GREATER MERCER TRAILS PLAN

GREATER MERCER TMA
Discover Greener Paths

November 2019

WSP NV5

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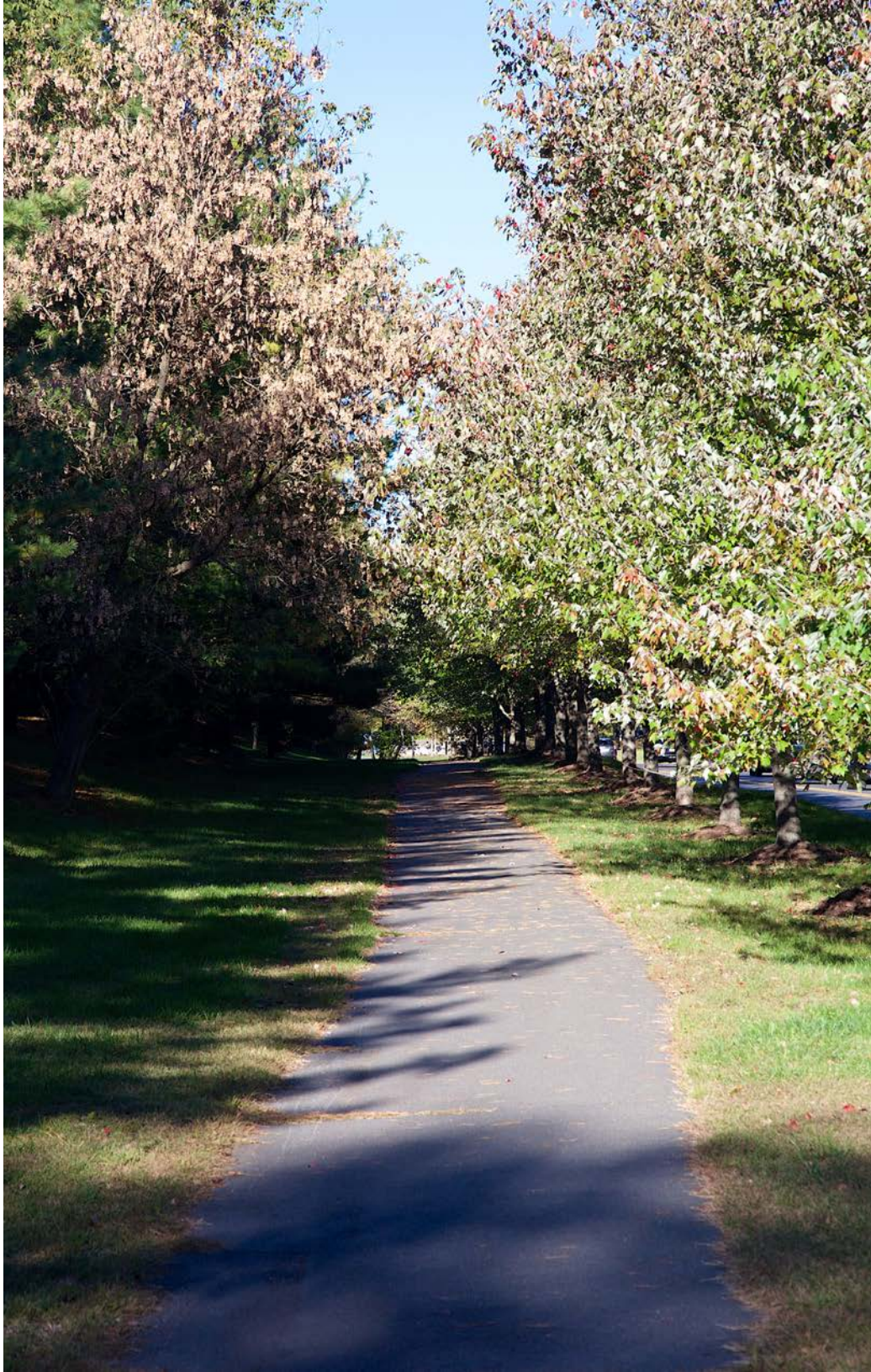

Introduction

The Greater Mercer Trails Plan is a living plan that will take shape and be implemented over time, segment by segment, and community by community, to create a low-stress, all ages network of trails, paths, and on-street facilities for walking, biking, hiking, and a variety of other activities and pursuits.

The Trails Plan is a Framework Plan for action and collaboration, not a navigational aide or guide to study area destinations and amenities. And similar to the municipal master plan, this Framework Plan is intended to be reviewed and updated on a periodic basis as local and regional needs, demographics, and context change and evolve. The Trails Plan proposes a program of concepts, with the potential to improve bicycle and pedestrian safety, mobility, and access. Some can be implemented quickly and easily; some may require moderate levels of effort such as speed limit reductions or minor widening; and others will require significant effort to advance to completion.

It is the role of the GMTMA to take each of these potential concepts, and work with municipal partners, Mercer County, and private landowners to assess feasibility of these concepts before advancing to design, funding, and construction.


SPEED
LIMIT
35
STOP
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01

Community Engagement

Development of the Greater Mercer Trails Plan was driven by extensive engagement and collaboration with the many communities and stakeholders comprising the Greater Mercer area. Feedback was gathered through numerous sources including online and printed surveys, an interactive WikiMap, and numerous public meetings where the project team shared findings and concepts with stakeholders and received feedback, suggestions, and comments. The team hosted and participated in dozens of meetings and events in support of the planning process.

Stakeholder Engagement

Local stakeholders, municipal and county governments, and members of the public, are all integral to the planning process, each contributing their own unique perspectives and experiences, furthering the aim of providing recommendations beneficial to stakeholders throughout the Greater Mercer area.

The outreach and engagement process included the following elements, subsequently discussed in greater detail:

- Study Advisory Committee meetings
- Community "Pop-Up" Meetings Events
- New Jersey Bike and Walk Coalition
- Public Meetings
- Social Media and Crowdsourcing

Study Advisory Committee

The Study Advisory Committee (SAC) served as the foundation for directing the plan. Members included the Mercer County Bicycle and Pedestrian Task Force plus representatives from Plainsboro and Montgomery Townships. The SAC determines which elements to focus on and in which direction to take the project.

The committee's role is to ensure that the study is based on a thorough understanding of local context and needs, and the project team adequately understands and addresses local vision, goals, and priorities.

Members of the SAC include representatives from local municipalities, Mercer, Middlesex, and Somerset County, the Greater Mercer Transportation Management Association, (GMTMA), the Bicycle Coalition of Greater Philadelphia, the Lawrence Hopewell Trail (LHT) and the Tri-State Transportation Campaign. SAC members are intended to represent stakeholders from all parts of the study area. A complete list of committee members is provided in the Appendix.

Three SAC meetings were held to guide the planning process from goal setting and assessment of existing conditions, to development and assembly of candidate network improvements, and finally to review of the Framework Plan.

SAC Meeting #1 – 04.16.2018

This first meeting introduced the study, project team, and SAC roles and responsibilities. The study goals, objectives, and vision statement, presented on page 12, were among the principal outcomes of the engagement process.

SAC Meeting #2 – 10.29.18

At the second SAC meeting the team presented the findings of the infrastructure inventory and assessment, including trail mapping, data collection, previous studies and implementation status, and various performance measures including crash data.

GMTMA Board Meeting – 01.18.2019

Members of the GMTMA Board received a summary of the overall planning process, and overview of the Framework Plan of draft trails, paths, and on-street network.

SAC Meeting #3 – 03.18.19

The final SAC meeting included an overview of the draft findings, and the individual layers and elements that make up the overall network - including both existing and proposed facilities on state, county, and municipal roadways, and off-street trails and paths. Comments from committee members ranged across a broad spectrum of planning, mobility, safety, and quality-of-life issues.

Community Meetings and Events

Project team members participated in a series of events using the "pop-up" approach, traditional in-person meetings, and conference calls.

Community "Pop-up" Events are an innovative and efficient way to involve those who live, work, visit, and do business in the study area to ensure they are engaged in the planning process. Engagement events, meetings, and activities included the following:

- NJ Trails Task Force Meeting-04.20.18
- Lawrence Greenways Committee-05.02.18
- Capital to Coast Trail Planning Meeting-05.19.18
- Meeting with Jay Watson, D&R Greenways-06.12.18
- Meeting with Tim Brill, New Jersey Conservation Foundation to discuss Assunpink Greenway, Union Transportation Trail, and Capital to Coast Trail - 06.28.18
- Meeting with Rob Poppert, Hamilton Township-07.09.18
- Meeting with Chuck Latini, Ewing Township-07.13.18
- Meeting with Eleanor Horne, LHT-07.20.18
- Presentation and discussion with Princeton Pedestrian and Bicycle Advisory Committee (PBAC)-07.27.18
- Plainsboro Townships provided documentation and maps
- Monmouth County Collaborative Trails Meeting-08.30.18
- Princeton PBAC & Complete Street Committee-09.27.18
- LHT Annual 2018 Full Moon Bike Ride, Lawrence-08.27.18
- Multi-County NJ Trails Collaborative Meeting-12.11.18

GMTMA staff also attended numerous event, meetings, and activities, including the following:

- Mercer Green Fest, Lawrence-03.17.18
- St. Anthony's Health Fair, Hightstown-04.08.18
- Rider University Health Fair, Lawrence-04.12.18
- Earth Day Event at Bloomberg, Montgomery-04.16.18
- Montgomery Earth Day-04.22.18
- Hopewell Earth Day-04.24.18
- Earth Day Event at BMS, Lawrence-04.26.18
- Communiversity, Princeton-04.29.18
- Princeton Ciclovia-05.06.18
- St. Lawrence Rehab Bike Rodeo, Lawrence-05.12.18
- Princeton Wheels Bike Rodeo-05.19.18
- Pennington Day-05.20.18
- Trenton Library Birthday-06.08.18
- West Windsor National Night Out-08.07.18
- TCNJ Welcome Week, Ewing-08.24.18


HUNTERDON COUNTY
SOMERSET COUNTY
MIDDLESEX COUNTY

New Jersey Bike and Walk Coalition

Bike-Walk 2018 Summit-03.24.18

The team and GMTMA staff facilitated a 'Tell us Your Trail Tales' session at the 2018 New Jersey Bike & Walk Coalition Summit at Mercer County Community College in West Windsor. Large maps of the study area were displayed and the team collected feedback from stakeholders concerning strengths, weaknesses, and opportunities for improvement, as well as desired trail connections.

Bike-Walk 2019 Summit-02.23.19

The team hosted a follow-up session at the 2019 New Jersey Bike & Walk Coalition Summit Attendees reviewed findings and in-progress recommendations and concepts, and discussed walking and biking challenges, barriers, and other concerns.

Public Meetings

Public meeting formats were structured to encourage open discussion on a wide range of topics to help guide and inform the planning and development of the countywide network of trails, shared-use paths, and on-road facilities.

Private citizens, advocates, planning and engineering professionals, and municipal and agency representatives attended a series of public meetings held between April 2018 and June 2019 in Princeton, Robbinsville and Ewing Township, and Trenton.

Open Public Forum-Princeton-04.24.18

This meeting introduced the study purpose, schedule, and community outreach plan. The meeting concluded with an interactive session in which the project team and attendees marked comments on maps including where attendees travel and where more trails are desired. This exercise helped with vision and goal-setting.

Municipal Meeting, Ewing Township-09.12.18

This meeting consisted of a short presentation by the project team about the progress made to-date and next steps.

Attendees contributed ideas for desire lines and destinations to investigate further, including providing bicycle and pedestrian connections between Trenton-Mercer Airport and the West Trenton SEPTA station. After the presentation, attendees drew their comments on a large printout map of the area and interacted with the project team.

Municipal Meeting, Robbinsville Township Public Library-09.25.18

The project team engaged attendees to gather feedback and comments. Most of the attendees were already familiar with the project. The meeting was cut short during the presentation due to inclement weather resulting in the venue (Mercer County Library-Robbinsville Branch) closing early.

Municipal Meeting, Princeton-09.27.18

The project team presented their progress to Princeton's Pedestrian and Bicycle Advisory and Complete Street Committees as well as the general public. This presentation included a short-term work plan, and a list of ways stakeholders can contribute to the process including the online survey, interactive WikiMap, and fact sheets and comment cards provided to attendees.

Social Media and Crowdsourcing

Online Survey

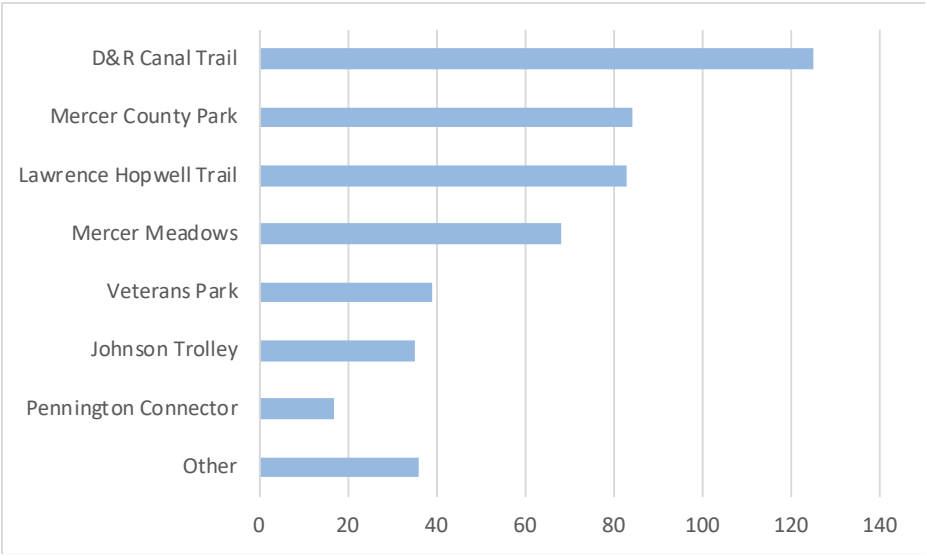
The project team created and maintained an online survey to elicit feedback concerning stakeholder behaviors and attitudes toward biking and walking in the study area. The survey elicited 165 responses.

The Mercer County Trail Network Survey was launched in March 2018 and remained open until October. This survey was designed with input from Steering Advisory Committee members. The survey provided important feedback on the types of biking, walking, and trail improvements capable of expanding these modes and improving the user experience.

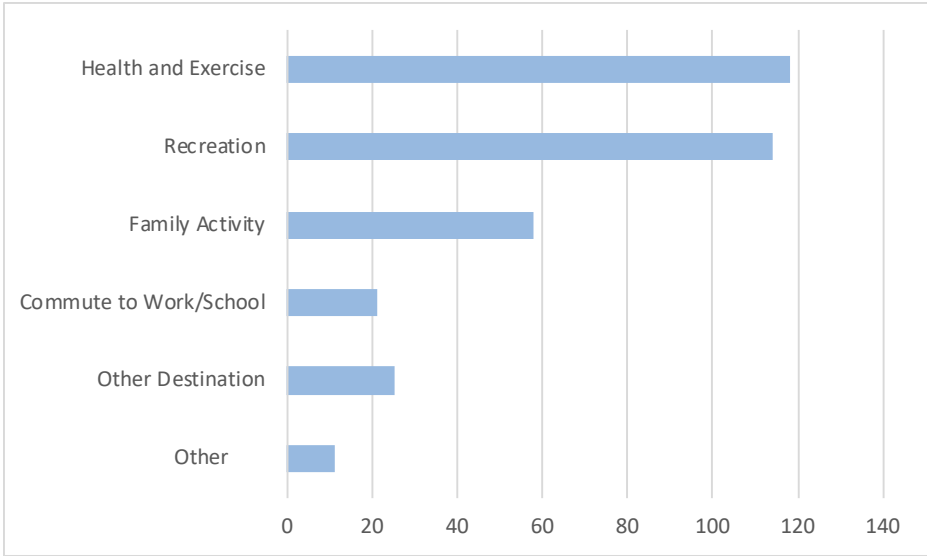
Principal findings from the survey include:

- 92% of respondents use trails in the study area
- 57% of respondents were between the ages of 45 and 64
- 89% of respondents use the D&R Canal; 59% use the LHT (Graph 1)
- Exercise and recreation are the most common activities along the trails (Graphs 2 and 3)
- Most respondents use the trails at least 2-4 times per month
- Most respondents still drive to trails and parks (Graph 4)
- Access and wayfinding are the most desired amenities
- Desire for connections to existing trails, parks and train station
- Rarely used for commuting or shopping trips

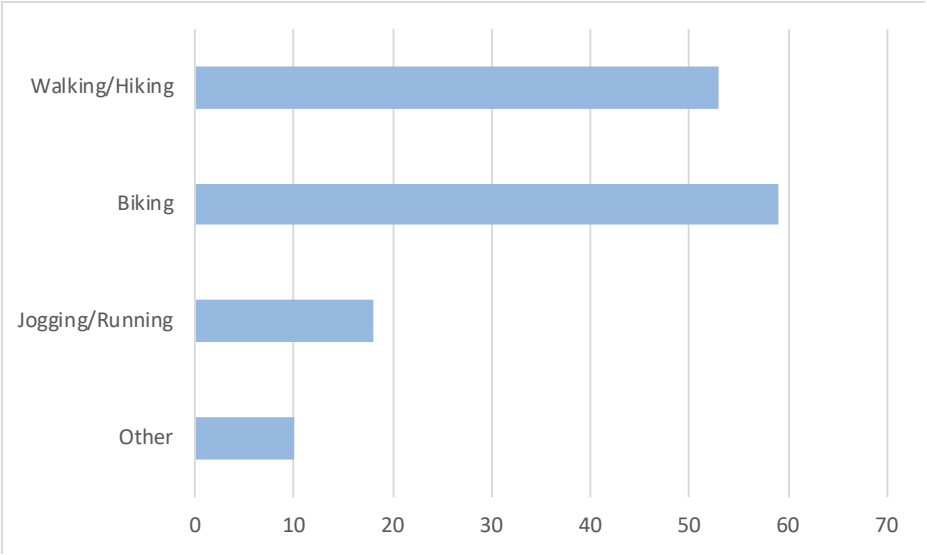
Graph 1: Which trails have you used in the past year?



