halt. Moving forward, the County will continue to improve our highways to accommodate all users and community needs.

With nearly 400,000 residents and thousands of local businesses located within the County, it is crucial to work together to promote a more economically viable, environmentally sustainable and livable area. Transportation planning at the regional scale is critical to our economic vitality, environmental health and community cohesion. To meaningfully influence economic and environmental impacts associated with development, land use, and transportation, officials must act at a level where central cities and suburbs can be considered together. At the County level, our transportation system connects towns to each other and to connect towns to other surrounding counties.



This plan is a sub-element of the Mercer County Mobility Element and serves to enhance our County road network as directed per the Mercer County Complete Streets Resolution (Resolution No. 2012-249), adopted on April 26, 2012. Under this resolution, the Mercer County Board of Chosen Freeholders wish to support the County Executive's "Complete Streets" policy through the planning, design, construction, maintenance and operation of new and retrofitted transportation facilities, enabling safe access and mobility of pedestrians, bicyclists, and transit users of all ages and abilities. This Mercer County Bike Plan serves as a guidance document for the County in developing bicycle facilities along County roadways and, to enhance travel for pedestrians and bicyclists of all abilities. It also serves to improve the quality of our transportation network as well as the quality of life for everyone who lives and works in the County.



Mercer County 1950's



Robbinsville Town Center 2018



Ewing Town Centre 2022

Project Context and Background

Through adoption of Complete Streets policies at the State, County, and Municipal levels, Mercer County is committed to accommodating and encouraging transportation by all modes on our public roadways. An important element of this complete streets initiative in turn is the pursuit of a safe and comprehensive network for cyclists. Over the past decade, bicycling has become increasingly recognized as a key element of everything from reducing traffic congestion to improving air quality to reducing obesity and is a critical factor in creating healthy and vibrant communities. Within the county, existing and proposed investments for bicycling are seen in dedicated on-street facilities as well as several off-road multi-use trails, such as the Lawrence-Hopewell Trail, Delaware and Raritan (D&R) Canal Trail and others.

Individually, these projects reflect improved safety for cyclists, but their sum is a network that lacks connectivity - both between bicycle facilities and between key destinations. Obstacles such as highways and large intersections pose additional challenges to improving the connectivity of the network.

Mercer County's strategy for improving the network begins by focusing on improvements for safety and accommodation along our jurisdiction of approximately 180 centerline miles of County Routes. These roadways are owned and maintained by the County, and serve as critical intra-county and inter-county corridors for all users. By addressing bicycle access on these routes, the County hopes to provide strategies that bridge disparate municipal plans and resolve existing obstacles.

The Mercer County Master Bike Plan provides a comprehensive analysis and bicycle facility design recommendations for all County routes. As part of the Mercer County Master Plan, this sub-element of the Mercer County Mobility Element, complements local initiatives and programs; and builds upon the work of the County Planning Department, the Mercer County Bicycle and Pedestrian Task Force (MCBPTF), and local municipalities' plans and studies. This analysis can be used for future planning efforts by County staff as well as by the County Engineer and Planning Board during the Land Development review process, especially when determining DTS, ROW dedications, and conditions of approval such as sidepaths.

Staff from the Delaware Valley Regional Planning Commission (DVRPC), our regional Metropolitan Planning Organization, assisted with this study to assess opportunities, constraints, and strategies towards enhancing bicycle facilities and connections on County Routes within Mercer County, with emphasis on improving safety and mobility for all users.

In addition to the recommendations included in the report, this study provides a replicable framework for identifying, assessing, and designing facilities to be used in future phases of MCPD's bicycle network development. The following pages discuss our County Vision, Goals and Objectives which served as the guide to developing our plan and facility recommendations as well as to help guide future conceptual designs and implementation.

Vision, Goals and Objectives

Bicycling and walking are integral components of an efficient transportation network. Appropriate bicycle and pedestrian accommodations provide the public, including the disabled community, with access to the transportation network, connectivity with other modes of transportation, and independent mobility regardless of age, physical constraint, or income. It is the objective of Mercer County to create a bicycle facility network that encompasses the entire County of Mercer and connects neighborhoods to parks, schools, open space, retail, employment centers, public facilities and anywhere else people may need to go. Our vision is to create the most bike friendly community in the State of New Jersey.



Goals

In order to achieve this vision, the County of Mercer has outlined a C5 strategy, similar to that in NJDOT's *Complete Streets Design Guide*, towards developing and integrating bike facilities throughout the County. These 5 goals will guide the County's efforts of establishing

Continuous: Create a network of continuous facilities that do not require bicyclists to walk their bikes or ride in and out of vehicular traffic.

Complete: Create a complete and thorough network of on and off-road bike facilities.

Connected: Provide bicycle access to destinations such as schools, employment centers, neighborhoods, shopping centers, trails, parks and other major attractors.

Comfortable: Create a safe ride that is comfortable where people do not have to fear riding on our facilities.

Convenient: Create facilities that are easy to use by all age groups.

Objectives

In order to achieve these goals, this study accomplishes 4 objectives:

1. Consider roadway conditions of all County Routes including the following:
Posted Speeds, AADT, Existing Cartway Widths, Land Use, Environmental Conditions, Constraints and Pinch Points, Truck Routes, Bus Routes, and Street Activity.
2. Demonstrate conceptual designs and identify opportunities, constraints and costs associated with implementation.
3. Identify and separate road segments into short term, medium term and long term project horizons based on necessary infrastructure needed, right-of-way considerations and fiscal constraints.
4. Prioritize bicycle capital program improvements (maintenance, operational or major capital projects), especially for resurfacing projects.

Project Background and Development

The steering committee assembled for this project included staff from the Mercer County Planning Department and the Mercer County Engineering Division. The steering committee also included the Greater Mercer Transportation Management Association (GMTMA) which includes advocates and staff from the Mercer County Bicycle and Pedestrian Task Force (MCPBTF), the Greater Philadelphia Bicycle Coalition, as well as and municipal representatives. The steering committee met during this County Bicycle Master Plan process and the GMTMA Trail Plan process. Committee members and the general public were involved during 5 public meetings and 2 pop-up events held in May, June and July. Photos from those meetings are on the following pages.

Mercer County Planning Department staff also worked closely with the Engineering Division to discuss implications and overall feasibility of bicycle infrastructure. With the help of the Engineering Division, a variety of issues were discussed. Items such as setting speed limits and utilizing USLIMITS2, reducing cartway widths, road diets, intersection improvements, crosswalk types and locations, curb radii, incorporating bike infrastructure during resurfacing projects and more were discussed. The County Highway Division was also consulted with to determine feasibility of improvements at a series of locations. Moving forward the Department of Planning with Engineering and Highway Divisions will work to implement these facilities where feasible.

Steering Committee Meetings

The project team and steering committee first convened at a MCPBTF meeting in September 2016. After introducing the project scope and goals, the committee participated in a map based workshop of prioritizing routes in order to establish a study area for the project. This exercise helped to reduce the number of potential routes from forty to thirteen. An overview of these prioritized routes was provided in January 2017, during the second steering committee meeting. The project team briefly presented the existing conditions of the study area, and outlined the process of collecting, assessing, and mapping street characteristic data.

Feedback from the first two steering committee meetings informed the process by which the project team assembled additional data and conducted analyses. Next, a series of design proposals for each of the priority routes were developed and provided to the steering committee for review at the third meeting in April 2017. The committee shared their priorities and feedback related to the proposed designs, and discussed the potential outcomes of each proposal.

Five Public Meeting & Two Pop-Up Events

2019 Princeton Communiversy Day Celebration with GMTMA



2019 Cultural Heritage Festival at Mercer County Park



Above: Public Bike Plan meeting at the Hightstown Public Library



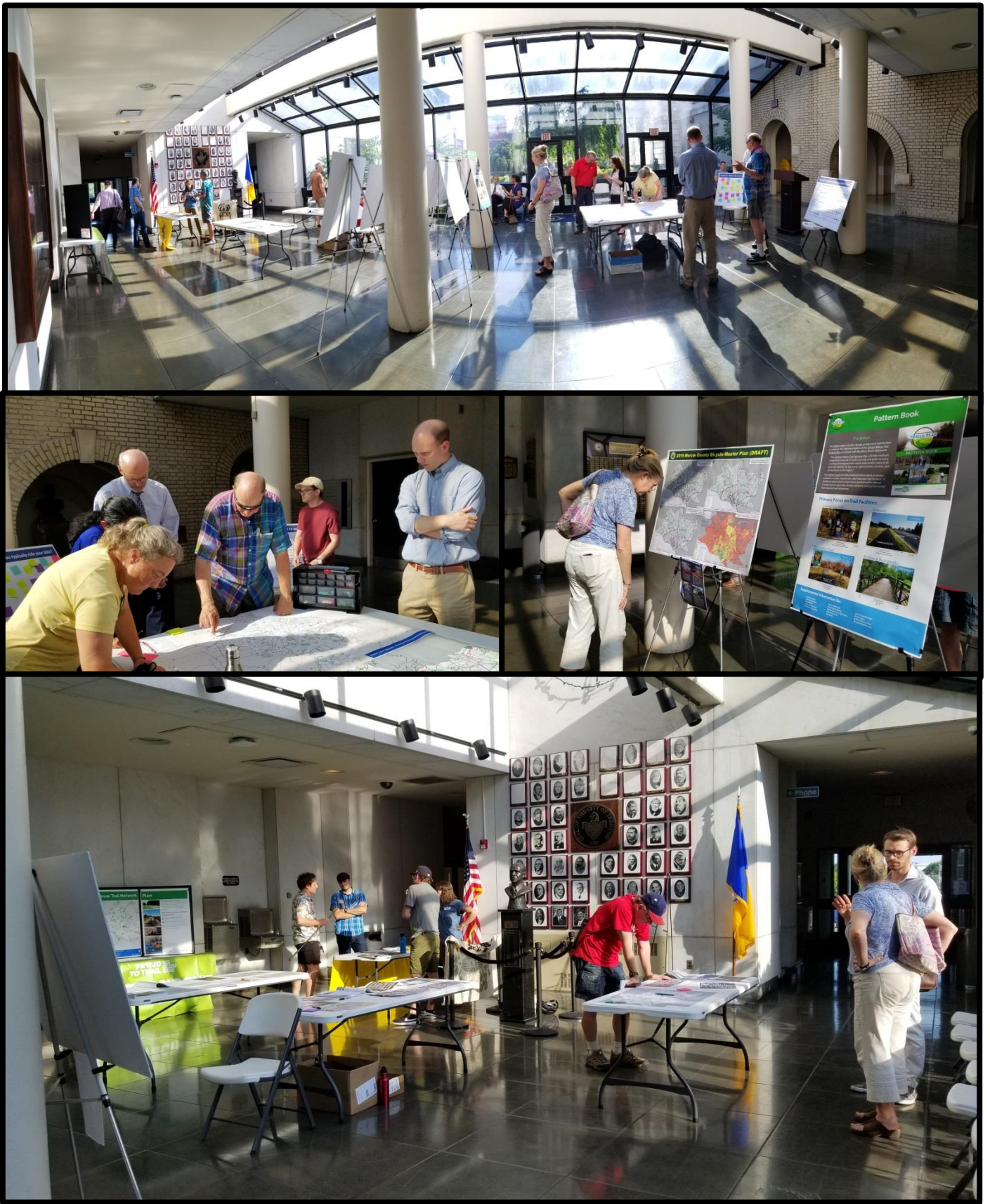
Above: Public Bike Plan meeting at the Ewing Senior Center across from NJDOT HQ.



Above: Public Bike Plan meeting at the Princeton Country Club in West Windsor.



Above: Public Bike Plan meeting at the Princeton University Carl Fields Center



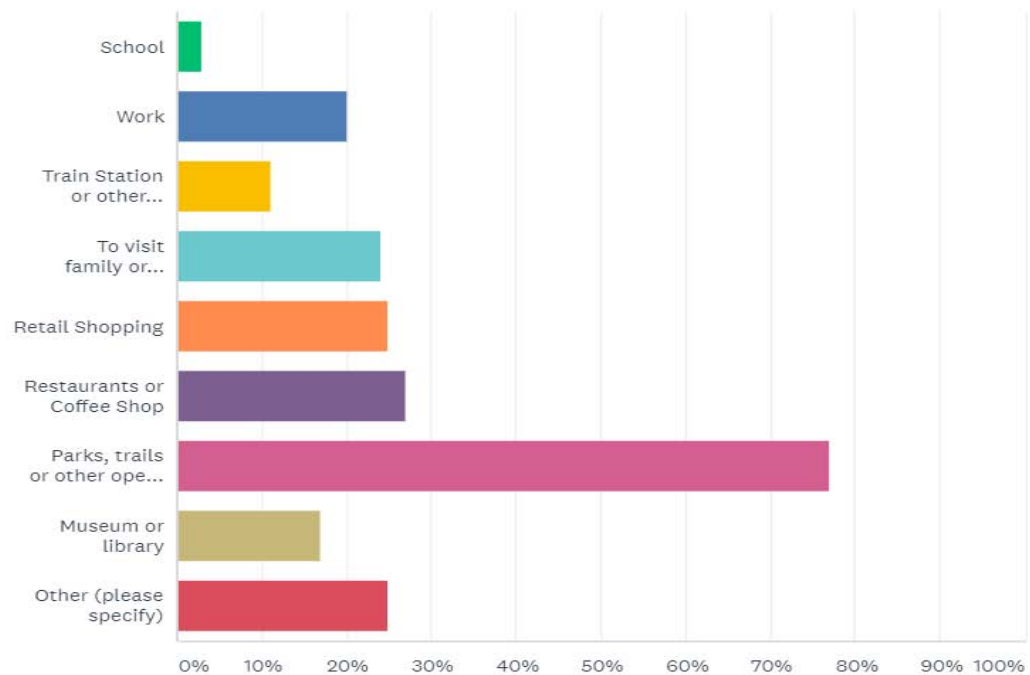
Above: Final Public Bike Plan meeting at Trenton City Hall coordinated with the GMTMA Trail Plan and Trenton Cycling Revolution, a local Trenton area bicycle advocacy group.

