Disclaimer

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Abstract

BIKEPassaicCounty proposes a county-wide multimodal network that meets the needs of all ages, all abilities, and all trip purposes, with particular emphasis on equity and safety. The plan proposes 311 miles of bicycle facilities to be advanced by Passaic County and municipal partners, with a program of supporting strategies and policies. *BIKEPassaicCounty* will become a task force whose mission will be to advance the implementation of the plan's projects, policies, and programs.

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We Need Your Input!
Help guide future bicycling improvements in Passaic County. Visit the project website to take a survey and sign up for updates.
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publicinput.com/bikepassaiccounty
Necesitamos Su Opinión!
Ayude a guiar las futuras mejoras en el uso de bicicletas en el condado de Passaic. Visite el sitio web del proyecto para completar una encuesta y registrarse para recibir actualizaciones.
Scan QR code to access website / Escanear el código para acceder al sitio web
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Executive Summary

BIKEPassaicCounty serves as a guide to developing a comprehensive multimodal mobility network that meets the needs of all ages, all abilities, and all trip purposes, with particular emphasis on equity and safety.

BIKEPassaicCounty was initiated by the Passaic County Department of Planning & Economic Development (County) in partnership with the North Jersey Transportation Planning Authority (NJTPA).

Community Engagement

BIKEPassaicCounty was focused on listening and fostering dialogue with stakeholders, rather than just talking at them, and community engagement was designed to gain a better understanding of local and regional priorities, needs and barriers to bicycling, and potential partnership opportunities to encourage and improve bicycling.

Passaic County has a diverse population, with many minority, foreign born, low-income residents, particularly in the southeast portion of the county. Community engagement efforts were designed to be inclusive.

To accommodate the changing restrictions of COVID-19 and reach a broader spectrum of participants, *BIKEPassaicCounty* used a mix of in-person and virtual engagement opportunities, including virtual public meetings, project web site, online questionnaires, virtual interactive mapping, and numerous in-person, and pop-up events. Study materials were provided in Spanish to engage the large Spanish speaking community. . The project team participated in at least 14 community events across Passaic County, interacting with hundreds of stakeholders and event participants.

Summary of findings and comments include:

- Respondents strongly support the plan vision to make bicycling safe, convenient, and enjoyable for people of all ages and abilities.
- Many would bike more if there were more bicycle lanes, paths, and trails in Passaic County.
- High-speed, high-volume traffic, aggressive motorist behavior, and poor roadway conditions deter many people from bicycling more.
- A strong preference was indicated for trails separated from motor vehicle traffic.
- Bicycle related education and open streets events are a priority for many.

EXISTING CONDITIONS

Passaic County currently has just 14.4 miles of existing bicycle facilities, including 5.9 miles of bike lanes, 1.9 miles of buffered bike lanes, and 6.7 miles of sharrows.

Previous reports, plans and studies – Including municipal Complete Streets policies, Morris Canal Greenway and Highland Trail studies, and the transportation element of the county's Master Plan – were reviewed to provide context and help compile existing recommendations to inform BIKEPassaicCounty.

During the six-year analysis period (2014-2019), 620 bicycle crashes were reported, about 103 per year; 16 of which resulted in serious injuries and three in fatalities; two of the three fatalities occurred in Paterson.

Reported bicycle crashes occur more frequently at intersections than statewide averages. Dedicated bicycle facilities such as bike lanes and separated bicycle facilities are among the improvements that may lessen bicycle crash risk at intersections by providing dedicated space for cyclists fully separated from motor vehicle travel lanes and turning lanes.

Greater percentages of reported bicycle crashes occur on county and municipal roadways than statewide averages, heightening the responsibility for addressing bicycle safety by Passaic County and its constituent municipalities. Reported bicycle crashes are very rare on state highways in Passaic County, due in part to the prevalence of complex geometrics, challenging highway ramps, and busy, high volume, four-lane state-owned roadway configurations, which limit their accessibility for most bicycle riders.

The analysis shows that Passaic County's roadway network presents a very stressful environment for many bicycle trips, with a prevalence of higher-stress roadways introducing significant barriers and gaps in mobility and access.

These conditions create an island effect, with numerous small but isolated low-stress "islands" frequently disconnected from adjacent areas and neighborhoods with the net effect of allowing for very local bicycle trips only within neighborhoods, and limiting access to key destinations and attractions.

This is consistent with comments and observations from the public and stakeholders; many indicated that they are unable or uncomfortable to range beyond their own streets and neighborhoods by bicycle due to safety concerns such as exposure to high traffic volumes, speeds, large trucks and busses, and aggressive and inattentive driving behaviors.

PLAN IMPLEMENTATION

Implementing *BIKEPassaicCounty* will take place one roadway segment and one new bicycle facility at a time, and require collaboration and consensus among a range of stakeholders and participants.

Plan implementation is supported by five plan elements: design guidance, the proposed county bicycle network, concept level plans, strategies, and implementation committee.

Design Guidance

The New Jersey Complete Streets Design Guide's bikeway selection process was used to identify candidate bicycle improvements. A Pattern Book was developed as part of this study to present various design options, ranging from on-street bicycle lanes to off-street side paths and trails. Together, the Complete Streets Design Guide and Pattern Book create a uniform process for selecting appropriate facility types and ensure consistency of design and implementation.

Proposed Passaic County Bicycle Network

The proposed network details the types of bike facilities needed to provide mobility and safety for bicyclists across Passaic County. The proposed county bicycle network would include 311 miles of dedicated bicycle facilities, with a variety of facility types on state, county, and local roadways. See Figures E-1 and E2.

Concept Level Plans

The concept level plans address12 priority locations distributed across Passaic County. Each concept level plan serves as a basis for building consensus and support for development of funding and grant applications for design and construction.

BIKEPassaicCounty Implementation Committee

To move *BIKEPassaicCounty* beyond a paper plan sitting on a shelf, an implementation committee is proposed to track the plan's progress, secure funding opportunities, and work with stakeholders and to advance implementation of the priority network and strategies.

Strategies Matrix: Policies, Plans, and Programs

The Strategy Matrix (Table E-1) summarizes the policy, planning, and program recommendations and identifies the specific goals that are addressed and advanced by each strategy. The matrix demonstrates the relationship between each strategy and plan goals and is designed to help local partners implement recommendations in their communities.

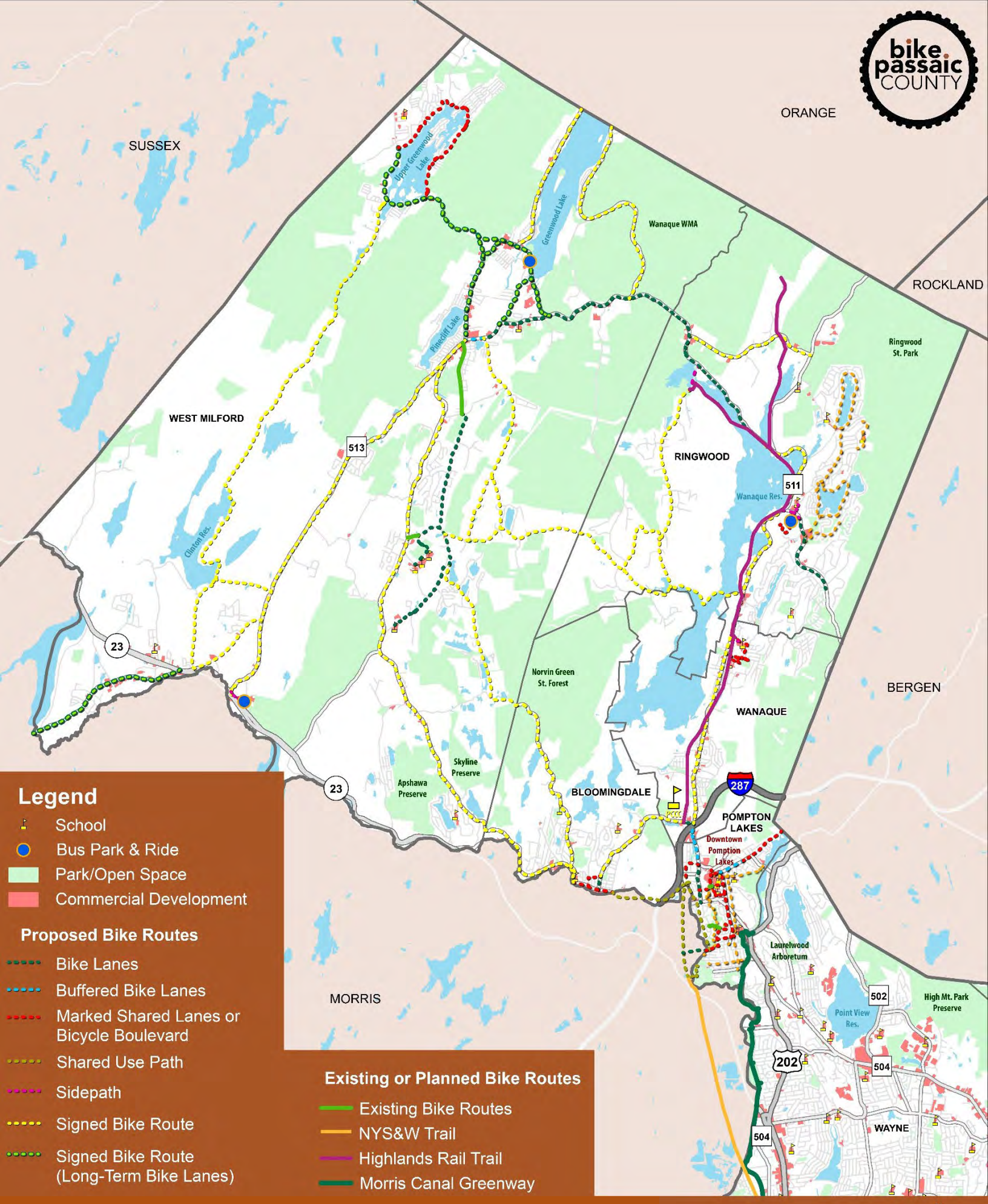


Figure E1: Proposed County Bicycle Network, Northwest

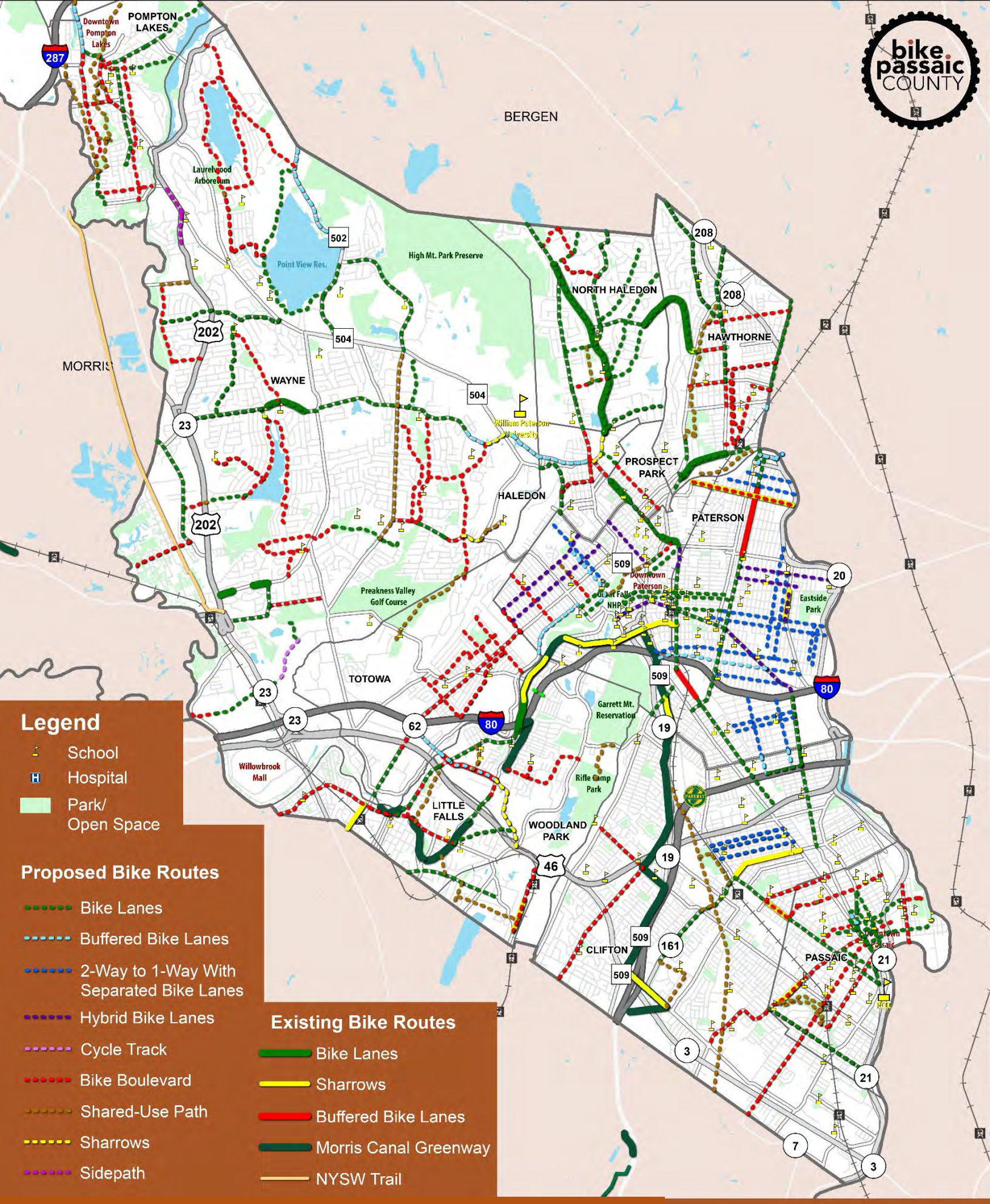


Figure E2: Proposed County Bicycle Network, Southeast

Table E1: BIKEPassaicCounty: Summary Strategy Matrix

POLICY, PLANNING, AND PROGRAM STRATEGIES
A: Municipalities should adopt a Complete and Green Street Policy
B: Develop bicycle facility maintenance procedures
C: Establish a Bicycle/Pedestrian or Complete Streets Advisory Committees
D: Incorporate bicycle needs into zoning, land use, and development review
E: Ensure consistency with municipal Master Plans and Elements
F: Create a Vision Zero Action Plans to eliminating severe injury and fatal crashes
G: Conduct Bike/Ped Road Safety Audits and Assessments
H: Coordinate transportation and land use through corridor planning
I: Integrate opportunities for bicycle improvements into Climate Action Plans
J: Support organizations that provide driver and bicycle education and workshops
K: Work with advocacy groups and law enforcement to inform the public about bicycle related laws and changes to new laws
M: Participate in and support Safe Routes to School and Bike Month activities
N: Engage local groups to develop and implement an Open Streets event
O: Work with police and local businesses to develop positive ticketing programs
P: Consider piloting a bike and micromobility share program
Q: Create low-cost opportunities to borrow or purchase bikes, e-bikes, and tools
R: Partner with non-profits to provide free bikes as incentives for education
S: Explore opportunities to install fix-it stations
T: Coordinate with NJ TRANSIT to improve bicycle access and parking at stations
U: Develop a plan for bicycle wayfinding signage
V: Work with partners to support demonstration and pilot projects
W: Targeted Lower Speed Limits and Right Turn on Red Prohibitions
X: Slow Speed Zones
Y: Targeted road diet applications
Z: Targeted one-way to two-way street conversions

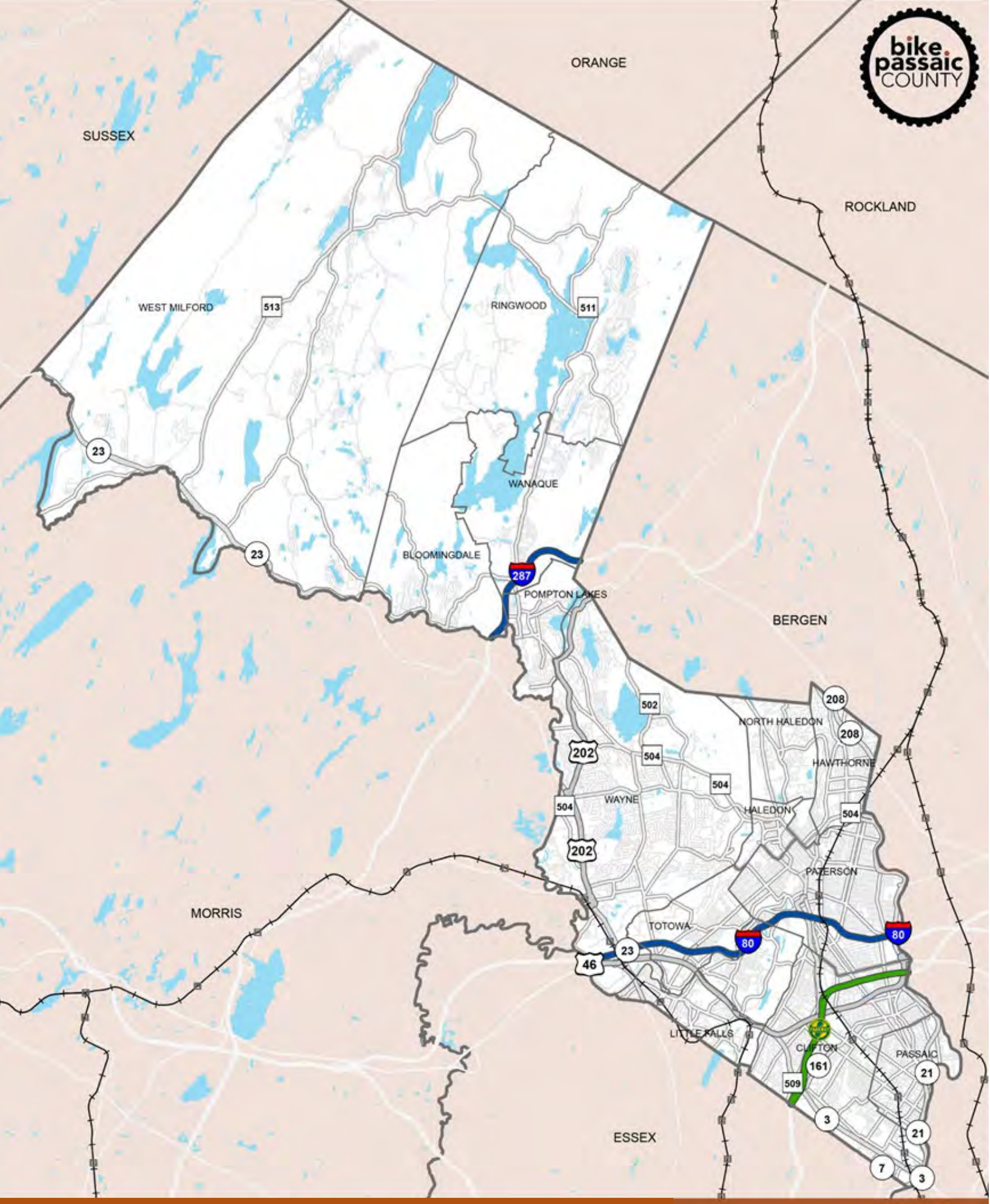


Figure 1: Passaic County, New Jersey

Introduction to *BIKEPassaicCounty*

BIKEPassaicCounty serves as a guide to developing a comprehensive multimodal mobility network that meets the needs of all ages, all abilities, and all trip purposes, with particular emphasis on equity, vulnerable roadway users, and disadvantaged groups.

The plan was developed with a rigorous methodology of data-driven analysis and extensive stakeholder engagement for identifying constraints and opportunities, selecting suitable bicycle improvements, and leveraging funding opportunities as roadways become candidates for resurfacing, bridge replacements, road diets, and other transportation improvement projects.

BIKEPassaicCounty was initiated by the Passaic County Department of Planning & Economic Development (County) in partnership with the North Jersey Transportation Planning Authority (NJTPA) with the goal of improving safety, mobility, equity, and access to opportunity across the County and its 16 municipalities. Developing safe bicycle connections will encourage travel by bike as a viable and accessible means of transportation and as a beneficial form of physical activity.

Each section of the *BIKEPassaicCounty* plan summarizes the analysis, findings, and recommendations of the technical memoranda. See the Appendix document for detailed discussion of: the environmental justice assessment; community engagement; review of previous plans, reports, and studies; existing conditions; and implementation plan including the pattern book and design guidance, proposed county bicycle network, concept level plans, and proposed structure for an implementation committee.

Passaic County Context

Mobility and safety challenges in Passaic County are significant and long-standing, including obsolete roadway infrastructure and networks, constraints of the region's terrain and geography, and the longstanding daily impacts of traffic congestion. Furthermore, decades of community planning and infrastructure projects have effectively isolated many residents in their neighborhoods, impeding safe bicycle/pedestrian access to basic daily necessities including work opportunities, healthy lifestyles, schooling, and essential services.

Despite these many challenges, opportunities to equitably improve mobility can be found in abundance. Nearly one-quarter of County residents travel 14 minutes or less to work, creating a significant capture market for travel-by-bike mode share. Segments of the Morris Canal Greenway and Highlands Rail Trail are advancing; road diet projects have been implemented and the Great Falls-Spruce Street Bridge road diet is under construction; bicycle lanes are being added to County roadways; and

redevelopment and infill projects are providing new housing. All represent expansive new travel-by-bike opportunities.

Passaic is also home to an energetic and engaged citizenry, well aware of the challenges but focused on the opportunities and greater vision. Many are actively engaged in Passaic County civic life to build a safe, accessible, and equitable future, and were instrumental in the development of BIKEPassaicCounty.