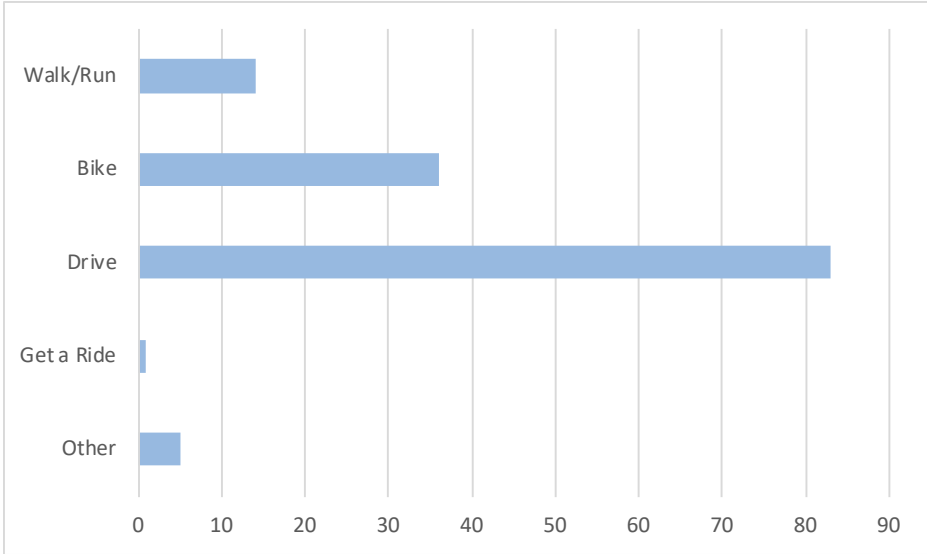
Graph 3: For what purpose do you use the trail?



Graph 2: What is your primary activity on the trail?



Graph 4: How do you usually get to the trail?



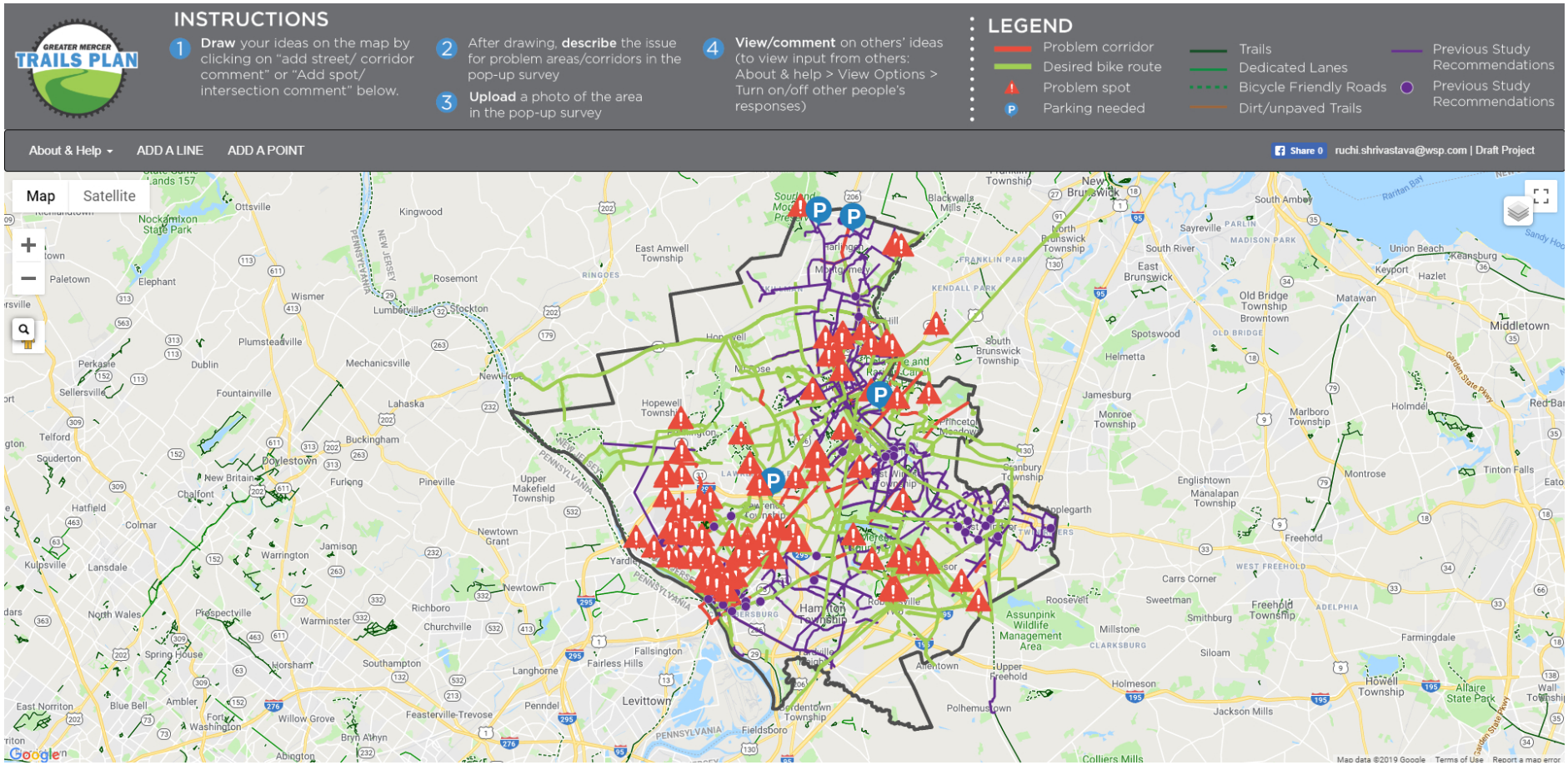
WikiMapping

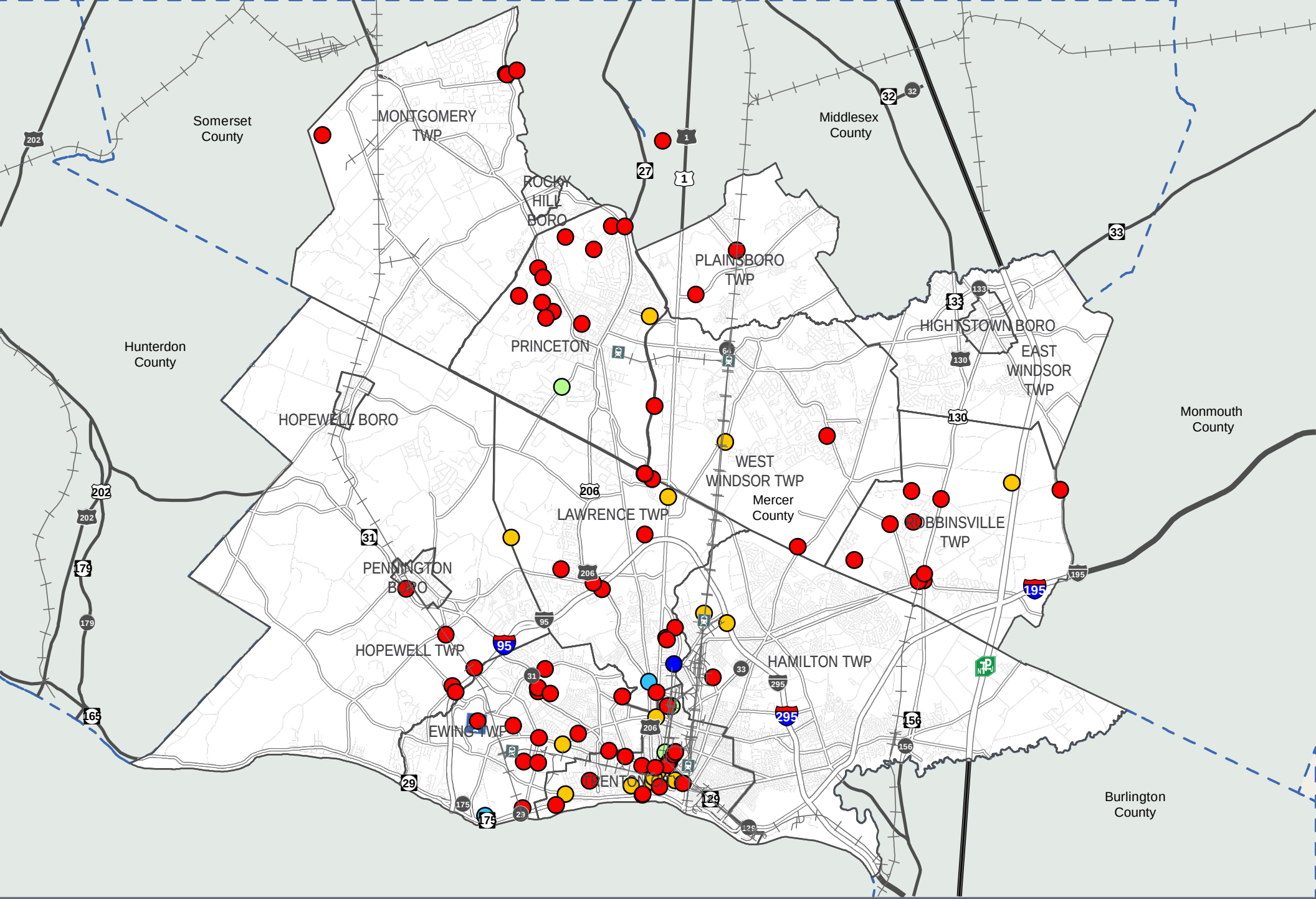
An online "WikiMap" website was launched and opened to the public in March 2018 to collect place-based comments about biking and walking in the study area. Like hard copy maps used at public events, the web interface allowed users to markup a virtual map of the study area.

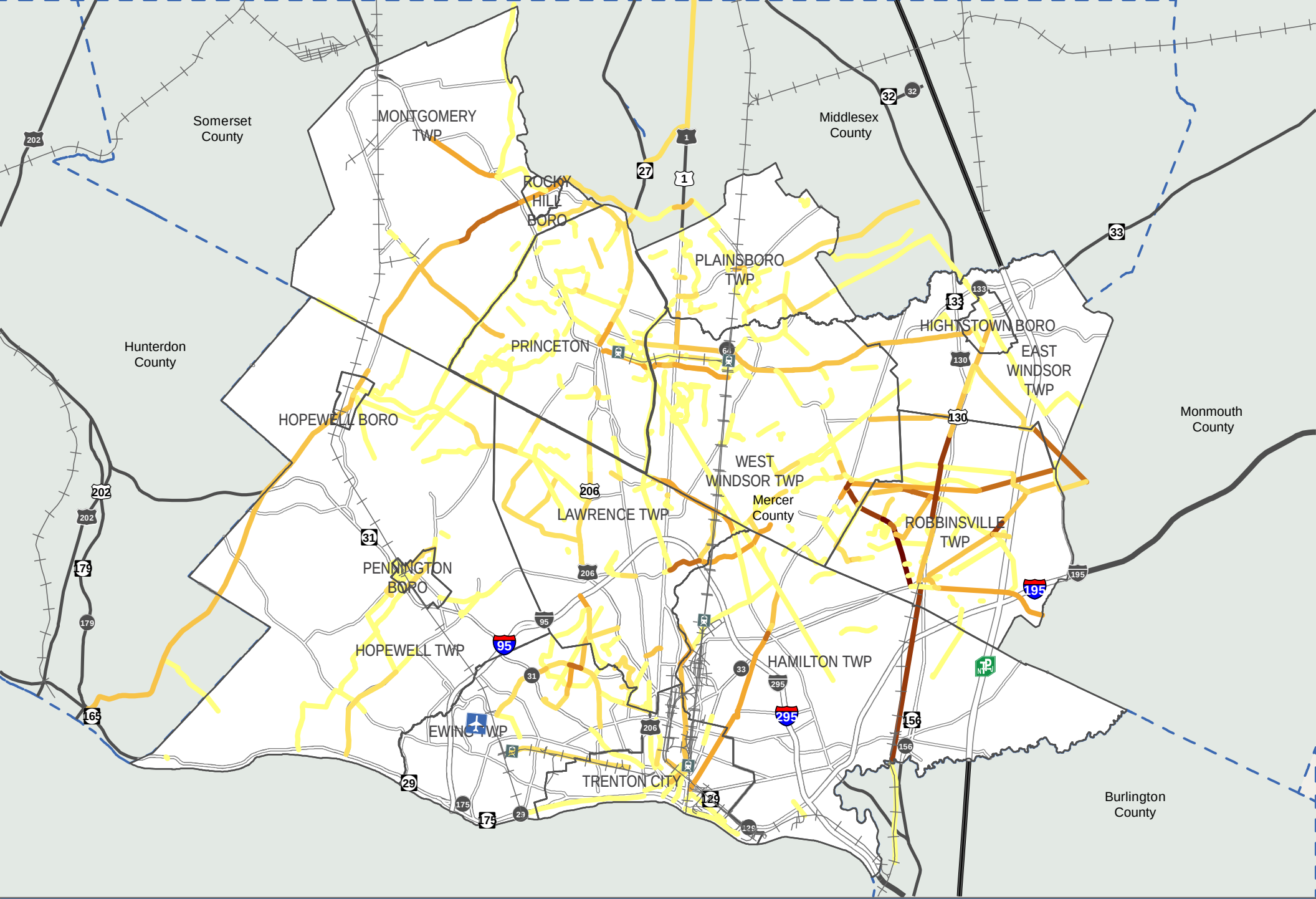
Users were asked to identify corridors and spot locations difficult for walking and biking, desired walking and biking routes, and ideal locations for bicycle parking. There were 774 total WikiMap responses including 420 online responses, and 354 outreach and previous study recommendations.

General themes of WikiMap comments and annotations included:

- Problem spots and intersection
- Barriers to local and regional mobility
- Destinations and travel needs
- Desired bike routes
- Corrections and additions to base maps
- Through WikiMap, comments were separated into several categories.