Public Meeting Findings & Summary

Through the months of May, June and July, a total of 5 public “open-house” style meetings were held throughout the County. These meetings were advertised on County and town websites and social media pages as well as through social media pages of various nonprofits and bicycle advocacy groups. In addition to these public meetings, Mercer County staff ran stands at the Princeton Communiversitry Day Festival and the Mercer County Cultural Heritage Festival to reach out to bypass residents who do not or cannot typically attend public meetings. Over these 7 public outreach events, staff interacted with hundreds of residents. During these meetings, staff asked residents to provide feedback on the County Bicycle Master Plan Element and cycling in general around the County.

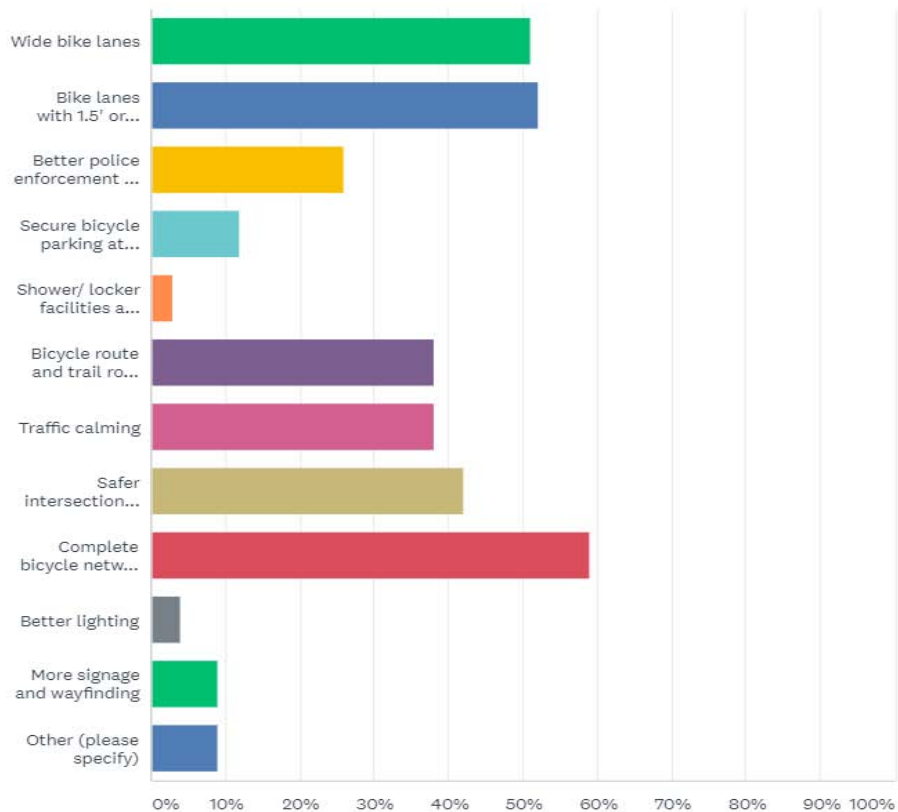
Three major forms of public participation were utilized. The County began its efforts with an online survey which the County website and social media linked to. Physical paper links with scannable QR codes were also handed out in person during live meetings. The link led to a short 5 minute survey (average response time 4.2 minutes) with 10 questions. The survey saw 144 individual respondents answer the survey. When asked how often they ride their bike, a majority of our respondents (41%) rode a few times a week, followed by 17% who said they rode a few times a year and 12% who rode a few times a year. Approximately 10% of our respondents ride their bikes every single day.

Which of the following destinations do you ride to?



Above: A majority (77%) respondents ride their bike to get to parks, trails or other open space opportunities in and around Mercer County. Due to lack of school reach out, school age children may have been underrepresented.

What would you MOST like to see to make your biking experience better?
(Pick up to 4 options)



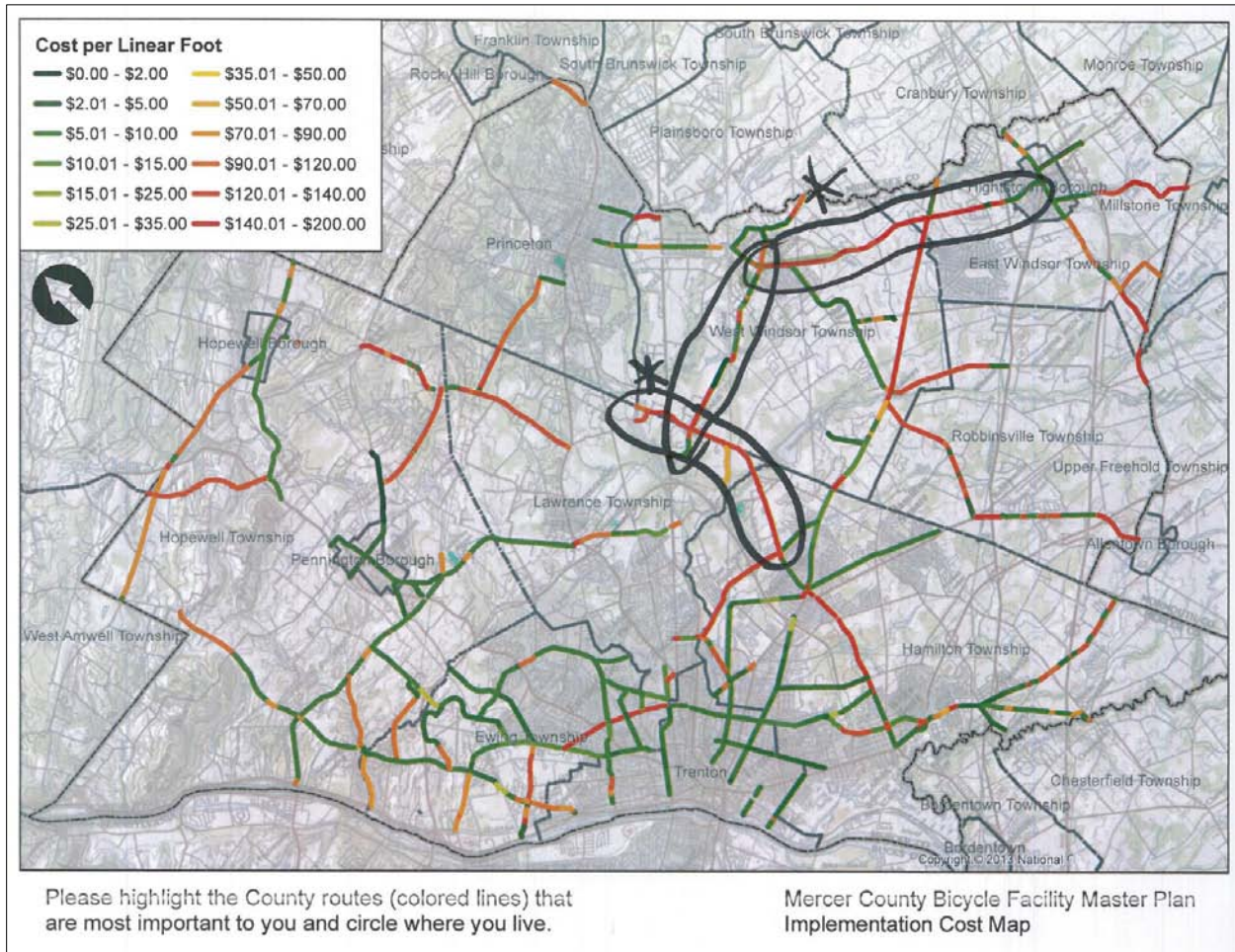
When asked about what impediments riders faced and factors that made it difficult to ride, 58% of respondents cited high speed traffic, 55% said there was too much traffic, and 57% cited that the road was too narrow. Other major problems facing riders include difficult intersections (37% of respondents) as well as unpredictable drivers (34% of respondents) and uneven roads (33% of respondents). When asked what they would like to see most to make their biking experience better, 59% said that a complete bicycle network connecting Local, County and State bike facilities was important. Respondents also wanted wide bike lanes (51% of respondents), bike lanes with 1.5' or 3' buffers (52% of respondents), and safer intersections, interchanges or bridge crossings (42% of respondents).

Approximately 75% of respondents, indicated that the primary reason that they bike was for health or exercise. Most also ride for recreation or for fun (69% of respondents). Only some 20% of respondents indicated that they ride primarily for commuting to school or work reasons. Of our respondents, approximately 65% of people indicated that their average bicycle trip is one hour or less with 35% indicating that their average trip is 30 minutes or less. Of the respondents, approximately 45% of respondents rode their bikes from 1.5 hours to 2 hours in a single trip. Two enthusiastic respondents indicated that they typically ride 4-5 hours in one trip.

STATEMENT	STRONGLY DISAGREE	DISAGREE	NEITHER	AGREE	STRONGLY AGREE	WEIGHED AVERAGE
I feel comfortable riding a bike around my neighborhood.	6%	10%	17%	41%	26%	3.71
I want to live in a community where people can bike to many destinations.	1%	3%	6%	23%	67%	4.52
I would ride my bicycle more often if the bikeway network was improved.	1%	0%	14%	29%	56%	4.39
Improving bicycling will have a positive benefit on Mercer County's attractiveness as a community.	1%	1%	9%	17%	72%	4.58
Better bicycle infrastructure is critical to attract and retain a talented workforce in Mercer County.	2%	4%	29%	35%	30%	3.87
More bicycle parking should be offered around destinations in the County.	0%	1%	20%	57%	22%	4
Providing safe bicycling alternatives for people who can't or don't drive is critical.	1%	2%	11%	46%	40%	4.22
Improving bicycling routes should be just as important as vehicle routes.	3%	4%	7%	31%	55%	4.31

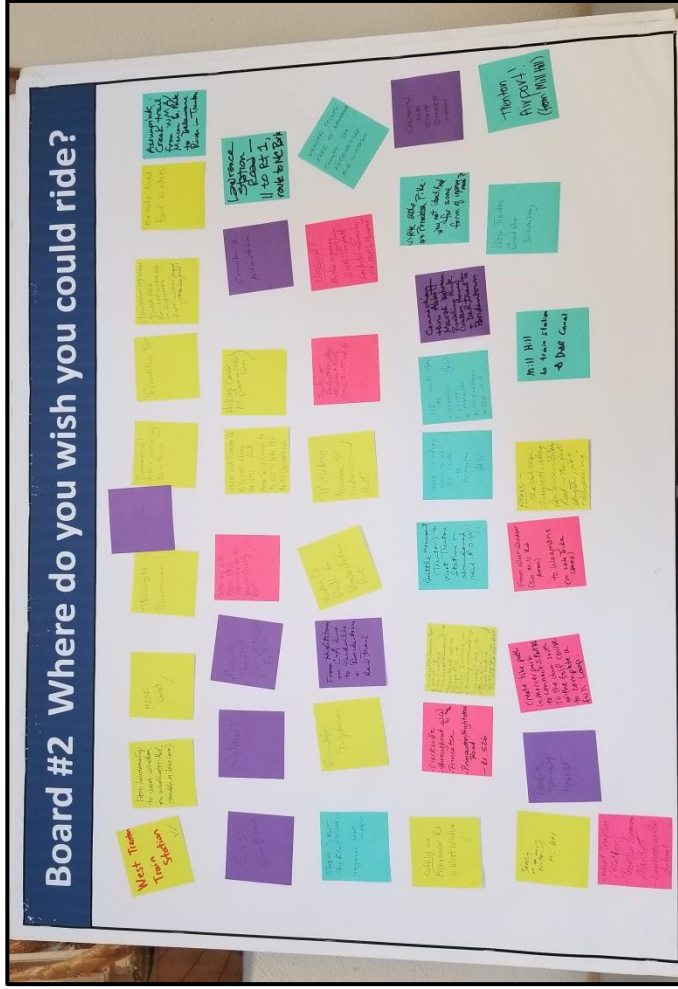
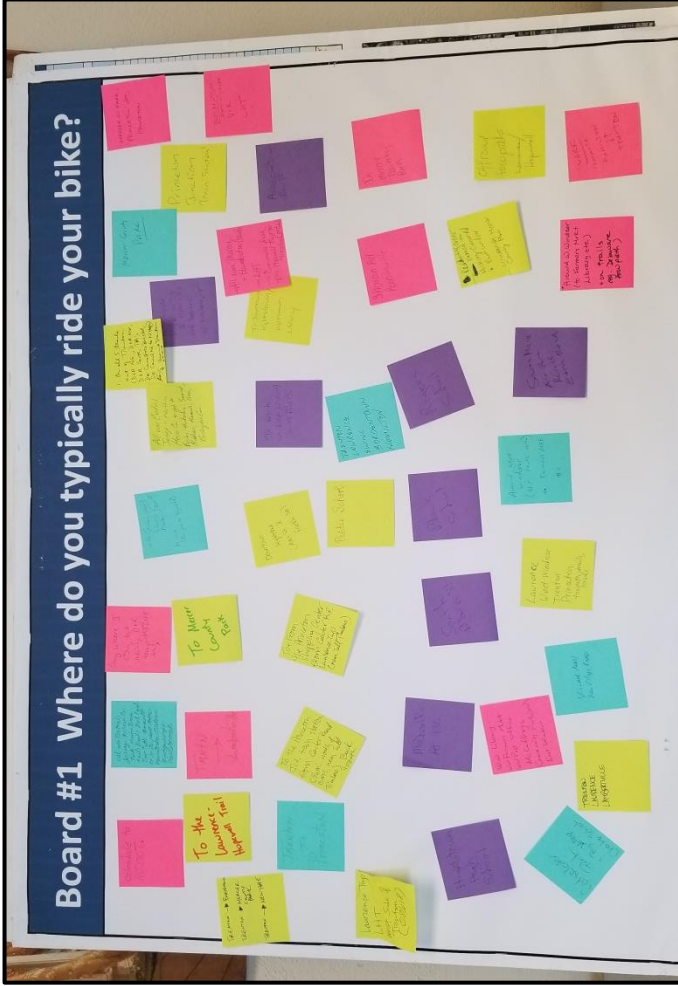
Above: Table showing agreement with a variety of statements. A higher percentage and weighed average indicates more agreement with statement.

