

Connect Warren County



Safe, accessible, efficient, functional travel for all

Comprehensive Complete Streets Policy & Implementation Plan



PREPARED FOR



PREPARED BY



May 2025



Disclaimer

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NV5

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Organization of Plan and What is Included

The Warren County Comprehensive Complete Streets Policy Implementation Plan is a five (5) part plan to guide the implementation of Complete Streets at the county and municipal levels with support from the County.

Section I, Introduction, explains the purpose, intent, and methodology behind the plan.

Section II, Complete Streets and Associated Elements, defines Complete Streets, expanding on their benefits, how it applies in rural and small-town environments, and where it fits in future transportation plans and projects.

Section III, Public Outreach and Public Engagement, details the process for public outreach, including stakeholder and public engagement, digital outreach tools, and in-person events. Feedback gathered through these various means results in a community-driven plan that focuses on the concerns of the people who live and work in Warren County.

Section IV, Mobility Overview of Warren County, Issues and Opportunities provides an in-depth look at mobility and circulation in the County while identifying issues and opportunities relating to Complete Streets and road safety. This section provides local context and trends, an analysis of the existing transportation network conditions, crash data, and an assessment of needs.

Section V, Complete Streets Policy Implementation Plan lays out a comprehensive set of implementation strategies and includes a vision and a set of guiding principles. The Implementation Plan features the Warren County Complete Streets Typology tool, which was developed for future use by the County and municipalities to identify context-appropriate Complete Street design solutions based on roadway types. Also included are local case studies with conceptual Complete Streets improvements for specific locations in Warren County. The Action Plan and recommendations that follow were developed to apply to the range of roadway types and contexts found throughout the County and are relevant to all 22 municipalities in the County. The implementation plan ends with a review of guides, resources, and methods for measuring success.

Glossary

This glossary provides descriptions of data sources and definitions of terms utilized in the report that readers may be unfamiliar with.

Data Sources

Barrier Analysis: The Barrier Analysis dataset, created in the Active Transportation Plan by NJTPA, is a heavily data-driven analysis seeking to identify gaps in the bicycle network. This involved the creation of a value for all roads in the NJTPA region called “centrality,” which was created through intensive data manipulation. The shortest route between every possible pair of intersections (up to 5 miles apart) would be counted and weighted by the adjacent population, with the overall centrality based on how many shortest links pass through a road segment and the population weight of the links’ two endpoints. A road with high centrality should therefore be a road most often picked by cyclists, although this does not incorporate any factors that may discourage a cyclist from using a road.

Crashes: Using Numetric, a tool that allows detailed analysis of all reported crashes in New Jersey, road segments with large numbers of crashes were identified, with special attention given to Bicycle, Pedestrian, and Heavy Vehicle crashes. Using Numetric’s Sliding Window Analysis tool, which counts all crashes within a road segment, maps of the highest-crash road segments for the aforementioned modes were created.

Level of Stress (Warren County): Level of Stress data identifies roadways’ usability for bicyclists, incorporating factors like road volumes and speeds as well as existing bicycle infrastructure, and categorizing them accordingly. The lowest-stress roadways are usable by nearly all bicyclists and the highest-stress roadways are only recommended for the most adept and risk-tolerant.

Pedestrian Gaps by Trip Potential: Sidewalk data is available for Phillipsburg, Hackettstown, Washington (Borough and Township), and Belvidere only. This limits the evaluation of pedestrian connectivity but is still available in the most pedestrian-heavy areas. This allowed the identification of road segments with no sidewalks, and combining these sidewalk gaps with the previously described Pedestrian Trip Potential data identified roads without sidewalks that need them the most.

Trails: Trails data showed the location of trails in Warren County but was limited in terms of details on what the condition, development status, or allowed uses are. Additionally, the data provided did not indicate whether a trail is wheelchair-accessible.

Trip Potential: The Trip Potential analysis was created in the NJTPA Active Transportation Plan for both bicyclists and pedestrians. This data is represented in a hexagonal grid and combines the following factors: Population, Employment Opportunities, Poverty, Private

Vehicle Access, Transit Stops, and Land Use Mix. The intent of this data is to identify locations where there is a high likelihood for people to choose to walk or cycle, and it can be assumed that providing safe routes in these areas will drive both uses.

Truck Routes: The 2023 Warren County Transportation Master Plan Update included a truck route map. Roads with truck routes identified are relevant for the purposes of Complete Streets as a way to anticipate future truck traffic and ensure all users are accommodated.

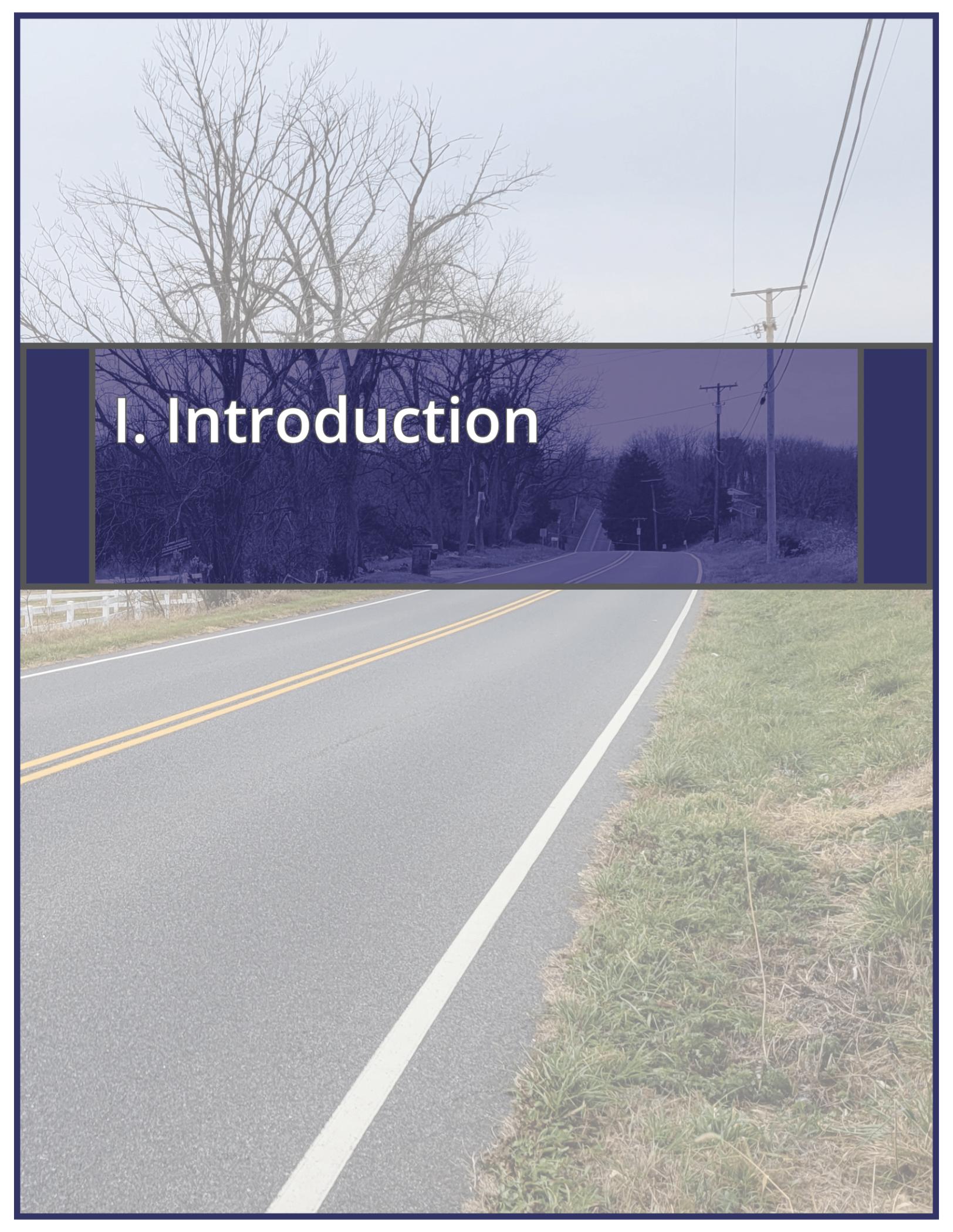
Additional Terms

Design Vehicle: Pursuant to the AASHTO “Green Book” – a “design vehicle” has representative weight, dimensions, and operating characteristics and is used to establish roadway design controls for accommodating designated vehicle classes.

Micromobility: Pursuant to the U.S. Department of Transportation’s Federal Highway Administration, micromobility refers to small, low-speed vehicles intended for personal use and includes station-based bikeshare systems, dockless bikeshare systems, electric-assist bikeshare, and electric scooters.

RRFB: Pursuant to the U.S. Department of Transportation’s Federal Highway Administration, a Rectangular Rapid Flashing Beacons (RRFBs) consist of two, rectangular-shaped yellow indications, each with a light-emitting diode (LED)-array-based light source that flash with an alternating high frequency when activated to enhance conspicuity of pedestrians at the crossing to drivers.

Side Guards: Pursuant to the U.S. Department of Transportation’s Volpe Center, a Truck Lateral Protective Device, also known as a *side guard*, are vehicle-based safety devices designed to keep pedestrians, bicyclists, and motorcyclists from being run over by a large truck’s rear wheels in a side-impact collision. Side guards work by physically covering exposed space where vulnerable road users can fall into the exposed space between the front and rear wheels and suffer fatal crushing injuries.



I. Introduction

I. Introduction

Purpose of the Plan

The purpose of this plan is to institutionalize the implementation of Complete Streets in Warren County with a focus on strategies geared towards rural areas and small towns. Warren County intends to adopt a Complete Streets policy and to partner with its municipalities to encourage adoption of local Complete Streets policies with guidance and technical assistance. Additionally, the County intends to update County-wide regulations such as the Highway and Bridge Standards in a manner that is complementary to a Complete Streets strategy.

The NJ Bicycle & Pedestrian Resource Center explains the relationship between Vision Zero, Safe Systems, and Complete Streets. All three have gained momentum in recent years and are parallel initiatives. The goal is zero traffic deaths. The Safe System approach is the blueprint while Complete Streets is the method of designing streets for all users with the goal of achieving zero deaths.

Complete Streets is an approach to planning, designing, and building streets that considers the travel needs of everyone, including drivers, pedestrians, bicyclists, transit riders, emergency responders, and drivers transporting goods.

This plan contains analyses of existing conditions relating to mobility and safety and introduces recommendations for implementing Complete Streets within the unique rural context of Warren County.



Figure 1: The intersection of Market Street and Water Street in Belvidere Township

Plan Goals

The plan's six goals capture the major themes of the Complete Streets philosophy:

1. **SAFETY:** Eliminate all road fatalities, significantly reduce crash severity and injury, and improve personal safety, creating a safe environment that is an essential prerequisite for more people to choose walking and bicycling.
2. **ENVIRONMENT:** Improve air and water quality, reduce flooding, and create healthier, more resilient communities by implementing green streets.
3. **ECONOMIC:** Stimulate economic prosperity while balancing the demands of a growing warehouse economy with the priority of ensuring the safety of all travelers, particularly those traveling outside of motor vehicles.
4. **FREIGHT AND EMERGENCY VEHICLES:** Complete Streets policies and design solutions must find a balance between creating roads that can provide safety benefits without disrupting essential economic operations, goods movement, and emergency vehicles access.
5. **ACCESS FOR EVERYONE:** Implement policies and distribute funding and other resources, especially in Priority Communities¹, to improve non-motor vehicle transportation systems and ensure that transportation investments reduce air pollution, enhance green spaces, and improve access to essential services for all residents.
6. **ACTIVE TRANSPORTATION:** Expand transportation options and alleviate traffic congestion to enhance the capacity of the transportation network, while redirecting investments towards safer, more efficient streets and establishing Complete Streets networks over time.

Plan Overview

Background

The plan is the result of a nearly yearlong research and planning process that included the preparation of technical memoranda to obtain the background information that guided development of the Connect Warren County Plan.

The technical memoranda assembled and analyzed the data necessary to prepare the plan, identified County-wide needs based on the underlying data, and made recommendations for implementing Complete Streets strategies. The technical memoranda prepared by the team included:

¹ Priority Communities are defined in the NJDOT Complete & Green Streets For All Model Complete Streets Policy & Guide as "*categories of underserved and adversely impacted populations.*"

- Stakeholder Outreach Summary
- Literature Review
- Multimodal Inventory
- Crash Summary
- County and Municipal Code Review
- Demographic Analysis
- Complete Streets Best Practices

Intent of the Plan

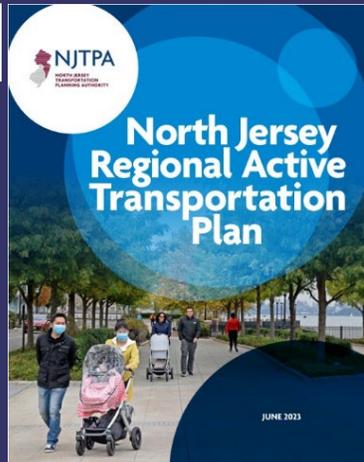
The Warren County Comprehensive Complete Streets Policy Implementation Plan provides the County with a full set of tools to plan, develop, and operate safe streets that are comfortable, efficient, and accessible for all. By incorporating Complete Streets into the County’s official policies, guidance documents, and review processes, implementation will occur incrementally as an outcome of day-to-day business operations. The plan was also developed with the intention that Warren County will provide resources, expertise, and objective information to its municipalities, helping them to make informed decisions around Complete Streets planning, design and implementation.

Methodology

An effective Complete Streets policy and implementation plan is based on strong partnerships with stakeholders, extensive community outreach, and robust data collection and analyses, combined with a granular understanding of the population within the policy and plan’s jurisdiction. The project team considered the needs of all travelers in Warren County with special attention on the safety concerns for the most exposed and vulnerable users: pedestrians of all abilities, bicyclists, and those that use micromobility transport. The main components of the methodology include data collection, a needs assessment, and utilizing Complete Streets best practices to form recommendations. The following Project Flow Chart that follows outlines the Scope of Work tasks and subtasks.

NORTH JERSEY REGIONAL ACTIVE TRANSPORTATION PLAN

The North Jersey Regional Active Transportation Plan was prepared by the NJTPA in 2023. Through the Active Transportation Plan, the NJTPA envisions a safe, comfortable, and connected network for active transportation in the NJTPA region, which includes Warren County. In preparing the Connect Warren County Plan, two tools from the North Jersey Regional Active Transportation Plan, Trip Potential Analysis and Barrier Analysis, were used during the Needs Assessment phase of the project.



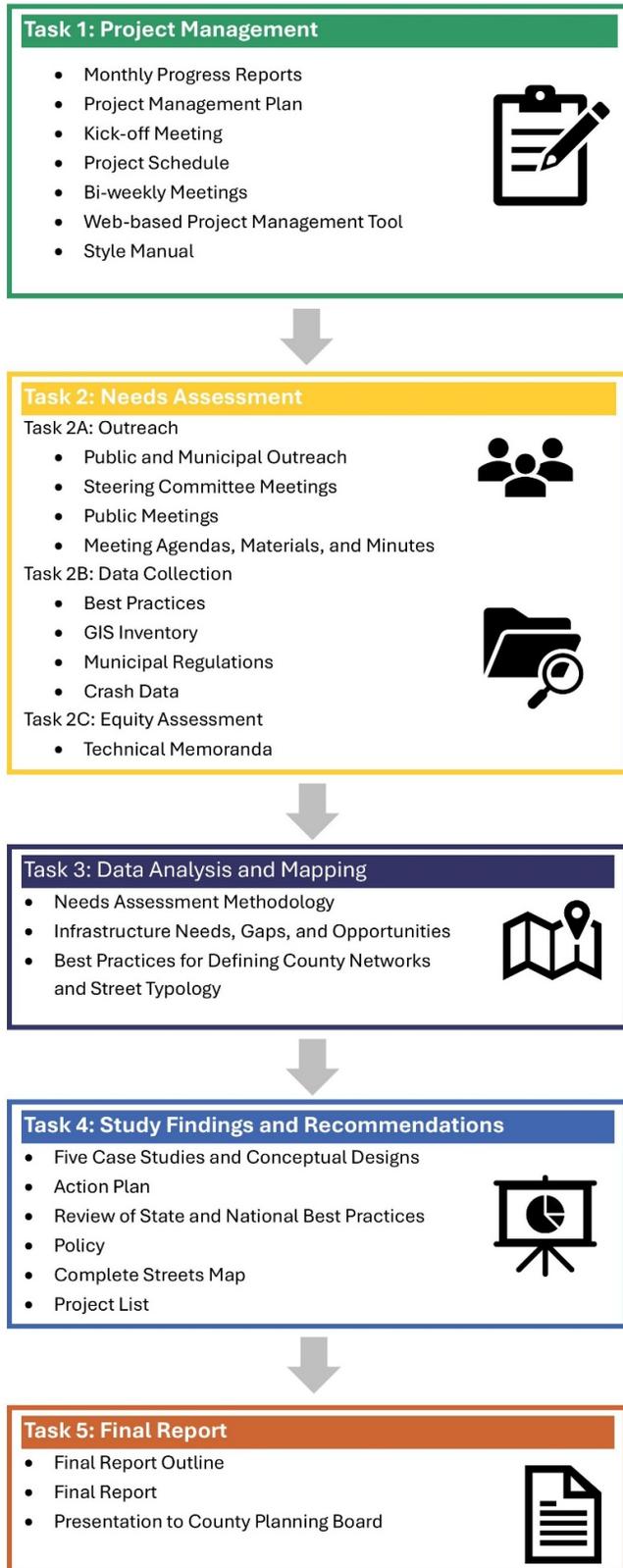
NJTPA
NJ TRANSIT
NJ STATE POLICE
NJ STATE DEPARTMENT OF TRANSPORTATION

North Jersey
Regional Active
Transportation
Plan

JUNE 2023



Figure 2: Project Flow Chart



II. Complete Streets and Associated Elements





II. Complete Streets and Associated Elements

What are Complete Streets?

The National Complete Streets Coalition defines Complete Streets as streets that are:

"...designed and operated to enable safe access for all users. Pedestrians, bicyclists, motorists and transit riders of all ages and abilities must be able to safely move along and across a complete street"

Complete Streets in New Jersey

The New Jersey Department of Transportation (NJDOT) adopted a statewide Complete Streets policy in 2009. According to the 2017 State of New Jersey Complete Streets Design Guide, the policy requires:

"...that roadway improvement projects include safe accommodations for all users, including bicyclists, pedestrians, transit riders, and the mobility impaired."

While the statewide policy is effective, the Guide also notes that, on a mileage basis, NJDOT controls less than 10 percent of roads in the State. Large scale adoption of Complete Streets requires action by county and municipal governments to make Complete Streets ubiquitous in New Jersey.

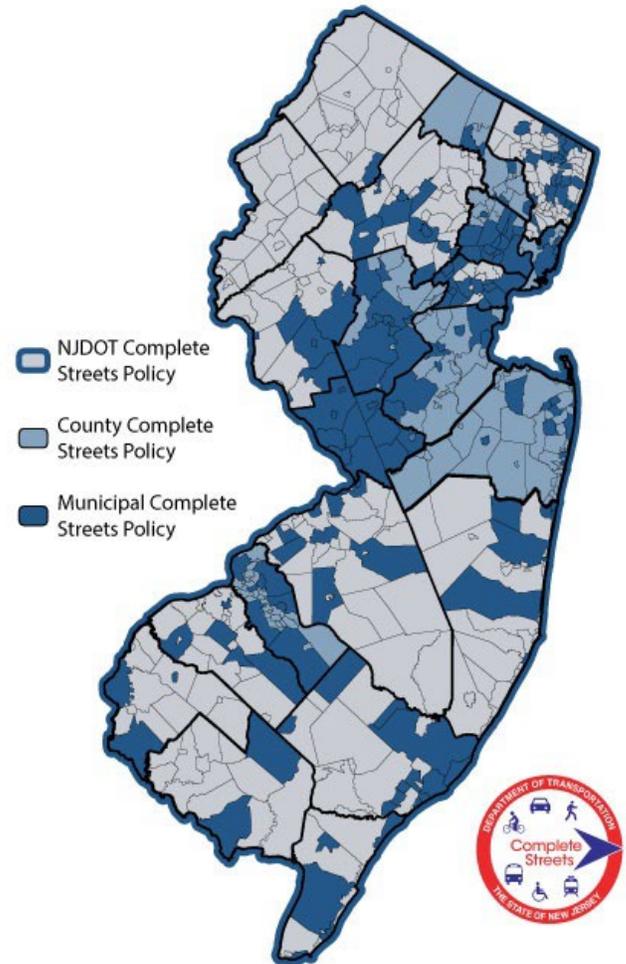


Figure 3. Map of Complete Streets Progress Across New Jersey, May 2024

Benefits of Complete Streets

Complete Streets offer wide-ranging benefits to the communities that implement them.

- **Health and Wellness:** Complete Streets encourage modes of active transit that are better for the health and wellbeing of the community. By walking and bicycling more often, individuals exercise more, which may lead to better health outcomes.
- **Economic Vitality:** Complete Streets can be lively streets. When streets are safer and more comfortable, individuals are more likely to spend time patronizing the establishments located along the street. A holistic Complete Streets strategy connects



more communities in more ways, creating opportunities for employees to travel to jobs, and for customers to travel to their favorite stores, shops, restaurants, and businesses.

- **Benefits for All:** Complete Streets prioritize street design that is comfortable and accessible for all users regardless of age, ability, or mobility.
- **Safety:** Complete Streets is a safety and design strategy to create streets that result in zero traffic-related fatalities and serious injuries.
- **Environment:** Complete Streets create opportunities to walk, bike, or utilize other non-motorized transportation, therefore reducing carbon emissions and improving the environmental health of the community.
- **Mode Choice:** Complete Streets are designed for pedestrians, bicyclists, motorists, and users of other transportation modes. This creates opportunities for transportation choice, empowering individuals to travel in their preferred manner.
- **Mobility:** In addition to giving individuals more choice in travel, Complete Streets also facilitate greater mobility, particularly in the “first/last mile²” context. Motorists who park in places with Complete Streets can safely reach a variety of destinations on foot, bike, or public transportation after leaving their autos behind.
- **Livability:** Complete Streets help support interesting places with a mix of uses that attract and engage people. Important destinations like employment centers, healthcare centers, public transit stops, schools, houses of worship, and other places are easily reached. These places foster interaction, leading to more social communities.

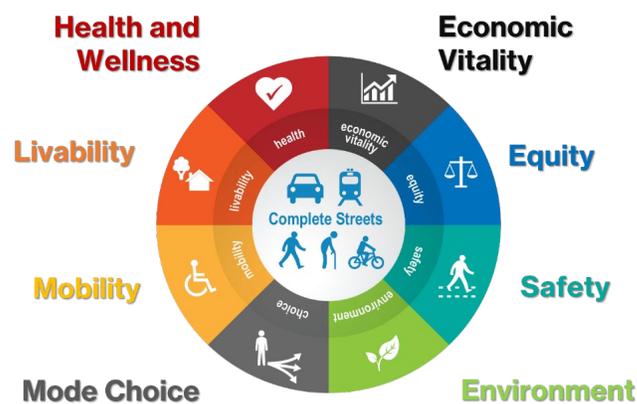


Figure 4. Benefits of Complete Streets

² First/Last Mile is defined by the NJTPA in their 2021 *Institutionalize Complete Streets Implementation Brief* as “...trips to and from fixed-route transit: the ‘first mile’ from a trip origin to transit and/or the ‘last mile’ from transit to the trip destination.”



What Can Warren County Learn from Other Counties?

WHAT CAN WARREN COUNTY LEARN FROM MERCER COUNTY?

Mercer County in central New Jersey has the distinction of being the first county in New Jersey to have all its municipalities covered by a county-wide Complete Streets policy and individual local policies for each of its municipalities.

- **Context is Key.** Implementing Complete Streets should have fixed principles supported by flexible strategies that can be tailored to specific communities.
- **Project Timing.** An overarching strategy and detailed list of actionable projects should be prepared and implemented during routine road maintenance.
- **Have Easy and Hard Conversations.** Engage advocates and Complete Streets supporters and be ready to have conversations with individuals and communities that disagree with the Policy.
- **Support Trails and Greenways.** Apply Complete Streets strategies to all roadway crossings located along existing or planned trails and greenways.

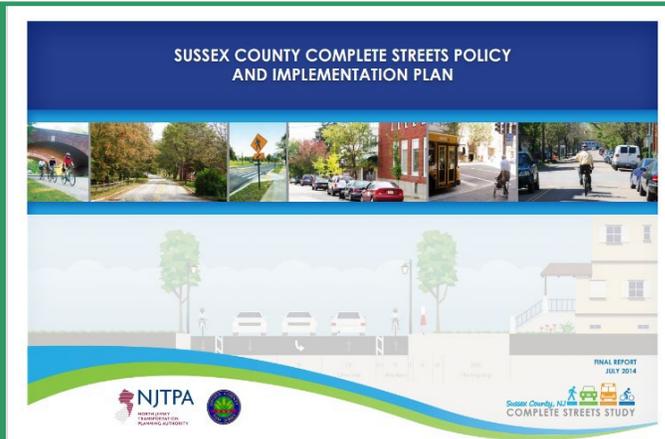


2018 Complete Streets Case Study
Mercer County, New Jersey



Prepared by: The New Jersey Bicycle and Pedestrian Resource Center at Rutgers, The State University of New Jersey
Prepared for: The New Jersey Department of Transportation

WHAT CAN WARREN COUNTY LEARN FROM SUSSEX COUNTY?



Sussex County adopted a Complete Streets plan with a transect-based implementation plan based on local roadway types and surrounding land uses.

Street Typology. Street and corridor types offer guidance on how Complete Streets elements can improve the mobility of various users based on local context.

Simplify Implementation. Street types aid transportation decision-makers to assess and apply context-specific multimodal treatments.

Give Examples. The plan included seven pilot locations to develop Complete Street recommendations and further advance the typologies.

Complete Streets in Rural/Small Town Environments

Complete Streets is a globally adopted method for planning, designing, and constructing streets for roadway users of all abilities. However, as seen in Mercer County in the case study provided above, it is not a one-size-fits-all solution. The context and needs of users are different in rural, suburban, and urban communities, and individual streets and regional networks will look different as a result.

Complete Streets concepts apply to all contexts, whether urban, suburban, or rural, and can be adjusted to fit the goals and needs in each of those contexts. Warren County features compact, walkable towns and villages, and natural scenic features within the boundaries of the County's nearly 400 square miles of land. These assets, coupled with data indicating high rates of crashes in the County's population centers of Phillipsburg, Hackettstown, Washington, and Belvidere, present opportunities to use the Complete Streets approach to better connect the County while simultaneously making it safer.

Challenges to Complete Streets in rural communities and small towns include longer distances, funding/resources, lack of transit options, and prevalence of high-speed, auto-oriented roads. Beyond walking, bicycling, driving, and transit, rural areas may have other unique transportation modes such as farm equipment.



Figure 5. Asbury-Bloomsbury Road (CR 632), Franklin Township

To address these challenges in a predominantly rural place like Warren County, the Complete Streets strategy will focus on the following:

1. Prioritizing safety interventions, especially in population centers.
2. Creating/fostering alternatives to automobile travel.
3. Improving access to its towns, villages, and other population and activity centers through the use of on-road and off-road multi-use paths.
4. Improving bicycling and pedestrian infrastructure within town centers.

The result would be a more accessible, better-connected County with greater opportunities for multimodal travel by residents and visitors.



Warren County's natural beauty and rural nature are cherished qualities that generate tremendous pride and a greater sense of place for residents and a source of enjoyment for visitors. Complete Streets, active transportation, and a better-connected multimodal network will allow residents and visitors alike to experience the County in a safe manner that cultivates appreciation and respect for its natural and environmental resources.

Incorporating Complete Streets Elements in Transportation Projects

Warren County Capital Improvement Project Process and Timeline

For the successful implementation of the Warren County Complete Streets policy, it is essential to incorporate Complete Streets elements from the earliest stages of project development and to maintain that commitment throughout every phase from initial planning to design, and through construction and long-term maintenance. Every element must be integrated into the project rather than as a second thought or option that may be subject to removal due to cost or time issues. To ensure continuous Complete Streets improvements in the County the policy must be fully embedded into the County's project development process from start to finish. The County's revised Highway and Bridge standards (included in the Appendix) include several recommendations and incentives to advance Complete Streets in land development applications on County roads.

