



The Central Bergen Bicycle & Pedestrian Plans

Bergen County Department of Planning & Engineering
Division of Regional Planning & Transportation | May 2015



Acknowledgements

2015

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Executive Summary

The Central Bergen Bicycle & Pedestrian Plans identify safety and mobility improvements for walking and bicycling to and from major destinations in the area. Central Bergen County is home to many attractions, such as malls, downtowns and commercial centers, schools, parks, rail stations, Bergen Community College, and Saddle River County Park. These are places that people would be likely to access by walking or bicycling if the routes were improved to accommodate these travel modes. The anticipated high demand for walking and bicycling within the eight municipalities of Central Bergen County is ideal for advancing a Complete Streets approach, which balances the needs of all users of the transportation network, so that people of all ages and abilities are able to safely move along and across streets in a community, regardless of how they are traveling.

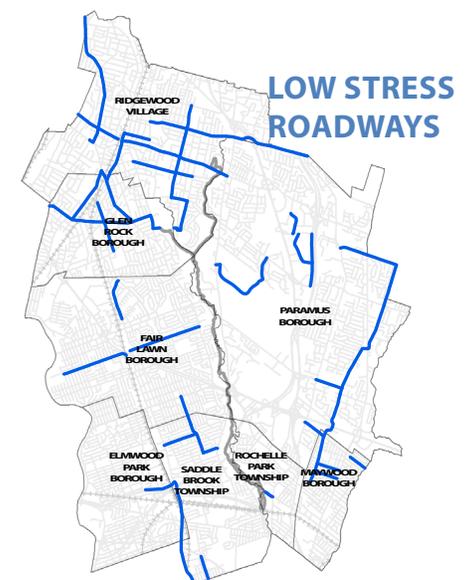
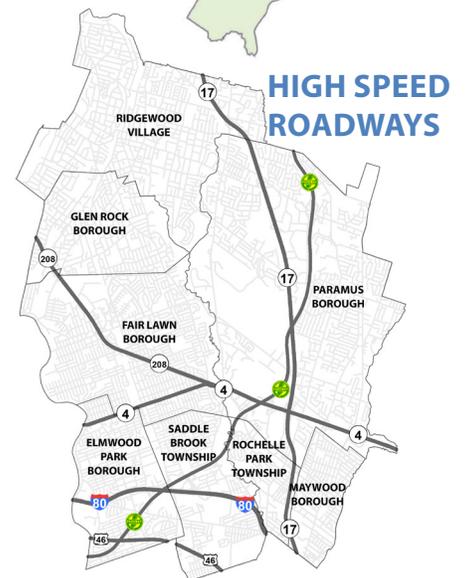
Defining a bicycling and walking network is intended to guide all roadway jurisdictions – state, county and the eight municipalities -- in prioritizing investment in bicycling and walking facility improvements, resulting in continuous accommodation along routes to destinations throughout the region. This network can easily be extended into adjacent municipalities, and as time and resources permit, subsequent bicycle and pedestrian plans can lead to Complete Streets throughout the remainder of the County. With respect to improvements within the Saddle River County Park, all recommendations and input received from the public have been forwarded to the County Department of Parks for their consideration.

Through a variety of activities described in **Chapter 2, "Public Participation,"** all eight municipalities were represented on a Technical Advisory Committee. Stakeholders and the public played an important role in shaping the priority network and recommendations through publicly accessible meetings, a project-specific website, and WikiMapping, an interactive digital mapping feature.

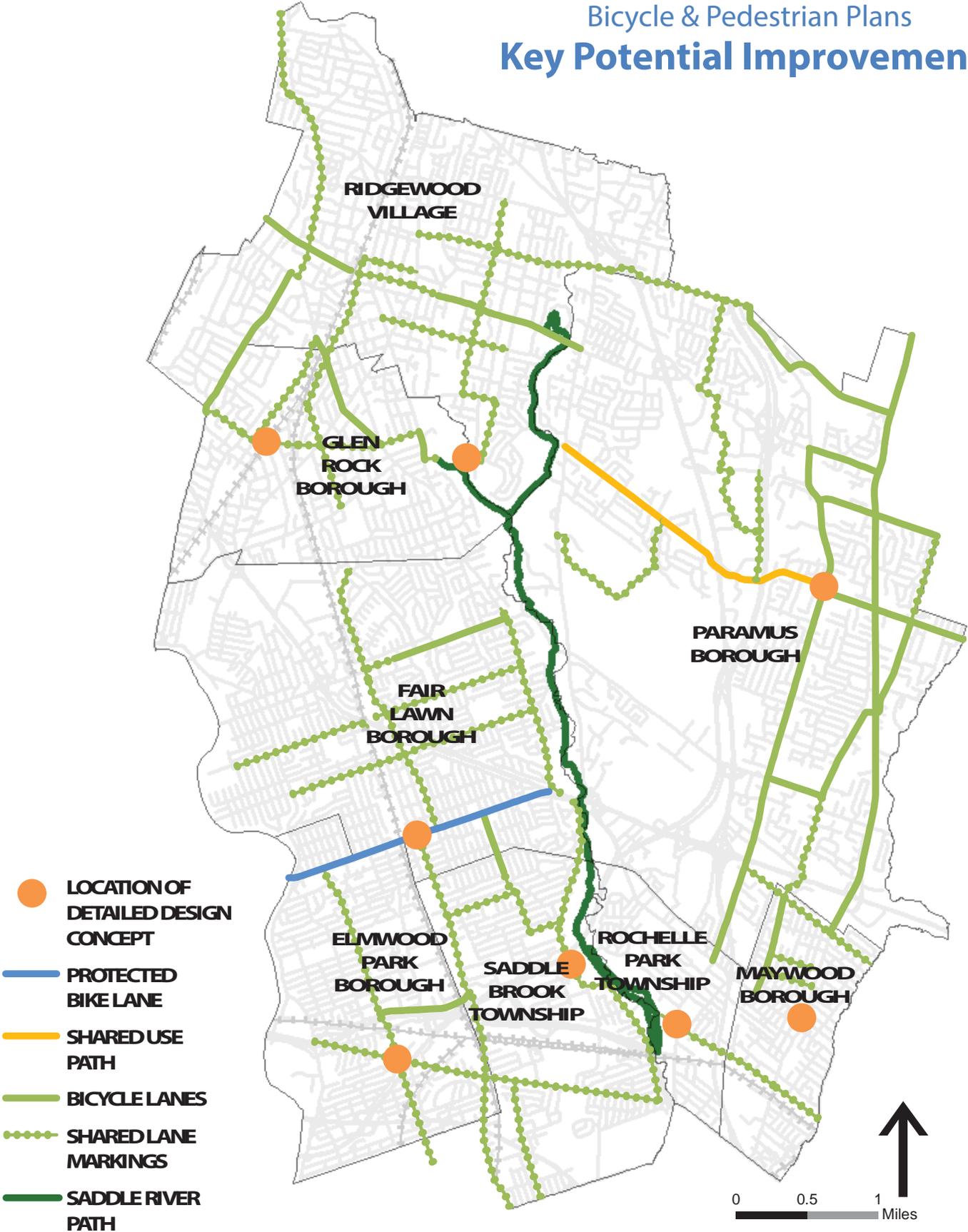
Chapter 3, "Methodology," describes analysis revealing that existing conditions within the study area, especially along the regional and connecting roads with high concentrations of public destinations, are challenging for bicycle and pedestrian travel. High volume and high speed state and county routes crisscross the study area forming barriers to bicycle and pedestrian connectivity. Crash analysis revealed "hot spots" for bicyclist and pedestrian crashes along arterials with high concentrations of public destinations. Bicycle compatibility overall was low, and the sidewalk network has gaps and deficiencies, such as missing crosswalks and excessive crossing distances.

A "low stress" analysis confirmed that there are few connecting roads with conditions comfortable for the average bicyclist - speeds less than 25 MPH on 4 to 5 lane roads and less than 30 MPH on 2 to 3 lane roads. As the Mineta Transportation Institute reports in *Low-Stress Bicycling and Network Connectivity (MTI Report 11-19)*, low stress connectivity will, "attract the widest possible segment of the population . . . providing routes between people's origins and destinations that do not require cyclists to use links that exceed their tolerance for traffic stress."

The Central Bergen Bicycle & Pedestrian Plans were developed over a one year period from April 2014 to May 2015. The project was funded in part through a U.S. Department of Transportation grant administered by the North Jersey Transportation Planning Authority (NJTPA).



Central Bergen Bicycle & Pedestrian Plans Key Potential Improvements



Recommendations & Improvement Concepts

Chapter 6, "Bicycle and Pedestrian Improvements by Municipality," presents bicycle and pedestrian facility recommendations, accounting for their different travel habits and needs for accommodation, on eight municipal maps with accompanying matrices that show existing conditions and the locations. There are also eight site-specific detailed design concepts with typical costs, each one illustrating a set of improvements with potential application throughout the study area and intended as a reference for all municipalities.

Key potential improvements are intended as a "starting point" for improving accommodation. The first step was to identify short-term improvements that are low-cost and easy-to-implement, requiring no changes to the current roadway configuration or conditions – no widening or right-of-way increases and no travel-lane or speed limit reductions. The plan shows recommendations that meet state and national facility standards and were shaped by municipal, stakeholder, and public comments.

Chapter 4, "Bicycle Plan"

Signing and striping are immediate low-impact recommendations. The plan also presents a wider range of bicycle facility types that could have wide application throughout the network and describes their characteristics, applications and typical costs. The long-term goals are to install dedicated and separated facilities and, where possible, change conditions through speed and/or road width reductions to create a bike-friendly environment comfortable for bicyclists of average skill level.

FACILITY TYPES

- Shared Lane Marking
- Bike Compatible Shoulder
- Bike Lanes
- Cycle Tracks
- Shared Use Path
- Bicycle Amenities
- Intersection Treatments/ Striping

SHARED LANE MARKING



BIKE LANE



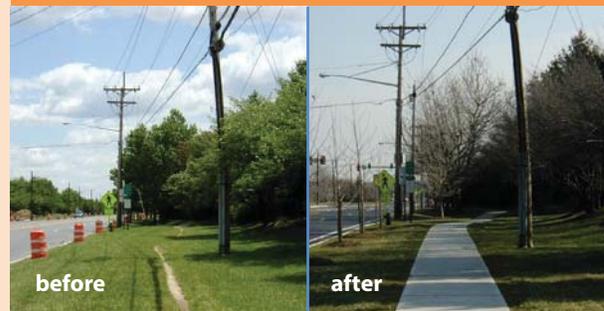
Chapter 5, "Pedestrian Plan"

Installing warning signs and enhanced crosswalk striping patterns are immediate short-term, low-impact recommendations for pedestrian facilities, such as re-striping the crosswalks along Market Street in Elmwood Park. The long-term goal is a continuous sidewalk network with safe pedestrian crossing facilities at intersections and high demand mid-block crossing locations. This may require detailed traffic control plans and design plans for facilities like curb extensions and median refuges.

FACILITY TYPES

- Sidewalks
- Shared Use Path
- Crosswalks
- Curb Extensions
- Median Refuges
- Traffic Signals & Warning Beacons
- Bus Stops

SIDEWALK



MEDIAN REFUGE



Changing Conditions for a Continuous Bicycling and Pedestrian Network

In addition to short-term signing and striping recommendations, the plans propose several longer-term improvements that would create a more conducive environment for bicycling and walking by people of average skill and ability. The following types of improvements change conditions by adding dedicated facilities separated from traffic or through speed and/ or lane reductions, contributing nearly five miles of low stress roads along the priority network. This outcome is confirmed by a low stress analysis of potential conditions after the plan's mostly low-impact recommendations are implemented. Roadway miles that convert from high to low stress include:

Protected Bike Lanes (1.9 miles) State Route 4/ Broadway, Elmwood Park



Shared Use Path (2.2 miles) Midland Avenue, Paramus



Implementation

Effective implementation must put into place processes and practices that facilitate improvements to the bicycling and walking infrastructure. Considerations include Planning, Zoning, Land Development, Project Development and Design, Project Selection, Construction, Maintenance, and Operations.

Chapter 7, "Implementation," presents a sample Complete Streets project implementation process designed to ensure that bicycle and pedestrian improvement concepts make it to the street and the Complete Streets approach becomes a practice as well as a policy. The chapter presents a project delivery structure that integrates the Complete Streets approach along with implementation checklists that can be used to ensure compliance with Complete Streets principles through all stages of project development.

Project implementation priorities include:

1. Detailed design concepts (bicycle and pedestrian improvement projects presented in Chapter 6 with costs, one per municipality)
2. A variety of typical pedestrian and bicycle improvement concepts
3. Geographic equity
4. High crash "hot spot" locations
5. Locations that link low stress "islands" and expand the low stress network (bicycle improvements)
6. Locations in proximity to crash "hot spots" (pedestrian improvements)
7. Facilities and changes to conditions that reduce level of traffic stress (separated facilities, speed and lane width/number reductions).

Central Bergen

BICYCLE & PEDESTRIAN PLANS

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OVERVIEW

Project Purpose

The *Central Bergen County Bicycle and Pedestrian Plans* propose a strategic bicycling and walking network within eight Bergen County municipalities. The purpose is to identify safety and mobility improvements that together will encourage more walking and bicycling to and from major destinations in the area. Bergen County initiated the project to identify which county roads or other links are appropriate and desirable for the introduction or enhancement of streets, sidewalks, and paths to better accommodate biking and walking. The eight municipalities surround Saddle River County Park. The park contains the Saddle River Path, a recreational shared use path extending over 7 miles north to south, with the potential to increase utilitarian bicycle and pedestrian travel throughout the study area.

Central Bergen County is home to many major attractions, such as vibrant municipal downtowns and business districts, malls, the county community college, schools, other parks, and rail stations. These attractors are places that people would be more likely to access by walking or bicycling if the routes were improved to accommodate these travel modes. It is because of this anticipated demand for walking and bicycling facilities that Central Bergen County is an ideal location to advance a Complete Streets approach, balancing the needs of all roadway users.

Defining a comprehensive bicycling and walking network is also intended to guide the eight municipalities in prioritizing investment to improve bicycling and walking infrastructure. A continuous and seamless network can only be achieved with the participation of each municipality together with the County. By focusing improvements along and leading to the designated network, each community contributes to a more comprehensive walking and bicycling infrastructure that offers all residents greater access to destinations and more opportunities to choose biking and walking over driving. With respect to improvements within the Saddle River County Park, all recommendations and input received from the public have been forwarded to the County Department of Parks for their consideration.

This planning process can be replicated in other areas of the County, and as time and resources permit, subsequent bicycle and pedestrian plans can lead to implementing Complete Streets throughout the remainder of the County.

Plan Objectives

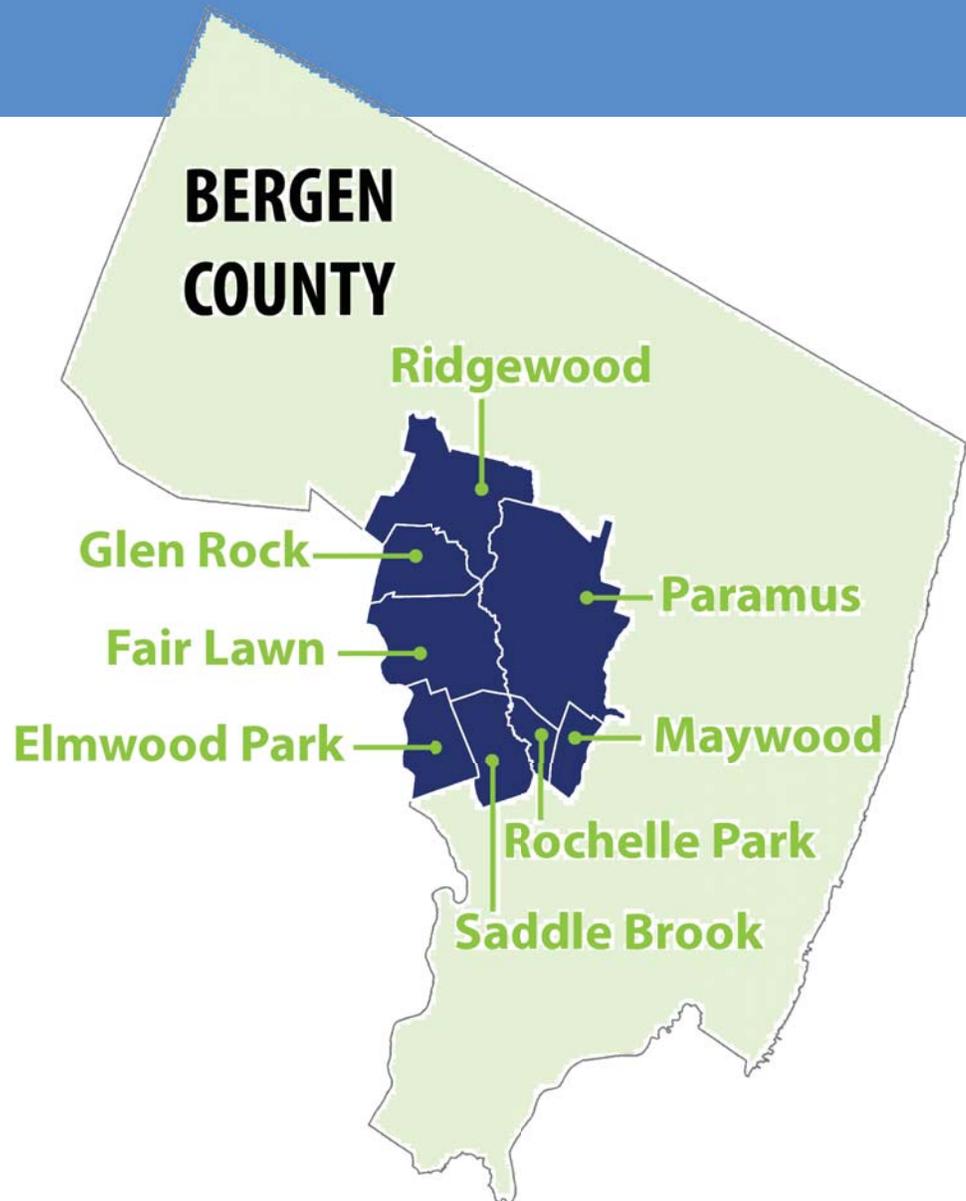
1 Identify linkages among key destinations, community facilities, parks, and transit stops.

2 Connect to existing or planned off-road pathways.

3 Build on municipal plans to promote biking and walking.

4 Address safe crossings of major county roads.

Project Study Area



Planning Process Overview

The Bicycle and Pedestrian Plans were developed over a one year period from April 2014 to May 2015. The project was funded in part through a U.S. Department of Transportation (U.S. DOT) grant administered by the North Jersey Transportation Planning Authority (NJTPA). The public played an important role in shaping the bicycle and pedestrian network and proposed improvements.

Central Bergen County is home to many major attractions, such as municipal downtowns, business districts, malls, the county community college, schools, parks, and rail stations. These attractors are places that people would be more likely to access by walking or bicycling if the routes were improved to accommodate these travel modes. It is because of this anticipated demand for walking and bicycling facilities that Central Bergen County is an ideal location to advance a Complete Streets approach.

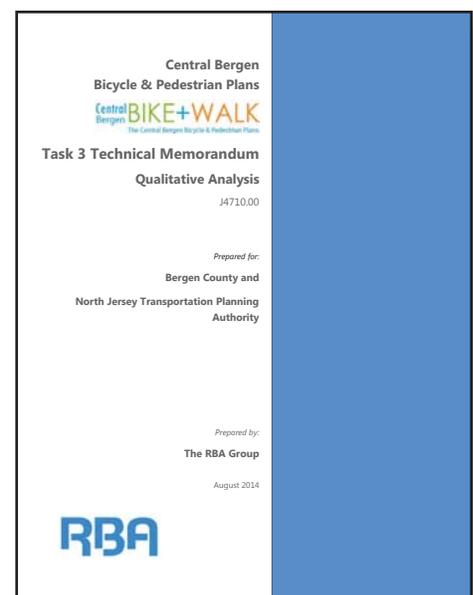
Technical Advisory Committee

A Technical Advisory Committee (TAC) was established and met three times over the course of the project. The TAC was composed of appointed representatives from the eight municipalities, Bergen County Department of Planning & Engineering, and NJTPA. Municipal participation was critical to the development of the plans and will be essential in its implementation. Municipal insight into local issues, needs and opportunities helped to shape the proposed bicycle and pedestrian network and improvement concepts. The TAC were also instrumental in supporting public outreach activities. All meetings were publicly advertised and accessible. Input was expanded via an interactive digital mapping feature (WikiMapping) on the project website.

Public & Stakeholder Outreach

The plans were developed with input from a wide range of stakeholders, including bicycle and pedestrian groups, the business community, and residents. Interviews, presentations to local organizations and three public meetings were held to gather input and collect feedback from the community. All public meetings were publicly advertised, accessible via NJ TRANSIT, and held in an ADA accessible building. A project website, www.centralbergenbikewalk.com, enabled the public and others to stay informed and share their insights using an on-line interactive map (WikiMap). The WikiMap was used to gather site-specific information about the conditions of walking and bicycling routes throughout the study area.

A Technical Memorandum, “*Qualitative Analysis*,” was prepared to document findings from the Public Outreach activities.



Technical Memorandum, “*Qualitative Analysis*” August 2014

Data Collection & Analysis

GIS data was used to create a study area base map showing land use and public destinations such as schools, parks, shopping centers as well as the roadway network. A continuous network of roads providing access to major public destinations throughout the eight municipalities was identified for further review and investigation. The primary criteria for selecting the routes were access to key destinations and trip generators, and crash history. “Hot spot” locations with a high concentration of bicycle and pedestrian crashes are target areas for focusing infrastructure improvements to increase pedestrian and bicycle safety.

Field assessments were conducted along the draft priority network to gather additional data necessary to determine the current level of bicycle compatibility and pedestrian accommodation. Based on the results of data collection and field investigation, the following analyses were conducted:

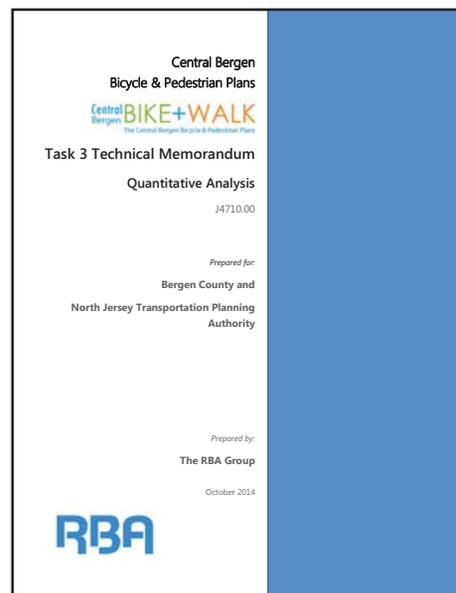
Crash Data – an assessment of county-wide NJDOT crash data (2008-2012) to identify areas which have a high concentration of pedestrian and bicycle crashes.

Bicycle Stress Level - an assessment of relative level of stress/comfort experienced by cyclists on a roadway, accounting for the cyclists’ level of experience and operational comfort.

Bicycle Compatibility - an assessment of roadway and traffic data to determine the different bicycle facilities that can be accommodated. This includes analyzing traffic volume, speed, parking, road type, roadway and lane widths, number of lanes and other local conditions.

Sidewalk Field Survey – an assessment of sidewalk conditions; widths; buffers; furnishing and frontage zones; materials and gaps.

A Technical Memorandum, “*Quantitative Analysis*,” was prepared to document data collection and analyses.



Technical Memorandum, “*Quantitative Analysis*”
October 2014

Recommendations and Improvement Concepts

The Priority Network for Bicycling and Walking is the result of a comprehensive review by county planning and engineering staff, NJTPA, TAC members, municipal representatives, stakeholders, and the general public. The Central Bergen Bicycle and Pedestrian Plans address environmental justice concerns by enhancing access and safety for the entire traveling population.

Design concepts are proposed for both bicycle and pedestrian improvements, which are illustrated separately on two area-wide network summary maps. The plans include a design guide “toolbox” to illustrate the types of facilities and improvements proposed. A bicycling and pedestrian improvement concept, specific to each municipality, was also developed.

Typical costs and phasing recommendations for implementing are also included.

Plan Organization

This document is organized to present the recommendations for bicycle and pedestrian improvements for the study area as a whole, as well as for each of the eight municipalities.

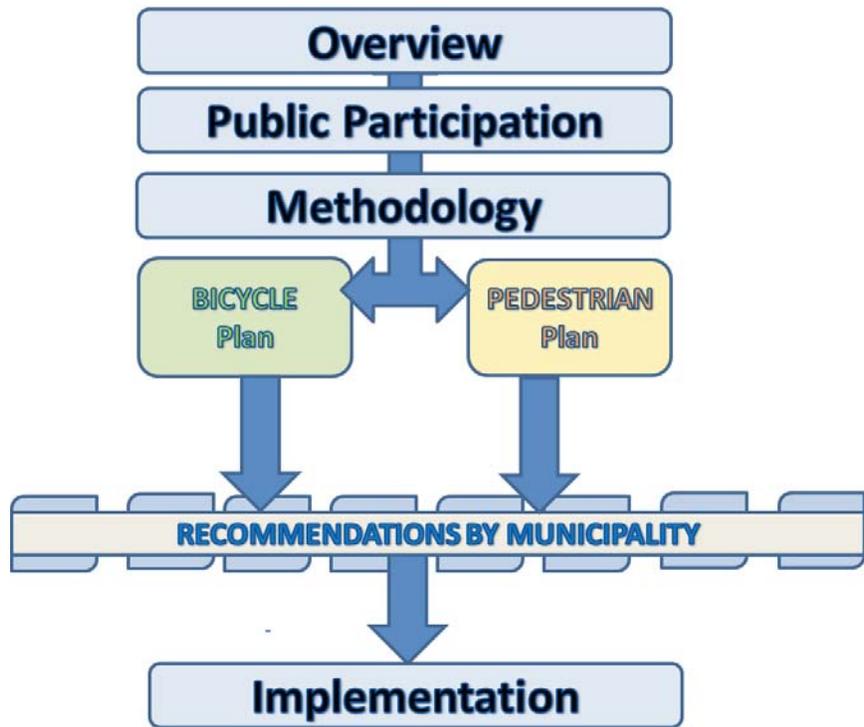
Chapter 4, “*Central Bergen Bicycle Plan*,” describes types of bicycle improvements and facilities with typical dimensions and costs and includes a study area-wide map illustrating all the proposed improvements for bicycling.

Chapter 5, “*Central Bergen Pedestrian Plan*,” describes types of pedestrian improvements and facilities with typical dimensions and costs and includes a study area-wide map illustrating all the proposed improvements for pedestrians .

Chapter 6, “*Bicycle and Pedestrian Improvement Concepts By Municipality*” illustrates the recommendations of the previous chapters on detailed municipal-wide maps, with accompanying matrices that show existing conditions and the location of proposed improvements throughout the municipalities.

Chapter 6 also presents eight schematic design concepts for specific locations. Each municipality has been provided with one design concept. These intersections and corridors were selected to show a range of bicycle and pedestrian improvement types complete with cost estimates. The concepts are representative of the types of improvements that could be applied throughout the project area and each is intended as a useful reference for all municipalities.

Chapter 7, “*Plan Implementation and Next Steps*,” presents the programmatic items that will help to support a Complete Street approach and ensure that County and Municipal policies work together to enhance safe travel for everyone. Complete Streets are roadways that are designed to be safe and effective for all users of all ages and abilities, including pedestrians, bicyclists, transit users, and motorists.



CHAPTER 2

PUBLIC PARTICIPATION

Public Engagement Strategy

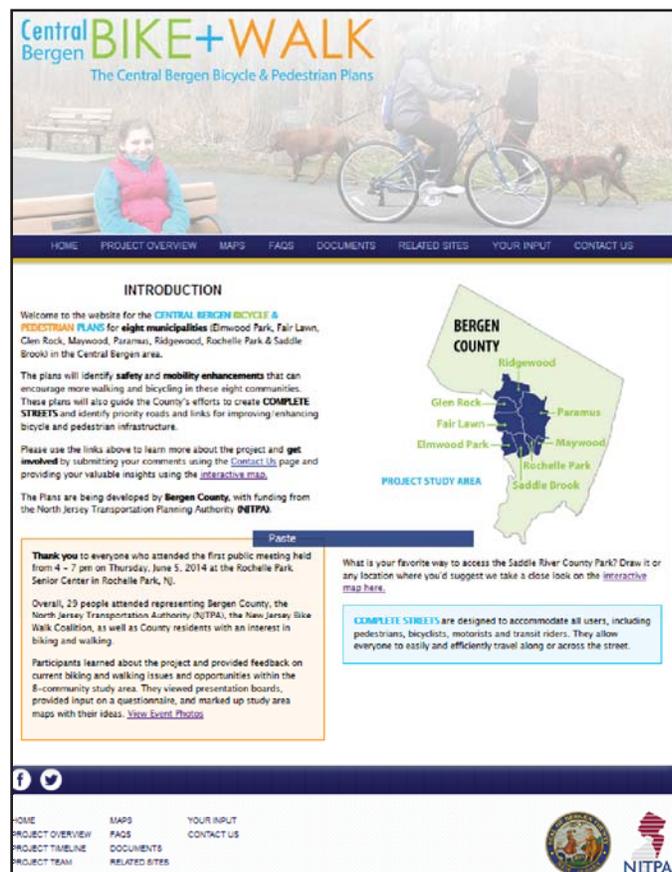
Several different forms of outreach – a project website and a WikiMapping tool, public open houses, Technical Advisory Committee meetings and stakeholder meetings/ interviews – were used to gather public input on both existing conditions and proposed improvements. A Technical Memorandum, "Qualitative Analysis," August 2014, documented comments received on biking and walking routes within the study area (see Appendix A, "Stakeholder and Public Comments").

Project Website

The consultant team developed a website to help the public stay informed and provide input on project-related events and milestones. The website, located at www.centralbergenbikewalk.com, consists of project updates, project overview and timeline, maps, and a link to provide on-line input via the WikiMapping tool. A screen capture of the project website is provided at right.

WikiMapping

WikiMapping is an on-line, interactive mapping tool that allows members of the public to "draw" their biking and walking routes, provide information on key destinations, highlight dangerous locations, and other issues. A map and table showing community input received via the WikiMapping website is in Appendix B. The public comments were organized by



Screen capture of the Central Bergen Bicycle & Pedestrian Plans project website.

municipalities and into various sub-topics such as safety, accessibility, parking, sidewalks, signage, bike routes and pathways.