A Tale of Many Places

Passaic County is not one place, but rather a number of different and unique places, often separated from their neighbors by challenging land forms, bodies of water, industrial areas, quarries, parks and forests, railroads, and highways. As such, the findings and recommendations of *BIKEPassaicCounty* are not uniform or template-driven, but rather unique to each town, place, geography, and local context.

Within its nearly 200 square miles, Passaic County features an immense diversity of communities with varying natural and man-made land forms, barriers, and density of development, bridging New Jersey's mountainous northwest with some of the state's most dense urban areas (See Figure 1).

In the rural northwest portion of Passaic County, significant natural barriers to active mobility are formed by the consistently hilly and mountainous terrain, large contiguous forested tracts and woodlands, numerous and large lakes and water bodies, many small streams and brooks, and the severely limited and sparse roadway network. These natural barriers, along with NJ-23 and I-80, further limit non-motorized mobility and connectivity, and create geometric constraints for many roadways and intersections.

The suburban middle, with its moderate density, features its own unique mix of land forms and natural barriers, including three large water bodies, the Passaic River, Ramapo River, Pequannock River, and the High Mountain Park Preserve.

The southeast portion of the county is comprised mostly of contiguous urban towns and cities, with some of New Jersey's most densely populated cities, including Paterson, Passaic, and Prospect Park. Even within these urban landscapes, a blend of natural and man-made barriers shape and constrain mobility: the Passaic River, hilly terrain, an active quarry, railroad alignments, state highways, county roadways, and numerous bridge crossings.

The Time for *BIKEPassaicCounty* is Now

BIKEPassaicCounty presents a comprehensive vision of bikeways along roadways, rivers, parks, and trails. Developing and promoting projects that enhance bicycle access to major activity centers, transit, and recreational opportunities will have positive impacts on health, safety, and quality of life for residents and visitors. In addition, a more bike-friendly Passaic County will be healthier, more affordable, more economically competitive, and more sustainable.

There are many reasons that the time for BikePassaicCounty is now:

Healthy: Bicycling is good for individual and community health.

- Bicycling improves mental well-being, can strengthen one's immune system, and cuts heart disease, diabetes, and cancer risk.
- Bicycling is also a sustainable, zero-carbon transportation option, which can reduce air pollution and help combat climate change.

Affordable: Bicycling is one of the lowest-cost forms of transportation.

- Bicycling can help reduce the burden of household transportation costs. Most bicycles cost a few hundred dollars compared to the average annual cost of vehicle ownership which is almost $10,000. [i]

Accessible: Bicycling is accessible to people of all ages.

- Bicycling can increase access to neighborhood destinations such as schools, parks, recreation centers, and shops.
- Bicycling can provide door-to-door convenience, eliminating the need to circulate to find parking and to pay for parking.

Vision Statement and Goals

The *BIKEPassaicCounty* vision and goals are the result of a robust collaboration and consultation effort among the plan sponsors, the public, and a variety of stakeholders and participants. This community-based planning process ensures that *BIKEPassaicCounty* reflects the community's vision for the future and consistent with both County and local Complete Streets policies.

The vision and goals guide transportation and land use decision making and development of capital improvements and strategies to meet safety, equity, and mobility needs across Passaic County.

BIKEPassaicCounty – Vision Statement

Passaic County is a place where people of **all ages and abilities** can bicycle safely, conveniently, and comfortably. The bicycle network and supporting **policies and programs** are an integral part of the County's transportation system. A **connected**, countywide system of paths, trails, and on-street facilities increases **access** to destinations, enhances community **health**, promotes **equity**, and improves the **experience** of people bicycling, especially the most vulnerable and those without vehicles.

CONSENSUS GOALS

1. **Increase Safety & Comfort**
2. **Enhance Access & Mobility**
   (access to bicycles, bicycle network, and programs)
3. **Inspire Collaboration & Coordination**
   (focused on government agencies & departments)
4. **Build Community Support for Bicycling**
   (focused on residents and community)
5. **Support Economic, Health, Resiliency& Sustainability Efforts**
   (focused on non-profits and other social service organizations)

Environmental Justice Assessment

According to the United States Department of Transportation (USDOT), the definition of environmental justice includes "fair treatment and meaningful involvement of all people, regardless of race, ethnicity, income, national origin or educational level" with respect to laws, regulations, and policies. Environmental justice communities have traditionally been underrepresented in decision-making related to public infrastructure projects and have been disproportionately exposed to their negative impacts. See the Appendix document for detailed discussion of the environmental justice assessment.

Consideration of equity and environmental justice is therefore a core component of *BIKEPassaicCounty*, and an environmental justice assessment was undertaken to:

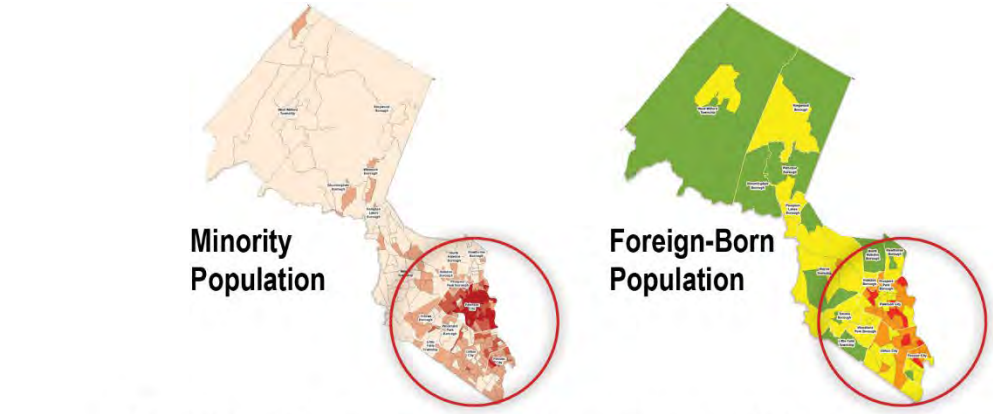
- Identify language services for outreach
- Ensure fair distribution of planned improvements
- Ensure that planned projects do not negatively affect communities

The environmental justice assessment identified multiple potentially disadvantaged populations across Passaic County as depicted in Figure 2; the shaded regions identify potential disadvantaged populations:

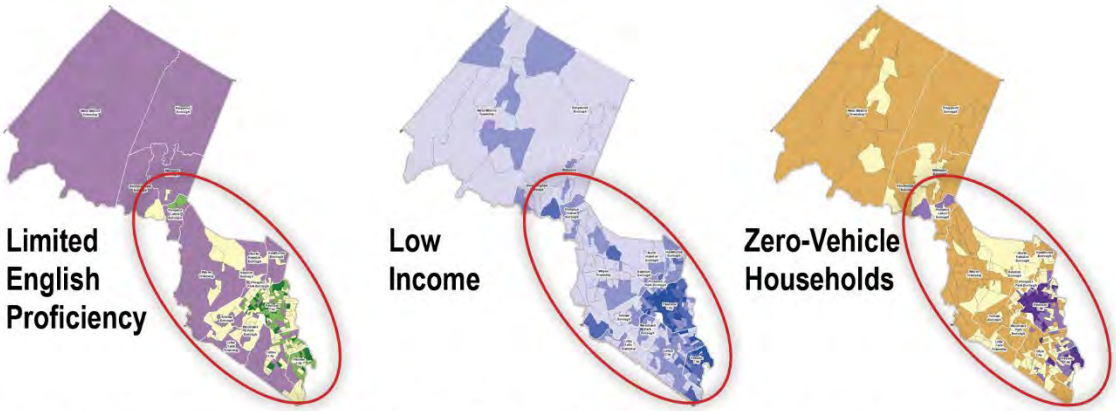
- Minority and foreign-born populations were most prevalent in the southeastern, more urbanized portion of Passaic County
- Limited English proficiency, low income, and zero-car households were most prevalent in the southeastern, more urbanized portion of Passaic County, but also extended north into the central, suburban towns
- Senior, minor, and disabled populations were distributed to varying degrees throughout Passaic County

Based on this analysis, the project team recommended:

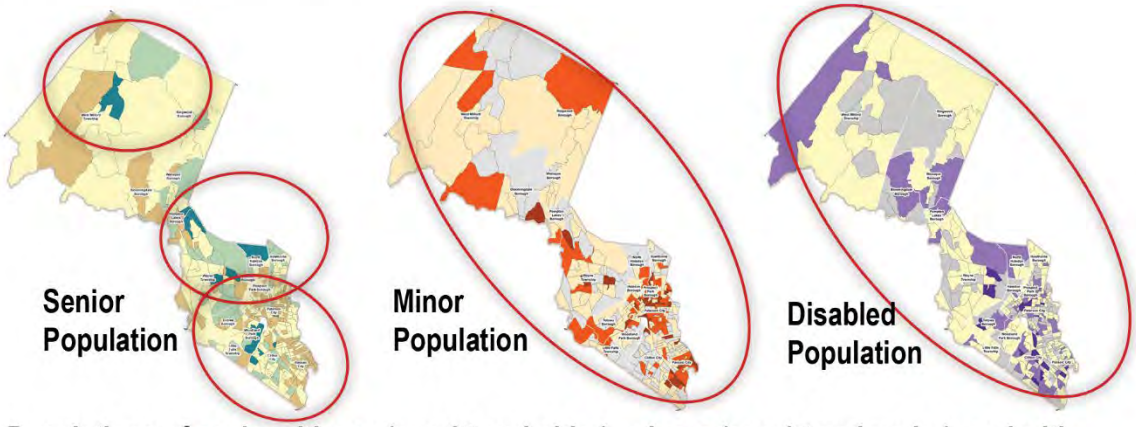
- Outreach methodologies must be inclusive of these potentially disadvantaged populations. Public meetings were provided with Spanish captions and a translator available for question-and-answer periods. The *BIKEPassaicCounty* website used Google Translate to provide project information in languages other than English.
- The project team tailored recommendations to address the needs of vulnerable roadway users and potentially disadvantaged populations, such as proximity to day care, senior centers, and access to transit, jobs, schools, or parks for seniors, minors, low-income, and zero-vehicle households.
- Bicycle network recommendations must provide equitable access and distribution of bicycle facilities throughout Passaic County and ensure there was not disproportionate impact to potentially disadvantaged populations.



Minority and foreign-born populations were prevalent in the southeastern portion of Passaic County.



Households with limited English proficiency, households below the poverty level (low income), and zero-vehicle households were prevalent in the southeastern portion of Passaic County and extending north.



Populations of senior citizens (age 65 and older), minors (age 17 and under), and with disabilities were distributed throughout Passaic County.

Figure 2: Geographic Distribution of Potential Disadvantaged Populations

Community Engagement

Community engagement is an integral part of *BIKEPassaicCounty*. The goal of community engagement was to gain a better understanding of existing programs and initiatives, needs and barriers to bicycling, and potential partnership opportunities to improve and encourage bicycling. See the Appendix document for detailed discussion of community engagement.

Study Advisory Committee

A steering advisory committee (SAC) provided guidance, direction, and input throughout the course of the plan. The SAC consisted of representatives of NJDOT, NJ Highlands Council, EZ Ride and TransOptions Transportation Management Associations (TMAs), Voorhees Transportation Center, NJ TRANSIT, and the New Jersey Bike & Walk Coalition. The SAC met three times during the planning process to discuss key elements of the plan, including community engagement, vision statement, proposed bicycle network, and implementation strategies.

Engagement Tools and Activities

To accommodate the changing restrictions of COVID-19 and reach a diverse spectrum of participants, the community engagement plan included a mix of in-person and virtual opportunities for public engagement, including engagement portal, virtual public meetings, online questionnaires and interactive mapping, and in-person pop-up events.

Table 1 on the following page lists the many activities and opportunities for community and stakeholder engagement.

Engagement Portal

The engagement portal (publicinput.com/bikepassaiccounty) served as the project website. The site included a project overview, timeline, project documents, relevant prior studies, an overview of the benefits of bicycling, materials from the public meetings, and links to the questionnaire and interactive mapping activity (Figure 3).

Table 1: Summary of BIKEPassaicCounty Community Engagement Activities

Date	Activity	Description
6/2021 – 1/2022	Online Questionnaire & Interactive Map	Input on existing conditions, opportunities, and barriers
6/26/2021	Community Event	Passaic County Food Truck Festival
6/26/2021	Community Event	West Milford BMX pop-up
8/3/2021	Community Event	National Night Out: Paterson
8/3/2021	Community Event	National Night Out: Little Falls
8/3/2021	Community Event	National Night Out: Woodland Park
8/3/2021	Community Event	National Night Out: West Milford
8/12-15/2021	Community Event	Passaic County Fair
9/4/2021	Community Event	Great Falls Festival (Paterson)
9/5/2021	Community Event	Pompton Day (Pompton Lakes)
9/6/2021	Community Event	Sounds of Passaic Concert Series (City of Passaic)
9/25/2021	Community Event	Wayne Day
10/7/2021	Steering Advisory Committee	SAC Meeting #1
10/9/2021	Community Event	Paterson Green Fair
10/16/2021	Community Event	Ride Out for Unity (Paterson)
10/2021 – 11/2021	Municipal Interviews	Discussion with representatives from nine municipalities
12/8/2021	Public Meeting	Virtual Public Meeting #1
2/16/2022	Steering Advisory Committee	SAC Meeting #2
3/23-25/2022	Focus Group Discussions	(1) education and events (2) bicycle clubs (3) enforcement
4/6/2022	Steering Advisory Committee	SAC Meeting #3
5/11/2022	Public Meeting	Virtual Public Meeting #2
5/11-31/2022	Virtual Open House	Review and feedback on vision, goals, draft network, and recommendations
June 4, 2022	Community Event	Bike Safety Training for National Trails Day, with Passaic County, EZ Ride TMA, at Goffle Brook Park, Hawthorne

The project team was able to build a contact list through website subscribers and questionnaire participants to assist with sharing project updates and promoting community engagement opportunities. The website was presented in a multilingual format allowing participants to choose any language through the site's Google Translate function.

The engagement portal received nearly 4,000 views and 500 public comments; 150 participants opted into the subscriber list to receive plan content and updates.

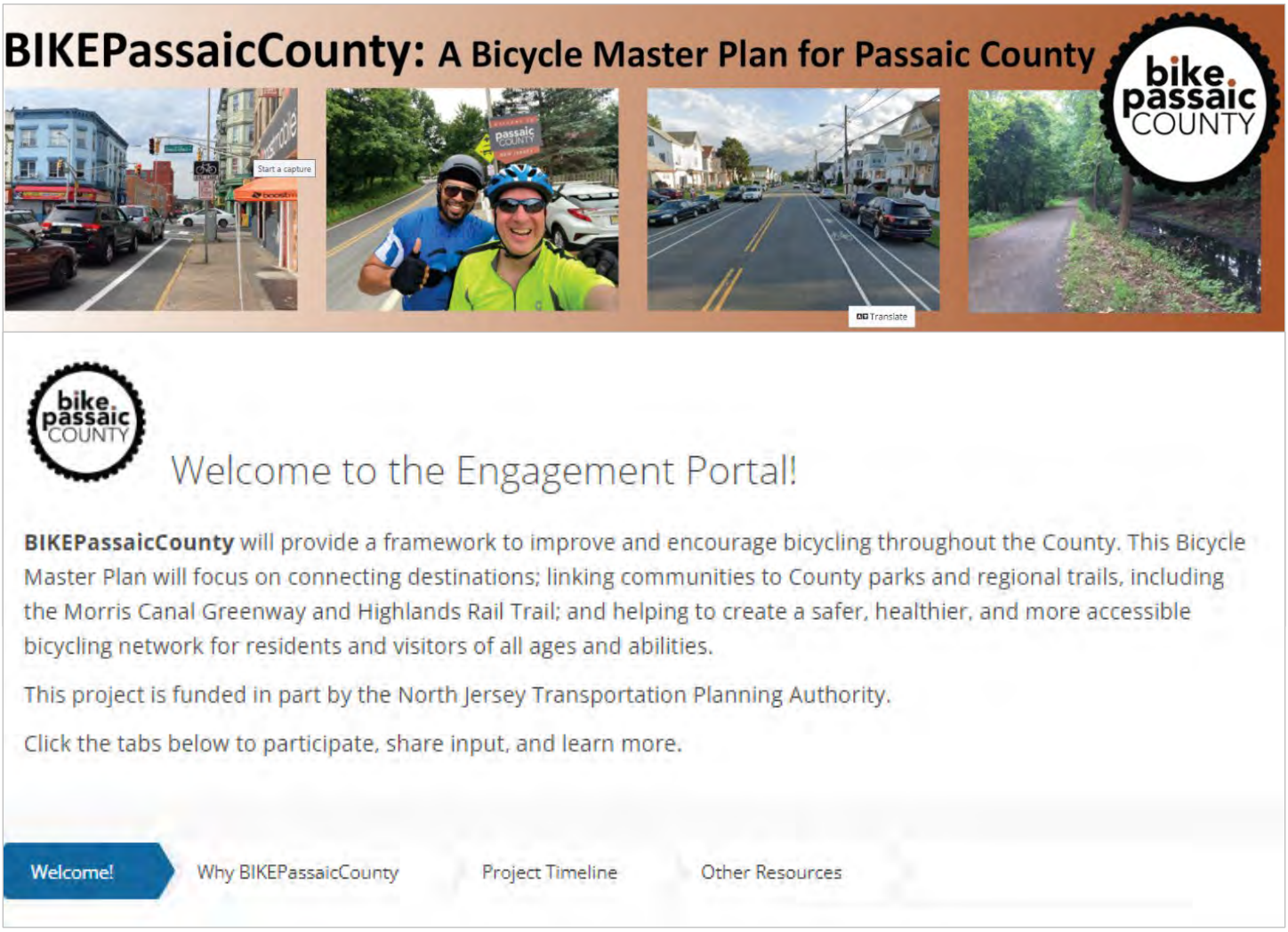


Figure 3: BIKEPassaicCounty Engagement Hub

Community Events

In the summer and fall of 2021, residents and visitors were engaged at a series of community events across the County. The project team participated in at least 14 community events sponsored by the municipalities, Passaic County, and other stakeholders and community groups to raise awareness of the study, to gather

feedback about issues and opportunities, and encourage people to participate in the online questionnaire and interactive mapping activities.

The level of engagement varied by event, with several drawing between 50-75 people, including National Night Out, Great Falls Festival, and the Sounds of Passaic Concert Series.

The Passaic County Parks and Recreation Department partnered with EZ Ride TMA to celebrate National Trails Day and World Bicycle Day on Saturday, June 4th in Goffle Brook Park in Hawthorne. Partners provided safety training, a bicycle skills course, and a group bike ride for children aged eight and up, to teach children how to properly ride their bikes on public streets. Additional training was provided for children aged six and up to learn basic skills, including: helmet fitting, balancing and pedaling, and starting and stopping skills.

Online Questionnaire

An online questionnaire was available from June 2021 through January 2022 on the project website. Responses were received from 474 participants. The questionnaire asked about people's experiences bicycling in Passaic County, their safety concerns, barriers to bicycle travel, and the types of bicycle improvements that residents would like to see in the future.

Virtual Interactive Map

Visitors to the project website were also asked to provide input using interactive mapping application; participants identified key destinations, problem spots and challenging intersections, and locations where they would like to see bike lanes and paths.

Public Meetings

There were two virtual public meetings. Both were held virtually via Zoom. The first virtual public meeting was held on December 8, 2021, with 25 participants in attendance, focusing on the purpose of the study, the study timeline, community engagement efforts, questionnaire highlights, and existing conditions. The second virtual meeting was held on May 11, 2022, with 59 registrants, and focused on plan implementation including proposed bicycle network, concept plans, and strategies. The presentation slides, recording of the public meetings, and a summary of the Q&A sessions were posted to the project website.

Virtual Open House

A Virtual Open House was hosted on the project website and was live for three weeks from May 11 to May 31, 2022, and designed so that participants could go through the site at their own pace to review materials, answer questions, and share their thoughts. There were 338 views, 62 participants, 351 responses, and 70 comments.

Figure 4: Promotional Materials Included Flyers with Interactive QR Codes

SAMPLE OF PUBLIC COMMENTS AND SUGGESTIONS

"Many residents are invested in Passaic County as their home and in its future as a safe, healthy, equitable, and mobile community."

"Not enough attention is paid to issues that affect our residents. The big and high-profile projects get all the attention and money."

"Healthy lifestyles are part of lifelong learning."

"Teach our kids healthy habits, eating, and lifestyles."

"Good network and roadway design are meaningless without safe driving and user behaviors."

" We need to teach both drivers and cyclists how to drive on and use Sharrow streets."

"Mixing with traffic while biking? NO!"

"I would like to ride in Paterson, but…"

"I make safety my own responsibility."

"Occupy our streets in productive ways."

"We also need safe walking."

"Many parents and students do not feel conditions are safe for biking to school."

Community engagement and participation are essential drivers of the planning process. These are just a small sample of the many comments, concerns, and hopes expressed by plan participants and stakeholders.

Municipal Interviews

Four discussion groups were conducted in October and November 2021 with representatives from Passaic County municipalities to receive input on their needs, issues, priorities, and bicycling opportunities. All municipalities were invited to attend these sessions. Nine of the County's 16 municipalities participated in the discussion groups. The municipalities included Little Falls, Haledon, Hawthorne, West Milford, Clifton, Pompton Lakes, Ringwood, Woodland Park, and Wayne Township.