A transparent, consistent and well-defined project development framework is crucial for seamlessly integrating Complete Streets principles into County projects. The County should document how various types of projects are initiated and executed from planning and prioritization to funding and construction. Additionally, a clear mechanism for aligning Complete Streets policies with key project milestones should be established. The County identified their Capital Improvement Project process as noted in the following flowchart:

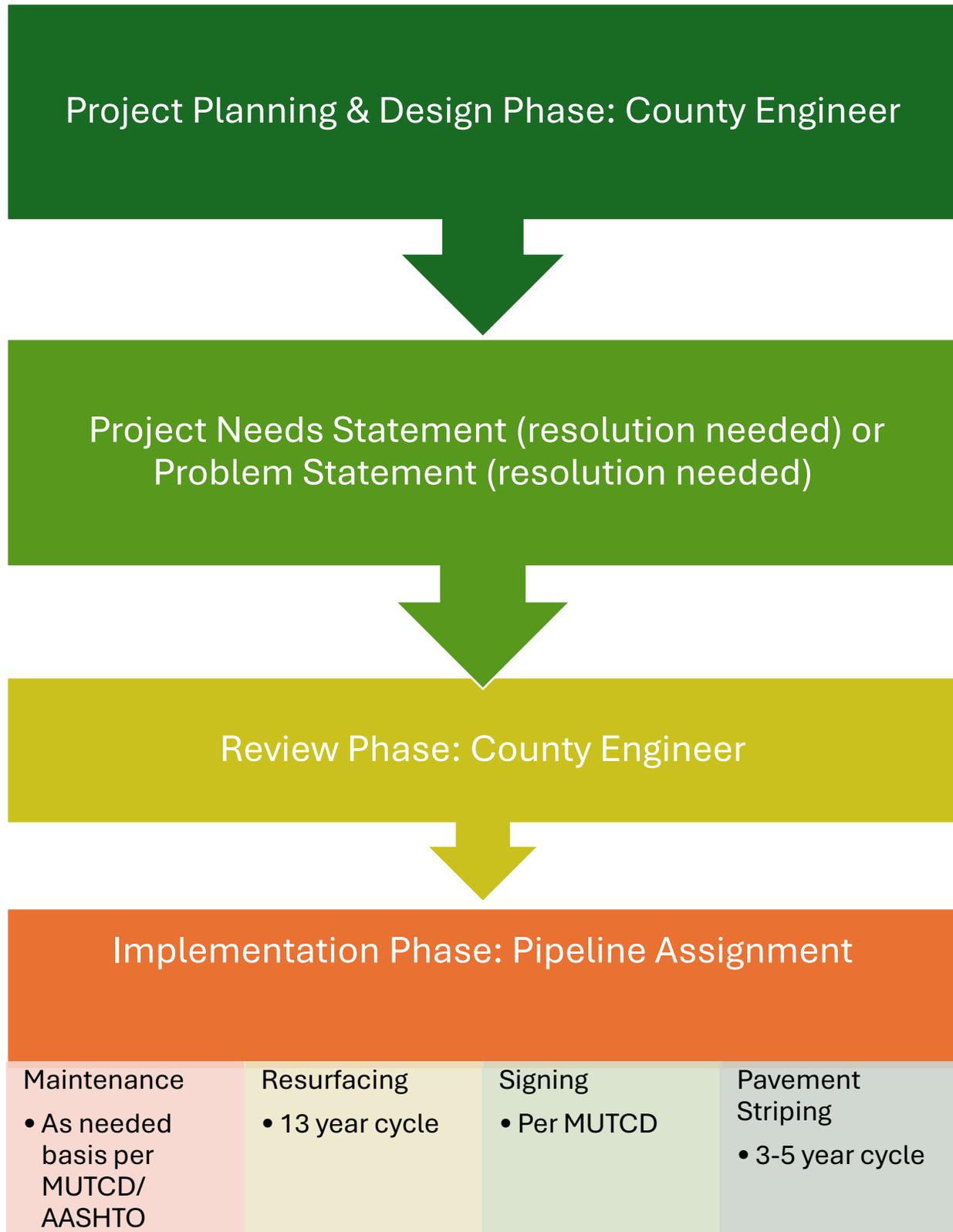


Figure 6: County Project Flowchart



III. Public Outreach and Stakeholder Engagement





III. Public Outreach and Stakeholder Engagement

Public Outreach Methods and Process

As indicated in the following infographic, public outreach was accomplished using five separate methods: A Steering Advisory Committee (SAC), a project website, interactive mapping, public outreach events, and a community survey.



Figure 7: Community Outreach Summary



Steering Advisory Committee

The Steering Advisory Committee (SAC) was assembled to provide input, oversight, and direction during plan development. It is constituted by a range of stakeholders from within County government and from regional and state organizations, including the Highlands Council, the Avenues in Motion Transportation Management Association (TMA), the Musconetcong Watershed Association, the New Jersey Department of Transportation (NJDOT), and the North Jersey Transportation Planning Authority (NJTPA).

The SAC met three times, providing a range of assistance to the Project Team. The SAC guided the project and reviewed deliverables and work products. They were instrumental in identifying stakeholders and opportunities for engagement with the community.



Figure 8. SAC Meeting



Project Website

The project team developed an ArcGIS website as the primary source of information for the Complete Streets Plan. The website provided a project overview explaining what Complete Streets are, the importance of connecting Warren County, and the anticipated project timeline. The site also contains links to the project survey and an interactive map (WikiMapping), enabling stakeholders to provide input.



Figure 9. Project Website Banner

Community Survey

To support the Warren County Complete Streets Plan, the project team developed a survey to gather insights into the community's travel habits, perceptions of safety across different travel modes, and views on the community's current needs. The survey was made available in English and Spanish and was open from July 16, 2024, to October 2, 2024. The survey and project website were both marketed by the County on social media and in a press release. Fifty-eight (58) respondents completed the survey.

The Community Survey was focused on understanding the transportation habits and preferences of Warren County's roadway users and included questions relating to the following topics:

- Demographics. Identified if respondents lived, worked, or visited Warren County.
- Travel Frequency. Asked how often respondents traveled in Warren County using various modes of transportation.
- Comfort Levels. Gauged how comfortable respondents felt using different transportation methods in the County.
- Safety and Connectivity. Sought opinions on whether streets should prioritize safety, comfort, and connectivity for all users.



- Complete Streets Improvements. Measured the importance of various improvements to the transportation network.
- Priority Areas. Asked respondents to select the top three areas where Complete Streets should be prioritized.
- Potential Changes in Travel Habits. Evaluated the likelihood of using different travel methods if the roads met the needs of users other than motorists.

WikiMapping

WikiMapping, an interactive mapping tool, was utilized to obtain public input in two broad categories. The tool was available on the project website and access to the tool was included on boards used at live events via a QR code.

1. Issues and Concerns. Input for this category consisted of participants marking locations on a digital map where they could identify specific geographic areas of concern relating to safety, access, or convenience while traveling in the County.
2. Ideas and Opportunities. Input for this category similarly included marked locations on the map and provided feedback for suggested improvements.

Overall, the input received highlighted the need for more accessible, reliable, and well-publicized transit solutions, as well as infrastructure improvements to support local mobility. Additional results from the WikiMapping exercise are visualized in the map on page 34.

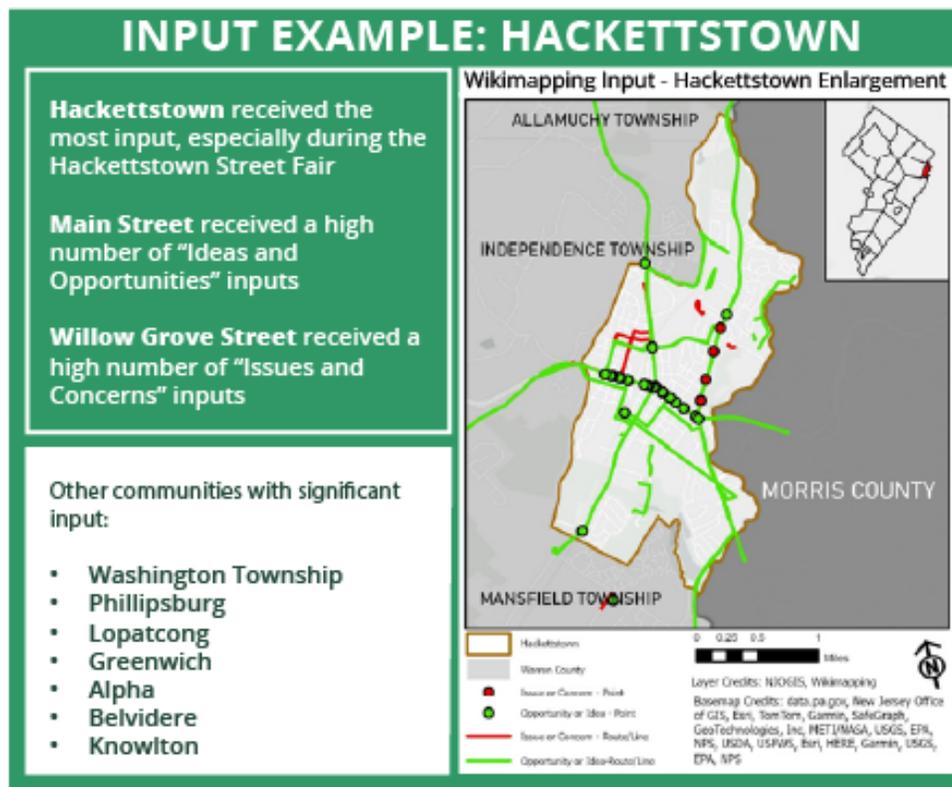


Figure 10: Wikimapping Input Example: Hackettstown

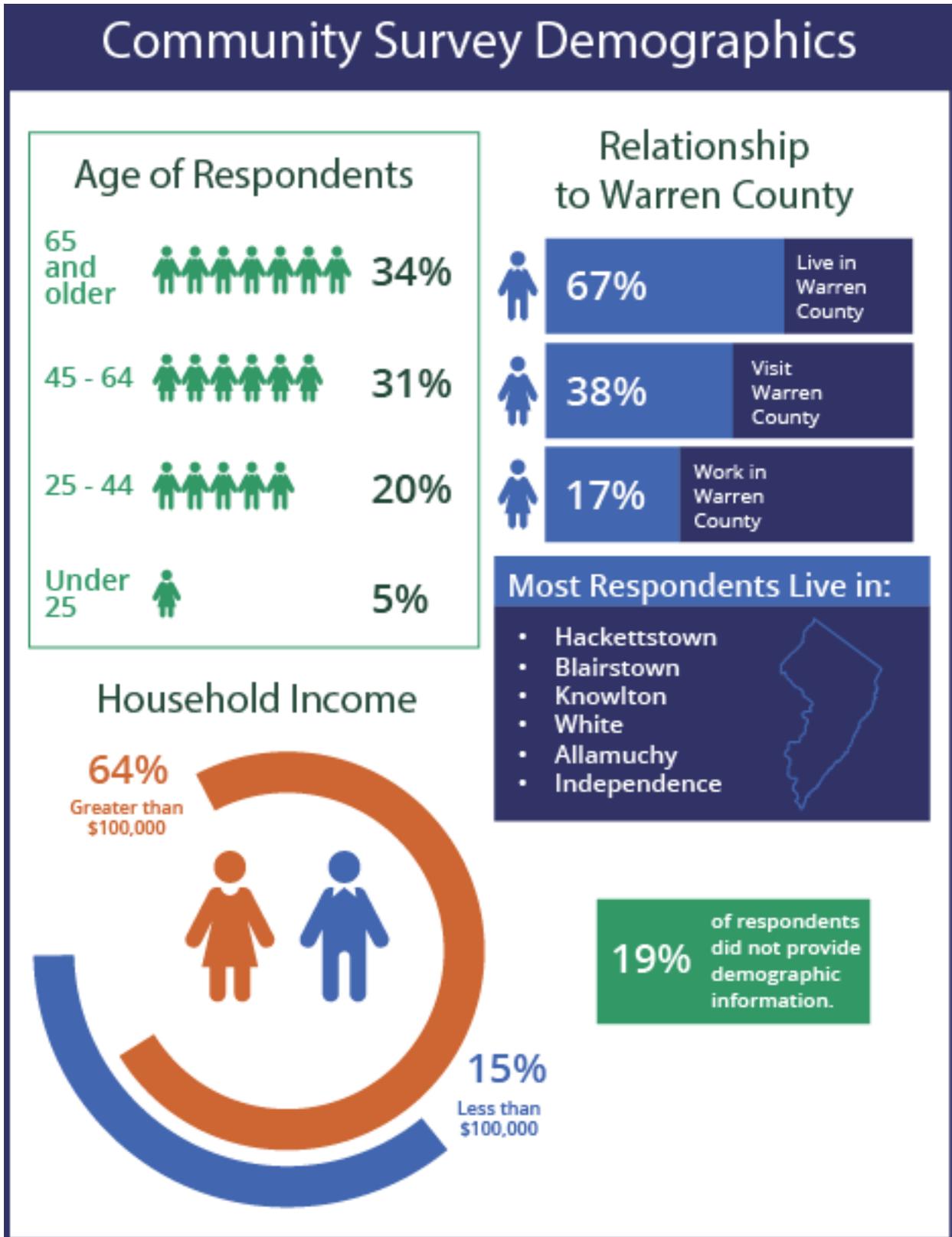


Figure 11: Community Survey: Demographics



Community Survey and Wikimapping Results

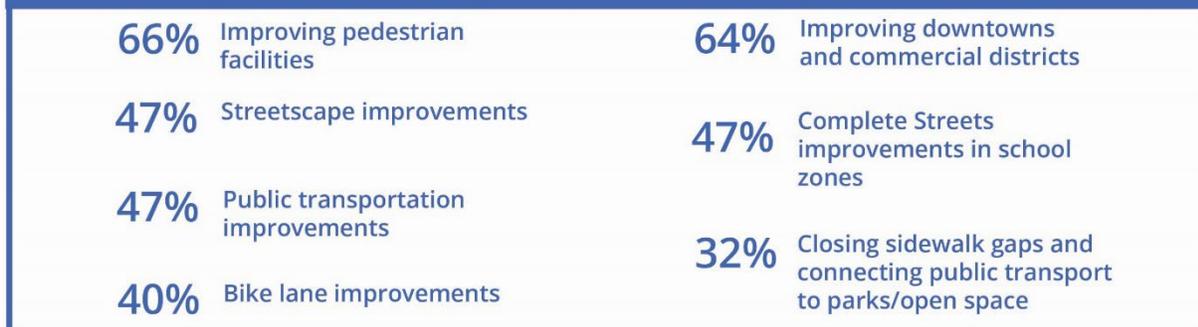
Travel Modes and Concerns



Level of Comfort by Mode of Travel



Important Complete Streets Improvements



Wikimapping Results



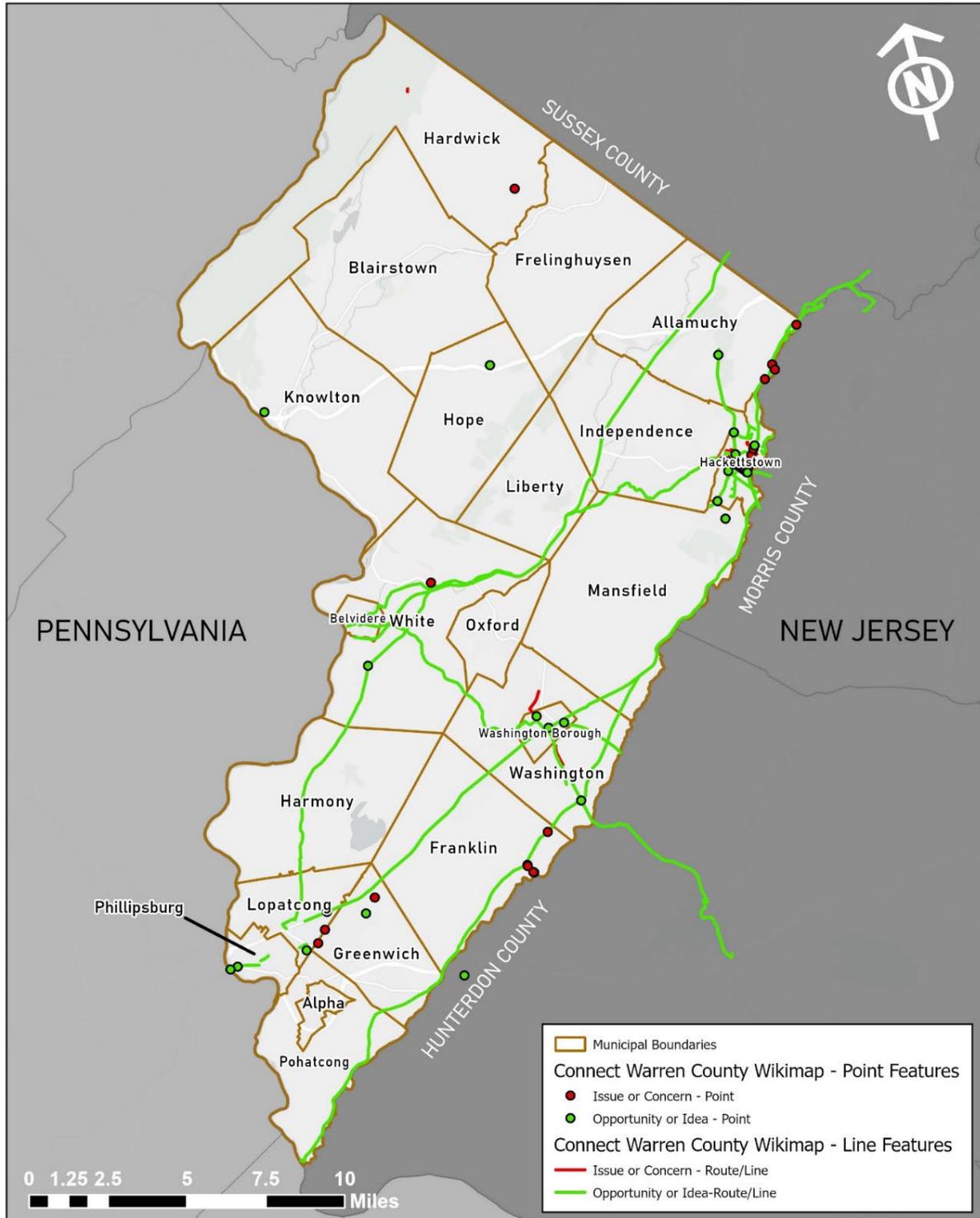
Ideas and Recommendations

- Improved connectivity
- Extending vanpool and shuttle services to New York City and the Lehigh Valley and Poconos
- Revive transit routes shut down during Covid
- Increase awareness of public transit
- Improve parking facilities, particularly around Centenary University

Figure 12: Community Survey and Wikimapping Results



Map 1: Connect Warren County WikiMap



Layer Credits: NJOGIS, Wikimapping

Basemap Credits: data.pa.gov, New Jersey Office of GIS, Esri, TomTom, Garmin, SafeGraph, METI/NASA, USGS, EPA, NPS, USDA, USFWS



Municipal Engagement

Municipal Outreach

Municipal and agency outreach was accomplished via two methods:

1. A municipal questionnaire sent to municipal officials, and
2. Meetings with municipal and agency officials.

Municipal Questionnaire - Findings

- There is some familiarity with the concept of Complete Streets.
- Hackettstown has a formally adopted Complete Streets policies as per the latest update on the NJ Bicycle and Pedestrian Resource Center.
- Recent municipal roadway improvements include sidewalk repair, adding new bicycle infrastructure, repair of multi-use paths, adding traffic calming elements, new walking paths, stormwater management projects, and development of new cul-de-sacs.
- There are plans in place for pedestrian safety interventions, traffic calming elements, and multi-use paths and trails.
- There is a recognition that safety, mobility, tourism, and public health improvements are benefits of Complete Streets policies.
- Cost, environmental constraints, lack of local expertise, and lack of public interest are barriers to Complete Streets implementation.

Municipal and Interagency Meetings

Three meetings involving representatives from the municipalities of Warren County were held during the project. The first two, held in June 2024, were introductory and were intended to gather information about local needs, context, and trends in the county. The third was conducted in February 2025, with the purpose of gathering feedback from the municipal representatives whose jurisdiction was included in the case studies.

Findings - Municipal Meetings June 2024 and February 2025

Locations mentioned by municipal representatives as either issues or areas of opportunity:

- Blairstown
 - NJ-94 at Carhart Street to access Footbridge Park is a hub of activity between downtown and parkland but is a challenging pedestrian crossing.
 - Lambert Road and Route 94 are another location of concern for pedestrian crossing safety, with significant volumes of students from North Warren High School and a crash history.
- Washington Township
 - The intersection of Route 57 and Route 31 has been improved but still lacks ease of bicycle/pedestrian movement.



- Concerns about increased traffic in the Hawk Pointe residential area on Route 31.
- Columbia (Knowlton Twp)
 - The junction of I-80, NJ-94 and US-46 affect the neighborhood.
 - The County is working with NJDOT on wayfinding in this area, as many oversized trucks end up on neighborhood roads.
- Asbury (Franklin Township)
 - The intersection of Main Street and Maple Avenue is a challenge. The Musconetcong Watershed Association hosts a summer camp and crosses children at this intersection.
- White Township
 - The intersection of County Route 519 and Route 46 is at the core of White, with the school, municipal building, shops, and restaurants.
 - Manunka Chunk Road is also a problem area. Trucks are not allowed but many trucks use it to enter Pennsylvania through Belvidere.
 - A roundabout has been discussed at the intersection of County Route 519 and County Route 620.
- Belvidere
 - There is a need for a pedestrian walkway over the Pequest River. There was formerly one at Adams Street, but it was destroyed in a flood.

Public Outreach Events

Findings - Hackettstown Street Fair Booth, July 2024, and Warren County Farmers-Fair, August 2024

- Public transportation is lacking in the County.
- Senior mobility was frequently mentioned, including challenges using and understanding the Warren County Shuttle.
- Many people mentioned Hackettstown-specific safety issues, including speeding, jaywalking (US-46), heavy traffic on Main Street, challenges parking downtown, and heavy vehicle traffic.
- Warehousing on Strykers Road has caused significant heavy vehicle traffic in that area, which is not designed to accommodate it.
- Washington Borough and Township need increased sidewalk coverage, including access to Warren County College.

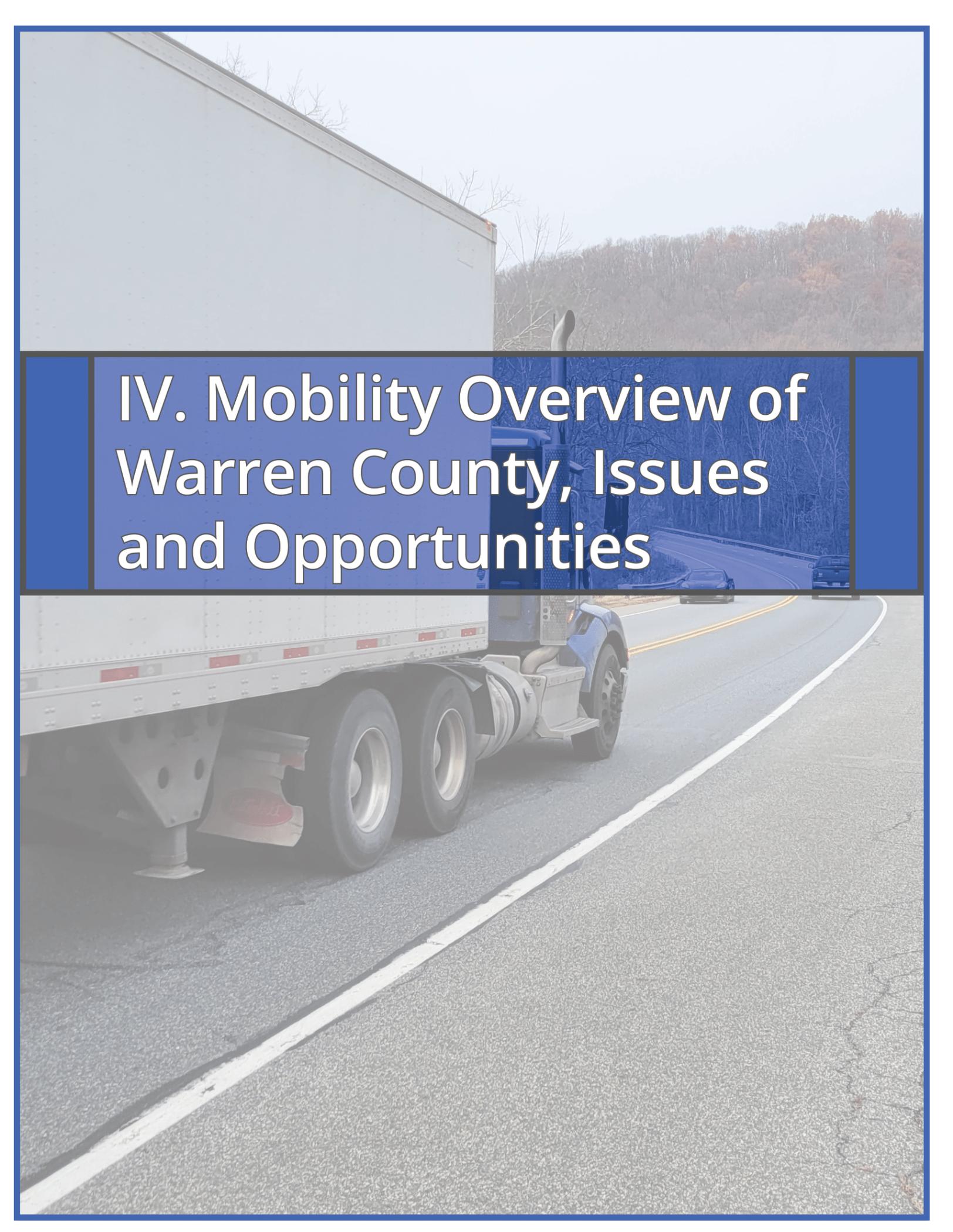


Joint Meeting with the Warren County Local Safety Action Plan Team (LSAP)

On Tuesday, March 18, 2025, a joint public meeting was held at the Warren County Library Southwest Branch in Greenwich Township for both Connect Warren County and the concurrent NJTPA project, the Warren County Local Safety Action Plan (LSAP). Members of the public were invited to view and comment on the work completed to date for each project. The event was publicized on WFMZ News in Allentown, Pennsylvania.



Figure 13. Connect Warren County and the Warren County LSAP Public Meeting (Photo credit: NJTPA)

A large white semi-truck is shown from a low angle, moving along a road. The background is a blue-tinted image of a road curving through a wooded area. The text is overlaid on a dark blue rectangular area.

IV. Mobility Overview of Warren County, Issues and Opportunities



IV. Mobility Overview of Warren County, Issues and Opportunities

About Warren County

Warren County is located in northern New Jersey, in the western portion of the State. It borders Sussex County to the north, Morris County to the east, Hunterdon County to the south, and Pennsylvania to the west. As indicated in the following table, it has a population of approximately 110,000 people and is the 19th most populous (or third least populous) of New Jersey's 21 counties. The median age in the county is just under 44 years old, 10 percent higher than the State average, and 4th highest of all counties in New Jersey. The average household size is 2.41 people per household, less than the State average and ranked 19th out of all New Jersey counties.

Table 1 Warren County Demographics

	Warren County	New Jersey	Warren County Rank (of 21 Counties in the State)
Population	110,238	9,267,014	19th
Median Age	43.9	40.1	4th
Population Under 18	19.4%	22%	19th
Population over 65	19%	17%	5th
Total Households	44,943	3,478,355	19th
Average Household Size	2.41	2.61	19th

Municipalities in Warren County

Warren County contains 22 municipalities. The most populous is Phillipsburg with approximately 15,000 residents, followed by Hackettstown with approximately 10,000 residents. Many of the municipalities in Warren County are large in terms of land area, while low in population density. The largest municipality by land area is Hardwick Township, which has approximately 38 square miles of land area, but a population density of only 38 people per square mile. Alternatively, Phillipsburg and Hackettstown contain 3.31 and 3.71 square miles of land but have much higher population densities of 4,607 and 2,733 per square mile, respectively. A map of the municipalities in Warren County follows, along with a table with population, land area, and population density for each municipality in the County with rankings for each variable.



Map 2: Municipalities in Warren County



Layer Credits: NJGIS, Warren County

Basemap Credits: State of New Jersey, Esri, HERE, Garmin, USGS, EPA, NPS



Table 2: Population, Land Area, and Population Density in Warren County Municipalities

Municipality	Population	Population Rank	Area (sq. mile)	Area Rank	Population Density	Pop. Density Rank
Allamuchy Twp.	5,373	10 th	20.76	9 th	259	12 th
Alpha Borough	2,249	19 th	1.70	21 st	1323	5 th
Belvidere Town	2,526	17 th	1.49	22 nd	1695	4 th
Blairstown Twp.	5,725	7 th	31.70	2 nd	181	15 th
Franklin Twp.	2,968	13 th	24.13	6 th	123	17 th
Frelinghuysen Twp.	2,020	20 th	23.57	8 th	86	21 st
Greenwich Twp.	5,481	8 th	10.54	15 th	520	7 th
Hackettstown Town	10,143	2 nd	3.71	18 th	2734	3 rd
Hardwick Twp.	1,436	22 nd	37.92	1 st	38	22 nd
Harmony Twp.	2,515	18 th	24.08	7 th	104	19 th
Hope Twp.	1,837	21 st	18.84	11 th	98	20 th
Independence Twp.	5,476	9 th	19.89	10 th	275	10 th
Knowlton Twp.	2,907	14 th	25.33	5 th	115	18 th
Liberty Twp.	2,686	16 th	11.87	14 th	226	14 th
Lopatcong Twp.	9,131	3 rd	7.16	16 th	1275	6 th
Mansfield Twp.	7,804	4 th	29.93	3 rd	261	11 th
Oxford Twp.	2,906	15 th	5.89	17 th	493	8 th
Phillipsburg Town	15,251	1 st	3.31	19 th	4608	1 st
Pohatcong Twp.	3,258	12 th	13.71	13 th	238	13 th
Washington Borough	7,287	5 th	1.95	20 th	3737	2 nd
Washington Twp.	6,597	6 th	17.75	12 th	372	9 th
White Twp.	4,646	11 th	27.63	4 th	168	16 th



Development and Transportation Context and Trends

With the development of this plan, Warren County has recognized the need to introduce the Complete Streets approach into the County’s transportation planning and implementation activities to better adapt to changing demographics, land uses, and conditions within the road network. Warren County’s location along the I-78 and I-80 corridors in the outlying areas of the New York City metropolitan area has made it attractive to new development both residential and commercial, the latter particularly in the form of warehouses and light industry.