Comments received were all tagged to geographically specific locations, and included:

- Areas of concern
- Walking or bicycling routes that participants either like or wish were better
- Destinations

Public Open Houses

Three public open houses were held over the course of the project. Summaries of these meetings are in Appendix C, "Public Outreach Meetings and Interviews." All public open houses were publicly advertised, accessible via NJ TRANSIT, and held in an ADA accessible building.

#1 - The first public meeting for the *Central Bergen Bicycle & Pedestrian Plans* was held on Thursday June 5, 2014 at the Rochelle Park Senior Center in Rochelle Park, New Jersey. The meeting was conducted as an open house and was held from 4:00 p.m. to 7:00 p.m. People attended representing Bergen County, the participating municipalities, the North Jersey Transportation Authority (NJTPA), the New Jersey Bike Walk Coalition, as well as County residents with an interest in biking and walking.

Public Open Houses
#1: June 5, 2014
#2: December 3, 2014
#3: April 15, 2015

Participants learned about the project and provided feedback on current biking and walking issues and opportunities within the eight-community study area. They viewed presentation boards, provided input on a questionnaire, and marked up study area maps with their ideas. The comments were organized by municipalities and grouped into different sub-topics such as safety, accessibility, parking, sidewalks, signage, bike routes and pathways.

#2 - The second public meeting for the *Central Bergen Bicycle & Pedestrian Plans* was held on Thursday December 3, 2014 at the Rochelle Park Senior Center in Rochelle Park, New Jersey. The meeting was conducted as an open house and was held from 4:00 p.m. to 7:00 p.m. Specific design treatments for enhancing bicycling and walking were presented. Preliminary concepts were brainstormed at stations for each municipality. A live WikiMap station was utilized for real time graphic input onto the project website, and to demonstrate how to use the site for further input after the meeting.

#3 - The third and final public meeting for the *Central Bergen Bicycle & Pedestrian Plans* was held on Thursday April 16, 2015 at the Elmwood Park Recreation Center from 4:00 p.m. to 7:00 p.m.. This was an opportunity for the TAC, the project stakeholders and the general public to review the project recommendations before the final report was completed. All recommendations were presented as they were intended to be packaged in the final report to ensure that the products are convenient to advance.

TAC Meetings

A Technical Advisory Committee (TAC) with representatives from the eight municipalities was formed for the project. The TAC was developed to help guide the process, develop the Plans, and ultimately endorse and approve them. TAC members serve as ambassadors for the project and they reach out to the different constituent groups in their municipality to keep them informed and involved in the project.

TAC members were named through engagement with the participating municipalities. Letters were sent to each mayor, who in turn nominated a TAC member to represent the municipality, providing an exchange of information between the project team and the municipality. The TAC comprises of the following members:

Technical Advisory Committee	
Elmwood Park Glen Pettigano, Council Member	Paramus Lt. Vinnie Pepe, Paramus Police Department
Fair Lawn Lisa Swain, Council Member	Ridgewood Christopher Rutishauser Director of Public Works / Village Engineer
Glen Rock Mark Baronne, Director of Park & Recreation	Rochelle Park Robert Davidson, Administrator
Maywood Roberta Stern, Administrator	Saddle Brook Peter LoDico, Administrator/Township Clerk

The first TAC meeting was held on April 30, 2014 at One Bergen County Plaza in Hackensack and was attended by representatives from each of the eight municipalities.

The second TAC meeting was held on October 2, 2014 at One Bergen County Plaza in Hackensack. The meeting was held as a series of targeted municipal coordination session with groups of municipalities cycling through the County office, allowing a focused effort on specific geographic area at each portion of the meeting.

TAC Meetings
#1: April 30, 2014
#2: October 2, 2014
#3: March 5, 2015

The third TAC meeting was held on March 5, 2015 at One Bergen County Plaza in Hackensack. During this meeting, draft recommendations were reviewed, and refined for inclusion in the plan.

Stakeholder Meetings & Interviews

Additional stakeholder outreach to public, private and non-profit organizations included NJDOT, NJ TRANSIT, PSE&G, Chambers of Commerce, EZ Ride (formerly Meadowlink), New York-New Jersey Trails Conference, Bicycle Touring Club of North Jersey, Bergen Community College, River Road and Broadway Improvement Corporations. Representatives were provided with information about the project and invited to attend public open house meetings. A telephone interview with Cyndi Steiner, Executive Director of the New Jersey Bike & Walk Coalition (NJBWC) was held on Wednesday, June 25, 2014. The project team also met with members of the Bicycle Touring Club of New Jersey (BCTNJ) at the Ridgewood Public Library on July 10, 2014. Meetings and interview summaries are included in Appendix C, "Public Outreach Interviews and Meetings."

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Identifying a Priority Network for Biking and Walking

A preliminary network of potential pedestrian and bicycle routes was developed in coordination with the County. The primary purpose for developing the routes was to identify a network that provided access to key destinations and trip generators. The selection of the preliminary Priority Network was based on the potential of each network element to contribute to a continuous, connecting system of roads that could, with improvements, provide an appropriate level of safe bicycle and/or pedestrians access to key public destinations, such as “downtowns,” malls, schools, churches, and parks, throughout the eight study area municipalities. This initial analysis generated a network of priority routes to serve as a base layer for soliciting public feedback, a network of transportation corridors to be improved by means of safety and access improvements suitable to encourage and support more bicycling and walking in the area. See the Central Bergen County Priority Routes Map on page 13.

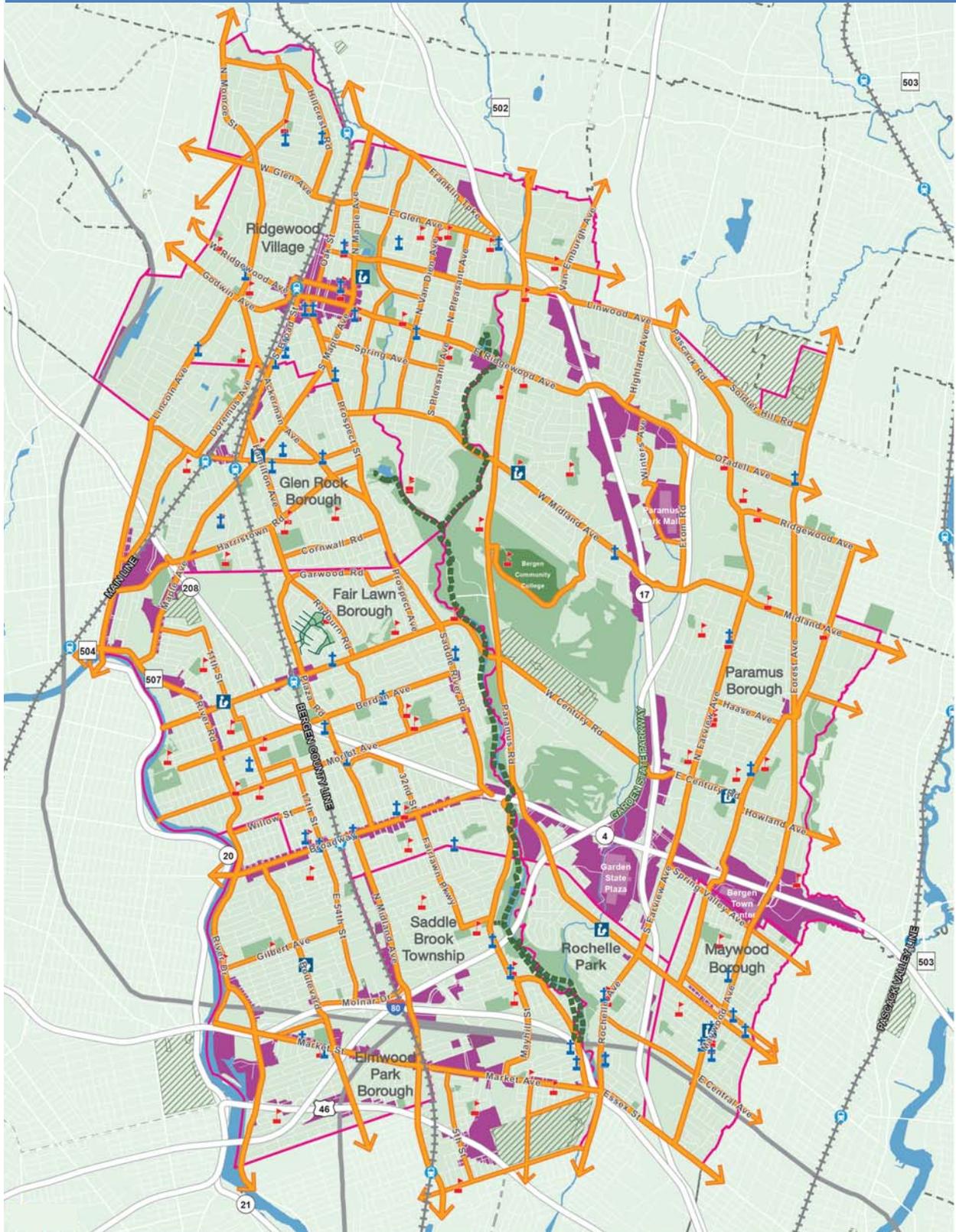
Three major categories of links comprised the preliminary Priority Network. These include:

- **Regional Roadways** - Regional roadways within the bicycle and pedestrian network provide mobility across the study area. They are typically longer, continuous corridors that enable longer distance trips with minimal detours. Regional roadways include some of the higher functional classification roadways (e.g. primary arterials) through the county, such as state and county routes. Regional roadways may also provide access to some of the study area’s primary destinations.
- **Destination Access Roadways**- The primary function of destination access roadways is to provide access between the regional roadways and key destinations that are not located along the regional roadways. Destination access roadways are typically lower functional classification roadways, and therefore tend to have lower traffic speeds and volumes and more of a local street character than the regional roadways.

- **Local Connector Roadways-** The primary functions of local connector roadways within the bicycle and pedestrian network are to provide connections between regional roadways, provide access to residential areas, and add some redundancy within the network. Local connectors tend to have lower traffic speeds and volumes and more of a local street character than the regional roadways, and some local connectors may provide less stressful alternative routes to portions of the regional network roadways.

The preliminary Priority Network was subjected to a variety of qualitative and quantitative analyses that resulted in revisions to the network.

Central Bergen County Priority Routes Map



Source: NJDOT, NJGIN, NJDEP, BERGEN COUNTY

PRIORITY ROUTES

- | | | | |
|-------------------|----------------|-------------------|---------------------------|
| Priority Network | Limited Access | Libraries | Study Area Municipalities |
| Bike Trails | Commuter Rail | Places of Worship | Cemeteries |
| Freight Rail Line | Schools | Commercial | |

0 0.5 1 2 Miles



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Analyzing the Network

Qualitative Analyses

Qualitative data is based on observations and comments from stakeholders and the general public about conditions, issues, and opportunities for bicycling and walking. Qualitative data was collected through various stakeholder and public outreach activities that were conducted for this study. These are detailed in Technical Memorandum Task 3, "*Qualitative Analysis*," dated August 2014.

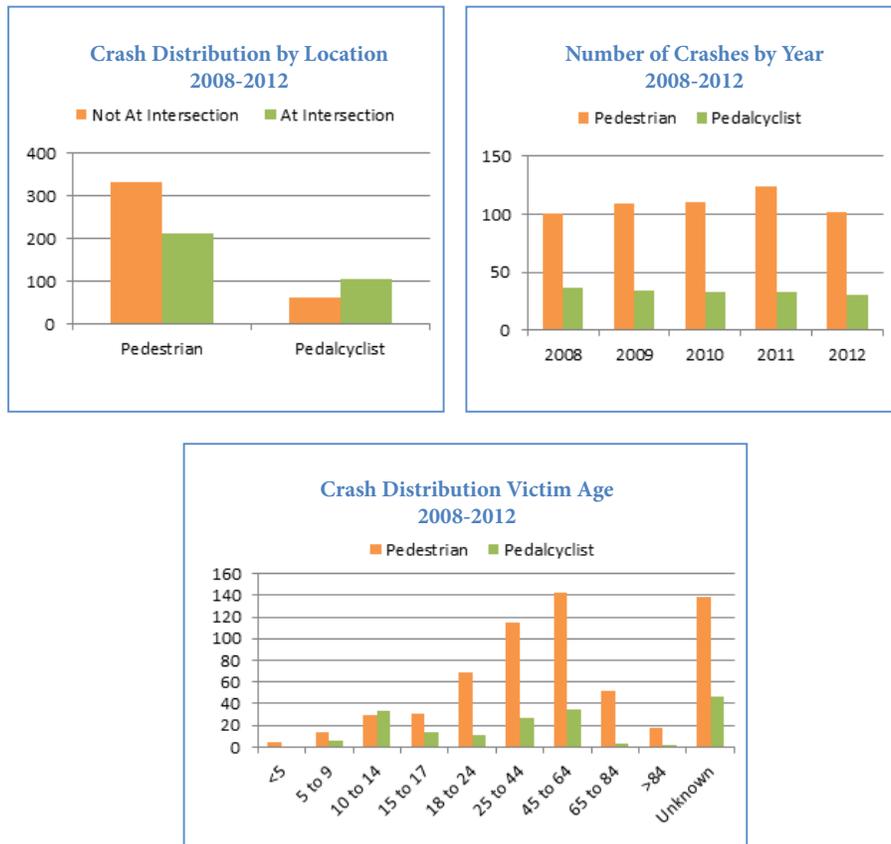
- The Public Participation Process - (Public Open Houses, Technical Advisory Committee, stakeholder meetings and interviews) provided participants the opportunity to voice their opinions and concerns, identify desired destinations and desirable and undesirable biking and walking routes. See Appendix A, "*Stakeholder and Public Comments*."
- WikiMapping - the WikiMap interactive mapping tool, accessible through the project website, was used to gather site specific information about the conditions of walking and bicycling routes throughout the study area by providing an opportunity for members of the public to identify their biking and walking routes, provide information on key destinations, highlight dangerous locations, and other issues. See Appendix B, "*WikiMap Comments*."

Quantitative Analyses

Subsequent analyses were focused on the preliminary Priority Network and are described in Technical Memorandum Task 3, "*Quantitative Analysis*," dated October 2014.

Crash Data Analysis

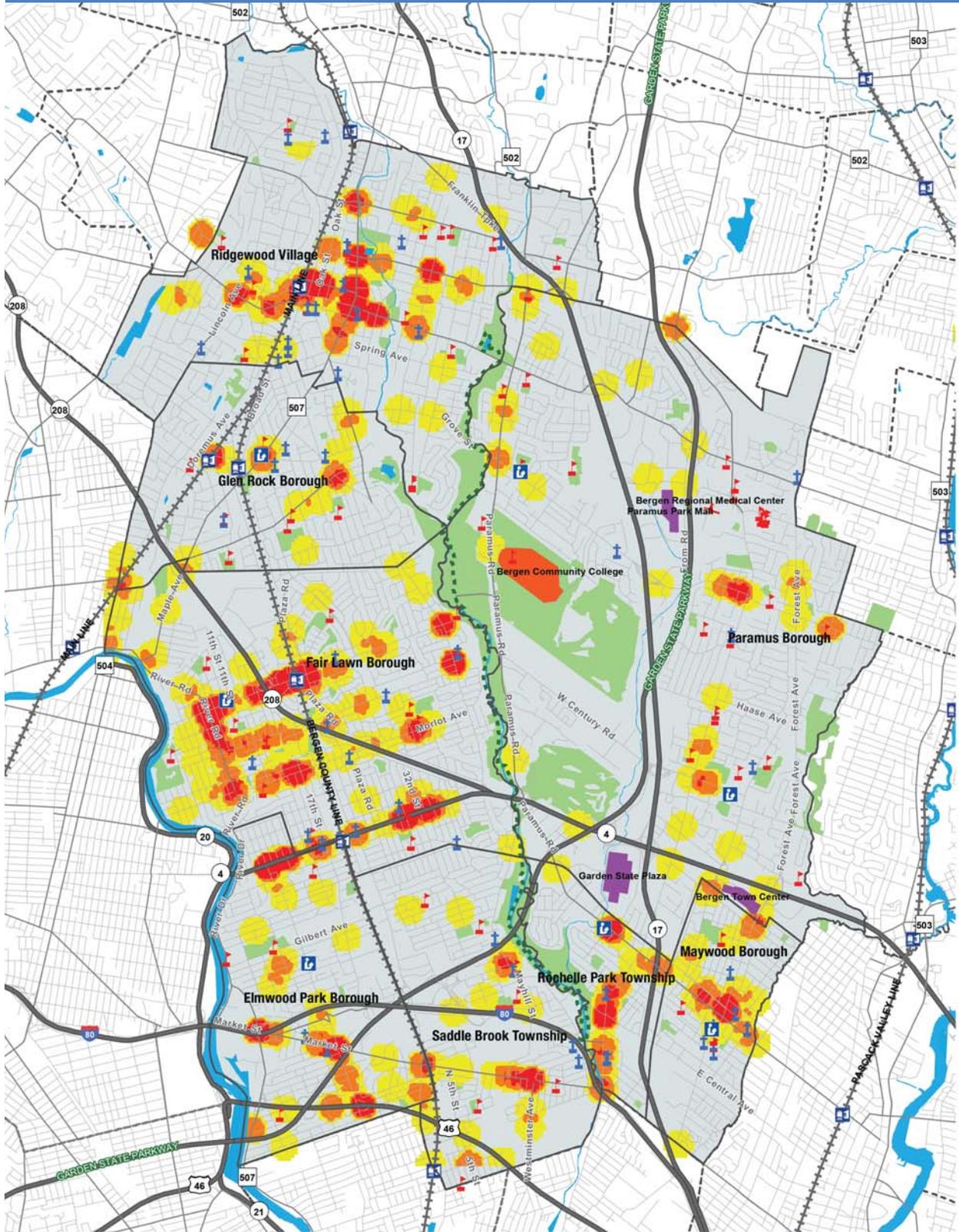
The project team analyzed county-wide NJDOT crash data (Plan4Safety, 2008-2012) to identify areas which have a high concentration of pedestrian and bicycle crashes. See Crash Data / Heat Map on facing page. Analysis of these crash “hot-spots” identified then provide areas where design and educational strategies could increase pedestrian and bicycle safety.



Key Findings

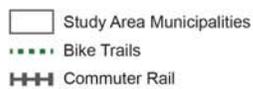
PEDESTRIAN	PEDALCYCLIST
545 Pedestrian crashes reported from 2008-2012	167 Pedalcyclist crashes reported from 2008-2012
Less than 6% of pedestrian crashes were either fatal or serious	Less than 2% were severe pedalcyclist crashes and none were fatal crashes
Most pedestrian crashes (61%) occurred at mid-block locations	Most pedalcyclist crashes (63%) occurred at intersections
53% of the pedestrian crashes involved adults (18-64) 13% involved teens/kids (<5-17) and 11% involved seniors	Adults (18-64) were involved in 41% of the crashes, 29% involved teens/kids (<5-17) and 3% involved seniors

Central Bergen County Crash Locations Heat Map



Source: NJDOT, NJGIN, NJDEP, BERGEN COUNTY

Crash Location Density



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Statistics

There were 712 pedestrian and pedalcyclist crashes reported during the analysis period involved 790 victims: the 545 pedestrian crashes involved 615 pedestrians and the 167 pedalcyclist crashes involved 175 pedalcyclists. There were 8 fatal and 22 severe pedestrian crashes and no fatal and 4 severe pedalcyclist crashes.

Approximately 61% of pedestrian crashes (332) occurred at mid-block locations, while the remaining 39% (213 crashes) occurred at intersection locations. This is similar to the larger statewide trend during the same analysis period, where 61% of all pedestrian crashes occurred at mid-block locations.

Pedalcyclist crashes – approximately 37% (62 crashes) occurring at mid-block locations, while 63% (105 crashes) occurred at intersections. This pattern is somewhat similar to the statewide trend for all pedalcyclist crashes (45% at mid-block locations, 55% at intersection).

Pedestrian crashes were distributed fairly evenly among different age groups. Young people (ages 5- 24) were involved in 23% of all pedestrian crashes (144 crashes), with an even distribution among different school-age groups. Seniors (65+) were involved in 70 pedestrian crashes.

Pedalcyclist crashes involved both young people and adults. Age groups with the largest number of crashes included ages 45-64 (35, 20%) and middle school aged children (ages 10-14; 33 crashes, 19%).

Lighting was a factor in pedestrian crashes. Two-thirds (355 crashes, 65%) occurred during daylight conditions. This is comparable to the statewide trend, where 61% of all pedestrian crashes from 2006-2013 occurred during daylight conditions. Similarly, the majority of pedalcyclist crashes occurred during daylight (139 crashes, 83%), consistent with the statewide trend (75%).

In general, the crashes involved a similar proportion of males and females as victims. Among pedestrian crashes, 48% involved males. The proportion was skewed towards males for pedalcyclist crashes, where 74% of pedalcyclist crashes involved males. The proportion of male pedestrian crashes and pedalcyclist crashes in the County are both comparable to the statewide proportion (48% vs. 52% and 74% vs. 82%, respectively).

The highest concentration of crashes occurred along Ridgewood Avenue in Ridgewood Village, Fair Lawn Avenue, Berdan Avenue, and Morlot Avenue, and Broadway in Fair Lawn Borough, and Market Avenue in Elmwood Park Borough. These corridors could be considered crash “hot spots” in the analysis period. The highest concentration of crashes occurred near pedestrian trip generators, reinforcing a priority to enhance safety at these locations, including:

- Central Business Districts
- Schools/Libraries/Places of worship
- Train Stations

Bicycle Stress Level Analysis

In order to determine which of the priority routes were candidates for implementing bicycle facilities, the project team used a measure, Level of Stress, which is an assessment of relative level of stress/comfort experienced by a cyclist on a roadway. The various Stress Levels are associated with 4 classes or categories of cyclists and the conditions they deem necessary to feel conformable and safe on any given roadway or route. Stress Levels are reflective of how members of a class of cyclists view and experience the roadway environment. The level of comfort or stress they feel, based on exposure to vehicle speeds, volumes and relative proximity to traffic, affects how they select routes or whether or not they will choose to bicycle at all. As the Mineta Transportation Institute reports in *Low-Stress Bicycling and Network Connectivity* (MTI Report 11-19), low stress connectivity will, "attract the widest possible segment of the population . . . providing routes between people's origins and destinations that do not require cyclists to use links that exceed their tolerance for traffic stress."

Stress Level	Description
Level 1	Traffic stress level that most children can tolerate
Level 2	Level tolerated by mainstream adult population
Level 3	Level tolerated by the "enthused and confident" but prefer having their own dedicated space
Level 4	Level tolerated by the "strong and fearless"

The primary influences of this measure are traffic speed (based on posted speed limit) and street width (based on number of lanes). Secondary variables define the character/context of the roadway (marked/unmarked centerline and/or local residential street), where unmarked and residential low speed and narrower width streets have a lower stress level. Roadway width and speed data were collected and roadways were categorized by stress level as defined below:

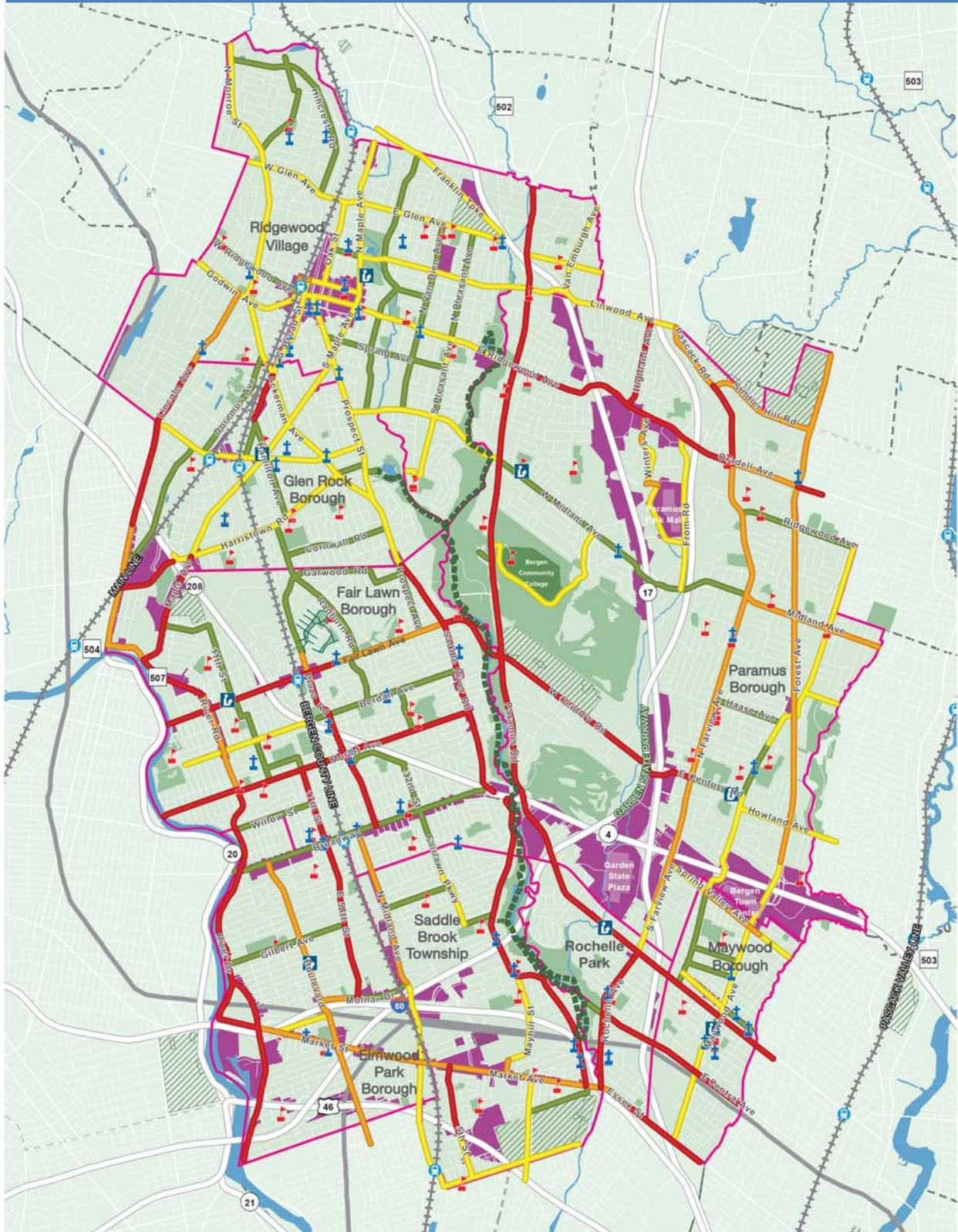
Criteria for Level of Traffic Stress in Mixed Traffic			
SPEED LIMIT	STREET WIDTH		
	2-3 Lanes	4-5 Lanes	6+ Lanes
≤ 25 MPH	Level 1* or 2*	Level 3	Level 4
30 MPH	Level 2* or 3*	Level 4	Level 4
≥ 35 MPH	Level 4	Level 4	Level 4

**Note: Use lower value for streets without marked centerlines or classified as residential with fewer than 3 lanes; use higher value otherwise.*

FINDING: Low Stress routes are most frequent in the northwest portion of the study area. The remainder of the study area contains a mix of High Stress and Low Stress routes.

Central Bergen County

Priority Bicycle Network Existing Level of Stress



Source: NJDOT, NJGIN, NJDEP, BERGEN COUNTY



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Bicycle Compatibility Analysis

Bicycle compatibility uses roadway and traffic data to determine the different bicycle facilities that can be accommodated on the streets within the project area. This includes analyzing traffic volume, speed, parking, road type, roadway and lane widths, number of lanes and other local conditions. The primary data source for the roadway and traffic data used in this analysis is NJDOT's Straight Line Diagrams (SLD).

The data for this analysis was subsequently used to identify the types of bicycle improvements that can be implemented within the constraints imposed by existing traffic, roadway geometry and available right-of-way, and to identify situations where significant construction and/or ROW acquisition might be required. Where actual traffic and roadway conditions are not accurately identified in the SLD, additional investigation (traffic studies, field observations and measurements) would be required to accurately assess Bicycle Compatibility or determine what improvements might be accommodated within that network segment.

The map indicates the Bicycle Compatibility measure of the existing conditions as either Compatible; Sharrow Eligible (meets AASHTO criteria for allowing a Sharrow to be striped but not Compatible in existing condition); or Not Compatible. The methodology uses a maximum posted speed of 25 mph for the Sharrow Eligible designation (preferred limit by NACTO). Sharrow Eligible is a preliminary evaluation, not a final recommendation. The shared lane marking "sharrow" treatment fits the goal of Bergen County to potentially designate specific corridors with an enhanced bicycle treatment without widening the roadway. Mapping the roadways that are either Compatible or Sharrow Eligible helps to display what portion of the analyzed network is or could become serviceable to a wide range of bicyclists.

Analysis is based generally on the NJDOT Bicycle Compatible Roadways and Bikeways – Planning and Design Guidelines. Compatibility is based on traffic volume, presence of on-street parking, urban/rural land use, and traffic speed. After a preliminary screening using these criteria, the results were adjusted, as needed, to reflect real world conditions.

FINDING: Bicycle Compatibility is best in Ridgewood and Glen Rock. East-west compatibility is limited in Fair Lawn. Significant deficiencies are present in Elmwood Park. Saddle Brook has limited north-south compatible routes. Significant gaps in the bicycle-compatible roadway network exist in Paramus, Rochelle Park, and Maywood.

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Central Bergen County Bicycle Compatibility Map



Source: NJDOT, NJGIN, NJDEP, BERGEN COUNTY

- | | | | |
|-------------------|----------------|-------------------|---------------------------|
| Compatible | Bike Trails | Libraries | Study Area Municipalities |
| Sharrow Eligible | Limited Access | Places of Worship | Cemeteries |
| Not Compatible | Commuter Rail | Schools | Commercial |
| Freight Rail Line | | | |

0 0.5 1 2 Miles



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Sidewalk Field Survey

Field surveys were conducted by the project team to map, record and analyze sidewalk conditions; widths; buffers; furnishing and frontage zones; and materials and gaps. Analysis based on field observations conducted by the study team was intended to convey the general character of the sidewalk network by roadway segments >0.5 miles (not parcel by parcel or block by block) for both sides of the street. The evaluation results indicate the presence and condition of the sidewalk, presence of a buffer (or furniture zone in downtown areas), and frequency of gaps in the sidewalk network.