The survey also asked the public to agree or disagree with a variety of statements. Respondents answered that they strongly agreed, agreed, had no opinion, disagreed, or strongly disagreed with the statements shown above. Most people would like to live in a community in which they can bike to many destinations and that they would ride their bike more if the bicycle network was improved. Some 89% of respondents agreed or strongly agreed that improving bicycling will have a positive benefit on Mercer County's attractiveness as a community.



The second form of public participation included paper handouts of the County map with County routes emphasized by cost of improvement by linear foot. Participants at the 7 public meetings were asked to circle, highlight or point out locations where they currently ride, wish they could ride and specific things that obstruct their ride or prevent their ride. Respondents mostly selected out local routes near their homes but a significant portion of responses indicated a desire for improved bicycle facilities along County Route 571 between Hightstown Borough and downtown Princeton. There were also several participants who wanted to see more facilities improved in the inner I-295 ring of Mercer County, specifically the inner ring areas of Ewing-Trenton-Lawrence-Hamilton. Those sheets can be found in the appendix.

The third form of public participation includes 4 36" x 24" boards asking the public various questions. During this process, participants were asked questions very similar to our survey questions such as what was the biggest obstacle to their ride and what is the most important to their ride. This was done to get responses from visitors who would not take the time to do the survey. The following page shows the four boards while a high resolution photo of the responses can be found in the appendix.

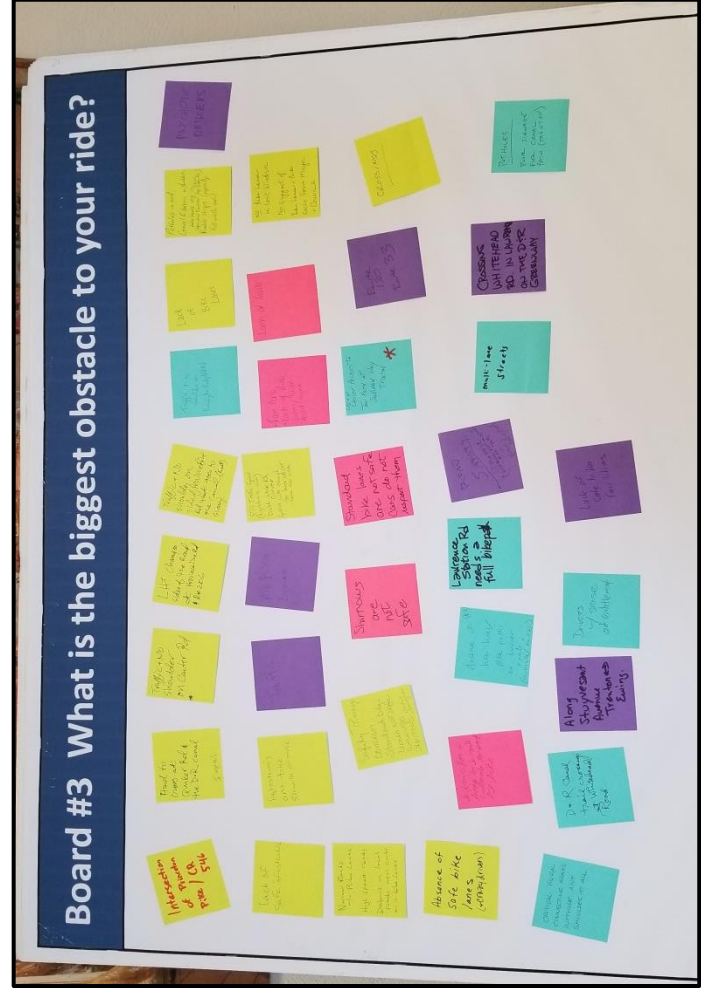


These four boards were used to gather public input on bicycle facilities asking basic questions such as where do people ride and where they wish they could ride. During this process, participants were asked what was the biggest obstacle to their ride and what is the most important to their ride.

Board #4 What is most important to you?

Wide bike lanes		Better lighting	
Buffered Bicycle Lanes <small>(With 1.5' to 3' buffers)</small>		Complete County, Local and State bicycle network	
Better police enforcement		Off-road Trail facilities	
Secure bike parking at destinations		Safer bicycle and pedestrian intersection crossings	
Shower/locker facilities at work or school		Better signage, wayfinding, and/or bike route maps	
Slower Traffic		Safer interchange or bridge crossings	
Other: <i>On line or printed bike routes is Lawrence Hogewell Trail map</i>			

(Feel free to write in option!)



Evolution of Mercer County Bicycle Planning

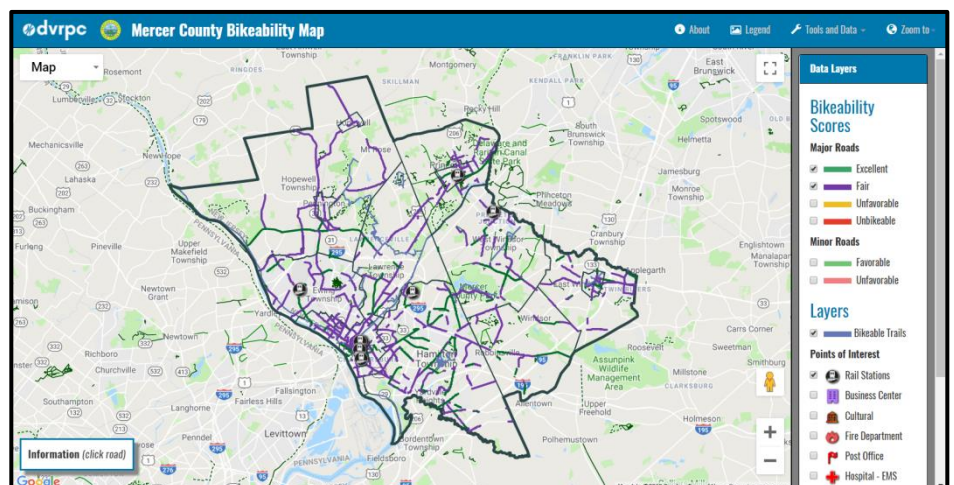
The 2019 Mercer County Bike Plan builds upon years of various planning objectives and initiatives to develop cycling facilities throughout the County. Over the past decade, there has been an increasing amount of effort to reincorporate bicycle traffic within our right-of-way. The following efforts show previous initiatives and projects that have paved the way and influenced our Mercer County Bike Plan.

2007 Mercer County Bike-Ped Task Force Created

In 2009, the Mercer County Bike-Pedestrian Task Force (MCBPTF) was created with the support of Mercer County Executive, Brian M. Hughes, and hosted by the Greater Mercer Transportation Management Association (GMTMA). The MCBPTF consists of municipal representatives designated by town mayors as well as various advocates and residents. The primary purpose of the organization is to help advocate for non-motorized infrastructure throughout Mercer County, including sidewalk improvements, bicycle improvements, intersection improvements, trail improvements, and many others. The group also acts as a forum to coordinate municipal efforts and keep each other informed of activities happening around the County.

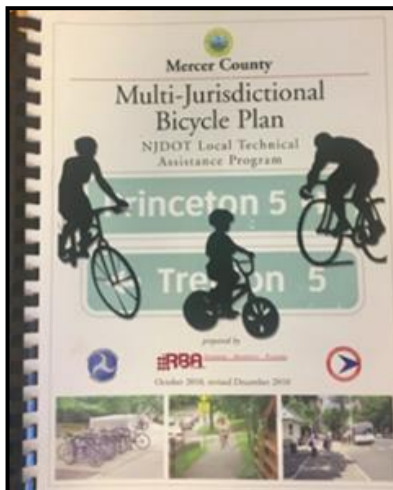
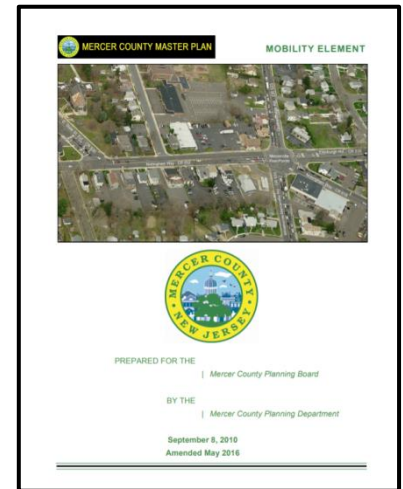
2009 Mercer County Bicycle Level of Service Online Tool

The Mercer County Bicycle Level of Service Project was the first project to attempt to identify the bikability (on-road) of Mercer County Highways. Bikability is an estimate of how comfortable it is to bike along a roadway, and considers many factors, including traffic volumes, traffic speeds, pavement widths, and whether there is a usable shoulder. This online tool derived bikability using the Bicycle Level of Service (BLOS) model, which references physical characteristics such as shoulders and widths as well as functional characteristics including traffic volumes to determine a letter grade (A-F) for each segment. The study incorporated an interactive map to facilitate data sharing and solicit feedback stakeholder from agencies and with the community. This site was and currently is also intended to be a resource for Mercer County residents and bicyclists to help them plan bicycle-friendly routes to ride and to help planners identify priority bicycle corridors and facilities to be considered in the future.



2010 Mercer County Mobility Master Plan (Amended 2016)

In September of 2010, the County adopted a new Master Plan, replacing the traditional highway element with a Mobility Element that addressed all modes at a policy level. This was our complete streets policy, among other more general policies. This mobility plan presented a vision for the future of mobility in Mercer County that was conservative about recommending new roads and increased vehicular capacity. Instead the plan looked at existing conditions and making realistic improvements to our existing network. It also addressed for the first time the need to consider all modes, including transit, bicycle infrastructure and pedestrian scale walkability improvements.



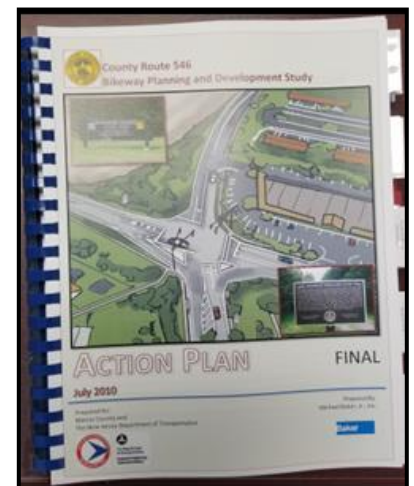
2010 Mercer County Multi-Jurisdictional Bike Plan

A predecessor of the current study, the Multi-Jurisdictional Bicycle Plan, was intended to create a database of roadway conditions from which the County could select segments or intersections for improvements. This plan was not adopted into the County Master Plan due to its focus on all jurisdictions. The County does not have jurisdiction over municipal or state facilities and as such cannot adopt a Master Plan stating where those improvements should take place. Instead, the MCBPTF decided to informally adopt this plan as their guide in advocating for improvements.

Prior to this document, the last Countywide bicycle plan effort County staff could track down was a 1975 Mercer County Bikeway Map, 35 years prior.

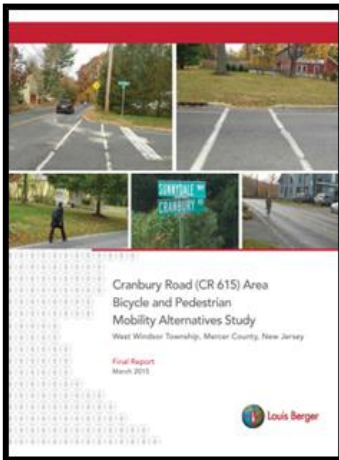
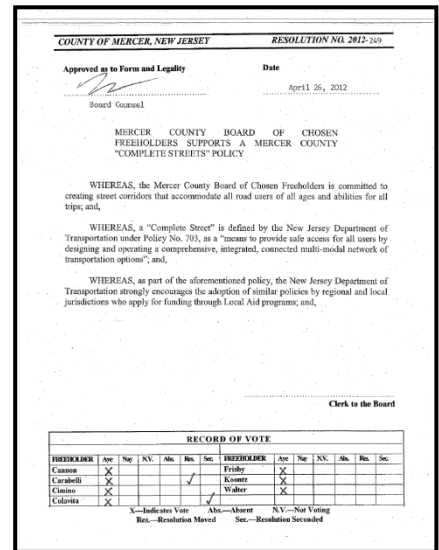
2010 County Route 546 Bikeway Study

The County Route 546 Bikeway Planning and Development Study was prepared in July of 2010 by Michael Baker, Jr., Inc. The primary purpose of the plan was to develop a concept for bikeway infrastructure between Washington Crossing State Park in Hopewell and the Johnson Trolley Line in Lawrence Township. The proposed bikeway would also include a possible connection to the Borough of Pennington via CR 631, CR 640 and CR 632. This study analyzed existing conditions and compiled data on the roadway and proposed improvement alternatives including a preferred alternative.