In recent years new warehouse developments have been constructed or are currently under construction in the greater Phillipsburg area. Additional warehouse developments are being proposed within Phillipsburg and in adjacent municipalities. These and other residential and commercial developments have increased traffic on the County’s highway network, which is primarily composed of two-lane roads and at-grade intersections. These increased vehicular volumes are contributing to crashes and traffic congestion in areas that historically did not experience these issues to the same extent.



Figure 14: U.S. Route 22 in Warren County



Figure 15: Interstate 80 in Warren County

Warren County’s roadway system accommodates pedestrian and bicycle traffic to varying degrees. Sidewalks, which are primarily under the jurisdiction of municipal governments, are mostly located in the more densely populated urban and suburban portions of Warren County. Sidewalks are rarer in the rural parts of the County. There are no on-street bicycle lanes in Warren County, though there is a side path on CR-638. Some roads have wide shoulders that, while unmarked, are utilized for bicycling. However, rural roads are typically narrow, experience higher speeds, and contain limited, if any, shoulder width. Most cyclists would not be comfortable sharing these roads with motor vehicles, with the possible exception of experienced recreational cyclists.

The Complete Streets approach to transportation planning, while having gained traction in New Jersey and beyond, is in limited use in Warren County. Currently, the County’s policies



and procedures do not specifically address Complete Streets. For example, the current Warren County Highway and Bridge Standards provide details for roadway and driveway intersection geometry, but those details do not include lanes or shoulders of sufficient width to accommodate bicycle traffic. Also, the County's detailed annual Crash Data & Road Safety Assessment reports include detailed breakdowns of many crash types, but do not separate pedestrian or bicycle crashes which are simply grouped in the "Other" categorization.

Transportation Network Conditions

The sections that follow summarize key findings from the data and analyses completed as part of a Multimodal Inventory, which point towards Complete Street needs and opportunities for roadway users and highlight areas for potential improvements to both transportation planning and implementation processes.

Pedestrian, bicycling, and trails conditions are presented first, as they represent the County's most vulnerable roadway users and a focus for Complete Streets safety improvements. They are followed by roadway, freight, and public transportation conditions. This section includes the following subsections:

- Pedestrian Network
- Bicycle Network
- Trails Networks
- Roadway Network
- Freight and Goods
- Public Transportation

Pedestrian Network

An analysis of the Avenues in Motion sidewalk network maps (Maps 3a-3d) identified strengths and weaknesses in the municipalities for which data is available: Phillipsburg, Hackettstown, Washington Township, Washington Borough, and the Town of Belvidere.

Existing Sidewalk Network

As indicated in the following descriptions and maps, these four communities have varying levels of sidewalk connectivity.

- Phillipsburg. A continuous network exists across much (but not all) of the municipality, with key gaps in the network including Sitgreaves Street, Pursel Street and South Main Street, the southeastern edge of the municipality, and US Route 22 (also known as Memorial Parkway within portions of Phillipsburg).
- Hackettstown. Hackettstown has a robust sidewalk network, with sidewalks on both sides of streets throughout much of downtown, though a large neighborhood northwest of downtown almost entirely lacks sidewalks.



- Washington Township and Washington Borough. Although these are separate municipalities, they were analyzed collectively. Washington Borough is in the center of the much larger Washington Township, surrounded by it on all sides. The Borough has a downtown core with continuous sidewalks, but certain neighborhoods, and most of the Township, lack sidewalks.
- Belvidere Town. Belvidere has several roads with full sidewalk coverage within the southeastern street grid, though gaps exist. The rural north has few roads or sidewalks.

Pedestrian Network Potential

The NJTPA Regional Active Transportation Plan study, prepared in June of 2023, conducted a pedestrian trip potential analysis for Warren County (as part of a region-wide exercise), creating a heat map with a scale between 0 (minimal pedestrian activity anticipated) and 1 (heavy pedestrian activity anticipated). This analysis weighed the following factors:

- Population
- Employment Opportunities
- Intersection Density
- Poverty
- Private Vehicle Access
- Transit Stops
- Land Use Mix



Figure 16. Main Street in Hackettstown



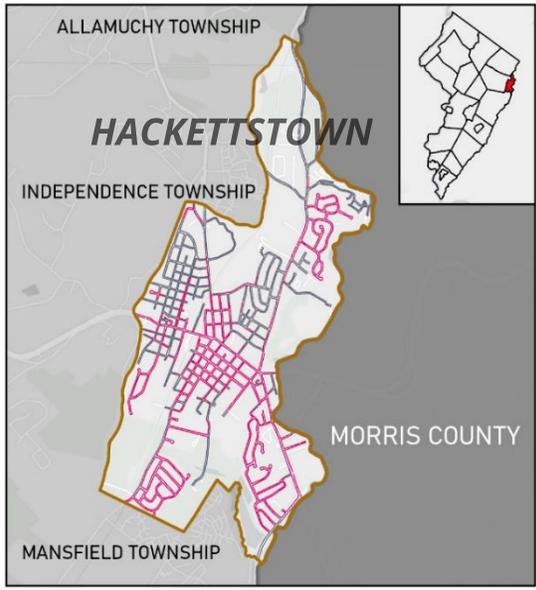
As indicated in the map on the following pages (Map 4), hotspots in Warren County are concentrated in Washington Borough, Hackettstown (including the Panther Valley area in Allamuchy and the northern portion of Mansfield), Belvidere, Phillipsburg (including parts of Lopatcong and Alpha, and to a lesser extent Greenwich), and Oxford. Each has a moderate to high trip potential score, meaning that it contains factors that contribute to demand for walking.



Figure 17. Washington Avenue in Washington Borough

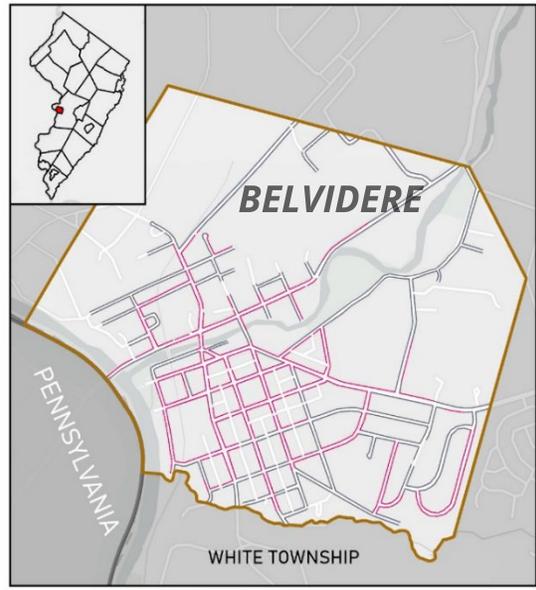


Maps 3a-3d: Existing Sidewalk Network



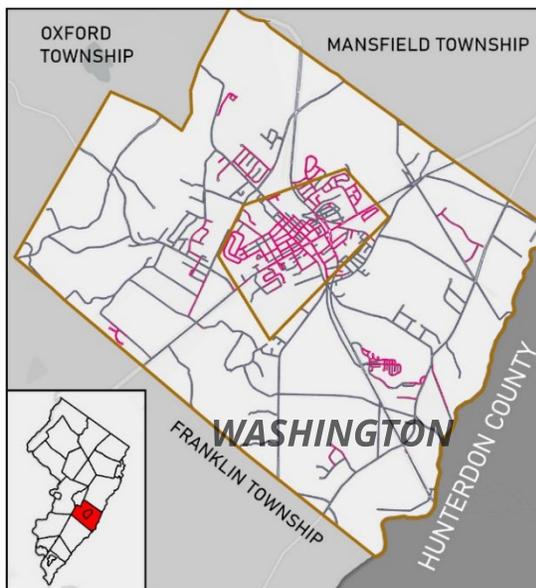
Existing Sidewalks Hackettstown 0 0.25 0.5 1 Miles
 Sidewalk Gaps Warren County

Layer Credits: NJOGIS, Avenues in Motion
 Basemap Credits: data.pa.gov, New Jersey Office of GIS, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, USDA, USFWS, Esri, HERE, Garmin, USGS, EPA, NPS



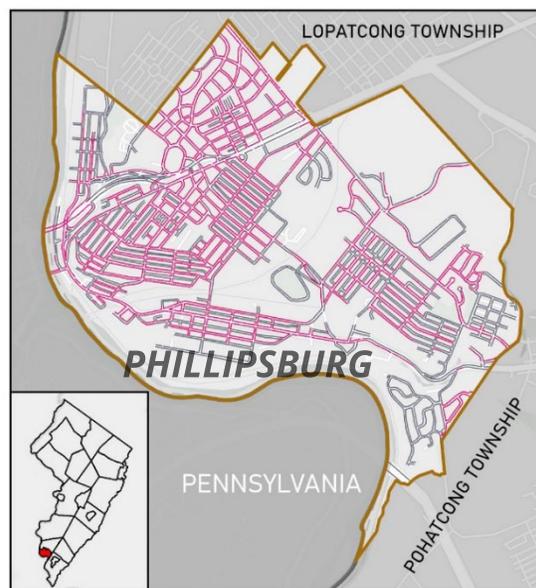
Existing Sidewalks Belvidere 0 0.13 0.25 0.5 Miles
 Sidewalk Gaps Warren County

Layer Credits: NJOGIS, Avenues in Motion
 Basemap Credits: data.pa.gov, New Jersey Office of GIS, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, US Census Bureau, USDA, USFWS, Esri, HERE, Garmin, USGS, EPA, NPS



Existing Sidewalks Washington 0 0.38 0.75 1.5 Miles
 Sidewalk Gaps Warren County

Layer Credits: NJOGIS, Avenues in Motion
 Basemap Credits: data.pa.gov, New Jersey Office of GIS, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, USDA, USFWS, Esri, HERE, Garmin, USGS, EPA, NPS

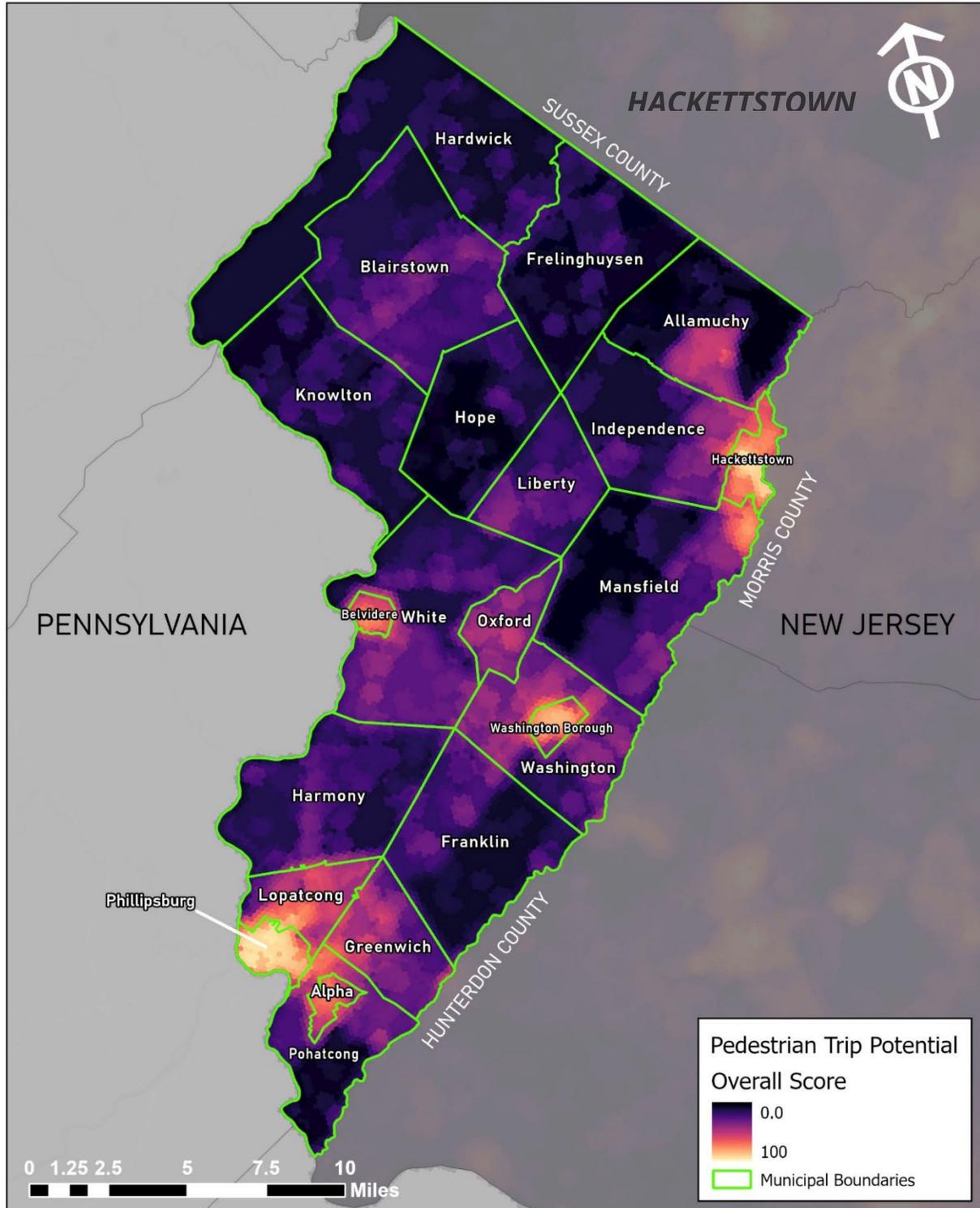


Sidewalk Gaps Phillipsburg 0 0.13 0.25 0.5 Miles
 Existing Sidewalks Warren County

Layer Credits: NJOGIS, Avenues in Motion
 Basemap Credits: data.pa.gov, New Jersey Office of GIS, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, USDA, USFWS, Esri, HERE, Garmin, USGS, EPA, NPS



Map 4: Pedestrian Trip Potential



Layer Credits: NJTPA, NJOGIS
 Basemap Credits: State of New Jersey, Esri, HERE, Garmin, USGS, EPA, NPS



Bicycle Network

Warren County's bicycle network was analyzed, identifying strengths and weaknesses in the County. The analysis consists of four separate metrics (each defined in the plan glossary): Bicycle Level of Traffic Stress, Bicycle Trip Potential, Bicycle Network Centrality (from NJTPA Bicycle Barrier Analysis), and Bicycle Crashes Sliding Window Analysis. The analysis led to the following findings:

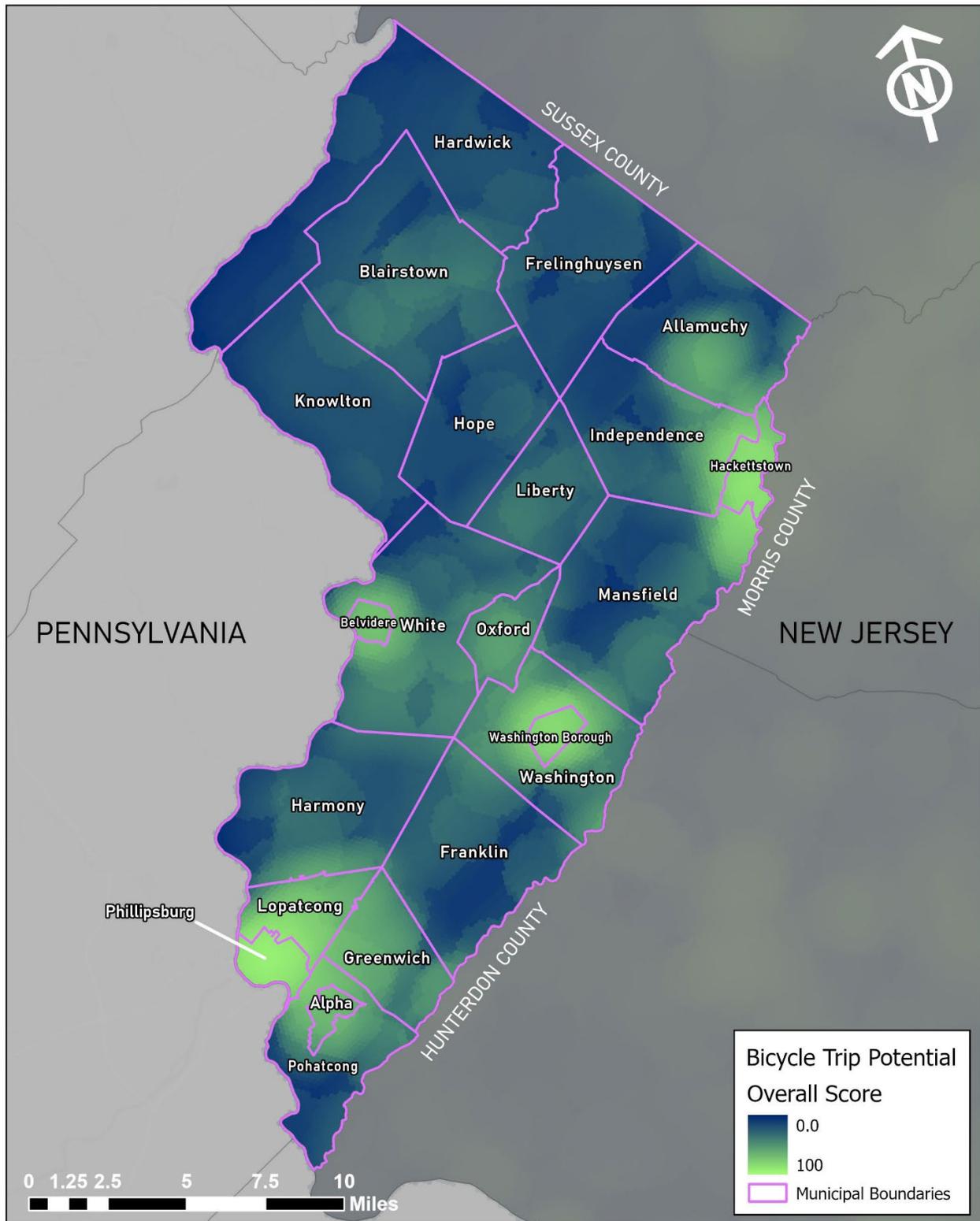
1. Roads that are most challenging for bicyclists include: all of US-22 and some of NJ-173; sections of NJ-57 in Lopatcong, Franklin, Washington Township, and Mansfield; County Route 517 in Independence; and parts of NJ-31 in Washington Township, Oxford, and White.
2. Roads in highly populated areas and those that connect densely populated areas have the highest demand for cycling. These same areas tend to have the greatest potential for increasing bicycling activity if bicycling improvements are implemented.
3. The places with the most bicycle involved crashes include NJ-57 in Greenwich and on the border between Hackettstown and Mansfield, NJ-182 in Hackettstown, US-46 in two locations north of Belvidere in White and Knowlton, and County Route 627 in Pohatcong.



Figure 18. Bicycle Themed Photographs in Hackettstown and Washington Borough



Map 5: Bicycle Trip Potential



Layer Credits: NJTPA, NJOGIS

Basemap Credits: State of New Jersey, Esri, HERE, Garmin, USGS, EPA, NPS



Trails Network

The Project Team analyzed Warren County’s extensive trails network, which attracts visitors from both within and outside New Jersey and is a source of economic activity. Warren County is rich in trails and natural areas that represent significant opportunities for multimodal network improvement. While most trails in the county are hiking trails, some, such as the Paulinskill Valley Trail and the Morris Canal Greenway, are suitable for bicycling.

Warren County Trails and Paths (Existing and Planned)

Warren County is home to a variety of trails containing a range of lengths and difficulty. The County trail network is a significant driver of tourism in Warren County. The County is home to state park forests and trails, and National Recreation Areas that are largely located in the north. There are trails throughout the southwestern part of the County, with a continuous trail linkage from Phillipsburg to Liberty through the Townships of Lopatcong, Harmony (which includes a private trail network at Merrill Creek Reservoir), White, Washington, and Oxford. Other trails can also be found in the Townships of Hardwick, Frelinghuysen, Independence, and Washington. In contrast, the southeastern portion of the County has a limited trail network.

One of the most significant, ongoing trail projects in the County is the Morris Canal Greenway. There is a continuing effort to connect trails along the alignment of the now-defunct Morris Canal, which at its peak spanned 107 miles from Jersey City to Phillipsburg. The segment in Warren County loosely follows NJ-57, connecting Hackettstown, Washington, and Phillipsburg.

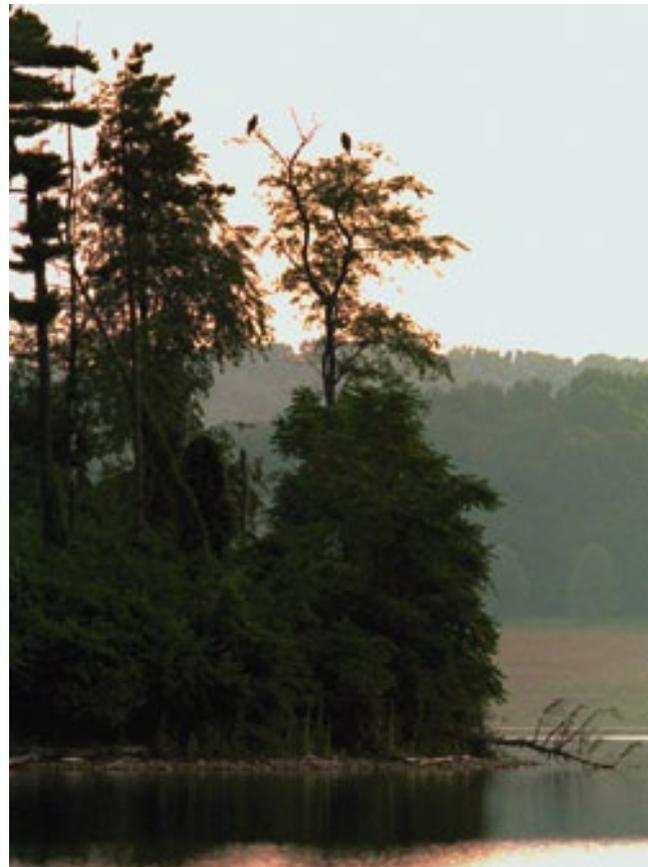


Figure 19. Merril Creek Trail (njskylands.com)

New Jersey State Parks and Forest Trails System

The New Jersey State Park Service trails system closely follows lands within the parks system, with a trails network present throughout Worthington State Forest, Jenny Jump State Forest, and Allamuchy Mountain State Park. Another trail, the Paulinskill Valley Trail, connects to Sussex County and extends south through Frelinghuysen, Hardwick, Blairstown, and Knowlton. There are no state trails in the southern part of the county.



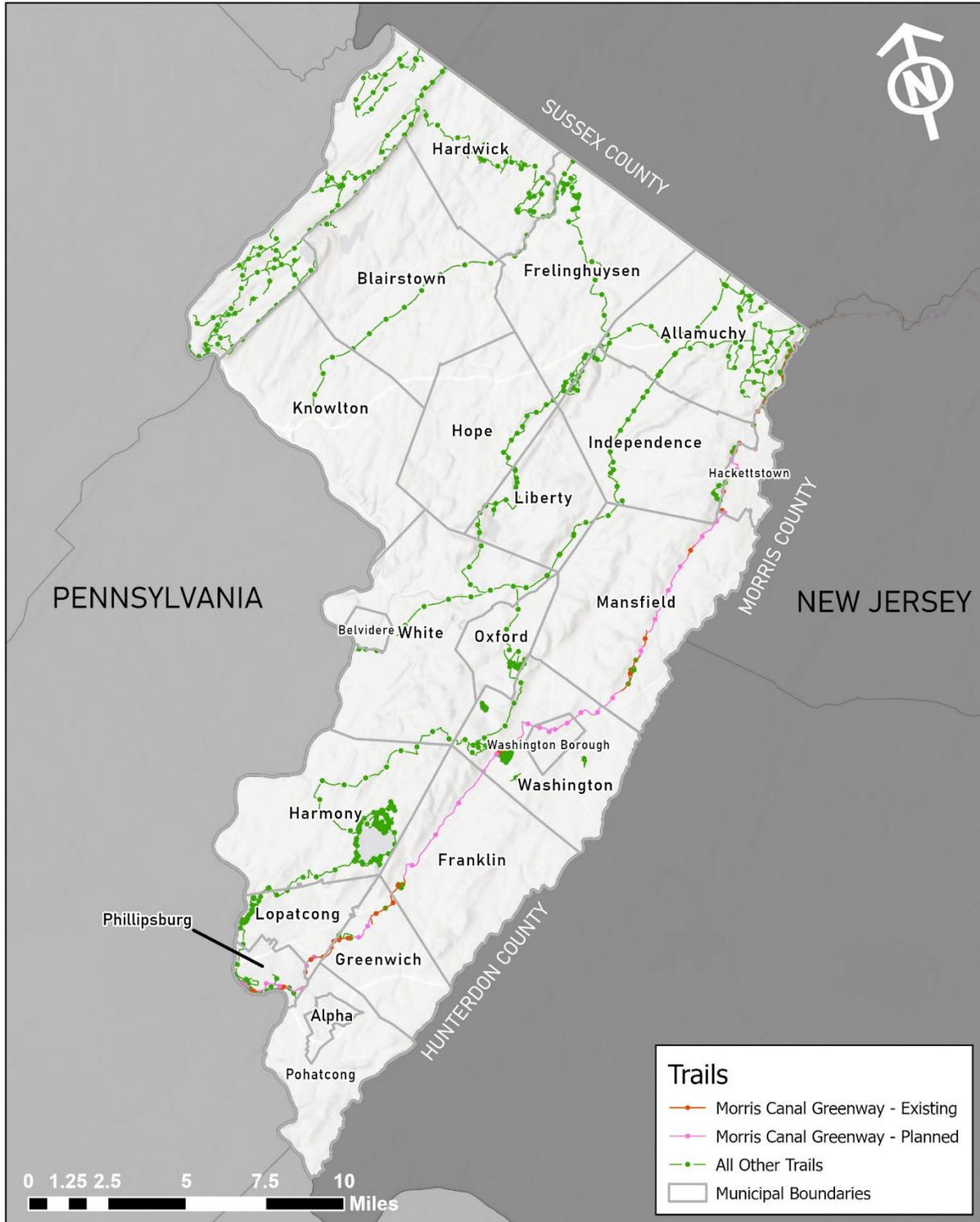
Figure 21. Allamuchy Mountain State Park (nj.gov/dep)



Figure 20. Worthington State Forest (nj.gov/dep);



Map 6: Warren County Trails

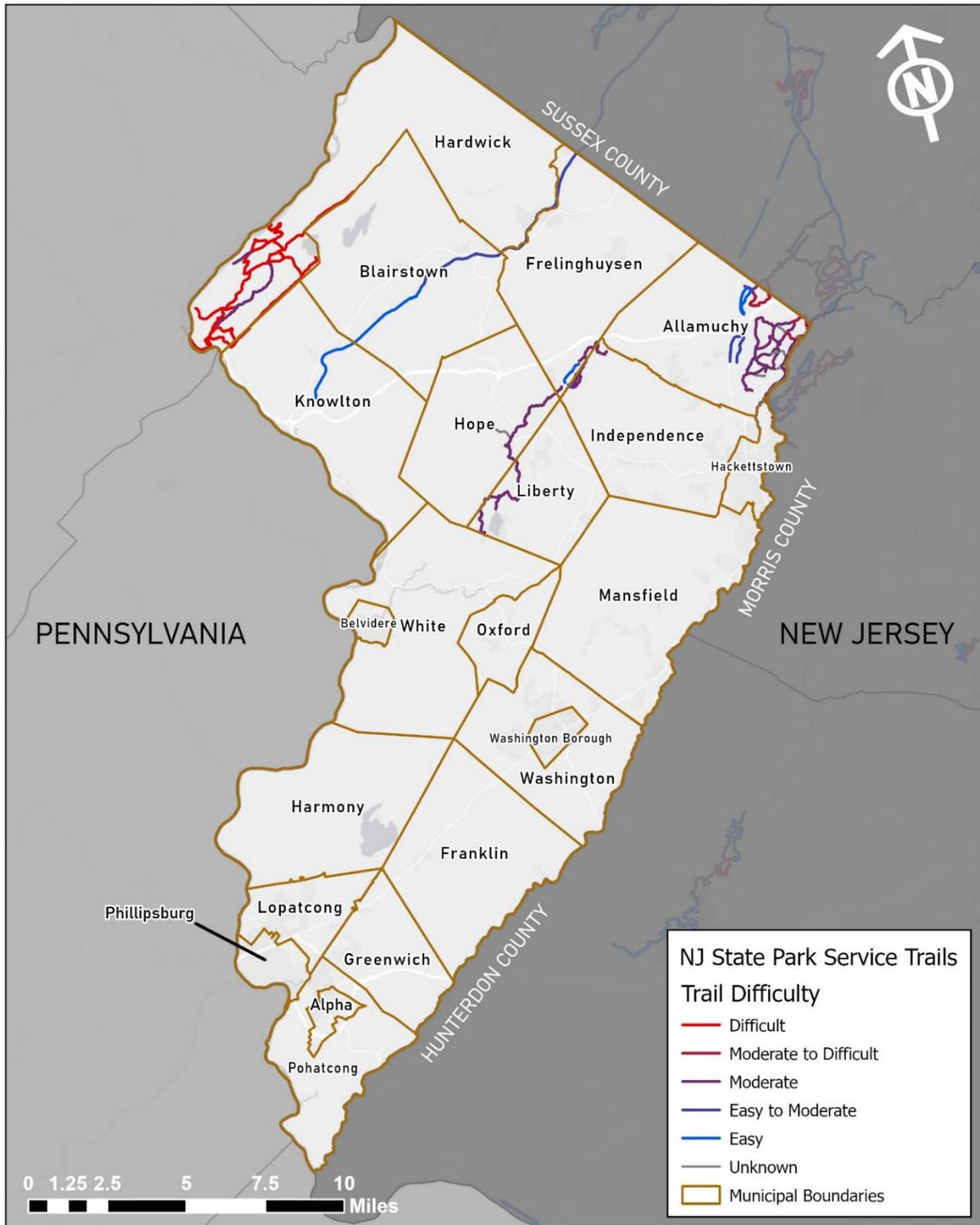


Layer Credits: NJOGIS, Warren County

Basemap Credits: Esri, NASA, NGA, USGS, State of New Jersey, Esri, HERE, Garmin, USGS, EPA, NPS



Map 7: NJ State Park Service Trails



Layer Credits: NJDEP, NJOGIS

Basemap Credits: State of New Jersey, Esri, HERE, Garmin, USGS, EPA, NPS



Roadway Network

The Project Team reviewed and analyzed Warren County’s roadway network, functional road classifications, traffic signals, annual average daily traffic, and scenic byways.