FINDING: Sidewalk coverage is best in Ridgewood and Glen Rock, although some gaps are present and conditions are frequently fair or worse. Few gaps are present in Fair Lawn, but conditions are frequently fair or worse. Elmwood Park and Saddle Brook have many gaps with frequent fair or worse conditions. Significant gaps exist in Paramus, Rochelle Park and Maywood with frequent fair or worse conditions.

Photos showing examples of sidewalk conditions categories:



Sidewalk Category: GOOD



Sidewalk Category: FAIR



Sidewalk Category: NONE



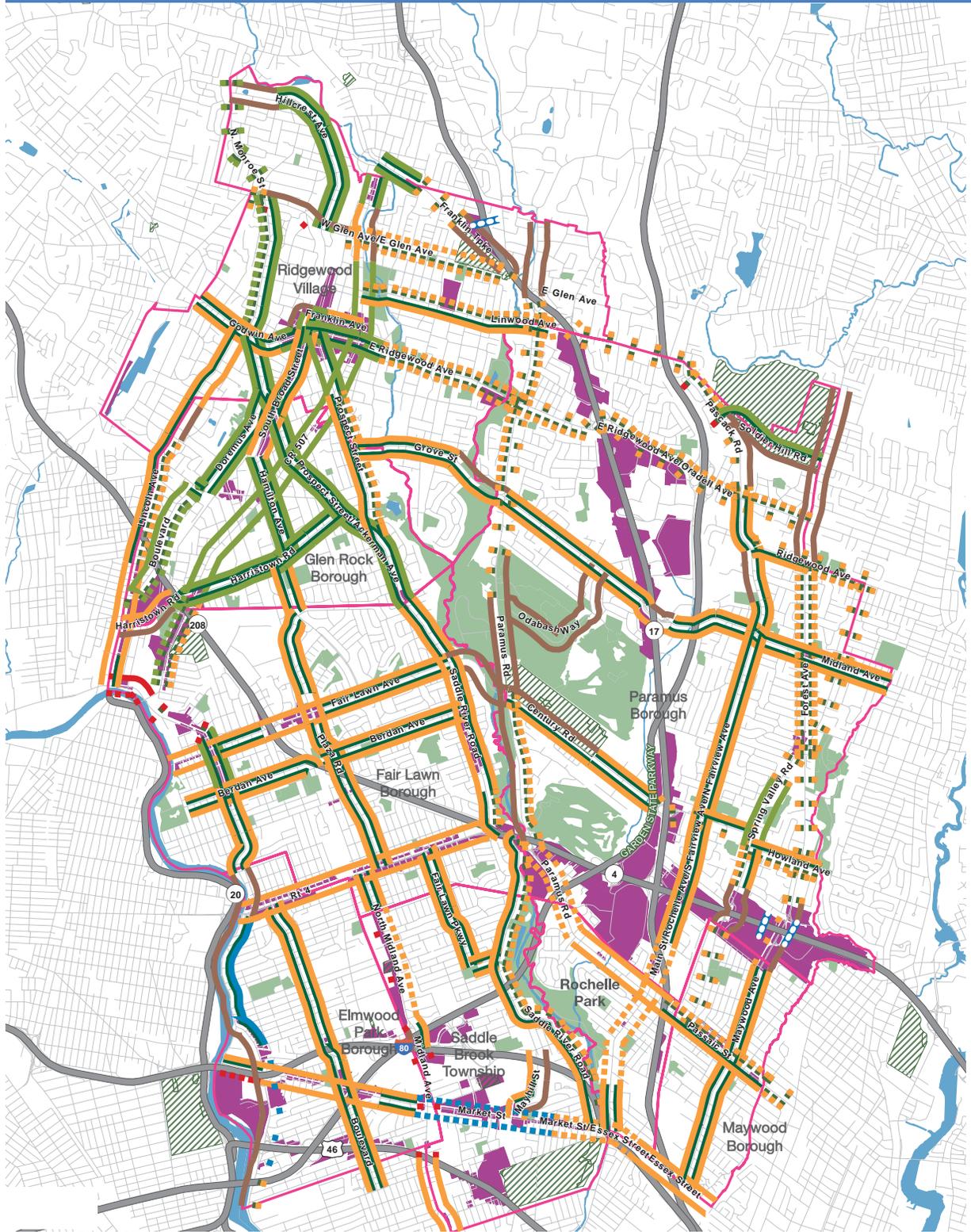
Sidewalk Category: POOR



Sidewalk Category: VARIABLE

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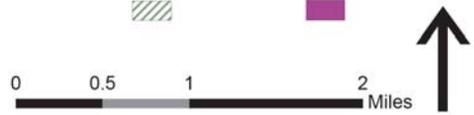
Central Bergen County Sidewalk Conditions Map



SIDEWALK CONDITIONS

Source: NJDOT, NJGIN, NJDEP, BERGEN COUNTY

- | | | | | | |
|---------------------------|---------------------|----------------------|---------------------------|-------------------|-------------------|
| Sidewalk Condition | Buffer | Gap Frequency | Municipal Boundary | Cemeteries | Commercial |
| Good | Yes | None | | | |
| Fair | No | Few/Minor | | | |
| Poor | | Significant | | | |
| Variable | | | | | |
| None | | | | | |
| | Pedestrian Overpass | | | | |



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CHAPTER 4

CENTRAL BERGEN BICYCLE PLAN



Study Area-Wide Bicycle Network Summary

The recommendations included in this chapter are intended to be a “starting point” for the study area municipalities, Bergen County and New Jersey Department of Transportation when considering enhancements to the bicycling infrastructure along roadways under their respective jurisdictions. These concepts have been vetted with the project’s Technical Advisory Committee and consist of enhancements that for the most part can be easily implemented. Current state of the practice suggests that even more robust treatments (beyond what is recommended in this study) could be considered; also, it is intended that the bicycling network will continue to grow and evolve over time.

The study area-wide bicycle network recommendations appear on the Central Bergen County Potential Bicycle Network Improvements map on the following page. Details of the recommendations on a municipality basis are in Chapter 6.

Existing Conditions

The current condition of bicycle accommodation throughout the study area was analyzed (as described in Chapter 3) and summarized. This included mapping the existing facilities, such as the striped bicycle lanes on Grove Street in Ridgewood.

Short-Term Recommendations

The first step in developing the recommendations for bicycle enhancements was to see what could be implemented without changes to the current roadway configuration. This was interpreted as no roadway widening, no right-of-way takings, and no changes to the number of travel lanes or speed limits. This left signing and striping ‘on the table’ as immediate low impact recommendation concepts for designated bicycle accommodation.

These low impact recommendations are widely applicable. Where paved roadway width of 30’ or greater permitted (e.g. eastern Fair Lawn Avenue in Fair lawn), bicycle lanes were considered first. If bicycle lanes would not fit, shared lane markings were considered where the posted speed limit was 35 miles per hour or lower (e.g. Linwood Avenue in Ridgewood).

Future Recommendations

In critical locations where bike lanes or shared lane markings would not fit without major impacts, larger scale changes to the roadways were considered. These included instances where four lane roads could be considered for a ‘road diet’ (e.g. Forrest Avenue in Paramus) changing to one travel lane in each direction, with a center turn lane and bicycle lanes. This concept will require additional traffic analysis and detailed site design for the corridor. Larger scale reconfiguration of roadways such as moving the on-street parking out from the curb to make room for a protected bicycle lane (Broadway/ Route 4 in Elmwood Park and Saddle Brook), and constructing a shared use path along one side of a roadway (Midland Avenue in Paramus) are also longer term concepts that will require detailed design.

County and Municipal Review and Refinement

The preliminary recommendations were shared with the Project Team, the Technical Advisory Committee and the general public at a series of outreach meetings. The recommendations were then refined to include only those recommendations that the municipalities and Bergen County were comfortable considering for implementation. This resulted in the elimination of some potential recommendations where available existing conditions data may not have fully reflected conditions along the corridor, or may not have revealed the most limiting spot locations.

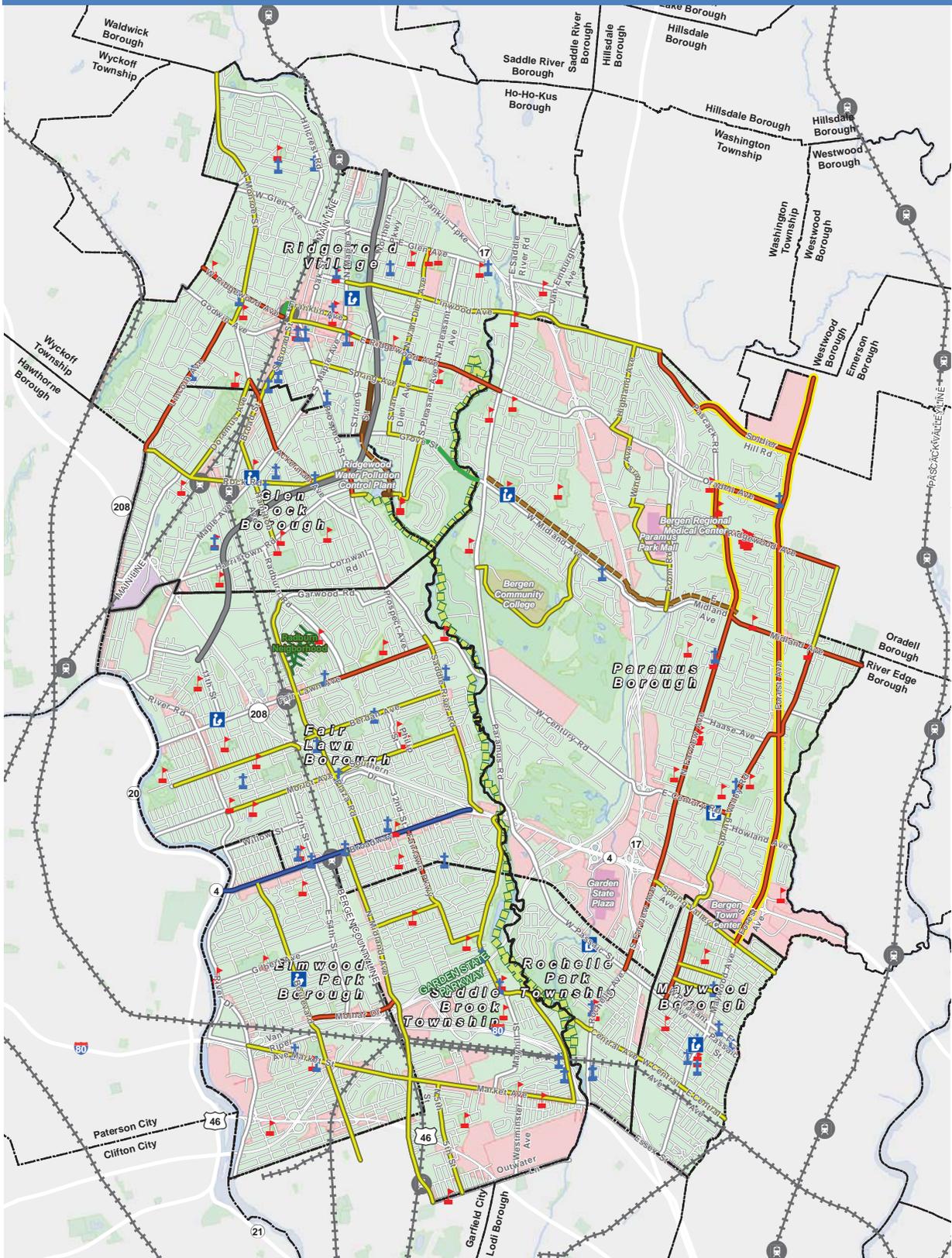
Data Limitations and Recommendation Process

The Project Team gathered available digital information about roadway characteristics from the state, county, and local resources. This included Straight Line Diagrams and other digitally available data on roadway width, speed limits, traffic volumes, on-street parking, land use and existing facilities along the transportation corridors in the study area.

This data was the basis for identifying a priority network of major through and connecting roadways with input from the County and the Technical Advisory Committee regarding what corridors have the most potential for accommodating bicycle travel throughout the study area. This included a number of the more major roadways, many of which are under County jurisdiction.

This data was then field checked throughout the study area, on a corridor level. Investigation of spot locations, and specific intersection details with isolated anomalies along a generally consistent roadway were beyond the scope of this analysis. Therefore, the analysis and recommendations are limited to a general corridor wide level. Further analysis will be required to refine the recommendations of this eight municipality wide plan.

Central Bergen County Potential Bicycle Network Improvements



- Proposed Bicycle Improvements**
- Bicycle Lanes
 - Protected Bike Lane
 - Shared Lane Markings
 - Shared-Use Path
 - Potential Road Diet

- Existing Facilities**
- Existing Bike Lane
 - Existing Multi-Use Path
 - Saddle River Path
 - Utility Right-of-Way

- Municipal Border**
- Libraries
 - + Places of Worship
 - + Schools
 - Train Station
 - Rail Line

- Land Use**
- Commercial
 - Mixed Use

DATE: 05-06-2015

NOTE: Not all items in the standard legend may be applicable to this map.



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Bicycle Stress Analysis of Potential Recommendations

An analysis of bicycle stress in the Priority Network with all proposed changes implemented generates important realizations about the overall character of bicycle facility implementation in Central Bergen County. These realizations inform how the County and Municipalities may choose to structure their long-term approach to bicycle facility implementation.

The Existing Low Stress Bicycle Network map (next page) shows the refined Priority Network and expresses the bicycle stress level as analyzed in the *existing condition* of Central Bergen County. Low stress bicycle facilities account for 48% (31.6 miles) while high stress facilities account for 52% (34.1 miles) of roadway-miles. This puts Central Bergen County in the position of having a less-than-half-complete low stress bicycle network with significant gaps in low stress bicycle mobility. Moreover, that the existing low stress bicycle network is clustered in Ridgewood and Glen Rock indicates that where there are network gaps they tend to be widespread, characterized more as an absence of available facilities than as missing gaps in an otherwise cohesive network.

The Potential Low Stress Bicycle Network map (following the next page) shows how the bicycle facility recommendations made in this plan (install bike lanes, install shared lane markings, etc.) would impact bicycle stress levels in Central Bergen County. All existing low stress roadway-miles remain low stress when enhanced bicycle facility recommendations are implemented, as would be expected. An additional 5 roadway-miles convert from high stress to low stress when enhanced bicycle facility recommendations are implemented. Meanwhile, 29.1 roadway-miles remain high stress even when enhanced bicycle facility recommendations are implemented. As a result, low stress roadway-miles account for 55% (36.6 miles) while high stress roadway-miles account for 45% (29.1 miles) of the refined Priority Network.

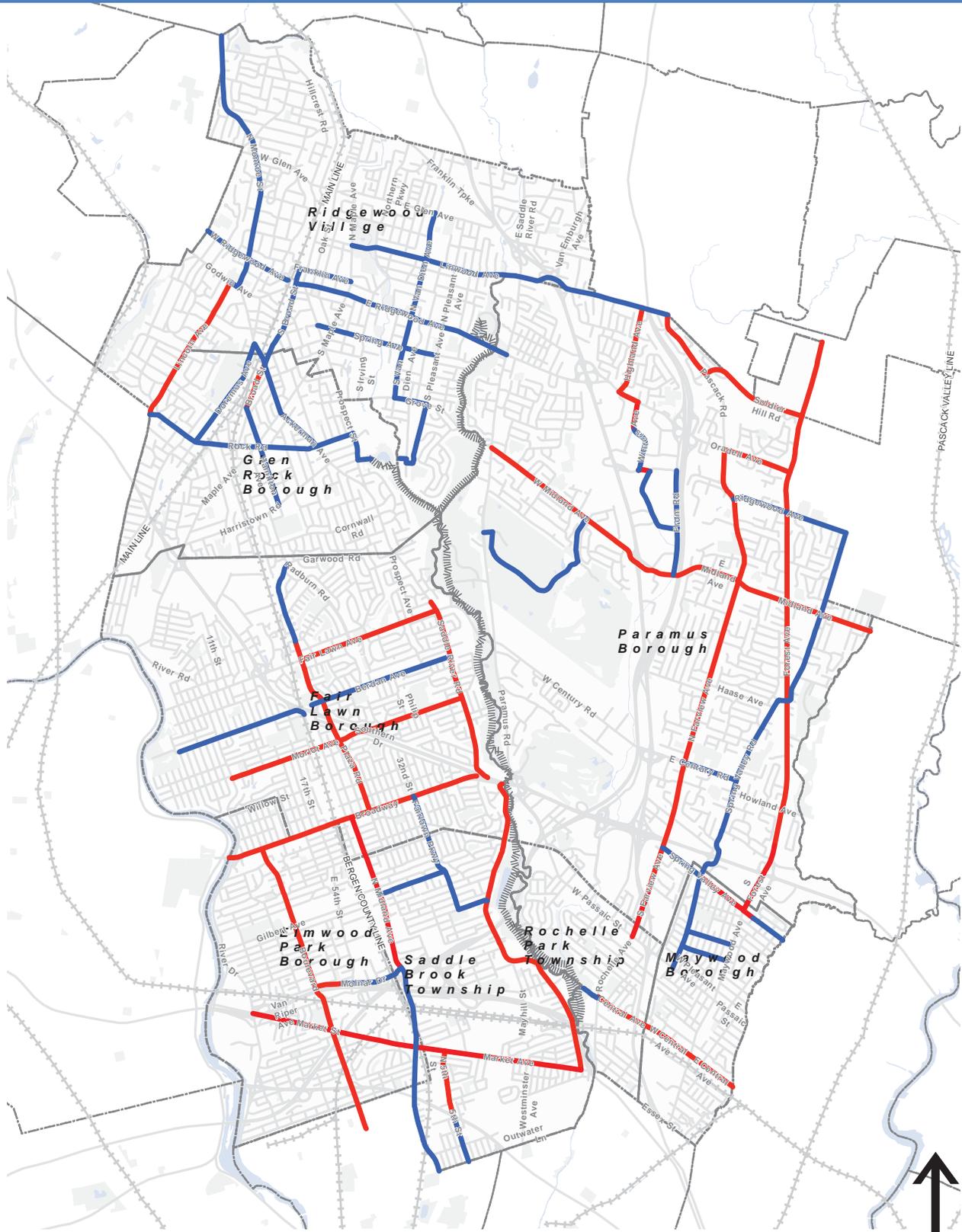
The roadway miles that convert from high stress to low stress include:

- State Route 4/Broadway in Elmwood Park with the implementation of protected bike lanes (1.9 roadway-miles);
- Midland Avenue in Paramus with the implementation of a shared use path (2.2 roadway miles);
- Forest Avenue in Paramus with the implementation of a road diet and bike lanes (0.5 roadway-miles); and
- Rochelle Avenue / Farview Avenue in Rochelle Park and Paramus with the implementation of bike lanes (0.4 roadway-miles).

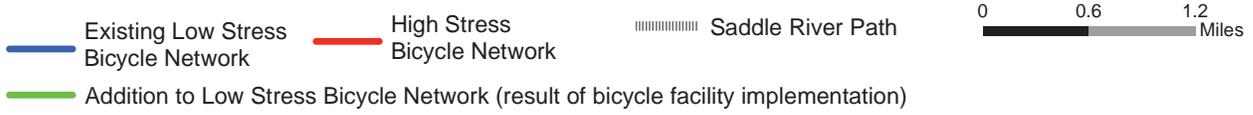
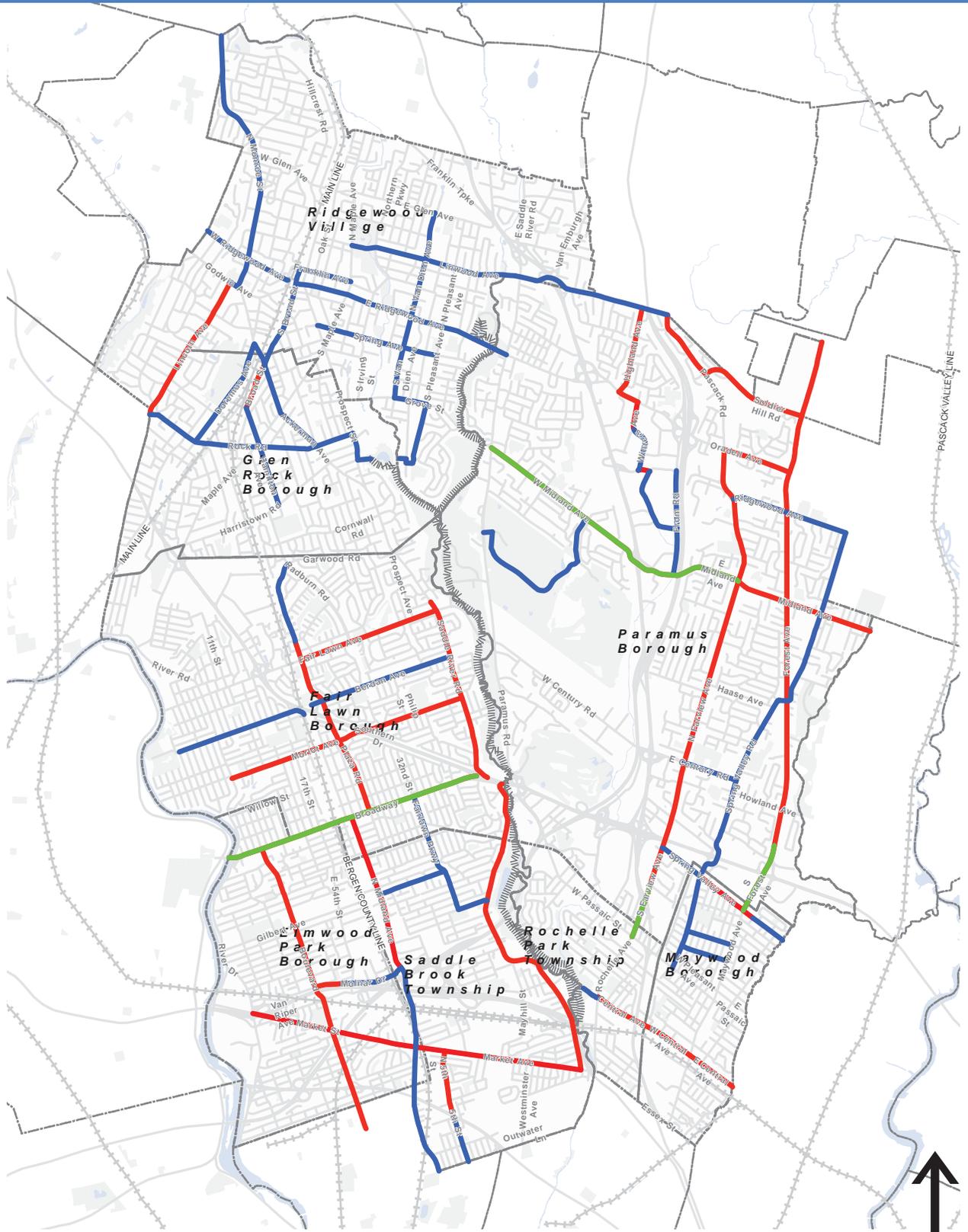
Notably, the largest gains in the low stress bicycle network are associated with the implementation of bicycle facility recommendations that are significant projects to plan in detail, design, and construct: protected bike lanes and a shared use path. This indicates that implementation of “paint only” bicycle facilities (bike lanes, shared lane markings) have little measurable effect on reducing the stress level of existing high-stress roadways in Central Bergen County. As a result, long-term efforts to increase low stress bicycle mobility in Central Bergen County should focus on significant enhancements because “paint only” retrofits are not effective solutions in the context of existing roadway profiles, travel speeds, traffic volumes, and land use. Whereas the focus of this study and plan is to identify and recommend bicycle facilities limited to low-cost and low-construction solutions, Bergen County should consider additional study to identify a visionary approach to significant build-out of low stress bicycle facilities into the future.

Central Bergen County

Existing Low Stress Bicycle Network



Central Bergen County Potential Low Stress Bicycle Network



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Bicycle Facility Types

This section presents bicycle facility types represented in the proposed conceptual improvements. These are the facility types that have wide application throughout the network and may be implemented without requiring extensive feasibility and design studies. It is not intended to be an exhaustive list of possible facilities. The objective was to identify improvements that could be cost effectively implemented without requiring major road reconstruction.

The dimensions, characteristics, and applications shown follow accepted standards and guidelines, including *AASHTO Guide for the Development of Bicycle Facilities*, the *Manual on Uniform Traffic Control Devices (MUTCD)*, and the National Association of City Transportation Officials (NACTO) *Urban Street Design Guide and Urban Bikeway Design Guide*.

The bicycle facility types presented include:

- Shared Lane Marking or "Sharrows"
- Bike Compatible Shoulder
- Bike Lane
- Cycle Track
- Shared Use Path
- Bicycle Amenities
- Intersection Treatments & Striping for Bicycles

Shared Lane Marking or “Sharrows”

Shared lane markings or “sharrows” are road markings used to indicate a shared lane environment for bicycles and automobiles. Shared lane markings are most appropriate for lower volume, lower speed streets and are best employed to strengthen connections in a bicycle network, filling in gaps of otherwise continuous bike facilities over a short distance.

Description & Features	Location & Traffic Flow
<ul style="list-style-type: none"> Sharrows are road markings that are used to indicate a shared lane environment for bicycles and automobiles Appropriate for lower volume, lower speed streets Best employed to strengthen connections in a bicycle network over a short distance 	<ul style="list-style-type: none"> Locate 4’ o.c. from curb Locate 11’ o.c. from curb (where on-street parking is present) Alt. location in center of travel lane Place after intersections and max. 250’ interval thereafter
Typical Application	Key Dimensions
<ul style="list-style-type: none"> Roadways with insufficient width for bike lanes <3,000 annual average daily traffic ≤35 MPH posted speed limit 	<ul style="list-style-type: none"> Do not take up an exclusive space in the roadway May be applied within existing travel lanes
Benefits	Considerations/Drawbacks
<ul style="list-style-type: none"> Reinforce the legitimacy of bicycle travel Assist cyclists with lateral positioning in lane Fill in gaps in the bicycle network Offer directional guidance No construction necessary 	<ul style="list-style-type: none"> Do not designate exclusive space for cyclists
Adaptation	Typical Costs
<ul style="list-style-type: none"> On multi-lane roads, a sharrow may be accompanied by a painted area or dashed striped to delineate a bicycle priority lane On hills, shared lane markings should be placed in the downhill travel lane in order to (where feasible) provide space for a bike lane on the uphill side, where cyclists will struggle to maintain speed 	<ul style="list-style-type: none"> \$300 per symbol. \$13,000 per mile. (Assume 44 symbols per mile for both directions with one symbol every 250’ in each direction).
Resources	
<p><i>NJDOT Bicycle Compatible Roadways and Bikeways, Planning and Design Guidelines (1996); AASHTO Guide for the Development of Bicycle Facilities, 4th Edition; Manual on Uniform Traffic Control Devices for Streets and Highways (2009); NACTO Urban Bikeway Design Guide (2011).</i></p>	

Example Shared Lane Marking Applications



Centered in Travel Lane

Brookline, MA. Credit: NACTO.org.



Adjacent to Parking

New York, NY. Credit: NACTO.org.



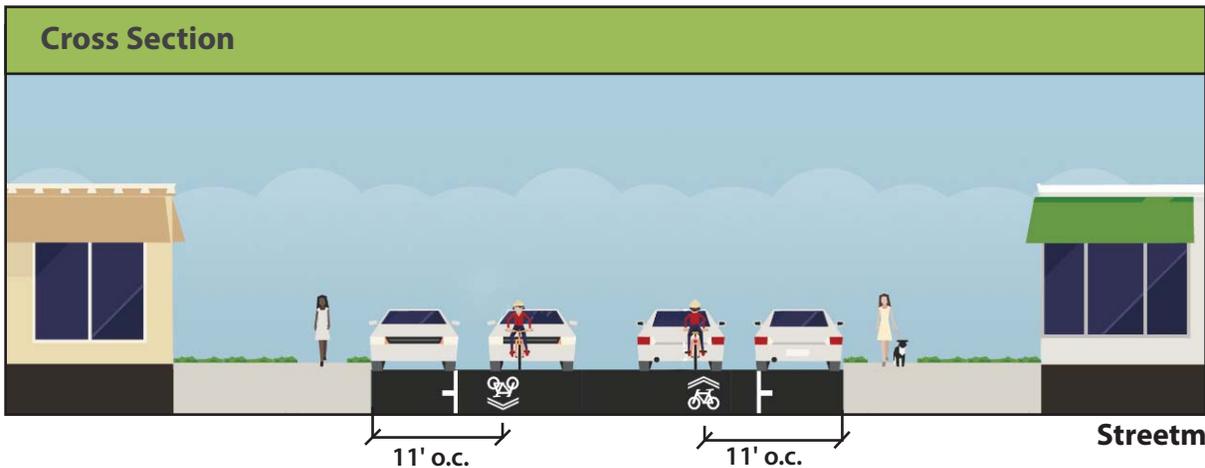
Adjacent to Curb

Princeton, NJ.



Bicycle Priority Lane

Salt Lake City, UT. Credit: Salt Lake City Transportation Division



Bike Compatible Shoulder

A bike compatible shoulder offers bicyclists a preferential use space within the roadway without a formal designation. Bike compatible shoulders are most appropriate where wide shoulders already exist or in rural areas.

Description & Features	Location & Traffic Flow
<ul style="list-style-type: none"> • On-road • Offer a comfortable space for bicycle use without designating a bike facility • Most compatible where wide shoulders already exist or in rural areas 	<ul style="list-style-type: none"> • Typical location between the travel lane and the curb or road edge • Typically flow with automotive traffic
Typical Application	Key Dimensions
<ul style="list-style-type: none"> • Where shoulders $\geq 4'$ wide exist on roads without parking • Range of configurations based on average annual daily traffic (AADT), posted speeds, and available shoulder (see Key Dimensions) 	<ul style="list-style-type: none"> • 4' shoulder: 1200-10,000 AADT and <30-40 MPH • 6' shoulder: 1200-$\geq 10,000$ AADT and 41-50 MPH • 8' shoulder: 2000-$\geq 10,000$ AADT and ≥ 50 MPH
Benefits	Considerations/Drawbacks
<ul style="list-style-type: none"> • Utilize existing shoulders to accommodate bicycle travel 	<ul style="list-style-type: none"> • Not appropriate for urban areas • Shoulders should be maintained clear of puddles, debris, and vegetation • Inlets should be bike compatible
Adaptation	Typical Costs
<ul style="list-style-type: none"> • Where feasible, bike lanes should be used in place of bike compatible shoulders 	<ul style="list-style-type: none"> • Ongoing maintenance costs
Resources	
<p>NJDOT <i>Bicycle Compatible Roadways and Bikeways Planning and Design Guidelines</i>, 1996.</p>	

Example Bike Compatible Shoulder Facilities



Glassboro, NJ.