Somerset County
MONTGOMERY TWP
ROCKY HILL BORO
PLAINSBORO TWP
Middlesex County
Hunterdon County
PRINCETON
HIGHTSTOWN BORO
EAST WINDSOR TWP
Monmouth County
HOPEWELL BORO
WEST WINDSOR TWP
Mercer County
LAWRENCE TWP
ROBBINSVILLE TWP
PENNINGTON BORO
HOPEWELL TWP
HAMILTON TWP
EWING TWP
TRENTON
Burlington County
Wikimap Problem Spots Frequency
1
2
3
4
5 - 7
Rail
Rail Station
Airport
0
1.5
3
6
Miles


Somerset County
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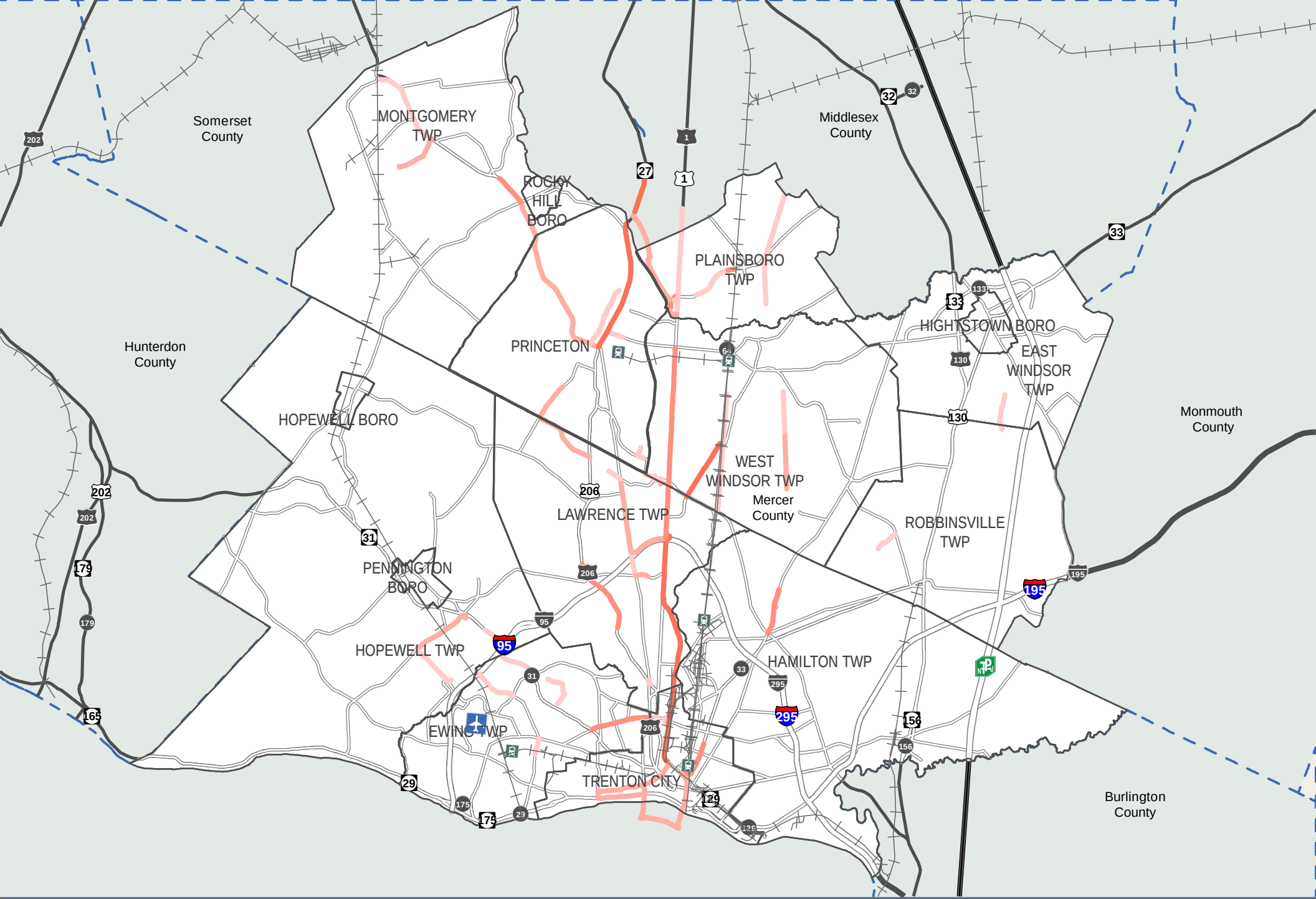
Middlesex County
PLAINSBORO TWP
HIGHTSTOWN BORO
EAST WINDSOR TWP
Hunterdon County
PRINCETON
HOPEWELL BORO
WEST WINDSOR TWP
Mercer County
Monmouth County
LAWRENCE TWP
ROBBINSVILLE TWP
PENNINGTON BORO
HOPEWELL TWP
HAMILTON TWP
EWING TWP
TRENTON CITY
Burlington County
Wikimap Desired Routes Frequency
1
2
3
4
5
6
7
Rail
Rail Station
Airport
0
1.5
3
6
Miles



GREATER MERCER TRAILS PLAN

Wikimap Problem Corridors Frequency

1 2 3 4 5 6 7

Rail

Rail Station

Airport

0 1.5 3 6 Miles

VISION STATEMENT

The Greater Mercer Trail Network Plan will help create an integrated network of multi-use trails, paths, and on-street facilities to serve a variety of transportation needs and connect users of all ages and abilities to the many opportunities, services, and destinations in the region.

Vision and Goals

The Vision Statement articulates the purpose and intent of the study in a brief and concise manner, while the Goals are a series of declarative statements used to prioritize and evaluate the various recommendations and concepts.

The Vision Statement and Goals reflect the priorities and concerns of study area stakeholders and represent local values, desires, and concerns. Working with the focus groups, and advisory committees, and others, the team identified a host of needs, issues, and concerns including pedestrian safety and mobility, access, travel safety for school-age children, and wayfinding.

The team reviewed the extensive record of public discourse, written comments, and correspondence in formulating and refining the Greater Mercer Trails Plan Vision Statement and Goals.

Improve Mobility

Develop regional trail routes, crossings, and facilities accessible to all ages and abilities

Expand Access to Destinations

Expand access between residential areas and important local and regional destinations

Provide Trail Amenities

Provide and enhance amenities along trails, including parking, lighting, and benches

Develop Regional Connections

Integrate Mercer County's trail network with other regional trails, supporting linkages to neighboring counties and towns

Enhance Safety

Enhance safety and driver awareness of bicyclists and pedestrians through improved crossings, sidewalks, and bicycle facilities, consistent with local context and priorities

02

Existing Conditions

Mercer County lies in central New Jersey, midway between New York City and Philadelphia. Despite covering only 226 square miles, the Greater Mercer area includes a wide range of development patterns, communities, and constituencies. Suburban development surrounds U.S. Route 1 while Trenton and its immediate surroundings have much higher densities. Moving out from Trenton, Route 1, and the Northeast Corridor Rail Line, communities become less dense, and more rural. The study area also includes the adjacent communities of Montgomery Township in Somerset County, and Plainsboro Township in Middlesex County, encompassing the Greater Mercer Area.

Development of the Greater Mercer Bike & Trails Plan began with the assessment of existing conditions, and mobility, safety, and access needs. This effort included the following:

- Compiling the base maps to support technical assessment
- Investigating previous studies and recommendations to build upon and leverage previous planning efforts
- Preparing the crash data assessment to evaluate trends and identify areas of need and risk
- Completing a bicycle network assessment to identify barriers to mobility and connectivity, and target potential improvements to where they are needed most
- Mapping existing bicycle infrastructure to establish the baseline, and identify multimodal trip generators and attractors
- Developing a composite demand model using demographic data and related metrics to support assessment of need and prioritization

The previous studies include hundreds of individual bicycle and pedestrian recommendations. Although many of these studies were prepared prior to development of the New Jersey Complete Streets Design Guide; they reflect the priorities of the municipal partners and stakeholders organizations, and were based on applicable standards and guidance at the time they were prepared.

Base Mapping

The planning process started with compilation of detailed base mapping, using the GIS platform and data layers from municipal, county, and institutional sources to guide the identification and assessment of candidates for new and enhanced facilities. GIS analytical methodologies and comprehensive data resources are particularly useful to identifying need, opportunities for improvement, and potential constraints and impediments to facility design, construction, and use.

Previous Studies

The team reviewed numerous planning studies and plans for the study area to build upon the existing knowledge base.

These resources provided valuable information and a starting point for this plan. This synergy will produce a more comprehensive and expansive bicycle and pedestrian system. Proposals for bicycle infrastructure on contiguous routes reveal the need for cooperation and collaboration on a region-wide scale. The breadth of these resources speaks to the interest throughout the study area in improving bicycle and pedestrian infrastructure and mobility.

The following reports, plans, and studies were among those consulted:

- Downtown Trenton Bicycle and Pedestrian Plan (2016)
- East Windsor Township Bicycle and Pedestrian Circulation Study (2016)
- Hamilton Township Bicycle & Pedestrian Circulation Study (2011)
- Hopewell Circulation Plan Element (2006)
- Lawrence Township Bicycle and Pedestrian Planning Assistance Study (2009); Master Plan Circulation Element-Bicycle and Pedestrian Plan (2019)
- Montgomery Township Bicycle and Pedestrian Plan (2019)
- Plainsboro Circulation Plan (2015)
- Princeton Bicycle Mobility Plan (2017)
- Robbinsville Land Preservation Map (2008 rev. 2015)
- West Windsor Bicycle and Pedestrian Plan (2004); Circulation Element (2009)
- Mercer County Bicycle Master Plan (2019)
- Crosswicks Creek-Doctors Creek Greenway Feasibility Study (2007)
- Capital-to-Coast Trail Plan-Monmouth County Planning Board (2004 rev. 2010)

The nature and scope of recommendations was typically dependent on the location. For example, most recommendations in the Downtown Trenton Bicycle & Pedestrian Plan involved installing dedicated bike facilities on urban streets. Recommendations in East Windsor Township's Bicycle and Pedestrian Study included constructing ADA-compliant curb ramps, restriping crosswalks and installing pedestrian refuge islands at key high-volume intersections. The Hamilton Bicycle & Pedestrian Circulation Study recommended installing bike lanes on a number of corridors including Klockner Rd and Nottingham Way. Throughout the study area, recommendations also included installing sidewalks along busy corridors where walking is otherwise dangerous. The Princeton Bicycle Mobility Plan recommended a comprehensive bicycle network consisting of about 70 total miles of new or improved bike infrastructure. A detailed corridor plan for Nassau Street was also provided.

Recommendations provided in each of these municipality-specific reports mainly focused on providing connections within the municipality. Analyzing each of the reports together will result in better regional bike connections.

Reports published by the Regional Plan Association and Delaware Valley Regional Planning Commission looked at providing more regional, inter-county and inter-state bicycle connections though these improvements were more general in nature.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Crash Data Assessment

The following analysis utilizes pedestrian and bicyclist crash data (2014-2016) obtained in June 2018 from the New Jersey Department of Transportation (NJDOT), using the Safety Voyager Tool to illustrate crash statistics and trends within the Greater Mercer Trail Network study area. Crash data findings have been grouped by theme to aid in efforts to improve pedestrian and bicyclist safety throughout the study area.

Crash Data Overview

There were 492 pedestrian crashes and 214 bicyclist crashes within the study area between 2014-2016. The 492 pedestrian crashes involved 518 total pedestrians. The annual distribution of crashes by mode is displayed to the top right.

Crashes by Municipality

More than half (242 of 443) of the study area pedestrian crashes were in Trenton. Many other pedestrian crashes were concentrated in areas of Ewing and Hamilton near Trenton, and downtown Princeton.

Bike crashes are more geographically dispersed. Trenton has more bike crashes than any other study area municipality, although significant numbers also exist in Hamilton, Princeton, Hightstown, East Windsor and Plainsboro. Trenton is the study area's most densely populated community with the densest street network. This high concentration of narrow streets and conflict points can lead to more crashes, but Trenton's relatively low speeds indicate these crashes are frequently less severe.

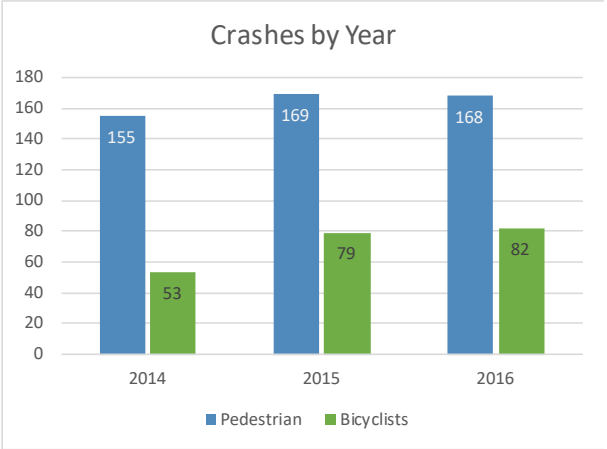
Crash Severity

Of the 492 pedestrian crashes, 22 of the crashes (4.5%) were fatal and resulted in 23 pedestrian deaths. Additionally, 11 (2.2%) crashes caused incapacitating injuries to 13 pedestrians, and 139 (28.3%) resulted in moderate injury.

From 2014-2016 there were 214 bicyclist crashes reported in the study area. Of these 214 bicyclist crashes, 2 (0.9%) were fatal and 75 (35.0%) resulted in moderate injury. There were no reported incapacitated cyclists.

Temporal Factors

About 35% of pedestrian crashes occurred between October and December, with October having the highest concentration of crashes at 13.6%. More than a third of the bicyclist crashes occurred during the summer months (June – August), with the highest concentration of bicyclist crashes in July with 17.3%. October had the highest combined number for both pedestrian and bicyclist crashes with 83 total crashes representing 11.8% of all crashes.



While the majority of pedestrian crashes took place during daylight conditions (56%), roughly 36% of crashes occurred during dark conditions with street lights on, including 60% of the 22 fatal crashes. Of the 214 bicyclist crashes, 75% occurred in daylight while 19% occurred during dark conditions with street lights on. These findings suggest that lighting levels may not adequately illuminate crosswalks and roadways in these areas, especially for pedestrians.

Roadway Characteristics

In terms of environmental factors, roughly 80% of pedestrian crashes and around 91% of bicyclist crashes took place on dry roads and over 81% of pedestrian crashes and roughly 92% of bicyclist crashes occurred during clear weather conditions.

Of the 492 pedestrian crashes, more than

60% occurred on municipal roads while 20% occurred on County roads. Similarly, 47% of bicyclist crashes occurred on municipal roads and another 32% on County roads. This is shown in the graphs to the top right.

More than 70% of pedestrian crashes and roughly 50% of bicyclist crashes occurred on streets with a posted speed limit of 25 mph. Among pedestrian crashes, 44.7% occurred at an intersection compared to 51.4% of bicyclist crashes as shown in the graphs to the bottom right.

High-Crash Corridors

Table 1 shows the study area road corridors with the highest concentrations of pedestrian crashes. Together, these 15 corridors account for 36.6% of the total 492 crashes within the study area from 2014-2016. US 206 had the highest concentration of crashes with 8.3% of the total pedestrian crashes. NJ 33 and Liberty St. (Hamilton Township) had the highest number of fatal crashes with 2 each.

Table 2 shows the study area road corridors with the highest concentrations of bicyclist crashes. Together, these 14 corridors account for 40.4% of the total 214 crashes within the study area from 2014-2016. US 206 had the highest concentration with 8.4% of the total bicyclist crashes. NJ 33 and Mercer County 622 had the highest number of fatal bicyclist crashes with 1 each.