Functional Classification and Traffic Signals

Functional Classification

Warren County contains roads of all the NJDOT Functional Classifications, with the exception of “Other Freeway/Expressway”. Major roads include:

- Interstates 78 and 80.
- Principal Arterials, including NJ-57, US-46, NJ-31, and US-22.
- Minor Arterials, including US-46 east of NJ-31, NJ-94, and County Routes 517, 519 and 521.

Traffic Signals

Traffic signals offer a level of intersection control that can contribute to a safer and more efficient road environment to protect all travelers. There are a total of nine (9) county-owned traffic signals as well as seven (7) assorted flashing warning signals. Presented below are further insights about the data:

Table 3: County-owned Traffic Signals and Flashing Warning Signals

	Traffic Signals	Flashing Warning Signals
Allamuchy Township	1	1
Alpha Borough	1	0
Belvidere Town	1	0
Greenwich Township	2	0
Hope Township	0	1
Independence Township	1	1
Phillipsburg	2	3
Pohatcong Township	1	0
White Township	0	1
Total	9	7



Annual Average Daily Traffic (AADT)

Much of the road mileage in the County serves traffic volumes under 10,000 vehicles per day, with some roads containing road mileage within the 10,001-25,000 range. As indicated below, the most highly trafficked routes with volumes over 25,001 vehicles per day are Interstate Highways, particularly where they intersect with other major roads:

- US-22 through Phillipsburg and ending at the junction with Interstate 78 has an AADT of 25,001-50,000.
- Interstate 80 between Columbia (Knowlton Township) and Febletown (Hope Township) has an AADT of 25,001-50,000.
- Interstate 80 between the Pennsylvania border and Columbia has an AADT of 50,001 to 100,000.
- Interstate 80 from the center of Allamuchy to the Sussex County border has an AADT of 50,001 to 100,000.
- Interstate 78 between its junction with US-22 and South Main Street in Greenwich Township has an AADT of 50,001 to 100,000.
- Some portions of Interstates 78 and 80 do not contain counting stations, so there are gaps in AADT data.

New Jersey Scenic Byways

The stretch of NJ-57 in Warren County, running from Greenwich Township to Hackettstown, is officially known as the Warren Heritage Scenic Byway, one of New Jersey's eight scenic byways. The County is in the process of formalizing extensions of the Scenic Byway to the north and south. Planning for Complete Streets and implementing improvements within the Scenic Byway Corridor is important, as a primary objective of Scenic Byways is to encourage travelers to visit destinations along the way. Supporting safe and convenient access to Scenic Byway destinations such as trailheads, rest stops, viewing pull-offs, exhibits, museums and shops merit special attention in Complete Streets planning.



Figure 22. Union Square, Phillipsburg on the Warren Heritage Scenic Byway (Warren County Planning Dept.)



Freight and Goods Movement

Warren County, characterized by its rural landscape and strategic location, plays a vital role in the movement of goods. The county's freight network includes major highways such as I-78, I-80 and Route 22, which are major through corridors for truck traffic. Additionally, the Norfolk Southern Railway provides essential rail services, facilitating the movement of bulk commodities. The County's proximity to major markets in New York and Pennsylvania further underscores its importance in the regional freight system.

This section provides a high-level overview of the importance of freight in New Jersey and in Warren County and makes recommendations to integrate freight within the Complete Streets framework.



Figure 23: Freight Vehicle on County Route 632

Why Freight Movement is Important

Freight transportation is a cornerstone of economic vitality, underpinning the movement of goods that fuels commerce and industry. According to the North Jersey Transportation Planning Authority (NJTPA), the freight industry in North Jersey alone is projected to grow by 16 percent by 2050. This immense volume of freight movement supports a wide array of industries, from manufacturing to retail, ensuring that products reach consumers efficiently. The freight industry is also a significant job creator and helps to support the competitiveness of local businesses in the global market, making it integral to the economic vitality of Warren County.

Because vulnerable road users such as bicyclists and pedestrians have a higher risk of injury or death in crashes with heavier vehicles, on-road freight movement needs to be considered when planning for Complete Streets. In locations where both freight movement and nonmotorized road users are expected, road owners should plan to provide safe and separated accommodation for all users, or alternative routes should be identified for vulnerable road users.

By incorporating freight in the Complete Streets planning and policy-making process, the County and its municipalities can continue to support the freight industry while making streets that better accommodate all users while making roads safer in the process.

Freight in Warren County

In Warren County, specific areas of focus include improving connectivity to major freight corridors and enhancing intermodal facilities. The NJTPA Warren County Freight Profile suggests that investments in these areas could significantly boost the county's freight capacity and efficiency. Additionally, there is a call for better coordination between public and private sectors to address freight-related challenges comprehensively. By prioritizing these improvements, Warren County can enhance its role in the regional freight network, supporting economic development while mitigating negative impacts on the environment and local communities.

Highways in Warren County serve different roles for freight transportation, with some primarily handling local traffic and others accommodating a high percentage of pass-through traffic. The usage patterns of these highways can vary significantly by location. For major highways like Interstates 78 and 80, the data shows that approximately 60 percent of truck trips are pass-through traffic, meaning these trucks are traveling through Warren County between destinations outside New Jersey. About 38 percent of trucks travel to or from other parts of New Jersey, while only about 2 percent of trucks on these interstates have origins or destinations within Warren County itself. This highlights the county's role as a critical transit point in the broader regional and national freight network.

The Future of Freight in Warren County: Growth and Land Use Policy

Warren County's strategic location near Interstates 78 and 80, makes it an attractive area for warehouse development and freight movement. This has led to increased interest in developing warehousing and distribution facilities in the county.

The County has been proactive in freight planning, beginning with the 2020 Light Industry Study and further evidenced by the 2023 Amendment to the County Transportation Plan Element. The Amendment includes a Truck Route Map. The purpose of the amendment and map is to give the County a tool to guide freight transportation from industrial and warehouse uses from local and County roads to State and Interstate roads. Following the plan amendment, Chapter IV of the Warren County Development Review Regulations was subsequently updated to require applicants to the Warren County Planning Board that generate truck traffic to abide by the Truck Route Map.

The 2020 Warren County Light Industry Assessment identified 15 potential sites for industrial development, covering over 4,000 acres and potentially accommodating more than 45 million square feet of industrial space. The development of these sites is expected to generate significant traffic volume due to increased employment and goods movement. The study indicates that traffic conditions are likely to deteriorate at almost every location analyzed if development proceeds at its current pace, including increased congestion at key



intersections such as the I-80/CR-521 intersection in Hope Township and I-78/CR-632 in Franklin Township.

The report suggests that County and local officials need to prepare for these challenges by identifying areas with the greatest potential impact and implementing measures to mitigate negative effects associated with increased traffic. There is a major opportunity to utilize Complete Streets strategies to incorporate design treatments that not only mitigate the impacts of potential future freight growth but create a safer and more comfortable transportation network.



Figure 24. Freight Traffic on NJ Route 31

As freight movement and the demand for warehouse and distribution facilities continues to grow, the noise, safety, and air quality impacts of these uses have on residents should be considered when planning warehousing, industrial uses, and freight routes.

Public Transportation

Public transportation in Warren County is generally limited and became more so due to the closing of routes during the COVID-19 pandemic. The County and its municipalities should look for opportunities to build upon the existing public transportation network to improve accessibility to residents, visitors, and workers in Warren County as part of an overall Complete Streets Strategy.

Bus

NJ TRANSIT

NJ TRANSIT Bus Routes in Warren County are provided within the Phillipsburg area, providing connections between Phillipsburg and Lopatcong, Greenwich, Pohatcong, and Easton, Pennsylvania. Bus routes vary; however, all routes stop at St. Luke’s Hospital – Warren



Campus in Phillipsburg, the Phillipsburg Municipal Building, Hillcrest Plaza in Lopatcong, and the Easton Transportation Center.

Warren County

The Warren County Transportation system is administered by the Board of County Commissioners through the Department of Human Services. The Warren County Route 57 Shuttle is comprised of two routes connecting Washington Borough with Hackettstown and Phillipsburg, respectively. The routes operate hourly, stopping at commercial areas, healthcare facilities, and other destinations, with weekday and limited Saturday service.

Private Bus Lines

One private bus line operates within the County, Martz Trailways, and another, TransBridge, operates just outside the County. The Martz Trailways route connects Wilkes-Barre, PA with the Port Authority Bus Terminal in New York City with a stop at Panther Valley Mall in Allamuchy Township. The TransBridge route connects Allentown, PA with JFK Airport in New York City, with the nearest stops being the park and ride in Clinton, Hunterdon County and in Easton, Pennsylvania.

Rail

NJ TRANSIT Rail

The NJ TRANSIT Morris & Essex Line and Montclair/Boonton Line both terminate in Hackettstown, providing service to Hoboken and Newark during weekdays with no weekend service. Dover Station in Morris County is the nearest station with weekend service. As part of the Lackawanna Cut-off Restoration project, a joint effort between AMTRAK and NJ TRANSIT, a NJ TRANSIT train station is currently under construction in Andover Township just over the border in Sussex County to the north which is expected to begin service in 2026.



Figure 25. Hackettstown Station



Furthermore, another joint study that includes the Pennsylvania Northeast Regional Railroad Authority in addition to AMTRAK and NJ TRANSIT is exploring the potential for passenger rail service between New York City and Scranton, Pennsylvania with a possible stop in Blairstown. While there are no concrete plans to develop service at this time, the possibility of restoring service to Blairstown for the first time in over 50 years would be a positive development for Warren County.

Park and Ride

Park and Ride facilities are present for both private buses, rail, and NJ TRANSIT buses in Warren County and are located near Interstate 80 and another located at the Panther Valley Mall in Allamuchy. A Rail Park and Ride is located near Hackettstown Station.

Transportation Crash Safety Conditions

Crash Trends

The Project Team conducted an analysis of crashes occurring on local and County roads between January 1, 2015, and December 31, 2021. Important highlights from the data are included in the infographic on the following page, which is followed by a map showing the total number of geocoded crashes across the County. This data should inform Complete Streets policies which include safety interventions for the County and each municipality.



General Summary 2015-2021



80 Total Fatal Crashes



21,966 Total Crashes



16,690 Geocoded Crashes (75.9 percent)



4,695 Persons Injured



2,042 Heavy Vehicle Crashes

Of the 21,966 Crashes:



21 percent Occurred within an Intersection



9 percent Involved a Distracted Driver



41 percent Occurred between Noon and 5:59 PM



17.6 percent Involved a driver aged 65+



14 percent Involved a driver aged 16-20



135 Involved Pedestrians



77 Involved Cyclists



7.6 percent Involved Unsafe Speed

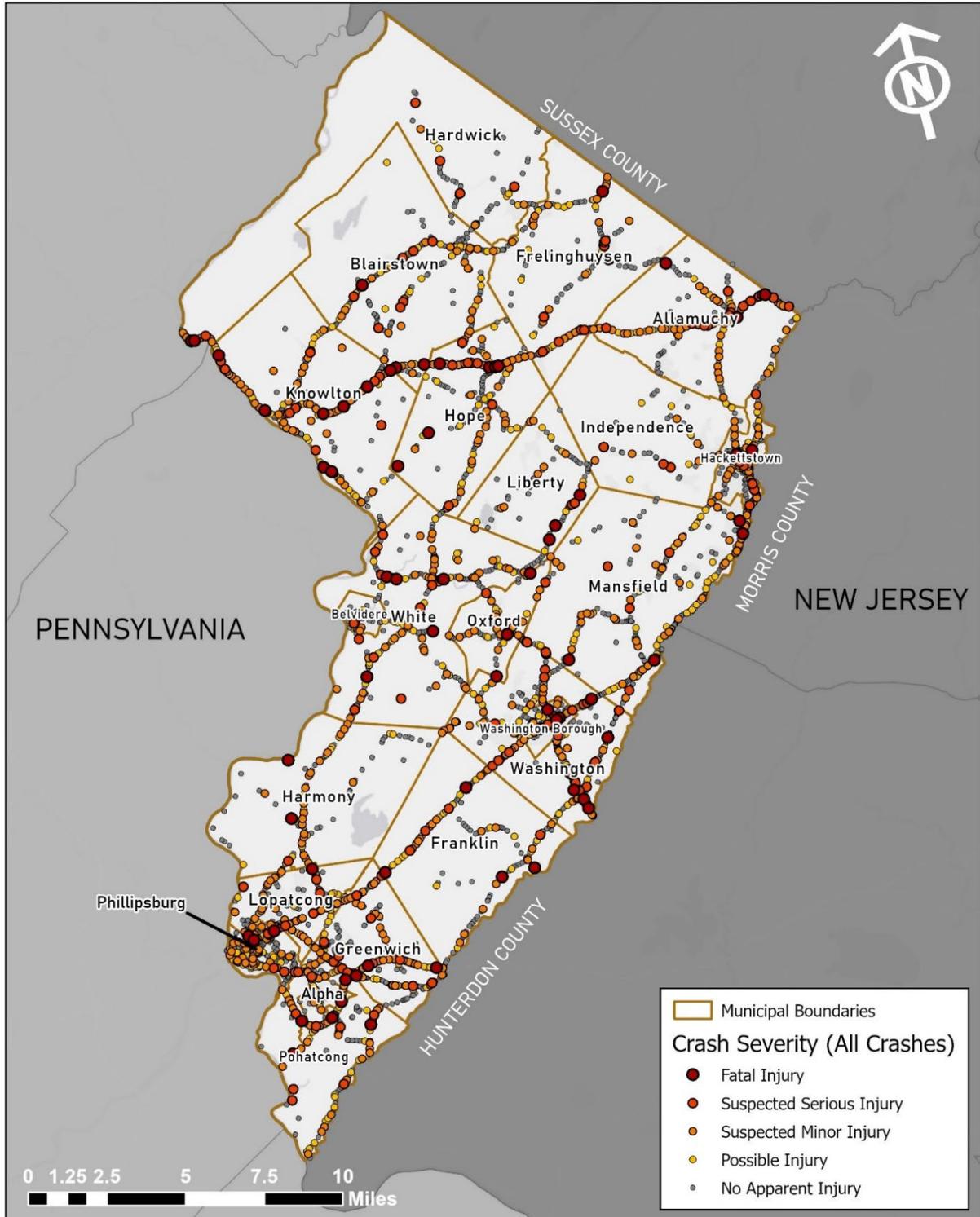


3.4 percent Involved Alcohol or a Drug Impaired Driver

Figure 26: Crash Data Summary



Map 8: Crashes by Severity (2017-2021)



Layer Credits: NJOGIS, NJDHTS

Basemap Credits: State of New Jersey, Esri, HERE, Garmin, USGS, EPA, NPS

Needs Assessment

The project team performed a needs assessment and identified key gaps, needs, and opportunities in Warren County’s roadway network that, when improved or developed with Complete Street policies, will help the County gradually and strategically build its Complete Streets network over time. The needs assessment led to the identification of 20 priority locations, areas with identified gaps in transportation safety infrastructure, for the County to consider as part of the overall Complete Streets Plan.

Needs Assessment Methodology

The Needs Assessment utilized the following datasets as part of a multimodal inventory and grouped datasets into four key layers/themes, as well as additional base map datasets, as follows:

1. Bicycle and Pedestrian Network Layers
2. Roadway Network Layers
3. Freight and Goods Movement Layers
4. Public Transportation Layers

The datasets were then grouped by mode to assess needs and gaps in the transportation network.

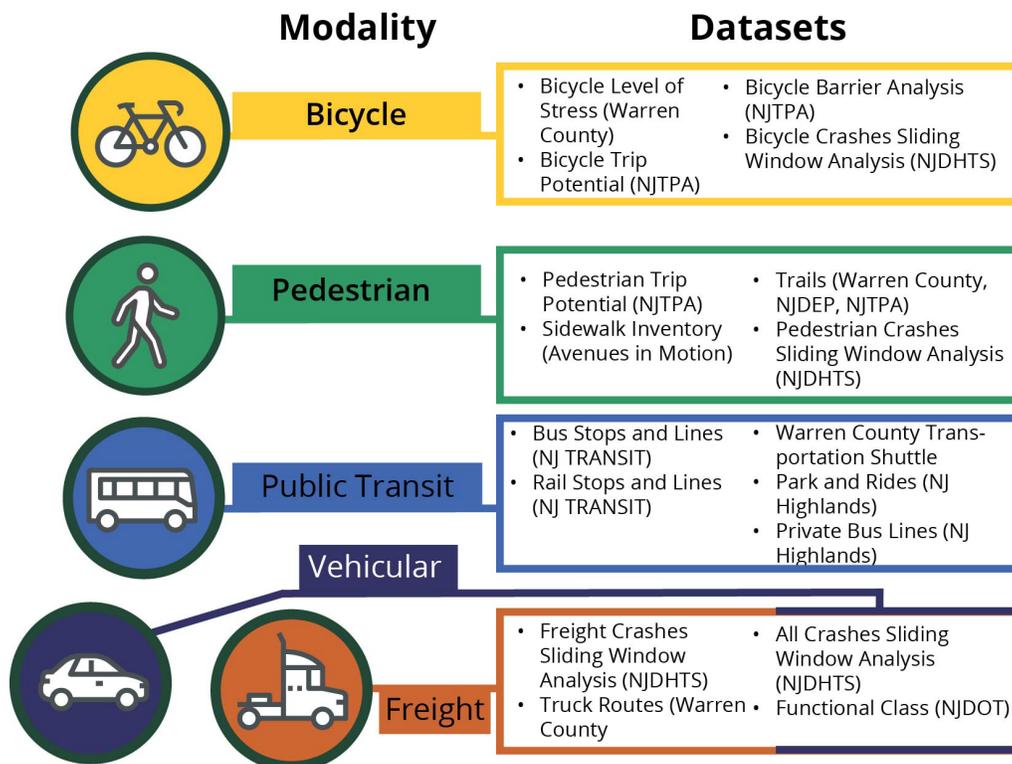


Figure 27. Data Sources



Bicycle Gaps, Needs, and Opportunities

Bicycle travel is feasible in urban areas for regular transportation, but in rural areas it is often more commonly used for recreation. This was reflected in both the bicycle trip potential and bicycle crash concentrations, both of which were highest in the most densely populated areas of Warren County. The bicycle level of stress data mostly showed the high-volume arterial roads as the high-stress roads.

The barrier analysis, which heavily utilizes population to identify roads central to bicycle travel, also showed high bicycle travel demand in densely populated areas. As this analysis identifies roads which facilitate many different potential bicycling routes, it tends to highlight roads that provide important connections through areas that lack a well-connected street network. The barrier analysis was weighted equally with bicycle level of stress to identify key bicycle routes that were both challenging to bicycle and that could provide important connections for bicyclists. These were largely located on connecting roads between neighborhoods, with segments in Phillipsburg, Pohatcong, and Greenwich all standing out.

Pedestrian Gaps, Needs, and Opportunities

Pedestrian travel, with the exception of recreational hiking, typically consists of short trips near home. This is reflected in the pedestrian trip analysis, which showed that the four urban cores of Warren County (Belvidere, Hackettstown, Phillipsburg, and Washington Borough) and to a lesser extent the municipalities near Hackettstown and Phillipsburg, have the highest pedestrian activity. The sidewalk inventory was used to identify specific gaps in these four municipalities (with the addition of Washington Township), with areas such as northwest Hackettstown and southeast Phillipsburg identified as having disconnected sidewalk networks. This sidewalk inventory was also combined with pedestrian trip potential to identify sidewalk gaps in high-activity areas.

The locations of pedestrian crashes, which were also most frequent on some of the busier arterial roads in Hackettstown, Phillipsburg, and Washington, were noted as areas of need for Complete Streets including better pedestrian accommodations. The presence of trails was also noted on a case-by-case basis, as there is limited information available about their character, directness, and accessibility. Nonetheless, trails can be expected to drive pedestrian activity.

Transit Gaps, Needs, and Opportunities

Proximity to these transit stops—defined by a ¼-mile radius for walkers and a ½-mile radius for bicyclists—serves as a key metric for identifying priority locations to incorporate



Complete Streets within the transit network. Based on this analysis, priority areas primarily include much of Washington Borough, the Hackettstown area, and Phillipsburg.

Vehicular/Freight Gaps, Needs, and Opportunities

The functional class and truck route map were referenced in determining freight needs and vehicular movement. Roads with a high functional class, or roads along a designated truck route, are anticipated to see greater traffic volumes due to increased light industrial/warehouse growth and should be emphasized when considering the implementation of Complete Streets. This is especially important in areas where there would be potential conflicts with vulnerable road users. The crash data highlighted specific roads where road safety issues exist. A combination of the datasets provided areas of need related to freight and vehicles in the County.

Priority Locations

As indicated in the following infographic, priority locations were determined based on identified gaps combined with existing information overlays sourced from public outreach, the NJTPA Active Transportation Network, other studies, trail connections, and transition areas (the portions of the road network connecting urban and rural areas).

This analysis resulted in a list of 20 priority locations to consider as part of the Connect Warren County Plan for possible implementation of Complete Streets. Priority Locations are shown in the following table and organized by roadway jurisdiction. The first 13 locations are County and local roads and the remaining seven are State roads (Thirteen of the 20 priority locations that are not located on State roads are shown on Map 10 following Table 3).

Table 4: Priority Location List

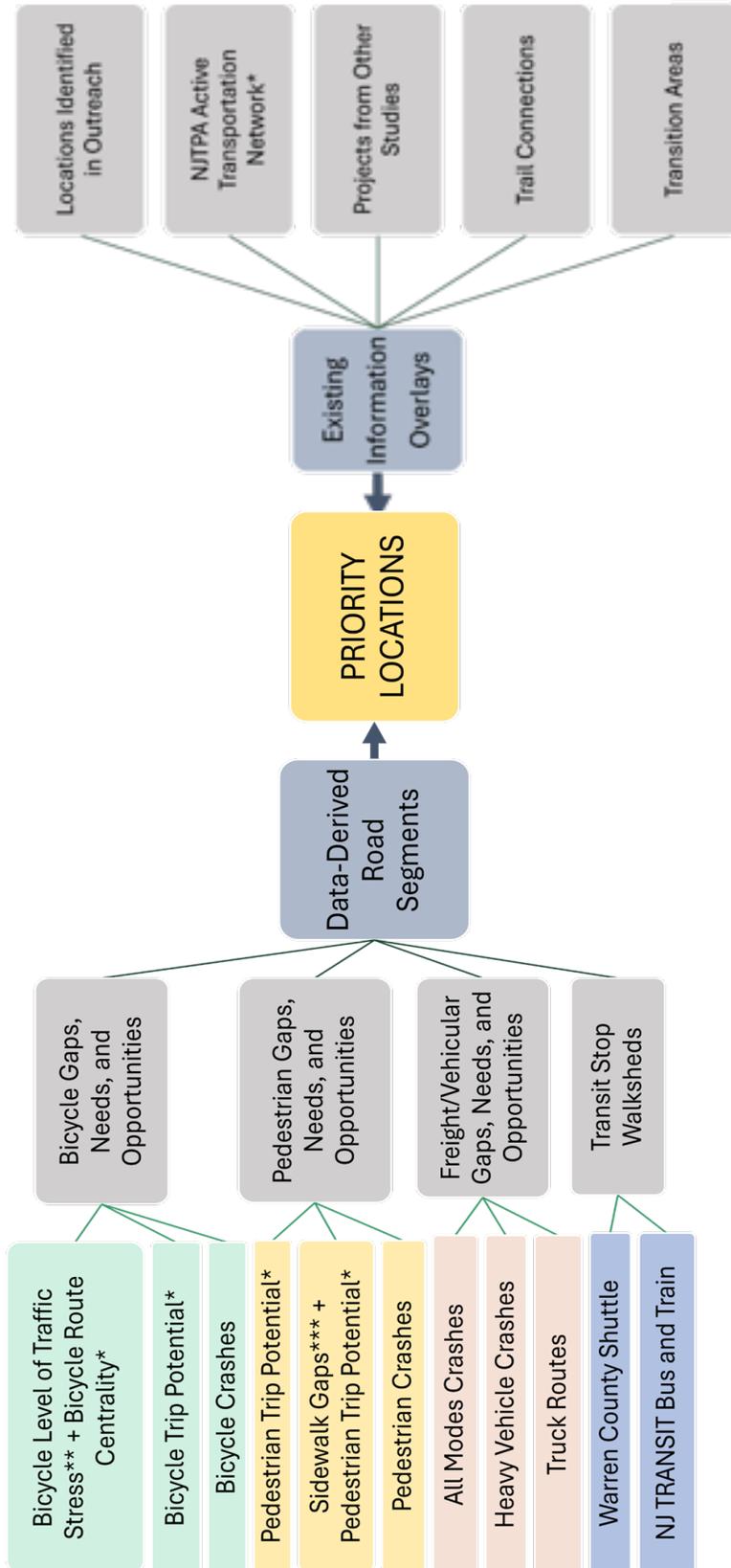
	Road Name (Route Number, if Applicable)	Start	End	Jurisdiction	NJDOT Functional Class	Municipality/ Municipalities
1	Uniontown Road/ St. James Avenue (CR 519)	Liggett Blvd	Strykers Rd	County	4 - Minor Arterial	Pohatcong, Greenwich
2	Logan Street/ Lock Street/ Chestnut Street	Center Street	Shimer Blvd	Local	4 - Minor Arterial	Phillipsburg
3	Fairview Ave/ Belvidere Road (CR 646)	Memorial Parkway	Wildview Avenue / Charles Road	County	4 - Minor Arterial	Phillipsburg
4	South Main Street (formerly CR 678)	Pursel Street	Union Square	Local	3 - Other Principal Arterial	Phillipsburg
5	Asbury-Anderson-Bloomsbury Road (CR 632)	To be determined	To be determined	County	4 - Minor Arterial / 5 - Major Collector	Washington Township, Franklin, Greenwich