2012 Mercer County Complete Streets Policy

In 2012, the Mercer County Freeholders adopted a Complete Streets Policy and became the first County in New Jersey in which every single jurisdiction had adopted a Complete Streets Policy. Twelve Borough, Township and City policies now complement Complete Streets policies at the County and State levels. Adopting these Complete Street Policies orients roadway owners to improve transportation options, access to opportunities, safety, physical health, environmental quality, and community and economic vitality. Implementation of Complete Streets policies ensures that all users of the roadway are routinely considered in transportation projects and provided with safe, convenient, affordable, and equitable transportation options. With the adoption of the Complete Streets Policy, Mercer intends to incorporate complete streets facilities on all new roadways and during resurfacing projects when time and budgets allow.



2016 Cranbury Road Area Bicycle and Pedestrian Study

The Cranbury Road Area Bicycle and Pedestrian Alternatives Study was released in 2016. Prompted by a lack of pedestrian and bicycle connections, West Windsor Township commissioned a study of five alternatives for a two-mile stretch of Cranbury Road (Route 615), from Route 571 to the County line. Proposed Alternatives include options for bicycle lanes and sidewalks and options centered on off-road facilities. The study ultimately recommends a hybrid alternative: a four-foot sidewalk along the north side of the road before transitioning to the south side of the road to avoid relocation of utility poles.

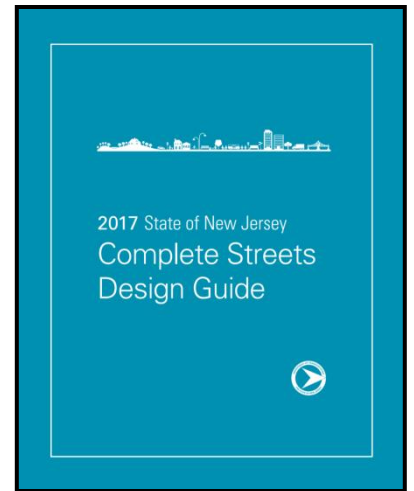
2016 New Jersey Bicycle & Pedestrian Master Plan

An update to the New Jersey Bicycle and Pedestrian Master Plan was released in December of 2016, renewing NJ's commitment to creating a bicycle and pedestrian-friendly state. This document at the State level lays out a series of goals and proposes measurable actions to reach them. The plan also aims to integrate the NJDOT Complete Streets Policy and design frameworks into a long-term vision for New Jersey.



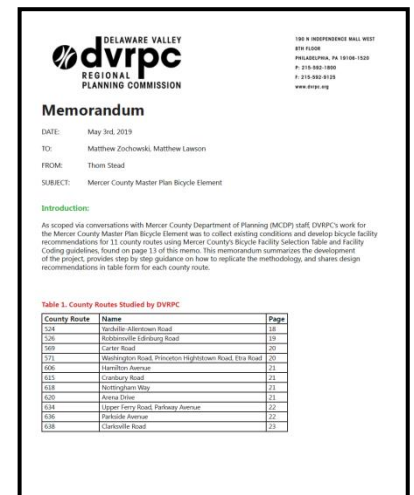
2017 NJDOT Complete Street Design Guide

In 2017, The State of New Jersey Complete Street Design Guide was released and serves as a reference for strategies and designs to achieve the goals of each municipality's adopted policy. Our 12 municipal complete streets policies as well as the County and State policies vary in their implementation approach and intensity, but each references and promotes the NJDOT vision of providing "safe access for all users by designing and operating a comprehensive, integrated, connected, multi-modal network of transportation options" (NJDOT Complete Streets Policy). The design guide helps move municipalities as well as the State from policy to action with design recommendations.



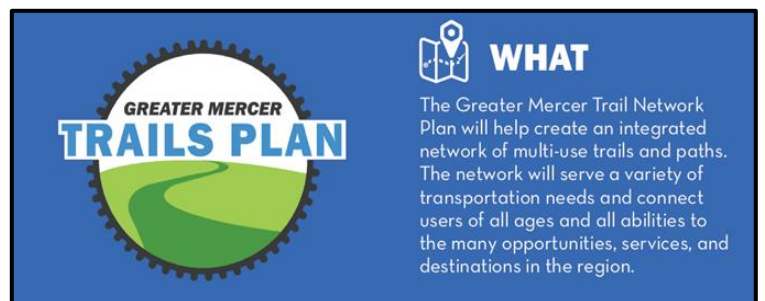
2018-2019 Mercer County Priority Route Process Memo

Mercer County most recently worked with DVRPC to prepare a technical memorandum regarding the process and methodology for analyzing our County roadways and execute that process for thirteen routes. These routes were selected with input of the Mercer County Bike and Pedestrian Task Force (MCBPTF) and determined to be of the highest priority. During this process, the County Planning Department and Engineering Division worked very closely to establish a methodology which would produce recommendations to be considered which could actually work out in the field in accordance with MUTCD, AASHTO and local regulations.



2019 Greater Mercer Trails Plan

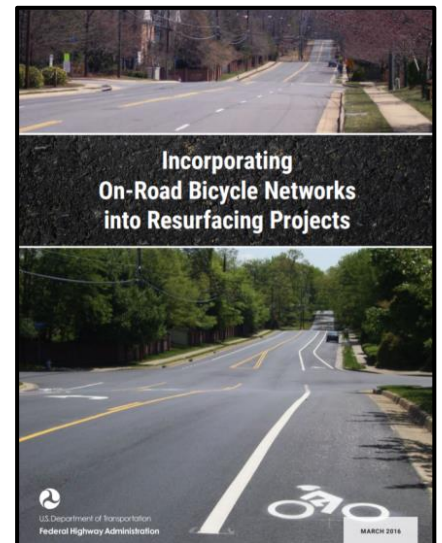
During the creation of the 2018 Mercer County Bike Plan, Mercer County transportation staff was also involved with the Greater Mercer Transportation Management Association's (GMTMA) 2019 Mercer County Trail Plan. The GMTMA is preparing a trail network plan which will serve as a guide to further developing a trail network that will connect users of all ages and abilities to many opportunities, services, and destinations in the region. This plan is due to be released in 2019 and compliments this plan by looking at trail and multi-use paths outside of Mercer County right-of-way. As some on-road facilities may be too expensive or difficult to construct throughout Mercer County, these networks will serve as secondary or "Plan B" routes to connect the rest of our network. See more on page ____.



2019 Repaving Program & Bike Facility Implementation Coordination

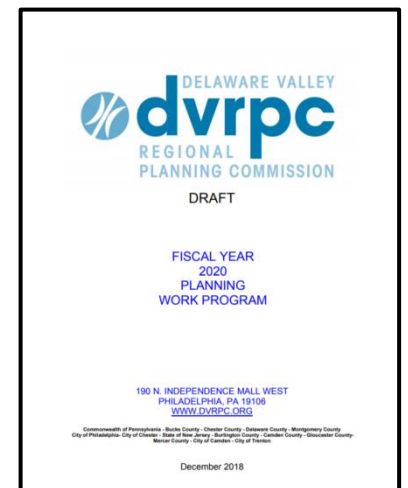
Prior to the 2019 repaving program, several roadways were identified in need of milling and resurfacing throughout the County. During this process, the roadway is typically restriped to the existing traffic conditions.

Following a FHWA's 2016 report titled, "Incorporating On-Road Bicycle Networks into Resurfacing Projects", conversations within the County Engineering and Highway Divisions took place about feasibility. Staff identified several roads within the scheduled 2019 paving program which could accommodate bicycle lanes with simple restriping. These projects include no geometric changes and only make improvements to the existing cartway with epoxy paint/ thermoplastic and signage. Moving forward, Planning Department staff will work on a Bicycle Implementation Repaving program alongside the County Engineering Department and Highway Division. This will be the County's primary method of increasing the number of bicycle facilities around the County.



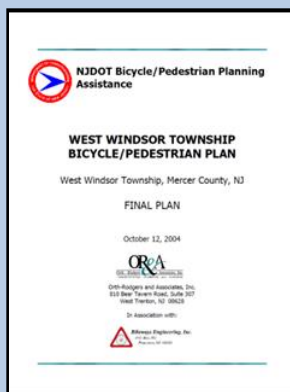
2020 DVRPC UPWP Assistance

In fiscal year 2020, DVRPC has scheduled to set aside staff time and resources to assist Mercer County with a pilot project on selected Mercer County roadways scheduled to be re-paved with bicycle lanes. This project will determine feasibility of bicycle improvements in circumstances where travel lanes would need to be moved, eliminated or added. DVRPC staff will work with the County in identifying specific locations and will conduct technical work to assist with planning-level design concepts. Concept refinement may require capacity analysis to assess the impacts of lane configuration changes on traffic movements and if bicycle facilities are feasible in those select locations.



Relevant Municipal Documents

As this study area comprises all of Mercer County's municipalities, the plan aims to synthesize disparate municipal plans and local studies related to bicycle facilities and policy. The resources reviewed include local complete street policies, which serve as the foundation for the current project, as well as municipal master plans and elements. In determining appropriate bicycle improvement on County facilities, it was imperative to look at municipal proposals and priorities in determining how best to link the different jurisdictional networks. Below is a list of municipal documents reviewed for this purpose.

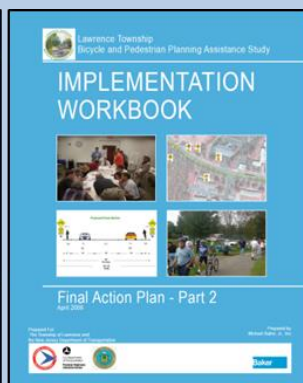
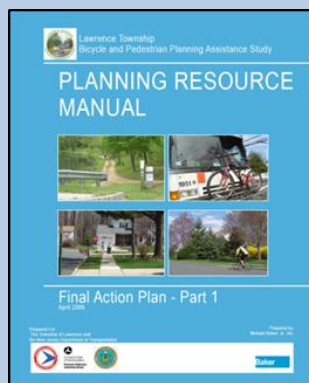
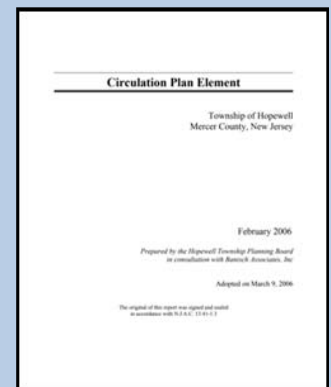


2004 West Windsor Bicycle/ Pedestrian Plan

NJDOT provided technical assistance to West Windsor Township by assessing 28 miles of roads and 14 miles of trails. The study finds over 60 percent of segments as 'not optimal' for accommodating bicyclists and pedestrians. For more feasible areas, the plan provides short- and long term recommendations for increasing the network; a few of the assessed routes are included in the current study as well. West Windsor is also home to a few corridor improvement projects such as the CR 571 Princeton Junction Project and others.

2006 Hopewell Circulation Plan Element

Hopewell Township has identified the bicycle as a low-cost and effective means of transportation that is quiet, nonpolluting, extremely energy-efficient, versatile, healthy and fun. Bicycles also provide low-cost mobility to the non-driving public, including the young. In addition, pedestrian and bicycle routes can be designed to accommodate both forms of transportation. The intent in recommending both pedestrian and bikeway plans are to ensure that the dual function is accommodated.



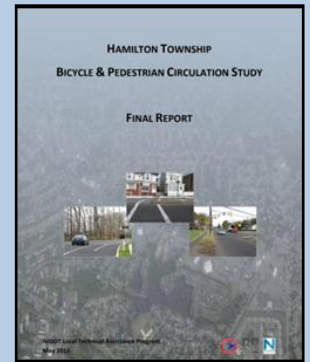
2011 Lawrence Township Study

The stated goal of the Lawrence Township Bike and Ped Planning Assistance Study was to develop and implement a comprehensive bicycle and pedestrian plan that includes improvements in the three (3) E's (Engineering, Education and Enforcement), to enhance safety and mobility. The outcome of this planning study is a two-part Action Plan, The Planning Resource Manual as well as an Implementation Workbook.

Relevant Municipal Documents

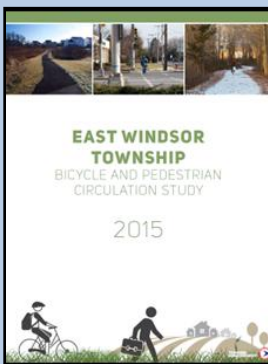
2011 Hamilton Bicycle and Pedestrian Circulation Study

The Hamilton Bicycle and Pedestrian Circulation Study is envisioned as a component of the overall circulation element and will serve to support planning and implementation of bicycle and pedestrian improvements across the Township. This study was undertaken as part of the NJDOT's Local Bicycle/Pedestrian Planning Assistance Program, which seeks to foster the development of non-motorized transportation modes in accordance with statewide goals and local needs.