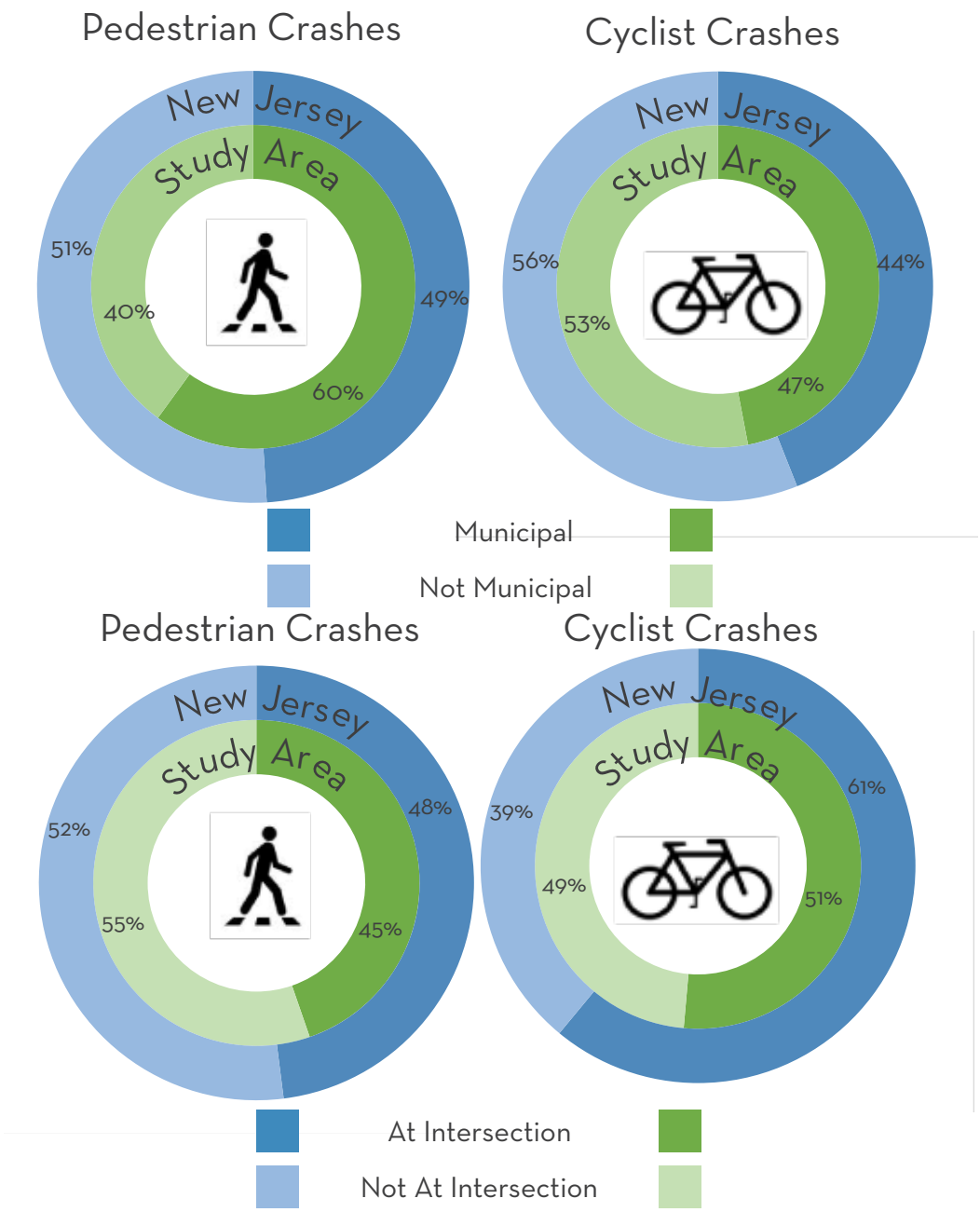


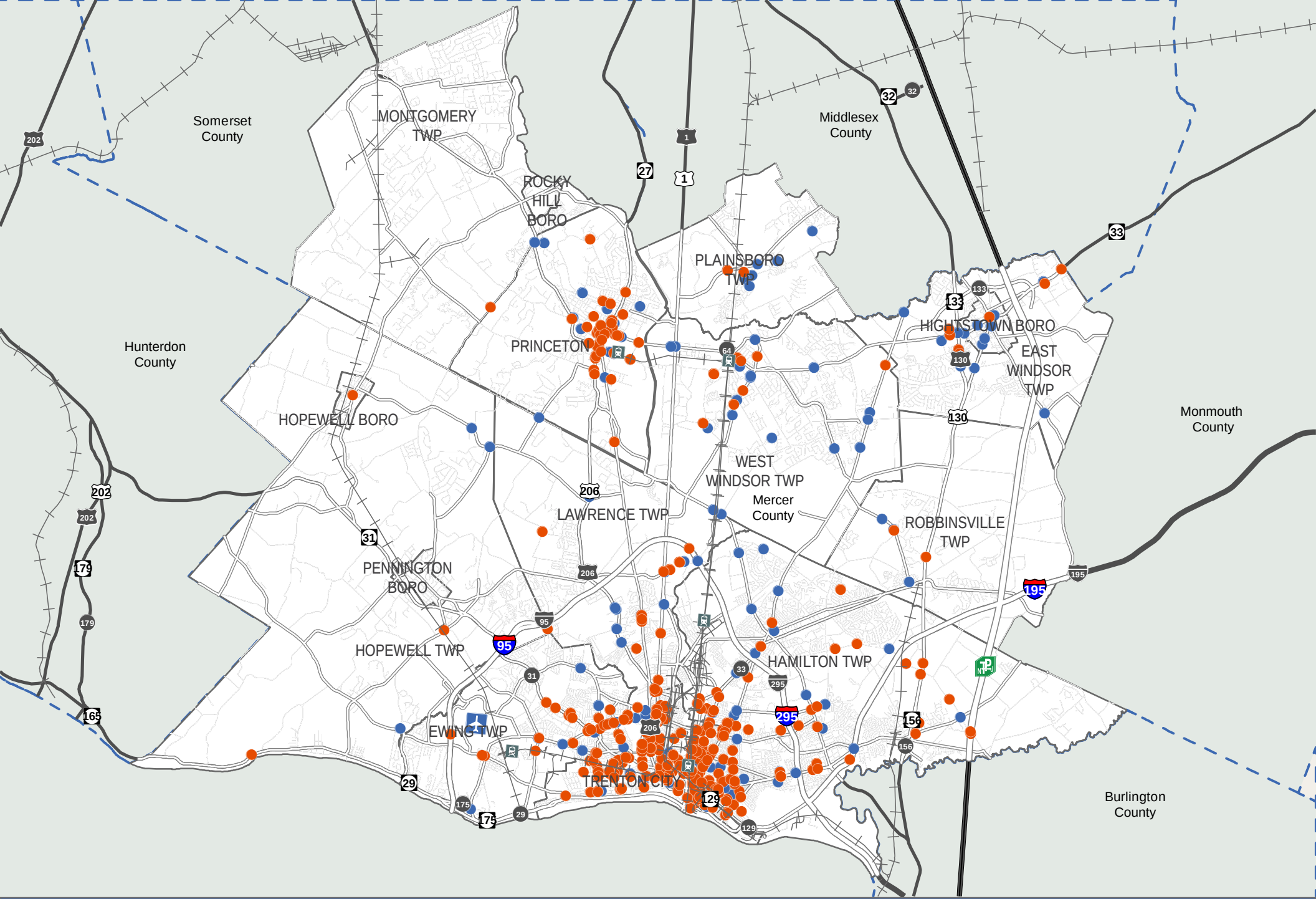
Table 1: High Pedestrian Crash Corridors (2014-2016)

Corridor	Road System	Killed	Severe Injury	Moderate Injury	Complaint of Pain	Property Damage	Total	Percent
US 206	State Highway			17	22	2	41	8.3%
MERCER CO. 606	County	1		3	13	3	20	4.1%
MERCER CO. 622	County			7	9	4	20	4.1%
NJ 33	State Highway	2	2	6	6	3	19	3.9%
S CLINTON AVE	Municipal			1	10		11	2.2%
NJ 31	State Highway		1	2	4	3	10	2.0%
NJ 27	State Highway			5	4		9	1.8%
LIBERTY ST	Municipal	2		1	5		8	1.6%
MERCER CO. 636	County	1	1	3	2		7	1.4%
MERCER CO. 635	County				6		6	1.2%
MERCER CO. 653	County			2	4		6	1.2%
PERRY ST	Municipal				6		6	1.2%
ROUTE 571	County		1	2	3		6	1.2%
STUYVESANT AVE	Municipal			2	2	2	6	1.2%
US 130	State Highway			3	1	2	6	1.2%
N CLINTON AVE	Municipal			1	4		5	1.0%
ROUTE 535	County	1		2	2		5	1.0%
ROUTE 583	County	1		2	2		5	1.0%
W STATE ST	Municipal			2	3		5	1.0%
WALNUT AVE	Municipal				2	3	5	1.0%
	Total Crashes	**8**	**5**	**61**	**110**	**22**	**206**	**41.9%**

Table 2: High Bicyclist Crash Corridors (2014-2016)

Corridor	Road System	Killed	Severe Injury	Moderate Injury	Complaint of Pain	Property Damage	Total	Percent
US 206	State Highway			6	10	2	18	8.4%
NJ 33	State Highway	1		4	5	1	11	5.1%
MERCER CO. 622	County	1		3	2	1	7	3.3%
ROUTE 571	County			1	4	2	7	3.3%
US 130	State Highway			2	1	3	6	2.8%
ROUTE 535	County			1	4		5	2.3%
MERCER CO. 606	County			2	2		4	1.9%
MERCER CO. 634	County				4		4	1.9%
MERCER CO. 636	County				4		4	1.9%
MERCER CO. 638	County				2	2	4	1.9%
NJ 27	State Highway			3	1		4	1.9%
NJ 31	State Highway			2	1	1	4	1.9%
ROUTE 526	County			2	2		4	1.9%
ROUTE 539	County			1	2	1	4	1.9%
ALEXANDER RD	Municipal			2		1	3	1.4%
MERCER CO. 653	County			2	1		3	1.4%
MIDDLESEX CO. 614	County			1		2	3	1.4%
ROUTE 533	County			2	1		3	1.4%
S CLINTON AVE	Municipal				2	1	3	1.4%
US 1	State Highway			2		1	3	1.4%
	Total Crashes	**2**	**0**	**36**	**48**	**18**	**104**	**48.6%**


BIKE ROUTE
PLAINSBORO VILLAGE



Bicycle and Pedestrian Crashes (2014-2016)

- Bike Crashes
- Ped Crashes
- Rail
- Rail Station
- Airport

0 1.5 3 6 Miles

Bicycle Network Assessment

Bicycle facilities and infrastructure were inventoried and evaluated using innovative metrics and methodologies including Bicycle Level of Traffic Stress and the Island Effect.

Bicycle Level of Traffic Stress

Each bicyclist has unique and personal ability to tolerate the stress created by the volume, speed, and proximity of automobile and truck traffic.

Bicycle level of traffic stress (LTS) measures a cyclist's expected comfort given the current conditions of the roadway. The LTS metric evaluates the bicycle network from the user's perspective. As such, it accounts for the ability of a user to move between points unimpeded by higher stress environments.

The LTS metric is based on the Dutch concept of low-stress bicycle facilities. In general, lower stress facilities provide increased separation between cyclists and vehicular traffic and/or lower speeds and traffic volumes. Higher stress environments generally involve cyclists riding in close proximity to traffic, multi-lane roadways, and higher speeds or traffic volumes, a condition undesirable for most cyclists.

High stress roads, often arterials and primary connectors, can reduce bicycle network connectivity, impeding a user's ability to travel to a desired destination, and discouraging wider cycling use. One goal of this plan is to provide low-stress bike connections by addressing key deficiencies on high stress roadways.

Based on an analysis of the LTS criteria, the LTS for a given roadway segment is classified into one of four categories:

Level of Traffic Stress 1: conditions are acceptable for even the most vulnerable users who often have limited mobility (including children, seniors, and those with disabilities)

Level of Traffic Stress 2: conditions acceptable for most adults among the general population

Level of Traffic Stress 3: "enthusiastic" riders who can tolerate most roadways but might still prefer dedicated facilities away from traffic

Level of Traffic Stress 4: tolerated by only the most experienced riders

The LTS assessment is supported by a variety of data sources, including base mapping, GIS data files, NJDOT Straight Line Diagrams, and traffic data. DVRPC conducted an LTS analysis for their region and preliminary results from that analysis were used for Mercer County. The team also conducted field evaluations to make measurements and verify the various roadway features, character, parameters, and user behavior. For many local roads in the study area, basic assumptions were made for their typical features and characteristics.

The overall breakdown of LTS designations for the Greater Mercer study area is presented below; maps for each are presented across the following pages

Most roads within the study area have an LTS of 1. Many of these are local, low-volume, low-speed residential streets. Despite this finding, the prevalence of long stretches of LTS 4 corridors impedes many riders from making their desired local and regional trips and limited mobility and access. The study area has many busy, high-speed roads lacking adequate bicycle infrastructure.

LTS 1

- 66% of Greater Mercer study area roadway network mileage
- Includes many low-speed residential streets found throughout the study area

LTS 2

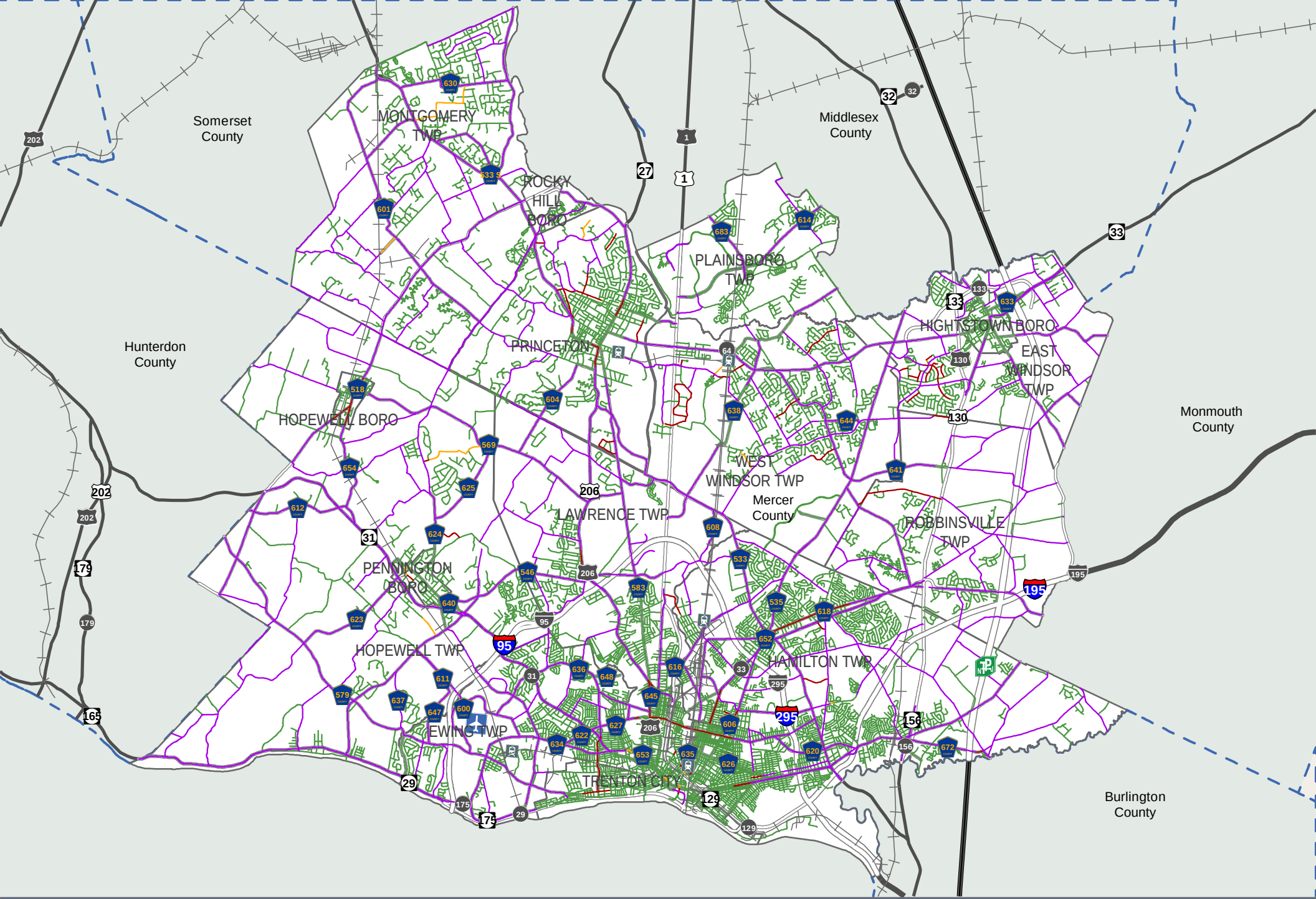
- 3% of network
- Found mostly in Trenton

LTS 3

- 3% of network
- Found mostly in Trenton

LTS 4

- 29% of network, including most County and State Highways
- Typically these are high-volume, high-speed, or wide roadways


Somerset County
Middlesex County
Hunterdon County
Monmouth County
Mercer County
Burlington County
MONTGOMERY TWP
ROCKY HILL BORO
PRINCETON
PLAINSBORO TWP
HIGHTSTOWN BORO
EAST WINDSOR TWP
WEST WINDSOR TWP
HOPEWELL BORO
LAWRENCE TWP
ROBBINSVILLE TWP
PENNINGTON BORO
HOPEWELL TWP
HAMILTON TWP
EWING TWP
TRENTON CITY
Bicycle Level of Traffic Stress (LTS)
LTS 1
LTS 2
LTS 3
LTS 4
Rail
Rail Station
Airport
0
1.5
3
6
Miles

Island Effect

The team also conducted a connectivity analysis to determine the extent of the "Island Effect". The Island Effect methodology helps identify where significant barriers and gaps exist and focuses on the need to mitigate and overcome these shortcomings to reconnect the islands.

Gaps in connectivity caused by high-stress roadways and other natural and m,an-made barriers create isolated pockets with good internal mobility, but which are isolated from nearby areas and destinations, effectively creating a series of adjacent but disconnected mobility-limited islands.