	Road Name (Route Number, if Applicable)	Start	End	Jurisdiction	NJDOT Functional Class	Municipality/ Municipalities
6	Asbury Broadway Road (CR 643)	Mountain View Road	County Border	County	6 - Minor Collector	Franklin
7	Brass Castle Road (CR 623)	Belvidere Border	NJ-57	County	5 - Major Collector	White, Washington Township
8	CR 519	White Road	MP 38.8	County	4 - Minor Arterial	White
9	Greenwich Street/ Belvidere Road (CR 620)	Water Street	Old Phillipsburg Road	County	5 - Major Collector	Belvidere, White
10	Grand Avenue (briefly CR 629)	Allen Road	Main Street	County/ Local	4 - Minor Arterial	Mansfield, Hackettstown
11	Willow Grove Street (CR 604)	Main Street/US-46	Bilby Road	County	4 - Minor Arterial	Hackettstown
12	High Street (CR 517)	Main Street	Cat Swamp Road	County	4 - Minor Arterial	Hackettstown, Allamuchy
13	Hope-Johnsonburg Road (CR 519)	Mt Hermon Road	Millbrook Road/Great Meadows Road	County	5 - Major Collector 4 - Minor Arterial	Hope
	Hope-Blairstown Road (CR 521)	Millbrook Road	Hope-Johnsonburg Road			
14	NJ-57/ US-22	State Border	Uniontown Road (CR 519)	State	3 - Other Principal Arterial	Phillipsburg, Lopatcong
15	NJ-173	US-22 end	Past Greenwich Church Road	State	4 - Minor Arterial	Greenwich
16	NJ-57	Halfway House Road	Buttermilk Bridge Road	State	3 - Other Principal Arterial	Franklin, Washington Township
17	NJ-31	NJ-57	James Chapel Road (Pequest Road)	State	3 - Other Principal Arterial	Oxford, Washington (Twp/Borough)
18	NJ-31	Springtown Road	County Border	State	3 - Other Principal Arterial	Washington Township, Washington Borough
19	NJ-57	Airport Road	NJ-182	State	3 - Other Principal Arterial	Mansfield, Hackettstown
20	NJ-94	Main Street	Hope Road	State	4 - Minor Arterial	Blairstown

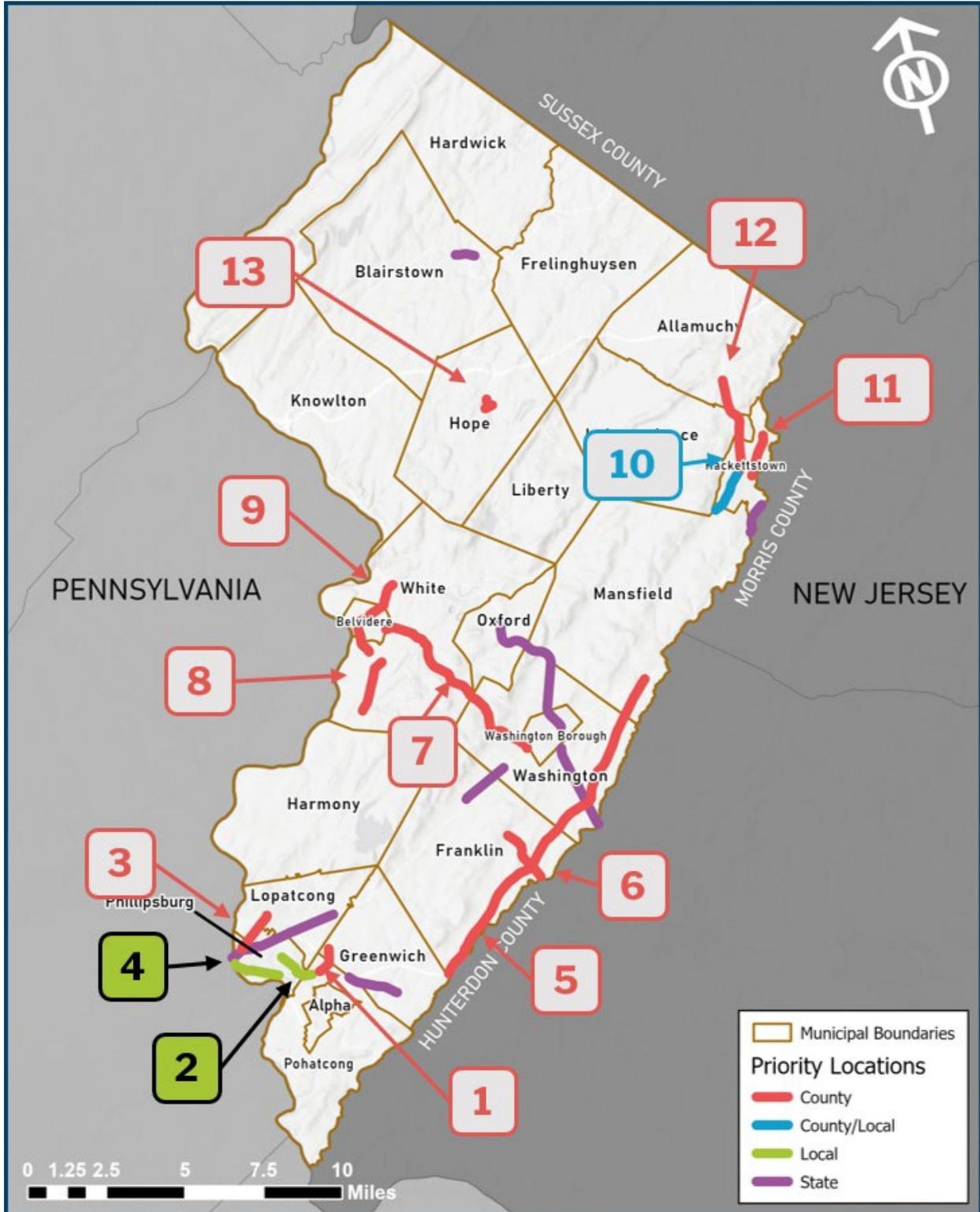


Figure 28: Needs Assessment and Priority Locations Methodology





Map 9: Priority Locations Map





V. Complete Streets Policy Implementation Plan



V. Complete Streets Policy Implementation Plan

Complete Streets Policy Implementation Overview

To ensure that individuals can reach their desired destinations safely and comfortably, it is essential to provide a seamless and connected street network. This network must accommodate all modes of transportation, including safe and convenient pedestrian crossings, bicycle infrastructure, access to public transportation, trail connectivity, and freight movement. Even minor interruptions or hazardous sections within this network can significantly hinder the ease and safety of travel.

Every street does not necessarily need to provide separate accommodation for every mode of transport; however, a network should be in place so that trips can be made by walking, biking, and taking public transportation, as well as driving. In addition to streets, the Complete Streets network should be bolstered by trails, greenways, and other connections throughout the County and in individual communities.

To facilitate plan implementation, the County plans to adopt a Complete Streets policy and revise relevant County Standards to facilitate implementation. Additionally, the County will aid municipalities in the form of guidance to implement Complete Streets strategies as part of any local development or infrastructure project. Furthermore, the County should work with the New Jersey Department of Transportation and other related agencies, its municipalities, neighboring counties, and businesses and educational institutions to develop plans, facilities and accommodations that further Complete Streets strategies.

Vision

Every person in Warren County has the right to travel safely each day, without risking death or serious injury on our roads. We envision a safe, balanced, and environmentally sustainable multi-modal transportation system that preserves our scenic rural landscapes, prized farmlands, natural and historic assets, and quality of life. Through collaboration with our municipalities, we aim to provide diverse transportation choices by using the roads to better accommodating people of all ages and abilities that enhance safety and mobility, fostering a more accessible, sustainable, and resilient future. Our vision is a County where the movement of people and goods is seamless, active living and mobility independence are encouraged, and everyone has convenient and safe access to goods and services.

Complete Streets Action Plan

The County, in coordination with its municipal and state partners, can advance Complete and Safe Streets in a coordinated way that results in seamless and county-wide Complete Street networks across jurisdictions. However, the County must ensure that their internal procedures for transportation decision-making systematically support Complete Street objectives, and improvements to the transportation infrastructure systematically prioritize



Complete Street networks. By implementing Plan recommendations and ensuring that the County’s transportation decision-making processes prioritize Complete Streets, the County is positioned to lead municipalities in Complete Streets implementation. As indicated in the “Best Practices” memorandum, municipal codes should be amended to incorporate Complete Streets strategies, infrastructure, and design interventions, and the County can encourage and facilitate this process through Complete Streets education, technical resources, and funding incentives.

With a plan in hand, the County can guide the development of a seamless county-wide Complete Street network through coordination with municipalities and the New Jersey Department of Transportation. In addition to implementing Complete Streets on the County’s road network, the County should encourage a variety of stakeholders, including developers, municipalities and state agencies, to help implement the Connect Warren County plan.

The Action Table below organizes recommendations into seven primary action areas:

SEVEN PRIMARY ACTION AREAS:

1. Institutionalize Complete Streets by enacting policies, plans and guidelines at the County level.
2. Encourage municipal adoption of Complete Streets policies and plans through technical assistance, incentives, leadership and engagement.
3. Build Complete Streets networks throughout the County.
4. Support and enhance municipal education and public awareness programs about Complete Streets in the County.
5. Encourage freight-related Complete Streets guidelines across County departments and municipalities and continually engage with freight companies.
6. Monitor the County’s progress towards implementing Complete Streets.
7. Prioritize safety through speed management.

The following actions are recommended:

Timeframe	
Continuous	<i>Ongoing</i>
Short-Term	<i>0-6 months</i>
Medium-Term	<i>6-18 months</i>
Long-Term	<i>18+ months</i>



No	Recommendations	Lead	Timeframe
1. Institutionalize Complete Streets by enacting policies, plans and guidelines at the County level.			
1a.	<p>Revise the County Highway and Bridge Standards to:</p> <p>(1) Include Complete Streets elements with incentives for developers to implement the recommendations of the CWC plan.</p> <p>(2) Incorporate up-to-date standards relating to accessibility, including, where appropriate, references to, but not limited to, the Americans with Disabilities Act and the Public Right-of-Way Accessibility Guidelines.</p>	Warren County	Short-Term
1b.	Adopt the Warren County Complete Streets Action Plan including the <i>Complete Streets policy or resolution of support</i> and street typologies by resolution.	Warren County	Short-Term
1c.	Create a webpage on the County website dedicated to Complete Streets resources such as the NJDOT Complete Street Design Manual, Connect Warren County Plan, Complete Street Network Map and Typology. Create a page dedicated to the implementation of the Complete Streets Action Plan with a dashboard of progress.	Warren County	Short-Term
1d.	Continue to include Complete Streets considerations in all future plans and studies in the County through the revised County Highway and Bridge standards and consistently communicate about Complete Street priorities with other departments.	Warren County	On-Going
1e.	Prepare a brief annual report on Complete Streets progress, to be shared with municipalities and publicly.	Warren County	On-Going
1f.	Establish an ongoing County-sponsored committee with municipal and stakeholder representation with responsibility for overseeing progress in implementing the Plan and in tracking progress in Complete Streets implementation countywide. Encourage the Complete Streets Study Advisory Committee to join the Local Safety Action Plan Local Implementation Committee and expand its role to	Warren County	On-Going



No	Recommendations	Lead	Timeframe
	oversee progress in implementing the plan and to track progress countywide.		
1g.	Consider conducting an annual or semi-annual review meeting with NJDOT to discuss implementation of Complete Streets infrastructure on state roads and to ensure recommendations of this plan are reviewed and updated with the State on a regular basis.	Warren County	Mid-Term
1h.	Consider creating a funding source that provides dedicated funding for bicycle lanes, multi-use trails, and other safety improvements such as local bond measures or levies.	Warren County/ Municipalities	Medium-Term
2. Encourage municipal adoption of Complete Streets policies and plans through technical assistance, incentives, leadership and engagement.			
2a.	Develop a technical assistance committee to assist municipalities with developing and adopting Complete Street policies and plans.	Warren County/ Municipalities	Short-Term
2b.	Prioritize County funding and support for municipalities with adopted Complete Street policies and plans.	Warren County/ Municipalities	Long-Term
2c.	Recognize, support and facilitate multi-jurisdictional Complete Street network projects between municipalities.	Warren County/ Municipalities	Medium-Term
2d.	Conduct annual Complete Streets meeting/event with municipalities to share implementation status and recognize Complete Streets projects.	Warren County/ Municipalities	Medium-Term
2e.	Conduct outreach and provide technical assistance to municipalities to encourage amendment of municipal codes to incorporate Complete Streets strategies and design interventions as per the "Best Practices" memorandum.	Warren County/ Municipalities	Long-Term
3. Build Complete Streets networks throughout the County.			
3a.	Prioritize Complete Streets improvements on high-risk corridors identified through the LSAP plan and in the CWC plan.	Warren County/ Municipalities	Medium-Term



No	Recommendations	Lead	Timeframe
3b.	Enhance connections between the towns and villages and prioritize Complete Streets improvements on the roads that connect them, as they are the destinations and centers of activity within the county-wide Complete Streets network.	Warren County/ Municipalities	Medium-Term
3c.	Implement Complete Street improvements to off- and on-street connections to major trails, prioritizing county-wide and regional trail networks such as the Morris Canal Greenway.	Warren County/ Municipalities	Long-Term
3d.	Highlight the scenic beauty within the County by extending the Warren Heritage Scenic Byway, protecting the County's scenic roadway networks and facilities, and exploring the potential for new scenic byways.	Warren County	Long-Term
3e.	Work with municipalities to advance the case-study recommendations, expanding them to include municipal priorities for Complete Street improvements.	Warren County/ Municipalities	Long-Term
4. Support and enhance municipal education and public awareness programs about Complete Streets in the County.			
4a.	Share the final plan on the County social media accounts and announce the new page for the Complete Streets initiative. Adopt the "Connect Warren County" marketing to be used for the Complete Streets program.	Warren County	Short-Term
4b.	Share Complete Streets resources with the municipalities such as funding sources, technical assistance opportunities and trainings.	Warren County	Medium-Term
4c.	Consider utilizing "quick build" or temporary measures to allow the community to experience potential Complete Streets improvements prior to permanent installation.	Warren County	Medium-Term
5. Encourage freight-related Complete Streets guidelines across County departments and municipalities and continually engage with freight companies.			



No	Recommendations	Lead	Timeframe
5a.	Continue working with industrial, warehouse, and freight companies to ensure compliance with County development review and truck route map regulations.	Warren County	Long-Term
5b.	Advance Complete Streets recommendations related to freight across the various County departments and with municipalities: <ul style="list-style-type: none"> a. Balance the needs of large vehicles with those of other road users and select appropriate vehicle size for design. b. Provide adequate space for large vehicle turns. c. Reduce conflicts with vulnerable roadway users. d. Safely reduce speeds. e. Provide network connectivity and redundancy. f. Provide adequate space for parking, loading, and emergency response operations. g. Provide curb and building access. 	Warren County	Medium-Term
5c.	Launch an awareness campaign to educate truck drivers about the importance of adhering to speed, height, and weight limits and the potential dangers of speeding in areas with vulnerable users.	Warren County	Long-Term
6. Monitor the County's progress towards implementing Complete Streets.			
6a.	Develop and maintain a list of municipalities with adopted policies and plans.	Warren County	Short-Term
6b.	Periodically analyze crash data and trends to identify and update priority areas of improvements.	Warren County	Medium-Term
6c.	Consider adopting performance targets and measures such as miles of bicycle facilities developed, percent of CS network advanced, percent of workers biking or walking to work and similar performance measures.	Warren County	Long-Term
6d.	Consider conducting a bicycle and pedestrian count program at trails.	Warren County	Long-Term
7. Prioritize safety through speed management.			



No	Recommendations	Lead	Timeframe
7a.	Support and advance the recommendations in the Warren County Local Safety Action Plan.	Warren County / Municipalities	Medium-Term
7b.	Establish a pilot program to implement speed management interventions, near schools, parks, and residential areas where vulnerable users are likely to be present. Interventions should include lowering speed limits, roadway narrowing, speed feedback signs, curb bump-outs, chicanes, and other speed management techniques.	Warren County	Medium-Term
7c.	Increase compliance with speed limits through speed monitoring and targeted enforcement, in partnership with local and state law enforcement agencies.	Warren County	Long-Term

Warren County Complete Streets Toolbox

A Complete Streets toolbox for municipalities and the County was developed to support the implementation of the Action Plan. The tools are listed below, and the corresponding symbols appear adjacent to the description of each tool.



Amendments to the County Highway and Bridge Standards



Model County Complete Streets Policy



Complete Streets Model Policy, Resolution and Development Checklists for Municipalities



Complete Streets Typology



Complete Streets Network Map



Visual Guide of Key Design Treatments.

Terms and strategies associated with Complete Streets may be new to municipal officials and residents. Policies, checklists, and typical graphics can help to inform and ensure systematic implementation of Complete Streets design interventions. The following resources are included:



Resources for the County

- Case Studies: Five case studies provide examples of how the Complete Streets approach could be applied to different locations within Warren County.
- Model Policy Language: A draft model policy is included in the appendix for the County.

Resources for Municipalities

- Checklists: Four distinct checklists are provided, to be utilized during four phases of the lifecycle of a project.
- Typical Diagrams: Typical images and diagrams of Complete Streets features are included in the Typology and the Visual Guide of Key Design Interventions, which can be used by municipalities to graphically communicate Complete Streets interventions in municipal guidelines and regulations.
- Model Policy Language: A draft model policy is included in the appendix for municipalities.



Model Complete Streets Policy

The project team prepared a draft policy that is included in the Appendix in Section VII. The policy declares the municipal vision for Complete Streets in the community. The body of the policy is based on six principles: Environmental Sustainability; Safety; Economic Vitality; Health; Access for All, and Efficiency. The policy is intended to apply to all public and private transportation projects within the jurisdiction of the adopting body. Additionally, the model policy is meant to function as a guide for creating municipal policies that meet the goals, level of commitment, and capacity for each municipality to implement. The model policy covers the following:

- Implementation measures: Auditing and, where necessary, amending existing procedures, policies, plans, documents, training programs, and performance measures to be consistent with the Complete Streets

Complete Streets Policy: Ordinance vs. Resolution

Adopting a Complete Streets policy is a critical step in reducing injuries and deaths from traffic crashes, improving health, responding to climate change, and increasing transportation options. The New Jersey Department of Transportation's 2020 [Complete & Green Streets for All: Model Complete Streets Policy & Guide](#) describes two strategies for advancing a Complete Streets policy. Once the Complete Streets policy has been drafted and approved, municipalities in Warren County can choose to codify it by adopting either a Complete Streets resolution or an ordinance, depending on the desired level of enforcement. In the context of Complete Streets, an ordinance would establish enforceable requirements for street design and infrastructure, while a resolution adopting a Complete Streets policy would express the municipality's commitment to the principles of Complete Streets without creating binding regulations.

It is recommended that each municipality begin with a resolution to build support and later, with public support in place, move forward with adopting an ordinance to establish enforceable measures to ensure compliance with the principles detailed in the resolution.



vision and policy.

- Comprehensive Planning: It directs the municipality to update and amend Master and Capital plans to include additional sustainable design elements.
- Complete Streets Advisory Committee: The policy establishes a municipal Complete Streets Advisory Committee to aid the community in policy compliance and to provide feedback to the governing body related to Complete Streets implementation.
- Public Participation: The municipality is directed to implement methods of public participation to obtain public feedback regarding decision-making and planning matters.
- Exceptions: This section establishes exceptions for implementing Complete Streets in specific projects.
- Conflicting or Competing Needs: This section establishes the governing policy that where there are conflicting or competing needs, safety shall be the highest priority.
- Complete Streets Network: This section directs the municipality to establish a Complete Streets network and to require developers to contribute to the construction of the network where and when it is applicable to a project.
- Program Reporting: This section of the policy establishes measurable benchmarks to track the progress of implementing Complete Streets in the municipality.
- Complete Streets Checklists: The policy directs the municipality to adopt the four checklists included in the appendix of this plan. This includes the Concept Development Checklist, Preliminary Engineering Checklist, Construction Checklist, and Maintenance Checklist.
- Key Terms and Definitions: This section contains relevant terms and definitions relating to Complete Streets.



Checklists

The project team developed four distinct checklists to be utilized during four phases of the lifecycle of a project. The checklists are used as part of the implementation of the Complete Streets Policy. The checklists are included in the Appendix in Section VII.

These include:

1. Concept Development Phase
2. Preliminary Engineering Phase
3. Construction Phase
4. Maintenance Phase



These checklists are meant to make the implementation of Complete Streets strategies easier and more efficient. While they are included in this report as separate documents, it is recommended that municipalities integrate these checklists into their existing land development and/or maintenance checklists to avoid duplicative requirements or additional administrative burden.

Concept Development Checklist

The Concept Development Checklist is intended to be utilized at the conceptual or pre-application phase of development. The intent of the checklist is to determine how the project can incorporate Complete Streets strategies. The checklist includes the following items:

- Existing bicycle, pedestrian, and transit accommodations.
- Existing bicycle and pedestrian operations.
- Existing transit operations.
- Public participation.
- Existing motor vehicle operations.
- Existing truck/freight operations.
- Land use.
- Major sites.

Questions asked regarding these items determine if they are relevant to the project, and if so, how the project may make improvements or enhancements to these items.

Preliminary Engineering Checklist

The Preliminary Checklist is intended to be utilized during the project application phase when engineering plans are being submitted and reviewed. Where these similar topics are covered in the Concept Development Checklist relating to existing conditions, this checklist is concerned with proposed conditions. The checklist includes the following items:

- Bicycle, pedestrian, and transit accommodations.
- Bicycle and pedestrian operations.
- Transit operations.
- Motor vehicle operations.
- Truck/Freight operations.
- Access and mobility.
- Land use.
- Major sites.
- Streetscape.
- Design standards or guidelines.
- Safety.
- Stormwater management.



These items, if completed, ensure the appropriate Complete Streets improvements are included in relevant projects.

Construction Checklist

The Construction Checklist is intended to be utilized during construction. The checklist includes the following items:

- Maintenance of traffic.
- Detours.

These items, if completed, ensure safe and well-lit access during road construction, and where necessary, safe and efficient detours, for autos as well as pedestrians, bicyclists, and micromobility users.

Maintenance Checklist

The Maintenance Checklist is intended to be utilized in perpetuity by the agency or department that maintains the roadway. The checklist includes the following items:

- Street cleaning.
- Snow removal.
- Re-striping.
- Stormwater management.
- Street trees.
- Lighting.

These items, if completed, perform two functions:

1. Identify areas of improvement for existing infrastructure during normal maintenance, and;
2. Ensure that when roads are upgraded to include Complete Streets improvements, they are maintained in a manner that allows all users to utilize the roads during all times and weather conditions.

County-Wide Regulatory Amendments

As part of the implementation of Complete Streets policy in Warren County, it is recommended that the County amend the Highway and Bridge Standards to require Complete Streets design interventions where appropriate. Specific recommendations are contained herein.



Highway and Bridge Standards

The purpose of the Warren County Highway and Bridge Standards is to provide guidance for the design of road and bridge improvements under County jurisdiction. Also, these regulations will establish the procedures and requirements for



obtaining access to the County Road, performing work within the County rights-of-way, and/or performing work which impacts a County bridge or culvert. These standards are intended to work in conjunction with municipal ordinances and regulations to provide a coordinated development process. Municipal regulations will apply to all development activities under municipal jurisdiction. The County reserves the right to apply municipal standards when appropriate to obtain the highest quality improvements possible.

Given the purpose of these standards, and the purpose of this plan being to implement Complete Streets in the County, it is recommended that the portions of the Highway and Bridge Standards indicated herein be amended (included in the Appendix) to prioritize and incentivize Complete Streets improvements in the County. The key recommendations and modifications are noted below:

1. Definitions and Abbreviations:

- Addition of definitions for Complete Streets, Bike Lanes Fair Share, Sidewalk, and Sidepath.

2. Traffic Impact Study (Incentives and Additions):

- Developer Incentives for Complete Streets Improvements:
 - Adjustments to the thresholds for requiring traffic impact studies based on the inclusion of pedestrian and bicycling facilities.
 - Adjustments to the major and minor driveway thresholds for developments that provide Complete Streets improvements.
 - Provision of Fair Share contribution credits for Complete Streets improvements based on the type of street as noted in this Plan.
- Traffic Impact Studies with Complete Streets Recommendations:
 - Inclusion of pedestrian and bicycling counts in traffic studies.
 - Evaluation of site access points for safety, including pedestrian and bicycle access.
 - Review of bicycle accommodation in traffic safety evaluations.
 - Recommendations for mitigating deficiencies, including improvements to pedestrian and bicycle networks.

3. Road Improvements:

- Specifications for sidewalk widths and construction standards.
- Requirements for curb cut ramps at intersections and pedestrian crossings.
- Use of high visibility crosswalks.
- Consideration of shade tree placement to avoid conflicts with pedestrian and bicycle facilities.

4. Bridge and Culvert Improvements:

- Determination of roadway widths on bridges and culverts to include bicycle accommodations.



5. Utility Improvements:

- Resetting or rebuilding utility improvements to provide a smooth surface in compliance with accessibility guidelines.

These amendments aim to enhance the safety, accessibility, and connectivity of transportation infrastructure in Warren County, aligning with the Complete Streets policy.

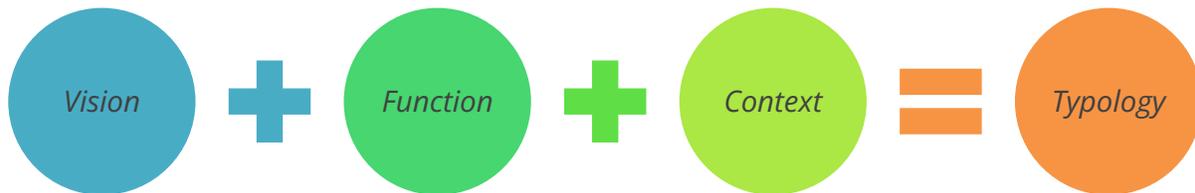


Complete Streets Typology

Overview

The project team developed the following Complete Streets Typology for *Connect Warren County*. The typology builds on the functional classification of roads in Warren County, refined with site-specific context and vision for the overall Warren County Complete Streets network.

The Complete Streets Typology covers eight distinct types of streets differentiated by roadway factors such as width, speed, volume, and functional classification, while accounting for contextual factors such as the surrounding land use, density, and character. As such, a roadway may be classified differently at various points along its length. Table 5 summarizes the classification of street types that form the typology.



The following section provides an expanded definition of each street classified in the typology, along with key recommendations for each street type. A Glossary of Design Treatments is presented at the end to provide a brief introduction to select design treatments and resources for more information.



Visual Guide to Design Treatments

The typology is supported by a visual guide of key Complete Streets design treatments (included in the Appendix). The visual guide functions as a reference for design recommendations and typical images that can be utilized by municipalities crafting their Complete Streets regulations.

County-wide Complete Streets Map

The glossary is followed by a map that shows the streets in the County and their classification under the Typology.



Table 5: Warren County Street Typology

	Width	Functional Class	Traffic Volume	Travel Speeds	Freight Corridor	Parking	Sidewalks	Bike Facilities	Jurisdiction
REGIONAL HIGHWAY	40' to 80' or more	Interstate, freeway, principal arterial	30,000 – >100,000 AADT	50 - 65 MPH	Yes	No	No	No	NJDOT
REGIONAL CONNECTOR	40' – 60'	Principal arterial, Minor arterial	10,000 – 20,000 AADT	35 – 55 MPH	Yes	No	Limited or no	No	NJDOT, Warren County
HIGHLANDS REGIONAL STREET	30' – 45'	Principal arterial, Minor arterial	10,000 – 20,000 AADT	35 – 55 MPH	No*	No	Limited or no	No	NJDOT, Warren County
SCENIC CORRIDOR	±30'	Minor arterial, Major collector, Scenic Byway	5,000 - 10,000 AADT	35 – 45 MPH	No*	No	Limited or no	No	NJDOT, Warren County, Municipal
MAIN/ DOWNTOWN STREET	30' – 40'	Minor arterial, Major collector	5,000 – 15,000 AADT	25 – 35 MPH	No*	Yes	Yes	Yes	NJDOT, Warren County, Municipal
VILLAGE/ HAMLET CROSSROADS	20' - 30'	Major collector, Minor collector	5,000 – 10,000 AADT	25 – 35 MPH	No	Yes	Yes	Yes	NJDOT, Warren County, Municipal
NEIGHBORHOOD STREET	16' – 30' (two-way)	Minor collector, Local Street	<5,000 AADT	25 MPH	No	Varies	Limited or no	Varies	Municipal
RECREATION TRAIL	8' – 16'	Shared Use Path	Varies (non-vehicular)	2.5 - 20 MPH	No	Trailhead and bike parking	No	Yes	County or Municipal

*Except local deliveries.