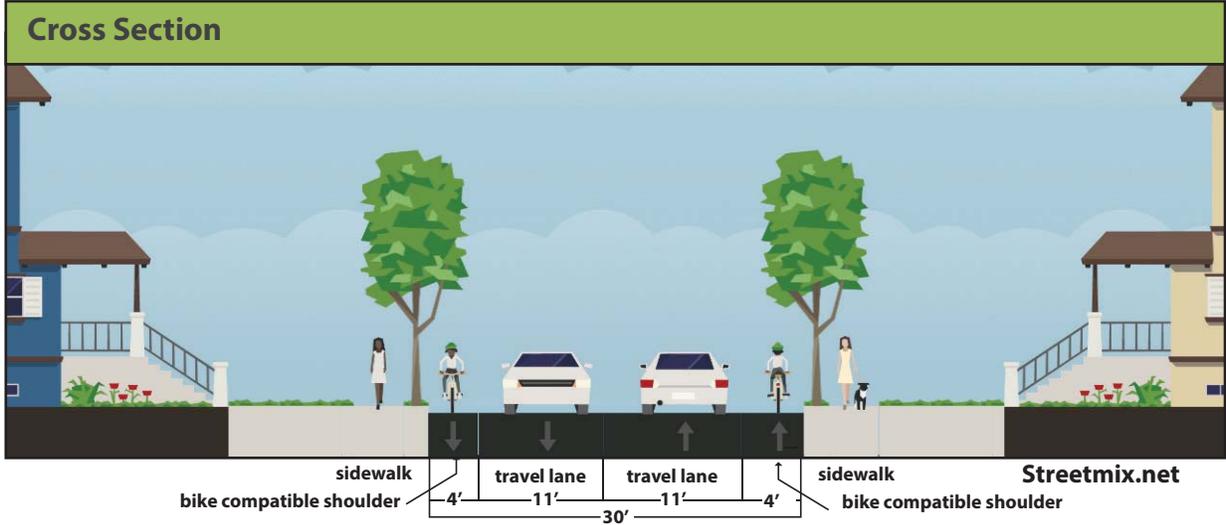
Blairstown, NJ.



Austin, TX. Credit: NACTO.org.



Ocean City, NJ. Credit: NJDOT.



Bike Lane

A bike lane is a portion of the roadway that has been designated by striping, pavement markings, and signage for the preferential or exclusive use of bicyclists.

Description & Features	Location & Traffic Flow
<ul style="list-style-type: none"> On-road bicycle facility Designates bicycle space through use of striping, pavement markings, and signage 	<ul style="list-style-type: none"> Typical location on right side of street between automotive travel lane and parking lane, curb, or edge of road Typically flow in the same direction as adjacent automotive traffic
Typical Application	Key Dimensions
<ul style="list-style-type: none"> Roadways $\geq 30'$ wide (two-lane road) $>3,000$ annual average daily traffic Posted speeds 25-40 MPH 	<ul style="list-style-type: none"> Min. 4' wide Min. 5' wide for roadways with curb, gutter, or on-street parking
Benefits	Considerations/Drawbacks
<ul style="list-style-type: none"> Visually delineate cyclists' right to the street and allocation of space Enable cyclists to ride at their preferred speed Facilitate predictable behavior between cyclists and motorists 	<ul style="list-style-type: none"> Not all users will be comfortable in a bike lane When located adjacent to a parking lane, there is risk for 'dooring' accidents Require some measure of enforcement to prevent blockage by stopped or standing vehicles.
Adaptation	Typical Costs
<ul style="list-style-type: none"> Where space allows, it is desirable to add a 2' buffer zone to create a buffered bike lane Painted bike lanes increase visual presence Advisory bike lane is a possible for narrow streets with low traffic volume and low speeds 	<ul style="list-style-type: none"> \$2 - \$4 per linear foot \$17,000 - \$33,000 per mile
Resources	
<p><i>NJDOT Bicycle Compatible Roadways and Bikeways, Planning and Design Guidelines (1996); AASHTO Guide for the Development of Bicycle Facilities, 4th Edition; NYCDOT Street Design Manual (2009); NACTO Urban Bikeway Design Guide (2011).</i></p>	

Example Bike Lane Facilities



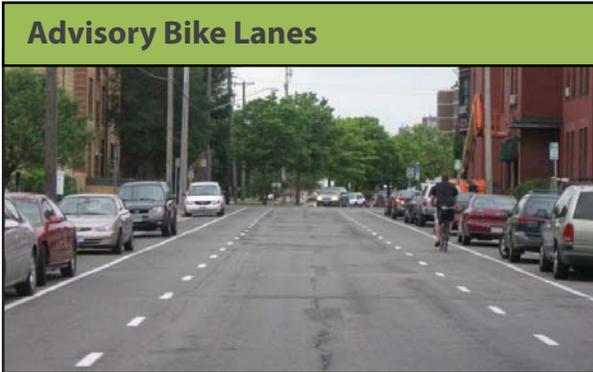
Chicago, IL. Credit: NACTO.org.



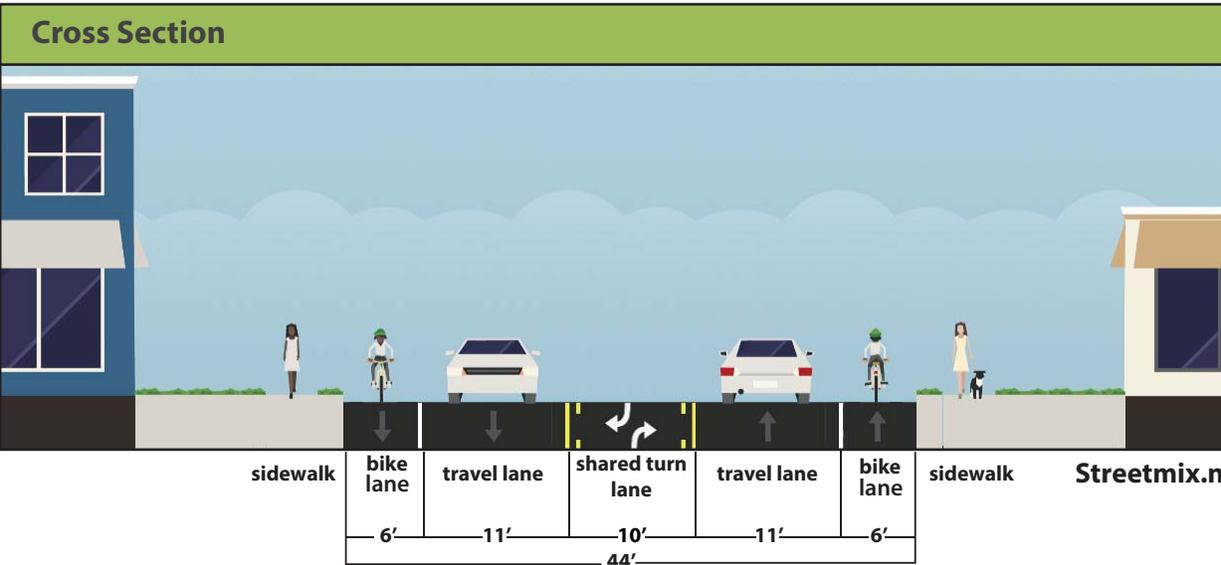
New York, NY. Credit: NACTO.org.



Jersey City, NJ.



Minneapolis, MN. Credit: BikeWalkTwinCities.org



Protected Bike Lane

A protected bike lane (also known as a cycle track) is an exclusive on-road bike facility that is physically separated from automotive traffic and is distinct from the sidewalk. Bicycle traffic along a cycle track may be one-way or two-way, and the cycle track facility may be grade-separated from adjacent automotive or pedestrian facilities.

Description & Features	Location & Traffic Flow
<ul style="list-style-type: none"> On-road bike facility Physically separated from automotive and pedestrian traffic Can accommodate one- or two-way bicycle travel 	<ul style="list-style-type: none"> One-way facilities on right side of street, between automotive travel lane or parking lane and curb or sidewalk Two-way facilities on either side of street
Typical Application	Key Dimensions
<ul style="list-style-type: none"> High stress roadways where bike lanes are insufficient to reduce stress One-way facilities in urban areas with frequent intersections and signals Two-way facilities where intersection and signals are at a minimum 	<ul style="list-style-type: none"> One-way facilities min. 5' wide plus 3' buffer area Two-way facilities min. 12' wide (8' in constrained location) plus 3' buffer area
Benefits	Considerations/Drawbacks
<ul style="list-style-type: none"> Most effective dedication and protection of space for cyclists Reduce risk and fear of collisions Most attractive facility for cyclists of all levels and ages 	<ul style="list-style-type: none"> May require special consideration and equipment for snow removal
Adaptation	Typical Costs
<ul style="list-style-type: none"> Highly customizable facilities that can vary greatly in their size, application, and method of construction 	<ul style="list-style-type: none"> \$6 - \$12 per linear foot for one-way painted facility Up to \$3,000,000 per mile for two-way constructed facility
Resources	
<p><i>NACTO Urban Bikeway Design Guide (2011).</i></p>	

Example Protected Bike Lane Facilities



Chicago, IL. Credit: NACTO.org.



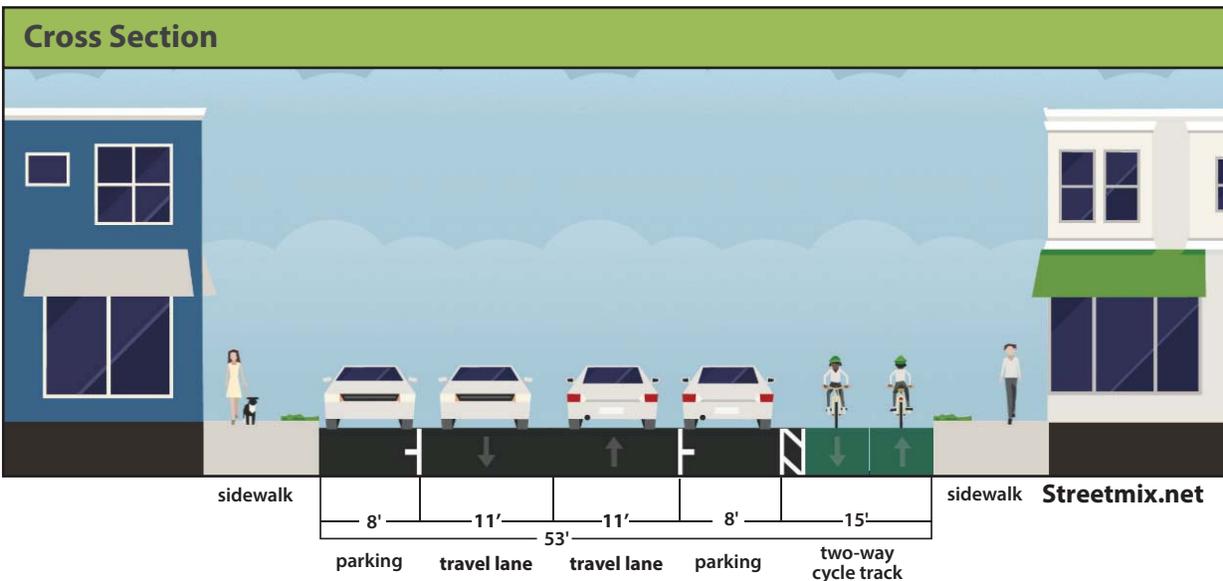
Cambridge, MA. Credit: NACTO.org.



New York, NY. Credit: NACTO.org.



New York, NY. Credit: NACTO.org.



Shared Use Path

A shared use path is a bike and pedestrian facility that is physically separated from motorized vehicular traffic by an open space or barrier. Shared use path facilities accommodate a variety of non-motorized uses, most often bicycle and pedestrian traffic. Shared use paths are a complimentary addition to the roadway network and fall under the accessibility requirements of the Americans with Disabilities Act.

Description & Features	Location & Traffic Flow
<ul style="list-style-type: none"> Bike & Pedestrian facility Physically separated from motorized traffic Complimentary addition to the roadway network Require ADA compliance 	<ul style="list-style-type: none"> May be located within the roadway ROW or independent ROW(s) Accommodate two-way bicycle and pedestrian traffic
Typical Application	Key Dimensions
<ul style="list-style-type: none"> Along or through parks and open space Adjacent to waterways Along former railways Through under-utilized ROWs 	<ul style="list-style-type: none"> Min. 10' wide for two-way traffic A 2' graded area and 3' clear zone must be maintained on both sides
Benefits	Considerations/Drawbacks
<ul style="list-style-type: none"> Provide a low-stress bicycle and pedestrian environment separated from motorized traffic Commutable and recreational for bicyclists and pedestrians Appeal to users of all ages and abilities 	<ul style="list-style-type: none"> Rarely the most direct means of transportation May require specialized study for feasibility May require complex coordination if planned for location in independent ROW
Adaptation	Typical Costs
<ul style="list-style-type: none"> Highly customizable facilities that can vary greatly in their size, application, and method of construction. 	<ul style="list-style-type: none"> Asphalt paved surface 10' wide: \$2,000,000/mile
Resources	
<p><i>NJDOT Bicycle Compatible Roadways and Bikeways, Planning and Design Guidelines (1996); AASHTO Guide for the Development of Bicycle Facilities, 4th Edition; Proposed Right-of-Way Accessibility Guidelines (PROWAG); Advance Notice of Proposed Rulemaking (ANPRM) on Accessibility Guidelines for Shared Use Paths.</i></p>	

Example Shared Use Path Facilities



Columbia Trail, NJ.



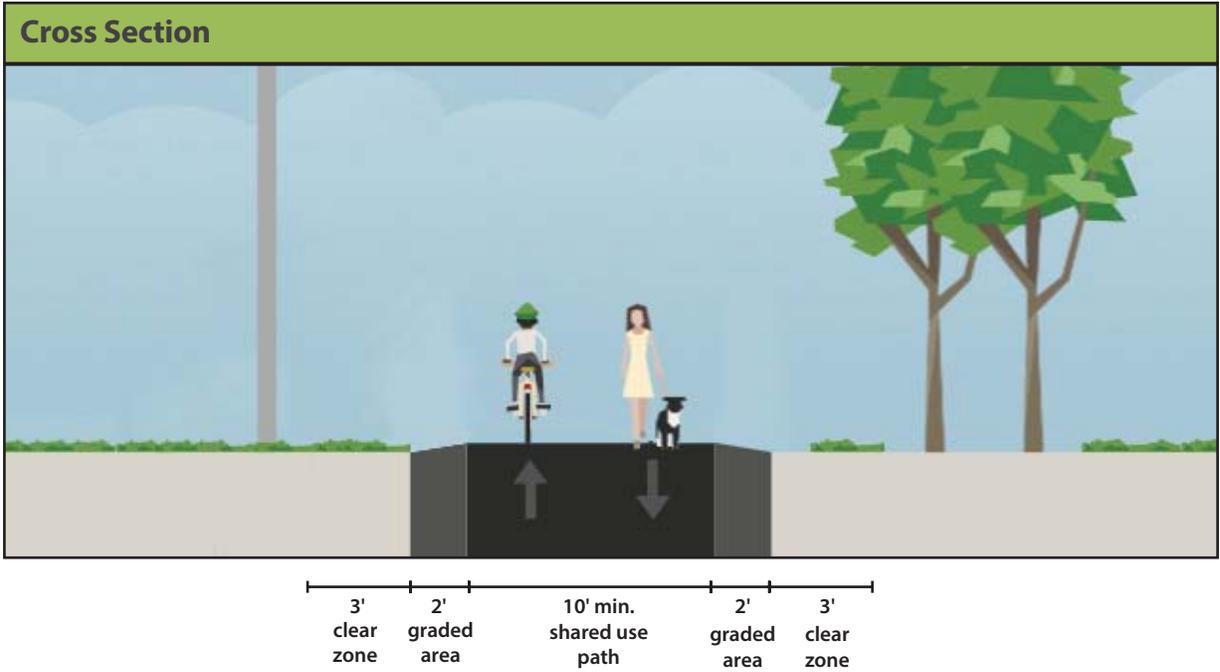
Hoboken, NJ.



Burlington, WA. Credit: AmericanTrails.org



Sandy Hook, NJ.



Bicycle Amenities

To effectively increase bicycle travel, it is necessary to provide amenities that enable safe, convenient, and efficient bicycle transportation. These include amenities for bicycle parking and repairs, as well as general considerations of the bicycle environment, such as bike-compatible inlet grates.

Bicycle Parking

Benefits of Bicycle Parking	
<ul style="list-style-type: none"> Bicycle parking is good for business, enabling cyclists to access local shops Well designed bicycle parking promotes an orderly streetscape and preserves pedestrian right-of-way Bicycle parking legitimizes bicycling as a transportation mode with opportunities equal to motorized travel 	
Short-Term Bicycle Parking	Long-Term Bicycle Parking
<ul style="list-style-type: none"> Usually consists of simple bicycle racks on sidewalk in front of a building or destination Focus is on convenience, utility, and security Should be placed no more than 50' from destination otherwise cyclists may lock to other street furniture 	<ul style="list-style-type: none"> Wider variety of fixture types and layouts including racks, lockers, and bicycle rooms, both indoors and outdoors Should have weather protection and consider controlled access
 <p>Hoboken, NJ</p> <p>Bike Rack Retrofit on Meter Post</p>	 <p>Princeton Junction, NJ</p> <p>Bike Lockers</p>
 <p>Newark, NJ</p> <p>Bike Rack</p>	 <p>NJTRANSIT Train Station, Montclair, NJ. Credit: njbwc.org</p> <p>Indoor Multi-bicycle Parking</p>
<p>Bike racks typically cost \$250 - \$450 per rack. Bike locker typically cost \$2,000 - \$3,000. Multi-bike parking facilities typically cost \$3,500 to \$15,000.</p>	

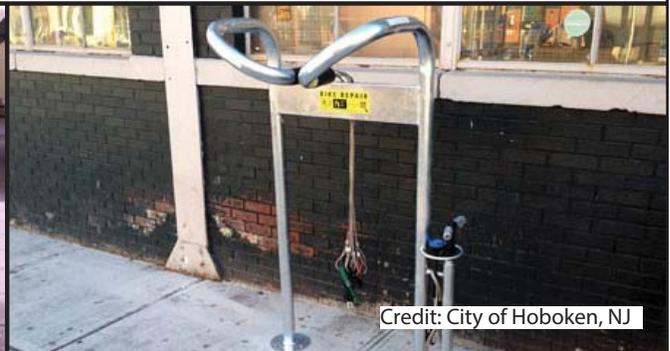
Bicycle Repair Stations

Benefits of Bicycle Repair Stations

- Encourage safe bicycle travel
- Allow for quick adjustment/repair of common bicycle needs, including tire inflation, brake adjustments, axle bolt tightening, seat adjustments, and handlebar adjustments
- Save time for cyclists
- Integrate with long-term bicycle parking facilities



Credit: Caltech Bike Lab



Credit: City of Hoboken, NJ

Bike repair stations typically cost \$500 - \$2,000 each.

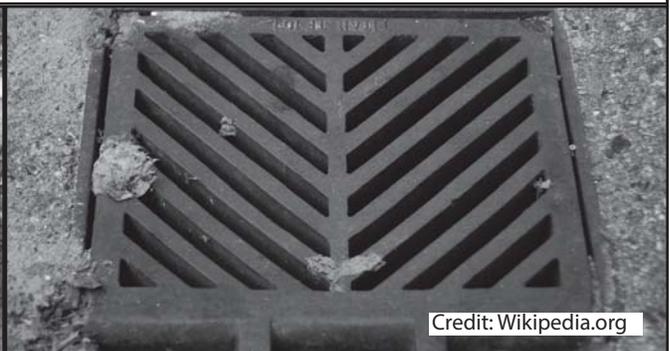
Bicycle-safe Drainage Facilities

Benefits of Bicycle-Safe Drainage Facilities

- Increase safety for bicyclists, since drainage facilities are usually located along the edge of the roadway where bicyclists tend to ride
- Eliminate trapping the front bicycle wheel in the inlet grate
- Reduce swerving action as cyclists try to avoid inlet grates



Credit: safety.fhwa.dot.gov



Credit: Wikipedia.org

Bicycle-safe drainage grates typically cost \$450 each for a 2'x3' unit.

Intersection Treatments & Striping for Bicycles

The planning of on-road bicycle facilities requires special consideration for bicycle movement patterns and bicycle facility striping through intersections. The following tables include information on special treatments and striping for bicycles as related to turning, through, and crossing movements at intersections.

Bicycle Turning Movement

<p>Bike Box</p>	
<ul style="list-style-type: none"> • A bike box is a designated area at the head of a travel lane at signalized intersections to provide cyclists with a safe way to get ahead of traffic during the red signal phase • Makes cyclists highly visible at intersections • Reduces right turn conflicts between cyclists and motorists • Enables cyclists to position themselves to safely execute a left turn 	 <p>Austin, TX. Credit: NACTO.org</p>
<p>Two-Stage Turn Queue Box</p>	
<ul style="list-style-type: none"> • Provides cyclists with a left turn opportunity that avoids yielding in front of oncoming vehicular traffic • At a green light, cyclists proceed straight across an intersection to the far side and queue in a bike box. They reorient 90° left and wait until the signal cycles red. At that point, the signal in the opposing direction cycles green and cyclists depart the bike box proceeding straight across the intersection. 	 <p>Portland, OR. Credit: NACTO.org</p>
<p>Combined Bike/Turn Lane</p>	
<ul style="list-style-type: none"> • Positions a suggested bike lane within a portion of a motor vehicle dedicated right turn lane • Shared lane markings or dashed lines delineate the space of cyclists and their proper positioning within the lane • Allows for "dual use" of a lane where space is insufficient for both a bike lane and a vehicular dedicated right turn lane • Reduces the risk of "right hook" collisions at intersections 	 <p>Eugene, OR. Credit: NACTO.org</p>
<p>Typical costs are \$5 - \$7 per foot for linear facilities and \$10 per square foot for painted areas.</p>	

Bicycle Through Movement

<p>Through Bike Lane Striping</p> <ul style="list-style-type: none"> • Used at approach to intersections with vehicular turn lanes • Enables cyclists to correctly position themselves and avoid conflict with turning vehicles • Enables more predictable bicyclist and motorist travel movements • Signifies appropriate location for motorists to migrate across bike lane • Also known as a "bicycle pocket" 	<p>Lansing, MI. Credit: League of Michigan Bicyclists</p> 
<p>Green Colored Pavement Striping</p> <ul style="list-style-type: none"> • Colored pavement can be used along the length of a bike lane or cycle track, or as a spot treatment such as a bike box, conflict area, or intersection crossing marking • Increases visibility of the bike facility • Promotes multi-modal nature of roadway • Increases yielding behavior by motorists • Reinforces the presence and priority of cyclists 	<p>Philadelphia, PA</p> 
<p>Typical costs are \$5 - \$7 per foot for linear facilities and \$10 per square foot for painted areas.</p>	

Bicycle Crossing Movement

<p>Intersection Crossing Marking/Crossbike</p> <ul style="list-style-type: none"> • Indicate the intended path for cyclists across intersections, driveways, or ramps • At major intersections are placed next to the crosswalk to indicate intended space for bicycle crossing • Increase visibility of cyclists at intersections and encourage motorists to yield 	<p>Ocean City, NJ</p> 
<p>Typical costs are \$5 - \$7 per foot for linear facilities and \$10 per square foot for painted areas.</p>	

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CHAPTER 5

CENTRAL BERGEN PEDESTRIAN PLAN



Study Area-Wide Pedestrian Network Summary

The recommendations included in this chapter are intended to be a “starting point” for the study area municipalities, Bergen County and New Jersey Department of Transportation when considering enhancements to the pedestrian infrastructure along and across the roadways under their respective jurisdictions. These concepts have been vetted with the project’s Technical Advisory Committee and consist of enhancements that for the most part can be easily implemented. Many of the treatments included here focus on simple upgrades to the existing infrastructure, such as enhanced striping patterns for crosswalks to improve visibility and extend maintenance schedules (e.g. continental striping for crosswalks). Other treatments such as adding countdown pedestrian signal heads to signalized intersections will require further investigation to determine if the current signal can accommodate the increased phasing required to incorporate these features.

The pedestrian focus locations were selected by the project team and vetted by the Technical Advisory Committee based on targeting high conflict locations and proximity to frequent crash locations. The concepts for enhancing each of these locations are also intended to be representative of other similar locations throughout the study area.

All of the concepts conform to current state of the practice and follow national guidelines such as American Association of State Highway and Transportation Officials (AASHTO) *Guide for the Planning, Design, and Operation of Pedestrian Facilities*, *Manual on Uniform Traffic Control Devices* (MUTCD), and the National Association of City Transportation Officials (NACTO) *Urban Street Design Guide*.

The study area-wide pedestrian network recommendations appear on the Central Bergen County Potential Pedestrian Network Improvements map on the following page. Details of the recommendations on a municipality basis are in Chapter 6.

Existing Conditions

The current condition of pedestrian accommodations was analyzed (as described in Chapter 3) and summarized throughout the study area. This included mapping the existing pedestrian accommodations, such as the presence or absence of a continuous sidewalk network along the priority routes.

Short-Term Recommendations

The first step in developing the recommendations for pedestrian enhancements was to see what could be implemented without changes to the current roadway configuration. This was interpreted as no roadway widening or narrowing, no right-of-way takings, and no changes to the number of travel lanes or speed limits. This left installing warning signs and enhanced crosswalk striping patterns 'on the table' as immediate low impact recommendation concepts for pedestrian facilities, such as restriping the crosswalks at Market Street in Elmwood Park.

Future Recommendations

In critical locations where pedestrian access can be enhanced further by physical construction elements, concepts were identified that will likely take additional effort to implement. Detailed traffic control plans would likely be required for striped curb extensions, and site specific design plans would be required for fully built curb extensions that can be implemented along Broadway/ Route 4 in Elmwood Park and Saddle Brook. Constructing a shared use path along one side of a roadway (Midland Avenue in Paramus) is also a longer term concept that will require detailed design.

County and Municipal Review and Refinement

The preliminary recommendations were shared with the Project Team, the Technical Advisory Committee and the general public at a series of outreach meetings. The recommendations were then winnowed down to include only those recommendations that the municipalities and Bergen County were comfortable considering for implementation. This resulted in the exclusion of some potential recommendations where available existing conditions data may not have fully reflected conditions in the corridor, or may not have revealed the most limiting spot locations.

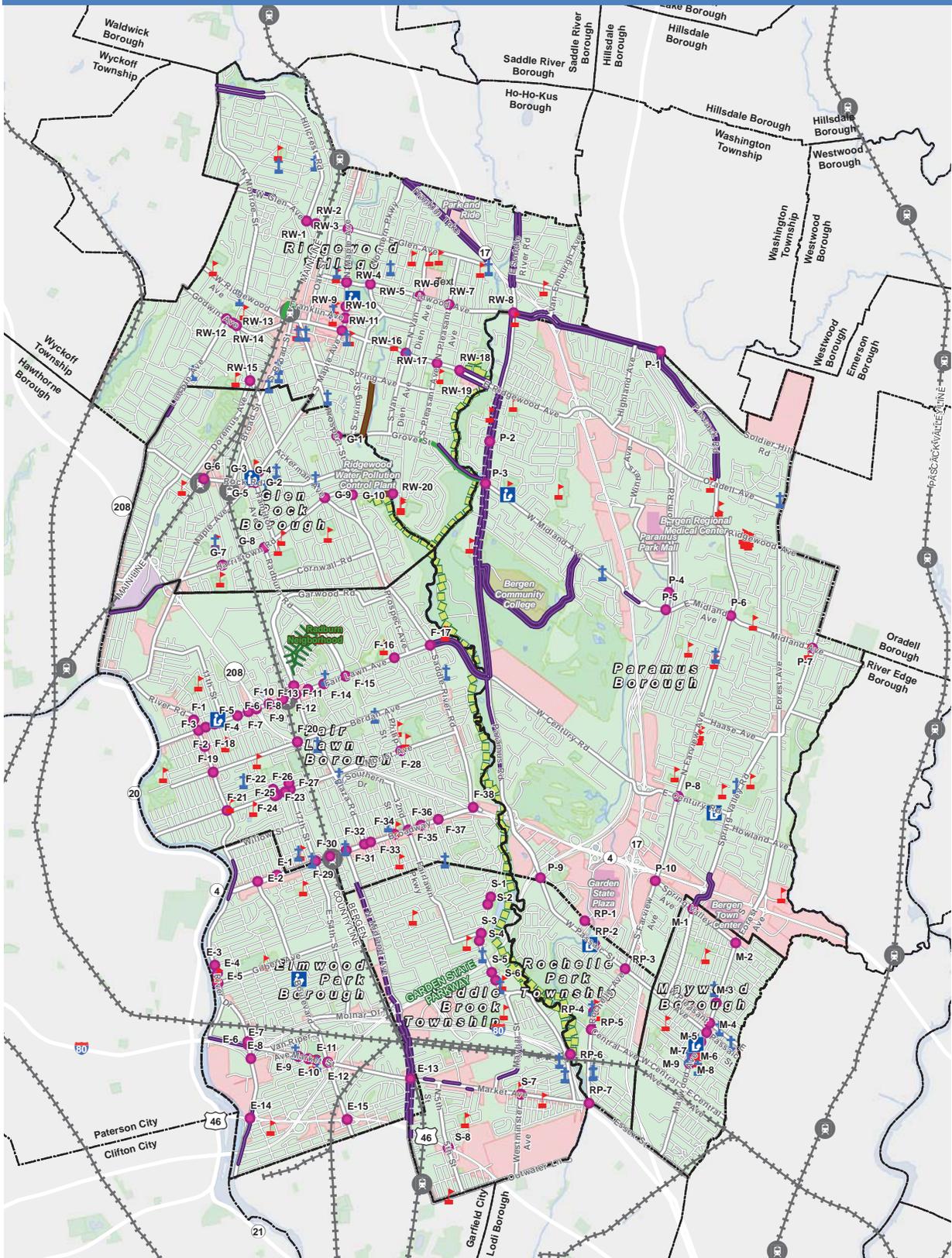
Data Limitations and Recommendation Process

The Project Team gathered available digital information about roadway characteristics from the state, county, and local resources. This included Straight Line Diagrams and other digitally available data on roadway width, speed limits, traffic volumes, on-street parking, land use and existing facilities, available digital mapping and street views along the transportation corridors in the study area.