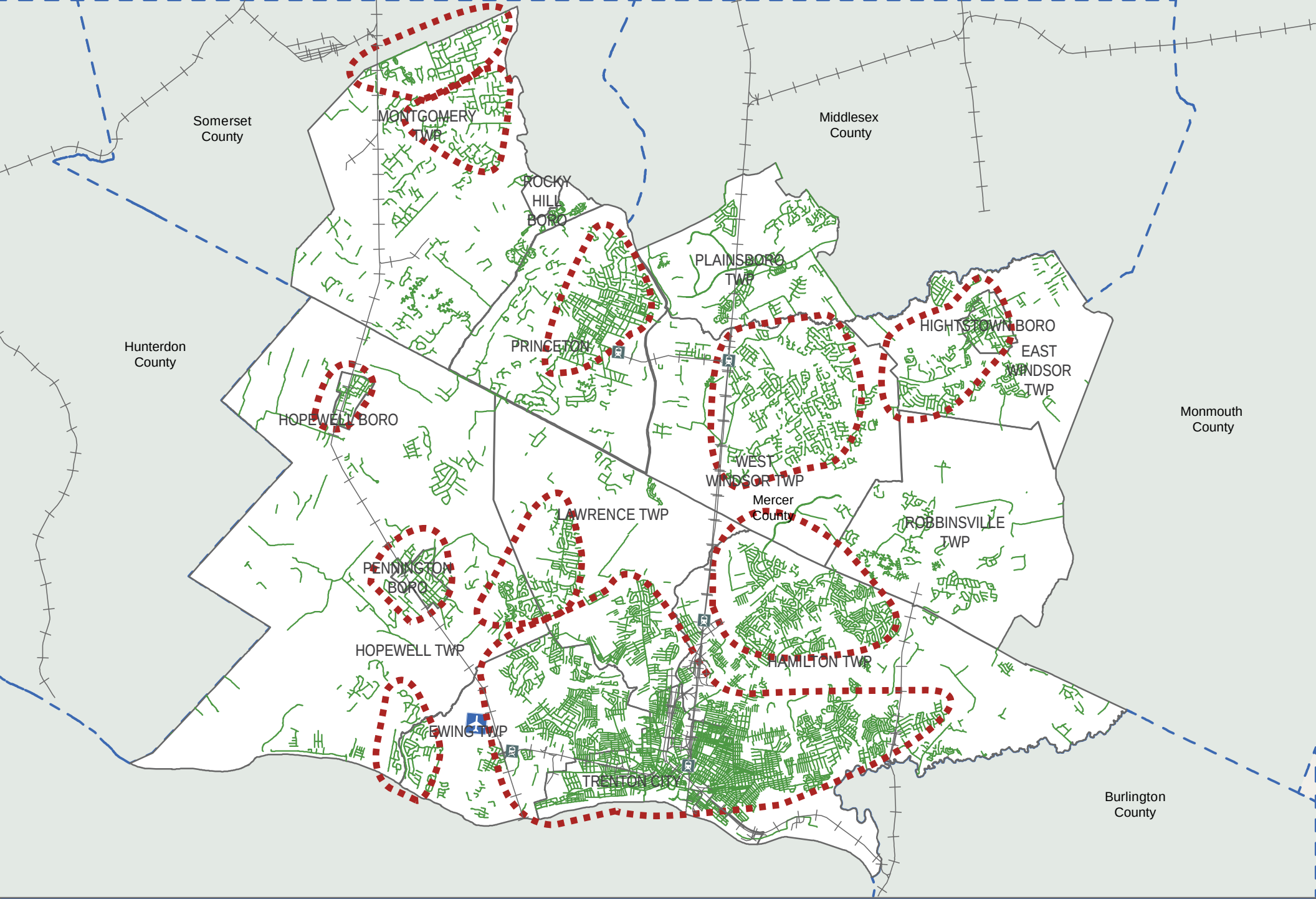
Although most streets in the study area are LTS 1, these are primarily residential streets with limited connectivity to the overall region, and isolated from other neighborhoods by barriers such as high-volume, and high-speed LTS 4 streets and arterial roadways.

Assuming each LTS level cyclist only rides on roads matching their comfort level, the existing conditions assessment can reveal a fragmented system of disparate islands, separating riders from their neighbors and the adjacent communities.

The display of the islands effect on the following map is not an exact science, but rather is intended to illustrate the isolating impact of high-speed corridors and other natural and man-made barriers to "low-stress" mobility and connectivity.

Looking only at LTS 1 streets, numerous gaps exist within the Greater Mercer study area. LTS 1 islands within and across many study area communities, including large swaths Princeton, Hopewell Borough, Pennington, Ewing, Trenton, Hamilton, and West Windsor.

The figure to the right indicates a significant island effect and more than 11 individual islands across the study area.



Bicycle Level of Traffic Stress (LTS) 1 "Islands"

LTS 1 "Islands"

Rail

Rail Station

Airport

0 1.5 3 6 Miles

Existing Bike Network

The existing network of on- and off-road trails and bike facilities include

- Facilities currently built and in-use

The existing network features a mix of trails, paths, and on-street facilities of various design and uses.

Points of Interest

Points of interest include a collection of trips generators, destinations, and amenities that generate, accommodate, and support walking and biking activity.

The points of interest were identified and mapped to better pinpoint demand for biking and walking trips, consistent with Plan goals to expand access to local and destinations.

These points of interest included:

Public and Private Schools

More than 160 K-12 schools are located throughout the Greater Mercer area. In addition to numerous public schools, large private schools exist in Lawrenceville, Princeton, Pennington and Hightstown.

Higher Education Institutions

Higher education institutions include Thomas Edison State University (Trenton), the College of New Jersey (Ewing), Rider University (Lawrence), Mercer County Community College (West Windsor and Trenton) and Princeton University (Princeton), with more than 40,000 students and more than 10,000 employees.

Hospitals and Health Care

Five regional hospital and many related facilities are located in the study area.

Retail Destinations

Popular commercial areas include the Quaker Bridge Mall in West Windsor and downtown the Princeton hub centered on Nassau Street, as well as many local main streets.

Public Transit

Many NJ TRANSIT bus routes traverse the study area, providing both local service and commuting options to New Brunswick, New York and Philadelphia. Intercity bus service is also available in Princeton. NJ TRANSIT train stations include Princeton Junction (West Windsor), Hamilton, Princeton, and Trenton. Trenton and Princeton Junction have Amtrak service.

Museums

Highly frequented museums in the area include Grounds for Sculpture (Hamilton), the New Jersey State Museum (Trenton) and Princeton University Art Museum (Princeton).

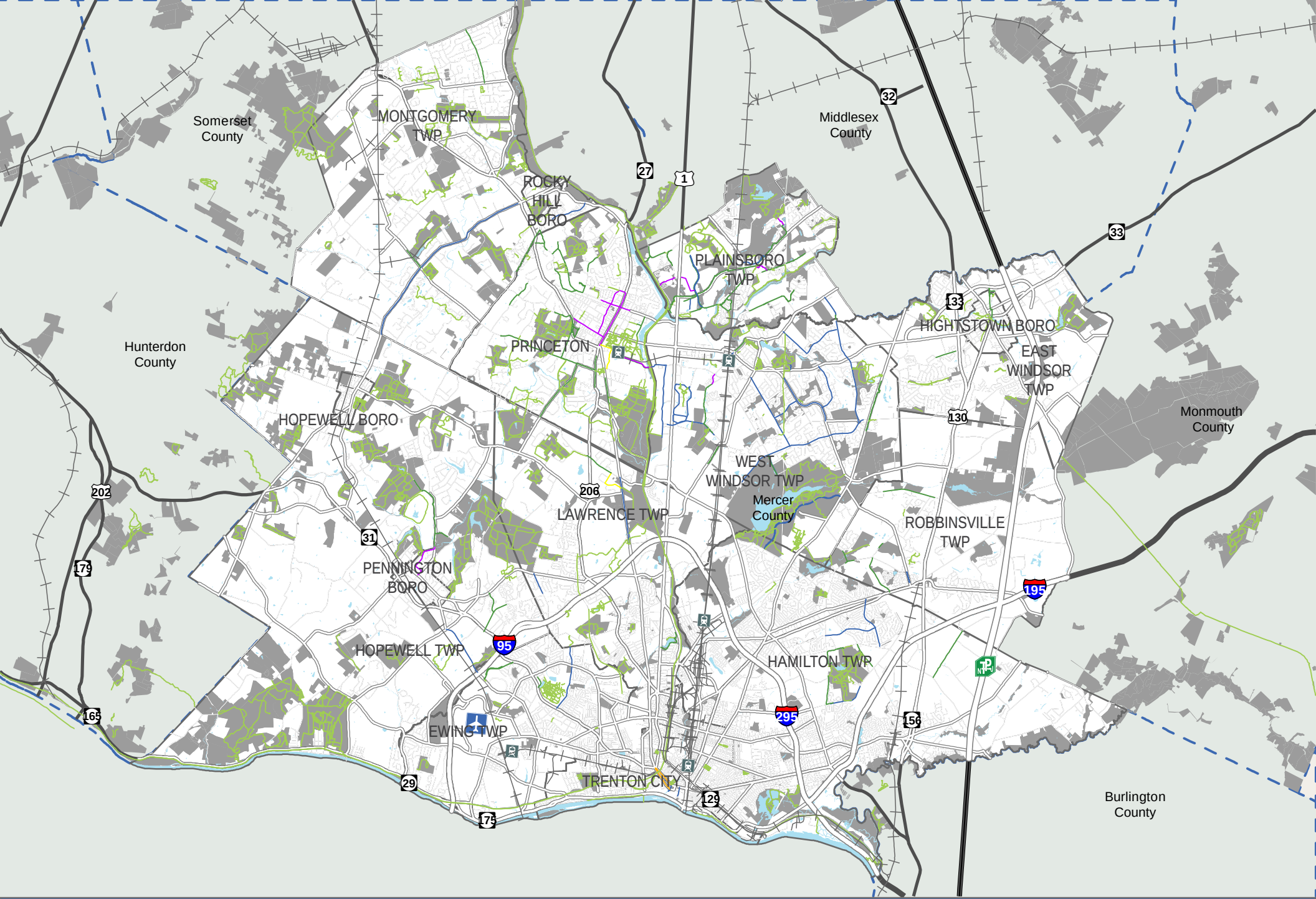
Recreation and Open Space

Large recreational facilities exist throughout Mercer County, and include Mercer County Park (West Windsor), Assunpink Wildlife Management Area (Robbinsville), Mercer County Park Northwest & Rosedale Park (Lawrence/Hopewell) and Washington Crossing and Baldpate Mountain Parks (Hopewell).

Major Employers

Major employers in the study area include:

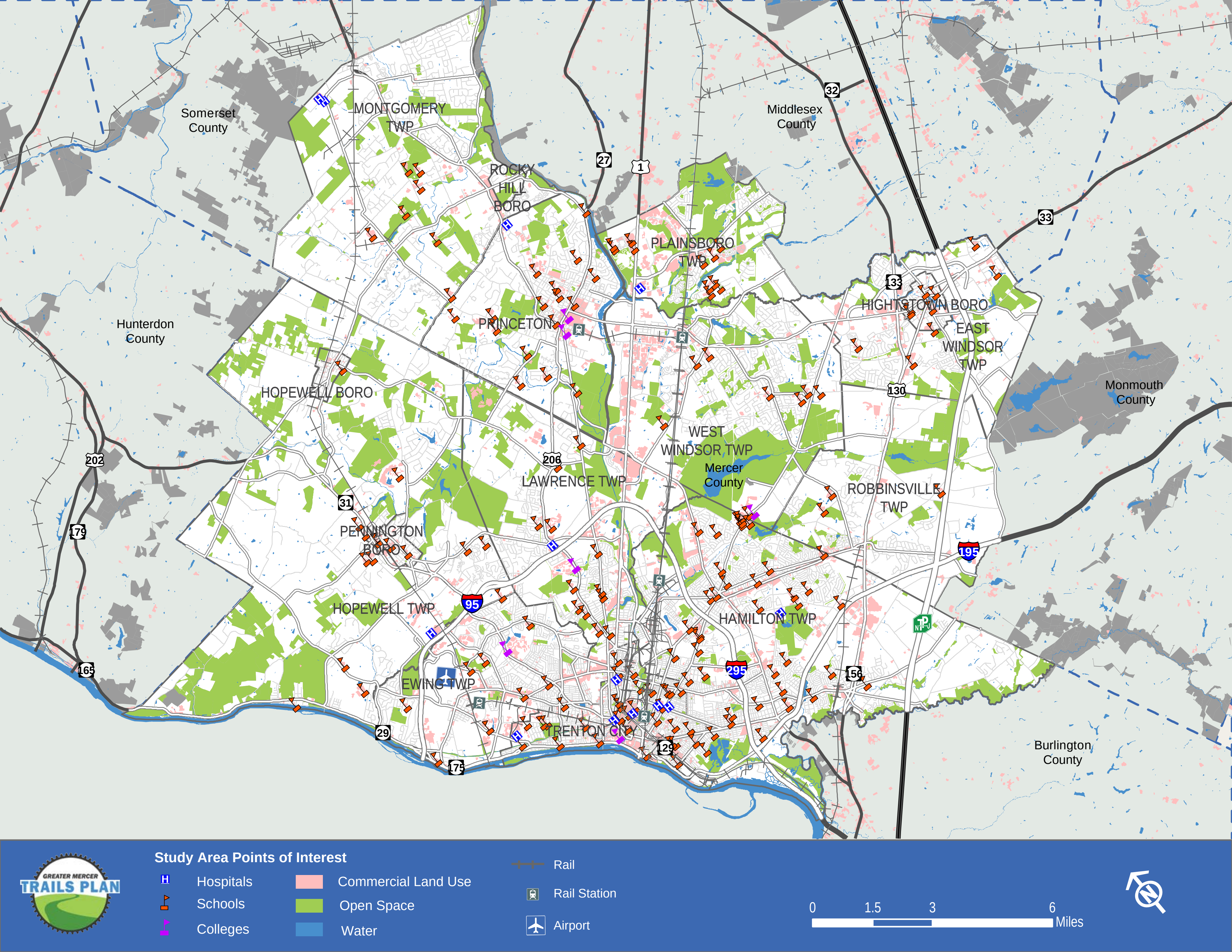
- Carnegie Center
- Princeton Forrestal Center
- Princeton Pike Corporate Center
- Bristol Myers Squibb (BMS)
- Educational Testing Service (ETS)
- NJM Insurance Group
- Janssen Pharmaceutical Company



Existing Facilities

- Trail
- Shared Use Path
- Bike Boulevard
- Buffered Bike Lane
- Bike Lane
- Shared Roadway
- Rail
- Rail Station
- Airport
- Open Space
- Water

0 1.5 3 6 Miles



Somerset County
MONTGOMERY TWP
ROCKY HILL BORO
Middlesex County
PLAINSBORO TWP
HIGHTSTOWN BORO
EAST WINDSOR TWP
Monmouth County
Hunterdon County
PRINCETON
HOPEWELL BORO
WEST WINDSOR TWP
Mercer County
LAWRENCE TWP
ROBBINSVILLE TWP
PENNINGTON BORO
HOPEWELL TWP
HAMILTON TWP
EWING TWP
TRENTON CITY
Burlington County
27
1
32
33
133
130
202
206
31
179
95
195
295
165
29
175
129
156
Study Area Points of Interest
Hospitals
Schools
Colleges
Commercial Land Use
Open Space
Water
Rail
Rail Station
Airport
0
1.5
3
6
Miles
GREATER MERCER TRAILS PLAN

Demand Assessment

The Greater Mercer Trails Plan aims to develop a comprehensive multimodal network serving residents throughout the study area, efficiently and conveniently connecting them with destinations.

Measures of existing bicycle usage, such as bicycle counts do not fully reflect the potential, or latent demand, for bicycle travel. These traditional metrics do not capture those who would be more interested in bicycling if appropriate facilities were available: the "interested, but concerned" cyclists who comprise most of the population. Commuting trips to work are often overemphasized, as only 15 percent of daily trips are taken for commuting (Bureau of Transportation Statistics, 2017). Additionally, people frequently make multiple trips per day using different modes.

Some trips are more amenable to driving while others are more attractive for biking and walking and these factors can change across the course of a day or week (weather, visibility) as well as across an individual's lifetime (physical ability to bike). Improving the ability and attractiveness of bicycle travel broadens peoples' options and allows them to travel in the manner they wish.

Bicycle and walking travel demand are influenced by a variety of factors, including the locations of population centers, jobs, key destinations, and demographic factors. In order to quantify this latent demand, the plan includes a comprehensive bicycle demand analysis. The analysis helps demonstrate the need for bicycle accommodations, identify potential routes, and guide the development of a suitable and accessible network.