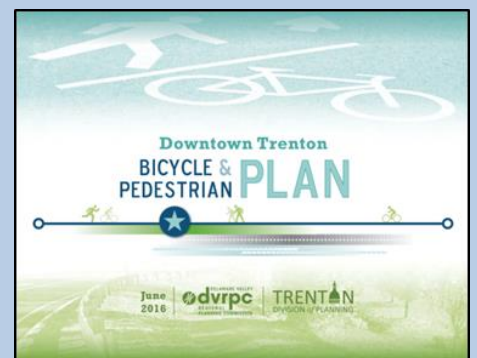
2015 East Windsor Bicycle and Pedestrian Circulation Study

East Windsor Township sought to develop a plan for bicycle and pedestrian circulation that accommodates access and provides connections to key generators of non-motorized traffic. The plan is anticipated as a framework plan to guide the development of improvement concepts and policies, and to support planning and implementation of bicycle and pedestrian improvements for the township. East Windsor has indicated their commitment to improving conditions for non-motorized traffic through their Complete Streets Policy, passed in May 2014.



2016 Downtown Trenton Bicycle and Pedestrian Plan

This plan was prepared by DVRPC in 2016. This plan suggests that Trenton the capital city and major city of Mercer County, can become a more walkable, bikable and safer city through a robust cycling and walking network and through dedicated infrastructure. The plan compiles existing conditions and provides strategies and designs ranging from standard bicycle lanes to Bicycle Boulevards, and also addresses off-road trails and pedestrian infrastructure.



2017 Princeton Bicycle Master Plan

This is the most recent municipal bike plan finished in 2017. Princeton earned recognition as Bronze Level Bicycle Friendly Community in 2013, and hopes to achieve silver status through implementation of its 2017 Bicycle Master Plan. The data for the plan incorporates a crowd-sourced webmap, an analysis of Level of Traffic Stress (LTS), and a Bicycle Penalty Metric which calculates the percentage of the street network that is fully-accessible to vehicles but falls above LTS 2 for bicyclists. The plan concludes with guidance and proposals to improve Princeton's bicycling infrastructure and facilities.

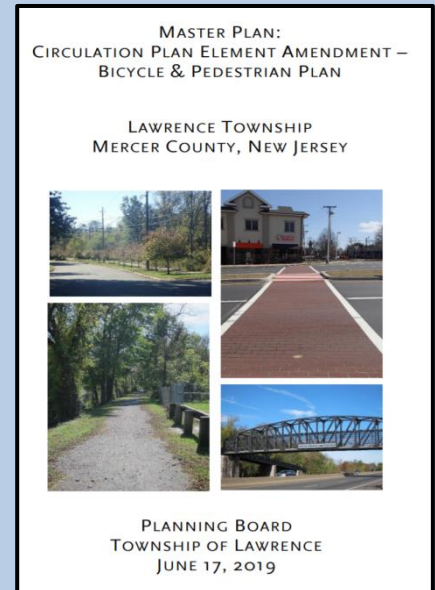


New and Upcoming Municipal Documents

2019 Lawrence Township Master Plan Element Effort

This plan serves as Lawrence Township's guiding document for guiding bicycle and pedestrian improvements. With approximately one-third of the town's population unable to drive for reasons such as age, disability, or income, it is important that this significant segment of the population be able to safely access destinations. The town also recently updated their Complete Streets Policy, Complete Streets, Implementation Policy and Complete Streets Checklist.

This document is intended to further advance the Township's vision for complete streets and related open space and recreation goals by providing goals and objectives, recommendations and implementation strategies specifically intended to enhance bicycle and pedestrian safety, access, and mobility throughout Lawrence Township.



2020 Ewing Township Rec and Open Space Master Plan

Ewing Township's Open Space and Recreation Plan will serve as a "blueprint" for the future of its parks and recreation system. As an element of the Township Master Plan, the document will communicate the Township's vision for current and future park facilities and make recommendations to guide Township policies, capital expenditures, and decisions by the Planning Board and Zoning Board. Through the plan, Ewing will continue to form an integrated system of open space that is sufficiently diverse and comprehensive to protect natural areas and provide sources of recreation for all residents. The ultimate goal is to deliver an adequate supply of park and recreation facilities that is connected to schools, public transit, bicycle and pedestrian routes, surrounding neighborhoods, and economic activity.



2020 Hightstown Borough Mobility Plan

The Hightstown Borough Mobility plan, funded through NJDOT, will aim to establish a long-term plan to improve the bicycling and walking environment for residents and visitors to Hightstown. The Borough has been proactive in incorporating new sidewalks and crosswalks in new public works projects and would like for this plan to build upon those efforts with private owners as well as County and State agencies.

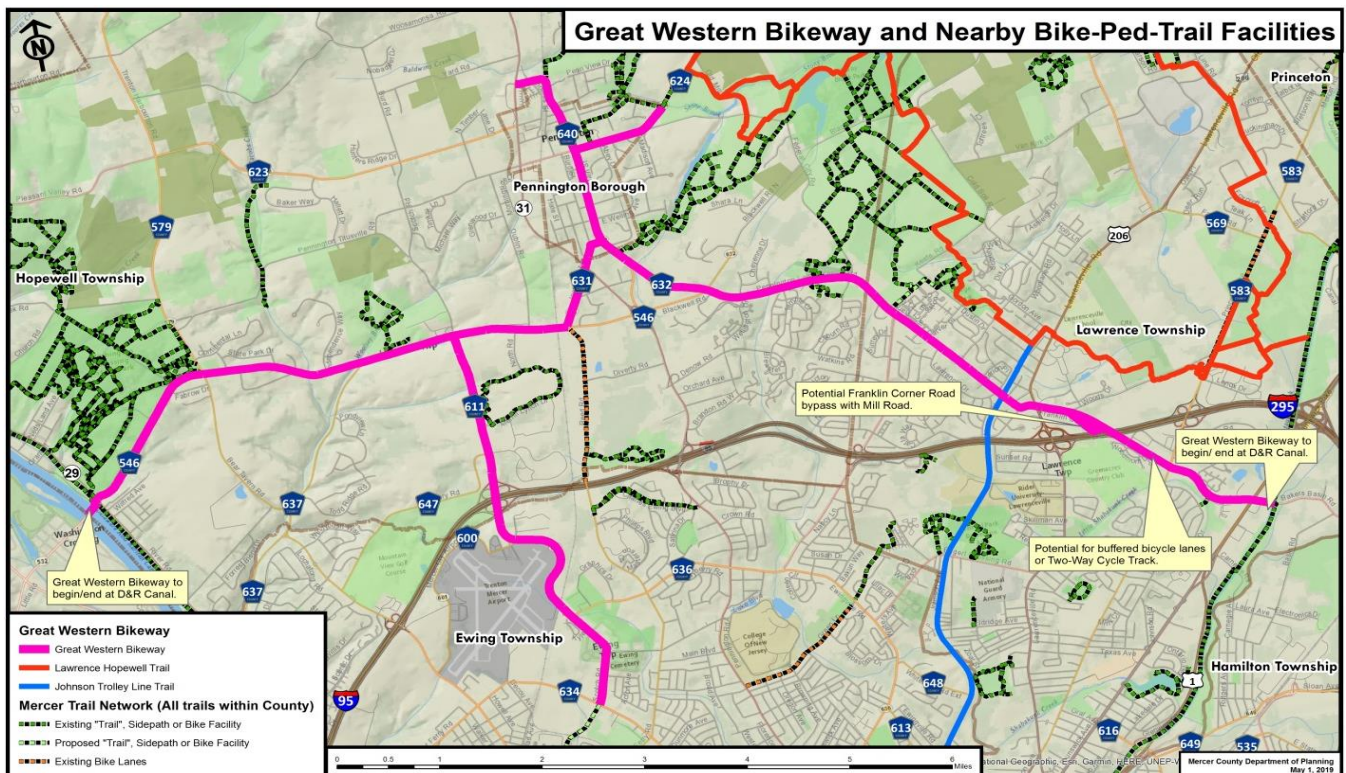


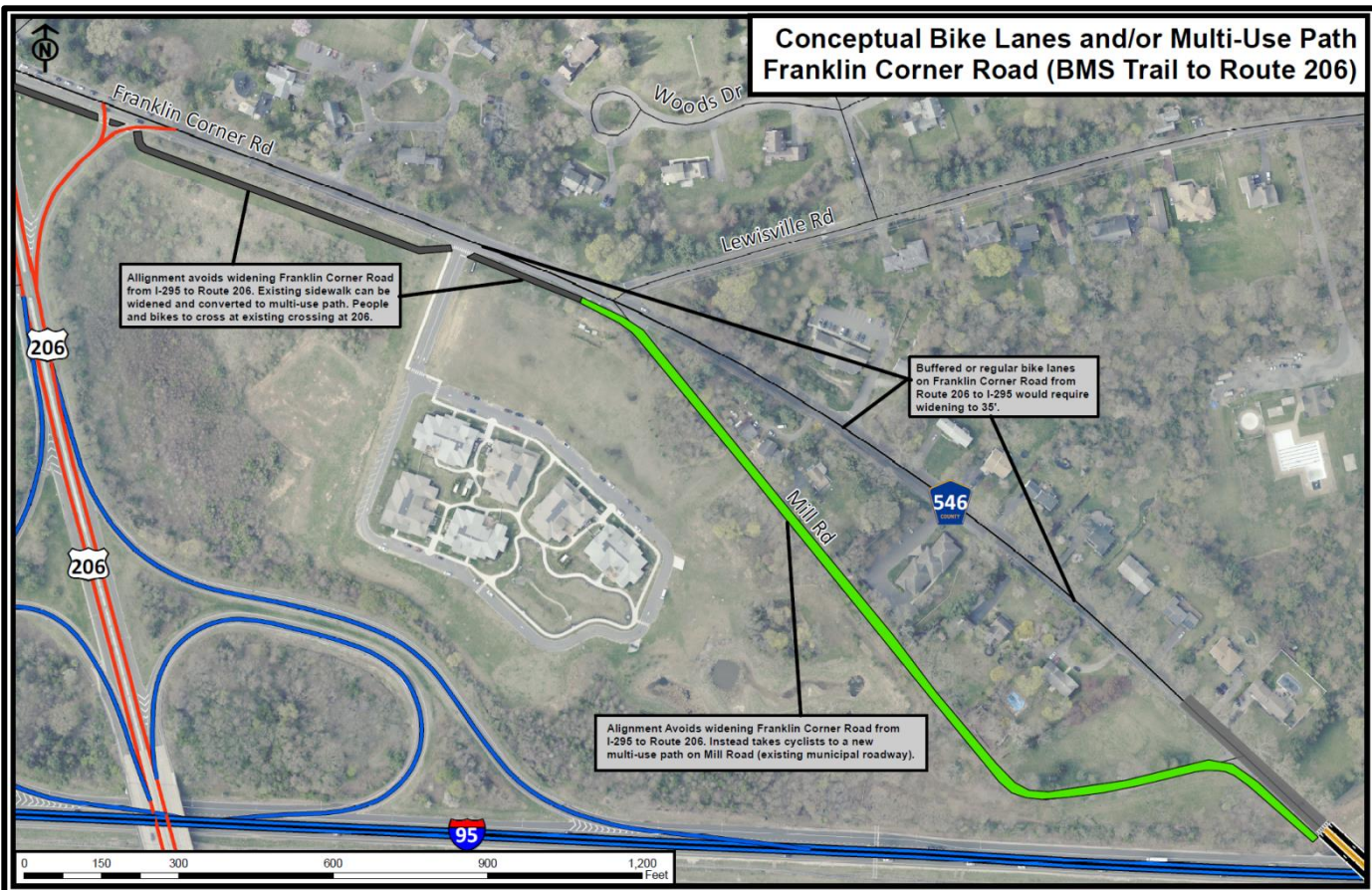
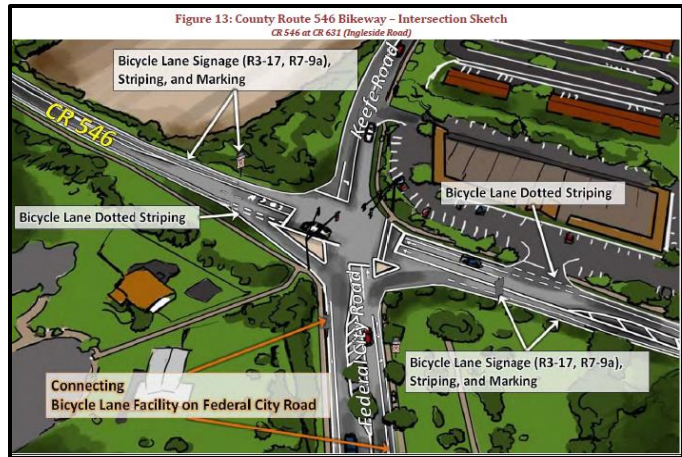
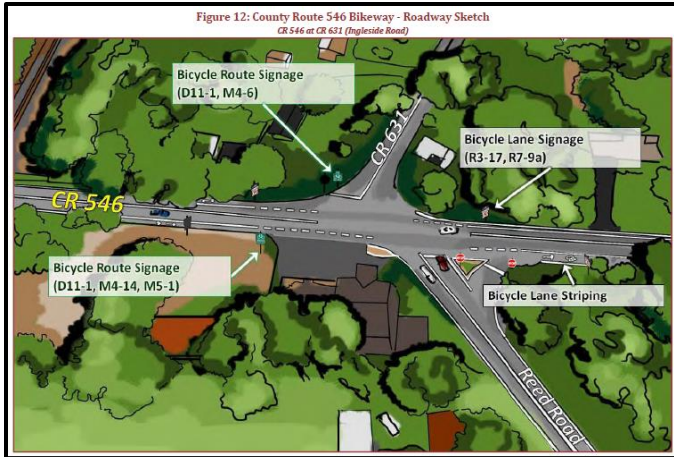
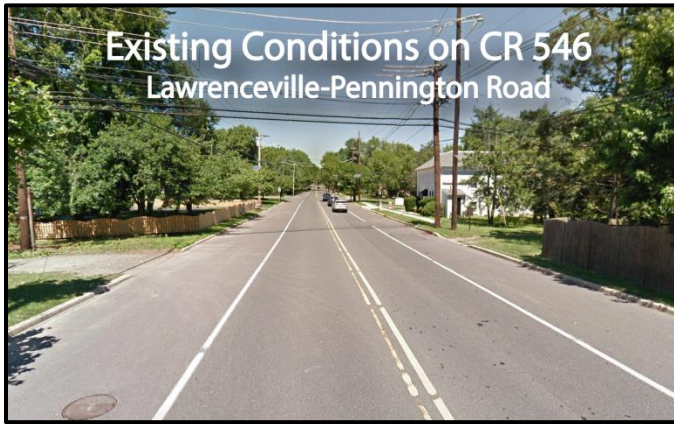
Great Western Bikeway