Focus Group Discussions

Discussions were held virtually with three stakeholders groups to receive input from different perspectives. An education and events focus group was held with representatives from parks and recreation, government, health, and sustainability organizations. A bicycle clubs focus group was held with representatives from the Brothers United and Sisters United Bicycling Clubs, both of which are active in Paterson. The final discussion group was held with a representative from the Community Policing Unit of the Paterson Police Department.

Feedback from the group discussions helped guide programmatic recommendations.

Plan Promotion

Engagement opportunities were promoted via the website, email, social media, and various print media throughout the course of the project. All materials and graphics were provided in both Spanish and English, and they displayed a QR code and link to the website. Emails with project updates and flyers were also sent to website subscribers, questionnaire participants, and other community organizations. Flyers and stickers were handed out at various events in Passaic County, and lawn signs were placed throughout the County.

Promotional materials included flyers with interactive QR codes were posted to social media and handed out in-person, and stickers with the project logo.

Key Findings - Community Engagement

- **Vision and Goals.** A vast majority of those who participated in *BIKEPassaicCounty's* public engagement strongly support the plan's vision and goals to make bicycling safe, convenient, and enjoyable for people of all ages and abilities. Priorities include improved safety, enhanced access and connectivity, and emphasis on equity and vulnerable populations. Many noted that these goals cannot be achieved unless people feel safe and comfortable while bicycling.
- **People would like to bike more**. Half of questionnaire respondents reported bicycling at least a few times per month but over 90% of people said they would bike more if there were more bicycle lanes, paths, and trails in Passaic County. While most people reported that they bicycle for exercise, to enjoy nature, and as a social activity, people also support enhancing bicycle facilities for equity reasons and as an important part of promoting tourism in Passaic County.
- **Mitigate barriers to bicycling.** High-speed, high-volume traffic and aggressive motorist behavior prevent people from bicycling more. Poor road conditions including potholes, debris on the road, and overgrown vegetation are also a concern. While some municipalities would like to see more people bicycling, they are also concerned that on-street parking demands, existing street designs, high traffic and speeds, and environmental conditions (including terrain) make it challenging to integrate bicycle facilities into local and regional street networks.
- **There is a strong preference for bicycle facilities separated from motor vehicle traffic.** Many prefer bicycling in parks and areas with less traffic. While only 44% of questionnaire respondents said they would be comfortable in a standard bicycle lane, 84% indicated they would be comfortable bicycling on a buffered bicycle lane, and 95% said they would be comfortable riding on a path or trail. Additional paths and trails was selected as the top infrastructure improvement by questionnaire participants.
- **Providing and promoting bicycle related education and events is a priority**. Multiple stakeholders highlighted the need to address both bicycling and driving behaviors and that hosting more events would be a great way to encourage bicycling. It was also noted that it is important to support existing bike clubs and organizations providing bicycle education opportunities.
- **Need for consistency and coordination.** Inconsistent enforcement between municipalities of regulations such as sidewalk riding, helmet use, and bicycle registration cause confusion and deter people from bicycling in other communities. Coordination is necessary to ensure that bike lanes and paths do not stop at municipal borders.
- **Improve bicycle access and supportive amenities.** People would like to see more secure bicycle parking at destinations, a bicycle wayfinding system, and a bike rental or share system in place.

Previous Plans, Reports, and Studies

Prior and ongoing initiatives provide context, background research, and design guidance and recommendations that inform and support the planning process. See the Appendix document for additional details.

Significant examples include:

- *Complete Streets Policies:* Four municipalities – Bloomingdale, Little Falls, North Haledon, Pompton Lakes – have adopted Complete Streets policies to guide the planning, design, and construction of local streets and street networks.
- *Moving Passaic County-Transportation Element, Passaic County Master Plan (Passaic County & NJTPA, 2012):* identified bicycle mobility and safety as key priorities and established a collaborative roadway resurfacing process that brings together County planners and engineers to advance multimodal improvements to the Capital Improvement Program. The Plan defines context-specific street classification typologies and key pedestrian and bicyclist access corridors.
- *Morris Canal Greenway Corridor Study (NJTPA, 2018)*: identifies a continuous greenway corridor for walking and biking that adheres to the original Morris Canal route as closely as possible and potential projects for short- to medium- and long-term implementation. *BIKEPassaicCounty* includes the conceptual alignment in the proposed bicycle network and concept level plans, accounting for any sections of the greenway that have been constructed or for which planning/design has been advanced within Passaic County.
- *Great Falls Circulation Study (Passaic County & NJTPA, 2016):* advances a five-part Gateway Vision Plan of multimodal transportation, placemaking, traffic calming, and bicycle and pedestrian improvements.
- *Highlands Rail Trail Feasibility Study (Passaic County, 2017):* portions of the proposed Highlands Rail Trail along the historic alignment of the New York and Greenwood Lake Railway are currently under study and development.
- *Paterson-Newark Transit Market Study (Passaic County, Essex County & NJTPA, 2020):* found that a high-quality transit connection between Newark and Paterson is viable and highlighted the need for more detailed study of “bicycle/pedestrian trails and greenway compatibility.” A proposed BRT alignment alternative provides a potential Rail with Trail facility along the Newark Industrial Track (NIT).
- *Design Resources:* applicable design guides, standards, and resources were used to identify and evaluate candidate bike routes, develop the proposed bicycle network, assign context-appropriate bicycle facility types, and assemble the concept level plans. Examples of design resources include but not limited to the NJDOT New Jersey Complete Streets Design Guide, the National Association of City Transportation Officials (NACTO): Urban Street Design Guide, the American Association of State Highway and Transportation Officials (AASHTO) Guide for the Development of Bicycle Facilities, and the Federal Highway Administration (FHWA) Separated Bike Lane Planning and Design Guide.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Existing Conditions

Passaic County currently has a limited bicycle network with just 14.4 miles of existing bicycle facilities, including 5.9 miles of bike lanes, 1.9 miles of buffered bike lanes, and 6.7 miles of sharrows. See the Appendix document for details on existing conditions.

Bicycle Crashes and Hotspots

During the six-year analysis period (2014-2019), 620 bicycle crashes were reported, about 103 per year, 16 of which resulted in serious injuries and three in fatalities (see Table 2). Two of the three fatalities occurred in Paterson.

Passaic County's total of 620 bicycle crashes during the analysis period was 5.7% of the statewide total of 10,856 bicycle crashes. The county accounted for 5.6% of statewide population during this period, so Passaic has been about average in this regard. Figure 5 depicts the reported bicycle crashes and hot spot locations in northwest Passaic County; Figure 6 depicts the reported bicycle crashes and hot spot locations in the southeast.

Although distributed across the county as a whole, the occurrence of crashes is more frequent in the urbanized areas of Passaic County. Paterson, for example, accounts for 29.2% of county population but almost 36% of reported bicycle crashes. The most significant crash hotspots occur in the Cities of Paterson and Passaic, which together account for 46 percent of county residents, but account for 62 percent of reported bicycle crashes. Additional hotspots are located in the less-densely populated Pompton Lakes, with lesser concentrations in Clifton and Wayne. In the northwest portion of the county, the hotspots are reflective of the sparse population and roadway network and occur mostly along the major regional roadways and at significant intersections.

Reported bicycle crashes in Passaic County occur more frequently at intersections than statewide averages (61.2% vs. 56.9%). Sparse roadway networks and high intersection turning volumes may also be among the factors that contribute to increased risks for bicycle travel at Passaic County intersections. Dedicated bicycle facilities such as bike lanes and separated bicycle facilities are among the improvements that may lessen bicycle crash risk at intersections by providing dedicated space for cyclists fully separated from motor vehicles.

Greater percentages of reported bicycle crashes in Passaic County occur on County (47.6% vs. 35.9%) and municipal roadways (50.3% vs. 47.9%) than statewide averages, heightening the responsibility of Passaic County and its constituent municipalities to address bicycle safety. Reported bicycle crashes are very rare on state highways in Passaic County (2.6% vs 14.7% statewide). This is due in part to the prevalence of complex geometrics, challenging highway ramps, and busy, high volume, four-lane state-owned roadway configurations, particularly in southeast Passaic County, which limits their accessibility for most bicycle riders.

Table 2: Bicycle Crash Summary, (2014-2019), NJDOT Safety Voyager

Comparison of Bicycle Related Crashes (2014-2019)				
	Passaic County		New Jersey	
Severity	**Count**	**% of Total**	**Count**	**% of Total**
Fatal	3	0.5%	85	0.8%
Suspected Serious Injury	16	2.6%	293	2.7%
Suspected Minor Injury	152	24.5%	3,304	30.4%
Possible Injury	315	50.8%	4,895	45.1%
Property Damage Only	134	21.6%	2,279	21.0%
Total	**620**	**100.0%**	**10,856**	**100.0%**
Roadway Network	**Count**	**% of Total**	**Count**	**% of Total**
County Road	295	47.6%	3,898	35.9%
Municipal Road	312	50.3%	5,198	47.9%
State Highway	13	2.1%	1,598	14.7%
Other	-	0.0%	162	1.5%
Total	**620**	**100.0%**	**10,856**	**100.0%**
Crash Location	**Count**	**% of Total**	**Count**	**% of Total**
At Intersection	382	61.6%	6,174	56.9%
Not at Intersection	238	38.4%	4,682	43.1%
Total	**620**	**100.0%**	**10,856**	**100.0%**
Roadway Condition	**Count**	**% of Total**	**Count**	**% of Total**
Dry	565	91.1%	9,808	90.3%
Wet	50	8.1%	966	8.9%
Snowy	3	0.5%	21	0.2%
Icy	-	0.0%	7	0.1%
Other	-	0.0%	13	0.1%
Unknown	2	0.3%	41	0.4%
Total	**620**	**100.0%**	**10,856**	**100.0%**
Light Condition	**Count**	**% of Total**	**Count**	**% of Total**
Daylight	452	72.9%	8,011	73.8%
Dusk	21	3.4%	352	3.2%
Dawn	7	1.1%	102	0.9%
Dark (no streetlights)	10	1.6%	203	1.9%
Dark (street lights off)	7	1.1%	79	0.7%
Dark (street lights on, Cont)	104	16.8%	1,649	15.2%
Dark (Street lights on, Spot)	19	3.1%	413	3.8%
Unkown	-	0.0%	47	0.4%
Total	**620**	**100.0%**	**10,856**	**100.0%**
Environmental Condition	**Count**	**% of Total**	**Count**	**% of Total**
Clear	559	90.2%	9,691	89.3%
Overcast	23	3.7%	400	3.7%
Rain	34	5.5%	658	6.1%
Snow	3	0.5%	26	0.2%
Other	-	0.0%	30	0.3%
Unkown	1	20.0%	51	0.5%
Total	**620**	**100.0%**	**10,856**	**100.0%**

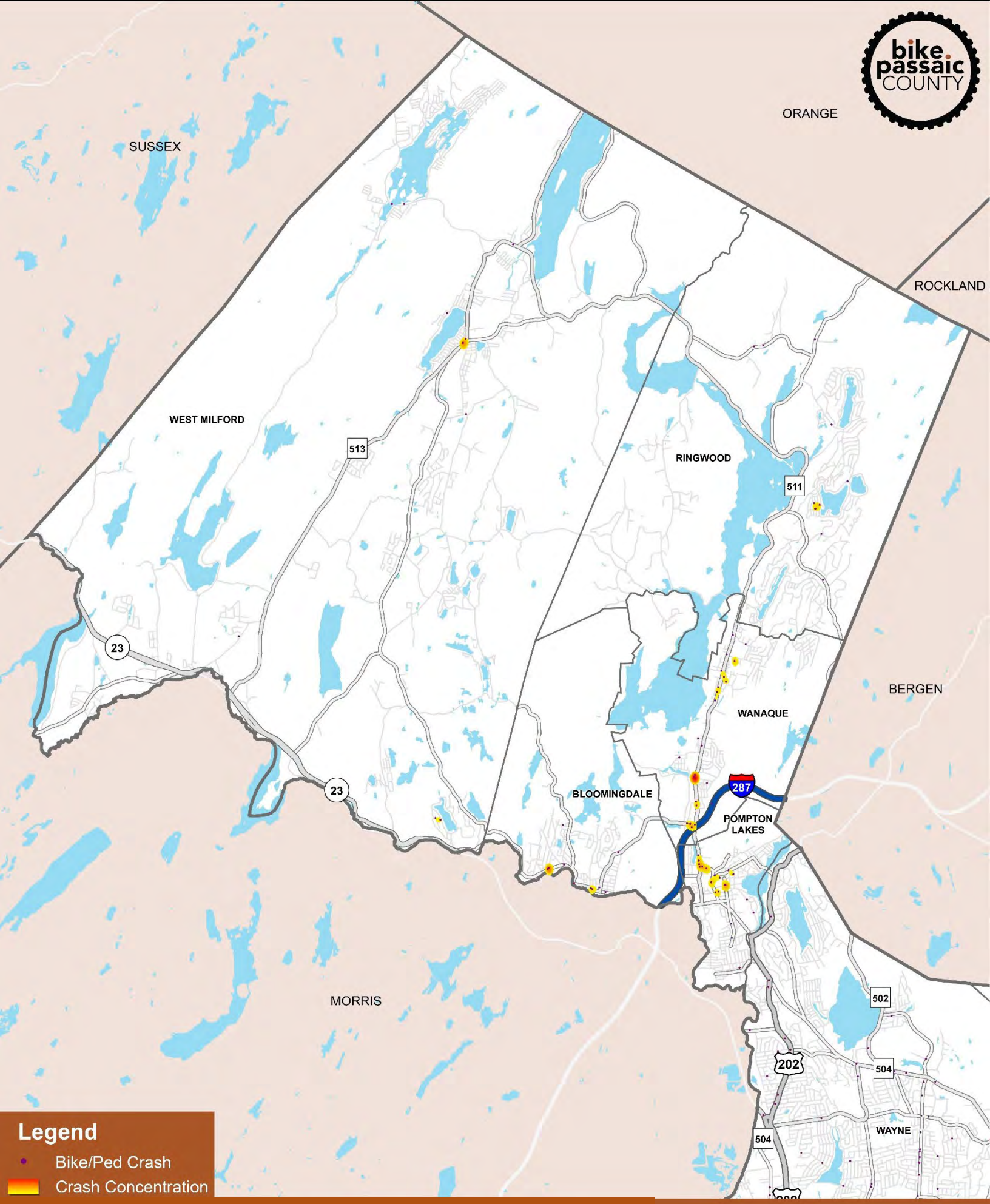


Figure 5: Bicycle Crashes and Hotspots, Northeast, (2014-2019)

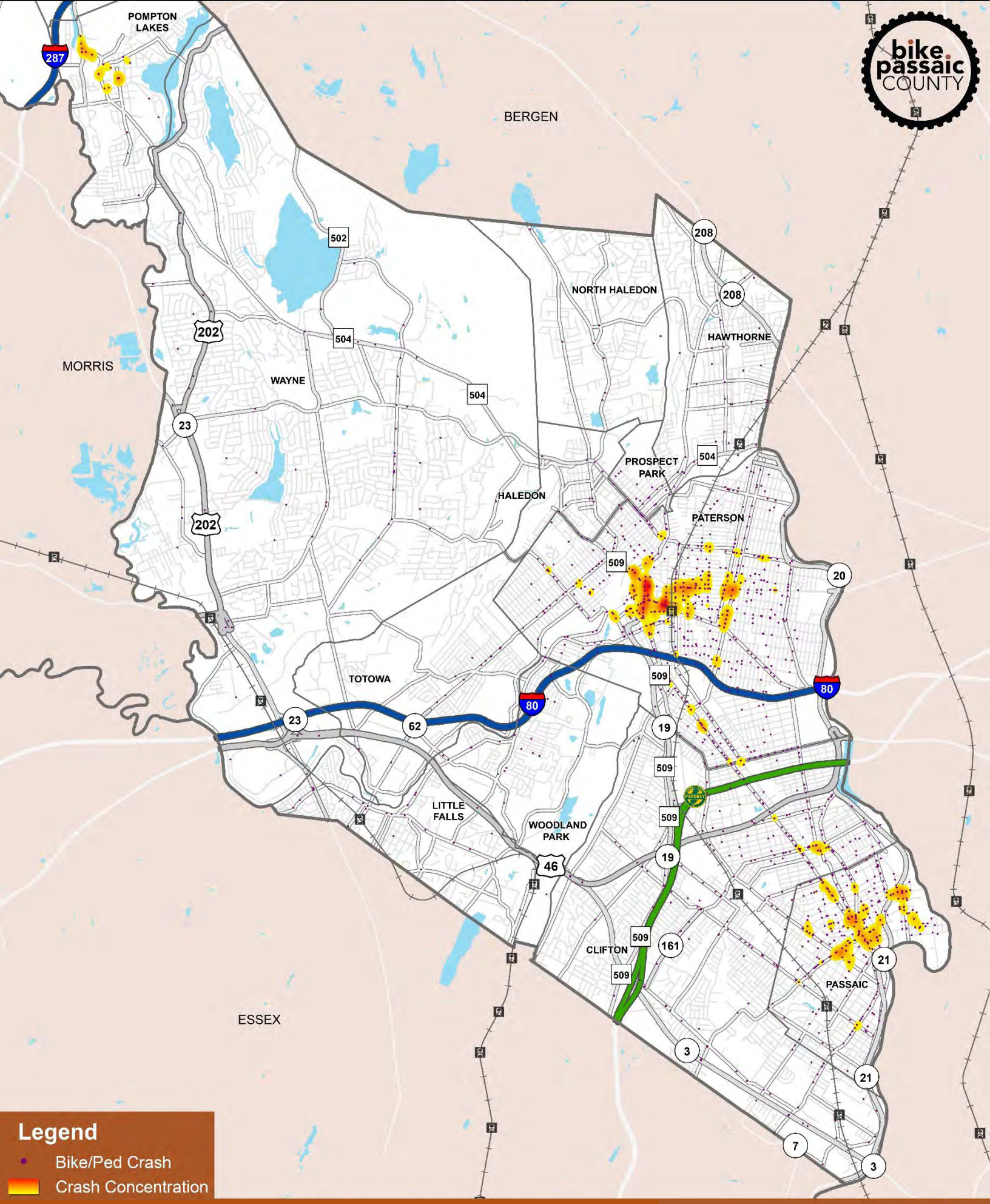


Figure 6: Bicycle Crashes and Hotspots, Southeast, (2014-2019)

Speed vs. Crash Occurrence & Severity

Many studies have shown that slower motor vehicle speeds exponentially increase the survival rates for both pedestrians and bicyclists who are involved in a collision with a motor vehicle. As Figure 7 below illustrates, a crash that takes place at 30 miles per hour is 800% more likely to result in a fatality than a crash at 20 miles per hour. Consequently, 20 mile-per-hour speed limits are ideal for roadways heavily travelled by pedestrians and bicyclists. Studies have also suggested that not only can bicycle infrastructure help slow motorists travel speeds but increasing the presence of cyclists and pedestrians has a traffic calming effect as well.[ii]

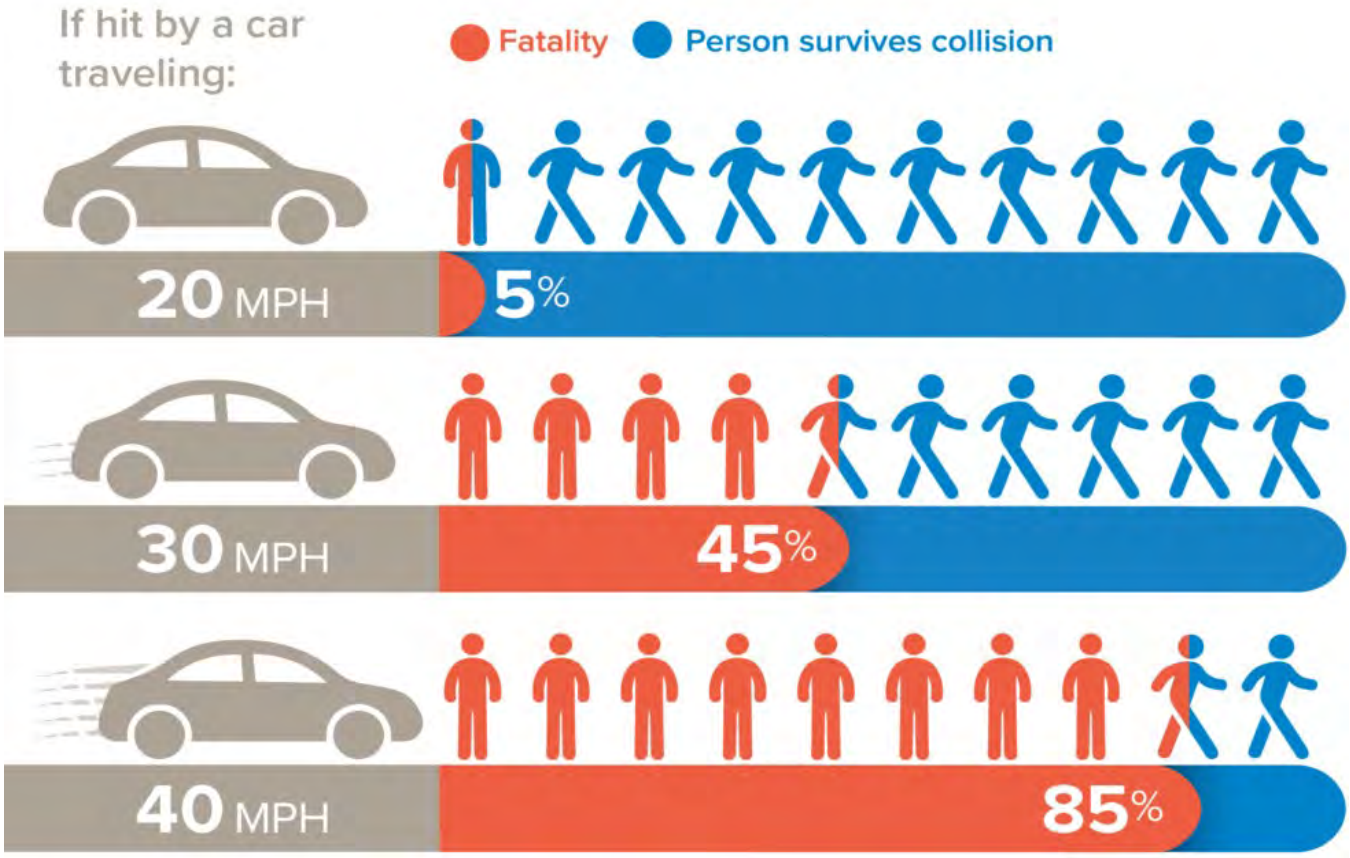


Figure 7: Risk of Fatality and Serious Injury to Pedestrians vs Vehicle Speed.