Population Density

The objective of the bicycle network is to connect residents from where they live to where they need to go. Residential neighborhoods are the origin for most trips, whether by foot, bike, transit, or car. An analysis of population density identifies the most populous neighborhoods of Mercer County, indicating higher potential bicycle demand. In addition to identifying the greatest concentrations of potential bicyclists, more developed neighborhoods and development patterns are also more conducive and convenient for alternative modes of transportation – including walking, biking, or transit.

The study area population density (1525 persons per sq.mi.) is higher than the State as a whole (1210). Within the Greater Mercer area, higher density areas include Trenton and portions of Ewing, Lawrence and Hamilton close to Trenton, downtown Princeton, Hightstown and eastern Plainsboro.

Job Density

While residential areas are a significant generator of trips, employment areas are a major trip attractor, or destination for walk and bike trips. An analysis of job density data (2015 U.S. Census data) identifies the large employment hubs within the Study Area, such as the U.S. Route 1 Corridor, downtown areas of Princeton and Trenton, and Scotch Road in Hopewell Township.

The following variables were included in the demand assessment.

Population Density-residents per square mile

Job Density-jobs per square mile

School Access-proximity to elementary and secondary schools

University Access-proximity to an institution of higher education

Park Access-proximity to public parks, play grounds, and open space areas

Commercial Access-proximity to retail land uses

Bus Access-proximity to bus stops

Train Access-proximity to a train station

Under 18 Density-proportion of population under 18 years of age

Over 64 Density-proportion of population over 64 years of age

Zero Car Household Density-proportion of population without access to a vehicle

Income-Poverty Ratio < 1.25-proportion of population living below 125% of the poverty line

Bike to Work Density-proportion of people who currently bike to work

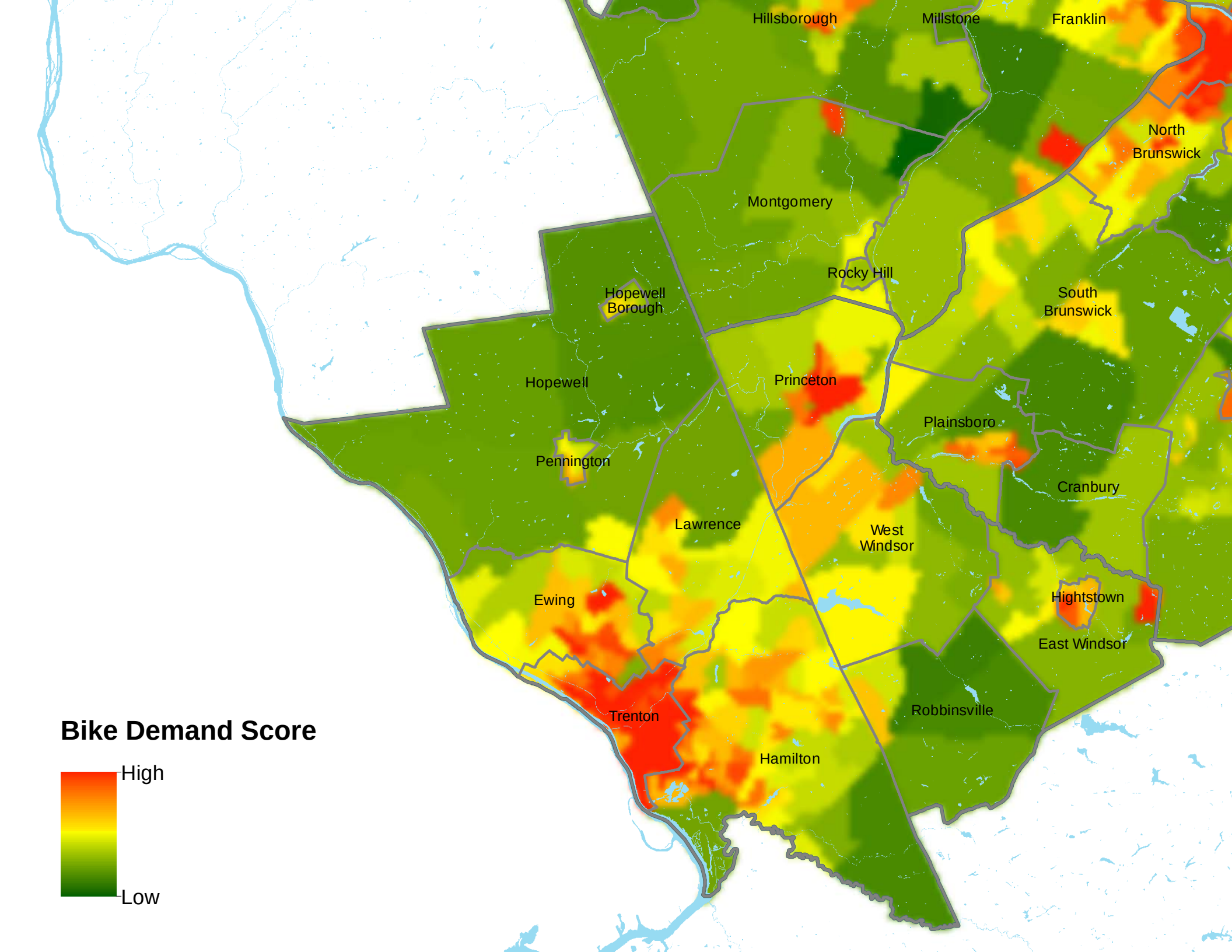
Walk to Transit or Work Density-proportion of people who walk or take public transit to work

Composite Demand Metric

These socioeconomic factors all indicate populations for whom bicycle access may be a preferred or necessary means of travel to work, school, or other destinations. They capture residents who cannot afford or choose not to own a car, who may see cycling as a more affordable or accessible means of transportation, who already bike to work, or for whom cycling might be a suitable alternative for getting to work.

The different factors of the bicycle demand analysis were aggregated at the U.S. Census block group level, and demographic factors were normalized to the block group area to account for differences in block group size. Each factor was assigned a weight to give greater influence to different factors and balance factors representing or associated with trip generators (origins) and those representing trip attractors (destinations).

Areas of moderate to high demand are located throughout the study area, and represent important nodes to link the proposed bicycle network. Communities in the study area with the highest bicycle demand tend to be those with the highest population densities and economic opportunities, namely Trenton and central Princeton, (formerly Princeton Borough). Areas with high bicycle demand also include central Plainsboro, eastern East Windsor and portions of Lawrence, Ewing and Hamilton near Trenton. Many of these high demand areas are connected by wide, highly used, high-speed roads posing a barrier to comfortable bike travel.


Hillsborough
Millstone
Franklin
North Brunswick
Montgomery
Rocky Hill
Hopewell Borough
South Brunswick
Hopewell
Princeton
Plainsboro
Pennington
Cranbury
Lawrence
West Windsor
Ewing
Hightstown
East Windsor
Trenton
Robbinsville
Hamilton
Bike Demand Score
High
Low

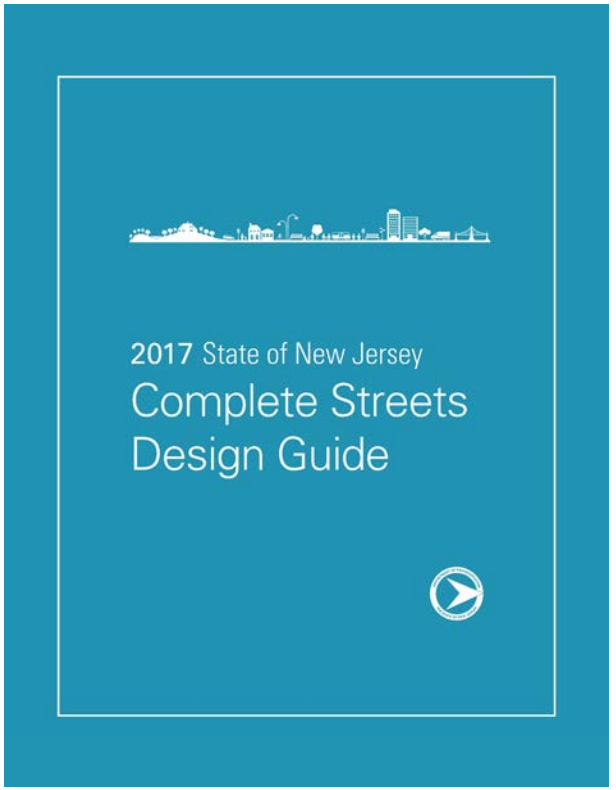
03

Framework Plan

The Framework Plan improves safety and mobility, and accommodates and encourages walking and biking across wide range of locations, abilities, uses, and activities.

The team worked collaboratively across dozens of interactive meetings and mapping sessions with GMTMA staff, regional stakeholders, and study partners to develop and refine the Framework Plan and hundreds of individual multimodal improvements designed to implement and advance the Plan Vision and Goals.

Development of the countywide network was guided by two essential resources: New Jersey's Complete Streets Design Guide (2017), and the Greater Mercer Trails Plan Pattern Book, developed as a standalone, companion piece to this study.



Mercer County Bicycle Master Plan

Mercer County completed its Bicycle Master Plan in 2019. This plan includes proposed improvements for county roads.

The Mercer County Bike Plan is aspirational in its approach and recommendations and may include some recommendations that exceed the guidelines reflected in the New Jersey Complete Streets Design Guide. In each case, Mercer County will examine these recommendation to assess feasibility of these concepts before advancing to design, funding, and construction.

The Greater Mercer Trails Plan complements the Mercer County Bike Plan with additional recommendations for trails, paths, and on-street facilities, gathered from previous studies, municipal plans and public input. Together, these two plans create a single, integrated, and interconnected network for multimodal travel across the Greater Mercer region

Design Options and Criteria

The proposed bicycle and trail facilities are based on the extensive base mapping and assessment processes detailed in the previous chapter and capitalizes on the many existing bicycle facilities already available.

A variety of facility types are proposed for the network, ranging from shared lane markings and designated bicycle boulevards, to on-road facilities and dedicated off-road trails.

Specific details, regulatory criteria, and examples are provided in the New Jersey Complete Streets Design Guide and Greater Mercer Trails Plan Pattern Book.

The table and maps on the following pages illustrate the types and number of miles of bike facilities, both existing and proposed.

Trails

Trails provide off-road connections, catering to cyclists and pedestrians, with access to safe and scenic routes for recreation and commuting trips. Due to the amount of open space in Mercer County, trails are the most frequently recommended facility type in the plan. Trails are typically made of natural surfaces, stone, or gravel.

Shared Use Path (Sidepath)

Shared-use paths are recommended along busy and high speed corridors where there is ample right-of-way for a dedicated facility. These facilities are consistent with the vision of “low stress, all ages, all abilities.” Sidepaths are recommended along Route 526, Sharon Rd and Gordon Rd in Robbinsville, Bakers Basin Rd in Hamilton, NJ 31 in Hopewell, US 130 in Hightstown.

Bicycle Boulevard

Bicycle boulevards use traffic calming measures to create low-speed, low-volume routes prioritizing bicycle mobility over vehicular through-traffic, frequently along residential streets. Posted speed are 25 mph and below.

Proposed bicycle boulevards include Prospect Ave, Tyson Ln and Leavitt Ln in Princeton, and Chestnut Ave and Riverside Dr in Trenton.

Buffered Bicycle Lane

Buffered bicycle lanes provide an enhanced buffer to increase separation between cyclists and motorists and reduce exposure to traffic stress; they are recommended for high-speed, busy, and wide roadways to provide more separation from moving traffic than a standard bike lane. Buffered bike lanes are recommended for Opossum Rd and Camp Meeting Rd in Montgomery.

Separated Bicycle Lane

Separated bikes lanes provide a physical barrier from traffic such as a traffic island or median separator, and most often utilized on streets with high traffic volumes and a high frequency of parking. There are no existing separated bike lanes in the study area.

Standard Bicycle Lane

Standard bicycle lanes provide dedicated space to cyclists by reallocating space from motorists, and typically on roads of up to 35 mph posted speed limits. Standard bicycle lane recommendations include Klockner Rd, Hughes Dr, and Hamilton Square-Whitehorse Rd in Hamilton, NJ 31 in Ewing, Denow Rd in Lawrence and Hopewell, and Pennington-Rocky Hill Rd in Princeton.

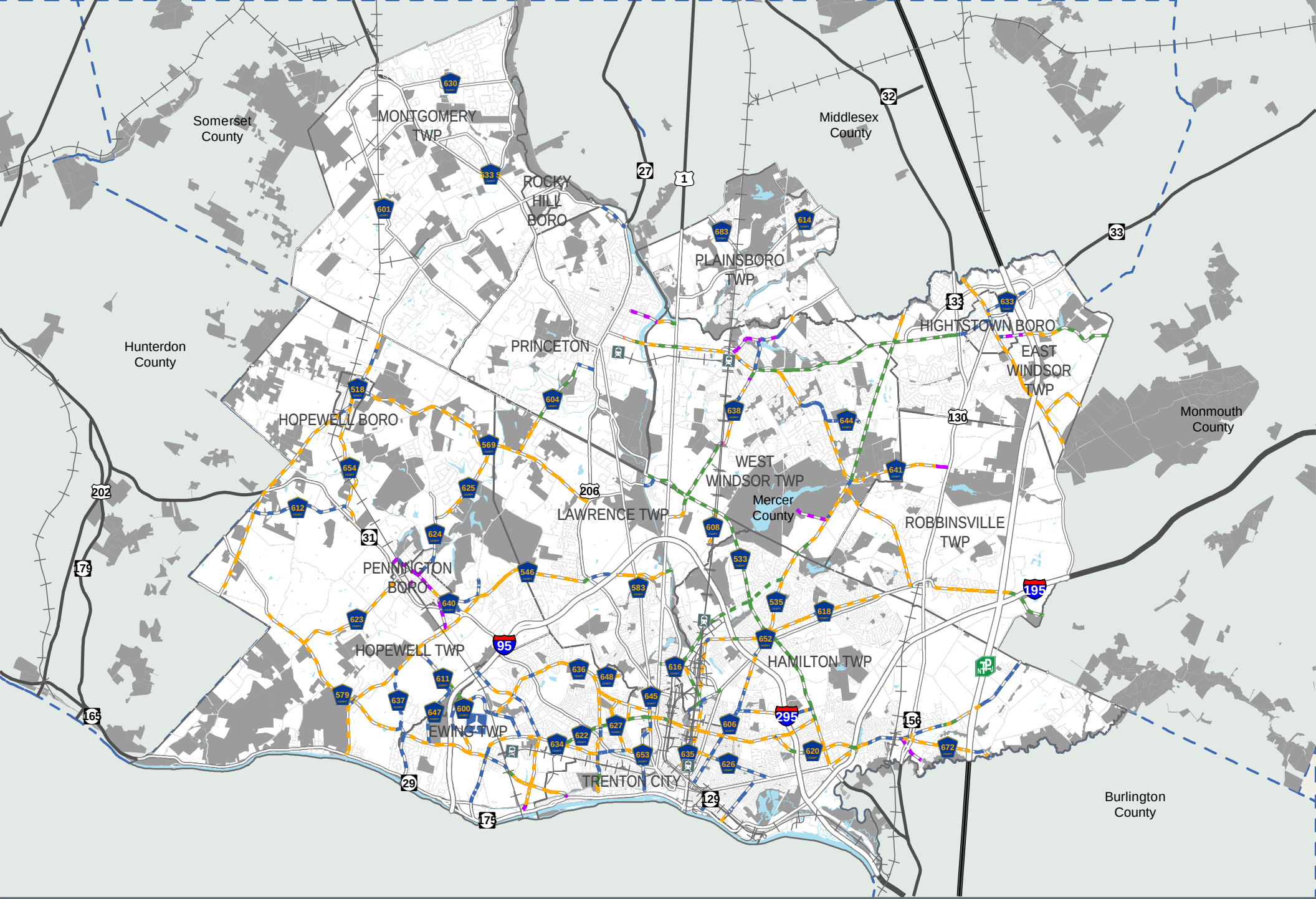
Shared-Lane Markings (Sharrows)

Shared-lane markings are intended to provide connections between dedicated bicycle facilities. Shared-lane markings are paired with traffic calming and primarily recommended for short stretches between other facilities, such as along Woodland Dr in Plainsboro, and Cambridge Way in East Windsor. One exception to this is a 2.6 mile portion of U.S. 206 in Trenton.

A series of tables and maps on the following pages depict the existing and proposed new candidate facilities.

The legends indicate the various facilities with a unique color scheme for each type; existing facilities are displayed with solid lines, and proposed facilities are dashed.