One of Mercer County's signature projects currently underway is a major long distance bicycle corridor along County Route 546. This County Route essentially runs from the D&R Canal next to the Delaware River in Hopewell Township through to the D&R Canal and Route 1 in Lawrence Township and covers a massive western section of Mercer County. Once completed, the Great Western Bikeway will establish 17.5 miles of bikable shoulders, bike lanes and signed bikeways on CR 546 and Scotch Road. In 2009, Mercer County requested local planning assistance from NJDOT for the project's CR 546 segment, resulting in a plan and conceptual alignment.



With this alignment, we can create a "bicycle spine" that will allow us to connect future bike facilities and trails from Ewing, Pennington, Hopewell and Lawrence. Building off this spine will allow us to create a safe, comprehensive, connected and continuous network for residents and visitors to Mercer County. Much of this route was originally intended to be a 4-lane highway, though only ever striped to carry one lane in each direction. With such wide pavement extents, most of this road can be converted to bicycle lanes relatively easily, converting existing 8 foot shoulders to 5 foot bike lanes with 3 foot rumble and painted buffers. There are however certain segments which will require minor widening to accommodate a safe and continuous facility from the Delaware River to Route 1 and from Upper Ferry Road to CR 546. Though no ROW acquisition is anticipated, items such as utility poles, landscaping and mailboxes may need to be moved in certain cases for road widening. In 2017, Mercer County submitted a Regional Transportation Alternatives application which was awarded in 2019 in the sum of \$2,365,900.





Conceptual Two-Way Cycle Track and Center Turn Lanes on Franklin Corner Road (BMS Trail to Princeton Pike)



UT's proposed improvement to the road is to add a center turn lane and a two-way cycle track. The center turn lane will be 10 feet wide and the cycle track will be 10 feet wide. The total width of the proposed improvements is 20 feet. The road will be widened to 60 feet. The road will be widened to 60 feet. The road will be widened to 60 feet.

Franklin Corner Road will need to be widened to accommodate the two-way cycle track. The road will be widened to 60 feet. The road will be widened to 60 feet. The road will be widened to 60 feet.



Since there may need to be widening and 2'-3" trees may need to be taken down as well as some utility work and migration for the above 4' high trees that are existing.



This alignment creates a two-way cycle track from the BMS Trail to Princeton Pike, or to Route 1 and back on one side of roadway. Further consideration to take place during PE phase and with continued discussions with NJDOT.



Current C&E is to be scheduled to be prepared and submitted by Mercer County. Little Backwood Creek (Vegetary Channel) - 20080108 - Department of Utilities



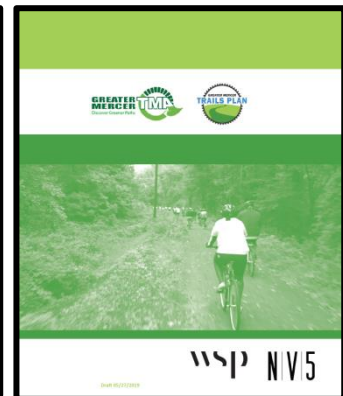
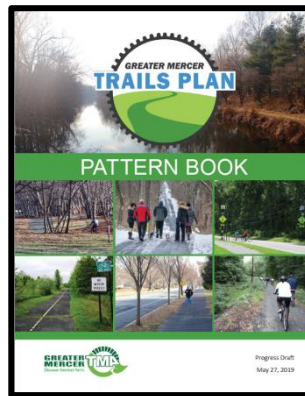
2020 Greater Mercer Trail Plan

Concurrently, as the Mercer County Department of Planning has been developing our Bicycle Plan, the Greater Mercer Transportation Management Association (GMTMA) has been working with their consultant, WSP, on a Greater Mercer Trail Plan. This trail plan aims to create an integrated network of multi-use trails and paths throughout the Greater Mercer region and is directly tied to the County's on-road Bike Plan network. The combined on-road and off-road network will provide a variety of transportation needs and will connect users of all ages and all abilities to the many opportunities, services, and destinations in the region.

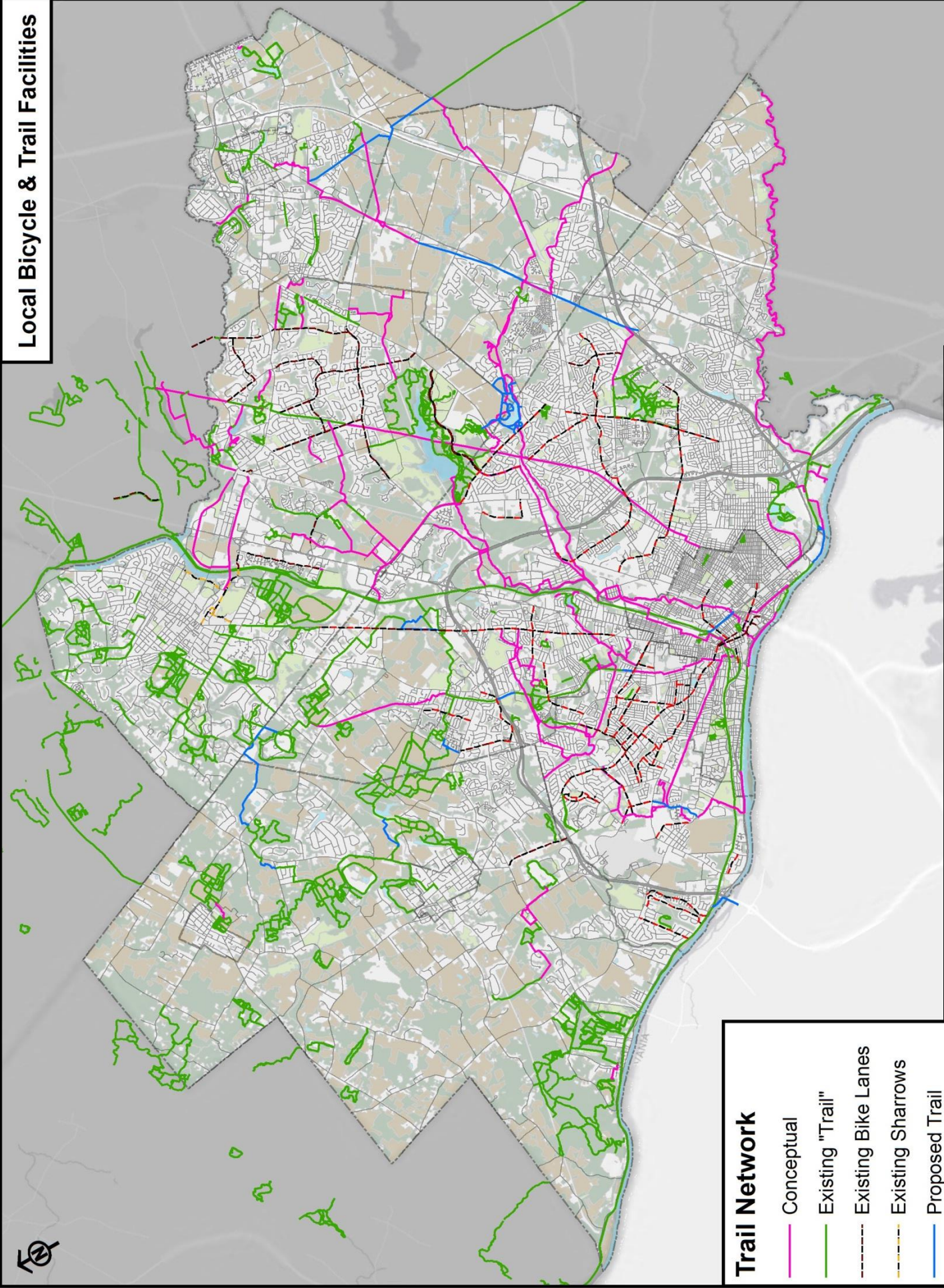


The effort involved inventorying existing and planned trails and paths for all jurisdictions in the Planning Area, and gained input from all relevant stakeholders. WSP is currently creating a plan for an interconnected network of multi-use paths that enable access to transit stations, education, retail and other employment locations and recreation. The vision is for the Planning Area to be home to a multiuse trail network that transforms public life by linking communities and the amenities within those communities with a safe, low stress option to motorized travel.

This plan alongside our Mercer County Bike Plan can be transformative for Mercer County in creating wholesome connections. Trails, bikeways and greenways are often seen narrowly when it comes to their benefits. People tend to focus on the recreational or environmental aspects of bikeways, trails and greenways, failing to see the big picture—the total package of benefits that a bikeway, trail or greenway can provide to communities, including public health, economic and transportation benefits, and even the effect on community pride and identity. See the benefits section for more information.



Local Bicycle & Trail Facilities



Trail Network

- Conceptual
- Existing "Trail"
- Existing Bike Lanes
- Existing Sharrows
- Proposed Trail
- Proposed Bike Lanes



Vital Local Connections

Mercer County is lucky to be home to hundreds of recreational facilities (including parks, ball fields, trails, nature preserves, nature centers, etc.) that are dispersed throughout the County. In addition, the County has done an excellent job preserving farmland and open space. Today, approximately 28,000 acres of land in Mercer County is protected and preserved, accounting for over 20% of all developable land in Mercer County. The County also has a wealth of existing and planned trails. Among all of these recreational facilities, open space, trails, schools, neighborhoods, local businesses and other areas of interest, there are few connections for non-motorized traffic. Under current conditions, it is difficult for a pedestrian or cyclist to get from the Delaware and Raritan Canal State Park to Mercer County Park.

At the same time, it is difficult for workers and students to get from their homes to employment centers or schools. Where a short bike ride should be possible to get to school, current road conditions make it difficult and oftentimes dangerous to ride to school with on-road traffic. Though State Law in New Jersey grants bicycles the same rights and subjects them to the same duties as a motor vehicle driver, it is oftentimes impractical for the average rider to utilize existing right-of-way.

The Mercer County Bike Plan strives to utilize the County Road System to create as many connections as possible so our residents can travel without a motor vehicle. With some of the best natural and institutional assets in New Jersey, Mercer County will strive to connect these for the general public. The following pages illustrate a few of the many incredible assets within the County that could ultimately be connected with a full bicycle network.

Over 28,000 acres of land in Mercer County are protected and preserved, accounting for over 20% of all developable land in the County. Of the land preserved for recreation and public use, most land isn't interconnected in a way that residents can access without an automobile.



DELAWARE & RARITAN CANAL TRAIL

The 70-mile trail is one of central New Jersey's most popular recreational corridors for canoeing, jogging, hiking, bicycling, fishing and horseback riding. The canal and the park are part of the National Recreation Trail System, Circuit Trails and East Coast Greenway. This linear park is also a valuable wildlife corridor connecting fields and forests.