Key Recommendations

<p>Traffic Safety</p>	<p>Guide Rail & Barriers – Add protective guide rail where warranted to prevent vehicles from veering off the road.</p> <p>Overnight Parking – Consider teaming with other agencies and the private sector to identify needs for overnight parking in targeted areas in compliance with the FHWA Truck Parking Development Handbook. Providing designated overnight parking and rest areas for freight drivers improves safety by reducing fatigue-related crashes and illegal parking. Well-lit, strategically located rest areas with essential amenities provide drivers with safe and accessible places to stop and rest. A Complete Streets approach should be included in the planning of overnight truck parking to ensure that trucks do not negatively impact pedestrian or bicyclist safety and mobility.</p>
<p>Pedestrian Mobility</p>	<p>Interchanges – Provide continuous pedestrian routes with high-visibility crosswalks and advanced warning signs; consider flashing signals to accompany signs.</p>
<p>Bicyclist Mobility</p>	<p>Interchanges – Provide continuous bicycle routes with safety provisions for intersections with on- or off-ramps.</p>
<p>Environmental / Green Infrastructure</p>	<p>Highway Noise Barriers – Assess needs for sound wall barriers in residential areas near highways to reduce noise pollution.</p> <p>Pollinator and No-Mow Zones – Consult with NJDOT to consider establishing pollinator and no-mow zones along roadsides, landscaped medians, and within interchange loops to reduce maintenance and provide habitat.</p> <p>Wildlife Crossings & Fencing – Assess needs for wildlife overpasses or underpasses in ecologically sensitive areas to reduce animal-vehicle collisions.</p>



Regional Connector

Typical Existing Conditions

A Regional Connector is an arterial that connects between town centers and developed areas within Warren County. The principal role of a Regional Connector in Warren County is to facilitate vehicular travel to destinations within the county and provide access to Regional Highways.



Roadway Width	40' – 60' (one travel lane in each direction in most areas, expanding to two lanes and/or dedicated turning lanes in some areas)
Functional Class	Principal arterial, Minor arterial
Traffic Volume	10,000 – 20,000 AADT
Travel Speeds	35 – 55 MPH Posted Speed Limit
Freight Corridor	Yes
Parking	No
Sidewalks	Limited or no
Bike Facilities	No
Jurisdiction	NJDOT, Warren County
Warren County Examples	U.S. Highway 46, N.J. Route 57, N.J. Route 94



Varies 40' - 60'



Key Recommendations

Traffic Safety	<p>Traffic Calming – Consider road diets, feedback signs, reduced speed limits, and enforcement measures in critical areas.</p> <p>Lighting – Assess lighting levels to improve visibility at night, especially at intersections and crossings.</p> <p>Access Management – Limit the number of driveways and uncontrolled access points to reduce conflicts between vehicles and pedestrian/cyclists.</p> <p>Freight Map – Create a freight corridor map for Warren County.</p> <p>Balanced Intersections – Design intersections with sufficient turning radii for trucks and emergency vehicles without compromising pedestrian and bicycle safety. Consider strategies like recessed stop lines and mountable curbs.</p>
Pedestrian Mobility	<p>Intersection Safety – Provide high-visibility crosswalks, pedestrian refuges, and advanced stop lines to protect non-motorized users.</p> <p>Sidewalk Continuity – Where feasible, provide continuous sidewalks on both sides, particularly in areas near transit stops, schools, and commercial hubs.</p> <p>ADA Compliance – Ensure all crossings, sidewalks, and ADA-compliant curb ramps meet ADA accessibility standards.</p> <p>Safe Waiting Areas – Provide pedestrian islands and curb extensions for safer waiting areas.</p>
Bicyclist Mobility	<p>Bike Facilities – Assess the potential to provide protected bike lanes, or shared use paths.</p> <p>Intersections – Ensure that bike facilities continue through intersections with treatments such as bike boxes, separate signal phases, and conflict zone markings.</p>
Environmental / Green Infrastructure	<p>Stormwater Management – Consider no-mow areas, rain gardens, and permeable pavement for stormwater reduction and/or treatment.</p> <p>Street Trees – Increase tree canopy coverage to provide shade and improve air and water quality.</p> <p>Renewable Energy – Explore solar-powered lighting and electric vehicle charging stations at key locations.</p>



Highlands Regional Street

Typical Existing Conditions

A Highlands Regional Street is an arterial that connects between town centers and developed areas within Warren County and is subject to development standards of the Highlands Regional Plan. The principal role of a Highlands Regional Street is to facilitate vehicular travel to destinations within the county and provide access to Regional Highways.



Roadway Width	30' – 45' (one travel lane in each direction in most areas, expanding to two lanes and/or dedicated turning lanes in some areas)
Functional Class	Principal arterial, Minor arterial
Traffic Volume	10,000 – 20,000 AADT
Travel Speeds	35 – 55 MPH Posted Speed Limit
Freight Corridor	No*
Parking	No
Sidewalks	Limited or no
Bike Facilities	No
Jurisdiction	NJDOT, Warren County
Warren County Examples	N.J. Route 31, N.J. Route 57, County Route 517

*Except local deliveries.



Varies 30' - 45'



Key Recommendations

<p>Traffic Safety</p>	<p>Traffic Calming – Consider road diets, feedback signs, reduced speed limits, and enforcement measures in critical areas.</p> <p>Guide Rail & Barriers – Add protective guide rail and barriers where warranted.</p> <p>Striping and Signage – Enhance lane markings, reflective markers, and advanced warning signs to help drivers navigate safely, especially in foggy or inclement weather.</p> <p>Narrow Lanes – Consider narrowing lanes as a visual cue to reduce speeds.</p>
<p>Pedestrian Mobility</p>	<p>Sidewalk Continuity – Provide sidewalks where feasible, particularly in areas which connect residential to commercial plazas, transit stops, and schools.</p> <p>Crosswalks and Refuge Islands – Introduce high-visibility crosswalks and midblock pedestrian refuge islands where crossing distances are long.</p> <p>ADA Compliance – Install ADA-compliant curb ramps, detectable warning surfaces, and accessible pedestrian signals at intersections.</p>
<p>Bicyclist Mobility</p>	<p>Bike Facilities – Provide bike lanes, paved shoulders, protected bike lanes, or shared use paths where possible, particularly in commercial areas.</p> <p>Signage & Shared Lane Markings – Consider “Share the Road” signage and shared lane markings (sharrows) where bike lanes are not feasible.</p> <p>Intersections – Ensure that bike facilities continue through intersections with treatments such as bike boxes, separate signal phases, and conflict zone markings.</p>
<p>Environmental / Green Infrastructure</p>	<p>Stormwater Management – Consider grass swales, vegetative filter strips, and small-scale bioretention systems.</p> <p>Noise & Air Pollution Mitigation – Consider vegetative buffers and sound barriers in areas close to residential neighborhoods.</p> <p>Wildlife Protection Measures – Consider wildlife crossings or fencing in ecologically sensitive areas to prevent roadkill incidents and protect local fauna.</p>



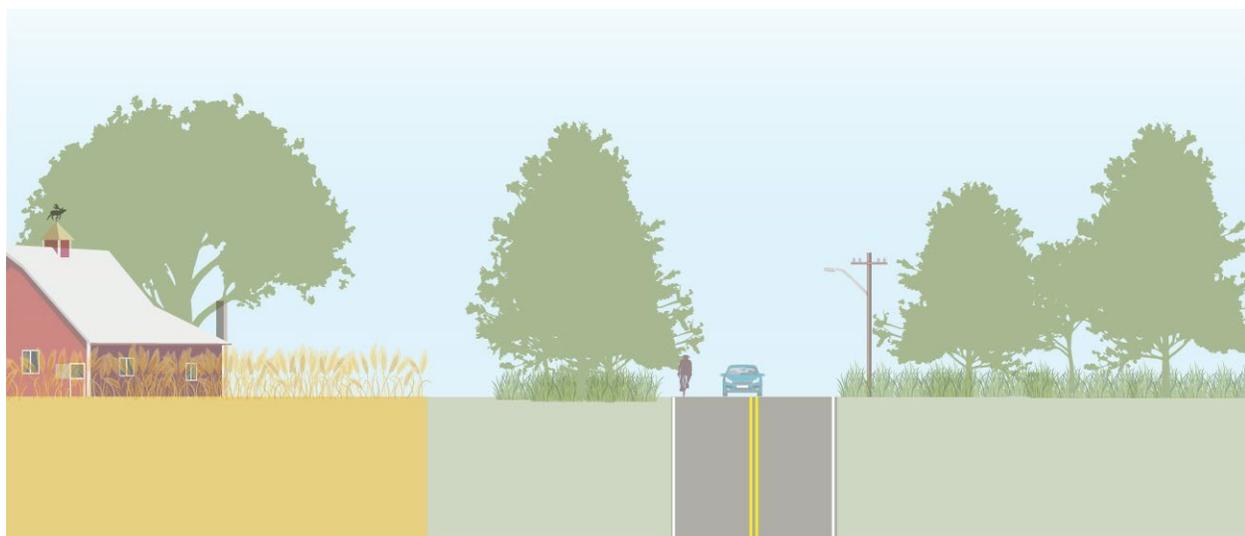
Scenic Corridor

Typical Existing Conditions

A Scenic Corridor is an arterial or collector with scenic or tourism value that connects town centers and developed areas through areas characterized by rural farmland or natural landscapes. within Warren County. A Scenic Corridor provides connectivity as well as a sense of place and of natural and cultural heritage. (Roads classified as Scenic Corridors in this typology are not necessarily designated under the NJDOT Scenic Byways Program).



Roadway Width	±30' (one travel lane in each direction with minimal or no shoulders)
Functional Class	Minor arterial, Major collector, Scenic Byway
Traffic Volume	5,000 - 10,000 AADT
Travel Speeds	35 – 45 MPH Posted Speed Limit
Freight Corridor	No*
Parking	No
Sidewalks	Limited or no
Bike Facilities	No
Jurisdiction	NJDOT, Warren County, Municipal
Warren County Examples	Asbury-Bloomsbury Road (CR-632), Millbrook Road



Varies ±30'

*Except local deliveries.



Key Recommendations

<p>Traffic Safety</p>	<p>Speed Management – Consider speed limit reduction in sensitive areas and install speed feedback signs. Curve Warning & Roadside Safety – Install additional signage, chevron markers, and reflective guideposts on winding sections to improve driver awareness. Narrow Lanes – Implement narrowed lanes and visual cues to naturally reduce speeds.</p>
<p>Pedestrian Mobility</p>	<p>Sidewalk Continuity – Where feasible, add sidewalks for pedestrian mobility, particularly at intersections or commercial areas. Intersection Safety – Provide high-visibility crosswalks, flashing beacons, and advance stop lines at intersections where pedestrian crossings are needed. ADA-Compliance – Ensure pedestrian access routes have ADA-compliant curb ramps, detectable warning surfaces, and other accessibility features for all users. Pedestrian Areas – Consider seating areas or plazas at scenic viewpoints to accommodate pedestrians and tourists.</p>
<p>Bicyclist Mobility</p>	<p>Bike Facilities – Provide bike lanes, paved shoulders, protected bike lanes, or shared use paths where possible, particularly in commercial areas. Signage & Shared Lane Markings – Consider “Share the Road” signage and shared lane markings (sharrows) where bike lanes are not feasible. Intersections – Ensure that bike facilities continue through intersections with treatments such as bike boxes, separate signal phases, and conflict zone markings.</p>
<p>Environmental / Green Infrastructure</p>	<p>Noise & Air Pollution Mitigation – Consider vegetative buffers in areas close to residential neighborhoods. Wildlife Protection Measures – Consider wildlife crossings, fencing, and signage in ecologically sensitive areas to reduce animal-vehicle collisions. Scenic & Historic Preservation – Maintain existing tree canopy coverage and enhance native landscaping along the corridor to preserve its rural and cultural aesthetic. Stormwater Management – Consider grass swales, vegetative filter strips, and small-scale bioretention systems.</p>



Main/Downtown Street

Typical Existing Conditions

A Main/Downtown Street is a minor arterial or collector in a downtown setting with a mix of retail, commercial, and residential land use. Main/Downtown Streets are both a destination and a route, balancing the needs of a diverse range of pedestrians, cyclists, private vehicles, and commercial/delivery vehicles.



Roadway Width	30' – 40' (one travel lane in each direction in most areas)
Functional Class	Minor arterial, Major collector
Traffic Volume	5,000 – 15,000 AADT
Travel Speeds	25 – 35 MPH Posted Speed Limit
Freight Corridor	No*
Parking	Yes
Sidewalks	Yes
Bike Facilities	Yes
Jurisdiction	NJDOT, Warren County, Municipal
Warren County Examples	Water Street (CR-620) in Belvidere; High Street (CR-517) in Hackettstown

*Except local deliveries.



Varies 30' - 40'



Key Recommendations

<p>Traffic Safety</p>	<p>Traffic Calming – Consider implementing curb extensions (bulb-outs), raised crosswalks, or chicanes to slow vehicle speeds. Lighting – Assess lighting levels to improve visibility at night, especially at intersections and crossings. Truck Side Guards – Consider truck side guards and improve driver visibility to reduce conflicts with pedestrians and cyclists. Loading Zones– Designate delivery and pick-up zones to minimize conflicts between pedestrians, cyclists, and parked vehicles. Balanced Intersections – Design Intersections with sufficient turning radii for trucks and emergency vehicles without compromising pedestrian and bicycle safety. Consider strategies like recessed stop lines and mountable curbs.</p>
<p>Pedestrian Mobility</p>	<p>Sidewalk Continuity – Expand sidewalks where necessary and maintain clear pedestrian pathways free from obstruction. Intersection Safety – Install high-visibility crosswalks, pedestrian countdown signals, and advance stop lines at all major intersections. ADA Compliance – Install ADA-compliant curb ramps, detectable warning surfaces, and accessible pedestrian signals at crosswalks. Street Furnishings – Install benches and wayfinding signs to improve the walking experience and direct visitors to key destinations. Public Plazas & Pocket Parks – Where feasible, convert underutilized areas into pedestrian plazas with seating. Lighting – Consider pedestrian-scale lighting.</p>
<p>Bicyclist Mobility</p>	<p>Bike Lanes – Consider bike lanes or protected bike lanes. Shared Lane Markings & Bike Signage – Use sharrows ("Share the Road" markings) where bike lanes are not feasible and install clear wayfinding signage for cyclists. Bicycle Parking – Install small bike racks at key destinations like transit stops, commercial zones, and public buildings Intersections – Ensure that bike facilities continue through intersections with treatments such as bike boxes, separate signal phases, and conflict zone markings.</p>
<p>Environmental / Green Infrastructure</p>	<p>Street Trees – Increase tree canopy along sidewalks to provide shade and improve air quality. Stormwater Management – Consider permeable pavement and rain gardens.</p>



Village/Hamlet Crossroads

Typical Existing Conditions

A Village Hamlet/Crossroads is an intersection with retail or commercial trip generators in an otherwise residential or rural setting. Crossroads accommodate a diverse range of pedestrians, cyclists, private vehicles, and commercial/ delivery vehicles.



Roadway Width	20' - 30'
Functional Class	Major collector, Minor collector
Traffic Volume	5,000 - 10,000 AADT
Travel Speeds	25 - 35 MPH Posted Speed Limit
Freight Corridor	No*
Parking	Yes
Sidewalks	Yes
Bike Facilities	Yes
Jurisdiction	NJDOT, Warren County, Municipal
Warren County Examples	High Street (CR-519) and Hope Blairstown/Bridgeville Roads (CR-519) in Hope; Main Street (CR-637) and Greenwich Street (CR-638) / Washington Street in Stewartsville

*Except local deliveries.





Key Recommendations

<p>Traffic Safety</p>	<p>Traffic Calming – Consider raised intersections, speed humps, and curb extensions (bulb-outs). Lighting – Assess lighting levels to improve visibility at night, especially at intersections and crossings. Improved Signage and Striping – Use high-visibility stop signs, advance warning signage, and painted road markings to alert drivers to crossings and speed changes. Speed Cushions – Utilize speed cushions instead of speed humps.</p>
<p>Pedestrian Mobility</p>	<p>Sidewalk Continuity – Ensure sidewalks are continuous, free of obstructions, and wide enough to accommodate foot traffic. Intersection Safety – Install high-visibility crosswalks and advance stop lines at all major intersections. Ensure signal-controlled intersections provide pedestrian signals with countdown timer indications. ADA Compliance – Provide ADA-compliant curb ramps, detectable warning surfaces, and accessible pedestrian signals at key crossings. Street Furnishings – Install benches and wayfinding signs to improve the walking experience and direct visitors to key destinations. Public Plazas & Pocket Parks – Where feasible, convert underutilized areas into pedestrian plazas with seating. Lighting – Consider pedestrian-scale lighting.</p>
<p>Bicyclist Mobility</p>	<p>Bike Lanes – Consider bike lanes or protected bike lanes. Shared Lane Markings & Bike Signage – Use sharrows ("Share the Road" markings) where bike lanes are not feasible and install clear wayfinding signage for cyclists. Traffic Signal Adjustments for Cyclists – Where applicable, provide bike boxes at intersections and adjust signal timing to accommodate cyclists.</p>
<p>Environmental / Green Infrastructure</p>	<p>Stormwater Management – Consider rain gardens, bioswales, and permeable pavement. Street Trees – Increase tree canopy along sidewalks to provide shade and improve air quality. Stormwater Management – Consider permeable pavement and rain gardens.</p>



Neighborhood Street

Typical Existing Conditions

Neighborhood Streets are predominately residential streets with low traffic volume. Neighborhood Streets provide local access to residential areas.



Roadway Width	16' – 30' (two-way)
Functional Class	Minor collector, Local Street
Traffic Volume	<5,000 AADT
Travel Speeds	25 MPH Posted Speed Limit
Freight Corridor	No
Parking	Varies
Sidewalks	Limited or no
Bike Facilities	Varies
Jurisdiction	Municipal
Warren County Examples	Axford Avenue in Oxford; Lincoln Avenue in Washington



Varies 16' - 30'



Key Recommendations

<p>Traffic Safety</p>	<p>Traffic Calming – Consider speed humps, chicanes, and mini-roundabouts. Narrow Lane Widths – Maintain narrow travel lanes (10-11 feet) to discourage speeding. Signage and Striping – Ensure that signage and striping are clear, visible, and well maintained. Safety Cushions – Utilize speed cushions instead of speed humps.</p>
<p>Pedestrian Mobility</p>	<p>Continuous Sidewalks – Provide continuous sidewalks where possible and upgrade existing sidewalks to meet ADA standards. Intersection Safety – Consider raised intersections, high-visibility crosswalks, and curb extensions to improve pedestrian safety. Lighting – Consider pedestrian-scale lighting.</p>
<p>Bicyclist Mobility</p>	<p>Neighborhood Greenways – Consider designating networks of low-traffic streets as priority bike routes with regulatory and wayfinding signage integrated with traffic calming measures. Maintain slow speeds, providing a safer environment for cyclists.</p>
<p>Environmental / Green Infrastructure</p>	<p>Stormwater Management – Use permeable pavement, grass swales, and rain gardens. Encourage a neighborhood approach to implementing cohesive and effective stormwater management. Noise & Air Pollution Mitigation – Encourage vegetative buffers to help absorb vehicle emissions and reduce street noise.</p>



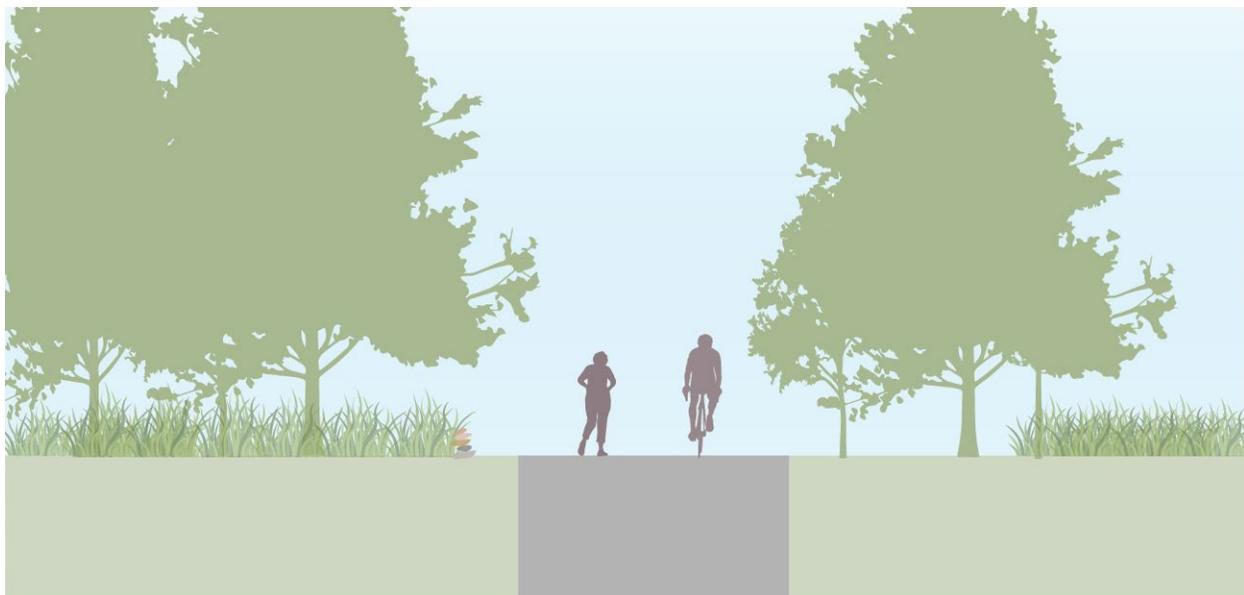
Recreation Trail

Typical Existing Conditions

A Recreation Trail is a non-vehicular route for shared use by pedestrians and bicyclists. Recreation Trails can be part of a street right-of-way or an independent right-of-way, offering the benefits of both a low-stress transportation route and park-like, recreational, or heritage destination.



Trail Width	8' - 12'
Functional Class	Shared Use Path
User Volume	Varies (non-vehicular)
Travel Speeds	2.5 MPH (walking) to 20 MPH (Class 1 or 2 e-bike or e-scooter)
Freight Corridor	No
Parking	Bike parking
Sidewalks	No
Bike Facilities	Yes
Jurisdiction	County or Municipal
Warren County Examples	Paulinskill Valley Trail; Morris Canal Greenway; Oxford Bikeway



Varies 8' - 12'



Key Recommendations

<p>Traffic Safety</p>	<p>Lighting – Consider solar-powered LED lighting at trail entrances, key intersections, and tunnels for safety and security. Use reflective pavement markers for night visibility. Intersections – Where trails intersect the road network, provide high-visibility crosswalks, advanced warning signs, and flashing beacons (RRFBs). Consider raised crossings, where feasible.</p>
<p>Pedestrian Mobility</p>	<p>Rest Areas – Consider benches, shade, and hydration stations. ADA Compliance – Ensure smooth, firm, slip-resistant surfaces and provide ADA-compliant curb ramps, crossings, and signage.</p>
<p>Bicyclist Mobility</p>	<p>Trail Width – Minimum 10–12 feet wide. Trail Surface – Consider the role of the trail as a resource for transportation, recreation, or both. Provide an appropriate surface, likely either asphalt or compacted gravel, depending on the role of the trail in the community. Wayfinding – Provide distance markers, directional signs to community destinations, and hazard warnings.</p>
<p>Environmental / Green Infrastructure</p>	<p>Surveillance and Emergency Call Boxes – Consider security cameras and emergency call stations at trailheads and isolated sections. Trees and Vegetation – Plant native trees and shrubs to provide shade and improve air quality. Stormwater Management – Place grass swales and small-scale bioretention systems to capture stormwater and improve aesthetics.</p>



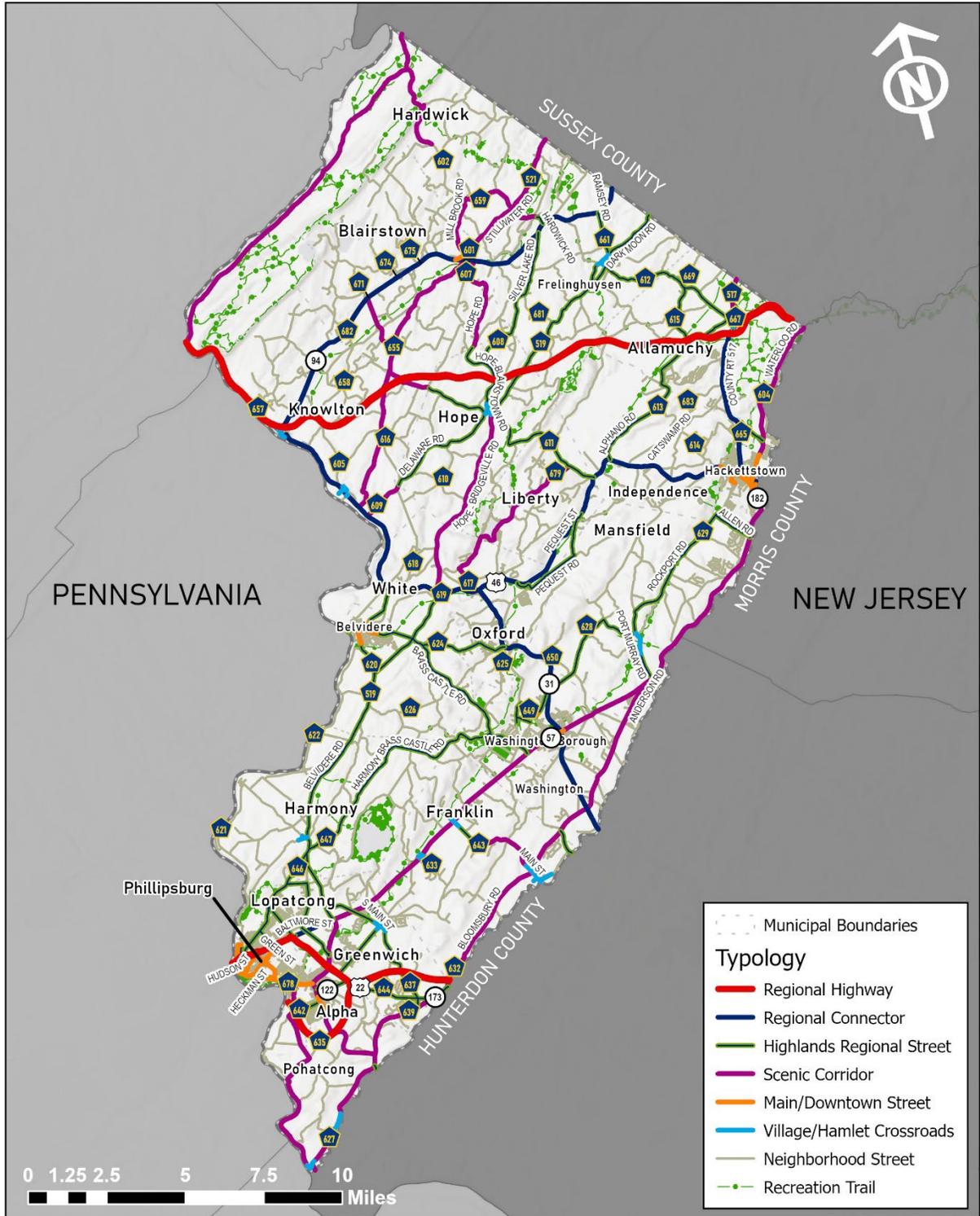
County Complete Streets Network

The street typologies build upon the functional classification of roads in Warren County and have been refined based on insights from case-study analyses, site-specific contexts, and the vision for Complete Streets within the County. The project team developed a Complete Street Network map to categorize and guide the development of various street types across the County (see Map 10: Draft Warren County Complete Street Network). As a street is considered for redesign, improvements, or development, the County and municipality should consider additional factors such as gateways, commercial areas, school zones, transition zones (between different street types) and transit integration in determining the overall vision for that street in Warren County. In addition to the County-wide network map (Map 11), the project team created more detailed maps (Maps 11-14) focusing on the larger townships in the County with denser street networks to provide a closer perspective.