Facility Type	Existing (miles)	Proposed (miles)	Total (miles)
Trail	673	421	1,094
Shared-Use Path (Sidepath)	48	84	132
Bicycle Boulevard	1	15	16
Buffered Bicycle Lane	1	13	14
Standard Bicycle Lane	44	148	192
Shared Lane Markings (Sharrows)	7	17	24
Total	774	697	1,471



Proposed Facilities Mercer County Bike Plan 2019

- Shared Use Path
- Bike Boulevard
- Buff Bike Lane
- Bike Lane
- Shared Lane Markings
- Rail
- Rail Station
- Airport

0 1.5 3 6 Miles

Long Distance Corridors

The proposed network is intended to provide a variety of connections to link destinations and expand access and mobility options. Some offer significant opportunities for new regional connections over the short term. Others are have significant potential but will require extensive collaboration, planning, and design to come to fruition. These regional connections are described below.

Crosswicks Creek (Greenway)

An 11.2 mile trail is proposed along Crosswicks Creek between Hamilton and Trenton. The trail will follow the creek in Hamilton, which separates Mercer and Burlington Counties, and parallels I-195 into Trenton. This trail will provide connections to other proposed facilities along Klockner Rd, a utility right-of-way in Hamilton, and the Camden-Amboy line, U.S. 206, the existing DVRPC Circuit Trail, and a proposed county route facility on CR 672.

Capital Loop (Utility Trail)

There is an 11.6 mile right-of-way arcing around Trenton in Ewing, Lawrence and Hamilton home to PSE&G power lines. A trail is recommended below the power lines to improve scenic connections between these communities. This route will provide connections to the existing trails in John A. Roebling Memorial Park, and the D&R Canal Trail, as well as proposed routes on Independence Ave, U.S. 206, S Clinton Ave, Cypress Ln, Klockner Rd, the Capital to Coast Trail, Assunpink Greenway, Central Park, Nancy Ln, Federal City Rd, NJ 31, the West Trenton Line, and proposed County route facilities on CR 643, CR 649, CR 535, CR 606, CR 619, CR 622, and CR 620.

West Trenton Line (Rail with Trail)

A trail is recommended parallel to the 18.8 mile CXST-owned West Trenton Line in Ewing, Hopewell, Township, Pennington, Hopewell Borough, and Montgomery. This trail will provide an off-road connection between these communities in areas which are otherwise difficult to navigate due to high-speed roads and other barriers. This trail will connect to existing DVRPC Circuit Trails, and proposed trails along facilities including the Capital Loop, the RR Connection Over Rt 31 to the West Trenton Line, off-road trails in Montgomery, as well as proposed County route facilities on CR 518, CR 654, CR 640, CR 546, CR 611, CR 634, and CR 579.

Johnson Trolley Line (Rail Trail)

Building from the existing segments of the Johnson Trolley Line Trail trail, an off-road trail is proposed through residential neighborhoods in Lawrence to Carter Rd (CR 569) and then through farmland and the Bristol Myers Squibb campus to Elm Rd in Princeton. In the southwesterly direction, the Johnson Trolley Line trail will continue as a shared-use path/standard bike lane along Fifth Ave in Ewing, and operate as a trail along Calhoun St in Trenton. The proposed trail will connect to existing facilities in Central Park, the LHT, and proposed facilities on Craven Ln, Denow Rd, the Capital Loop, Eggerts Crossing Rd, and Columbia Ave and proposed County routes on CR 648, CR 613, CR 622, and CR 653.

Dinky Line (Rail with Trail)

A trail is proposed along the 2.6 mile Dinky Rail Line in Princeton and West Windsor. This will improve connectivity across the Delaware and Raritan Canal and provide direct connections to the Princeton Junction train station. The trail will connect to the existing D&R Canal Trail, and proposed facilities along U.S. 1, and Vaughn Dr.

Union Transportation Trail (Rail Trail)

The Union Transportation Trail is a 9 mile off-road trail in Monmouth County, stopping short of the East Windsor border at CR 539. We propose extending the trail 2.9 miles in East Windsor where it will terminate at proposed facilities along Airport Rd at NJ 33. The trail will also connect to proposed facilities on Conover Rd and Woods Rd, and provide an off-road connection between Mercer and Monmouth Counties.

John Bull (Rail Trail)

The John Bull trail is named after the John Bull steam locomotive, which was the first in New Jersey, operating from 1831 – 1866 between Bordentown and Hightstown – it was rebuilt and still operable, now at the Smithsonian. A 9.9 mile abandoned rail right-of-way parallels U.S. 130 between Bordentown in Burlington County and CR 641 in Robbinsville. A trail is proposed along this right-of-way to connect to proposed routes along U.S. 206, the Crosswicks Creek, Yardville-Hamilton Square Rd, Kuser Rd, Estates Blvd, CR 526, Gordon Rd, and proposed County routes on CR 641, CR 524. North of CR 641, the trail will continue as a shared-use path along U.S. 130 where it intersects with proposed routes along Village Rd East, Conover Rd, Hickory Corner Rd, South Lane, CR 571, and Old Cranbury Rd.

Assunpink Creek (Greenway)

The Assunpink Creek is a 23 mile long tributary running through Mercer and Monmouth Counties, beginning in Trenton. 9.9 miles of trail are proposed along the creek in Trenton, Hamilton and West Windsor. The off-road trail will connect to the Delaware River Heritage Trail, the D&R Canal Trail, and proposed bike facilities on U.S. 206, Market St, Chestnut Ave, the Capital to Coast Trail, the Capital Loop, and the Station Road Sidepath, as well as linking Downtown Trenton with Mercer County Park. The trail will overlap with a portion of the Capital to Coast Trail.

Capital to Coast (Greenway)

The Capital to Coast Trail is a proposed 55 mile network of trails from Trenton to Manasquan along the Jersey Shore. A significant portion of the network already exists, but this proposal details a connection of new trails and alternatives for the Capital to Coast route. The trail begins in Trenton near the Battle Monument and continues onto U.S. 206 and New York Ave before crossing U.S. 1 to Second Ave. The trail will then parallel a stream continuing east into County-owned land near Miry Run before turning southeast toward U.S. 130 and Sharon Rd. The route will then operate as a shared-use path along Sharon Rd before converting to a trail after crossing the New Jersey Turnpike and continuing into Monmouth County. The trail will intersect with the existing D&R Canal Trail and Mercer County Park trails and intersect with proposed facilities along U.S. 206, First Ave, Klockner Rd, the Capital Loop, Brookwood Rd, Paxson Ave, Hughes Dr, Pond Rd, and the Union Transportation Trail in addition to proposed County routes on CR 616 and CR 622. This corridor of proposed trails will add 14.9 miles to the system.

The College of New Jersey to Rider University (Utility Trail)

A shared-use path is proposed to connect The College of New Jersey in Ewing and Rider University in Lawrenceville. There are two potential alignments for the trail; one along Shabakunk Creek to Denow Rd and the Capital Loop, and an easterly option through Green Lane Fields past William L Antheil Elementary School to the Capital Loop. The trail would connect these two educational communities and provide recreational biking and hiking options for students, faculty, and local residents.

Shabakunk Creek (Greenway)

Colonial Lake and Colonial Lake Park lie in Lawrence between Brunswick Ave and U.S. 1. A shared-use path is proposed southwest from Colonial Park along Shabakunk Creek, southwest past The College of New Jersey, terminating at the Capital Loop Trail Crossing of Shabakunk Creek. This will improve access to the recreational opportunities of Colonial Lake and the Johnson Trolley Trail.

Tatemy - Bear Brook (Greenway)

The Tatemy - Bear Brook Trail is a proposed off-road connection from the D&R Canal Path west along Duck Pond Run to connect to the Trolley Line 15 trail, then follow greenbelt open space to a shared use path along CR571, then along Bear Brook in West

Windsor, to connect to existing trail in East Windsor, terminating at the John Bull / Union Transportation Trail intersection.

Millstone River (Greenway)

The 1 mile Millstone River Greenway will run along Rocky Brook and the Millstone River in East Windsor connecting the residential neighborhoods north of NJ 133 with the commercial and residential neighborhoods along U.S. 130 south of NJ 133. The Greenway will connect with other trails proposed as part of the East Windsor Township Bicycle and Pedestrian Study.

Pennington to Baldpate Mountain (Utility Trail)

The Pennington to Baldpate Mountain Trail will connect the West Trenton Line and NJ 31 in Pennington Borough with the trails on Baldpate Mountain in Hopewell. The route will travel along Woolsey Brook to Hopewell Township's baseball fields and northwest under a power line right-of-way to Baldpate Mountain. This will connect Pennington Borough, which can otherwise be difficult to reach for low-stress cyclists with the many scenic trails at Baldpate Mountain.

Mercer Health (Utility Trail)

The Denow to Capital Health Trail will operate 3.5 miles along a power line right-of-way parallel to Denow Rd in Lawrence and Hopewell, ultimately connecting to the West Trenton Line, north of Capital Health Medical Center.

Trolley Line 15 (Rail Trail)

The Elizabeth to Trenton Rail Trail will run along a power line right-of-way in Hamilton and West Windsor, passing through Mercer County Park. This trail will be an extension of the existing Trolley Line Trail. The trail will intersect with proposed bike facilities on Village Rd W, Lanark Dr, Paxson Ave, Klockner Rd, and the Tatemy-Bear Brook, Mercer Lake, Capital to Coast, Assunpink and Capital Loop long distance trails.

Delaware Bound Brook (Rail Trail)

The Delaware Bound Brook Rail Trail will run 3.5 miles between Downtown Trenton and the West Trenton train station in Ewing on an abandoned rail right-of-way. The trail will intersect with the proposed Johnson Trolley extension, proposed trails near the Heritage Court Apartments, and the West Trenton Rail with Trail.

Mercer Lake (Utility Trail)

A 6.26 mile trail is proposed between Mercer County Park in West Windsor and the proposed Union Transportation Trail extension in East Windsor, passing through Robbinsville. The trail would run along a power line right-of-way. The trail will connect with proposed bike facilities along N Main St, and Woods Rd.

Hamilton Breezeway (Utility Trail)

The Hamilton Breezeway will be a utility trail connecting Crosswicks Creek at Yardville to Veterans Park to the Capital Loop Trail at Cypress/ I-295.

D&R Trail Connections

The existing 15.6 mile Delaware and Raritan Canal Trail provides scenic biking and walking parallel to its namesake canal in Trenton, Lawrence and Princeton. Bisected by several high-speed roadways without bike facilities of their own, the trail requires many visitors to travel by car. Bike facilities are recommended for the following intersecting corridors:

- Princeton-Mercer County 629, a path north of the Dinky Line, and the Dinky Line
- Lawrence-a path north of Nassau Park Blvd, Bakers Basin Rd, a path south of Bakers Basin Rd, and Whitehead Rd
- Trenton-Mulberry St, a trail north of Southard St, U.S. 206 and Winter St
- Ewing-Mercer County 643, the West Trenton Line, Wilburtha Rd, Scenic Dr, and Willis Dr in Ewing.

The maps on the subsequent pages illustrate the existing and proposed long distance corridors, the on-road connections, the off-road connections, and the combined on and off road network.

GREATER MERCER TRAILS PLAN

Long Distance Corridors

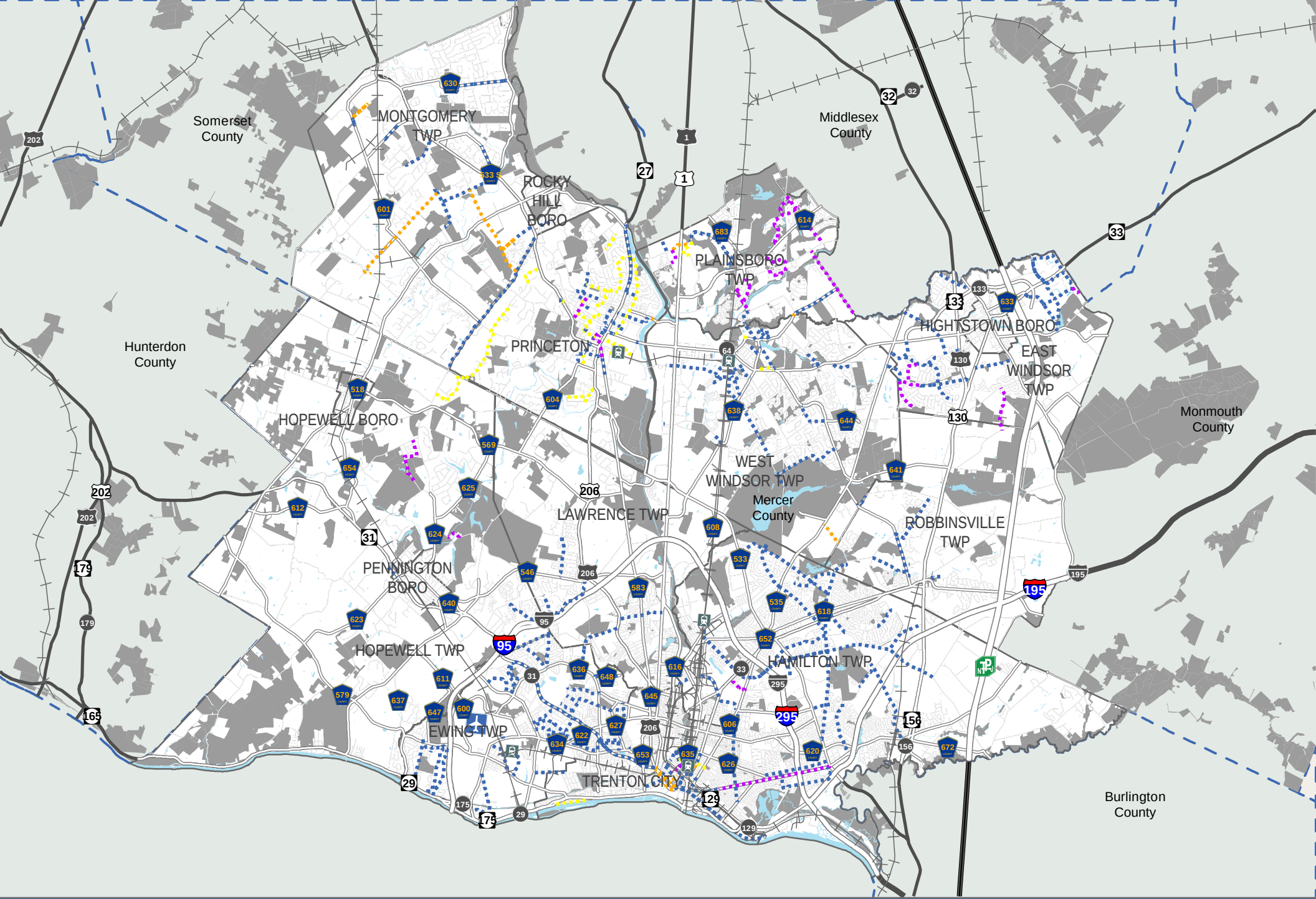
Existing
- Trail
- Shared Use Path
- Bike Boulevard
- Shared Lane Markings