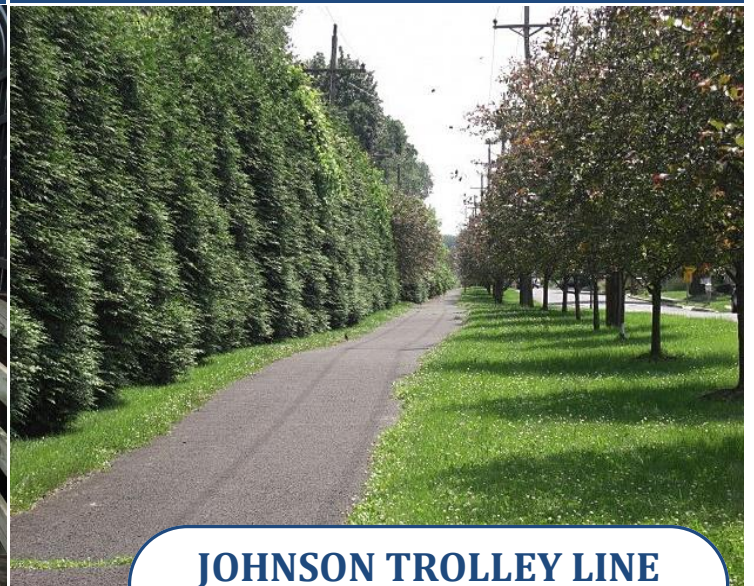
DELAWARE RIVER HERITAGE TRAIL

The Delaware River Heritage Trail's goal is to ultimately link 24 towns in the hopes of highlighting the cultural and natural resources along the river. The Delaware River Heritage Trail will follow the east bank of the Delaware River from D&R Canal in downtown Trenton to the Ben Franklin Bridge in Camden and will loop to Pennsylvania to connect from Morrisville to Philadelphia's Tacony neighborhood in Pennsylvania.



LAWRENCE HOPEWELL TRAIL

The LHT is a 18.7 mile trail that traverses public and private lands in Lawrence and Hopewell Townships including Mercer Meadows, the Stony Brook Millstone Watershed Association, Mt. Rose Preserve, Maidenhead Meadows Park and more. The trail is complete and open to the public for all but 3.3 miles which planned. The trail offers safe, off-road access for all who want to enjoy the great outdoors.



JOHNSON TROLLEY LINE TRAIL

Following the corridor of the former Johnson Trolley Line in Lawrence Township, the Johnson Trolley Line trail is a 1.9 mile route that is divided by Interstate 95. The Johnson Trolley Line South is also a linear park that runs from the Shabakunk Creek in the south to Rider University in the north. At just under one mile in length, the southern route connects the future Heritage Park, the Loveless Nature Preserve, Central Park, and Rider University's nature trail.



MERCER MEADOWS

Mercer Meadows consists of more than 1,600 acres, divided among five separate districts (Rosedale Park, Mercer County Equestrian Center, Mercer County Park Northwest and Curlis Woods). Miles of mowed and gravel trails provide visitors and their families with scenic walking and biking routes through the meadows and woodland. Fishing and kayaking is also popular activity at the park's four water bodies.



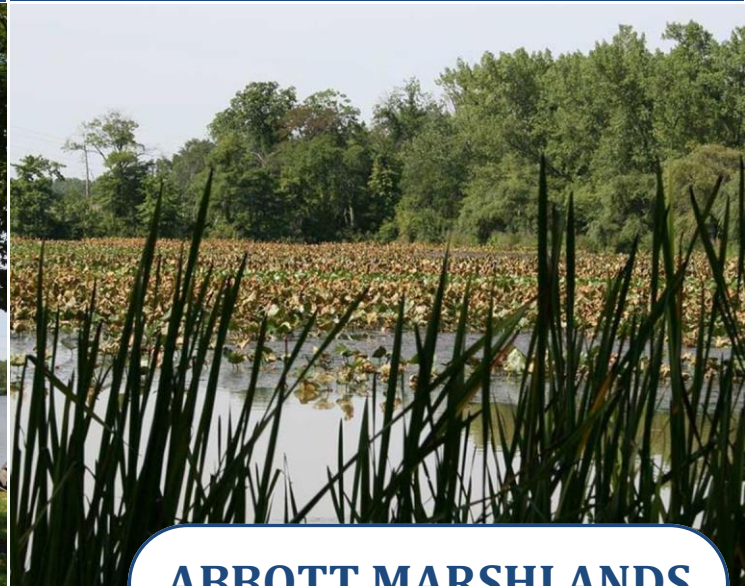
MERCER COUNTY PARK

Mercer County Park is 2,500 acre park primarily within West Windsor Township and includes a tennis center with indoor and outdoor courts, an ice skating center, a boat marina, a lake used for rowing with local and national events, picnic and playground areas, soccer, baseball, and cricket playing fields, basketball, bocce and volley ball courts, dog parks, paved paths and nature/bike dirt trails. Mercer County Community College is on the southern border.



BALDPATE MOUNTAIN

Baldpate Mountain is located adjacent to the Delaware River, on the border of Mercer and Hunterdon Counties, just south of Lambertville. The woods at Baldpate Mountain have over 12 miles of marked trails for hiking, horseback riding, mountain biking, and trail running. A walk to the grassy summit of Baldpate, the highest point in Mercer County, offers a spectacular view of the Delaware River and the City of Trenton.



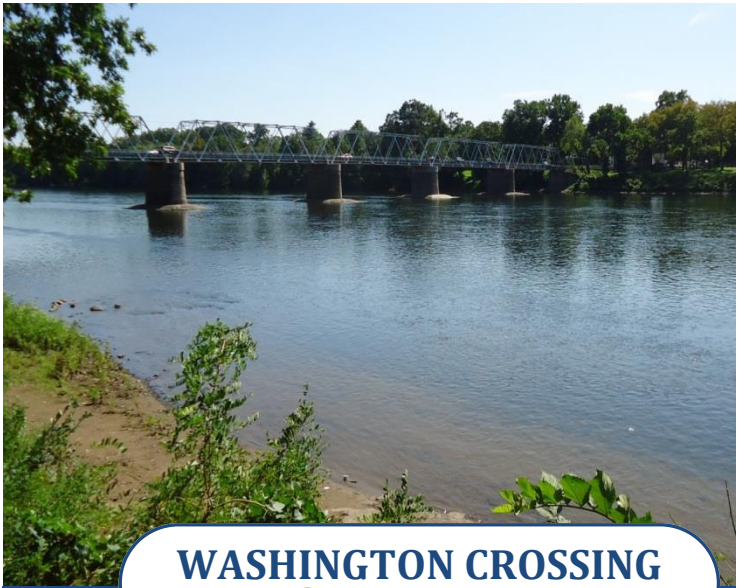
ABBOTT MARSHLANDS

The Abbott Marshlands contain a number of different habitats, including tidal and non-tidal freshwater marsh, streams, upland forest, and forested swamps. These habitats support a huge array of plant and animal life, making the Marshlands an excellent destination for nature enthusiasts. The marshland also has 4 trails for hikers and cyclists that allow visitors to explore the park.



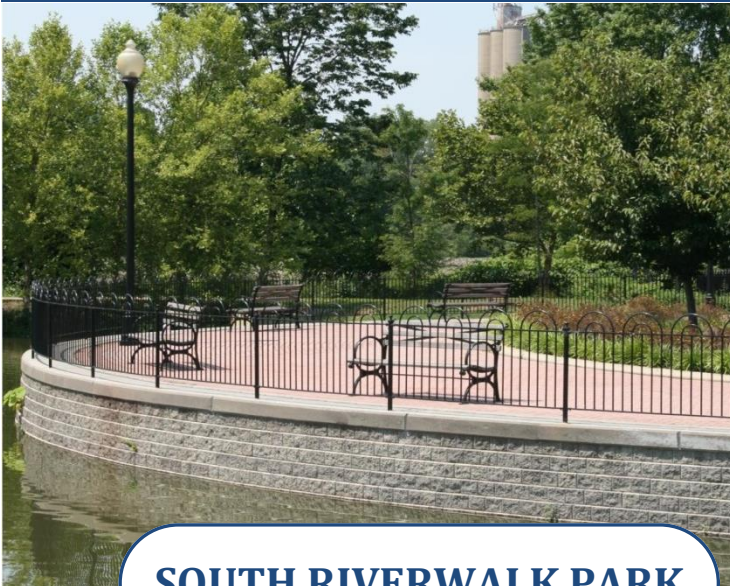
VETERAN'S PARK

Veteran's Park is a large park in Hamilton Township that has walking and bike paths, as well as many other facilities. The recreation facilities include a playground, picnic areas, formal gardens, a shallow lake, and numerous memorials, baseball fields, tennis, bocce, croquet, badminton, and shuffleboard courts as well as two dog parks. The historic area near the entrance includes a Civil War and Native American Museum.



WASHINGTON CROSSING STATE PARK

Washington Crossing State Park is a 3,575-acre park in Hopewell Township and is the location of General George Washington's Delaware River crossing on December 25, 1776 prior to the attack on Trenton, NJ. The park offers miles of hiking and cycling trails, numerous historic artifacts, a nature center, observatory, overlook, and contains a variety of wildlife and plant species.



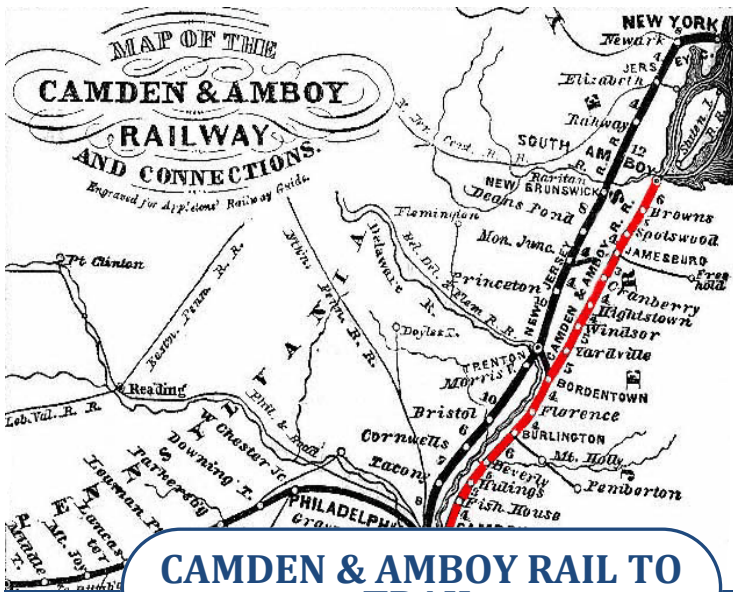
SOUTH RIVERWALK PARK

The South Riverwalk Park sits above the Route 29 tunnel in the City of Trenton and hosts many festivals throughout the year. It also hosts weddings, walk-a-thons, community events and offers picturesque views of the river and waterfront. Within the park sits, bicycle and pedestrian walkways, lawn areas, pavilions, a children's playground, an historic interpretive area and an urban streetscape along Lambertson Street.



STONY BROOK-MILLSTONE RESERVE

The Stony Brook-Millstone Watershed Reserve in Hopewell Township was created with an initial gift of 400 acres from Dr. Muriel Gardiner Buttinger in 1969, the Reserve now spans nearly 1,000 acres of forest, wetlands, meadows and farmland. More than 10 miles of hiking trails wind through these habitats and pass by two historic farmsteads that date back to the 18th and 19th centuries.



CAMDEN & AMBOY RAIL TO TRAIL

Located between two of the nation's most important cities, in an important corridor for the Mid Atlantic region, the Camden & Amboy Railway was the third railroad to be constructed in the nation. Today the line is no longer used but right-of-way is retained by Conrail. In the future, this could be a great location for a Rails to Trails project, creating walking, cycling, and commuting connections for residents and visitors alike.



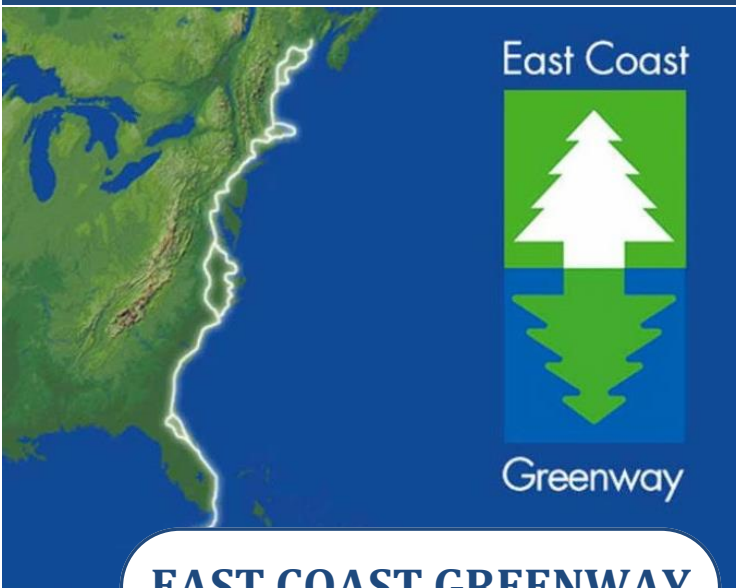
CAPITAL TO COAST TRAIL

The Capital to Coast Trail is a 55-mile (89 km) cross-state multi-use trail network that is designed to span the state of New Jersey (west to east) from the Delaware River in Trenton through much of Eastern Mercer County, including Miry Run Ponds (Dam Site 21), to the beach front town of Manasquan on the Atlantic Ocean. When finished the trail will be the third longest in the state, behind the Delaware and Raritan Canal Trail and the Appalachian Trail.



UNION TRANSPORTATION TRAIL

The Union Transportation Trail is a 9 mile rail trail on the former Pemberton & Hightstown Railroad in Monmouth County. The trail now accommodates equestrians, hikers, walkers, joggers and bicyclists and will ultimately be extended into Mercer County from Old York Road in East Windsor Township to downtown Hightstown. The new extension will continue to follow the Jersey Central Power and Light right-of-way.



EAST COAST GREENWAY

The East Coast Greenway is the nation's longest connected biking and walking route and will ultimately connect 15 states as well as 450 cities and towns. The approximately 3,000-mile protected biking and walking routes will allow bicyclists, walkers, runners, inline skaters, horseback riders, wheelchair users, cross-country skiers and more — of all ages and abilities — feel safe, for commuting and recreation.