National Traffic Safety Board (2017) Reducing Speeding-Related Crashes involving Passenger Vehicles

Bicycle Level of Stress and Island Effect

Bicycle Level of Traffic Stress (LTS) evaluates a bicyclist's potential comfort level given the current use and design of the roadway and has proven influential in the advancement of bicycle planning in the United States. The LTS metric is based on the Dutch concept of low-stress bicycle facilities and advanced in the U.S. by research supported by the Mineta International Institute for Surface Transportation.[iii]

Bicycle riders of varying skills and experience have different tolerances for stress created by volume, speed, and proximity of vehicular traffic. In general, lower stress facilities (LTS 1 and 2) have increased separation between cyclists and vehicular traffic with lower speeds and traffic volumes. Higher stress environments (LTS 3 and 4) generally involve cyclists riding on multi lane roadways, near higher volumes of vehicular traffic traveling at higher speeds.

Four levels of traffic stress were used to evaluate Passaic County's road network:

- LTS 1: The level most users can tolerate (including children and seniors). Often called "ages 8 to 80."
- LTS 2: The level tolerated by most adults.
- LTS 3: The level tolerated by "enthusiastic" riders who might still prefer dedicated space but able to mix with vehicular traffic.
- LTS 4: The level tolerated only by the skilled most experienced riders.

From the perspective of low stress (LTS 1 and 2) cyclists, such as children bicycling to school or most adults riding in their neighborhoods or to the local park or main street, Passaic County has many accessible roadways. LTS 1 and 2 roadways comprise about 81% of the total countywide network.

Overall, however, the LTS analysis shows that Passaic County's roadway network presents a very stressful environment for many bicycle trips, with the low-stress network heavily fragmented and isolated by higher-stress LTS 3 and 4 roadways, introducing significant barriers and gaps in mobility and access. These conditions create an *island effect*, with numerous small but isolated low stress "islands" of local mobility frequently disconnected from adjacent areas and neighborhoods, with the net effect of containing residents within their neighborhoods and limiting access to key destinations and attractions. This is consistent with comments and observations from those that participated in the BIKEPassaicCounty community engagement effort; many respondents indicated they are unable or uncomfortable to travel beyond their own streets and neighborhoods by bicycle due to safety concerns, exposure to high traffic volumes, speeds, large trucks and busses, and aggressive and inattentive driving behaviors.

In the northwest portion of Passaic County, the roadway network is sparse with few regional roadways and very limited connectivity and roadway capacity (See Figure 8 and Figure 9). Many of the primary routes were evaluated as high stress roadways,

including Clinton Road, Union Valley Road, Macopin Road, Westbrook Road, Otterhole Road, Stonetown Road, Greenwood Lake Turnpike, and Ringwood Avenue. The low stress network is mostly limited to neighborhood streets that provide local access but limited regional connectivity. The unique topography, severe terrain, and prevalence of lakes and water bodies, magnify traffic stress and isolation, and create additional barriers to mobility. Taken together, the island effect is considered severe in the northwest of the Country.

In the southeast portion of the county, the roadway network is more developed but still dominated by high stress roadways, including both county routes and municipal roadways, among them Berdan Avenue, Hamburg Turnpike, Ratzer Road, Belmont Avenue, Long Hill Road, Rifle Camp Road, and large portions of the densely population and traffic heavy cities of Paterson, Passaic, and Clifton. Interstate 80, U.S. 202, NJ Routes 3, 7, 19, 20, 21, 23, 46, 62, and others all create significant barriers to bicycle and pedestrian mobility. Many state and county roadways function as de facto highways with very limited or no bicycle access provided (See Figure 10 and Figure 11).

In southeast Passaic County, the island effect is considerable, but less severe than the northwest portion of the County, although barriers and gaps are common. The islands of low-stress network are effectively larger, but the barriers and gaps become more pronounced and inhibiting. Regardless of the size and extent of the islands, the net effect is that residents are still relatively confined within their neighborhoods, limiting access, mobility, and opportunity.

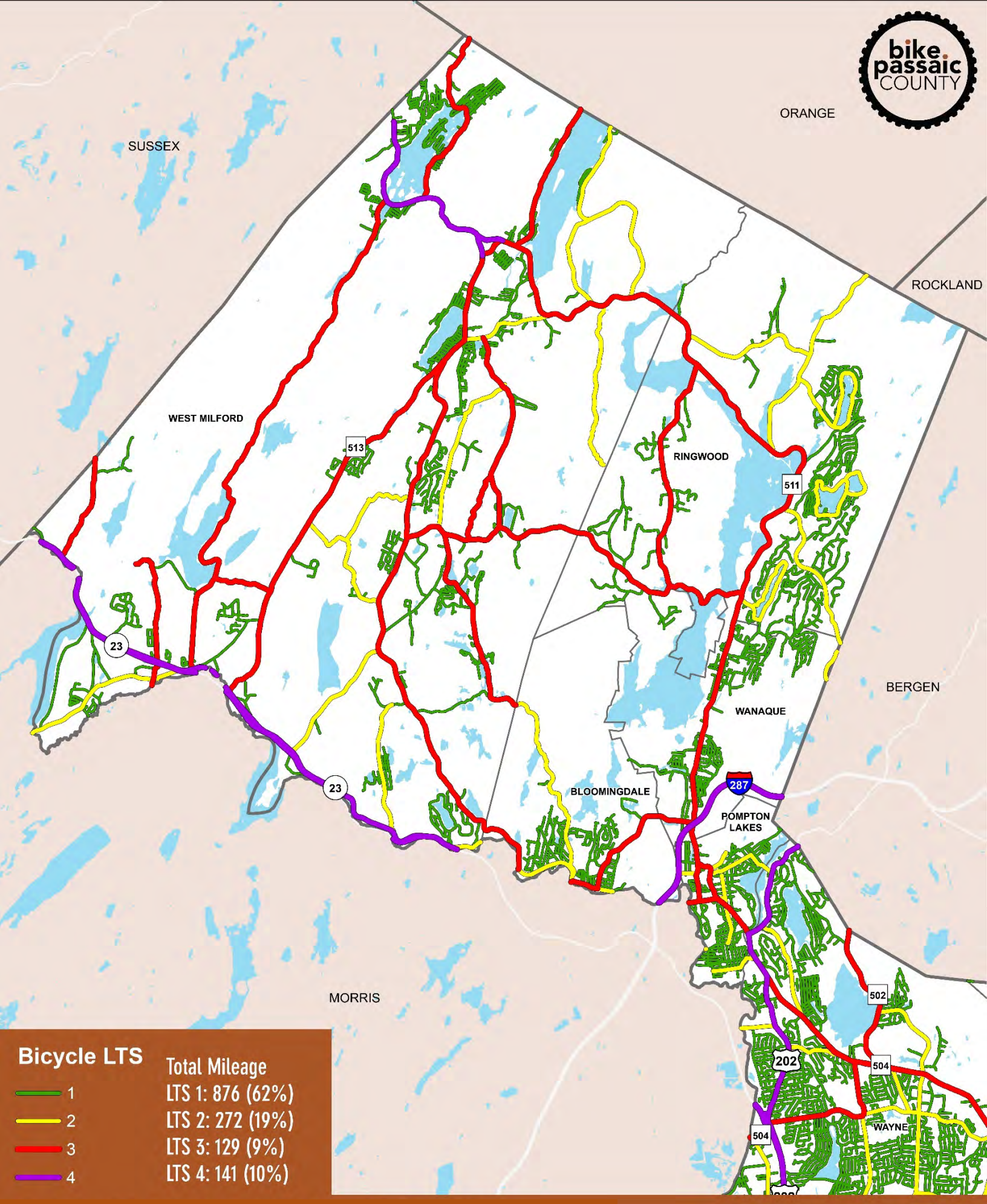


Figure 8: Existing Bicycle LTS, Northwest

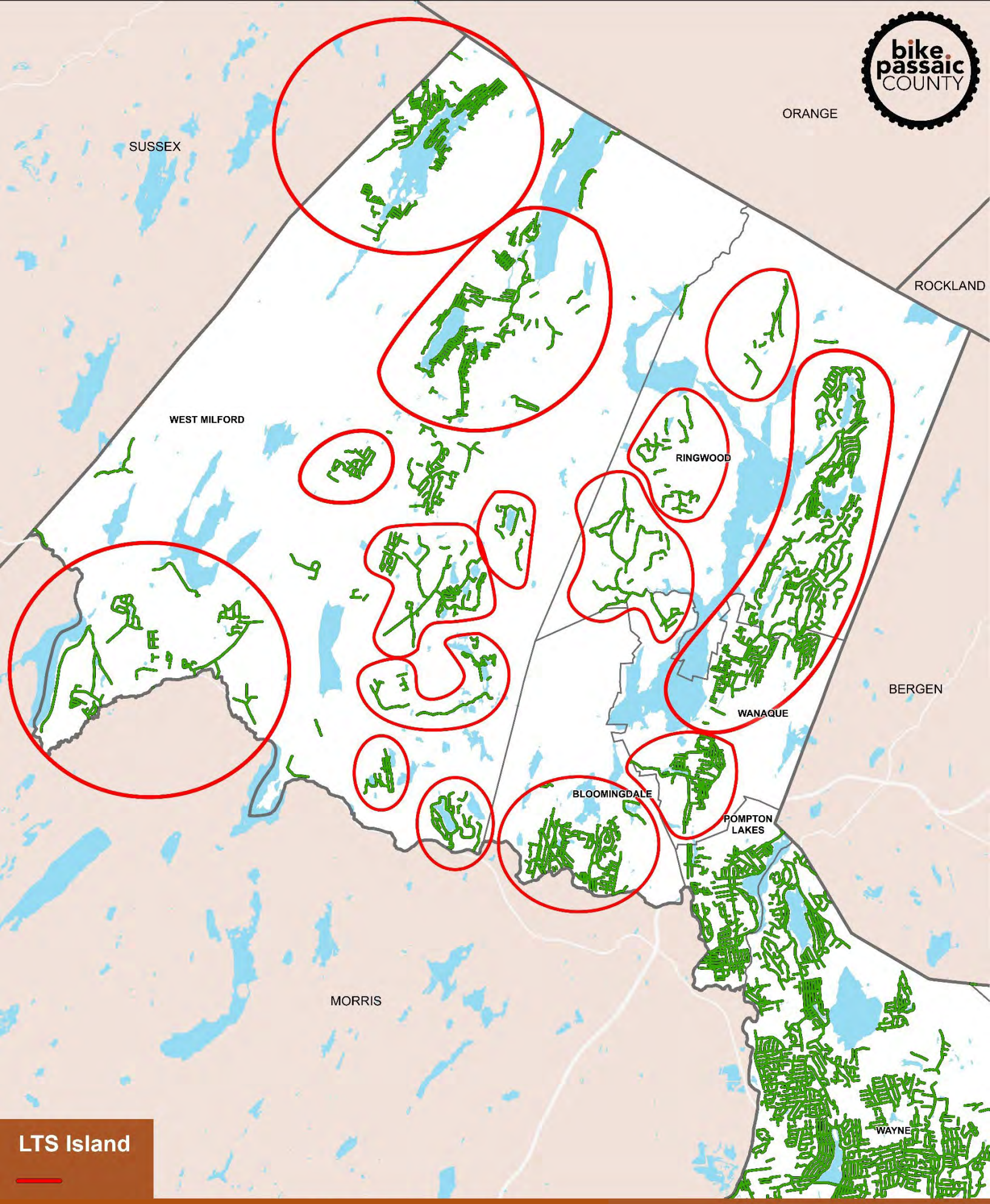


Figure 9: LTS Island Effect, Northwest

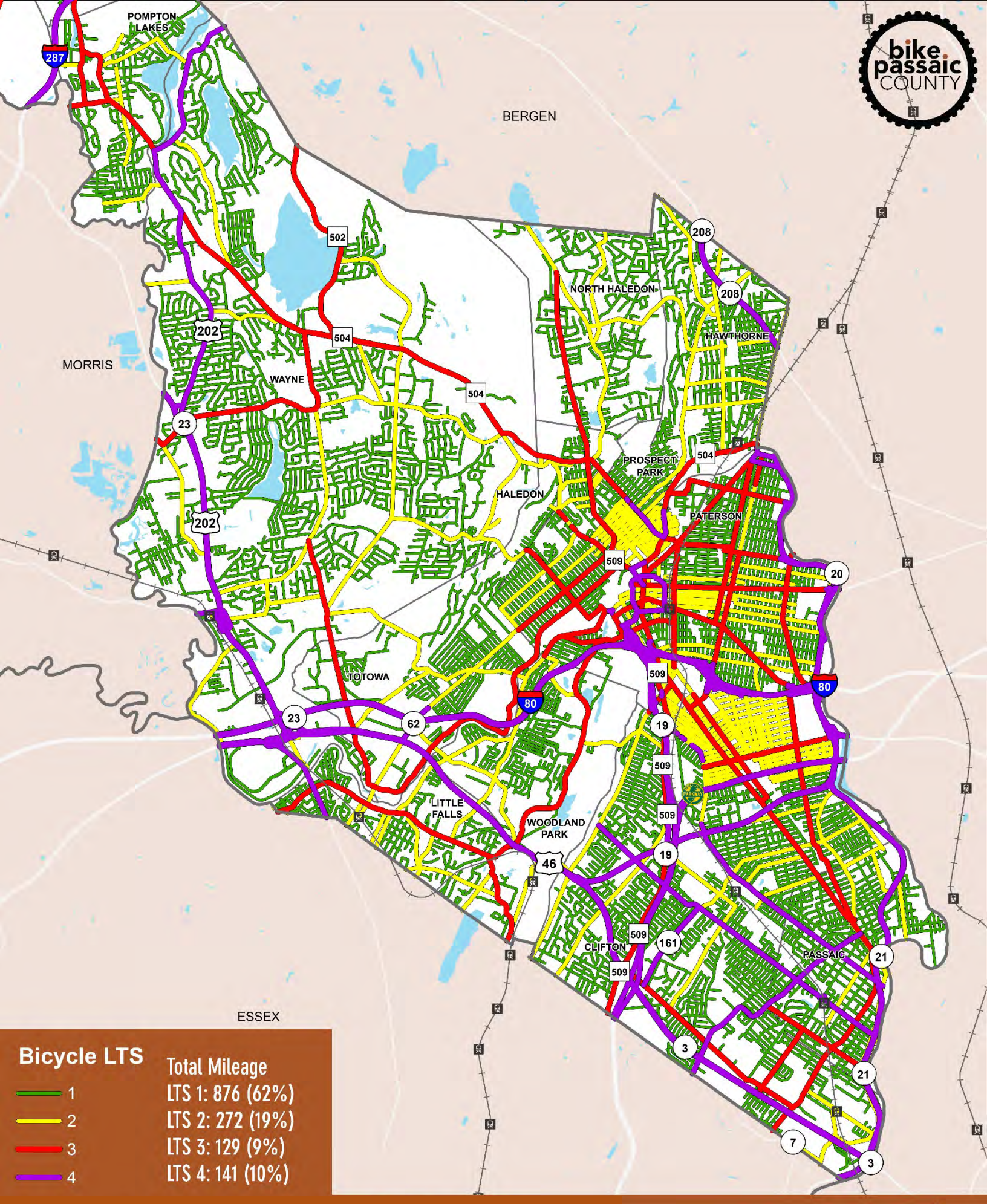


Figure 10: Existing Bicycle LTS, Southeast

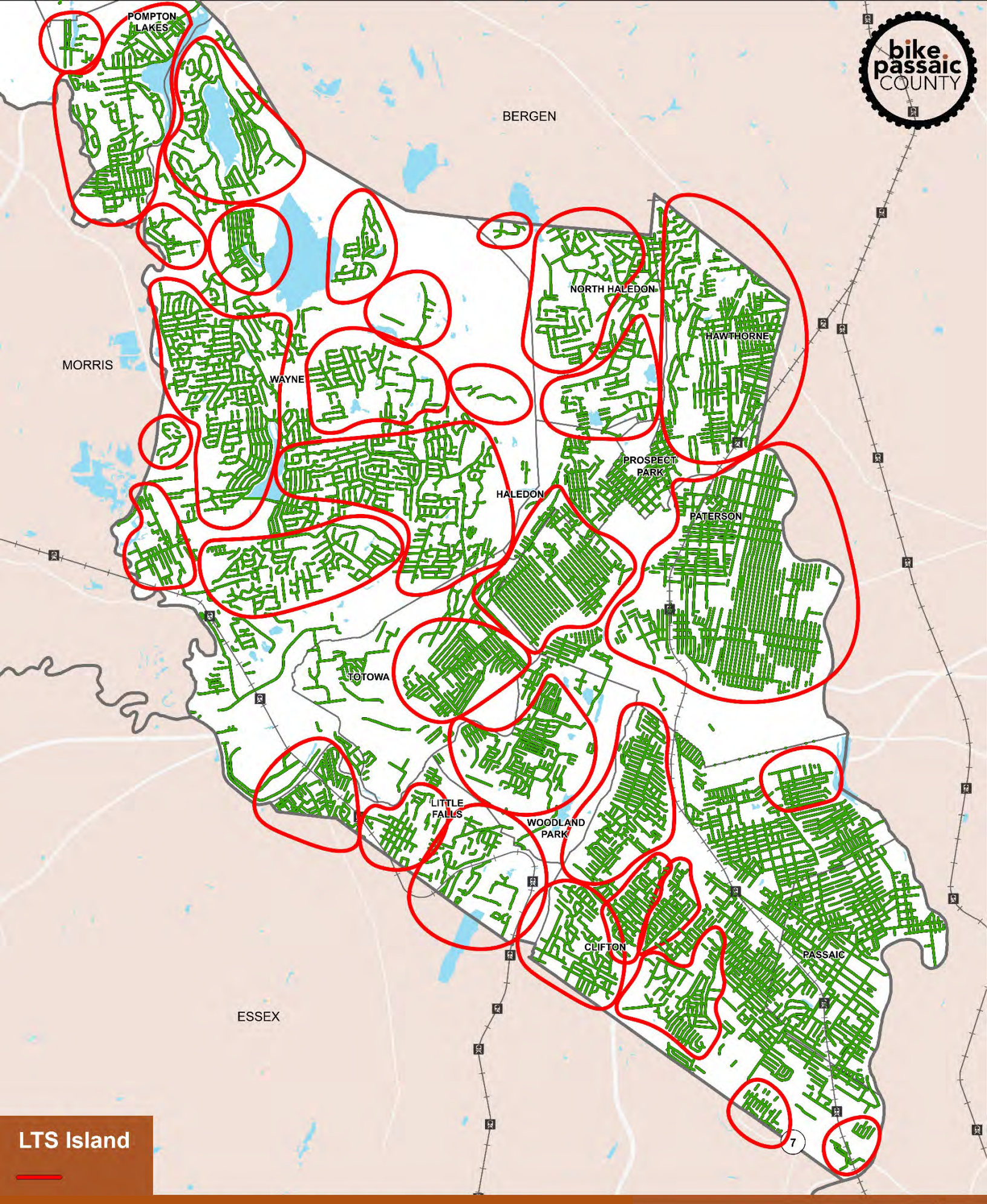


Figure 11: LTS Island Effect, Southeast

Key Findings-Existing Conditions

- Passaic County currently has a limited bicycle network with just 14.4 miles of existing bicycle facilities, including 5.9 miles of bike lanes, 1.9 miles of buffered bike lanes, and 6.7 miles of sharrows.
- Greater percentages of reported bicycle crashes occur on county and municipal roadways than statewide averages, heightening the responsibility for addressing bicycle safety by Passaic County and its constituent municipalities.
- Reported bicycle crashes occur more frequently at intersections than statewide averages. Dedicated bicycle facilities such as bike lanes and separated bicycle facilities are among the improvements that may lessen bicycle crash risk at intersections by providing dedicated space for cyclists fully separated from motor vehicle travel lanes and turning lanes.
- Reported bicycle crashes are very rare on state highways in Passaic County, due in part to the prevalence of complex geometrics, challenging highway ramps, and busy, high volume, four-lane state-owned roadway configurations, which limit their accessibility for most bicycle riders.
- Passaic County's roadway network presents a very stressful environment for many bicycle trips, with the low stress network heavily fragmented and isolated by higher stress LTS 3 and 4 roadways, introducing significant barriers and gaps in mobility and access.
- The overall roadway network is heavily fragmented due to the prevalence of "high-stress" roadways. These conditions create an island effect, with numerous small but isolated low stress "islands" frequently disconnected from adjacent areas and neighborhoods with the net effect of containing residents within their neighborhoods and limiting access to key destinations and attractions.
- This is consistent with comments and observations from the community engagement effort; many respondents indicated they are unable or uncomfortable to range beyond their own streets and neighborhoods by bicycle due to safety concerns, exposure to high traffic volumes, speeds, large trucks and busses, and aggressive and inattentive driving behaviors.