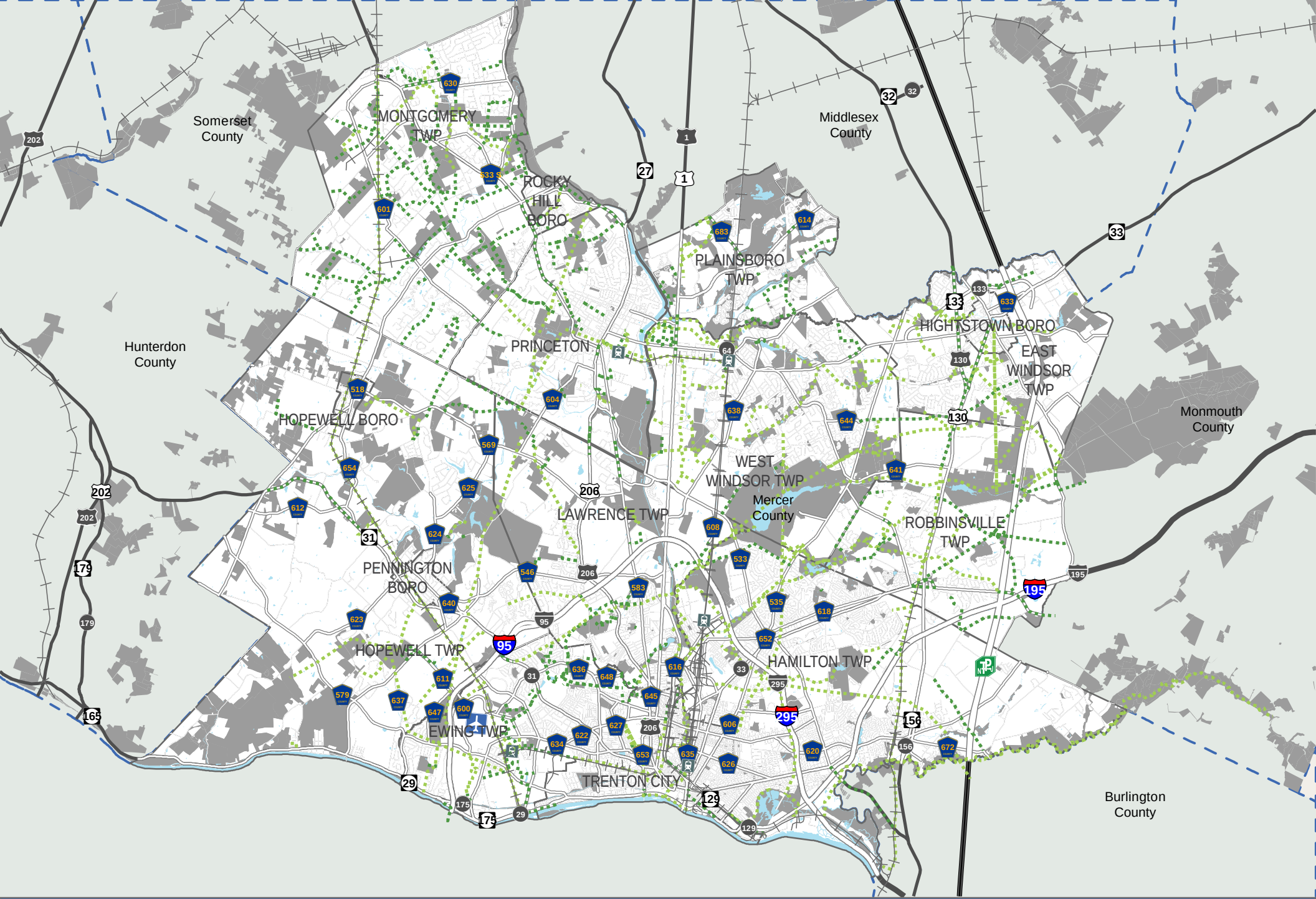
Proposed
- Trail
- Shared Use Path
- Bike Lane
- Sharrows

- Hospitals
- Schools
- Colleges

- Commercial Land Use
- Open Space
- Water

0 1.5 3 6 Miles


Somerset County
Middlesex County
Hunterdon County
Monmouth County
Mercer County
Burlington County
MONTGOMERY TWP
ROCKY HILL BORO
PRINCETON
PLAINSBORO TWP
HIGHTSTOWN BORO
EAST WINDSOR TWP
WEST WINDSOR TWP
HOPEWELL BORO
LAWRENCE TWP
ROBBINSVILLE TWP
PENNINGTON BORO
HOPEWELL TWP
HAMILTON TWP
EWING TWP
TRENTON CITY
Proposed On-Road Facilities on Municipal Roads
Bike Boulevard
Bike Lane
Buffered Bike Lane
Shared Roadway
Rail
Rail Station
Airport
Open Space
Water
0
1.5
3
6
Miles


Somerset County
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ROCKY HILL BORO
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PRINCETON
HIGHTSTOWN BORO
EAST WINDSOR TWP
HOPEWELL BORO
WEST WINDSOR TWP
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ROBBINSVILLE TWP
PENNINGTON BORO
HOPEWELL TWP
HAMILTON TWP
EWING TWP
TRENTON CITY
Proposed Off-Road Facilities
Trail
Shared Use Path
Rail
Rail Station
Airport
Open Space
Water
0
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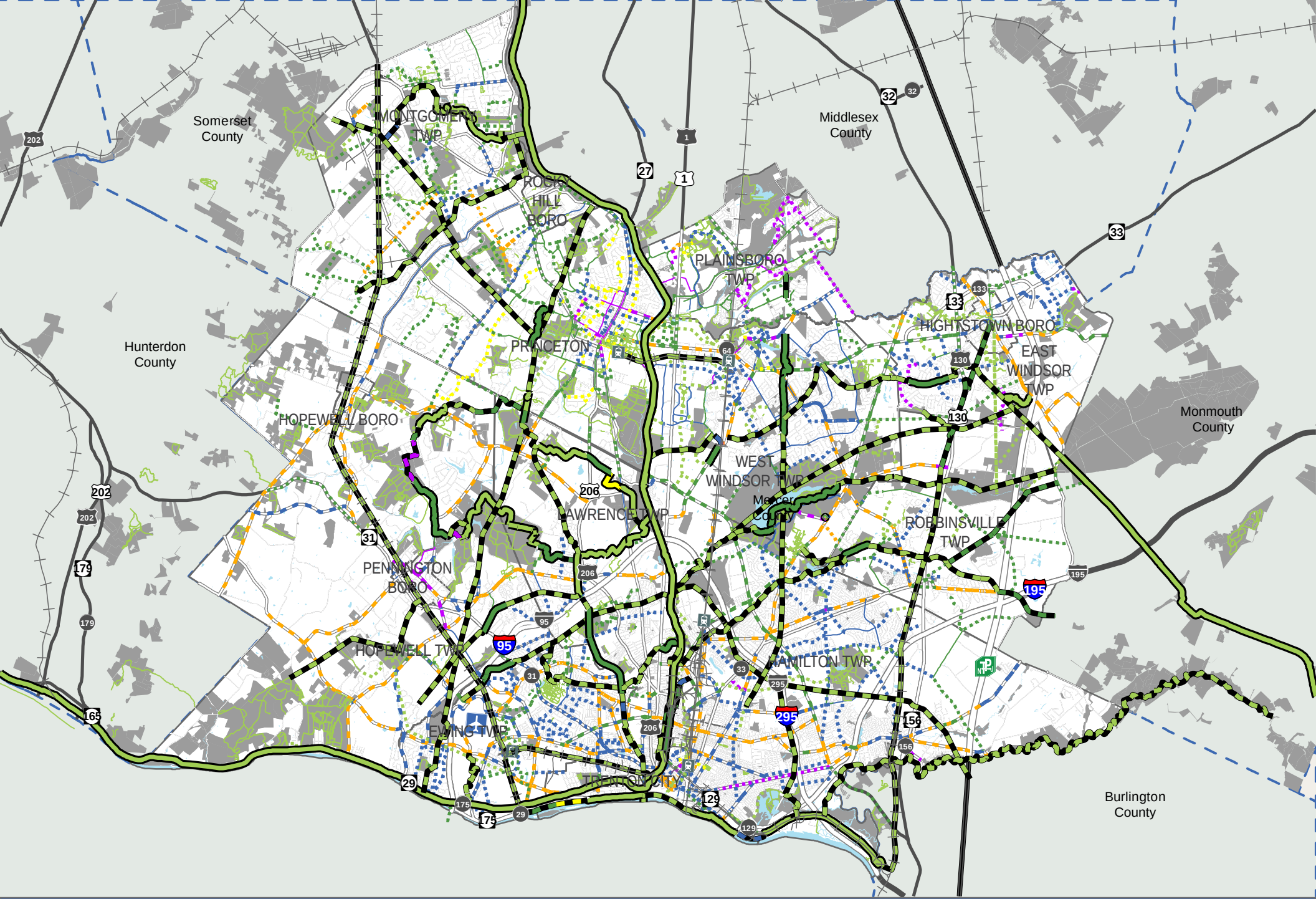
3
6
Miles



Existing and Proposed Facilities - Study Area

Long Distance Corridors

Existing

- Trail
- Shared Use Path
- Bike Boulevard
- Shared Roadways

Proposed

- Trail
- Shared Use Path
- Bike Lane
- Shared Roadways

Existing / Proposed Facilities

- Trail
- Shared Use Path
- Bike Boulevard
- Buffered Bike Lane
- Bike Lane
- Shared Roadway

0 1.5 3 6 Miles

04

What's Next

The Greater Mercer Trails Plan and Pattern Book transform how our streets and communities are designed, built, and maintained, and support the Greater Mercer Transportation Management Association in its mission to promote transportation choice, reduce congestion, improve mobility and safety, and further sustainability for the region's residents, businesses, and visitors.

Using the Vision Statement and Goals as a guide, the plan provides a blueprint for action, and shapes how each new plan, project, and policy is formulated and developed. This Plan is just the first step of an ongoing process that will continue to take shape and evolve in the coming years as citizens, advocates, and decision makers work collaboratively to meet the region's mobility, access, and safety needs through sustainable, cost-efficient, and resilient multimodal transportation infrastructure, facilities, and community amenities.

It is the role of the GMTMA to take each of these potential concepts, and work with municipal partners, Mercer County, and private landowners to assess feasibility of these concepts before advancing to design, funding, and construction.

The Trails Plan was developed through a methodical and collaborative process as documented in each chapter of this report:

Chapter One summarizes engagement and collaboration efforts to understand and evaluate vision, goals, and priorities

Chapter Two establishes the region's baseline conditions and context, and defines mobility and safety needs, existing barriers and constraints, and opportunities for improvement

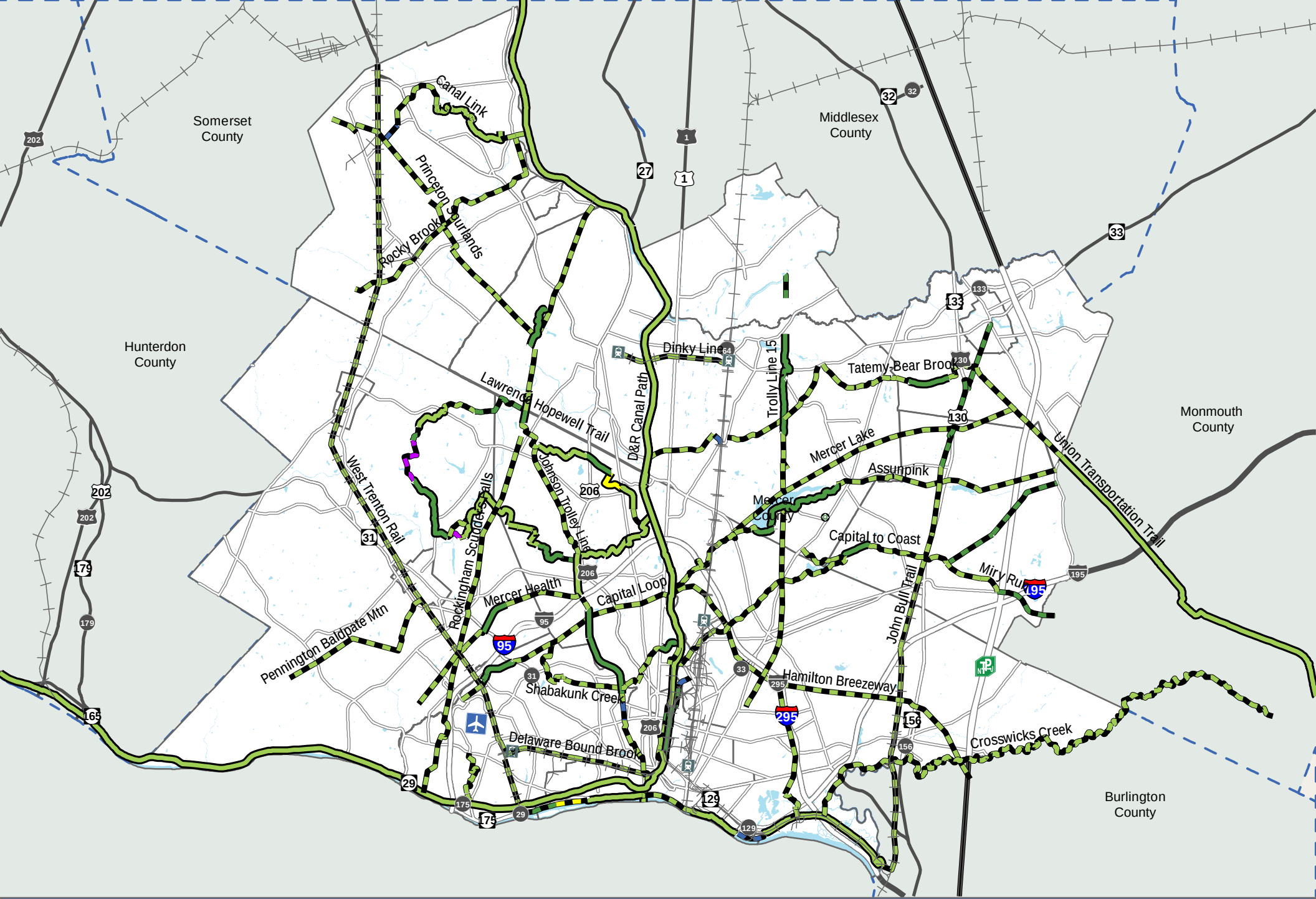
Chapter Three presents the Framework Plan with hundreds of proposed individual actions to improve multimodal mobility and safety

Chapter Four documents the prioritization methodology and Implementation Matrix of proposed improvements

Implementation Methodology

With an impressive system of existing trails, trail development and funding partners across the state, and new routes identified through this plan, the existing and proposed trail network in the Greater Mercer area can link communities, local economies, and outdoor adventures across the region. In moving forward, this section details the implementation time frame that will guide this momentum for trail development toward concrete results, benefiting both present and future generations.

Phasing timetables are based on the priorities identified in this plan. Some recommendations can be implemented quickly and easily; some may require moderate levels of effort such as speed limit reductions or minor widening; and others will require significant effort to advance to completion. The three time frames defined in this plan are short-term (0-5 years), medium-term (5-10 years) and long-term (>10 years). It is the role of the GMTMA to take each of these potential concepts, and work with municipal partners, Mercer County, and private landowners to assess feasibility of these concepts before advancing to design, funding, and construction. Long distance corridor names are shown on the next page, corresponding to the implementation matrix.



GREATER MERCER TRAILS PLAN

Long Distance Corridors

Existing

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Proposed

- Trail
- Shared Use Path
- Bike Lane
- Sharrows

0 1.5 3 6 Miles

Implementation Matrix

Corridor	Type	Timeframe	Length (miles)
Canal Link	Greenway	Short-Term	3.5
Delaware Heritage Trail	Circuit Trails	Short-Term	1.5
Lawrence Hopewell Trail	Circuit Trails	Short-Term	7.0
Mercer Health	Utility	Medium-Term	4.1
Miry Run	Greenway	Medium-Term	3.0
Union Transportation Trail	Rail Trail	Medium-Term	2.9
Assunpink	Greenway	Long-Term	10.2
Capital Loop	Utility	Long-Term	12.1
Capital to Coast	Greenway	Long-Term	14.8
Crosswicks Creek	Greenway	Long-Term	13.1
Delaware Bound Brook	Rail Trail	Long-Term	5.4
Dinky Line	Rail with Trail	Long-Term	2.6
Hamilton Breezeway	Utility	Long-Term	5.4
John Bull Trail	Rail Trail	Long-Term	13.8
Johnson Trolley Line	Circuit Trails	Long-Term	5.6
Mercer Lake	Utility	Long-Term	8.5
Pennington Baldpate Mtn	Utility	Long-Term	4.2
Princeton Sourlands	Utility	Long-Term	7.5
Rockingham Scudders Falls	Utility	Long-Term	13.3
Rocky Brook	Greenway	Long-Term	6.2
Shabakunk Creek	Greenway	Long-Term	3.6
Tatemy-Bear Brook	Greenway	Long-Term	8.2
Trolley Line 15	Utility	Long-Term	7.1
West Trenton Rail	Rail with Trail	Long-Term	18.6
		Total	**182.5**

Note:

- Short Term: 0-5 years
- Medium-Term: 5-10 years
- Long-Term: More than 10 years

Study Advisory Committee

Name	Organization
Jerry Foster	Greater Mercer Transportation Management Association
Beverly Asselstine	Hightstown Borough
Ann Bell	Robbinsville Township
Francis Guzik	West Windsor Township
Brenda Kraemer	Lawrence Township
Lauren Wasilauski	Montgomery Township
Matthew Lawson	Mercer County
Les Varga	Plainsboro Township
John Boyle	Greater Philadelphia Bicycle Coalition
Sonia Szczesna	Tri-State Transportation Campaign
Eleanor V. Horne	Lawrence Hopewell Trail
Larnie Myer	Pennington Borough
Andras Holzmann	Somerset County
Cheryl Kastrenakes	Greater Mercer Transportation Management Association
Matthew Zochowski	Mercer County
Cheryl Bergailo	Hopewell Township
Becky Taylor	Lawrence Hopewell Trail
Pete Boughton	Ewing Township
Deanna Stockton	Municipality of Princeton

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