CIRCUIT TRAILS

Greater Philadelphia is the proud home of the Circuit Trails, a vast regional network of hundreds of miles of multi-use trails that is growing in size each year. The Circuit connects Greater Philadelphia communities, and provides endless opportunities for recreating and commuting. Governments, non-profits, and foundations have collaborated to complete over 300 miles of the envisioned 750-mile regional network.



9/11 MEMORIAL TRAIL

The September 11th National Memorial Trail is a 1,300 mile system of trails and roadways that are a symbol of resiliency and character that links the World Trade Center in New York, the Pentagon in Washington D.C and the Flight 93 Memorial in Shanksville, Pennsylvania. It serves as a tribute to the fallen men and women who perished on September 11, 2001.



TRENTON WELLNESS LOOP

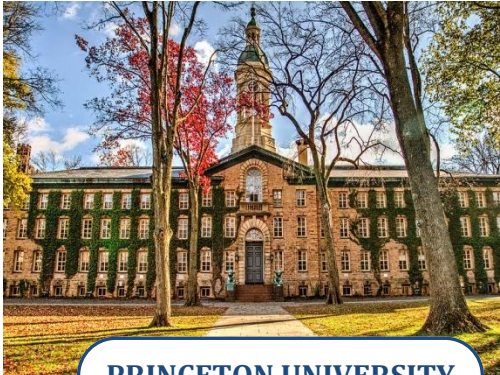
The Wellness Loop has been designed to provide connectivity between Battle Monument and the Assunpink Creek using Broad and Warren Streets. This loop operates on a pair of one-way streets. The wellness loop provides bike compatible roadways between the Battle Monument and the heart of downtown, with additional connections to the Assunpink Creek at Mill Hill Park.



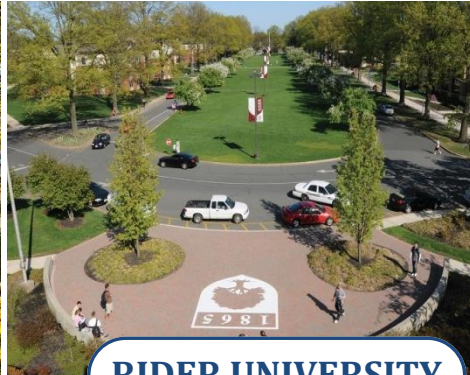
MUNICIPAL TRAILS

In addition to many regional, state-wide and national trail systems running through Mercer County, we have hundreds of miles of smaller local trails. These trails are the capillaries to main arterial trail systems, oftentimes more remote and secluded. They are great places to walk, run and enjoy within each town in Mercer County.

Educational Institutions



PRINCETON UNIVERSITY



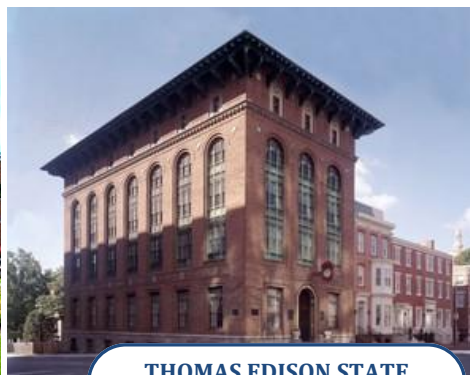
RIDER UNIVERSITY



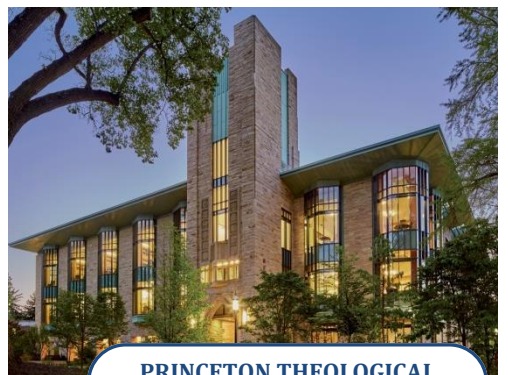
THE COLLEGE OF NEW JERSEY



MERCER COUNTY COMMUNITY COLLEGE



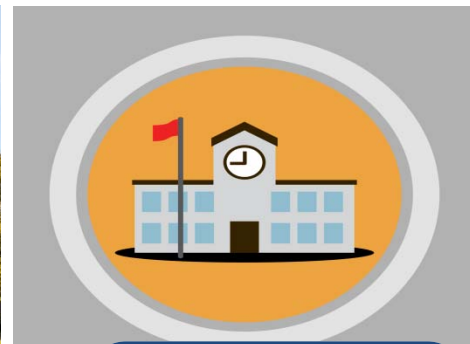
THOMAS EDISON STATE UNIVERSITY



PRINCETON THEOLOGICAL SEMINARY



INSTITUTE FOR ADVANCED STUDY



107 PUBLIC AND 65 PRIVATE SCHOOLS



OLD BARRACKS MUSEUM



GROUNDS FOR SCULPTURE



NJ STATE MUSEUM AND PLANETARIUM



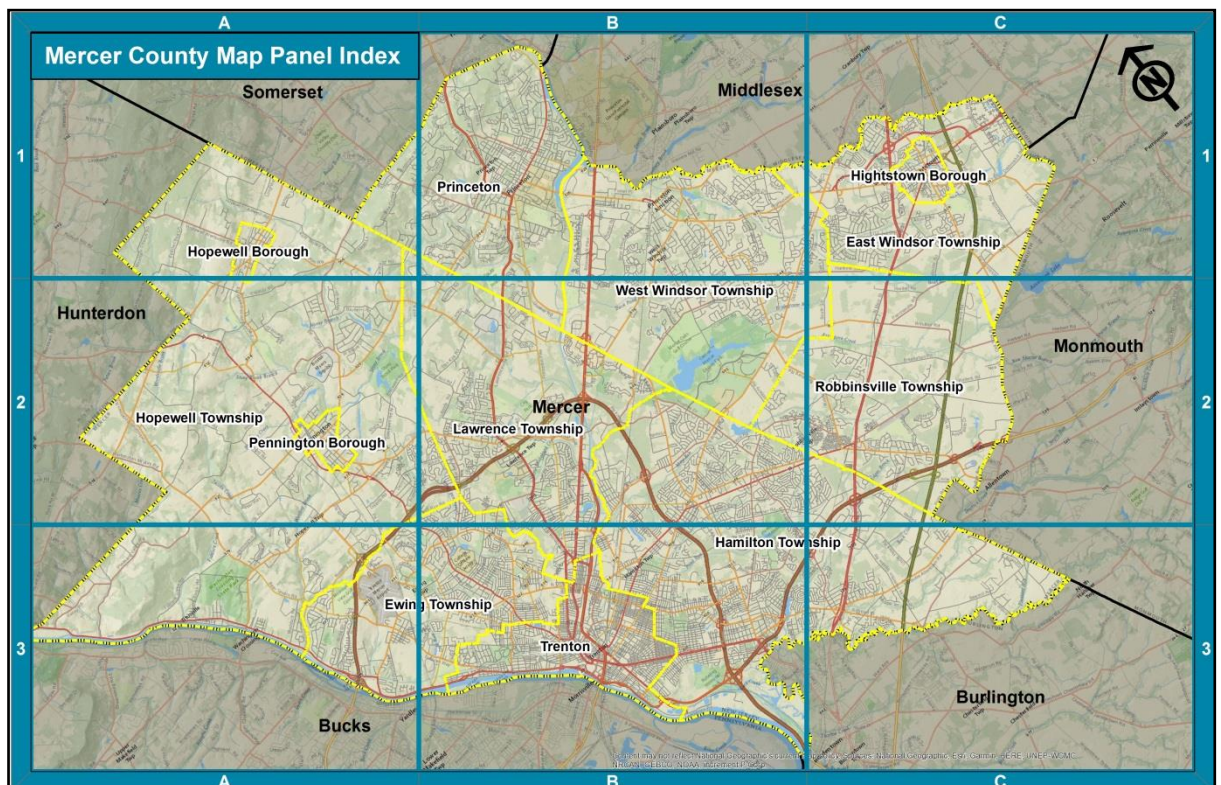
MORVEN MUSEUM & GARDEN

Study Area

This study considers the context of county-wide networks and amenities. Under this study every single County Roadway (approximately 180 miles) was analyzed for existing conditions and has a recommendation for future consideration. Only those routes under direct ownership and jurisdiction of Mercer County were observed unlike the 2010 Multi-Jurisdictional Bike Plan which examined both Municipal and County roadways.

It was determined that every County Route should be examined for a variety of reasons. Foremost, it was determined that choosing a select number of routes would limit the County in building out a network based on a Complete Streets Policy. By analyzing all routes at once, we can utilize a data-driven methodology to rank each route, or route sub-segments, by improvement cost and effort. In doing so, Mercer County can prioritize the low cost “low hanging fruit” for capital improvements while beginning work to design larger, more costly and more problematic routes. In doing so, we have also identified pinch points and determined future road conditions to be considered. This means that whenever Mercer County reconstructs a bridge or culvert, reconstructs a roadway or works on a County facility, projects can be programmed with design recommendations for future bicycle facilities.

Another benefit to analyzing the entire road network is that it provides an equitable way of reviewing our County network for improvements. By reviewing the entire County, underrepresented and overrepresented neighborhoods and corridors are treated equally. Below is a quadrant map of the County Road network, divided into 9 quadrants to make for legibility:



Mercer County Roadways Analyzed & Reference Map

CR #	Name(s)	Length	Maps
518	Lambertville-Hopewell Road/ Louellen Street/ Hopewell-Rocky Hill Road/ Georgetown Franklin Turnpike	7.35 miles	A1, A2
524	Broad Street	5.79 miles	B3, C3
526	Edinburg Road/ South Mill Road	3.84 miles	B1, B2
533	Quaker Road/ Quaker Bridge Road/ Mercerville-Quakerbridge Rd / White Horse Ave / Whitehorse-Mercerville Rd	8.65 miles	B1, B2, B3
535	East State Street/ East State Street Extension/Nottingham Way / Edinburg Rd./ Mercerville Edinburg Rd./Old Trenton Rd.	11.70 miles	B1, B2, B3
539	North Main Street / South Main Street / Old York Road	5.60 miles	C1, C2
546	Washington Crossing-Pennington Road/ Lawrence-Pennington Road/ Franklin Corner Road	9.90 miles	A2, A3, B2
569	Hopewell Princeton Road/ Carter Road	6.45 miles	A1, A2, B2
571	Washington Road/ Princeton Hightstown Road/ Etra Road	11.58 miles	B1, C1
579	Sullivan Way / Grand Ave / Bear Tavern Road / Trenton Harbourton Road	8.95 miles	A2, A3, B3
600	Sam Weinroth Road	1.69 miles	A3
602	S Post Road	0.73 miles	B2
604	Rosedale Road / Elm Road	3.04 miles	B1, B2
605	River Road	0.76 miles	B1
606	Hamilton Avenue	3.31 miles	B2, B3
608	Station Road	0.77 miles	B2
609	Groveville-Yardville Road	0.68 miles	C3
611	Scotch Road	3.55 miles	A3, B3
612	Marshalls Corner-Woodsville Road	2.45 miles	A2
613	Spruce Street	1.28 miles	B3
614	Nottingham Way	0.97 miles	B2
615	Cranbury Road	1.85 miles	B1
616	Whitehead Road	1.35 miles	B2
618	Nottingham Way	2.79 miles	B2
619	Kuser Road	1.75 miles	B3
620	Arena Drive	2.34 miles	B3, C3
622	Olden Ave	6.33 miles	B3
623	Pennington-Harbourton Road	2.62 miles	A2
624	Pennington-Rocky Hill Road	2.62 miles	A2
625	Elm Ridge Road	2.21 miles	A2
626	Chambers Street	2.06 miles	B3
627	Prospect Street	1.35 miles	B3
629	S Harrison Street	1.12 miles	B1
630	Imlaystown Road / Windsor-Perrineville Road	1.10 miles	A1
631	Ingleside Ave	0.77 miles	A2
632	Lawrenceville-Pennington Road	0.63 miles	A2
633	Monmouth Street	1.00 miles	A1
634	Parkway Ave	4.92 miles	A3, B3
635	East State Street	1.13 miles	B3
636	Parkside Ave/ Ewingville Road/ Upper Ferry Road	5.87 miles	A3, B3
637	Jacobs Creek Road	2.74 miles	A3
638	Clarksville Road / Grovers Mill Road	5.05 miles	A1, A2
639	Arctic Parkway	0.33 miles	B3
640	Main Street/ Pennington Road	2.26 miles	A2
641	Edinburg-Windsor Road	2.37 miles	C2
643	Lower Ferry Road	4.10 miles	A3, B3
644	Village Road East / Southfield Road	0.80 miles	B1
645	Brunswick Circle Extension	0.21 miles	B3
647	Nursery Road	1.73 miles	A3
648	Whitehead Road Extension	0.62 miles	B3
649	Sloan Ave/ Sweet Briar Ave/ Flock Road	3.23 miles	B2
650	Lalor Street	1.18 miles	B3
653	Calhoun Street	1.53 miles	B3
654	Pennington-Hopewell Road / W Broad Street	3.05 miles	A2
672	Broad Street	2.17 miles	B3