Implementation of *BIKEPassaicCounty*

Plan implementation will take place one roadway segment and one new bicycle facility at a time. It will require collaboration and consensus among a range of stakeholders and participants, including the public, elected officials, and municipal and county partners to balance the needs and priorities of all involved.

Implementation is supported by five plan elements: a Pattern Book, the proposed county bicycle network, concepts, strategies, and implementation committee.

BIKEPassaicCounty Pattern Book and Design Guidance

Candidate bicycle improvements were identified using the Bikeway Selection Guidance Process of the New Jersey Complete Streets Design Guide and application of the *BIKEPassaicCounty* Pattern Book. The Pattern Book summarizes the range of proposed improvements from on-street bicycle lanes to off-street side paths and trails.

Proposed Passaic County Bicycle Network

The proposed network implements the vision and goals: a connected, countywide system of paths, trails, and on-street facilities to increase access to destinations, enhance community health, promote equity, and improve the experience of people bicycling, especially the most vulnerable and those without vehicles. The proposed network includes 311 miles of dedicated bicycle facilities, and includes facilities on state, county, and local roadways.

Concept Level Plans

The concept level plans were developed for 12 priority locations across Passaic County. Each concept level plan serves as a basis for building consensus and support for development of funding and grant applications for design and construction. Each plan includes an overview, concept map, description of the potential bike facilities, and order-of-magnitude estimation of the level of effort and cost.

BIKEPassaicCounty Implementation Committee

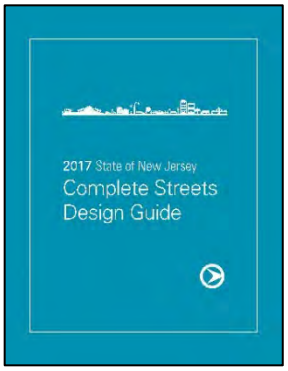
To move *BIKEPassaicCounty* beyond a plan sitting on a shelf, an implementation committee is proposed to track progress and identify and support opportunities for advancing recommendations. The committee should be organized and supported by the Passaic County Department of Planning & Economic Development and meet quarterly.

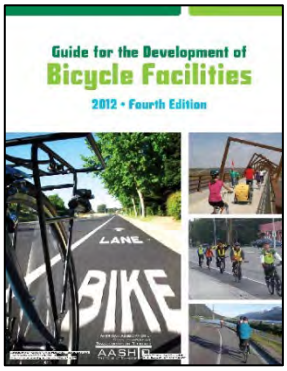
Strategies: Policies, Plans, and Programs

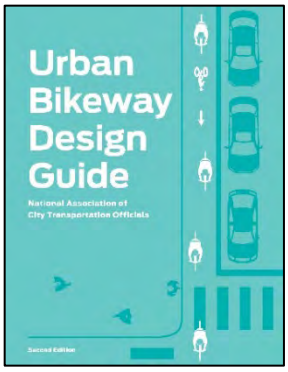
Policy, planning, and program strategies are proposed to support the implementation plan. The strategy matrix demonstrates the relationship between each strategy and plan goals and is designed to help local partners implement recommendations within their municipalities.

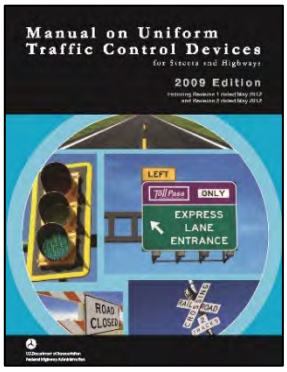
Pattern Book and Design Guidance

The Pattern Book supports *BIKEPassaicCounty* by providing general design guidance for bicycle facilities appropriate to the range of municipalities and variation in context in Passaic County. The Pattern Book summarizes the range of proposed improvements from on-street bicycle lanes to off-street side paths and trails. See the Appendix document for detailed discussion of the Pattern Book.









The purpose of this Pattern Book is threefold:

1. To inform the planning of the proposed county bicycle network by providing consistent criteria for facility selection relative to the variation of conditions that exist throughout Passaic County,
2. To provide a visual illustration and common palette of planned bicycle facilities to support and enhance communication with municipalities, stakeholders, and the public, and
3. To inform context-sensitive concept plans for priority routes in the proposed county bicycle network.

The level of detail provided in the Pattern Book is appropriate for bicycle facility network planning. Future implementation of proposed bicycle facilities should include careful and deliberate engineering design to ensure the safety of all users and comply with any and all applicable codes, statutes, and evolving best practices. Intersections, crossings, bicycle parking, wayfinding, and curbside management (such as parking, transit stops, goods movement, and parklets) will be important considerations in future phases of bicycle route design.

Together, the Design Guide, Pattern Book, and related design resources create a uniform process for evaluating and selecting appropriate facility types and ensure consistency of design and implementation.

Proposed Passaic County Bicycle Network

The *BIKEPassaicCounty* proposed county bicycle network implements the Vision Statement: a connected, countywide system of paths, trails, and on-street facilities increases access to destinations, enhances community health, promotes equity, and improves the experience of people bicycling, especially the most vulnerable and those without vehicles. See the Appendix document for detailed discussion of the proposed county bicycle network.

The network was developed through a series of steps, using data-driven and GIS mapping methodologies, planning and design guidance resources, manual field assessment of existing conditions, extensive outreach to stakeholders, and collaborative review and refinement of findings and recommendations.

This process draws upon the collaborative engagement and outreach efforts; findings and recommendations from previous plans and studies; existing conditions assessment, and applicable guidance including the Pattern Book, New Jersey Complete Streets Design Guide, and related resources. Together, these resources create a uniform process for evaluating and selecting appropriate facility types, while the Pattern Book also helps ensure consistency and connects details among the various facility types. A bike lane should look and function the same regardless of the context or community so that bike riders and drivers are able recognize it, use the facility, and interact in a safe and predictable manner.

Methodology

Development of the proposed county bicycle network used a three-step process:

Step 1: Passaic County Draft Priority Network

This first step was to develop the draft priority network, derived from the *Moving Passaic County (2012)* concept of "priority bicycle and pedestrian corridors." The goal of the priority network is to provide for bicycle travel within each town, between neighboring towns, across the County, and continuing through to neighboring counties. Step 1 of emphasizes County-owned roadways and lands for siting and hosting of bicycle facilities but does not specify facility types.

However, these 2012 priority corridors reflect conditions from at least a decade ago and do not reflect the current data resources and assessments, including recent crash data, crash hotspots, bicycle LTS, and the island effect, as described and documented in the existing conditions assessment. The existing conditions assessment reveals that the County must look beyond both the 2012 priority corridors to adequately meet everyday access and mobility needs, due to the high traffic volumes and travel speeds; crash occurrence and hotspots; and high-stress condition of many County-owned roadways.

Step 2: Completeness Check to Create the Priority Network

The second step was a completeness check of the draft priority network (step 1). The completeness check is an assessment of network connectivity, access, and mobility, with the goal to fill in network gaps and overcome barriers. The result is the priority network, which is focused on completing connections and providing local and regional access.

Each municipality should have a well-developed and accessible bicycle network with adequate connectivity not just locally, but to neighboring municipalities as well. The network should also provide access between critical multimodal trip generators and attractors, including residential areas, work locations, transit stops and rail stations, schools, parks, libraries, downtowns, and other activity centers. To provide adequate access and mobility, the network should bridge over high-stress and physical barriers and fill in gaps identified during the existing conditions assessment. The network should reconnect, to the extent feasible, the many isolated areas identified in the island effect analysis.

Step 3: Proposed County Bicycle Network with Bicycle Facility Types

The third and final step assigned recommended bicycle facility types to the priority network to create the proposed county bicycle network. The facility types include on- and off-street and range from bike lanes to shared-use paths and trails. This process yielded a comprehensive, county-wide bicycle network and facility type recommendations based specifically on Passaic County context and conditions, and ranges from on-street bicycle lanes to off-street side paths and trails.

In step 3, candidate roadway segments were identified and screened using the Bikeway Selection Guidance Process (pp 106-107) of the New Jersey Complete Streets Design Guide (CSDG), which outlines a three-part process for identification and selection of candidate bicycle facilities:

1. Evaluate Candidate Roadway Segment and Local Context
2. Determine Candidate Facility Type Options
3. Assess Feasibility and Select Preferred Facility Type

Bicycle facility type recommendations for the proposed county bicycle network were evaluated and selected based on context, existing conditions, and collaborative efforts, to develop a comprehensive, interconnected, and fully integrated bicycle network.

The proposed county bicycle network of 311 miles adds 297 miles to the existing inventory of 14.4 miles of dedicated bicycle facilities, with a variety of facility types spanning Passaic County's 16 municipalities, and includes facilities on state, county, and local roadway (see Figure 12 and Figure 13).

The proposed network includes a mix of large rural and suburban trail segments such as the planned 7.15-mile Passaic County Highlands Rail Trail (Highlands Rail Trail) that serves the communities east of the Wanaque Reservoir, and smaller urban segments such as the proposed bicycle lanes on Madison and Getty Avenues in the City of Paterson and proposed rail with trail facility adjacent to the conceptual Newark-Paterson Transit BRT concept in Clifton and Paterson.

Large format bicycle network mapping with enhanced detail is provided in the Appendix.

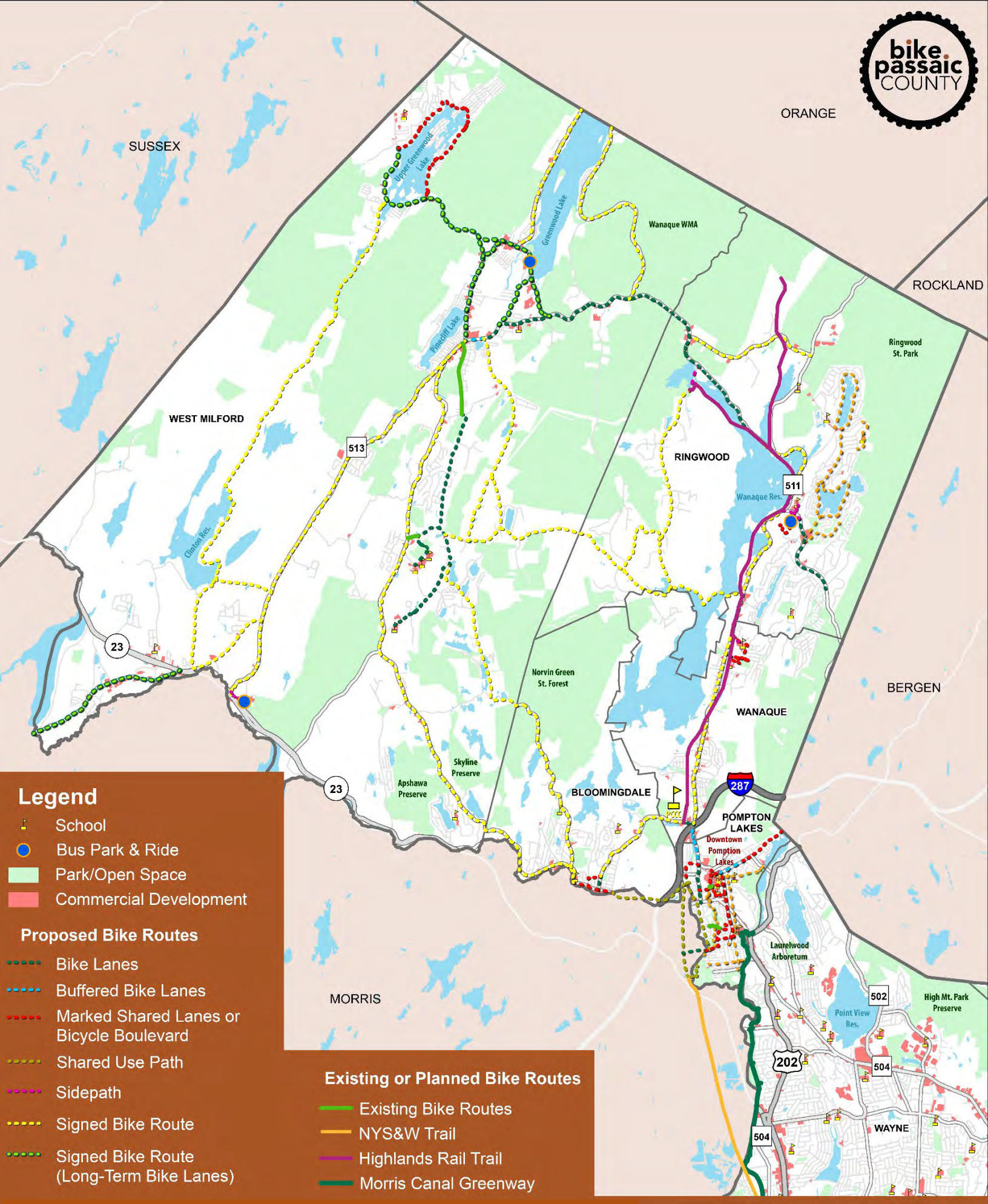


Figure 12: Proposed County Bicycle Network, Northwest

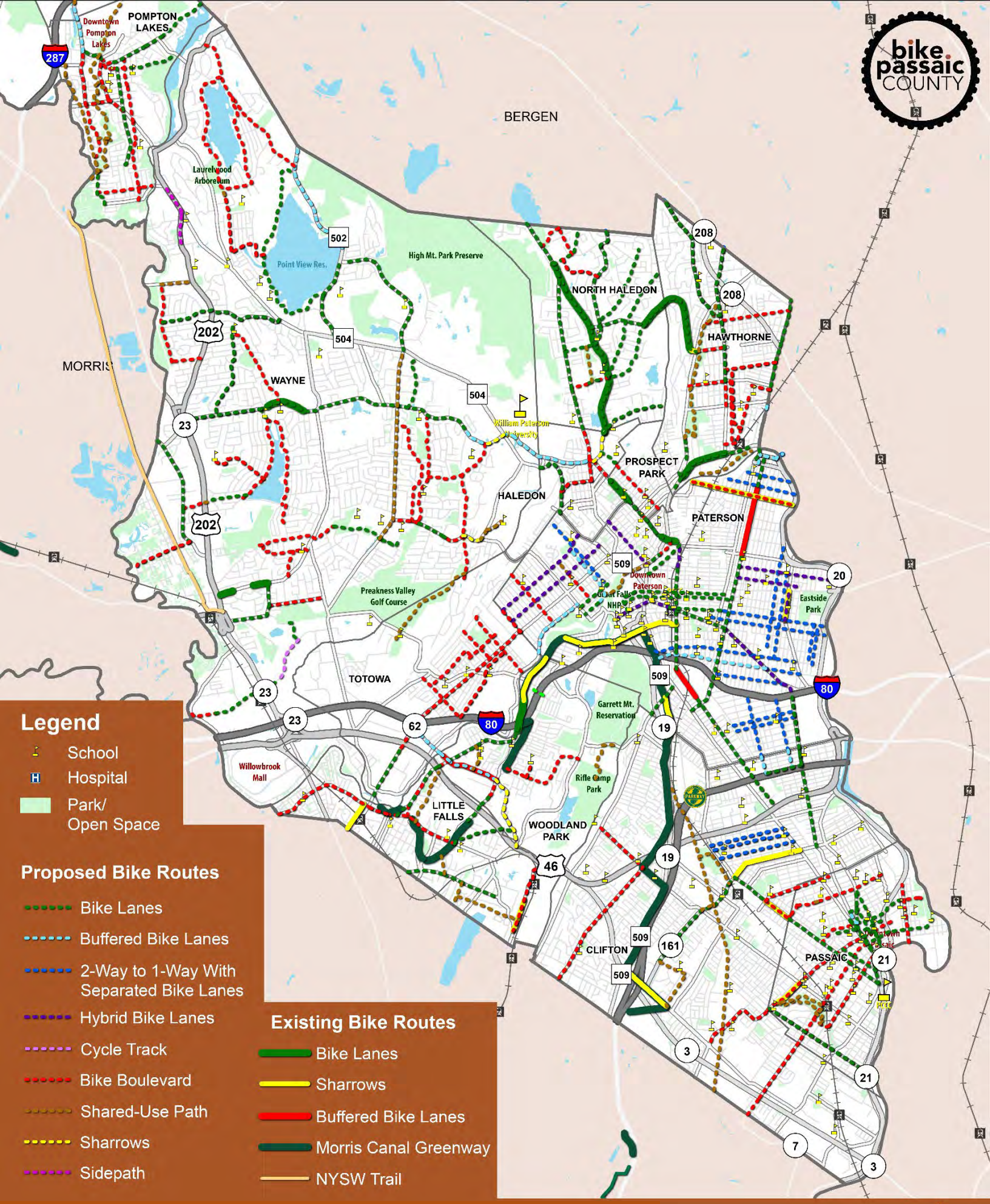


Figure 13: Proposed County Bicycle Network, Southeast

Concept Level Plans

The concept level plans comprise 12 priority locations distributed across Passaic County (see Figure 14). Each concept level plan serves as a basis for building consensus and support for development of funding and grant applications for design and construction. See the Appendix document for detailed discussion of the concept level plans.

The priority locations were identified in collaboration with Passaic County as a component of the *BIKEPassaicCounty* planning process and are depicted in . The concept level plans span a range of objectives including regional trail access, inter-community connections, and improvements for bicycle access to community destinations, such as schools, parks, and transit.

Each concept level plan includes an overview, concept map, description of the potential bike facilities planned for each route, and an order-of-magnitude estimation of the level of effort and cost to implement. Each concept is broken down into distinct segments in which the recommended facility, design considerations, and level of effort/cost vary, based on existing conditions and contextual considerations for the potential bike facilities.

In the same manner as development of the proposed county bicycle network, key references used in the development of the concept level plans include the *BIKEPassaicCounty* Pattern Book and New Jersey Complete Streets Design Guide Bikeway Selection Table

The concept level plans prioritize safety and an all-ages-and-abilities approach to provide safe and convenient connectivity in compliance with established design guidance.

These plans will help incrementally advance the planning and implementation of the proposed county bicycle network. Such advancement will require outreach and consensus from a range of stakeholders and participants, including the public, elected officials, and the engineering community to balance the needs and input of all involved. Each concept, therefore, is intended to serve as a basis for building consensus and support the development of funding and grant applications for future phases of design and construction.

Concept 1: West Milford Connection to Highlands Rail Trail, West Milford and Ringwood
Greenwood Lake Turnpike and Marshall Hill Road create an opportunity for an east-west bike lane connection to the Highlands Rail Trail between the communities of Ringwood and West Milford. In Ringwood, the potential bike lanes connect to the Highlands Rail Trail, supporting regional connectivity and access to scenic and historic destinations. In West Milford, the potential bike lanes would connect to existing bike lanes on Ridge Road, supporting access to commercial locations and schools.

Concept 2: Ringwood Connection to Highlands Rail Trail, Ringwood
An east-west bicycle connection along Skyline Drive in Ringwood would connect residential areas with commercial areas, schools, transit, and the Highlands Rail Trail. Once accessible to the Highlands Rail Trail, the area of Ringwood east of the Wanaque Reservoir will enjoy regional connectivity with the potential to connect with West Milford and communities to the south. Recommendations include buffered bike lanes with vertical delineators along the identified route, with opportunities for traffic calming.

Concept 3: Main Street Complete Street, Bloomingdale
Proposes to enhance Main Street as a 'Complete Street' with access and circulation for people on bicycles, on foot, or in motor vehicles, as well as improved connections to existing bus stops. Concepts would connect Bloomingdale's local network of low-stress residential streets to Main Street, the borough's primary business/commercial corridor. Recommendations include marked shared lanes, crosswalk visibility enhancements, and bicycle parking to encourage bicycle and pedestrian travel on Main Street to access local business and transit.

Concept 4: Morris Canal Greenway Connection, Wayne
The Pompton Feeder portion of the Morris Canal Greenway is an important regional trail connection through Wayne Township. This concept builds on Passaic County's 2011 Morris Canal Greenway Feasibility Study. Recommendations include sidepath and bicycle boulevard facilities to fill the existing connectivity gap in the Morris Canal Greenway between Dawes Highway and Cole Street.

Concept 5: Black Oak Ridge Connections to Morris Canal Greenway, Wayne
Propose to provide bicycle connectivity to the Morris Canal Greenway for residential areas of Wayne Township around Black Oak Ridge Road. Concept 5 would leverage existing low-stress, residential streets to provide connectivity by introducing bicycle boulevard design concepts.

Concept 6: Parish Drive Connections to Morris Canal Greenway, Wayne
Proposes to provide bicycle connectivity to the Morris Canal Greenway for residential areas of Wayne Township around Osbourne Terrace, Valley Road, and Parish Drive. Concept 6 would leverage existing low-stress, residential streets to provide connectivity by introducing bicycle boulevard design concepts, with bike lanes on higher stress roadways.

Concept 7: Wayne-Haledon Community Connection, Wayne and Haledon
Proposes inter-community connections among Wayne, Haledon, and North Haledon, with access to William Paterson University. Concepts include buffered bike lanes with vertical delineators in both directions (with an option for a sidepath) to provide low-stress bicycle connectivity.