Map 10: Warren County Street Network Map

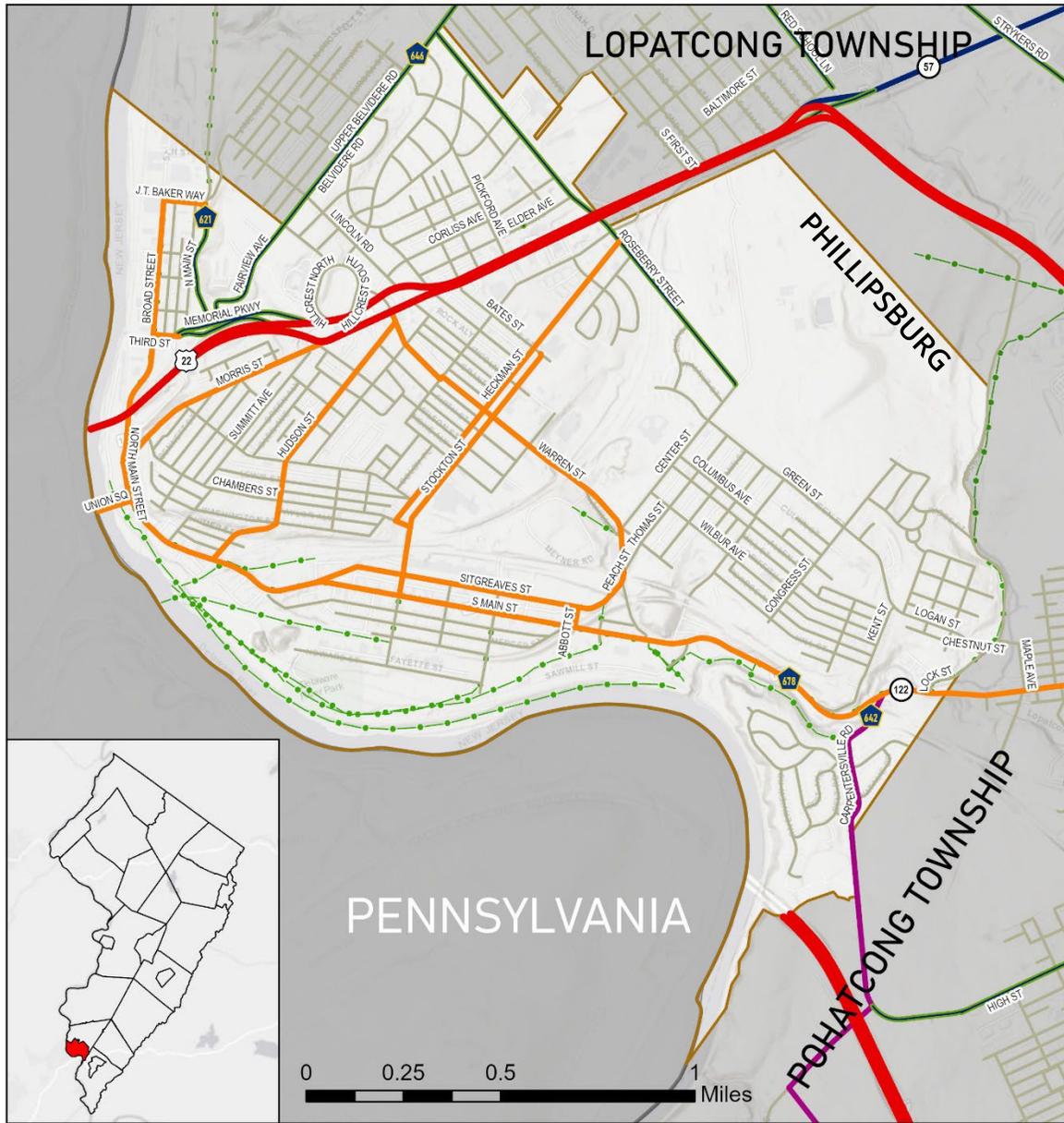


Layer Credits: NJOGIS, Warren County

Basemap Credits: Esri, NASA, NGA, USGS, State of New Jersey, Esri, HERE, Garmin, USGS, EPA, NPS



Map 11: Phillipsburg Complete Streets Network Map



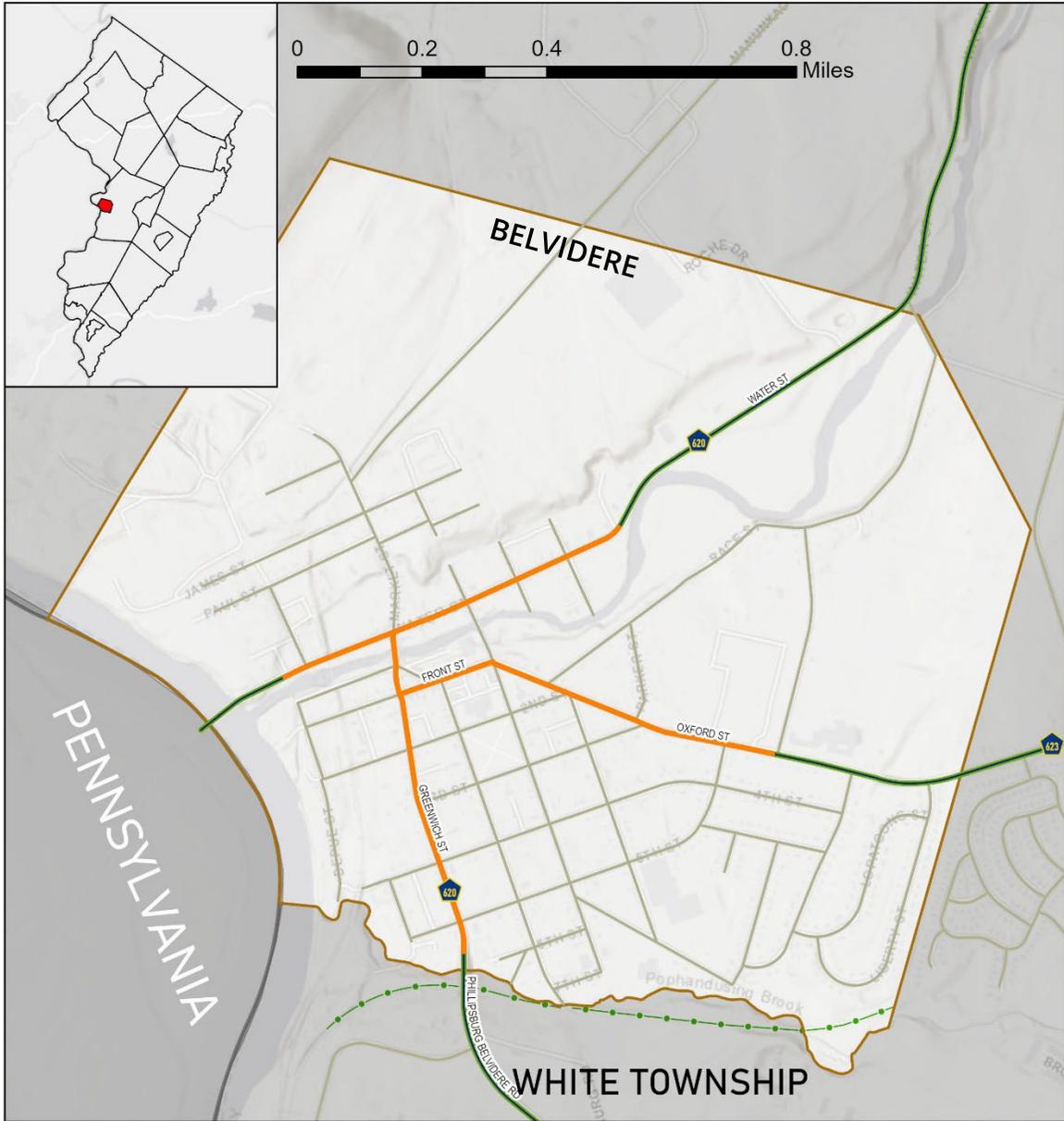
- Phillipsburg
- Warren County
- Typology**
- Regional Highway
- Regional Connector
- Highlands Regional Street
- Scenic Corridor
- Main/Downtown Street
- Village/Hamlet Crossroads
- Neighborhood Street
- Recreation Trail

Layer Credits: NJOGIS, Avenues in Motion
 Basemap Credits: Esri, NASA, NGA, USGS, FEMA, State of New Jersey, Esri, HERE, Garmin, GeoTechnologies, Inc., USGS, EPA, Esri, HERE, Garmin, USGS, EPA, NPS





Map 12: Belvidere Complete Streets Network Map



- Belvidere
- Warren County
- Typology
- Regional Highway
- Regional Connector
- Highlands Regional Street
- Scenic Corridor
- Main/Downtown Street
- Village/Hamlet Crossroads
- Neighborhood Street
- Recreation Trail

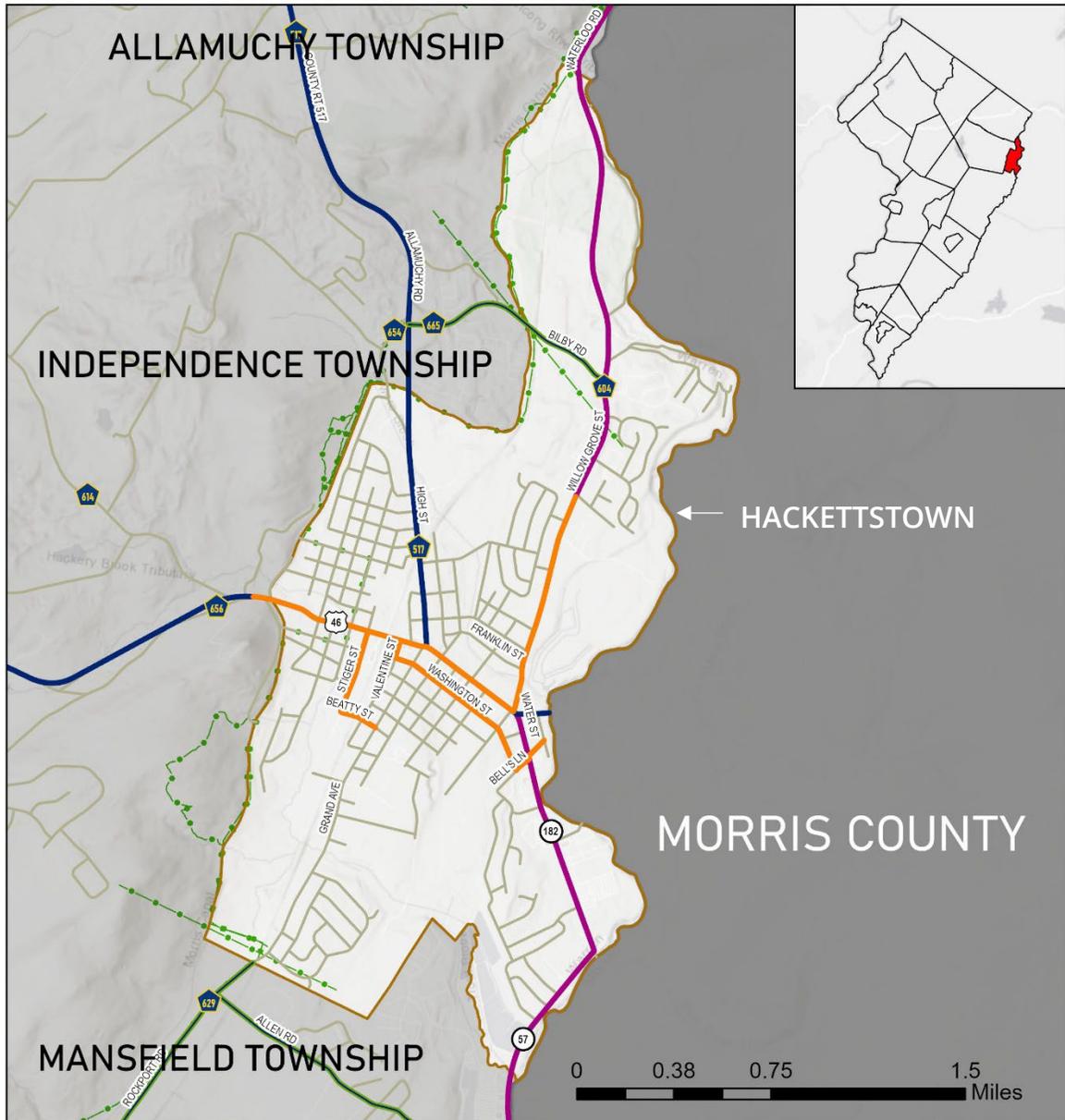
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Map 13: Hackettstown Complete Streets Network Map



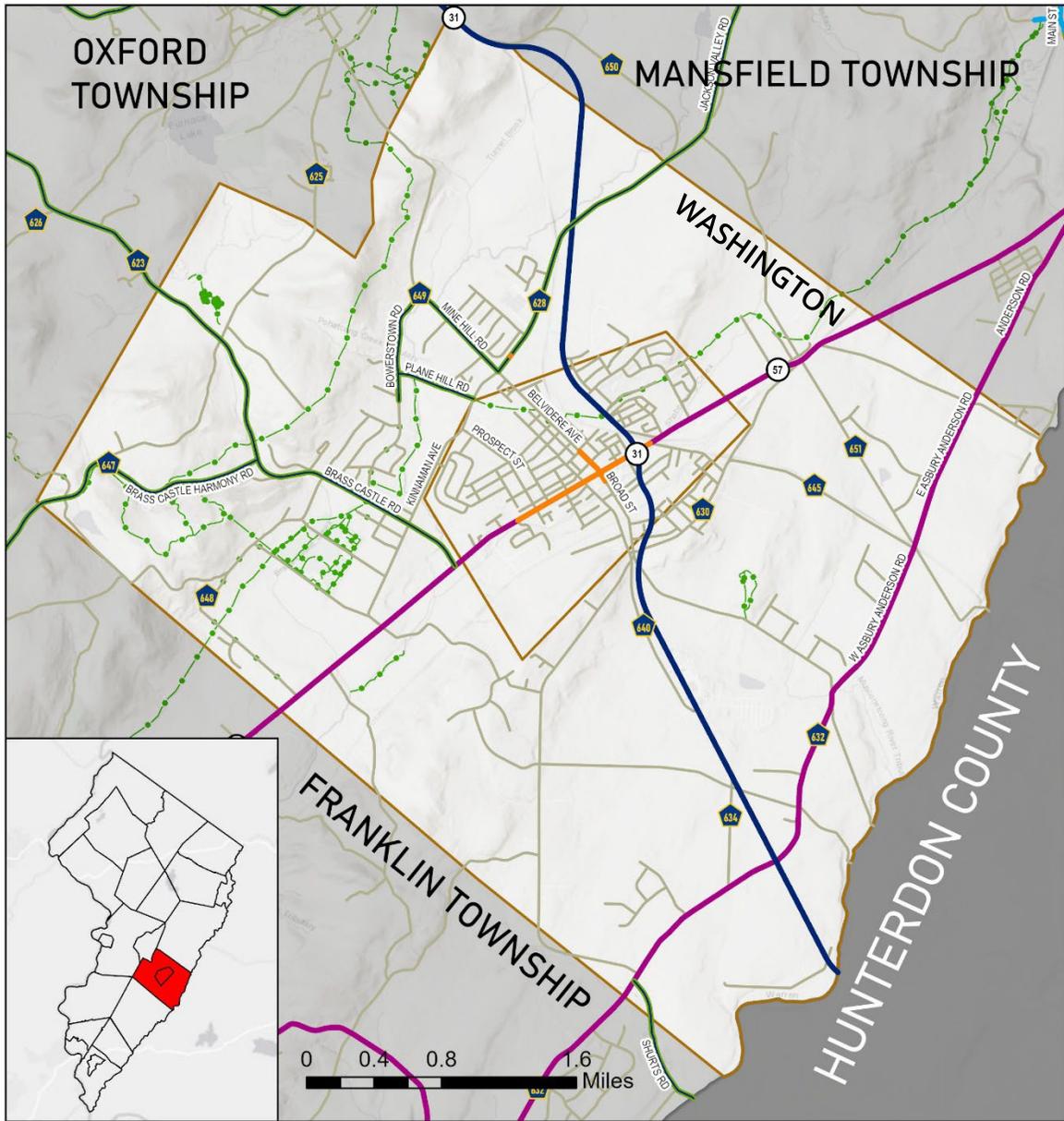
- Hackettstown
- Warren County
- Typology
- Regional Connector
- Highlands Regional Street
- Scenic Corridor
- Main/Downtown Street
- Village/Hamlet Crossroads
- Neighborhood Street
- Recreation Trail
- Regional Highway

Layer Credits: NJOGIS, Warren County, NJTPA
 Basemap Credits: Esri, NASA, NGA, USGS, FEMA, State of New Jersey, Esri, HERE, Garmin, GeoTechnologies, Inc., USGS, EPA, Esri, HERE, Garmin, USGS, EPA, NPS





Map 14: Washington Complete Streets Network Map



- Washington
- Warren County
- Typology**
- Regional Highway
- Regional Connector
- Highlands Regional Street
- Scenic Corridor
- Main/Downtown Street
- Village/Hamlet Crossroads
- Neighborhood Street
- Recreation Trail

Layer Credits: NJOGIS, Avenues in Motion
 Basemap Credits: Esri, NASA, NGA, USGS, FEMA, State of New Jersey, Esri, HERE, Garmin, GeoTechnologies, Inc., USGS, EPA, Esri, HERE, Garmin, USGS, EPA, NPS



Zoning Regulation Implementation: School Zone and Transition Area Overlays

Municipalities may consider school zone overlay zones and transition area overlay zones as part of future Complete Streets implementation s.

School Zone Overlay Zones

One tool for implementing Complete Streets strategies is a school zone overlay. This is an overlay zone that covers a specific radius around schools within a municipality. Within the zone there may be additional safety regulations, such as:

- Advanced warning signs
- Reduced speed limits
- Pavement and sidewalk markings
- High visibility crosswalks
- Enhanced lighting

Transition Area Overlay Zones

Transition areas are stretches of road between urban and rural areas. They contain elements of urban areas, including more pedestrians, but are often treated like rural roads with higher speeds and fewer safety interventions.

Municipalities should identify these areas and utilize Transition Area Overlay zones to incorporate additional safety interventions, recognizing that these places are used by pedestrians and should be safer and friendlier for modes of transportation other than automobiles.

Case Studies and Design Concepts

The project team prepared five case studies for specific roads in the County. These include:

- Willow Grove Street (CR 604) in Hackettstown.
- South Main Street (formerly CR 678) in Phillipsburg.
- Old Main Street (CR 643) in the Asbury section of Franklin Township.
- Asbury-Anderson Road (CR 632) in Washington and Mansfield Townships.
- County Route 620 in Belvidere and White Township.

Each case study provides existing conditions, a map indicating the case study area, and safety recommendations indicated visually using cross sections and plan view diagrams on aerial photographs, and narratively in a bulleted list.

These case studies incorporate recommendations from throughout this document into priority areas located in a variety of communities within Warren County. Case study locations were selected by the SAC and County staff to include a variety of roadway typologies and place types.



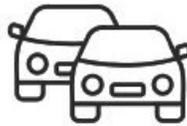
**CASE STUDY 1:
WILLOW GROVE STREET (CR 604), HACKETTSTOWN**

PROPOSED TYPE:
Main Street (south of Pine Street)
Regional Connector (north of Pine Street)

EXISTING CONDITIONS:



LENGTH: 1.3 miles



AADT: 8100



POSTED SPEED: 25 - 45 MPH

STREET VIEW:



CR 604 near Seber Street



CR 604 near Hackettstown Medical Center



Maple Ave near CR604

RECOMMENDATION MAP:





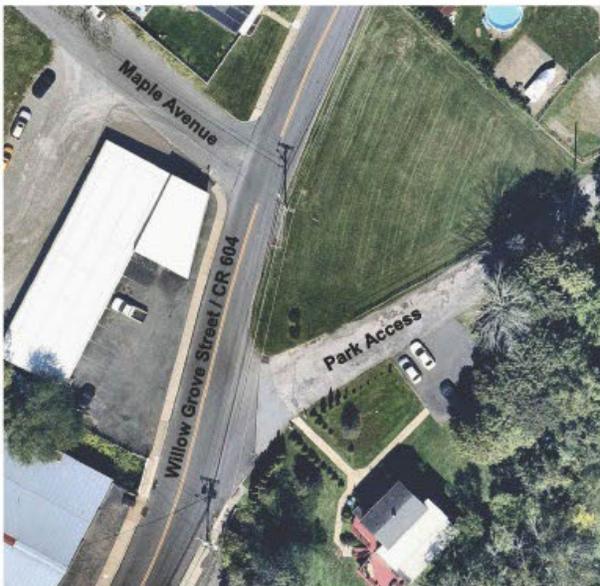
EXISTING CONDITIONS: CR 604 AT PINE STREET



PROPOSED INTERSECTION REDESIGN: CR 604 AT PINE STREET

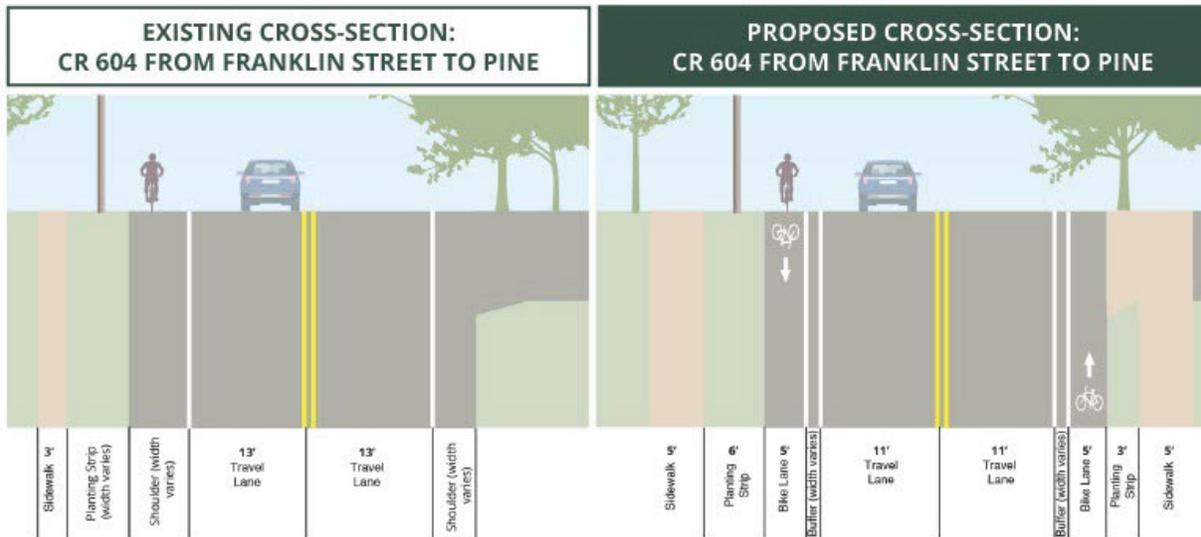


EXISTING CONDITIONS: CR 604 AT MAPLE AVENUE / PARK



PROPOSED REDESIGN: CR 604 AT MAPLE AVENUE / PARK ACCESS





RECOMMENDATIONS

- Fill sidewalk gaps on both sides of the road
- Add crosswalks at Bilby Road, Musky Ridge Drive, Seber Street, Connie Terrace, Franklin Street, and Maple Avenue, with curb extensions at all except Musky Ridge
- Add a gateway treatment at the intersection with Pine Street/Willow Grove Elementary School (or at designated change between Main Street and Regional Connector typologies)
- Stripe a bicycle lane from the gateway treatment to the intersection with Franklin Street, and add signage directing bicyclists to access Main Street using Franklin Street at that endpoint
- Add RRFBs to the Maple Avenue intersection and the Pine Street/elementary school driveway intersection (at a minimum)
- Consider a redesign of the road segment including both the Franklin Street and Maple Avenue intersections to ensure safe pedestrian crossing



CASE STUDY 2: SOUTH MAIN STREET, PHILLIPSBURG

PROPOSED TYPE:
Main Street

EXISTING CONDITIONS:



LENGTH: 1.5 miles



AADT: 8600



POSTED SPEED: 25 MPH

STREET VIEW:



South Main Street near Stockton

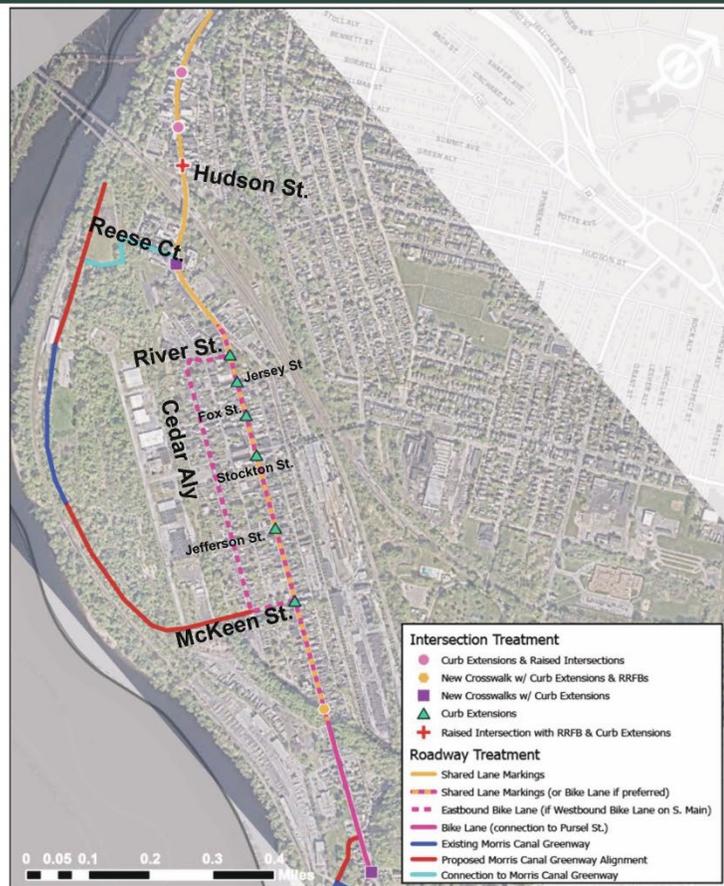


South Main Street at East Mercer Street



Abbott Street near South Main Street

RECOMMENDATION MAP:



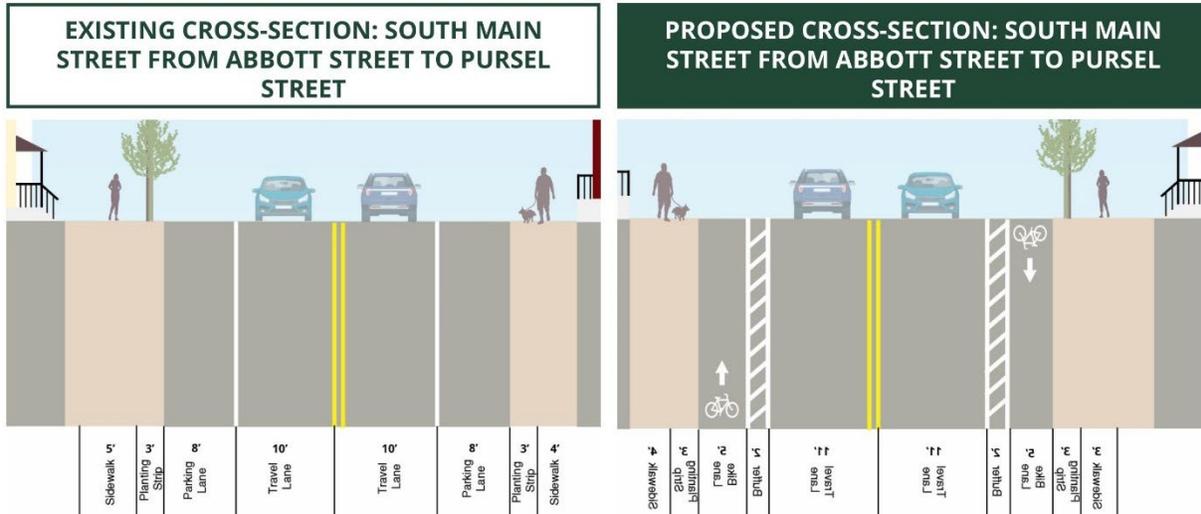


EXISTING CONDITIONS: SOUTH MAIN STREET AT [EAST] MERCER STREET / ABBOTT STREET



PROPOSED INTERSECTION REDESIGN: SOUTH MAIN STREET AT [EAST] MERCER STREET / ABBOTT STREET





RECOMMENDATIONS

- Add crosswalks across South Main Street at both ends of Mercer Street, as well as Purse Street
- Use curb extensions at all crosswalks, and ensure all crosswalks (existing and proposed) use the high-visibility pattern
- Raise crosswalks between Union Square and Sitgreaves Street for traffic calming
- Implement bicycle infrastructure in varying forms along the corridor:
 - From Purse Street to Abbott Street, bike lanes on both sides of the road
 - From Abbott Street to Mercer Street (west), consider multiple alternatives:
 - If bike lanes are desired, there will be a loss of street parking due to the limited roadway width. Three options are possible:
 - Continue bike lanes to Mercer Street (west)
 - Split the bike lanes between South Main Street and Sitgreaves Street
 - One option is to have the westbound bike lane use Abbott Street and Sitgreaves Street and the eastbound bike lane use South Main Street.
 - The other is to have the westbound bike lane use South Main Street and the eastbound bike lane navigate on to Mercer Street and use McKeen Street to rejoin South Main Street.
 - The first option uses an extra block of roadway for one-way bike lanes on South Main Street, which saves some street parking. The second option uses McKeen Street, which is identified as an on-road Morris Canal Greenway segment (along with South Main Street east of its intersection with McKeen). Developing on-road active transportation on McKeen Street would further the development of the Morris Canal Greenway, even if just by a block.
 - From Mercer Street (west) to Union Square, shared lane marking
- RRFBs should be added at priority locations, possibly:
 - Hudson Street, due to downhill traffic off the truss railroad bridge
 - Abbott Street/Mercer Street

Consider reconfiguration of the intersection with Sitgreaves Street to widen the angle of approach from Sitgreaves Street and reduce the width of open asphalt



CASE STUDY 3: OLD MAIN STREET, ASBURY (FRANKLIN TWP)

PROPOSED TYPE:
Village/Hamlet Crossroads

EXISTING CONDITIONS:



LENGTH: ±0.4 miles



AADT: 2100



POSTED SPEED: 25 MPH

STREET VIEW:



Old Main St (CR 643) near Stockton Street

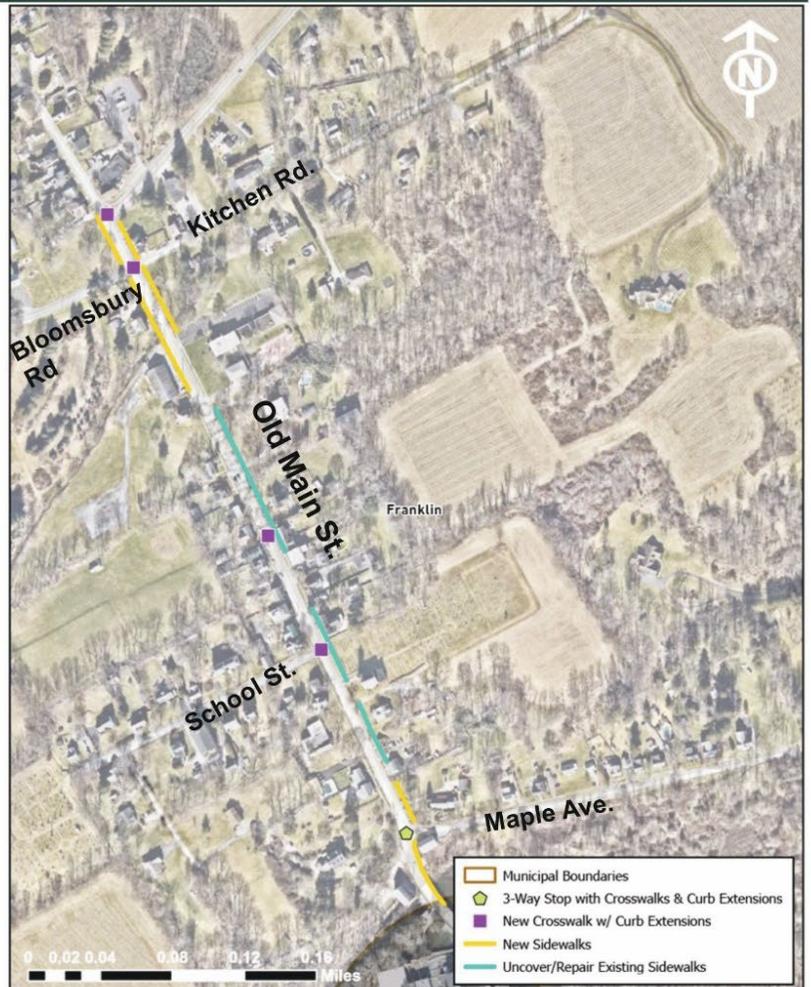


Maple Ave near Old Main St (CR643)



School St near Old Main St (CR643)

RECOMMENDATION MAP:



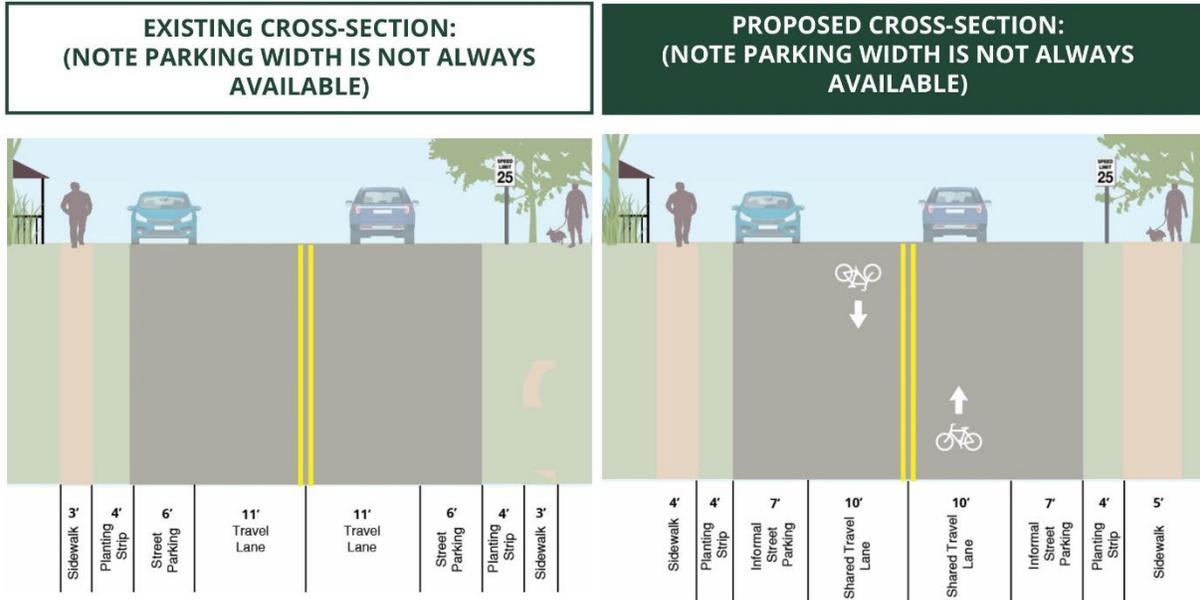


**EXISTING CONDITIONS:
OLD MAIN STREET (CR 643)**



**PROPOSED INTERSECTION REDESIGN:
OLD MAIN STREET (CR 643)**





RECOMMENDATIONS

- Revisit the configuration of the CR 632 intersection(s). Ideas could range from simply adding crosswalks where they are most necessary or could go as far as a realignment to directly connect the two CR 632 segments. In either case, turning radii should be evaluated, particularly on the western side.
- On the eastern side of the road, grass should be cut away from the sidewalks. Many of these sidewalks are fully engulfed in grass, which significantly limits pedestrian mobility.
- Shared lane markings should be placed along the corridor, as it is a low-speed, low-volume roadway and likely does not require a dedicated bike lane.
- Sidewalk gaps should be filled, specifically north of the fire station and near the Musconetcong Watershed Association headquarters. At the latter there are summer camps and several recreational open spaces that are likely to drive pedestrian traffic.
- A “gateway” treatment should be considered to encourage context-appropriate driver behavior.
- This may be most appropriate at the northern point of this segment, where a steep downhill grade may encourage southbound CR 643 drivers to enter the subject corridor at high speeds. Any design at this location should not obstruct heavy vehicle turning motions.
- Crosswalks should be considered at the CR 632 intersection(s) and at School Street, as well as mid-block at the access point for the Franklin Township field. At all these locations, they should be accompanied by curb extensions.
- At the intersection with Maple Avenue, stop signs at all approaches and curb extensions should be added.



CASE STUDY 4: ASBURY-ANDERSON ROAD, WASHINGTON TWP/MANSFIELD

PROPOSED TYPE:
Scenic Corridor

EXISTING CONDITIONS:



LENGTH: ±4.5 miles



AADT: 4,400 - 5,000



POSTED SPEED: 45 MPH

STREET VIEW:



CR 632 near Saddlebrook Road

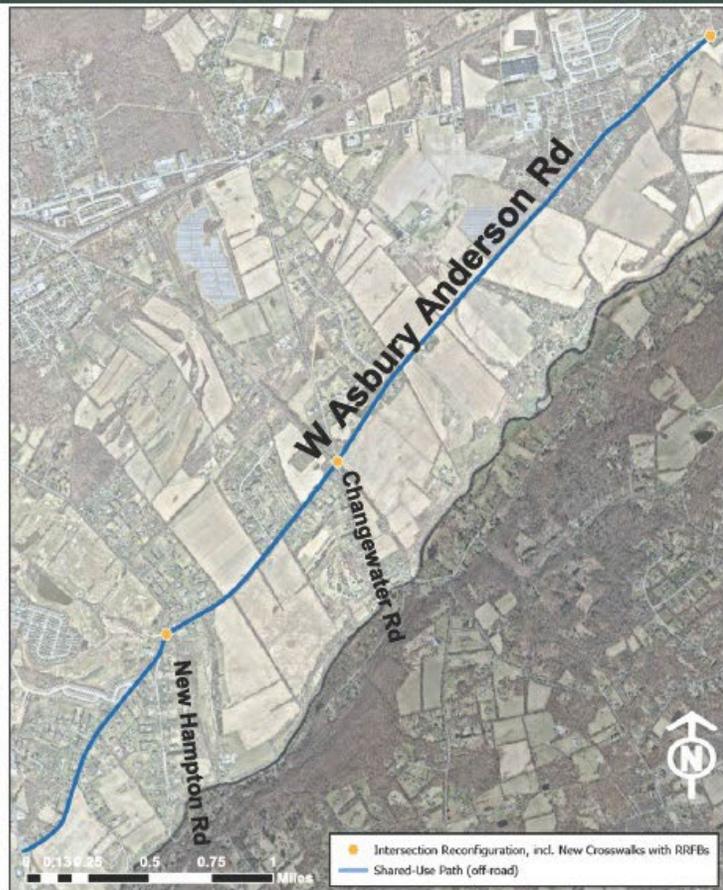


Changewater Rd near CR632



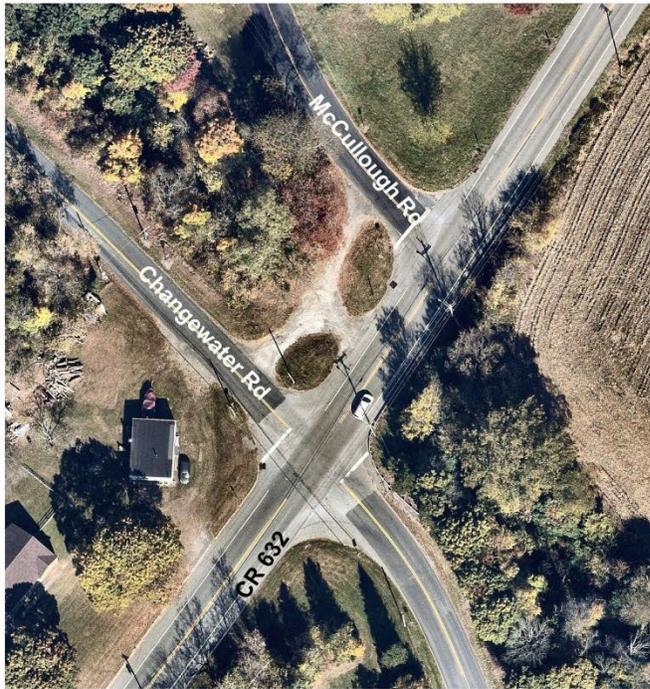
McCullough Rd near CR632

RECOMMENDATION MAP:



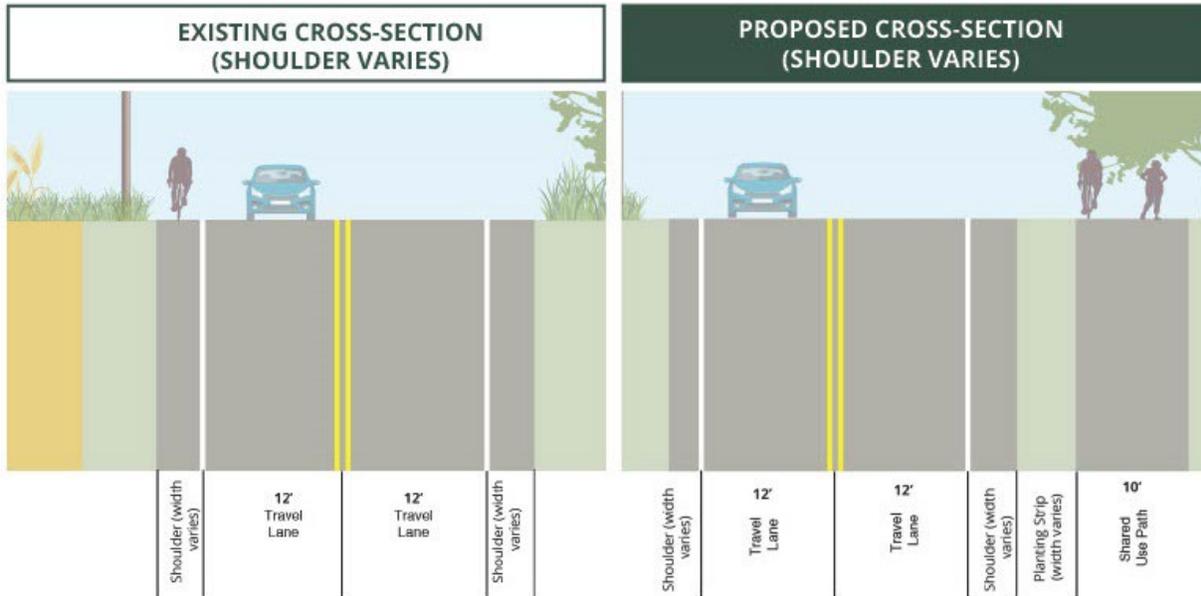


**EXISTING CONDITIONS:
CR 632 AT THE INTERSECTIONS OF
MCCULLOUGH AND CHANGEWATER ROADS**



**PROPOSED INTERSECTION REDESIGN:
CR 632 AT THE INTERSECTIONS OF
MCCULLOUGH AND CHANGEWATER ROADS**





RECOMMENDATIONS

- Add an off-road shared-use path for the full length of the road segment, preferably on the south side of the road since it appears wider ROW is available
- Provide crosswalks with Rectangular Rapid Flashing Beacons (RRFBs) at Springtown Road and at Changewater Road/McCullough Road
- Make the crosswalk at NJ-31 a high-visibility crosswalk and provide north-south crosswalks across Asbury-Anderson Road
- Reconfigure the intersections of Asbury-Anderson Road with Springtown Road and with NJ-57 to create right-angled approaches
- Consider adding/improving lighting at all crosswalks
- Consider adding wayfinding signage, particularly at Changewater Road and at Springtown Road directing people to Washington Borough
- Encourage any new developments at the intersection at NJ-31 to include active transportation facilities (paths, sidewalks) in site plans, as well as connections to the proposed shared-use path



CASE STUDY 5: CR 620, BELVIDERE & WHITE

PROPOSED TYPE:

Main Street (between 5th Street & Howell Street)

Regional Connector (remainder of road segment)

EXISTING CONDITIONS:



LENGTH: 3.3 miles



AADT: 4200 - 4250



POSTED SPEED: 25 - 45 MPH

STREET VIEW:



CR 620 near 2nd Street

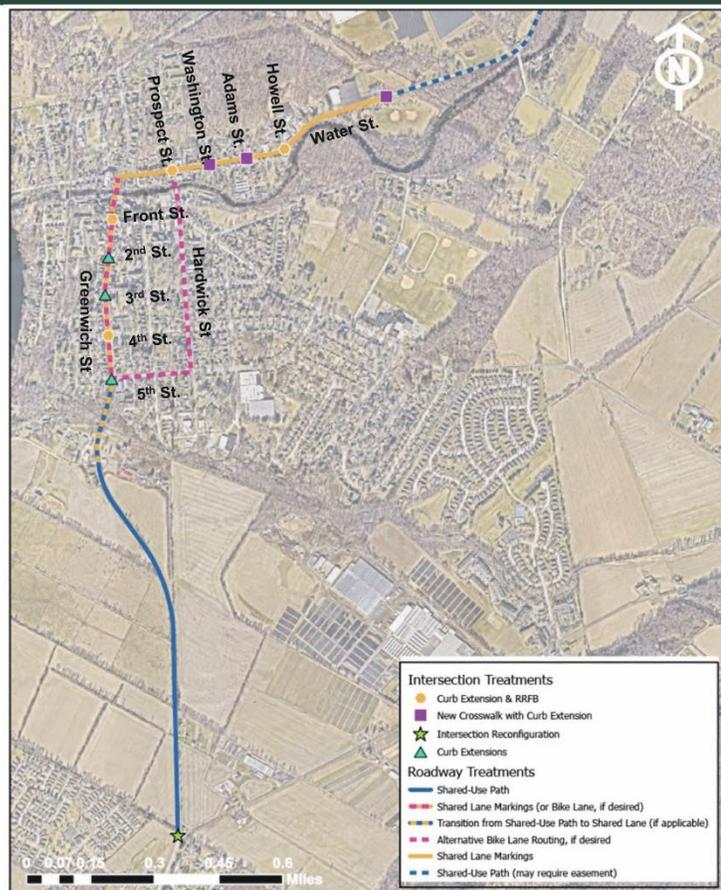


CR 620 near Old Phillipsburg Belvidere



Greenwich St near CR620

RECOMMENDATION MAP:





**EXISTING CONDITIONS: GREENWICH STREET
STREET
(CR 620) AT 5TH STREET, BELVIDERE**



**PROPOSED INTERSECTION
REDESIGN A: SHARED LANES**

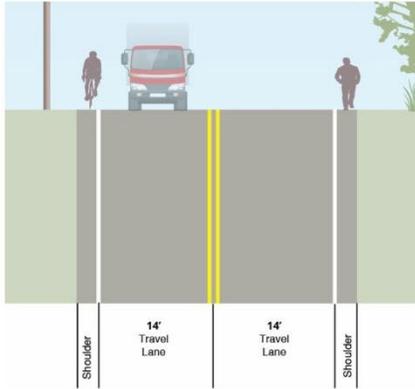


**PROPOSED INTERSECTION REDESIGN
B: PARKING-PROTECTED BIKE LANES
(ON GREENWICH STREET & HARDWICK)**

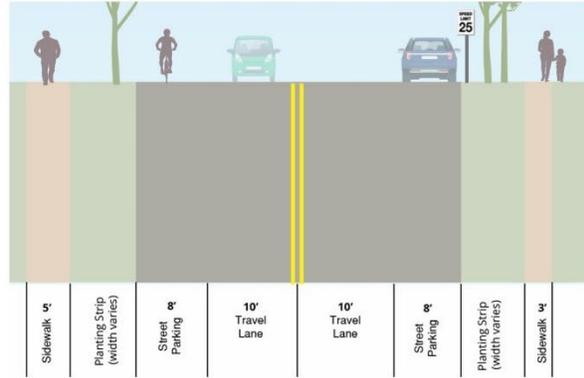




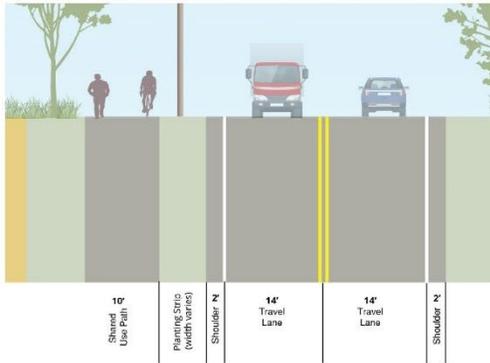
EXISTING CROSS-SECTION: BELVIDERE ROAD SOUTH OF FOUL RIFT ROAD



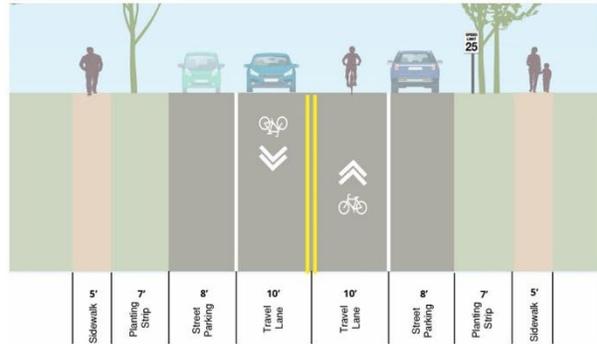
EXISTING CROSS-SECTION: GREENWICH STREET



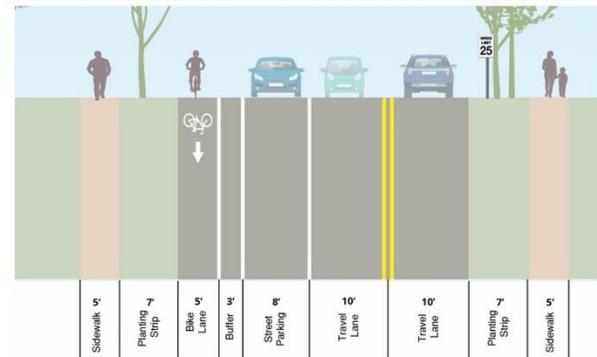
PROPOSED CROSS-SECTION: BELVIDERE ROAD (CR 620) IN WHITE TWP



PROPOSED CROSS-SECTION: GREENWICH STREET



ALTERNATIVE PROPOSED CROSS-SECTION: GREENWICH STREET





RECOMMENDATIONS

- Add a shared-use path between CR 519 and Foul Rift Road and between the municipal building and US-46 (latter segment may require easement)
- Add shared lane markings between 5th Street and the municipal building, through downtown
- Alternatively, consider bike lanes either split between Greenwich Street and Hardwick Street, or a cycle track along Greenwich Street
- Create a transition between the shared-use path and whichever treatment is chosen for Greenwich Street and lower speed limits between Foul Rift Road and 5th Street
- Add crosswalks at Adams Street, Washington Street, and the municipal building
- Add RRFBs to crosswalks at 4th Street, Front Street, and Howell Street
- Add curb extensions to all crosswalks and repaint in a high-visibility pattern
- Consider bicycle and pedestrian connectivity to the county building in a reconfiguration at CR 519 – potential roundabout location



Recommendations Relating to Freight and Emergency Vehicles

Accommodating freight and emergency vehicles such as fire trucks in Complete Streets design presents a complex challenge that jurisdictions across the United States are addressing through a diverse range of solutions. The following challenges and solutions span from short-term, quickly implementable measures to long-term strategies requiring extensive collaboration and planning. Some solutions, such as adjusting curb management or implementing new loading zone policies, can be relatively quick to deploy. Others, like major infrastructure changes or the development of comprehensive freight plans, may require significant time, resources, and collaboration among various stakeholders. This multifaceted approach allows jurisdictions to address immediate concerns while also working towards more comprehensive, sustainable solutions for integrating freight and emergency vehicle operations into Complete Streets designs.

Recommended strategies include selecting appropriate design vehicle, providing adequate space for large turn vehicles, reducing conflicts between freight vehicles and vulnerable users, reducing speeds, improving network connectivity and redundancy, providing adequate space for freight and emergency functions including parking and loading, and curb and building access. More detail is provided below.

- Select an appropriate design vehicle
 - Balance the needs of large vehicles with those of other road users
 - Consider both the control vehicle (largest expected) and the design vehicle (frequent user)
 - Evaluate trade-offs between accommodating large vehicles and pedestrian safety
- Provide adequate space for large vehicle turns
 - Design intersections with sufficient turning radii for trucks and emergency vehicles
 - Use strategies like recessed stop lines and mountable curbs to facilitate turns while maintaining reduced crosswalk lengths
 - Consider truck aprons and channelized right-turn lanes where appropriate
- Reduce conflicts with vulnerable roadway users
 - Implement separated bicycle lanes and pedestrian refuge islands
 - Use truck side guards and enhanced driver visibility to improve safety
 - Design loading zones to minimize interactions with pedestrians and cyclists
- Safely reduce speeds



- Utilize speed cushions instead of speed humps to accommodate emergency vehicles
- Implement narrowed lanes and visual cues to naturally reduce speeds
- Consider emergency response times when implementing traffic calming measures
- Provide network connectivity and redundancy
 - Maintain multiple route options for emergency vehicle access
 - Avoid permanent closures that could impact response times
 - Design median treatments to allow emergency vehicle passage
- Provide adequate space for parking, loading, and emergency response operations
 - Designate sufficient curb space for commercial loading activities
 - Implement flexible curb use policies to maximize efficiency
 - Ensure adequate space for emergency vehicles to park and operate at incident scenes
- Provide curb and building access
 - Design sidewalks and ADA-compliant curb ramps to accommodate delivery handcarts
 - Consider building service entrances in site planning and street design
 - Implement clear zones near building entrances for emergency access

Proposed Regional Active Transportation Network

It is recommended that municipalities and the County work towards implementing potential road and trail corridor connections identified in NJTPA's Active Transportation Plan³. The Regional Active Transportation Network created for the NJTPA Regional Active Transportation Plan identifies potential road and trail corridors that connect key activity centers across the region. The conceptual network identified two key existing linkages by trail in Warren County: 1) the Morris Canal Greenway, forming a spine from Hackettstown to Phillipsburg through Washington; and 2) the Paulinskill Valley Trail in Hardwick, Blirstown, and Knowlton. The former consists of both on-road and off-road options and connects much of the concentrated development in Warren County. However, neither trail serves Belvidere, which is a significant town center in the County. Belvidere is also the County seat and is therefore home to many critical resources such as the courthouse, County offices and more.

³ <https://www.njtpa.org/ActiveTransportation>



The conceptual network also identifies potential active transportation corridors centered on existing roads, including Heller Hill Road/Stillwater Road, Hope-Bridgeville Road/Belvidere Road (CR 519), High Street/Allamuchy Road (CR 517), NJ-57, 3rd Avenue /Springtown Road (CR 519), NJ-31, NJ-173, Rockport Road (CR 629), Jackson Valley Road (CR 628), and Mountain Lake Road (CR 679). These routes connect not only Belvidere but also Blirstown, Liberty, Hope, Lopatcong, Greenwich, and Alpha. These connections should be strongly considered as locations for case studies and potential improvements.

Local Safety Action Plan

Connect Warren County was prepared concurrently with the Warren County Local Safety Action Plan (LSAP). An LSAP is a proven safety countermeasure that provides a blueprint for reducing fatal and serious injury crashes on County and local roads. The LSAP process included several required elements, including: coordinating a Local Implementation Committee (LIC) to oversee plan development and implementation; conducting public and stakeholder outreach; identifying and analyzing roadway safety improvements on local roads; and prioritizing site-specific and systemic safety improvements, including Complete Streets recommendations.

The goals of Connect Warren County and the LSAP are complementary, and the two plans include overlapping strategies, recommendations, and priority locations. Warren County and its constituent municipalities can use both plans together to address road safety priorities while also improving multimodal accessibility.

Towards A Safe and Connected Warren County

The recommendations in the Connect Warren County Plan provide concrete and actionable guidance for regulatory updates and amendments, street design, and maintenance that, if implemented collectively by the County and its state and municipal partners, will incrementally and systematically build Complete Street networks project by project. The Action Plan lays out a set of strategies and tools that the County and its partners can use to adopt and implement Complete Streets in a systematic, consistent, and complementary way.

The Plan provides the necessary framework for collaboration among all roadway jurisdictions. Working together, the County and its partners can make steady progress towards achieving the Warren County Complete Streets Vision and create a safer and connected Warren County as it navigates a future of growth and change.

Complete Streets is a transportation planning and design approach formulated to guide future growth in a manner that protects and even enhances the County's tremendous assets. Complete Street networks that include the County's scenic roads and trails will improve connectivity, safety, and accessibility for residents and visitors alike to enjoy the County's natural beauty for future generations. Additionally, Complete Streets is a tool to manage the growth of the logistics and light industry sectors by creating roads that accommodate users of all ages and abilities and offer safer streets and smarter travel patterns to facilitate growth while protecting all travelers.



Figure 29. Greenwich Street (CR 638) Side Path in Greenwich Township



Appendices

Appendix A: County Highway and Bridge Standards Recommendations

Appendix B: County Complete Streets Policy

Appendix C: County Complete Streets Resolution

Appendix D: Draft Complete Streets Model Policy

Appendix E: Draft Complete Streets Resolution

Appendix F: Draft Complete Streets Checklists

F1. Concept Development Checklist

F2. Preliminary Engineering Checklist

F3. Construction Checklist

F4. Maintenance Checklist

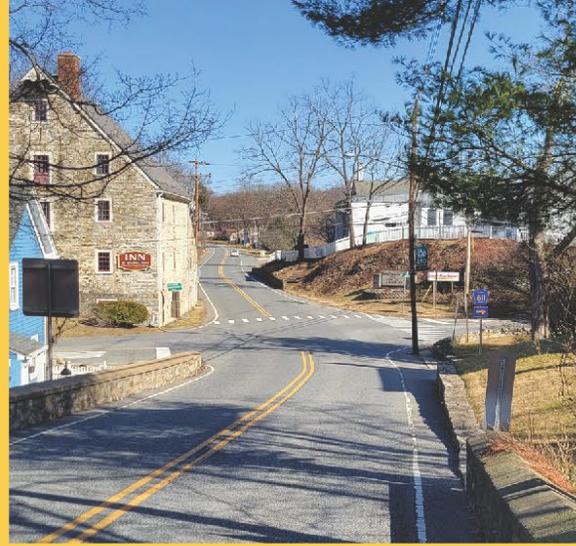
Appendix G: Visual Guide to Design Treatments

Appendix H: Funding Sources

Other technical memoranda are on file with Warren County and the NJTPA:

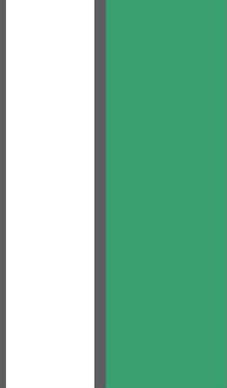
- Stakeholder Outreach Summary
- Literature Review
- Multimodal Inventory
- Crash Summary
- Complete Streets Best Practices and Municipal Regulations Review
- Demographic Analysis
- Needs Assessment and Street Typology





Connect Warren County

Safe, accessible, efficient, functional travel for all



COUNTY OF WARREN
NEW JERSEY
NJTPA



Connect Warren County



Safe, equitable, efficient, sustainable travel for all