This data was the basis for identifying a priority network of major through and connecting roadways by the Project Team with input from the County and the Technical Advisory Committee as to what corridors have the most potential for accommodating pedestrian travel throughout the study area. This included a number of major roadways, some of which are County jurisdiction roads.

This data was then field checked throughout the study area on a corridor level. Investigations of spot locations or specific intersections (with isolated anomalies) along a largely consistent roadway were beyond the scope of the analysis. Therefore, the analysis and recommendations are limited to general corridor wide level. Further analysis will be required to refine the recommendations of this eight municipality wide plan.

Central Bergen County Potential Pedestrian Network Improvements



- Proposed Pedestrian Improvements**
- Pedestrian Improvement
 - Sidewalk Proposed
 - Fill Gaps in Sidewalk Network

- Existing Facilities**
- Existing Bike Lane
 - Existing Multi-Use Path
 - Saddle River Path
 - Utility Right-of-Way

- Municipal Border**
- Libraries
 - Places of Worship
 - Schools
 - Train Station
 - Rail Line

- Land Use**
- Commercial
 - Mixed Use

DATE: 3-25-15
NOTE: Not all items in the standard legend may be applicable to this map.



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Pedestrian Facility Types

This section presents pedestrian facility types represented in the proposed conceptual improvements. These are the facility types that have wide application throughout the network and may be implemented without requiring extensive feasibility and design studies. It is not intended to be an exhaustive list of possible facilities. The objective was to identify improvements that could be cost effectively implemented without requiring major road reconstruction.

The dimensions, characteristics, and applications shown follow accepted national standards and guidelines, including the *AASHTO Guide for the Development of Bicycle Facilities*, the *Manual on Uniform Traffic Control Devices (MUTCD)*, and the National Association of City Transportation Officials (NACTO) *Urban Street Design Guide*.

The pedestrian facility types presented include:

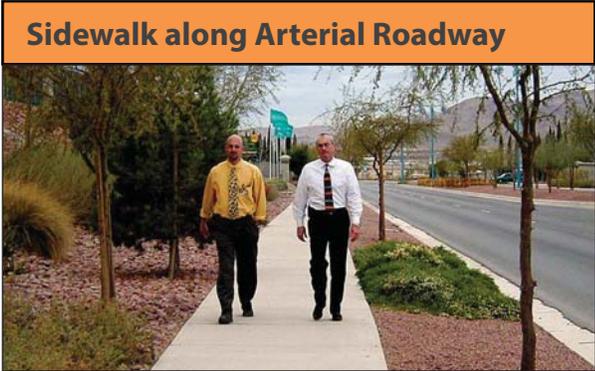
- Sidewalk
- Shared Use Path
- Crosswalk
- Curb Extension
- Median Island
- Signal Enhancement or Warning Beacon
- Bus Stop Enhancement

Sidewalk

The sidewalk is the most important element of the pedestrian transportation network, providing pedestrians with a designated space that is separate from motor vehicles, reducing pedestrian collisions. All sidewalks should be designed for universal access and meet standards in accordance with the Americans with Disabilities Act. Accessible sidewalks are an appropriate consideration for every public right-of-way project. A robust sidewalk network that links pedestrians with transit access, commercial centers, and other key destinations should be a high priority.

Description & Features	Location & Traffic Flow
<ul style="list-style-type: none"> • Most important element for pedestrian network • Require ADA compliance • Increase safety for all users • Should be considered for all public rights-of-way 	<ul style="list-style-type: none"> • Typically located at the outer edges of the public right-of-way, between the roadway and adjacent buildings or parcels • Traffic flow is typically not a consideration
Typical Application	Key Dimensions
<ul style="list-style-type: none"> • Typically concrete construction • Include curb ramps, detectable warning surfaces, and driveway crossings 	<ul style="list-style-type: none"> • Min. 4' wide • Desirable standard 5' wide • Can be >25' wide in urban or commercial areas
Benefits	Considerations/Drawbacks
<ul style="list-style-type: none"> • Safety • Dedicated space for pedestrians • Pedestrian access to key destinations 	<ul style="list-style-type: none"> • Require general upkeep and maintenance • Blockage often occurs from the placement of utility poles • Snow and ice removal can be labor intensive
Adaptation	Typical Costs
<ul style="list-style-type: none"> • Vary in width and design depending on pedestrian volume and context • May have decorative paving and include utilities and plantings 	<ul style="list-style-type: none"> • Concrete sidewalk 5' wide: \$60/lf • Curb ramp 5'x5': \$3500 • Detectable warning surface 2'x4': \$400
Resources	
<p><i>FHWA Designing Sidewalks and Trails for Access: Chapter 4 – Sidewalk Design Guidelines and Existing Practices; FHWA Designing Sidewalks and Trails for Access: Part II of II: Best Practice Design Guide; NACTO Urban Street Design Guide (2013).</i></p>	

Example Sidewalk Facilities



Credit: PedBikeSafe.org.



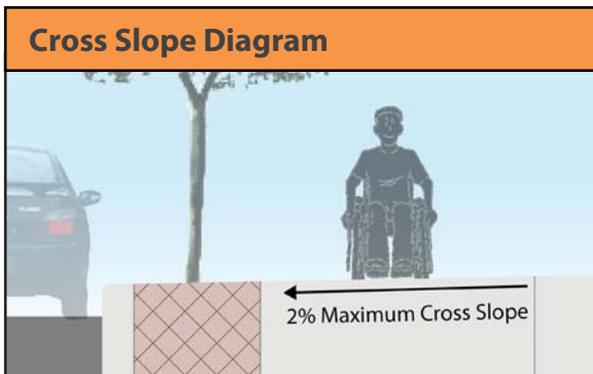
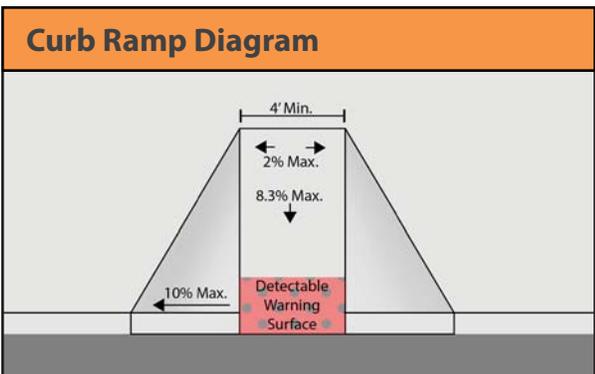
Bethesda, MD. Credit: NACTO.org.



St. Louis, MO. Credit: NACTO.org.



Charlotte, NC. Credit: NACTO.org.



Shared Use Path

A shared use path is a bike and pedestrian facility that is physically separated from motorized vehicular traffic by an open space or barrier. Shared use path facilities accommodate a variety of non-motorized uses, most often bicycle and pedestrian traffic. Shared use paths are a complimentary addition to the roadway network and fall under the accessibility requirements of the Americans with Disabilities Act.

Description & Features	Location & Traffic Flow
<ul style="list-style-type: none"> Bike & Pedestrian facility Physically separated from motorized traffic Complimentary addition to the roadway network Require ADA compliance 	<ul style="list-style-type: none"> May be located within the roadway ROW or independent ROW(s) Accommodate two-way bicycle and pedestrian traffic
Typical Application	Key Dimensions
<ul style="list-style-type: none"> Along or through parks and open space Adjacent to waterways Along former railways Through under-utilized ROWs 	<ul style="list-style-type: none"> Min. 10' wide for two-way traffic A 2' graded area and 3' clear zone must be maintained on both sides
Benefits	Considerations/Drawbacks
<ul style="list-style-type: none"> Provide a low-stress bicycle and pedestrian environment separated from motorized traffic Commutable and recreational for bicyclists and pedestrians Appeal to users of all ages and abilities 	<ul style="list-style-type: none"> Rarely the most direct means of transportation May require specialized study for feasibility May require complex coordination if planned for location in independent ROW
Adaptation	Typical Costs
<ul style="list-style-type: none"> Highly customizable facilities that can vary greatly in their size, application, and method of construction. 	<ul style="list-style-type: none"> Asphalt paved surface 10' wide: \$2,000,000/mile
Resources	
<p><i>NJDOT Bicycle Compatible Roadways and Bikeways, Planning and Design Guidelines (1996); AASHTO Guide for the Development of Bicycle Facilities, 4th Edition; Proposed Right-of-Way Accessibility Guidelines (PROWAG); Advance Notice of Proposed Rulemaking (ANPRM) on Accessibility Guidelines for Shared Use Paths.</i></p>	

Example Shared Use Path Facilities

Shared Use Path along Former Railroad



Columbia Trail, NJ.

Shared Use Path through an Urban Park



Hoboken, NJ.

Shared Use Path along a Utility ROW



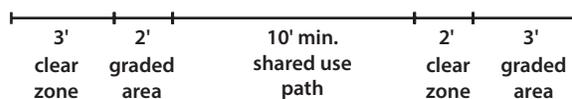
Burlington, WA. Credit: AmericanTrails.org

Shared Use Path Adjacent to Roadway



Sandy Hook, NJ.

Cross Section



Crosswalk

A crosswalk is the portion of the roadway designated for pedestrians to use to cross the street, channeling pedestrian crossing activity to designated, predictable, and (most effectively) marked areas. Crosswalk striping that creates a high level of visual contrast with the surface of the roadway is most effective for pedestrians (including those with low vision) as well as drivers. The continental stripe crosswalk pattern has been shown in studies to be the most visible marking pattern.

Description & Features	Location & Traffic Flow
<ul style="list-style-type: none"> • Pedestrian facility that shows where crossing movement should take place • Alerts motorists of pedestrians’ right to cross roadway • High visibility continental stripe is most effective 	<ul style="list-style-type: none"> • Typically located at intersections • Can be located mid-block (not at intersections) • Typically perpendicular to the flow of automobile traffic
Typical Application	Key Dimensions
<ul style="list-style-type: none"> • At roadway intersections where sidewalks or other pathways are present on both sides of the roadway 	<ul style="list-style-type: none"> • Min. 6’ wide
Benefits	Considerations/Drawbacks
<ul style="list-style-type: none"> • Increase pedestrian safety and make pedestrian crossing behavior more predictable for motorists • Strengthen the pedestrian network and right to the roadway 	<ul style="list-style-type: none"> • On high-speed roadways, motorists may not perceive marked crosswalks quickly enough to react; Alternative treatments such as pedestrian actuated signals, warning beacons, or traffic calming should be employed
Adaptation	Typical Costs
<ul style="list-style-type: none"> • Range of striping variations • Ergonomic or Scramble patterns effective where pedestrian use is high • Unit paver surfacing and stamped pattern surfacing should be avoided because they increase difficulty of wheelchair crossing and are subject to deterioration 	<ul style="list-style-type: none"> • High visibility thermoplastic striping: \$10/sf • For a crosswalk that is 10’ wide, 40’ long, with 1’ lines every 2 feet, typical treatment size is 200sf for price of \$2000
Resources	
<p><i>FHWA Designing Sidewalks and Trails for Access: Chapter 4 – Sidewalk Design Guidelines and Existing Practices; FHWA Designing Sidewalks and Trails for Access: Part II of II: Best Practice Design Guide; NACTO Urban Street Design Guide (2013).</i></p>	

Example Crosswalk Facilities

Continental Stripe Crosswalk



Indianapolis, IN. Credit: NACTO.org

Mid-block Crosswalk



Atlanta, GA. Credit: NACTO.org

Raised Crosswalk



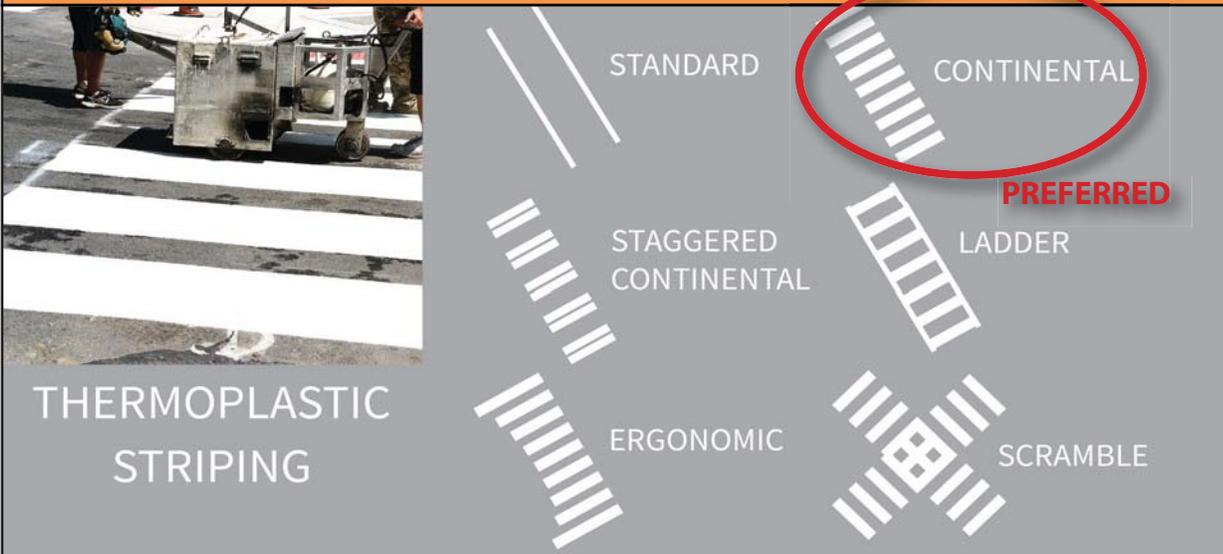
Boulder, CO. Credit: NACTO.org

Ergonomic Crosswalk



Montclair, NJ.

Crosswalk Types

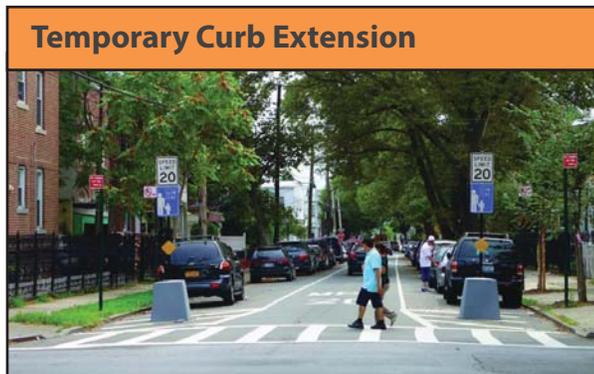
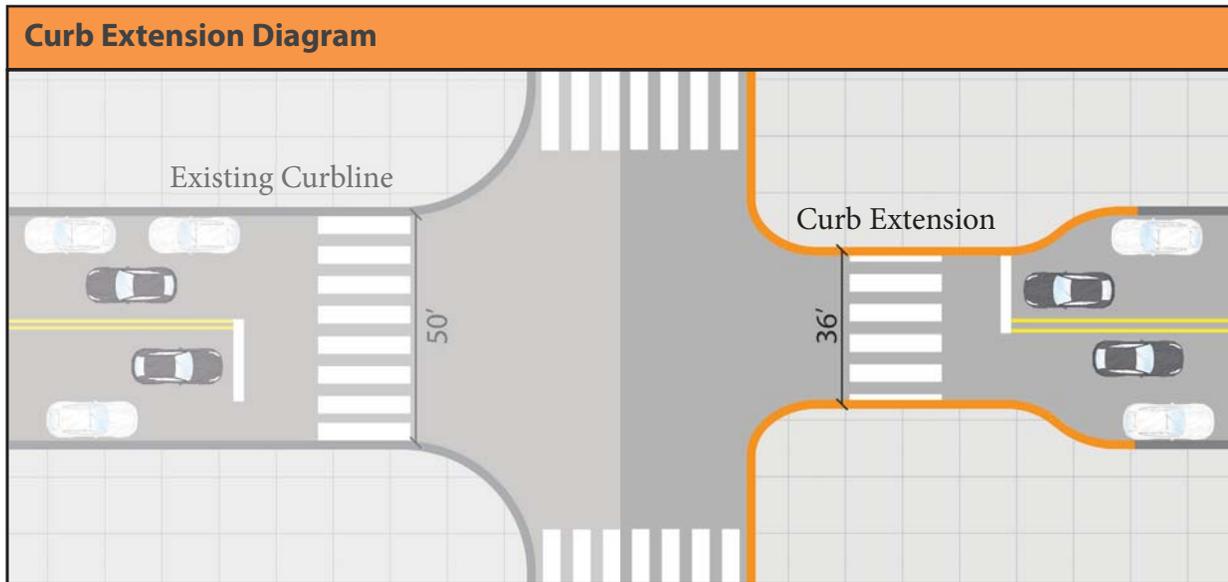


Curb Extension

A curb extension at an intersection is installed to decrease the overall width of the roadway and provide a traffic calming effect while expanding the pedestrian zone. Curb extensions benefit pedestrians by providing a shorter crossing distance, increased visibility, and smaller curb radii to reduce the turning speeds of vehicles. Curb extensions can be constructed or striped/painted in the roadway.

Description & Features	Location & Traffic Flow
<ul style="list-style-type: none"> • Pedestrian facility installed to decrease overall roadway width at intersections or crossings, calm traffic, and increase pedestrian visibility • Also known as pinchpoints, neckdowns, bulbouts, or chokers 	<ul style="list-style-type: none"> • Located at intersections or mid-block crossings aligned with crosswalks • Length should be at least equal to corresponding crosswalk
Typical Application	Key Dimensions
<ul style="list-style-type: none"> • Where there is on-street parking • Typically installed at intersections or mid-block crossings where traffic calming or increased pedestrian safety is necessary 	<ul style="list-style-type: none"> • Extending from the main curb line 1-2' less than the width of the shoulder or on-street parking lane
Benefits	Considerations/Drawbacks
<ul style="list-style-type: none"> • Increase pedestrian safety and visual presence • Calm traffic and slow vehicle turning movements • Increase sidewalk space and provide opportunity for planting/beautification 	<ul style="list-style-type: none"> • May require relocation of drainage inlets, hydrants, or utility posts • May impede truck turning movements at certain key locations
Adaptation	Typical costs
<ul style="list-style-type: none"> • Can be constructed of concrete and integrate planting or green infrastructure • Can be painted striped/painted in the roadway as a temporary or permanent installation • Can be used at bus stop locations 	<ul style="list-style-type: none"> • For concrete curb extension: \$8,000 - \$15,000 each (could have 4 per intersection; assuming some drainage modification) • For temporary painted curb extension: \$10/sf
Resources	
<p><i>FHWA Designing Sidewalks and Trails for Access: Part II of II: Best Practice Design Guide; NACTO Urban Street Design Guide (2013).</i></p>	

Example Curb Extension Facilities



New York, NY. Credit: NACTO.org.



Hoboken, NJ. Credit: City of Hoboken.



Hoboken, NJ. Credit: City of Hoboken.



Birmingham, MI. Credit: NACTO.org.

Median Island

A median island helps pedestrians by reducing the crossing distance of a wide roadway and providing a refuge area that is physically separated from the motor vehicle path of travel. Median islands help people with slow speeds to cross a wide intersection with short signal cycles.

Description & Features	Location & Traffic Flow
<ul style="list-style-type: none"> • Provide a refuge to reduce the crossing distance of a wide roadway • Enable people with slow speeds to cross wide intersections safely 	<ul style="list-style-type: none"> • Between opposing traffic lanes
Typical Application	Key Dimensions
<ul style="list-style-type: none"> • At wide intersections • At irregularly shaped intersections • At intersections where two roads converge into one 	<ul style="list-style-type: none"> • Cut-through median islands should have a min. 4' clear width and 3' length • Raised median islands should have curb ramps and a level area with at min. 4' clear width and 4' length
Benefits	Considerations/Drawbacks
<ul style="list-style-type: none"> • Reduce the crossing distance of a roadway • Increase pedestrian safety at wide intersection crossings • Provide opportunity for plantings/roadway beautification 	<ul style="list-style-type: none"> • May involve narrowing of traffic lanes
Adaptation	Typical Costs
<ul style="list-style-type: none"> • Cut-through median islands remain level with the street - more efficient design • Raised median island design elevates the pedestrian to "sidewalk height" within the median and must include curb ramps 	<ul style="list-style-type: none"> • \$7,500 - \$30,000 each. High variation in cost estimate because there is no "standard" design/application.
Resources	
<p><i>FHWA Designing Sidewalks and Trails for Access: Part II of II: Best Practice Design Guide; NACTO Urban Street Design Guide (2013).</i></p>	

Example Median Island Facilities



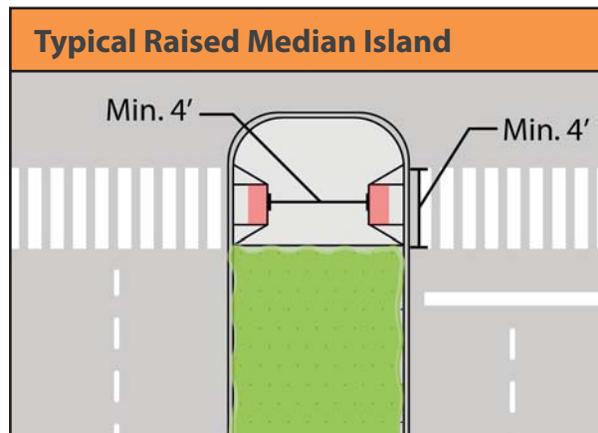
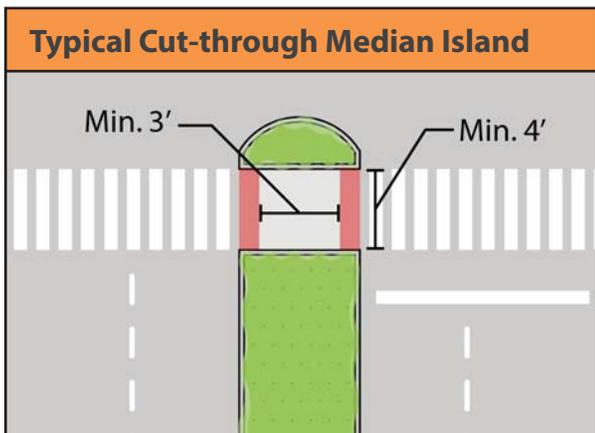
Crystal, VA. Credit: NACTO.org.



Austin, TX. Credit: NACTO.org.



Boston, MA.



Signal Enhancement or Warning Beacon

At intersections, traffic signals can be enhanced for pedestrian safety by providing pedestrian countdown signals or pedestrian-actuated controls. At intersections or mid-block crossings where traffic signals are absent, warning beacons can be installed to alert motorists of the presence of pedestrians at the crossing.

Description & Features	Location & Traffic Flow
<ul style="list-style-type: none"> Pedestrian countdown signals and pedestrian-actuated controls enhance pedestrian safety at signalized intersections Warning beacons and HAWK signals enhance pedestrian safety at unsignalized crossings 	<ul style="list-style-type: none"> Signal enhancements on existing signal poles in line with corresponding crosswalks Warning beacons and HAWK signals should be located in the approach to the pedestrian crossing
Typical Application	Key Dimensions
<ul style="list-style-type: none"> Countdown signals at all intersections where pedestrians cross Pedestrian-actuated controls for signals with long cycles and low pedestrian volume Warning beacons and HAWK signals at unsignalized intersections and mid-block crossings 	<ul style="list-style-type: none"> Any warning beacons suspended over the roadway should provide vertical clearance of 15-19 feet
Benefits	Considerations/Drawbacks
<ul style="list-style-type: none"> Enhance pedestrian ability to safely navigate signalized intersections Alert drivers to pedestrian crossings at unsignalized intersections and mid-block crossing locations 	<ul style="list-style-type: none"> Pedestrian actuation should be considered in analysis with average annual daily traffic, pedestrian volume, and signal timing
Adaptation	Typical Costs
<ul style="list-style-type: none"> Can be used in conjunction with curb extensions and high visibility crosswalks to greatly increase the visual presence of the pedestrian in the roadway 	<ul style="list-style-type: none"> Regulatory signs: \$150 - \$500 per sign Pedestrian countdown signal: \$900 per module (assume 8 modules per 4-way intersection) Pedestrian actuation: \$900 per module (assume 8 modules per 4-way intersection) Flashing beacon: \$3,000 per application (assumes 2 beacons installed) Flashing Rectangular Rapid Flash Beacon (RRFB): \$15,000 - \$20,000 per application (assumes 2 RRFBs installed) HAWK signal: \$90,000 - \$150,000
Resources	
<p><i>Manual on Uniform Traffic Control Devices; FHWA Designing Sidewalks and Trails for Access: Part II of II: Best Practice Design Guide; NACTO Urban Street Design Guide (2013).</i></p>	

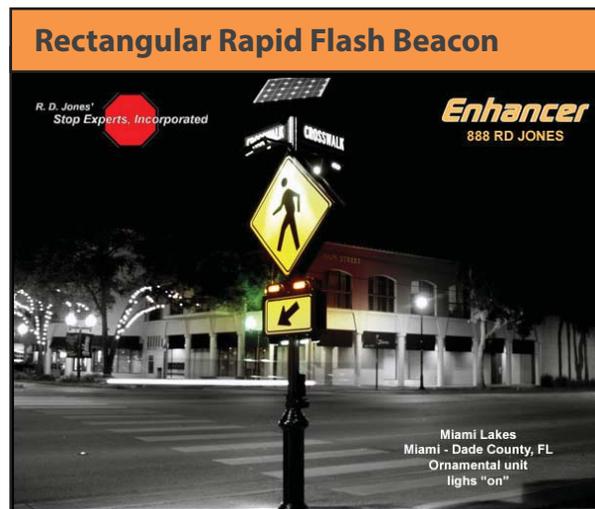
Example Signal Enhancement or Warning Beacon Facilities



Ocean City, NJ.



Haddon Heights, NJ.



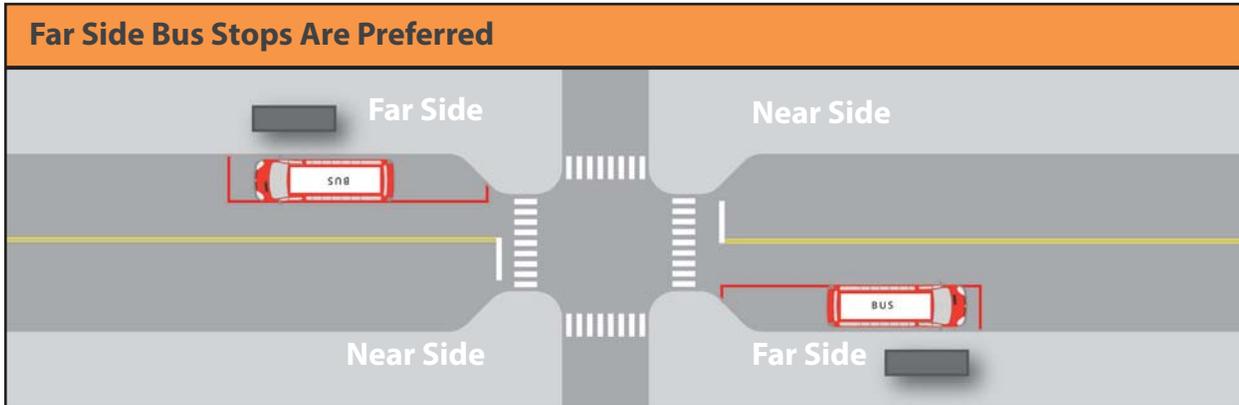
Miami Lakes
Miami - Dade County, FL
Ornamental unit
lights "on"

Bus Stop Enhancement

The design of and conditions around bus stops can affect pedestrian safety and transit ridership. Bus stops are required to meet ADA standards and should be a logical continuation of the sidewalk network. Bus shelters, agency logos, route maps, and adequate lighting will generally improve the bus transit experience and increase safety for bus transit users. The addition of bicycle parking can attract and serve cyclists.

Description & Features	Location & Traffic Flow
<ul style="list-style-type: none"> • Bus stops are part of the pedestrian network and must meet ADA standards • Bus stops are safer/improved with shelters, logos, route maps, and lighting • Bicycle amenities will increase bike-bus multimodal travel 	<ul style="list-style-type: none"> • Far side bus stops are preferred, allowing pedestrians to cross the street behind the bus • Near side bus stops should be used where the far-side location is problematic or to access key destinations
Typical Application	Key Dimensions
<ul style="list-style-type: none"> • Bus shelters should be provided for stops with high boarding numbers, long waiting times, or high environmental exposure 	<ul style="list-style-type: none"> • Min. 4' passage between bus shelter and curb
Benefits	Considerations/Drawbacks
<ul style="list-style-type: none"> • Bus stop enhancement can increase bus transit ridership and improve the overall experience 	<ul style="list-style-type: none"> • Bus shelters should be cleaned and maintained (often achieved through advertising contracts)
Adaptation	Typical Costs
<ul style="list-style-type: none"> • Bus shelters are an opportunity for custom design, local art, and placemaking 	<ul style="list-style-type: none"> • Signage: \$150 - \$500 per sign • Shelters: Seek an advertising contract that includes shelters and upkeep • Bus bulb-out, concrete: \$10,000 - \$15,000
Resources	
<p><i>NACTO Urban Street Design Guide (2013).</i></p>	

Example Signal Enhancement or Warning Beacon Facilities



Boston, MA. Credit: NACTO.org.



San Francisco, CA. Credit: NACTO.org.



San Francisco, CA. Credit: NACTO.org.