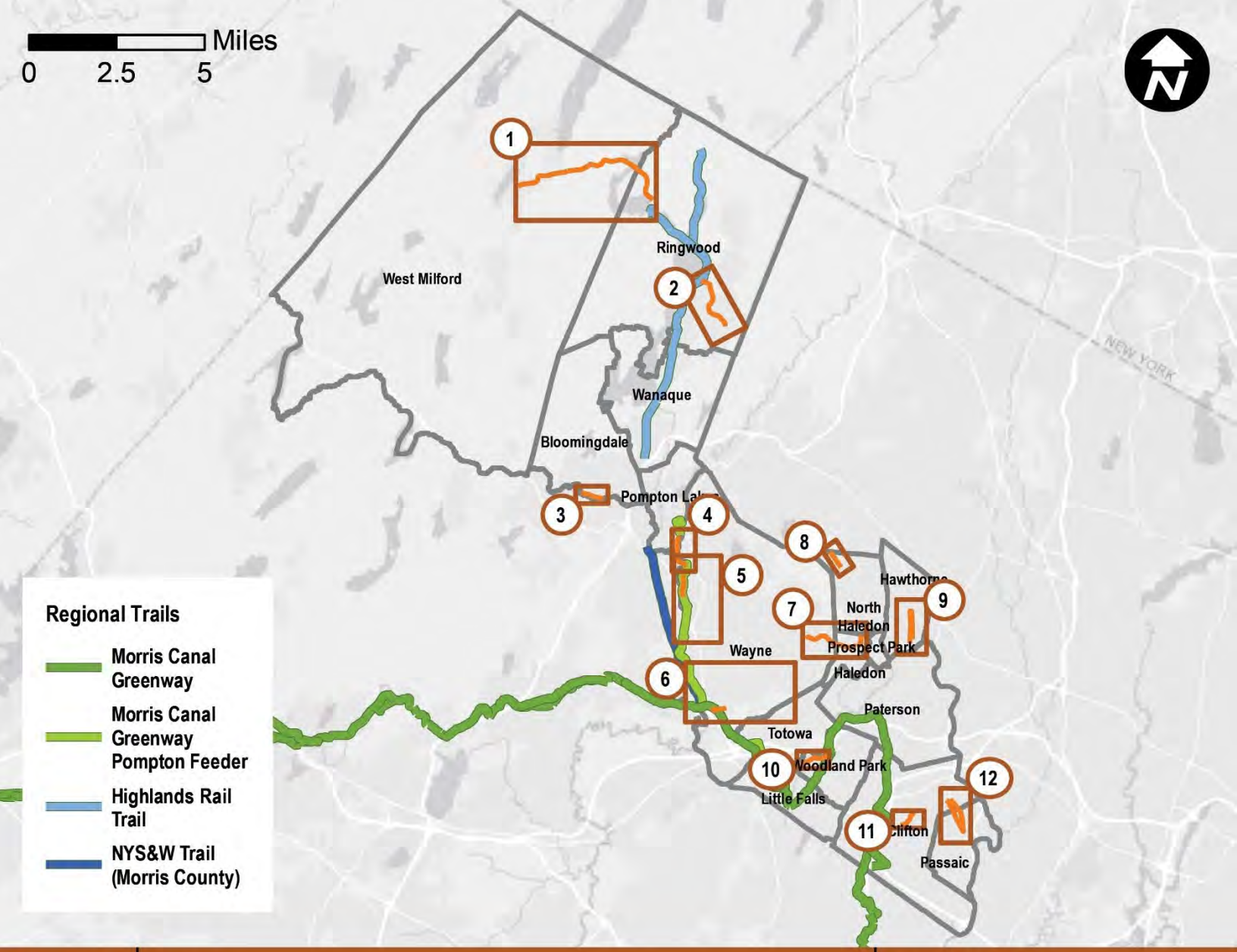
Concept 8: High Mountain Road Connection to Nature Preserve, North Haledon
Proposes bicycle connectivity to Franklin Lakes Nature Preserve by expanding existing bike lanes and leveraging select low-stress, residential streets enhanced as bicycle boulevards.

Concept 9: Hawthorne North-South Connection, Hawthorne
Enhanced connectivity in downtown Hawthorne between the train station and commercial activity center, using existing roadways shoulders for curbside bicycle lanes where possible along Lafayette Avenue. Segments that require on-street parking for retail would provide shared lane markings. Bicycle boulevard concepts on Grand Avenue and Royal Avenue will allow for local access to the train station.

Concept 10: McBride Avenue, Woodland Park
Proposes to extend existing bike lanes on McBride Avenue to connect existing bike lanes on Lackawanna Avenue to portions of the Morris Canal Greenway. Concepts would retain parking where possible (north segment), replace parking on one side with bike lanes in both directions for most of the corridor, and remove parking on the south side which has designated off-street parking.

Concept 11: Clifton Avenue, Clifton
Clifton Avenue between Van Houten Avenue and Paulison Avenue would provide a connection between existing bicycle facilities. Van Houten Avenue has marked shared lanes, and Paulison Avenue has bicycle lanes southeast of Clifton Avenue. Concepts include a continuous buffered bike lane where feasible, with marked shared lanes elsewhere.

Concept 12: Community Connection, Passaic and Clifton
Proposes an inter-community connection between Passaic and Clifton with access to the Main Avenue Bus Terminal, as well as commercial areas, schools, and residential streets. Concepts include northbound bicycle facility on Lexington Avenue and southbound on Central Avenue, maintaining curbside alignment with and without parking protection.



Concept	Name	Municipalities
1	West Milford Connection to Highlands Rail Trail	West Milford and Ringwood
2	Ringwood Connection to Highlands Rail Trail	Ringwood
3	Main Street Complete Street	Bloomingdale
4	Morris Canal Greenway Connection	Wayne
5	Black Oak Ridge Connections to Morris Canal Greenway	Wayne
6	Parish Drive Connections to Morris Canal Greenway	Wayne
7	Wayne-Haledon Community Connection	Wayne and Haledon
8	High Mountain Road Connection to Nature Preserve	North Haledon
9	Hawthorne North-South Connection	Hawthorne
10	McBride Avenue	Woodland Park
11	Clifton Avenue	Clifton
12	Passaic-Clifton Community Connection	Passaic and Clifton

Figure 14: Concept Level Plans, Locator Map

BIKEPassaicCounty Implementation Committee

To move *BIKEPassaicCounty* beyond a plan sitting on a shelf, an implementation committee is proposed to track the plan's progress, secure funding opportunities, and work with stakeholders to advance implementation of the priority network and strategies. Many recommendations require specific expertise, and familiarity with funding resources and regulatory requirements

Potential implementation items as outlined in *BIKEPassaicCounty*, include the following

- Adopt Complete Streets and Greens Streets policies
- Establish advisory committees of citizens, advocacy group, and subject matter experts to champion bicycle safety and mobility projects and policies
- Incorporate bicycle needs and safety into zoning, land use, and land development review
- Update master plans, and circulation, land use, and housing elements
- Prepare local bicycle, pedestrian, trail, and Vision Zero plan
- Provide bicycle safety education and training
- Organize and promote group bike rides and open streets events
- Develop bike and scooter share programs
- Develop demonstration and pilot projects
- Implement slow speed zones
- Incorporate low-cost and innovative design concept into capital improvement programs and projects

The committee should be organized and supported by the Passaic County Department of Planning & Economic Development and meet quarterly. Candidates for participation may include

- Passaic County Planning, Engineering, and Parks & Recreation
- Municipal partners
- NJTPA, NJDOT, NJ TRANSIT, Highlands Council
- EZ Ride and TransOptions Transportation Management Associations (TMAs)
- Voorhees Transportation Center at Rutgers University
- New Jersey Bike & Walk Coalition and Sustainable Jersey

Recommended Strategies: Policies, Plans, and Programs

BIKEPassaicCounty recommends policies, plans, and programs that will support development of the bicycle network and help to create a successful and sustainable bicycle-friendly Passaic County. Successful plan implementation will require cooperation and partnerships between the County, other government agencies, municipalities, community groups, local businesses, and social service/non-profit organizations. The proposed recommendations are based on a review of existing programs, information garnered through the engagement process, and guidance from the SAC.

The recommendations are organized into three categories: policies and regulations, planning, and other supportive programs. The supportive programs include recommendations related to education, encouragement, access to bicycles, bike/transit integration, and placemaking. Each section contains an overview of the category and descriptions of the recommended policies and programs. Local governments can use this chapter to assist with implementation in their municipalities and inclusion in their master plans.

Table 3: BIKEPassaicCounty: Policy, Planning, and Program Strategy Matrix

RECOMMENDATION	GOALS*	POTENTIAL PARTNERS
A: Municipalities should adopt a Complete and Green Street Policy	1,3,5	Municipal Government
B: Develop bicycle facility maintenance procedures to ensure that all relevant agencies are aware of requirements and standards	1,2,3	Municipal Government, County Government, DPW, Parks Department, Engineering Department
C: Establish a Bicycle/Pedestrian or Complete Streets Advisory Committee with the responsibility of advising municipal staff and boards on bicycle projects and needs	3,4	Municipal Government, Local Committees/Neighborhood Groups
D: Incorporate bicycle needs into zoning, land use, and development review	1,2,3,5	Municipal Government, County Government, Engineering Department, Planning Departments and Boards
E: Ensure consistency with municipal Master Plans and Elements	1,2,3,5	Municipal Government, Planning Departments and Boards
F: Create a Vision Zero Action Plan to identify strategies to achieve the goal of eliminating severe injury and fatal crashes	1,3	Municipal Government, County Government, Non-Profits/Advocacy Groups, Local Committees/Neighborhood Groups
G: Conduct Bike/Ped Road Safety Audits and Assessments	1	NJDOT, NJTPA, County, Municipal Government, Non-Profits/Advocacy Groups, TMAs, Schools, Bicycle Clubs, Local Committees/ Neighborhood Groups
H: Coordinate transportation and land use activity through the development of corridor plans	1,2,3	Municipal Government, County Government, NJDOT (Transportation Issues)
I: Integrate opportunities for bicycle improvements into Climate Action Plans/Greenhouse Gas Emissions Inventories	2,3,5	Municipal Government, County Government, Environmental Commissions, Local Committees/Neighborhood Groups
J: Support organizations that provide driver and bicycle education classes, workshops, and rodeos	1,2,4,5	TMAs, Non-Profits/Advocacy Groups, Enforcement, Bicycle Clubs
K: Work with advocacy groups and law enforcement to inform the public about bicycle related laws and changes to new laws	4,5	Municipal Government, County Government, NJDOT and other State Government, Enforcement, Non-Profits/Advocacy Groups
L: Help promote, organize, and schedule group rides and tours	2,4,5	Municipal Government, County Government, TMAs, Enforcement, Non-Profits/Advocacy Groups, Bicycle Clubs, Local Businesses, Local Committees/Neighborhood Groups

M: Participate in and support efforts to promote bicycling such as Safe Routes to School and Bike Month activities	1,2,4,5	Municipal Government, County Government, TMAs, Enforcement, Non-Profits/Advocacy Groups, Bicycle Clubs, Local Businesses
N: Engage local groups to develop and implement an Open Streets event	1,2,4,5	Municipal Government, County Government, TMAs, Enforcement, Non-Profits/Advocacy Groups, Bicycle Clubs, Local Businesses, Local Committees/Neighborhood Groups
O: Work with police departments and local businesses to develop a positive ticketing program	3,4	Enforcement, Local Businesses
P: Consider piloting a bike and micromobility share program	2,4,5	Municipal Government, County Government, NJDOT, Local Businesses, Local Committees/ Neighborhood Groups
Q: Create opportunities for people in Passaic County to borrow or purchase bikes, e-bikes, and tools at low or no cost	2,4,5	TMAs, Non-Profits/Advocacy Groups, Bicycle Clubs, Local Businesses
R: Partner with non-profit organizations to provide free bikes upon completion of a bike training or as incentives for youth education	1,2,4,5	Non-Profits/Advocacy Groups, Bicycle Clubs
S: Explore opportunities to install fix-it stations	1,2,4	Municipal Government, Non-Profits/Advocacy Groups, Local Committees/Neighborhood Groups, Local Businesses
T: Coordinate with NJ TRANSIT to improve bicycle access at stations and identify stations for enhanced bike parking	2,3	Municipal Government, County, NJTRANSIT
U: Develop a plan for bicycle wayfinding signage	1,2	Municipal Government, County Government, NJDOT, Local Businesses
V: Work with partners to support demonstration pilot projects	1,2,4,5	Municipal Government, County Government, Non-Profits/Advocacy Groups, Bicycle Clubs, Local Businesses, Enforcement, Local Committees/ Neighborhood Groups
Street design and traffic regulation W: Targeted Lower Speed Limits and Right Turn on Red Prohibitions X: Slow Speed Zones Y: Targeted road diet applications Z: Targeted one-way to two-way street conversions	1,2,3	Municipal Government, County Government, MPOs, NJDOT, TMAs

* BIKEPassaicCounty goals can be found on page 4 of this report.

POLICIES AND REGULATIONS

Policies and regulations play a critical role in creating a bicycle-friendly environment and in making bicycling an integral part of daily life. Policies and ordinances set the regulatory approach for bicycling. They help formalize implementation of projects and establish a framework for programs to support bicycling by improving safety, access, and amenities for people bicycling.

Decades of auto-centric transportation policies have disadvantaged walking and bicycling and have made bicycling less safe and convenient. There are many opportunities to make changes through the adoption of new policies and in the way a municipality approaches land use planning, site development, and zoning decisions. Some of the ways that government can address bicyclists' needs through policies and regulations include the following:

A. Adopting a Complete Streets and Green Streets Policy
B. Developing bicycle facility maintenance procedures to ensure that all relevant agencies are aware of requirements and standards
C. Establishing a Bicycle/Pedestrian or Complete Streets Advisory Committee with the responsibility of advising municipal staff and boards on bicycle projects and needs
D. Incorporating bicycle needs and safety into zoning, land use, and development review

Recommendation A:
Adopt a Complete Streets and Green Streets Policy
Audience/Potential Partners: Municipal Government

Adopting a Complete Streets policy formalizes the commitment by a jurisdiction to develop an integrated and connected multimodal transportation system that serves all neighborhoods and populations including bicyclists. Complete Streets policies direct the implementation of the most current and best practice design guidelines; provide performance measures and criteria for prioritizing projects; and help set clear and accountable procedures. Green Streets integrate green infrastructure in street design, allowing municipalities to become more resilient, sustainable, and equitable. Passaic County and four of its 12 municipalities (Pompton Lakes, Bloomfield, North Haledon, and Little Falls) have already adopted Complete Streets policies.

Resources

There are many available guides and documents to help government agencies institutionalize Complete Streets and Green Streets principles in roadway planning, design, and maintenance policies. These include:

Policy Development

- Complete and Green Streets for All: Model Complete Streets Policy and Guide (NJDOT, 2019)

- Institutionalize Complete Streets: Implementation Brief (NJTPA, 2021)
- The Elements of a Complete Streets Policy (Smart Growth America and the National Complete Streets Coalition, 2018)
- Making Complete Streets A Reality: Guide to Policy Development (NJDOT, 2012)

Design Guidance

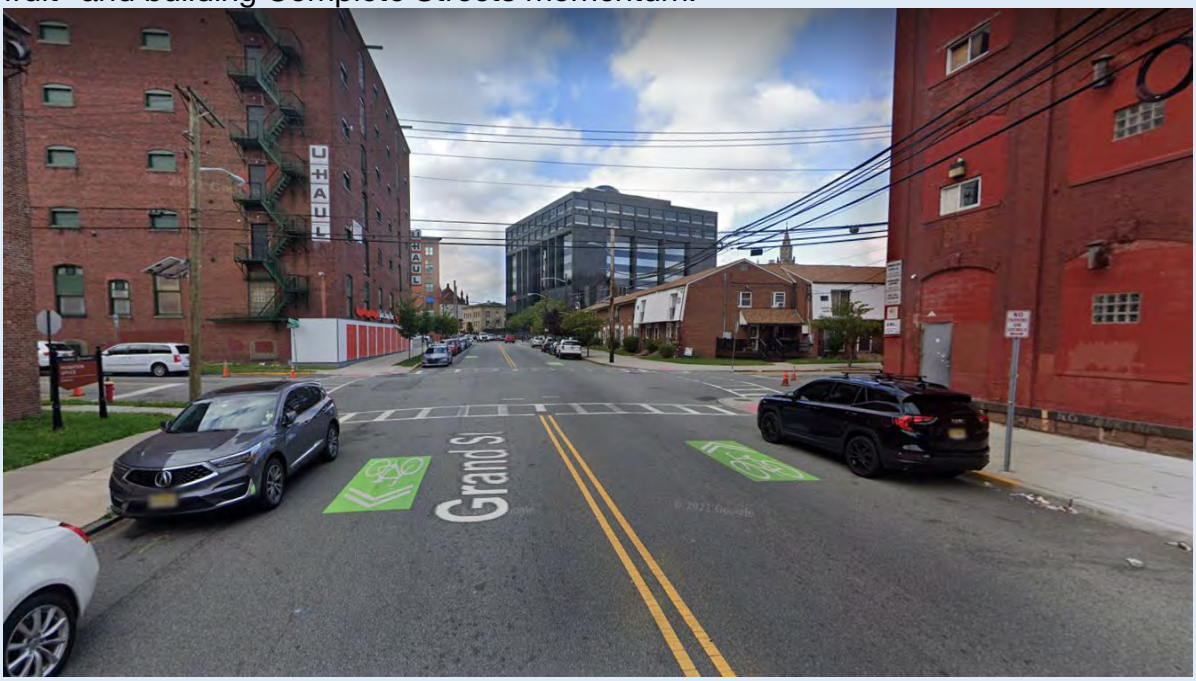
- State of New Jersey Complete Streets Design Guide (NJDOT, 2017)
- Urban Street Design Guide (NACTO)

Green Streets

- Green Streets Handbook (EPA, 2021)
- Green Infrastructure Element of the Passaic County Master Plan (2019)
- Green Infrastructure Guidance Manual for New Jersey (Rutgers, 2016)

Spotlight: Passaic County's Complete Streets Program

Passaic County adopted Complete Streets Guidelines and a Checklist as part of its 2012 Transportation Element. The Passaic County Planning and Engineering Departments work together to apply the County's Complete Streets Guidelines and Checklist to integrate Complete Streets measures into the County's resurfacing program. Recently, the County has incorporated bicycle lanes, sharrows, and road diet measures in road resurfacing projects as a means of targeting "low-hanging fruit" and building Complete Streets momentum.



SHARROWS ON GRAND STREET IN THE CITY OF PATERSON. SOURCE: GOOGLE

Recommendation B:
Develop bicycle facility maintenance procedures to ensure that all relevant agencies are aware of requirements and standards
Audience/Potential Partners: Municipal Government, County Government, Department of Public Works, Parks Department, Engineering Department

Bicycle facilities require regular maintenance to ensure that they are safe and accessible. Inadequately maintained facilities can create hazardous conditions and disrupt connectivity. Bike facilities are especially vulnerable to the accumulation of debris and leaves, which can create serious obstacles and hazards to bicyclists. On trails and multi-use paths, overgrown vegetation can encroach the pavement edge, effectively narrowing the usable surface. Maintenance may include repainting lines and symbols, replacing or maintaining bollards or other buffer materials.

Multi-use paths and trails require snow removal during the winter. Snowplows and snow removal equipment are often much too large to maneuver on multi-use paths and trails. Special snow removal equipment may be necessary. Maintenance policies should address the overall priority of snow removal on paths and trails and estimated clearance times so that trail users can adjust their trips and expectations accordingly. Bike lane design can consider snow removal and storage. For example, ensuring lanes are wide enough for a pickup truck to plow them, or by providing a buffer wide enough to accommodate snow storage. Some cities with significant snow are experimenting with deicing methods to keep the bike lanes safe including using beet juice or cheese brine as an additive to rock salt to save costs and improve deicing results.[iv]

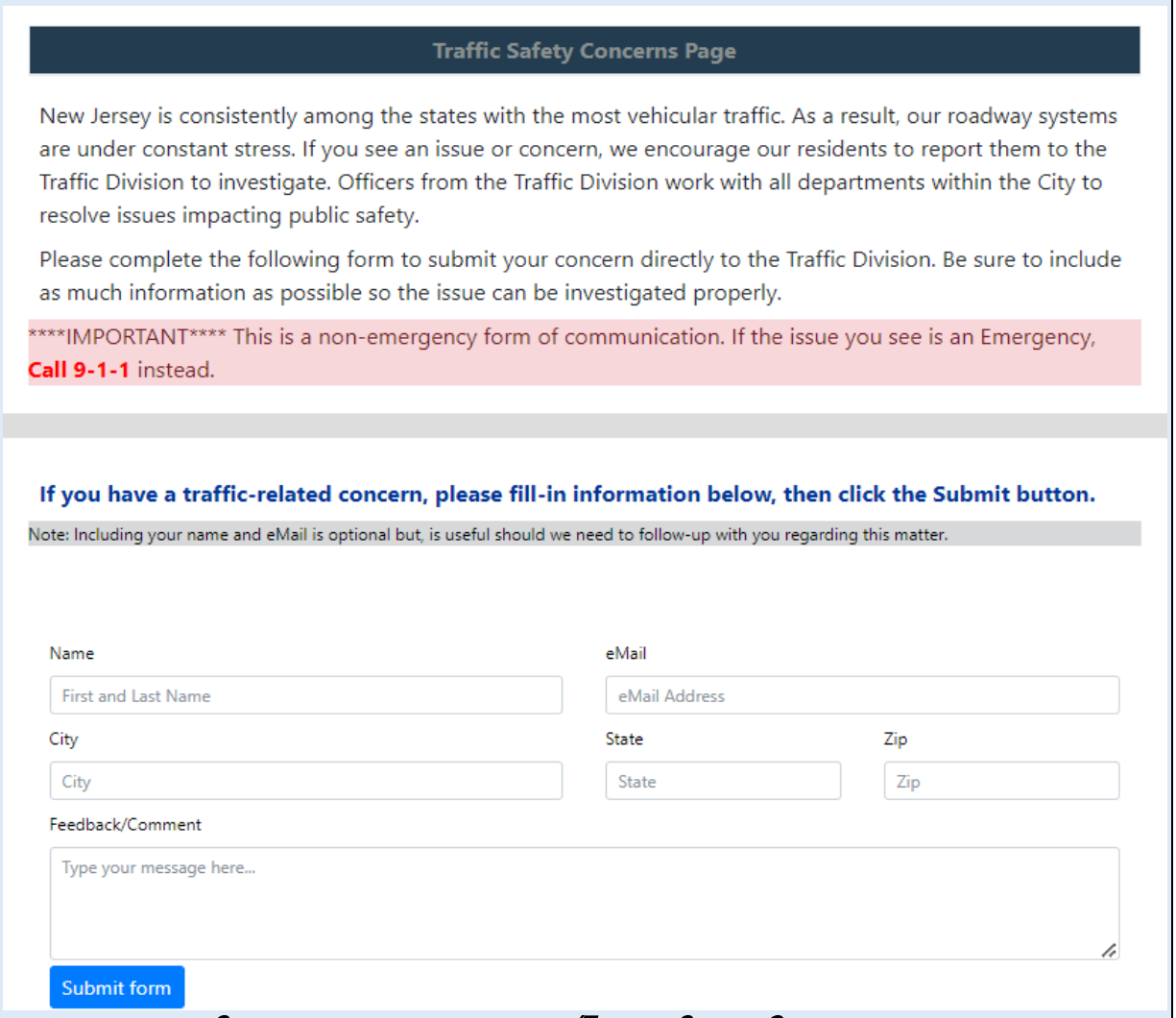
Maintenance policies should be reviewed by all relevant agencies including the Department of Public Works, Parks Departments, and Engineering and Traffic. Ideally, a mechanism should be implemented to encourage bicyclists to report maintenance problems. In addition, the cost of maintenance, along with a clear understanding of financial responsibility, should be part of every project budget.

Resources

- Guide for the Development of Bicycle Facilities by AASHTO provides model maintenance policy language.
- How Communities are Paying to Maintain Trails, Bike Lanes, and Sidewalks by Advocacy Advance: a partnership of Alliance for Biking & Walking and the League of American Bicyclists (2014)
- City of Madison, Wisconsin Public Works Bicycle Facilities Maintenance Program (2017)
- The City of Clifton Police Department operates an online traffic reporting system that allows residents to report any concerns to the traffic division. The traffic division works with all departments within the City of Clifton to resolve issues impacting public safety. Bicyclists can use this system to report maintenance issues.

Spotlight: City of Clifton Traffic Safety Concerns Page

The City of Clifton Police Department operates an online traffic reporting system that allows residents to report any concerns to the traffic division. The traffic division works with all departments within the City of Clifton to resolve issues impacting public safety. Bicyclists can use this system to report maintenance issues.



Traffic Safety Concerns Page

New Jersey is consistently among the states with the most vehicular traffic. As a result, our roadway systems are under constant stress. If you see an issue or concern, we encourage our residents to report them to the Traffic Division to investigate. Officers from the Traffic Division work with all departments within the City to resolve issues impacting public safety.

Please complete the following form to submit your concern directly to the Traffic Division. Be sure to include as much information as possible so the issue can be investigated properly.

****IMPORTANT**** This is a non-emergency form of communication. If the issue you see is an Emergency, **Call 9-1-1** instead.

If you have a traffic-related concern, please fill-in information below, then click the Submit button.

Note: Including your name and eMail is optional but, is useful should we need to follow-up with you regarding this matter.

Name
First and Last Name
eMail
eMail Address
City
City
State
State
Zip
Zip
Feedback/Comment
Type your message here...
Submit form

SOURCE: WWW.CLIFTONPOLICE.ORG/TRAFFIC_SAFETY_CONCERNS.HTML

Recommendation C:
Establish a Bicycle/Pedestrian, Complete Streets, Traffic Safety Advisory Committee with the responsibility of advising municipal staff and boards on bicycle projects and needs
Audience/Potential Partners: Municipal Government, Local Committees/Neighborhood Groups

Creating a municipal Bicycle/Pedestrian or Complete Streets Advisory Committee with the responsibility of advising municipal staff and agencies (e.g., Planning Board, Zoning Board) regarding projects and programs helps to address bicycle and pedestrian needs within the community. The Advisory Committee should include a diverse range of stakeholders selected through a fair process. Local committees and boards establish a partnership with the local government and provide an opportunity for public input and engagement in transportation decision-making and planning processes.

Recommendation D:
Incorporate bicycle needs into zoning, land use, and development review
Audience/Potential Partners: Municipal Government, County Government, Engineering Department

The land use and development review process is an opportunity to ensure new development includes appropriate bicycle accommodations. Leveraging private development activity provides an opportunity to advance planned improvements and preferred design standards by requiring their integration in development site plans.

Methods to incorporate bicycle needs into zoning, land use, and development review include:

I. Require bicycle parking via ordinance
II. Utilize checklists to identify bicycle improvements
III. Allow for mixed-use development and transit-oriented development (TOD)
IV. Include bicycle infrastructure improvements in Redevelopment Plans
V. Require a Traffic Impact Statement for applications for development and redevelopment
VI. Review motor vehicle parking requirements
VII. Manage the curbside to minimize conflicts
VIII. Clarify operation of bicycles on sidewalks
IX. Develop street tree standards

i. Require bicycle parking via ordinance

Requiring secure and convenient bicycle parking via an ordinance is essential to support and encourage bicycling for commuting, shopping, social visits, and other purposes. It is important for bicycle parking ordinances to require both short-term and long-term bicycle parking. Short-term bicycle parking is characterized by proximity to the destination and ease of use; it is primarily used by people who are visiting destinations for a short visits up to two hours. The design of long-term bicycle parking prioritizes the need for security and shelter from the elements and is primarily used by those who need bicycle parking for several hours or overnight storage.

Municipalities can also adopt bicycle amenity standards (showers, changing rooms, repair stations, etc.) or incentivize amenities in exchange for increased Floor Area Ratio (FAR), additional square footage, or reduced motor vehicle parking requirements.

SPOTLIGHT: TOWNSHIP OF LITTLE FALLS § 280-136.21 BIKE PARKING

Bike parking shall be provided in all Transit Village (TV) Districts to make cycling a more convenient transportation option. Bicycle parking facilities shall adhere to the requirements below. Buildings containing multiple tenants may satisfy their individual requirements by providing a single bike rack in a centrally located area.

- Multifamily residential: one space per 10 units, located within a secured common area within the building, an outdoor rack, or a combination.
- Nonresidential: two spaces per 5,000 square feet of gross floor area, located on the site within 50 feet of the principal building entrance and within a highly visible, well-lighted area that does not impede pedestrian or vehicular traffic.
- Mixed-use: both interior and exterior bike parking spaces as per the residential and nonresidential parking requirements above.

ii. Utilize checklists to identify bicycle improvements

Checklists are practical tools to help with the implementation of bicycle facilities. Checklists are meant to be used by developers and municipalities in the early stages of the projects to ensure that important elements, such as equity and sustainability considerations, are included in the project budget and scope.

A site review checklist can be used by developers to identify bicycle safety and accessibility in site development. Complete Streets checklists assist in project selection, project planning, design, construction, and maintenance of projects. They collect, share, and track project information between agencies/departments and ensure that projects fulfill the requirements and goals identified by the community. Complete Streets checklists also explain and facilitate the process for granting exceptions and indicate the party responsible for approving exceptions.

iii.Allow for transit-oriented development/mixed-use zoning

Mixed-use zoning allows for the combination of different land uses in an area. Transit-oriented development (TOD) focuses on development in close proximity to locations that are served by transit. Both land use strategies make communities more walkable and bikeable through promoting higher density development, encouraging a mix of uses, and creating bicyclist and pedestrian friendly streetscapes.

iv.Include bicycle infrastructure improvements in redevelopment plans

Redevelopment plans provide guidance for the future planning, development, redevelopment, or rehabilitation of an area. They are written in line with the community's Master Plan vision and land use objectives. They indicate land use and building requirements and design standards and establish the zoning requirements for the given area. Redevelopment plans have the potential to enhance bikeability by ensuring the built environment includes bicycle infrastructure improvements and connections.

v.Require Traffic Impact Statement for development and redevelopment applications

A Traffic Impact Statement (TIS) assesses the impact of a proposed development on the surrounding transportation system and recommends improvements to mitigate those impacts. A municipality can make a TIS a requirement for applications for development and redevelopment that increases the intensity of land use, where an intersection traffic control is modified, or if there are potential negative impacts on pedestrians or bicyclists. A TIS can help ensure that safe and efficient access is provided for all modes of travel.

vi.Review parking requirements

Minimum parking requirements subsidize cars (and are generally based on single-use suburban development of the 1970s and 1980s), increase traffic congestion and carbon emissions, encourage sprawl, raise housing and development costs, reduce walkability/bikeability, and exclude people without cars. Parking minimums that ignore shared parking relationships in mixed-use contexts, as well as walkability and transit accessibility can be major barriers to reinvestment in small properties and older buildings.

Communities in New Jersey and beyond have begun to reduce or remove minimum required parking standards, at least in their downtowns and in areas served by transit and/or targeted for redevelopment. Some communities have gone further and implemented maximum parking standards. Communities can also explore reducing minimum parking requirements for commercial and mixed-use development in tandem with adopting local bicycle parking requirements as part of a Complete Streets policy.

SPOTLIGHT: PARKING REQUIREMENTS FOR RESIDENTIAL LAND USES

In New Jersey, the Residential Site Improvement Standards (RSIS) specify statewide, mandatory requirements for new, residential development. The RSIS specifies parking requirements for residential land uses. Most municipalities in New Jersey treat the parking requirements as minimums. However, according to the Department of Community Affairs (DCA) who writes the rules, the RSIS specifies the maximum number of parking spaces planning boards and other local reviewers can require. In addition, the rules recognize that a variety of factors affect parking. When local reviewers ask for more parking than specified in the RSIS, the rules require the developer to notify the DCA of an agreement to exceed the standards, as specified at N.J.A.C. 5:21-3.6.

Source: The New Jersey Planner, Vol. 82, No. 1, January/February 2021. ISSN: 2168-6416

vii.Manage the curbside to minimize conflicts

Due to limited curb space, some vehicles might double-park or block bus and bicycle lanes, obstructing other users of the street. Designating specific zones for commercial loading and unloading activities, delivery truck parking, curbside pick-up, as well as pick-up and drop-off zones for ride-share vehicles can facilitate smoother traffic flow and make the streets safer and more efficient for all road users. The need for specific pick-up/drop-off zones and efficient curbside management will only increase in the future as more vehicles compete for the use of curb space with the continued rise of e-commerce, micromobility programs, and the introduction of self-driving cars on the road.

Figure 15: Physical Barriers

viii. Clarify operation of bicycles on sidewalks

New Jersey does not have a state statute prohibiting bicyclists from riding on the sidewalk. Sidewalks can provide an essential environment for safe, independent mobility, especially for children. Municipalities play the most important role in assuring that sidewalks are constructed, inspected, properly maintained, repaired, or reconstructed when needed. ADA standards specify a minimum 5-foot clear path width. An 8-foot-wide pedestrian clear zone allows two pairs of people to comfortably pass each other, and a 10-foot or wider clear zone can support higher volumes of pedestrians and potentially bicyclists depending on the land use and demand.

While some people may not feel safe riding in the street, riding a bicycle on a sidewalk can create potential conflicts with pedestrians. To avoid confusion and provide for the safety of all users, the municipality should be clear that bicyclists must yield the right-of-way to pedestrians. Municipalities may also want to consider allowing children under a certain age to ride bicycles on sidewalks, restricting bicycle speed to under 5 mph, and prohibiting bicycling from sidewalks in downtown and commercial areas where the potential for conflict is higher.

However, it is important for municipalities to inform residents and visitors of their adopted rules and regulations. Participants in focus group discussions identified inconsistent regulations and enforcement between municipalities especially regarding sidewalk riding, helmet use, and registration requirements.

SPOTLIGHT: BOROUGH OF POMPTON LAKES
§ 8-10.4 RIDING ON SIDEWALKS / CH 8: POLICE REGULATIONS

No person over the age of eight years shall ride a bicycle, tricycle, other wheeled vehicle or other means of transportation (except wheelchairs or other devices used for the same purpose; as an example, handicap scooters) upon any sidewalk in the Borough.

1. Wanaque Avenue from Lakeside Avenue to Pompton Avenue.
2. Colfax Avenue from Wanaque Avenue to Adrian Street.
3. Lakeside Avenue from Wanaque Avenue to Adrian Street.

Definition: As used in this section, "sidewalk" shall mean any sidewalk laid out by the Borough of Pompton Lakes or by any private individual, which is reserved by custom for the use of pedestrians and which has been specially prepared for their use, but not including footpaths or portions of public roads lying outside of the thickly settled parts of the Borough which are worn only by travel and are not improved by the Borough Council or by the abutting owners.

ix.Develop street tree standards

Street trees, shrubs, and landscape plantings play an important role in a street's vibrancy – they create shade, reduce traffic noise and energy consumption, and define boundaries between different types of users. Trees provide a sense of enclosure and interest that encourages people to walk and bike more, spend more time on the street, and visit local businesses and shops. Municipalities should adopt guidelines that address tree selection, tree well size and type, tree size and spacing, and tree installation and maintenance. The guidelines should also address the location of plantings around bicycle facilities. When selecting trees, it is important to prioritize native species as well as trees that are resilient to climate change.

PLANNING INTEGRATION

It is important to coordinate the implementation of this plan's recommended projects and programs with the recommendations and priorities set forth in related plans. The goals and recommendations of this plan should align with future planning efforts in Passaic County. It is recommended that the goals and recommendations from *BIKEPassaicCounty* be integrated into planning documents and related plans so municipalities:

E. Ensure consistency with municipal Master Plan and Elements
F. Create a Vision Zero Action Plan to identify strategies to achieve the goal of eliminating severe injury and fatal crashes
G. Conduct Bicycle and Pedestrian Road Safety Audits and Assessments
H. Coordinate transportation and land use activity through the development of Corridor Plans
I. Integrate opportunities for bicycle improvements into Climate Action Plans and Greenhouse House Emissions Inventories

Municipal Master Plans and Plan Elements

Recommendation E:
Ensure consistency with municipal Master Plans and Elements
Audience/Potential Partners: Ensure consistency with municipal Master Plans & Elements

Bicycle access and safety should be addressed in all planning documents and related plans, including the following:

i.Land Use Plan Element
ii.Circulation Plan Element
iii.Housing Element and Fair Share Plan (Affordable Housing)
iv.Stand-alone Pedestrian/Bicycle Plan or Pedestrian Plan

i.Land Use Plan Element

The Master Plan is a comprehensive, long-range plan intended to guide the growth and development of a community. The Land Use Plan Element should encourage mixed-use, transit-oriented development, and the linking of residential developments with commercial areas or with other residential areas by trails or multi-use paths.

ii.Circulation Plan Element

The Circulation Plan Element of the Master Plan examines the current transportation system and existing conditions, considers emerging trends and issues, and identifies strategies and recommendations to improve community mobility. This Element should include specific recommendations for bicycle facilities.

iiiHousing Element and Fair Share Plan (Affordable Housing)

The Municipal Land Use Law (MLUL), through incorporation of the New Jersey Fair Housing Act (FHA), requires municipalities to include a housing element in their Master Plans as a condition to exercising zoning power. The principal purpose of the Housing Element is to enumerate and provide the data, policies, and methods by which municipalities will meet present and forecast housing needs, with particular attention to low- and moderate-income households.

The principal purpose of the housing element is to describe the specific, intended methods that a municipality plans to use to meet its low- and moderate-income housing needs. However, affordability in a broader sense includes not only the cost of housing, but the time and cost of transportation to jobs and necessary services from that location. Communities that are walkable, bikeable, and public transportation-friendly allow residents to access employment and amenities easily and effectively with less dependence on automobiles.

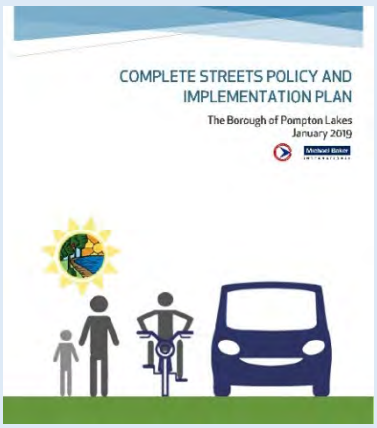
This results not only in savings of time and money, but also in increased physical activity and reduced greenhouse gas emissions.

iv.Stand-alone Pedestrian/Bicycle Plan or Pedestrian Plan

A Bicycle and Pedestrian Plan helps to guide the continued development of a community's network of bicycle and pedestrian facilities. A Bicycle and Pedestrian Plan describes existing and proposed conditions, includes a public outreach component, presents a vision, proposes network recommendations, prioritizes projects for implementation, and should include design guidelines. The NJDOT provides technical assistance to municipalities to assist with development of Bicycle and Pedestrian Plans through its Local Bicycle/Pedestrian Planning Assistance Program.

SPOTLIGHT: NJDOT LOCAL BICYCLE & PEDESTRIAN PLANNING ASSISTANCE

The NJDOT's Bureau of Safety, Bicycle and Pedestrian Programs works with local governments to develop bicycle and pedestrian plans through a Local Bicycle/Pedestrian Planning Assistance Program. Through this program, the NJDOT has provided technical planning assistance to more than 80 municipalities and counties to develop plans which will help make their communities better and safer places to bike and walk. The program provides these services to local jurisdictions that express a strong desire in improving or enhancing bicycle and pedestrian travel within their communities.



The Borough of Pompton Lakes received a grant from NJDOT to develop a Complete Streets Policy and Implementation Plan.

Vision Zero Action Plans

Recommendation F:
Create a Vision Zero Action Plan to eliminate severe injury and fatal crashes
Audience/Potential Partners: Municipal Government, County Government, Non-Profits/Advocacy Groups, Local Committees/ Neighborhood Groups

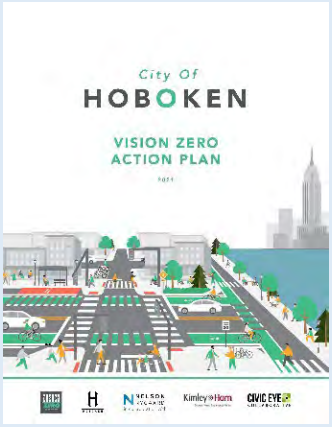
A Vision Zero framework is a multidisciplinary and collaborative approach that seeks to eliminate severe injuries and fatalities and prioritize human life and health in all aspects of transportation systems and operations. Vision Zero recognizes that human error and mistakes are inevitable and focuses on systems-level change (above individual behavior change) to achieve safer mobility. Vision Zero acknowledges that many factors contribute to safe mobility, such as roadway design, reduced speeds, and policy implementation. Vision Zero Action Plans serve as effective roadmaps for eliminating severe injury crashes and fatalities. They outline actionable strategies, roles and responsibilities, and performance measures to help communities implement their vision for traffic safety for all users and abilities. Some communities choose to adopt a Vision Zero policy or promote a Vision Zero pledge to further demonstrate their commitment to build safer streets and reduce traffic fatalities.

Resources

- Vision Zero NJ Alliance - https://www.visionzero4nj.org/
- Vision Zero Network - https://visionzeronetwork.org/

SPOTLIGHT: HOBOKEN VISION ZERO ACTION PLAN

Hoboken adopted a Vision Zero Action Plan in 2021. It is an important benchmark in the City's effort to eliminate traffic-related deaths and injuries by 2030. The Plan is informed by the Safe Systems Approach and is organized along six Safe Systems themes: Safe Streets, Safe Speed, Safe Vehicles, Safe Behavior, Post-Crash Investigation, and Data Driven Decisions.



Bike/Ped Road Safety Audits & Assessments

Recommendation G:
Conduct Bike/Ped Road Safety Audits and Assessments
Audience/Potential Partners: Municipal Government, Non-Profits/Advocacy Groups, TMAs, Schools, Bicycle Clubs, Local Committees/Neighborhood Groups

Walking and bicycling audits are performed to identify existing conditions and challenges to walking and bicycling within a specific area. An audit can be used to identify potential alternatives or solutions such as engineering treatments, policy changes, or education and enforcement measures. Bike audits can be geared toward examining one or many types of facilities or features (e.g., an audit could focus on pavement surfaces, intersections, school zones, availability of sufficient pavement space for shared use, etc.).

Resources

The NJTPA's Complete Streets Technical Assistance Program provides free direct technical assistance to municipalities to complete a specific task related to advancing a Complete Streets initiative in their community including road safety audits. The program is funded by the NJTPA, with technical assistance provided in partnership with Sustainable Jersey and the Voorhees Transportation Center at Rutgers University

Corridor Plans

Recommendation H:
Coordinate transportation and land use activity through the development of corridor plans
Audience/Potential Partners: Municipal Government, County Government, State Government

Corridor plans help to coordinate transportation and land use activity within a major transportation link/corridor. They identify existing conditions and issues and offer guidance on future infrastructure and capital improvements.