East Brunswick, NJ

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CHAPTER 6

BICYCLE & PEDESTRIAN IMPROVEMENT CONCEPTS BY MUNICIPALITY

In this chapter, network-wide recommendations illustrated in the previous chapters are presented for each municipality. These recommendations are intended to be a “starting point” for the municipalities, Bergen County and New Jersey Department of Transportation when considering enhancements to the bicycling and walking infrastructure along their roadways and off-road corridors under their jurisdiction. These concepts have been vetted with the project’s Technical Advisory Committee, municipal representatives, community stakeholders and the general public, and represent enhancements for both short-term and longer-term implementation. All of the concepts conform to current state of the practice, and follow national guidelines such as American Association of State Highway and Transportation Officials (AASHTO) *Guide for the Planning, Design, and Operation of Pedestrian Facilities*, *Manual on Uniform Traffic Control Devices* (MUTCD) and the National Association of City Transportation Officials (NACTO) *Urban Street Design Guide*.

Current state of the practice suggests that even more treatments could be considered in addition to the preliminary recommendations in this study. It is expected that the bicycling and pedestrian network will continue to grow and evolve over time as investments in walking and bicycling facilities are prioritized along the roadway network. As the public and government officials become more familiar with strategies to improve accommodation for bicycle and pedestrian travel throughout the area, and more people choose to walk or bike for local travel, the decisions about what facilities are appropriate, and what impacts are acceptable (changes to on-street parking, roadway widening, and right-of-way impacts) will continue to evolve.

Each municipality has its own package of focused concepts for enhancing bicycle and pedestrian accommodation. This includes a text summary of the existing conditions, potential concepts, and a phased implementation plan. There is a map summarizing all the recommended concepts for each municipality. All recommendations shown on the maps also appear in summary tables for each municipality.



A detailed concept design for enhanced bicycle and pedestrian accommodation is provided for one location in each of the eight municipalities. These were selected as typical examples to illustrate the spectrum of design concepts that could be replicated throughout the study area. Each of these also includes an order-of-magnitude cost estimate for the selected location. These cost estimates are representative of the area displayed on the concept plan, and can be extrapolated to determine costs for entire corridors or areas with similar conditions. The typical cost for each type of improvement, along with a description of design parameters and applications, are provided in Chapters 4 and 5.

The municipal concept packages are arranged alphabetically:

1. Elmwood Park Borough
2. Fair Lawn Borough
3. Glen Rock Borough
4. Maywood Borough
5. Paramus Borough
6. Ridgewood Village
7. Rochelle Park Township
8. Saddle Brook Township

Elmwood Park Borough

Overview and Potential Facilities

The roadway network in Elmwood Park is characterized by a loose grid of residential streets connecting north-south and east-west collectors. See the Elmwood Park Borough Bicycle and Pedestrian Improvements Map on the following page. Market Street is the main east-west collector in the Borough, and provides access to the main commercial areas between I-80 to the west and the Saddle Brook Township line to the east. Boulevard is the main north-south collector and provides regional access to State Route 4/Broadway and Fair Lawn Borough to the north and Garfield City to the south.

Pedestrian Improvement Priorities and Phasing

Based on crash analysis and public input, pedestrian safety improvements are recommended at 15 separate locations. These focus on crossing enhancements at high conflict areas. See Table 6.1. The “Map ID” column within the table corresponds to Pedestrian Improvement points as labeled on the Elmwood Park Borough Bicycle and Pedestrian Improvements Map. A detailed conceptual design is provided for proposed pedestrian and bicycle enhancements to occur at the intersection of Market Street and Boulevard (Map ID# E-12). In addition, sidewalks are proposed along portions of Market Street and River Drive to fill gaps in what should be a continuous network through the Borough. See Table 6.2.

Within Elmwood Park, there is a high crash occurrence associated with the commercial areas along Market Street and State Route 4/Broadway. As such, these locations should be prioritized for improvement. Notably, at each Pedestrian Improvement intersection studied in Elmwood Park, there is a recommendation to either upgrade to or add **high visibility “continental” crosswalk striping**. This is a simple improvement that involves no construction and will effectively increase the visibility of pedestrians and their right to safely use the roadways.

Elmwood Park Borough

Bicyclist Improvement Priorities and Phasing

An effective bicycle network in Elmwood Park will build upon the existing loose grid of north-south and east-west collectors. See the Elmwood Park Borough Bicycle and Pedestrian Improvements Map and Table 6.3.

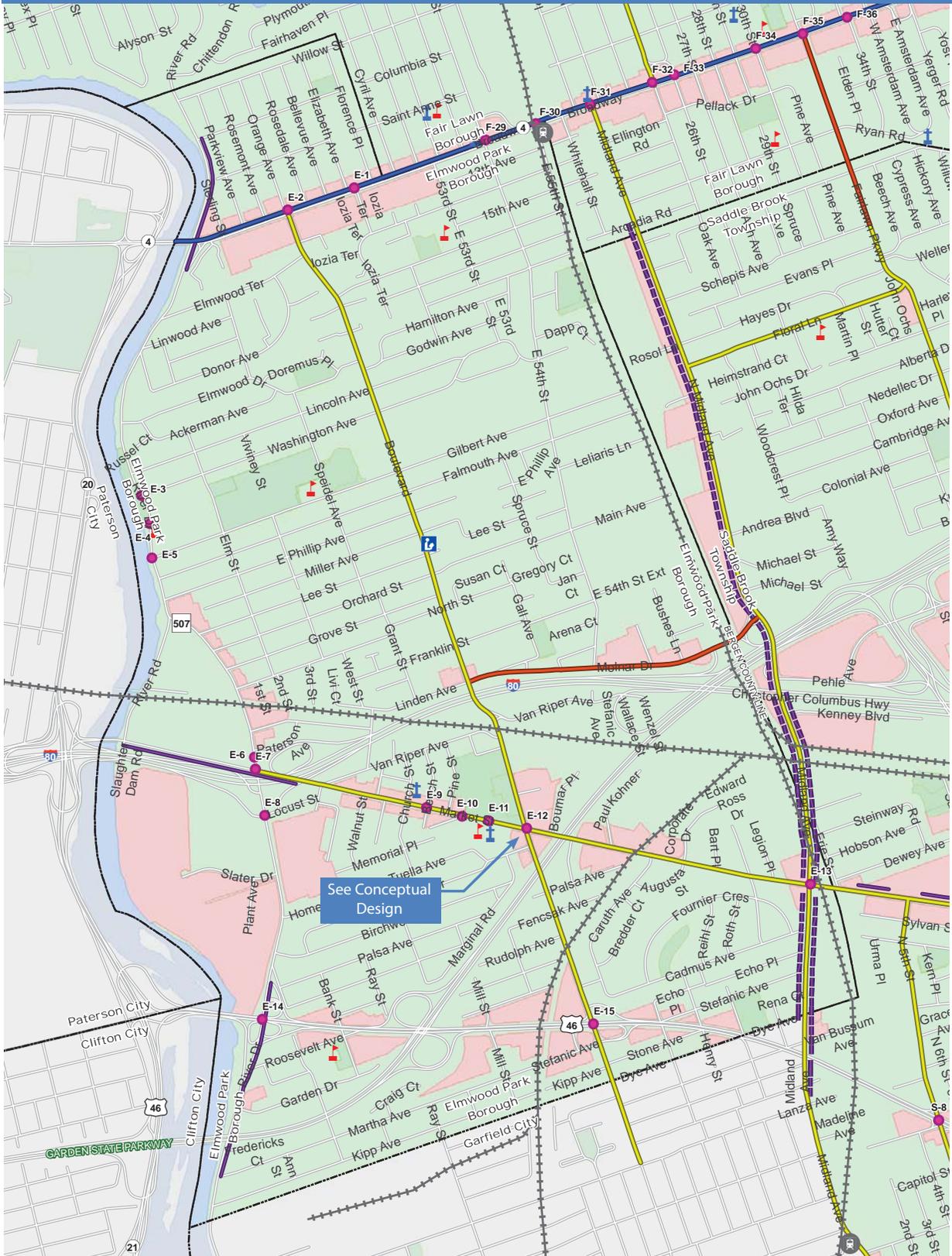
State Route 4/Broadway is recommended for **protected bike lanes** from Paterson City limits to the Fair Lawn Borough line (and continuing through Fair Lawn Borough). The protected bike lanes would be installed between the curb and on-street parking to provide a buffer between the bicyclists and traffic. This is a significant recommendation that will require detailed study and design phases prior to implementation. It will create a safe bicycling facility that connects to important north-south collectors in Elmwood Park Borough, Fair Lawn Borough, and Saddle Brook Township, ultimately connecting with the Saddle River Path. In addition, economic growth has been observed and is anticipated in this type of commercial area when design changes are employed to enable safe travel and access for bicyclists and pedestrians.

Although it would be desirable to continue a network of bike lanes throughout Elmwood Park Borough, **shared lane markings** are recommended for the other major collectors: Market Street and Boulevard. Market Street is an important collector lined with commercial activity. However, it is too narrow to accommodate bike lanes due to a constricted width ($\leq 30'$) at certain points and the presence of on-street parking west of Caruth Avenue. Shared lane markings along Market Street will function acceptably within the existing 30 MPH speed limit and continue from Elmwood Park Borough into Saddle Brook Township. Boulevard would also benefit from the addition of bike lanes, but shared lane markings (with a speed limit reduction from 35 to 30 MPH) are currently proposed in order to preserve on-street parking in the residential areas. With these recommendations, Market Street and Boulevard will offer improved bicycle accommodation, however, a long-term vision and goal for these two roadways should be to incorporate dedicated bicycling facilities, such as bike lanes. This will require further investigation to identify design solutions that balance the needs of all roadway users and adjacent land uses.

For bicyclists, the top priority in Elmwood Park is to implement the shared lane markings on Market Street and Boulevard, since they are the main collector streets with access to commercial, park, and residential amenities and can spur community support for further implementation. The addition of **bike lanes** on Molnar Drive will create an additional east-west connection. The protected bike lane on State Route 4/Broadway will require future study and design.

Elmwood Park Borough

Bicycle and Pedestrian Improvements Map



- Proposed Pedestrian Improvements**
- Pedestrian Improvement
 - Sidewalk Proposed
 - Fill Gaps in Sidewalk Network

- Proposed Bicycle Improvements**
- Bicycle Lanes
 - Protected Bike Lane
 - Shared Lane Markings
 - Shared-Use Path
 - Potential Road Diet

- Existing Facilities**
- Existing Bike Lane
 - Existing Multi-Use Path
 - Saddle River Path
 - Utility Right-of-Way

- Municipal Border**
- Libraries
 - Places or Worship
 - Schools
 - Train Station
 - Rail Line

- Land Use**
- Commercial
 - Mixed Use

DATE: 05-06-2015

NOTE: Not all items in the standard legend may be applicable to this map.

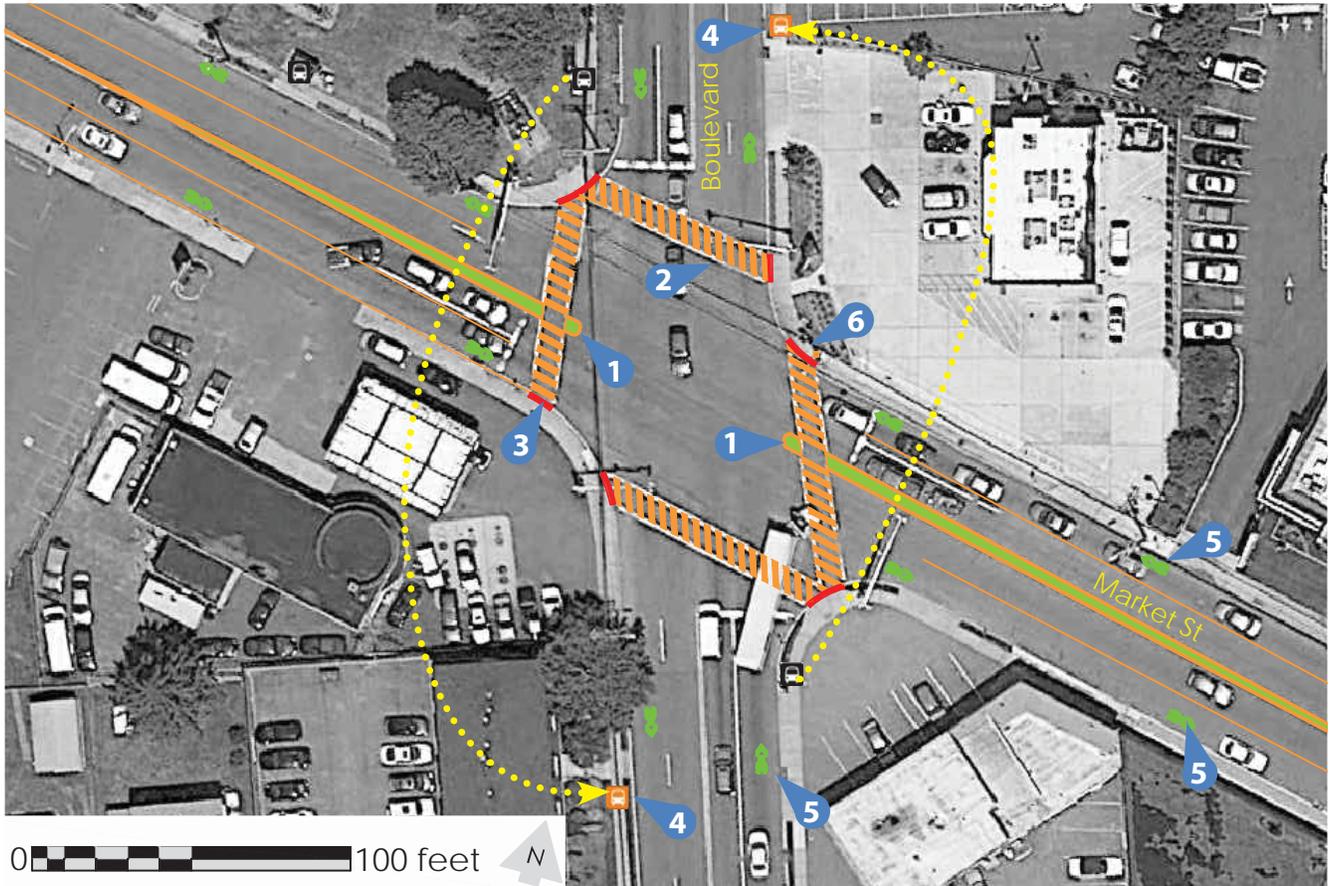


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Conceptual Design

Market Street is the main east-west collector Elmwood Park and provides access to the main commercial areas. Boulevard is the main north-south collector and provides regional access to Route 4/Broadway and Fair Lawn to the north and Garfield City to the south. The conceptual design presented below will increase pedestrian safety by enhancing visibility at crosswalks and providing refuge in median islands. It also displays how shared lane markings can be applied.

Market Street and Boulevard (Map ID# E-12)



Implementation	Estimate
1. Extend median to provide island for pedestrian refuge (2)	\$16,000
2. Upgrade all crosswalks to continental stripe (270' at 10' wide)	\$13,500
3. Install detectable warning surface on curb ramps (8 panels 2'x4')	\$3,200
4. Relocate bus stops to far side locations on Boulevard and add shelters (2)	\$1,000
5. Add shared lane markings (500' intersection approach from 4 directions)	\$4,800
6. Remove sidewalk impediment (relocate utility pole)	\$0
Total	\$38,500

Note: Where \$0 estimates are presented, assume task is under jurisdiction of separate parties. Estimated costs are for improvements as depicted with estimated quantities provided. Bus shelters are assumed to be provided by NJ TRANSIT. For unit costs of individual facility types, see Chapter 4 and Chapter 5.

Table 6.1: Pedestrian Improvements in Elmwood Park

MAP ID	Corridor Name	Jurisdiction (State, County, Municipal or Private)	Location / Cross Street	Jurisdiction (State, County, Municipal or Private)	Add Curb Extension	Reduce Curb Radius	Upgrade Crosswalk Striping	Add Crosswalk Striping	Add In-Street Pedestrian Crossing Sign	Install Pedestrian Signals	Convert to Pedestrian Countdown Signals	Install Detectable Warning Surface	Add Curb Ramp	Improve Curb Ramp	Add Bus Shelter	Relocate Bus Stop	Install Warning Beacon	Install HAWK Signal	Widen Sidewalk	Remove Sidewalk Impediment	Add Mid-Block Crossing	Add Median Island	Improve Median Island	Add Traffic Signal	Add Bike/Ped Bridge	Improve Bike/Ped Bridge
E-1	Route 4 / Broadway	S	Ioizia Terrace	M	●	●					●	●	●							●			●			
E-2	Route 4 / Broadway	S	Boulevard	M	●	●					●	●			●								●			
E-3	River Drive	C	Washington Avenue	M				●				●	●													
E-4	River Drive	C	Memorial High School driveways	M				●					●													
E-5	River Drive	C	Gilbert Avenue	M				●	●			●	●													
E-6	I-80 SB Off Ramp	S	River Drive	C			●		●			●	●													
E-7	Market Street	C	River Drive	C			●		●			●	●	●												
E-8	River Drive	C	Locust Street	M	●			●	●			●														
E-9	Market Street	C	Beech Street	M	●		●	●				●														
E-10	Market Street	C	Terrace Street	M				●					●													
E-11	Market Street	C	Midblock x-ing at Borough Park	M	●							●						●								
E-12	Market Street	C	Boulevard	M			●					●			●					●		●				
E-13	Market Street	C	Midland Avenue	C			●					●		●								●				
E-14	Route 46	S	River Drive	C				●	●				●													
E-15	Route 46	S	Boulevard	M			●					●	●		●							●				

See Conceptual Design

Table 6.2: Sidewalk Improvements in Elmwood Park

Corridor	Side	Jurisdiction (County or Municipal)	Extent From	Extent To	Recommendation	Segment Length (Feet)
Midland Ave	Southbound	C	southern border	eastern order	Fill Gaps in Sidewalk Network	2445
Midland Ave	Northbound	C	southern border	eastern order	Fill Gaps in Sidewalk Network	1877
Market St	Eastbound	C	Mulberry St	western border	Sidewalk Proposed	2033
River Dr	Northbound	C	Rt 4 Ramp	Columbia St	Sidewalk Proposed	1577
River Dr	Northbound	C	Martha Ave	Marginal Rd	Sidewalk Proposed	2306

Table 6.3: Bicycle Improvements in Elmwood Park

Roadway	Jurisdiction (State, County or Municipal)	Limit From	Limit To	Segment Length (Feet)	Recommended Bike Improvements	Average Annual Daily Traffic (AADT)	Existing Roadway Width (Feet)	Existing Shoulder Width (Feet)	Existing Number of Lanes	Recommended Number of Lanes	Recommended Road Diet (Yes)	Existing Lane Width (Feet)	Recommended Lane Width (Feet)	Change in Lane Width (Feet)	Existing Speed Limit (MPH)	Recommended Speed Limit (MPH)	Change in Speed Limit (MPH)	Existing Parking (Yes)	Existing Median (Yes)	Existing Level of Stress	Level of Stress with Recommendation	Change in Level of Stress
Rt 4 / Broadway	S	Plaza Road	west border	2504	PBL	11000	64	10	4	4		11	11		40	35	-5	Y		4	1	-3
Linden Ave	M	Staedler Lane	Boulevard	1086	BL	5000	39		2	2		19.5	11	-8.5	40	35	-5			4	3	-1
Molnar Drive	M	Midland Rd	Staedler Lane	2060	BL	5000	39		2	2		19.5	11	-8.5	25	25				2	1	-1
Boulevard	M	Broadway	south border	10705	SLM	9000	40		2	2		13	13		35	30	-5	Y		4	3	-1
Market St	C	Miller St	Legion Pl	704	SLM	27600	47		2	2		23.5	23.5		30	30				3	3	
Market St	C	Caruth Ave	River Dr	4637	SLM	27600	34		2	2		17	17		30	30		Y		3	3	
Market St	C	Legion Pl	Caruth Ave	1429	SLM	27600	30		2	2		15	15		30	30				3	3	
Midland Ave	C	Outwater Ln	south border	2317	SLM	11000	39		2	2		19.5	19.5		25	25				2	2	
↓ No Improvements Recommended ↓																						
Bergen County 105 / Van Riper Ave	C	Boulevard	Market St	2325	SU	1900	34		2	2		10	10		25	25		Y		2	2	
CR 507 / River Drive	C	Rt 4	Summit Ave	5743	SU	13700	30	2	2	2		13	13		35	35				4	4	
CR 507 / River Drive	C	Marlot Ave	Rt 4	1877	SU	13700	32	2	2	2		14	14		40	40				4	4	
CR 507 / River Drive	C	Roosevelt Ave	River border	1796	SU	19400	28	2	2	2		12	12		40	40				4	4	
CR 507 / River Drive	C	Summit Ave	Roosevelt Ave	4485	SU	19400	48		2	2		24	24		40	40				4	4	
E 54th Street	M	Broadway	Molnar Dr	6222	SU	1900	35		2	2		10.5	10.5		35	35		Y		4	4	
Gilbert Ave	M	Speidel Ave	Elm St	1300	SU	1800	30		1	1		16	16		25	25		Y		1	1	
Gilbert Ave	M	Elm St	River Drive	866	SU	1800	35		2	2		10.5	10.5		25	25		Y		1	1	
Gilbert Ave	M	E 54th Street	Speidel Ave	2662	SU	1800	35		2	2		10.5	10.5		25	25		Y		1	1	
Market St	C	River Dr	west border	1558	SU	27600	47		4	4		11.75	11.75		30	30				4	4	
River Road	C	River Road	Market St	1541	SU	5000	26	1	2	2		12	12		35	35				4	4	
Willow Street	M	17th Street	River Road	1959	SU	1900	35		2	2		10.5	10.5		25	25		Y		1	1	

For Recommended Bike Improvements:

PBL = Protected Bike Lane

BL = Bike Lane

SUP = Shared Use Path

SLM = Shared Lane Marking

SU = Legal Shared Use (status quo)

See Conceptual Design

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Fair Lawn Borough

Overview and Potential Facilities

The roadway network in Fair Lawn is characterized by a gridded network of residential streets connecting to a series of north-south and east-west collectors. See the Fair Lawn Borough Bicycle and Pedestrian Improvements Map on the following page. Fair Lawn Avenue is a key east-west collector in the Borough, and provides access to the train station and adjacent commercial areas. To the east, Fair Lawn Avenue connects with Century Road – with access to the Saddle River Path, a useful north-south bike and pedestrian facility connecting much of Central Bergen County. Other east-west collectors include Berdan Avenue, Morlot Avenue, and Broadway (State Route 4). In Fair Lawn, there are two key north-south collectors: Plaza Road and Saddle River Road. Saddle River Road parallels the Saddle River Path and provides a thoroughfare to Ackerman Avenue in Glen Rock to the north and Saddle Brook Township to the south. Plaza Road functions as the transportation spine for the Borough with convenient links to Glen Rock, the train station on Fair Lawn Avenue, and Broadway to the south.

Pedestrian Improvement Priorities and Phasing

Based on crash analysis and public input, pedestrian safety improvements are recommended at 38 separate locations. These recommendations focus on crossing enhancements at high conflict areas. See Table 6.4. The “Map ID” column within the table corresponds to Pedestrian Improvement points as labeled on the Fair Lawn Borough Bicycle and Pedestrian Improvements Map. A detailed conceptual design is provided for proposed pedestrian and bicycle enhancements to occur on Broadway (Map ID# F-31). In addition, sidewalks are proposed along portions of Century Road Extension and Harristown Road to fill gaps in what should be a continuous network through the Borough. See Table 6.5.

Within Fair Lawn Borough, there is a high crash occurrence associated with the commercial areas along Fair Lawn Avenue, River Road, and State Route 4/Broadway. As such, these locations should be prioritized for improvement. Notably, at nearly all Pedestrian Improvement intersections studied in Fair Lawn, there is a recommendation to either upgrade to or add **high visibility “continental” crosswalk striping**. This is a simple improvement that involves no construction and will effectively increase the visibility of pedestrians and their right to safely use the roadways. Additionally, there is a consistent need to install **detectable warning surface** on existing curb ramps, which aids vision-impaired pedestrians in safely crossing the road.

Fair Lawn Borough

Bicyclist Improvement Priorities and Phasing

An effective bicycle network in Fair Lawn will build upon the existing grid of north-south and east-west collectors. See the Fair Lawn Borough Bicycle and Pedestrian Improvements Map and Table 6.6.

State Route 4/Broadway is recommended for **protected bike lanes** from Saddle River Road continuing west into Elmwood Park Borough and on to Paterson City. The protected bike lanes would be installed between the curb and on-street parking to provide a buffer between the bicyclists and traffic. This is a significant recommendation that will require detailed study and design phases prior to implementation. If implemented, it will create a safe bicycling facility that connects to important north-south collectors in Elmwood Park Borough, Fair Lawn Borough, and Saddle Brook Township, ultimately connecting with the Saddle River Path. Increased bicycle and pedestrian activity can be anticipated in this vibrant commercial area when design changes are employed to enable safe non-motorized travel and access.

Fair Lawn Avenue is recommended for **bike lanes** east of Plaza Road that can be implemented by narrowing the existing travel lanes to 11 feet wide. This recommendation provides an important connection to Saddle River Road for north-south connectivity and access to the Saddle River Path. Bike lanes are also recommended for Fairlawn Parkway, a wide residential roadway that connects residential areas in Fair Lawn Borough and Saddle Brook Township to commercial areas along State Route 4/Broadway.

Although it would be ideal to implement bike lanes on the other identified key collectors in Fair Lawn Borough, **shared lane markings** are recommended for Plaza Road, Saddle River Road, Berdan Avenue, and Morlot Avenue. Shared lane markings are currently proposed on Plaza Road in order to preserve on-street parking and reduce property impacts, on Saddle River Road because it is not sufficiently wide to accommodate bike lanes, and on Berdan Avenue and Morlot Avenue in order to preserve on-street parking. With these recommendations, the key collectors will offer improved bicycle accommodation, however, a long-term vision and goal for these roadways should be to incorporate dedicated bicycling facilities, such as bike lanes. This will require further investigation to identify design solutions that balance the needs of all roadway users and adjacent land uses.

For bicyclists, the top priority in Fair Lawn is to implement the bike lanes and shared lane markings on Fair Lawn Avenue, since it is the main collector street with access to commercial and park amenities and can spur community support for further implementation. The second priority is to implement bicycle recommendations on north-south collector streets providing access to Glen Rock and Saddle Brook. The protected bike lane concept on State Route 4/Broadway will require future study and design, but could become a signature demonstration project along the proposed network.

Fair Lawn Borough

Bicycle and Pedestrian Improvements Map



- | | | | | |
|--|--|---|--|---|
| <ul style="list-style-type: none"> ● Pedestrian Improvement — Sidewalk Proposed — Fill Gaps in Sidewalk Network | <ul style="list-style-type: none"> — Bicycle Lanes — Protected Bike Lane — Shared Lane Markings — Shared-Use Path — Potential Road Diet | <ul style="list-style-type: none"> — Existing Bike Lane — Existing Multi-Use Path — Saddle River Path — Utility Right-of-Way | <ul style="list-style-type: none"> Municipal Border + Libraries + Places of Worship + Schools + Train Station + Rail Line | <ul style="list-style-type: none"> ■ Land Use ■ Commercial ■ Mixed Use |
|--|--|---|--|---|

DATE: 05-06-2015

NOTE: Not all items in the standard legend may be applicable to this map.

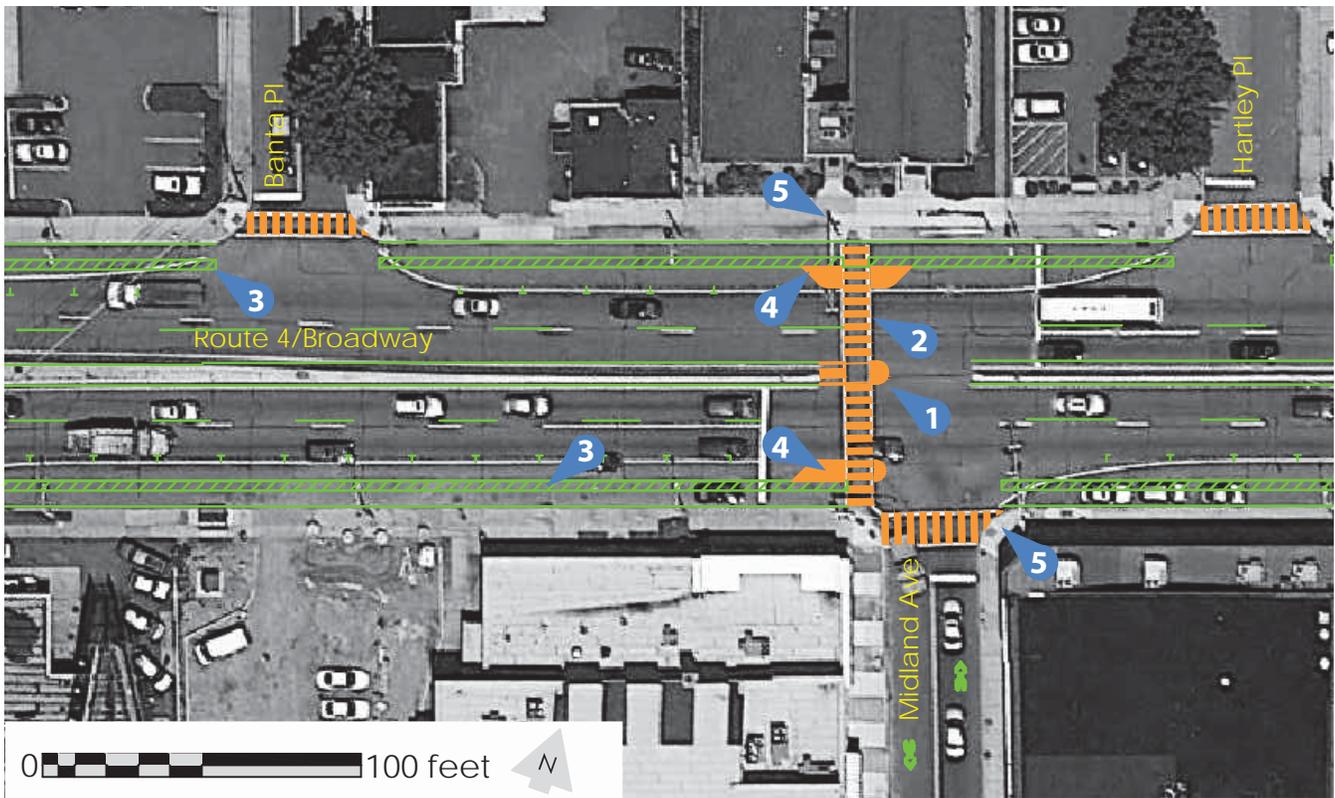


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Conceptual Design

Route 4/Broadway is an east-west arterial collector lined with commercial areas in Fair Lawn and Elmwood Park. It is an important connection in the southwestern portion of Central Bergen County, linking Fair Lawn, Saddle Brook, and Elmwood Park along a commercial corridor to the Saddle River Path. The conceptual design presented below will help bicyclists and pedestrians become an integral part of this roadway. For bicyclists, a protected bike lane can be installed on both sides of Broadway within the existing shoulder, buffered from traffic by parallel parking. For pedestrians, existing signalized crossings can be enhanced for safety through improved striping, curb extensions, and median islands. Increased bicycle and pedestrian activity can be anticipated in this vibrant commercial area when design changes are employed to enable safe non-motorized travel and access.