Climate Action Plans and Greenhouse Gas Emissions Inventories

Recommendation I:
Integrate opportunities for bicycle improvements into Climate Action Plans/Greenhouse Gas Emissions Inventories
Audience/Potential Partners: Municipal Government, County Government, Environmental Commissions, Local Committees/ Neighborhood Groups

A Climate Action Plan provides strategies and measures to reduce greenhouse gas (GHG) emissions and illustrates ways to enhance a community's resilience to climate hazards in the long term. GHG Inventories include a list of emission sources to manage GHG impacts and risks as well as to identify opportunities to reduce and mitigate those risks in communities.

Resources

The State of New Jersey adopted an Energy Master Plan (EMP) in 2019. Reducing energy consumption and emissions from the transportation sector is a key strategy from the plan. Supporting more transit use, bicycling, and walking is included as a way to reduce the overall transportation energy footprint. In 2020 the State released the New Jersey Global Warming Response Act 80x50 Report to reduce New Jersey's greenhouse gas emissions by 80% from their 2006 levels by 2050. The report recommends prioritizing complete streets and other bicyclist and pedestrian-friendly improvements as an action for reducing vehicle miles traveled.

EDUCATION

Educational programs offer different ways for people of all ages and abilities to learn skills and gain confidence in bicycling. They also provide all roadway users with awareness and information about how to share the road safely with vulnerable roadway users. The following actions are recommended in Passaic County:

J. Support organizations that provide driver and bicycle education classes, workshops, and rodeos
K. Work with advocacy groups and law enforcement to inform the public about bicycle related laws and changes to new laws

Classes, Workshops, and Bike Safety Rodeos

Recommendation J:
Support organizations that provide driver and bicycle education classes, workshops, and rodeos
Audience/Potential Partners: TMAs, Non-Profits/Advocacy Groups, Enforcement, Bicycle Clubs

Educational programming can range from information sharing about rules of the road to more structured training programs. Over one-third of questionnaire participants want to see more motorist and bicycle safety education programs, and 20% of participants want access to basic bicycle repair classes. Bicycle educational programming and materials should be culturally relevant, representative of the community, and tailored to the needs of different populations. Types of education programs include:

- Safety classes offered for both drivers and bicyclists so that people can safely share the road with other users.
- Bicycle rodeos designed to empower younger cyclists to bicycle more confidently. They are opportunities to educate parents and children about bicycle safety on roads and they often offer quick tune-ups and bicycle safety inspections.
- Bicycle maintenance workshops teach people basic bicycle repair skills and demonstrate how to perform regular check-ups and inspections so that people can feel more confident to handle issues such as flat tires during a ride. Having bicycle maintenance knowledge also helps people to monitor their bicycles' conditions to ensure safer and smoother rides each time and to catch problems on their bicycles before they develop into major and costly repairs.

Resources

There are many organizations that provide education to bicyclists and drivers in the region. Transportation Management Associations (TMAs) provide programs and services that improve mobility, the environment, and overall quality of life in New Jersey, including bike classes for youth and adults, bike rodeos, and bike workshops. They also assist with implementing Safe Routes to School programs. TransOptions is the TMA for northwestern Passaic County; EZ Ride TMA is the TMA for the southeast portion of the county.

The New Jersey Bike Walk Coalition (NJBWC) offers the Smart Cycling curriculum developed by the League of American Bicyclists that teaches cyclists how to ride safely and legally on busy streets and highways.

Rules of the Road

Recommendation K:
Work with advocacy groups and law enforcement to inform the public about bicycle related laws and changes to new laws
Audience/Potential Partners: Municipal Government, County Government, State Government, Enforcement, Non-Profits/Advocacy Groups

Recently, new laws have been passed that impact bicyclist safety. Sometimes, information about these laws may not be clearly communicated to law enforcement or the public. In addition, inconsistency of enforcement across municipalities was identified as an issue during focus group discussions.

Resources
The New Jersey Bike Walk Coalition (NJBWC) is the state-wide advocacy group for bicyclists and pedestrians which helps to educate the public on the laws and rules of the road. NJBWC also organizes the NJ Bike Walk Summit, which is a great opportunity to learn about state and federal policy issues and to network with others to advance bicyclist and pedestrian safety.

ENCOURAGEMENT

Providing a variety of opportunities to bicycle in the community can encourage people of different experience levels to bicycle more regularly and inspire changes in travel patterns. Encouragement programs such as bike rides and open streets events also build a greater sense of community and allow people to see and use typically car-centric streets and public spaces differently. They also help to diversify perceptions of bicyclists and encourage more people to see themselves riding a bicycle for recreation or transportation. More than one-half of questionnaire participants indicated that community bicycle events would encourage them to bicycle more often; one-third of participants would love to have more local group rides to gain confidence in bicycling. The following is recommended to support encouragement programs in the County:

L. Help promote, organize, and schedule group rides and tours
M. Participate in and support efforts to promote bicycling such as Safe Routes to School and Bike Month activities
N. Engage local groups to develop and implement an open streets event
O. Work with police departments and local businesses to develop a positive ticketing program

Group Bike Rides

Recommendation L:
Help promote, organize, and schedule group bicycle rides and tours
Audience/Potential Partners: Municipal Government, County Government, TMAs, Enforcement, Non-Profits/Advocacy Groups, Bicycle Clubs, Local Businesses, Local Committees/Neighborhood Groups

Organized bike rides and bike tours are great ways to build community and encourage people with little experience in bicycling to ride more confidently. County and municipal staff can help promote events and assist with road closures and police escorts.

SPOTLIGHT: PATERSON RIDE OUT FOR UNITY

The Paterson Ride Out for Unity was a free community event for all bikers at the skateboard park on 21st Avenue presented by the Paterson Community Police Division, Unity Foundation, Wheel Up Inc, Brothers United and Sisters United Bicycle Clubs & Bomb Squad.

The Ride Out for Unity was held in October 2021.

Public Awareness Campaigns

Recommendation M:
Participate in and support efforts to promote bicycling such as Safe Routes to School and Bike Month activities
Audience/Potential Partners: Municipal Government, County Government, TMAs, Enforcement, Non-Profits/Advocacy Groups, Bicycle Clubs, Local Businesses

Bike Month activities, which often take place in May, can illuminate the many benefits of bicycling, create opportunities for people to discuss potential challenges and issues with bicycling in their communities, strengthen and create partnerships among bicycle-related groups, and empower people to incorporate bicycling in their daily lives. The County and municipalities can expand regional efforts by providing incentives, distributing materials, and sharing information.

Open Streets Events

Recommendation N:
Engage local groups to develop and implement an Open Streets event
Audience/Potential Partners: Municipal Government, County Government, TMAs, Enforcement, Non-Profits/Advocacy Groups, Bicycle Clubs, Local Businesses, Local Committees/Neighborhood Groups

Open Streets events temporarily close roadways to motor vehicles in order to encourage people to walk, bike, and explore public spaces safely. They help people reimagine how car-centric public streets and spaces can be used differently. The County and municipalities can help identify partners and existing community celebrations which could be incorporated into a potential event.

Positive Ticketing Program

Recommendation O:
Work with police departments & local businesses to develop a positive ticketing program
Audience/Potential Partners: Enforcement, Local Businesses

Positive ticketing rewards kids for good behavior, such as giving out ice cream tickets for wearing helmets. This strategy helps to build relationships with younger community members and can be carried out by community organizations and/or law enforcement.

ACCESS TO BICYCLES

Providing access to bicycles is crucial in encouraging and allowing more people to bicycle. Existing barriers to access include affordability and lack of bicycle storage spaces. One-fifth of questionnaire participants noted that free and reduced cost access to bicycles would encourage them to bicycle more often. To increase access to bicycles, it is recommended the following are implemented:

P. Consider piloting a bike and micromobility share program
Q. Create opportunities for people in Passaic County to borrow or purchase bikes, e-bikes, and tools at low or no cost
R. Partner with non-profit organizations to provide free bikes upon completion of a bike training or as incentives for youth education
S. Explore opportunities to install fix-it stations

Bike Share Programs

Recommendation P:
Consider piloting a bike and micromobility share program
Audience/Potential Partners: Municipal Government, County Government, State Government, Local Businesses, Local Committees/ Neighborhood Groups

Bike share programs allow people to conveniently access bicycles and reduce concerns over bicycle theft, parking, and maintenance. They also serve as a great option for first and last mile transit connections. Successful bikeshare systems require a designated fleet of bikes, parking locations, and a growing network of bicycle-friendly streets that connect high demand destinations. Adequate funding is necessary to support a successful bikeshare network. Some bikeshare systems are privately funded with revenue coming from fares and advertising. Other systems rely on partnering with institutions and local businesses.

E-scooter sharing platforms are another alternative to bikeshare, but instead of bikes, electric-motor scooters are used. E-bikes, which have small electric motors that increase speed and ease of pedaling, have also increased in popularity and use.

SPOTLIGHT: UNION TOWNSHIP BICYCLE SHARE PROGRAM

Union Township has a docked bicycle share program that provides the community with multi-modal transportation options. It has a fleet of 60 bicycles with stations located throughout the town.

SOURCE: SUSAN G. BLICKSTEIN, LLC

Bike Libraries

Recommendation Q:
Create opportunities to borrow or purchase bikes, e-bikes, and tools at low or no cost
Audience/Potential Partners: TMAs, Non-Profits/Advocacy Groups, Bicycle Clubs, Local Businesses

Bike and tool libraries provide free access to bicycles, bicycle accessories, and tools for short periods of time. They often repair donated bicycles and serve as a great resource for those who might not own a bicycle. Sometimes bikes are available at no-cost or low-cost to individuals.

SPOTLIGHT: BOYS & GIRLS CLUB OF MERCER COUNTY BIKE EXCHANGE

The Boys and Girls Club of Mercer County Bike Exchange is a volunteer-led enterprise that repairs donated bicycles and sells them in the community. All proceeds go to The Boys & Girls Club of Mercer County. The bike exchange encourages the community to donate bicycles or to organize bike drives in schools, companies, civic or faith organizations.

SOURCE: WWW.BGCMERCER.ORG/BGC-BIKE-EXCHANGE

Earn-a-Bike Programs

Recommendation R:
Partner with non-profit organizations to provide free bikes upon completion of a bike training or as incentives for youth education
Audience/Potential Partners: Non-Profits/Advocacy Groups, Bicycle Clubs

Earn-a-bike programs allow children to earn a free bicycle through participation in various programs or initiatives, such as volunteering, summer reading programs, or bike mechanic classes. For example, The Boys and Girls Club of Wayne has given bicycles as rewards for kids who have completed a certain amount of work in their afterschool program.

Fix-it Stations

Recommendation S:
Explore opportunities to install fix-it stations
Audience/Potential Partners: Municipal Government, Non-Profits/Advocacy Groups, Local Committees/Neighborhood Groups, Local Businesses

Fix-it stations allow bicyclists to perform basic repairs and maintenance and help to quickly resolve issues during a ride.

BIKE-TRANSIT INTEGRATION

Building bicycle facilities in close coordination with transit services enables people, especially those who do not own a car, to access transit stations safely and conveniently by bicycle. Additionally, modal integration helps to avoid generating car trips to and from transit stations.

Recommendation T:
Coordinate with NJ TRANSIT to improve bicycle access at stations and identify stations for enhanced bike parking
Audience/Potential Partners: Municipal Government, NJTRANSIT

Integrating active transportation and transit addresses the first-mile/last-mile challenges of planning, reduces the number of single-occupant car trips to transit stations, and creates greater connectivity in the transportation network.

- Bike stations are buildings or structures designed to be used as secure long-term bicycle parking facilities. They can vary in size and design, ranging from lockable bicycle cages to multi-story buildings designed specifically for providing secure bicycle parking solutions.
- Bike lockers, or bike boxes, can be provided at places where people need long-term parking solutions, such as transit stations.

Resources

- NJTRANSIT Transit Friendly Planning Guide
- Association of Pedestrian & Bicycle Professionals (APBP) Bike Parking Guide
- NACTO Transit Street Design Guide

SPOTLIGHT: NEW JERSEY BIKE & WALK COALITION BIKE DEPOT PROGRAM

The NJBWC created the bike depot program in October 2014 with the launch of the Montclair bike depot at the Bay Street NJ TRANSIT station. The Bloomfield station bike depot was launched in March 2017 and the Elizabeth bike depot opened in May 2018, at the midtown garage adjacent to the Elizabeth station.

SOURCE: NJBWC.ORG/BIKE-DEPOT-PROGRAM/

The Elizabeth Bike Depot is a collaboration between NJBWC and the Parking Authority of the City of Elizabeth. The depot is managed and maintained by the NJBWC. All proceeds above expenses are used by the NJBWC to further its mission to make streets safer for all users in the state.

Elizabeth Bike Depot was made possible through Urban Enterprise Zone funds.

PLACEMAKING

Placemaking is the process of creating and reimagining public spaces that reflect shared needs, values, and identities of a community as well as contribute to people's well-being. It is a collaborative process that involves understanding a community's vision and desires for a place to facilitate creative patterns and uses. Placemaking strategies can range from simple, low-cost changes to capital improvements. Some placemaking strategies to transform places to become more bicycle-friendly include:

U. Develop a plan for bicycle wayfinding signage
V. Work with partners to support demonstration and pilot projects

Wayfinding Strategies

Recommendation U: Develop a plan for bicycle wayfinding signage
Audience/Potential Partners: Municipal Government, NJTRANSIT

Bicycle wayfinding is the use of signage, maps, apps, and other elements to help people better navigate, understand, and experience a place by bicycle. For example, signs can identify bike routes and can include mileage or travel time to community destinations. Wayfinding can also include unique branding.

Pilot Projects

Recommendation V: Work with partners to support demonstration and pilot projects
Audience/Potential Partners: Municipal Government, County Government, Non-Profits/Advocacy Groups, Bicycle Clubs, Local Businesses, Enforcement, Local Committees/Neighborhood Groups

Demonstration/Pilot Programs are short-term, low-cost projects that are used to pilot and experiment with potential solutions and improvements for safer walking and bicycling. This allows communities to test ideas using materials like paint, bollards, or rubber markers without spending a lot of money and time. In some locations, these projects may stay in place until the municipality can find funding to create something more permanent. Also called tactical urbanism, these demonstrations can create excitement and momentum for a project, allow results to be seen more quickly from a planning process, and allow for testing different areas or studying the effectiveness of certain treatments.

SPOTLIGHT: BOROUGH OF KEYPORT DEMONSTRATION PROJECT

Using temporary paint and plastic bollards, the Borough of Keyport was able to demonstrate how potential improvements, including a bicycle lane, designated pedestrian space and additional crosswalk, could improve safety where the Henry Hudson Trail crosses Maple Place at the intersections with Church and Atlantic streets.

SOURCE: NJTPA

The week-long temporary demonstration project was one component of public outreach for Keyport's Complete Streets Policy and Implementation Plan. The plan was completed though the NJTPA's Planning for Emerging Centers Program. This competitive program provides technical assistance to communities to create more sustainable, transit-supportive and walkable communities.

DESIGN STRATEGIES

The recommended design and traffic regulation strategies include low-cost and innovative roadway design strategies to achieve the vision and goals of *BIKEPassaicCounty* — to improve safety and mobility, provide access to opportunity, and achieve equitable outcomes for vulnerable roadway users and disadvantaged groups. These examples include proven strategies and countermeasures intended to slow travel speeds; improve separation among pedestrians, bicyclists, and motor vehicle traffic; and calm traffic, especially in residential areas and locations with high pedestrian and/or bicycle demand.

W. Targeted Lower Speed Limits and Right Turn on Red Prohibitions
X. Slow Speed Zones
Y. Targeted road diet applications
Z. Targeted one-way to two-way street conversions

Recommendation W:
Targeted Lower Speed Limits and Right Turn on Red Prohibitions
Audience/Potential Partners: Municipal Government, Passaic County, NJDOT

Identify streets and intersections where targeted Lower Speed Limits and/or Right Turn on Red prohibitions can improve safety and provide a less stressful street environment for travel by bike and by foot. The speed a vehicle is traveling at the point of impact is directly linked to the fatality rate in a vehicle and pedestrian crash. The average fatality rate for a person hit by a car is 10% at 20 mph, 40% at 30 mph, and 85% at 40 mph (USDOT, 2011).[v]

In some specific cases, a street provides the desired connectivity and access between residential areas and significant destinations such as schools, parks, libraries, social services, dining and entertainment, and transit service. However, this street or intersection may experience levels of traffic, speeds, and truck travel that create a stressful environment for non-motorized travel. Targeted application of Lower Speed Limits and/or Right Turn on Red Prohibitions may reduce the stress level and provide conditions that are more accessible and comfortable for non-motorized travel, especially among vulnerable populations and roadway users.

Lower speeds are also one of the factors that can reduce the LTS metric for a street, corridor, or intersection. Lowering the posted speed may reduce the LTS enough to make a dedicated bicycle facility viable that would otherwise be too stressful based on its current condition, design, and posted speed limit. These speed and turn changes are also among the FHWA's Proven Safety Countermeasures, which demonstrated results in case studies in cities and towns across the U.S.

Recommendation X: Slow Speed Zones
Audience/Potential Partners: Municipal Government, Passaic County, NJDOT

Slowing speeds is a key step in creating a safe environment for all road users. Slow speed zones, 20 is plenty programs, and similar strategies are designed to provide safety benefits on a larger scale than the targeted speed and turn changes.

These changes may be applied on a neighborhood or corridor basis, such as in downtowns or along main streets. They can also be more targeted like creating a slow zone around a school, park, recreation center, senior center, library, or other destination. Travel within neighborhoods is often slower and more local with many trips starting or ending at home. Residential, school, and other destination areas typically generate more pedestrian, bicycle, and transit travel with non-motorized and vulnerable travelers more directly exposed to vehicular traffic.

A 1-mph decrease in operating speeds can result in a 17% decrease in fatal crashes.[vi] Another study found that a 10% reduction in the average speed resulted in 27% fewer injury crashes and 34% fewer fatal crashes.[vii]

Walkable school zones have several health, safety, and educational benefits while also reducing transportation costs for families and school districts. Safe Routes to School programs have been found to increase walking and improve safety for students that walk and bicycle to school. In New York City, schools with SRTS programs saw a 44% decline in pedestrian injury.[viii] SRTS programs can also improve local air quality by decreasing local congestion around the school because 10-14% of trips during morning rush hour are for school transportation.[ix]

Recommendation Y: Targeted road diet applications
Audience/Potential Partners: Municipal Government, Passaic County, NJDOT

A road diet is most commonly done on a four-lane undivided roadway. Typically, the road diet makes the roadway one lane in each direction with a median with turning lanes or a turning lane in the middle and protected bike lanes or on-street parking on one or both sides.

The four-lane undivided roadway configuration generally experiences more crashes than other roadways because:

- Vehicles swerve around or are unable to stop when another vehicle comes to a stop in the left lane to turn left.
- Vehicles turning left onto the roadway must cross four lanes of traffic.
- Having multiple lanes in each direction encourages speeding.
- There are no bicycle facilities and pedestrians must cross longer distances with multiple conflict points.

Road diets on these types of roadways have been found to reduce crashes by 19-47% nationally.[x] Passaic County has been a leader in implementing road diets in New Jersey. The County found that after road diets were implemented, severe crashes were reduced by 50-60%, leading to many injuries and fatalities avoided.[xi]

Recommendation Z:
Targeted one-way to two-way street conversions
Audience/Potential Partners: Municipal Government, Passaic County, NJDOT

Identify streets and intersections where targeted one-way to two-way street conversions may improve safety, mobility, and access.

At the time when reducing congestion, promoting higher travel speeds, and maximizing vehicle throughput were considered the highest priority, city and local streets were converted from two-way to one-way travel, especially in locations with significant peak period directional travel demand. The conventional wisdom was that two lanes in the same direction could move more traffic and that this outcome should be prioritized. However, these multi-lane streets have also been found to encourage higher speeds, aggressive driving, and frequent lane-changing, with the unintended consequence of creating a less safe street environment, especially in denser areas that experience high non-motorized travel activity.

End Notes

[i] https://www.aaa.com/autorepair/articles/average-annual-cost-of-new-vehicle-ownership

[ii] Jacobsen and Rutter, *Bicycling and Cycling Safety*, 2012

[iii] https://transweb.sjsu.edu/research/Low-Stress-Bicycling-and-Network-Connectivity

[iv] Alta Planning + Design. (2014). Winter Bike Lane Maintenance: A Review of National and International Best Practices (Updated 2/14). Retrieved: https://altago.com/wp-content/uploads/winter-bike-riding-white-paper-alta.pdf

[v] AAA Foundation. (2011). Impact Speed and a Pedestrian's Risk of Severe Injury or Death. Retrieved: https://www.propublica.org/article/unsafe-at-many-speeds

[vi] Highway Safety Manual

[vii] NACTO. (N.d.). Speed kills. Retrieved: https://nacto.org/publication/city-limits/the-need/speed-kills/

[viii] Peter A Muennig et al., 'The Cost-Effectiveness Of New York City's Safe Routes To School Program', American Journal Of Public Health, issue 0 (2014): 1-6.

[ix] McDonald N., Brown A., Marchetti L., Pedroso M. (2011). U.S. School Travel 2009: An Assessment of Trends. American Journal of Preventive Medicine, 41(2), 146-151.

[x] Turner-Fairbank Highway Research Center (June 2010). "Evaluation of Lane Reduction 'Road Diet' Measures on Crashes." Federal Highway Administration. FHWA-HRT-10-053.

[xi] NJDOT. (2016). What Is a Road Diet? Retrieved: https://vimeo.com/169003402