Route 4 / Broadway at Signalized Crossings (Map ID# F-31)



Implementation	Estimate
1. Extend median to provide island for pedestrian refuge (1)	\$8,000
2. Upgrade all crosswalks to continental stripe (175' at 10' wide)	\$8,750
3. Add Protected Bike Lane both sides (500') <i>paint only, no drainage, segment of 9500' corridor</i>	\$9,000
4. Add concrete curb extensions (2) <i>may be tested with paint</i>	\$16,000
5. Convert to pedestrian countdown signal (4 modules)	\$3,600
6. Add shared lane markings (500' approach on Midland Ave)	\$1,200
Total	\$46,550

Note: Estimated costs are for improvements as depicted with estimated quantities provided. For unit costs of individual facility types, see Chapter 4 and Chapter 5.

Table 6.4: Pedestrian Improvements in Fair Lawn (Panel 1 of 2)

MAP ID	Corridor Name	Jurisdiction (State, County, Municipal or Private)	Location / Cross Street	Jurisdiction (State, County, Municipal or Private)	Add Curb Extension	Reduce Curb Radius	Upgrade Crosswalk Striping	Add Crosswalk Striping	Add In-Street Pedestrian Crossing Sign	Install Pedestrian Signals	Convert to Pedestrian Countdown Signals	Install Detectable Warning Surface	Add Curb Ramp	Improve Curb Ramp	Add Bus Shelter	Relocate Bus Stop	Install Warning Beacon	Install HAWK Signal	Widen Sidewalk	Remove Sidewalk Impediment	Add Mid-Block Crossing	Add Median Island	Improve Median Island	Add Traffic Signal	Add Bike/Ped Bridge	Improve Bike/Ped Bridge
F-1	River Road	C	Bergen Avenue	M	●		●					●						●								
F-2	Fair Lawn Avenue	C	River Road	C			●					●								●						
F-3	Fair Lawn Avenue	C	George Street	M	●		●	●				●														
F-4	Fair Lawn Avenue	C	Parmelee Street	M	●		●					●	●				●					●				
F-5	Fair Lawn Avenue	C	Arnold Street	M			●	●				●	●													
F-6	Fair Lawn Avenue	C	Burbank Street	M			●					●	●													
F-7	Fair Lawn Avenue	C	Orchard Street	M			●				●	●	●							●						
F-8	Rt. 208 Cloverleaf	S	Fair Lawn Avenue	C			●	●				●														
F-9	Fair Lawn Avenue	C	Chandler Drive	M			●				●	●														
F-10	Fair Lawn Avenue	C	Pollitt Drive	M			●				●	●														
F-11	Plaza Road	M	High Street	M	●		●	●										●								
F-12	Fair Lawn Avenue	C	Plaza Road	M			●				●	●											●			
F-13	Fair Lawn Avenue	C	Abbott Road	M								●	●					●				●				
F-14	Fair Lawn Avenue	C	Sanford Road	M			●	●				●	●													
F-15	Fair Lawn Avenue	C	Radburn Road	M			●	●				●					●									
F-16	Fair Lawn Avenue	C	Goldblatt Terrace	M		●	●					●	●					●								
F-17	Fair Lawn Avenue	C	Saddle River Road	C			●	●				●										●				
F-18	River Road	C	Hopper Avenue	M	●		●					●														
F-19	River Road	C	Berdan Avenue	M			●					●														
F-20	Berdan Avenue	M	20th Street	M				●				●														
F-21	Morlot_Avenue	C	River Road	C			●		●			●														
F-22	Ellis Avenue	M	15th Street	M				●				●					●									
F-23	Morlot_Avenue	C	15th Street	M			●	●				●														
F-24	Morlot_Avenue	C	Lyncrest Avenue	M			●	●				●														

Table 6.4: Pedestrian Improvements in Fair Lawn (Panel 2 of 2)

MAP ID	Corridor Name	Jurisdiction (State, County, Municipal or Private)	Location / Cross Street	Jurisdiction (State, County, Municipal or Private)	Add Curb Extension	Reduce Curb Radius	Upgrade Crosswalk Striping	Add Crosswalk Striping	Add In-Street Pedestrian Crossing Sign	Install Pedestrian Signals	Convert to Pedestrian Countdown Signals	Install Detectable Warning Surface	Add Curb Ramp	Improve Curb Ramp	Add Bus Shelter	Relocate Bus Stop	Install Warning Beacon	Install HAWK Signal	Widen Sidewalk	Remove Sidewalk Impediment	Add Mid-Block Crossing	Add Median Island	Improve Median Island	Add Traffic Signal	Add Bike/Ped Bridge	Improve Bike/Ped Bridge
F-25	Morlot_Avenue	C	Summit Ave	M			●		●			●														
F-26	Morlot_Avenue	C	17th Street	M			●				●	●														
F-27	Ellis Avenue	M	17th Street	M				●				●					●									
F-28	Morlot_Avenue	C	Philip Street	M			●					●					●									
F-29	Route 4/Broadway	S	17th Street	M	●		●				●	●											●			
F-30	Route 4/Broadway	S	E 55th Street	M	●							●						●						●		
F-31	Route 4/Broadway	S	Midland Avenue	C	●		●				●												●			
F-32	Route 4/Broadway	S/M	Plaza Road	M	●		●				●	●											●			
F-33	Route 4/Broadway	S	26th Street	M	●		●				●	●								●		●				
F-34	Route 4/Broadway	S	30th Street	M	●		●				●	●											●			
F-35	Route 4/Broadway	S	32nd Street	M	●		●				●	●											●			
F-36	Route 4/Broadway	S	34th Street	M	●		●				●	●											●			
F-37	Route 4/Broadway	S	Yerger Road	M	●		●				●	●											●			
F-38	Route 4/Broadway	S	Route 208	S																				●		



See Conceptual Design

Table 6.5: Sidewalk Improvements in Fair Lawn

Corridor	Side	Jurisdiction (County or Municipal)	Extent From	Extent To	Recommendation	Segment Length (Feet)
Century Rd Ext	Eastbound	C	Saddle River Rd	Paramus Rd	Sidewalk Proposed	2930
Century Rd Ext	Westbound	C	Saddle River Rd	Paramus Rd	Sidewalk Proposed	2899
Harristown Rd	Eastbound	C	Lincoln Ave	Elm Ave	Sidewalk Proposed	2422

Table 6.6: Bicycle Improvements in Fair Lawn (Panel 1 of 2)

Roadway	Jurisdiction (State, County or Municipal)	Limit From	Limit To	Segment Length (Feet)	Recommended Bike Improvements	Average Annual Daily Traffic (AADT)	Existing Roadway Width (Feet)	Existing Shoulder Width (Feet)	Existing Number of Lanes	Recommended Number of Lanes	Recommended Road Diet (Yes)	Existing Lane Width (Feet)	Recommended Lane Width (Feet)	Change in Lane Width (Feet)	Existing Speed Limit (MPH)	Recommended Speed Limit (MPH)	Change in Speed Limit (MPH)	Existing Parking (Yes)	Existing Median (Yes)	Existing Level of Stress	Level of Stress with Recommendation	Change in Level of Stress
Rt 4 / Broadway	S	Plaza Road	west border	3320	PBL	11000	64	10	4	4		11	11		40	35	-5	Y	Y	4	1	-3
Rt 4 / Broadway	M	Rt 208	Plaza Road	4377	PBL	11000	78	10	4	4		11	11		40	40		Y	Y	4	1	-3
Fair Lawn Ave	C	Saddle River Rd	Sanford Rd	4440	BL	11000	36		2	2		18	11	-7	35	35				4	3	-1
Fairlawn Pkwy	M	Broadway	Schepis Avenue	1573	BL	5000	60		2	2		30	11	-19	25	25				1	1	
Berdan Ave	M	Saddle River Rd	RR track	5751	SLM	5000	39		2	2		19.5	19.5		25	25		Y		1	1	
Berdan Ave	M	20th Street	1st Street	5210	SLM	5000	23		2	2		11.5	11.5		25	25		Y		2	2	
Bergen County 78 / Morlot Ave	C	Plaza Road	River Road (CR 507)	4424	SLM	9000	37		2	2		11.5	11.5		35	35		Y		4	4	
Bergen County 78 / Morlot Ave	C	Saddle River Road	Plaza Road	5103	SLM	9000	37		2	2		11.5	11.5		40	35	-5	Y		4	4	
Fair Lawn Ave	C	Sanford Rd	Plaza Road	1162	SLM	11000	36		2	2		18	18		35	35				4	4	
Midland Ave	C	Molnar Dr	I-80	1595	SLM	11000	41		4	4		10.25	10.25		25	25				3	3	
Plaza Rd	M	Warren Road	Broadway/Rt 4	6231	SLM	9000	36		2	2		18	11	-7	35	35				4	4	
Plaza Rd	M	Radburn Road	Howard Ave	3225	SLM	9000	26		2	2		13	13		25	25		Y		1	1	
Plaza Rd	M	High Street	Warren Road	1132	SLM	9000	55		5	4		11	11		25	25				4	3	-1
Saddle River Road	C	Pellington Dr	Market St	1797	SLM	15600	29		2	2		14.5	14.5		35	35				4	4	
Saddle River Road	C	Pellington Dr	Market St	2314	SLM	15600	29		2	2		14.5	14.5		35	35				4	4	
Saddle River Road	C	Kuiken Ter	Pellington Dr	5562	SLM	15000	39		2	2		19.5	19.5		40	35	-5			4	4	
↓ No Improvements Recommended ↓																						
11th Street	M	Hopper Ave	Henderson Blvd	708	SU	1900	36		2	2		11	11		25	25		Y		1	1	
12th St	M	Berdan Ave	Hopper Ave	1046	SU	1900	35		2	2		10.5	10.5		25	25		Y		1	1	
12th St	M	Morlot Ave	Berdan Ave	1676	SU	1900	41		2	2		13.5	13.5		25	25		Y		1	1	
17th St	M	Broadway	Bellair Ave	506	SU	1900	35		2	2		10.5	10.5		25	25		Y		1	1	
32nd St	M	Rosalie St	Southern Drive	1333	SU	1900	35		2	2		10.5	10.5		25	25		Y		1	1	
32nd St	M	Broadway	Rosalie St	596	SU	3000	40		2	2		13	13		25	25		Y		1	1	
Bellair Ave	M	17th Street	12th Street	1321	SU	1900	35		2	2		10.5	10.5		25	25		Y		1	1	
Bergen County 78 / Morlot Ave	C	River Road (CR 507)	west border	3067	SU	9000	37		2	2		11.5	11.5		40	40		Y		4	4	
Century Rd	C	CR 62 (Paramus Road)	CR 79 (River Road)	2876	SU	11000	45		4	4		11.25	11.25		40	35	-5			4	4	
CR 507 / River Drive	C	Marlot Ave	Rt 4	1509	SU	13700	32	2	2	2		14	14		40	40				4	4	

See Conceptual Design

Table 6.6: Bicycle Improvements in Fair Lawn (Panel 2 of 2)

Roadway	Jurisdiction (State, County or Municipal)	Limit From	Limit To	Segment Length (Feet)	Recommended Bike Improvements	Average Annual Daily Traffic (AADT)	Existing Roadway Width (Feet)	Existing Shoulder Width (Feet)	Existing Number of Lanes	Recommended Number of Lanes	Recommended Road Diet (Yes)	Existing Lane Width (Feet)	Recommended Lane Width (Feet)	Change in Lane Width (Feet)	Existing Speed Limit (MPH)	Recommended Speed Limit (MPH)	Change in Speed Limit (MPH)	Existing Parking (Yes)	Existing Median (Yes)	Existing Level of Stress	Level of Stress with Recommendation	Change in Level of Stress
CR 507 / River Road / Maple Ave	C	Cedar St	Campbell Road	3593	SU	17700	40		2	2		20	20		40	40				4	4	
CR 507 / Maple Ave	C	north border	Harristown Road	9	SU	11600	30		2	2		15	15		25	25				2	2	
CR 507 / Maple Ave	C	Harristown Road	Cedar St	3483	SU	17700	30		2	2		15	15		35	35				4	4	
E 54th Street	M	Broadway	Molnar Dr	3004	SU	1900	35		2	2		10.5	10.5		35	35		Y		4	4	
Fair Lawn Ave	C	Plaza Road	Rt 208 ramp	2031	SU	11000	54		4	4		13.5	13.5		35	35				4	4	
Fair Lawn Ave	C	Rt 208 ramp	George St	1778	SU	11000	36		2	2		18	18		35	35				4	4	
Fair Lawn Ave	C	George St	west border	1995	SU	11000	20		2	2		10	10		35	35				4	4	
Garwood Ave	M	Harlow Crescent	Radburn Road	2720	SU	2000	22		2	2		11	11		25	25				1	1	
Harristown Rd	C	Lincoln Ave	Elm Ave	1642	SU	9400	35		2	2		17.5	17.5		35	35				4	4	
Harristown Rd	C	Rt 208	Gramercy Pl	227	SU	9000	29		2	2		14.5	14.5		25	25				2	2	
Henderson Blvd	M	11th Street	Maple Ave (CR 507)	4889	SU	1900	52		2	2		19	19		25	25		Y		1	1	
Hillery St	M	Jasper Rd	Harlow Crescent	764	SU	2000	22		2	2		11	11		25	25				1	1	
Hopper Ave	M	12th Street	11th Street	251	SU	1900	35		2	2		10.5	10.5		25	25		Y		1	1	
Jasper Rd	M	Prospect Ave	Hillery St	1059	SU	3000	28		2	2		14	14		25	25				1	1	
Lincoln Ave	C	Loretto Ave	River Road	2167	SU	16300	22		2	2		11	11		30	30				3	3	
Lincoln Ave	C	Berry Pl	Loretto Ave	545	SU	16300	38		2	2		19	19		30	30				3	3	
Philip St	M	Morlot Ave	Berdan Ave	1724	SU	3000	28		2	2		14	14		25	25				1	1	
Prospect Ave	M	Saddle River Rd	Fair Lawn Avenue	2700	SU	5000	35		2	2		10.5	10.5		25	25		Y		1	1	
Prospect Street / Ackerman Ave	C	Rock Rd	Prospect Ave	49	SU	9000	29		2	2		14.5	14.5		25	25				2	2	
Radburn Road	M	Plaza Road	Owen Ave	1250	SU	5000	22		2	2		11	11		25	25				1	1	
Radburn Road	M	Harristown Road	Plaza Road	324	SU	5000	22		2	2		11	11		25	25				1	1	
Radburn Road	M	Owen Ave	Fairlawn Ave	2768	SU	5000	24		2	2		12	12		25	25		Y		1	1	
Saddle River Road	C	Naugle Dr	Kuiken Ter	2400	SU	15000	39		2	2		19.5	19.5		35	35				4	4	
Southern Drive	M	32nd Street	Plaza Road	2330	SU	1900	36		2	2		11	11		25	25		Y		1	1	
Sunnyside Dr	M	Berdan Ave	Fair Lawn Avenue	1881	SU	1900	42		2	2		14	14		25	25		Y		1	1	
Willow Street	M	17th Street	River Road	1205	SU	1900	35		2	2		10.5	10.5		25	25		Y		1	1	

For Recommended Bike Improvements:

PBL = Protected Bike Lane

BL = Bike Lane

SUP = Shared Use Path

SLM = Shared Lane Marking

SU = Legal Shared Use (status quo)

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Glen Rock Borough

Overview and Potential Facilities

The roadway network in Glen Rock is characterized by a grid of residential streets connecting to a series of north-south and east-west collectors. See the Glen Rock Borough Bicycle and Pedestrian Improvements Map on the following page. Rock Road is the main east-west collector in the Borough and provides access to the train stations and the main downtown commercial area between Hamilton Avenue and Doremus Avenue. Harristown Road is another east-west collector extending from Prospect Street to the east and State Route 208 to the west. Key north-south collectors include Lincoln Avenue, Broad Street, Ackerman Avenue, and Prospect Street. Prospect Street provides access to the Saddle River Path via Alan Avenue, a useful north-south bike and pedestrian facility connecting much of Central Bergen County.

Pedestrian Improvement Priorities and Phasing

Based on crash analysis and public input, pedestrian safety improvements are recommended at 10 separate locations. These recommendations focus on crossing enhancements at high conflict areas. See Table 6.7. The “Map ID” column within the table corresponds to Pedestrian Improvement points as labeled on the Glen Rock Borough Bicycle and Pedestrian Improvements Map. A detailed conceptual design is provided for proposed pedestrian and bicycle enhancements to occur at the intersection of Rock Road and Main Street (Map ID# G-6). In addition, sidewalks are proposed along portions of Lincoln Avenue to fill gaps in what should be a continuous network through the Borough. See Table 6.8.

Within Glen Rock Borough, there is a high crash occurrence associated with the commercial areas along Rock Road and with an unusual three-way intersection where Rock Road, Maple Avenue, and Hamilton Avenue -- the key collectors -- intersect. As such, these locations should be prioritized for improvement. Notably, at all Pedestrian Improvement intersections studied in Glen Rock, there is a recommendation to either upgrade to or add **high visibility “continental” crosswalk striping**. This is a simple improvement that involves no construction and will effectively increase the visibility of pedestrians and their right to safely use the roadways. Additionally, there is a consistent need to install **detectable warning surface** on existing curb ramps, which aids vision-impaired pedestrians in safely crossing the road.

Glen Rock Borough

Bicyclists Improvement Priorities and Phasing

An effective bicycle network in Glen Rock will build upon the existing loose grid of north-south and east-west collectors. See the Glen Rock Borough Bicycle and Pedestrian Improvements Map and Table 6.9.

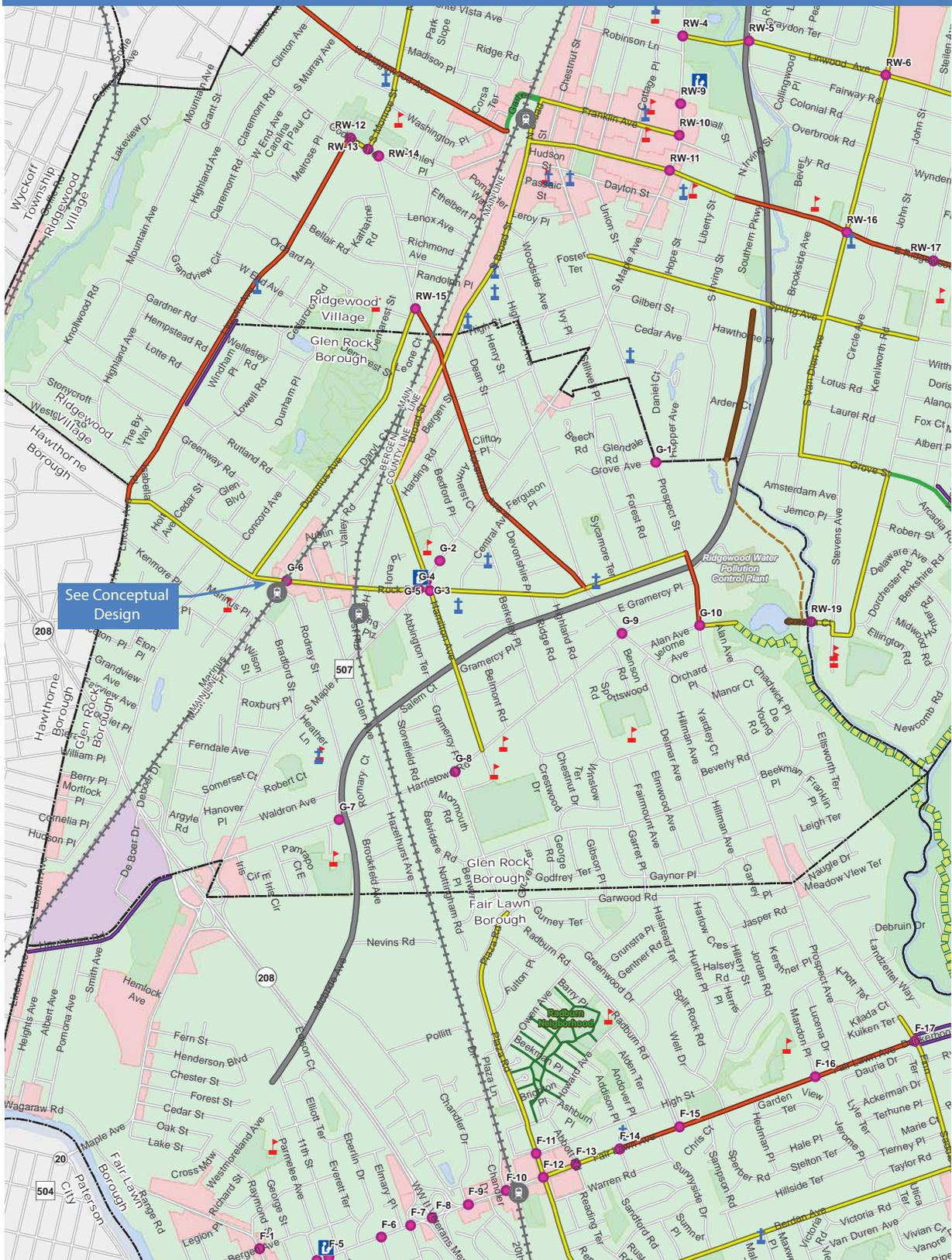
Bike lanes are recommended Ackerman Avenue, Lincoln Avenue, and a short stretch of Prospect Street and can be implemented by narrowing the existing travel lanes to and reallocating space for bike lanes that range from 4 to 6.5 feet wide.

Although it would be ideal to implement bike lanes on the other identified key collectors in Glen Rock Borough, **shared lane markings** are recommended for Rock Road, Doremus Avenue, Hamilton Avenue, and Broad Street. Shared lane markings are currently proposed on Rock Road because of dense land use patterns, closely spaced driveways, and in order to preserve on-street parking and accommodate bicycles where the varying roadway is insufficiently wide for bike lanes. Shared lane markings are currently proposed on Doremus Avenue, Hamilton Avenue, and Broad Street because they are not sufficiently wide to accommodate bike lanes. With these recommendations, the key collectors will offer improved bicycle accommodation, however, a long-term vision and goal for these roadways should be to incorporate dedicated bicycling facilities, such as bike lanes. This will require further investigation to identify design solutions that balance the needs of all roadway users and adjacent land uses.

For bicyclists, the top priority in Glen Rock is to implement bike lanes on Ackerman Avenue and Prospect Street and shared lane markings on Rock Road, Doremus Road, and Alan Avenue. These segments provide access to commercial and park amenities (including the municipal pool and arboretum) and can spur community support for further implementation. Bike lanes along Lincoln Avenue and shared lane markings along Hamilton Avenue and Broad Street will build redundancy into the network and improve connections with Ridgewood Village to the north.

Glen Rock Borough

Bicycle and Pedestrian Improvements Map



See Conceptual Design

<p>Proposed Pedestrian Improvements</p> <ul style="list-style-type: none"> ● Pedestrian Improvement — Sidewalk Proposed — Fill Gaps in Sidewalk Network 	<p>Proposed Bicycle Improvements</p> <ul style="list-style-type: none"> — Bicycle Lanes — Protected Bike Lane — Shared Lane Markings — Shared-Use Path — Potential Road Diet 	<p>Existing Facilities</p> <ul style="list-style-type: none"> — Existing Bike Lane — Existing Multi-Use Path — Saddle River Path — Utility Right-of-Way 	<p>Municipal Border</p> <ul style="list-style-type: none"> — Libraries — Places or Worship — Schools — Train Station — Rail Line 	<p>Land Use</p> <ul style="list-style-type: none"> — Commercial — Mixed Use
---	--	--	--	--

DATE: 05-06-2015
 NOTE: Not all items in the standard legend may be applicable to this map.

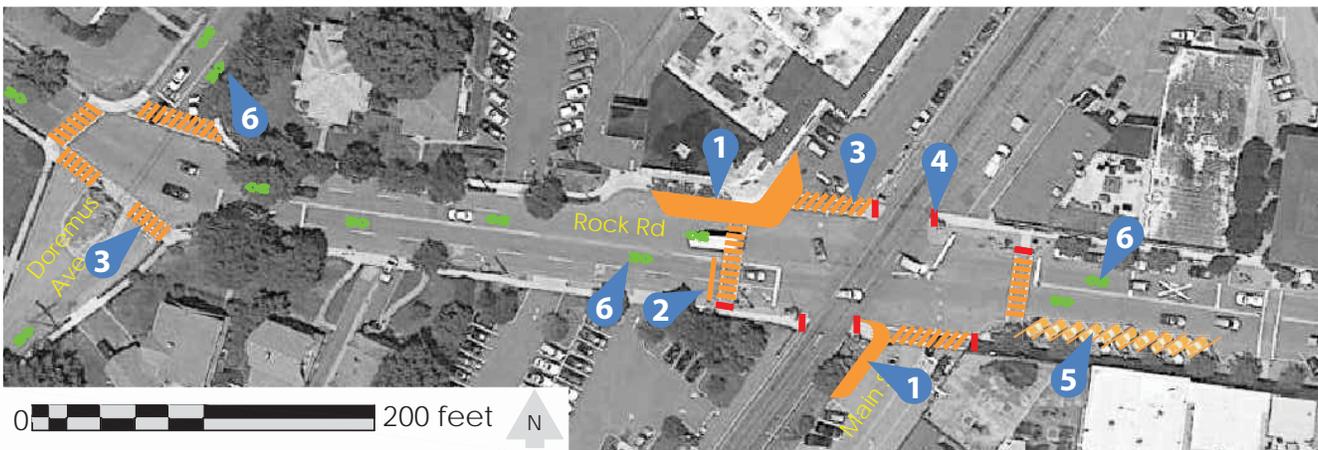
0 0.2 0.4 Miles

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Conceptual Design

Rock Road is an important east-west collector in Glen Rock and provides access to the Borough's two commuter rail stations, main commercial area, and park amenities. Pedestrian safety and access along Rock Road can be improved through high visibility crosswalks, concrete curb extensions, and accessible curb ramps. Bicyclists will benefit from shared lane markings and a conversion to front-out angle parking, which improves driver visibility of approaching bicycle traffic.

Rock Road and Main Street (Map ID# G-6)



Implementation	Estimate
1. Add concrete curb extensions (1 standard, 1 large)	\$23,000
2. Move stop bar ahead of crosswalk (20' by 12")	\$1,000
3. Add continental stripe crosswalks (310' at 10' wide)	\$15,500
4. Install detectable warning surface on curb ramps (7 panels 2'x4')	\$2,800
5. Switch to front-out angle parking (eradicate, restripe, and provide signage)	\$2000
6. Add shared lane markings (1000' on Rock Rd depicted plus 500' approaches from Doremus Ave)	\$4,800
Total	\$49,100
Long term: add traffic signals with pedestrian countdowns heads at Main Street (future study required)	\$100,000
Long Term Total	\$150,000+

Note: Estimated costs are for improvements as depicted with estimated quantities provided. For unit costs of individual facility types, see Chapter 4 and Chapter 5.

Table 6.7: Pedestrian Improvements in Glen Rock

MAP ID	Corridor Name	Jurisdiction (State, County, Municipal or Private)	Location / Cross Street	Jurisdiction (State, County, Municipal or Private)	Add Curb Extension	Reduce Curb Radius	Upgrade Crosswalk Striping	Add Crosswalk Striping	Add In-Street Pedestrian Crossing Sign	Install Pedestrian Signals	Convert to Pedestrian Countdown Signals	Install Detectable Warning Surface	Add Curb Ramp	Improve Curb Ramp	Add Bus Shelter	Relocate Bus Stop	Install Warning Beacon	Install HAWK Signal	Widen Sidewalk	Remove Sidewalk Impediment	Add Mid-Block Crossing	Add Median Island	Improve Median Island	Add Traffic Signal	Add Bike/Ped Bridge	Improve Bike/Ped Bridge
G-1	Prospect Street	C	Grove Avenue	M			●		●		●		●						●							
G-2	Maple Avenue	C	at Central School	C													●			●						
G-3	Maple Avenue	C	Hamilton Avenue	M			●				●															
G-4	Rock Road	C	Maple Avenue	C	●		●		●		●		●	●												
G-5	Rock Road	C	Hamilton Avenue	M			●				●						●									
G-6	Rock Road	C	Main Street	M	●		●	●		●		●												●		
G-7	Harristown Road	C	Rodney Street	M			●	●			●		●													
G-8	Harristown Road	C	Radburn Road	M		●	●	●			●	●						●								
G-9	Ackerman Avenue	C	Harristown Road	C/M			●			●	●					●										
G-10	Prospect Street	C	Alan Avenue	M			●				●						●									

See Conceptual Design

Table 6.8: Sidewalk Improvements in Glen Rock

Corridor	Side	Jurisdiction (County or Municipal)	Extent From	Extent To	Recommendation	Segment Length (Feet)
Lincoln Ave	Eastbound	C	Rutland Rd	Northern border	Sidewalk Proposed	1389

Table 6.9: Bicycle Improvements in Glen Rock (Panel 1 of 2)

Roadway	Jurisdiction (State, County or Municipal)	Limit From	Limit To	Segment Length (Feet)	Recommended Bike Improvements	Average Annual Daily Traffic (AADT)	Existing Roadway Width (Feet)	Existing Shoulder Width (Feet)	Existing Number of Lanes	Recommended Number of Lanes	Recommended Road Diet (Yes)	Existing Lane Width (Feet)	Recommended Lane Width (Feet)	Change in Lane Width (Feet)	Existing Speed Limit (MPH)	Recommended Speed Limit (MPH)	Change in Speed Limit (MPH)	Existing Parking (Yes)	Existing Median (Yes)	Existing Level of Stress	Level of Stress with Recommendation	Change in Level of Stress
Lincoln Ave	C	Godwin Ave	Welllsey Road	184	BL	16300	30		2	2		15	11	-4	35	35				4	3	-1
Lincoln Ave	C	Welllsey Road	Greenway Road	1873	BL	16300	35		2	2		17.5	11	-6.5	40	40				4	4	
Prospect Street	C	Rock Rd	Alan Ave	1065	BL	9000	29		2	2		14.5	10.5	-4	25	25				2	2	
Ackerman Ave	C	Doremus Ave	Broad Street	451	BL	9000	29		2	2		14.5	10.5	-4	25	25				2	2	
Ackerman Ave	C	Broad St	Rock Rd	3896	BL	9000	29		2	2		14.5	10.5	-4	25	25				2	2	
Alan Ave	M	Saddle River Park	Prospect St	524	SLM	1000	26		2	2		13	13		25	25				1	1	
Bergen County 134 / Rock Road	C	Hamilton Ave	Harding Rd	867	SLM	5000	45		2	2		22.5	22.5		25	25				2	2	
Bergen County 134 / Rock Road	C	Ackerman Ave	Hamilton Ave	2225	SLM	7000	29		2	2		14.5	14.5		25	25				2	2	
Bergen County 134 / Rock Road	C	Harding Rd	Train Tracks	1171	SLM	5000	55		2	2		22	22		25	25	Y			2	2	
Bergen County 134 / Rock Road	C	Prospect Ave	Ackerman Ave	1513	SLM	7000	35		2	2		17.5	17.5		25	25				2	2	
Bergen County 134 / Rock Road	C	Train Tracks	Doremus Ave	481	SLM	5000	38		2	2		12	12		25	25	Y			2	2	
Bergen County 135 / Rock Road	C	Boulevard	Lincoln Ave	1641	SLM	7000	29		2	2		14.5	14.5		25	25				2	2	
Doremus Ave	M	Godwin Ave	Rock Rd	4125	SLM	3000	29		2	2		14.5	14.5		25	25				1	1	
Hamilton Ave	M	South Broad	Harristown Road	3999	SLM	3000	22		2	2		11	11		25	25				1	1	
Rock Road	C	Doremus Ave	Boulevard	492	SLM	5000	29		2	2		14.5	14.5		25	25				2	2	
South Broad Street	M	Ridgewood Ave	Ackerman Ave	451	SLM	5000	22		2	2		11	11		25	25				2	2	
South Broad Street	M	Ackerman Ave	Hamilton Street	1840	SLM	5000	20		2	2		10	10		35	35				4	4	

See Conceptual Design

Table 6.9: Bicycle Improvements in Glen Rock (Panel 2 of 2)

Roadway	Jurisdiction (State, County or Municipal)	Limit From	Limit To	Segment Length (Feet)	Recommended Bike Improvements	Average Annual Daily Traffic (AADT)	Existing Roadway Width (Feet)	Existing Shoulder Width (Feet)	Existing Number of Lanes	Recommended Number of Lanes	Recommended Road Diet (Yes)	Existing Lane Width (Feet)	Recommended Lane Width (Feet)	Change in Lane Width (Feet)	Existing Speed Limit (MPH)	Recommended Speed Limit (MPH)	Change in Speed Limit (MPH)	Existing Parking (Yes)	Existing Median (Yes)	Existing Level of Stress	Level of Stress with Recommendation	Change in Level of Stress
<p>↓ No Improvements Recommended ↓</p>																						
Belvidere Rd / Cornwall Road	M	Prospect St	Radburn Road	4080	SU	1900	35		2	2		10.5	10.5		25	25		Y		1	1	
Boulevard	M	west border	Rock Rd	5283	SU	3000	30		2	2		15	15		25	25				1	1	
Grove St	M	S Van Dien Ave	S79/Prospect St	34	SU	9000	25		2	2		12.5	12.5		25	25				2	2	
Harding Pl	M	Hamilton Ave	Rock Road	1351	SU	3000	37		2	2		11.5	11.5		25	25		Y	Y	1	1	
Harristown Rd	C	Berkeley Pl	Ackerman Ave	1555	SU	9000	29		2	2		14.5	14.5		25	25				2	2	
Harristown Rd	C	Rt 208	Gramercy Pl	4216	SU	9000	29		2	2		14.5	14.5		25	25				2	2	
Harristown Rd	C	Gramercy Pl	Berkeley Pl	1420	SU	9000	20		2	2		10	10		25	25				2	2	
Harristown Rd	M	Ackerman Ave	Prospect St	1150	SU	1900	29		2	2		14.5	14.5		25	25				1	1	
Harristown Rd	C	Lincoln Ave	Elm Ave	970	SU	9400	35		2	2		17.5	17.5		35	35				4	4	
Lincoln Ave	C	Greenway Road	Berry Pl	2125	SU	16300	27		2	2		13.5	13.5		35	35				4	4	
Lincoln Ave	C	Berry Pl	Loretto Ave	1132	SU	16300	38		2	2		19	19		30	30				3	3	
CR 507 / Maple Ave	C	north border	Harristown Road	8528	SU	11600	30		2	2		15	15		25	25				2	2	
CR 507 / Maple Ave	C	Harristown Road	Cedar St	176	SU	17700	30		2	2		15	15		35	35				4	4	
Prospect Ave	M	Saddle River Rd	Fair Lawn Avenue	162	SU	5000	35		2	2		10.5	10.5		25	25		Y		1	1	
Prospect Street	C	Alan Ave	Chadwick Pl	670	SU	9000	29		2	2		14.5	14.5		25	25				2	2	
Prospect Street	C	Maple Ave	Rock Rd	1909	SU	9000	29		2	2		14.5	14.5		25	25				2	2	
Prospect Street	C	Chadwick Pl	Ackerman Ave	520	SU	9000	35		2	2		17.5	17.5		25	25				2	2	
Prospect Street / Ackerman Ave	C	Rock Rd	Prospect Ave	5305	SU	9000	29		2	2		14.5	14.5		25	25				2	2	
Radburn Road	M	Harristown Road	Plaza Road	1785	SU	5000	22		2	2		11	11		25	25				1	1	

For Recommended Bike Improvements:

PBL = Protected Bike Lane

BL = Bike Lane

SUP = Shared Use Path

SLM = Shared Lane Marking

SU = Legal Shared Use (status quo)

Maywood Borough

Overview and Potential Facilities

The roadway network in Maywood is characterized by a loose grid of residential streets connecting to a series of north-south and east-west collectors. See the Maywood Borough Bicycle and Pedestrian Improvements Map on the following page. Maywood Avenue is the main north-south collector in the Borough connecting with Paramus to the north, and providing access to commercial and residential areas. Spring Valley Road is another key north-south road in the Borough with important connections to State Route 4 and the Bergen Town Center in Paramus. Central Avenue and Spring Valley Avenue are key east-west collectors providing access to Rochelle Park to the west and Hackensack to the east.

Pedestrian Improvement Priorities and Phasing

Based on crash analysis and public input, pedestrian safety improvements are recommended at 9 separate locations. These recommendations focus on crossing enhancements at high conflict areas. See Table 6.10. The “Map ID” column within the table corresponds to Pedestrian Improvement points as labeled on the Maywood Borough Bicycle and Pedestrian Improvements Map. A detailed conceptual design is provided for proposed pedestrian and bicycle enhancements to occur at the intersection of Pleasant Avenue and Maywood Avenue (Map ID# M-4). Currently, there are no recommendations related to the sidewalk network in Maywood Borough.

Within Maywood Borough, there is a high crash occurrence along Maywood Avenue in an area with schools, the library, places of worship, and commercial activity. As such, these locations should be prioritized for improvement. Notably, at nearly all Pedestrian Improvement intersections studied in Maywood, there is a recommendation to either upgrade to or add **high visibility “continental” crosswalk striping**. This is a simple improvement that involves no construction and will effectively increase the visibility of pedestrians and support their right to safely use the roadways. Additionally, pedestrian **warning beacons** are recommended to improve pedestrian safety along a stretch of unsignalized crossings on Maywood Avenue, between Lennox Avenue and Taplin Avenue.

Maywood Borough

Bicyclist Improvement Priorities and Phasing

An effective bicycle network in Maywood will build upon the existing loose grid of north-south and east-west collectors. See the Maywood Borough Bicycle and Pedestrian Improvements Map and Table 6.11.

Bike lanes are recommended for Spring Valley Road south of Spring Valley Avenue and can be implemented by narrowing the existing travel lanes and reallocating space for bike lanes up to 7 feet wide. Bike lanes are also recommended along a short stretch of Forest Avenue entering Paramus Borough. A road diet would be necessary in order to implement bike lanes along Forest Avenue entering into Paramus Borough.

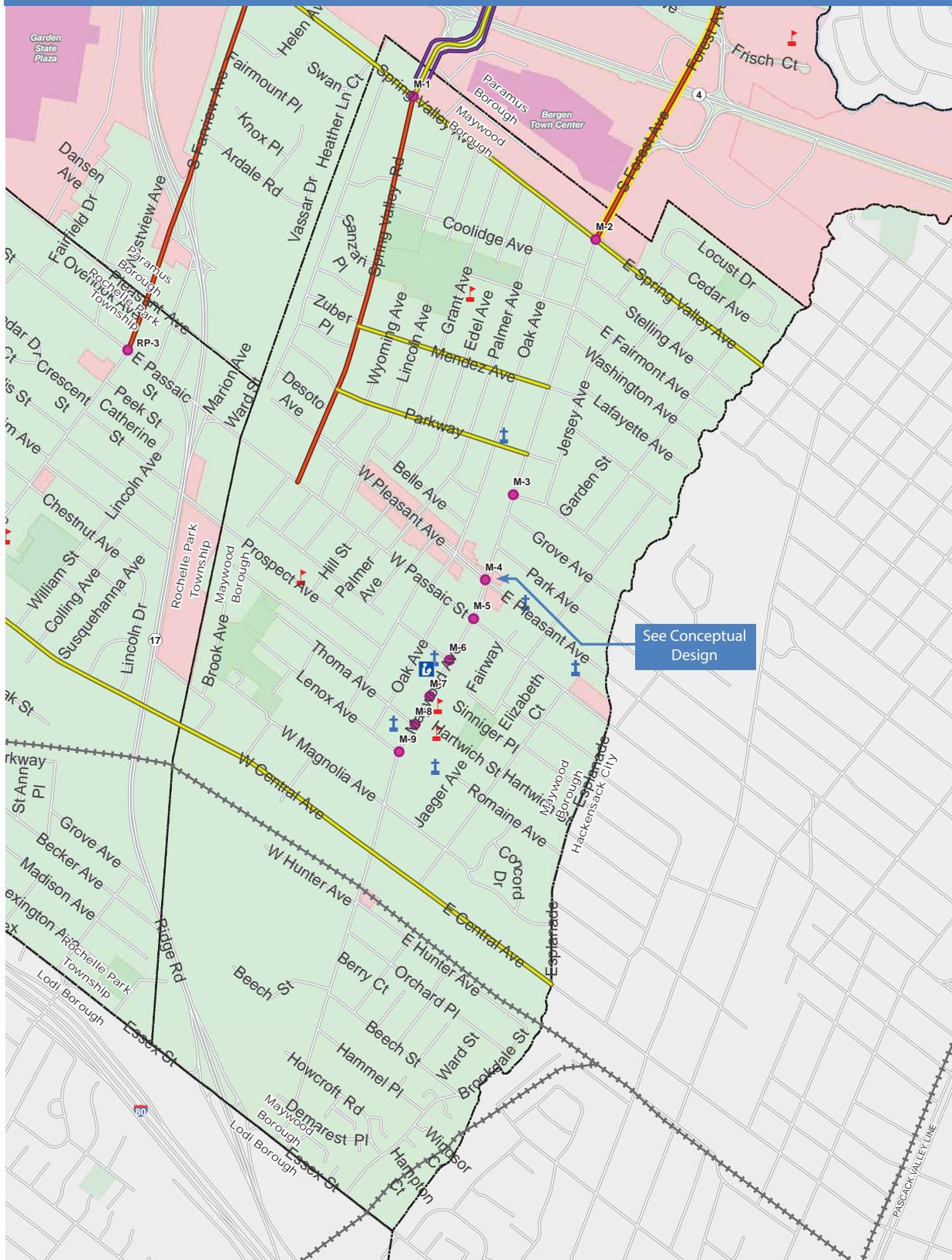
Although it would be ideal to implement bike lanes on the other identified key collectors in Maywood Borough, **shared lane markings** are recommended for Spring Valley Avenue, Central Avenue, Parkway, and Mendez Avenue. Shared lane markings are currently proposed on Spring Valley Avenue and Central Avenue because of dense land use patterns and a varying roadway profile that is at points insufficiently wide to implement bike lanes. Shared lane markings are currently proposed on Parkway and Mendez Avenue because they are residential, have a 25 MPH speed limit, and can expand east-west mobility within the bicycle network. With these recommendations, the key collectors will offer improved bicycle accommodation, however, a long-term vision and goal for these roadways should be to incorporate dedicated bicycling facilities, such as bike lanes. This will require further investigation to identify design solutions that balance the needs of all roadway users and adjacent land uses.

Notably, although it is the prime north-south collector, Maywood Avenue is not recommended for inclusion in the bicycle network at this time because it is perceived locally as a dangerous roadway. A long-term vision and goal should be established for Maywood Avenue to accommodate bicycle travel so that it can be included as a major link in Maywood's bicycle network.

For bicycles, the top priority in Maywood is to implement the bike lanes and shared lane markings on Spring Valley Road, since it is a main collector street with access to commercial and park amenities and can spur community support for further implementation. The second priority is to implement bicycle recommendations on east-west collector streets to provide access to adjacent communities. The third priority is to implement bicycle recommendations on the remaining east-west roads to build redundancy into the system.

Maywood Borough

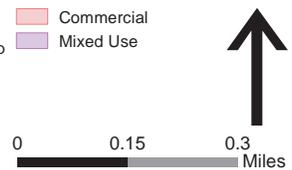
Bicycle and Pedestrian Improvements Map



<p>Proposed Pedestrian Improvements</p> <ul style="list-style-type: none"> ● Pedestrian Improvement — Sidewalk Proposed — Fill Gaps in Sidewalk Network 	<p>Proposed Bicycle Improvements</p> <ul style="list-style-type: none"> — Bicycle Lanes — Protected Bike Lane — Shared Lane Markings — Shared-Use Path — Potential Road Diet 	<p>Existing Facilities</p> <ul style="list-style-type: none"> — Existing Bike Lane — Existing Multi-Use Path — Saddle River Path — Utility Right-of-Way 	<p>Municipal Border</p> <ul style="list-style-type: none"> □ Libraries □ Places or Worship □ Schools □ Train Station □ Rail Line 	<p>Land Use</p> <ul style="list-style-type: none"> □ Commercial □ Mixed Use
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DATE: 05-06-2015

NOTE: Not all items in the standard legend may be applicable to this map.



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Conceptual Design

Maywood Avenue is the main north-south collector in Maywood and Pleasant Avenue is an important east-west collector with an established downtown commercial area. Pedestrian safety at this intersection can be enhanced through high visibility crosswalks and median islands that provide a refuge for pedestrians as they cross the roadway. Front-out angle parking is recommended for Pleasant Avenue because it is safer for pedestrians, allowing vehicle passengers to depart their vehicles and access their trunks from the safety of the sidewalk rather than directly adjacent to oncoming traffic. It also improves driver visibility of pedestrian, bicyclist, and vehicle traffic.

Pleasant Avenue and Maywood Avenue (Map ID# M-4)



Implementation	Estimate
1. Extend median to provide island for pedestrian refuge (1)	\$8,000
2. Upgrade all crosswalks to continental stripe (230' at 10' wide)	\$11,500
3. Switch to front-out angle parking (eradicate, restripe, and provide signage)	\$2,000
Total	\$21,500

Note: Estimated costs are for improvements as depicted with estimated quantities provided. For unit costs of individual facility types, see Chapter 4 and Chapter 5.

Table 6.10: Pedestrian Improvements in Maywood

MAP ID	Corridor Name	Jurisdiction (State, County, Municipal or Private)	Location / Cross Street	Jurisdiction (State, County, Municipal or Private)	Add Curb Extension	Reduce Curb Radius	Upgrade Crosswalk Striping	Add Crosswalk Striping	Add In-Street Pedestrian Crossing Sign	Install Pedestrian Signals	Convert to Pedestrian Countdown Signals	Install Detectable Warning Surface	Add Curb Ramp	Improve Curb Ramp	Add Bus Shelter	Relocate Bus Stop	Install Warning Beacon	Install HAWK Signal	Widen Sidewalk	Remove Sidewalk Impediment	Add Mid-Block Crossing	Add Median Island	Improve Median Island	Add Traffic Signal	Add Bike/Ped Bridge	Improve Bike/Ped Bridge
M-1	Spring Valley Avenue	M	Spring Valley Road	M	●	●			●	●	●	●							●							
M-2	Maywood Avenue	C	Spring Valley Avenue	M			●			●												●				
M-3	Rochelle Avenue	C	Terrace Avenue	M			●	●					●					●								
M-4	Maywood Avenue	C	E Pleasant Avenue	M			●															●				
M-5	Maywood Avenue	C	Passaic St	C	●		●			●	●															
M-6	Maywood Avenue	C	Taplin Avenue	M			●	●			●						●									
M-7	Maywood Avenue	C	Midblock Xing at Maywood Ave School	C							●		●				●									
M-8	Maywood Avenue	C	Thoma Avenue	M			●	●			●						●									
M-9	Maywood Avenue	C	Lennox Avenue	M			●	●			●		●				●									

See Conceptual Design

Table 6.11: Bicycle Improvements in Maywood

Roadway	Jurisdiction (State, County or Municipal)	Limit From	Limit To	Segment Length (Feet)	Recommended Bike Improvements	Average Annual Daily Traffic (AADT)	Existing Roadway Width (Feet)	Existing Shoulder Width (Feet)	Existing Number of Lanes	Recommended Number of Lanes	Recommended Road Diet (Yes)	Existing Lane Width (Feet)	Recommended Lane Width (Feet)	Change in Lane Width (Feet)	Existing Speed Limit (MPH)	Recommended Speed Limit (MPH)	Change in Speed Limit (MPH)	Existing Parking (Yes)	Existing Median (Yes)	Existing Level of Stress	Level of Stress with Recommendation	Change in Level of Stress
Forest Ave	C	north of Firsch court	Spring Valley Ave	303	BL	9200	52		4	3	Y	13	12	-1	25	25		Y		3	2	-1
Spring Valley Rd	M	Spring Valley Ave	Passaic St	3722	BL	9000	36		2	2		18	11	-7	25	25				2	1	-1
Bergen County 44 / Central Ave	C	Rochelle Ave	Maywood Ave	2135	SLM	9000	29		2	2		14.5	14.5		35	35				4	4	
Bergen County 44 / Central Ave	C	Maywood Ave	east border	2069	SLM	9000	35		2	2		17.5	17.5		35	35				4	4	
Mendez Ave	M	Maywood Ave	Spring Valley Ave	1848	SLM	2000	30		2	2		11.5	11.5		25	25		Y		1	1	
Parkway	M	Maywood Ave	Spring Valley Ave	1858	SLM	2000	30		2	2		11.5	11.5		25	25		Y		1	1	
Spring Valley Ave	M	Spring Valley Road	Farview Ave	472	SLM	5000	21		2	2		10.5	10.5		25	25				2	2	
Spring Valley Ave	M	east border	Patterson Ave	1449	SLM	5000	35		2	2		17.5	17.5		25	25				2	2	
Spring Valley Ave	M	Patterson Ave	Spring Valley Road	2629	SLM	5000	40		4	4		10	10		25	25				3	3	
Spring Valley Rd	M	Brockfield Ave	Spring Valley Ave	315	SLM	9000	36		2	2		18	18		25	25				2	2	
↓ No Improvements Recommended ↓																						
E Pleasant Ave	M	east border	Maywood Ave	1427	SU	5000	39		2	2		12.5	12.5		25	25		Y		1	1	
Essex Street	C	east border	Riverview Ave	1743	SU	27600	40		4	4		10	10		30	30				4	4	
Maywood Ave	C	Spring Valley Ave	south border / Essex Street	8901	SU	9000	30		2	2		15	15		25	25				2	2	
Passaic St	C	Powell Lane	east border	4323	SU	12000	30		2	2		15	15		35	35				4	4	
W Pleasant Ave	M	Maywood Ave	Spring Valley Road	2055	SU	9000	42		2	2		14	14		25	25		Y	Y	2	2	

For Recommended Bike Improvements:

PBL = Protected Bike Lane

BL = Bike Lane

SUP = Shared Use Path

SLM = Shared Lane Marking

SU = Legal Shared Use (status quo)

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Paramus Borough

Overview and Potential Facilities

The roadway network in Paramus is characterized by a loose grid of residential streets connecting to a series of north-south and east-west collectors. See the Paramus Borough Bicycle and Pedestrian Improvements Map on the following page. In addition to collectors, State Route 17 and the Garden State Parkway extend north-south dividing eastern and western Paramus. State Route 4 extends across the southern portion of Paramus and has significant cloverleaf intersections with State Route 17 and the Garden State Parkway. Regional commercial areas, including the Paramus Park Mall, Garden State Plaza, and the Bergen Town Center, are located adjacent to these regional highways.

Paramus Road is the main north-south collector in the Borough west of Route 17 and provides access to residential and commercial areas and to Bergen Community College. Paramus Road also provides connections to the Saddle River Path, a useful north-south bike and pedestrian facility connecting much of Central Bergen County. East of Route 17, Farview Avenue and Forest Avenue are key north-south collectors providing regional access to residential and commercial areas. Other north-south collectors include Pascack Road and Spring Valley Road. Midland Avenue and Linwood Avenue are key east-west collectors providing regional connectivity and local access to residential and commercial areas. Additionally, Midland Avenue provides a connection to the Saddle River Path. Other east-west collectors include Ridgewood Avenue, Oradell Avenue, and Soldier Hill Road.

Pedestrian Improvement Priorities and Phasing

Based on crash analysis and public input, pedestrian safety improvements are recommended at 9 separate locations. These recommendations focus on crossing enhancements at high conflict areas. See Table 6.12. The “Map ID” column within the table corresponds to Pedestrian Improvement points as labeled on the Paramus Borough Bicycle and Pedestrian Improvements Map. A detailed conceptual design is provided for proposed pedestrian and bicycle enhancements to occur at the intersection of Midland Avenue and Farview Avenue (Map ID# P-6).

Within Paramus Borough, the highest crash occurrence is in the vicinity of Midland Avenue and Farview Avenue. As such, this location should be prioritized for improvement. In addition, pedestrians in Paramus will benefit from a significant expansion of the sidewalk network. Nearly 25 miles of sidewalk gaps have been identified in Paramus Borough, significantly along Paramus Road, Linwood Avenue, Pascack Road, and surrounding the campus of Bergen Community College. Filling these sidewalk gaps to provide a continuous pedestrian network in Paramus Borough should also be a high priority. See Table 6.13.

Lower occurrence of crashes have also been reported at sporadic locations throughout the Borough. Notably, at all Pedestrian Improvement intersections studied in Paramus, there is a recommendation to either upgrade to or add **high visibility “continental” crosswalk**

Paramus Borough

striping. This is a simple improvement that involves no construction and will effectively increase the visibility of pedestrians and support their right to safely use the roadways. Additionally, **median islands** are recommended at 4 intersections with excessive pedestrian crossing distances and will make it safer for pedestrians to cross the roadway.

Bicyclist Improvement Priorities and Phasing

An effective bicycle network in Paramus will build upon the existing loose grid of north-south and east-west collectors and safely span the divides created by the regional highways. See the Paramus Borough Bicycle and Pedestrian Improvements Map and Table 6.14.

Bike lanes are recommended for a number of roadways in eastern Paramus Borough that provide a north-south connection to significant commercial attractors in the Bergen Town Center and Garden State Plaza malls. This network of bike lanes can be implemented either by reducing existing travel lane widths and reallocating space for bike lanes or through **road diets**. Road diets are proposed along roadways with 3 or more total travel lanes. A road diet consolidates the number of travel lanes in order to gain space for multimodal improvements. Bike lanes are preferred over shared lane markings for most locations in Paramus because of high motor vehicle volume and speed.

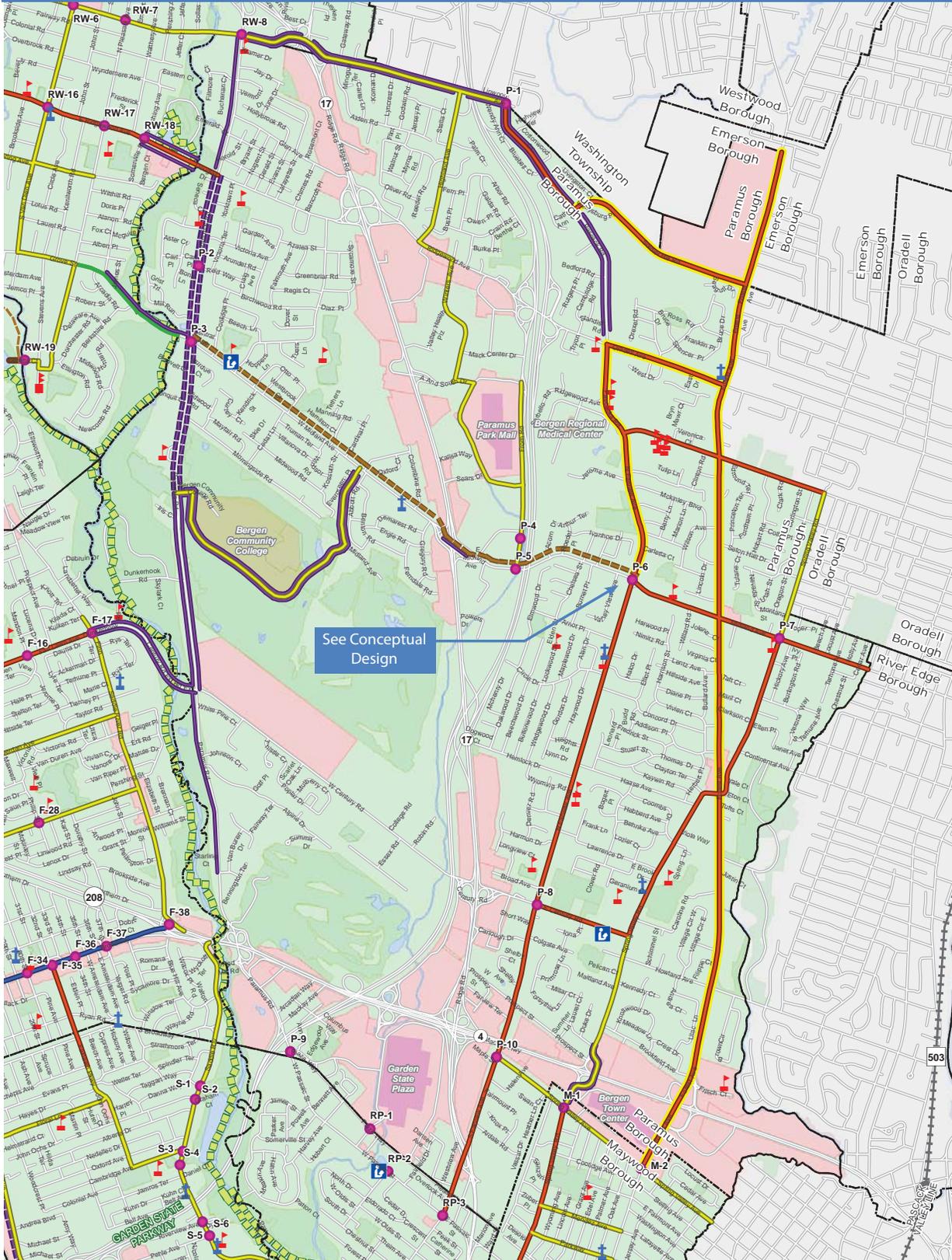
A **shared use path** is recommended along Midland Avenue from Farview Avenue to Paramus Road. This is a significant recommendation that will require future phases of study, possible land acquisition, design, and construction. However, a significant change is required along this stretch of Midland Avenue, an important connection to Bergen Community College and the only viable east-west connection in Paramus Borough, if bicyclists are to safely utilize the roadway. From the Bergen Community College, shared use paths are proposed to connect with the existing Saddle River path.

Shared lane markings are proposed along roadways providing access to the Bergen Community College and Paramus Park mall to supplement or enhance multimodal bicycle connectivity achieved with bike lanes and shared use paths.

For bicycles, the top priority in Paramus is to implement the shared use path proposed for Midland Avenue (this is the location of a recent fatal bicyclist crash during an early Sunday morning commute to work) and the bike lanes and shared lane markings on Farview Avenue and Spring Valley Road, since these collector streets provide access to commercial and park amenities and can spur community support for further implementation. For locations with road diets proposed, traffic studies should be conducted to ensure that safe and efficient operations can be accomplished with lane reductions. The second priority is to implement bicycle recommendations on east-west collector streets to provide access to adjacent communities. The third priority is to implement bicycle recommendations on the remaining collectors to build redundancy into the system.

Paramus Borough

Bicycle and Pedestrian Improvements Map



See Conceptual Design

- | | | | | |
|--|--|--|--|---|
| <ul style="list-style-type: none"> ● Pedestrian Improvement — Sidewalk Proposed — Fill Gaps in Sidewalk Network | <ul style="list-style-type: none"> — Bicycle Lanes — Protected Bike Lane — Shared Lane Markings — Shared-Use Path — Potential Road Diet | <ul style="list-style-type: none"> — Existing Bike Lane — Existing Multi-Use Path Saddle River Path — Utility Right-of-Way | <ul style="list-style-type: none"> Municipal Border L Libraries + Places or Worship + Schools T Train Station —+— Rail Line | <ul style="list-style-type: none"> Commercial Mixed Use |
|--|--|--|--|---|

DATE: 05-06-2015

NOTE: Not all items in the standard legend may be applicable to this map.



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Conceptual Design

Farview Avenue is the main north-south collector in Paramus connecting the residential areas in the eastern portion of the Borough with the commercial areas to the south. Midland Avenue is the main east-west collector and is the only viable route for accessing Bergen Community College and Farview Avenue. Bicycle mobility is paramount along these routes, and bicycle lanes will function along Farview Avenue and along the eastern portion of Midland Avenue. A shared use path is proposed on the western portion of Midland Avenue to provide a designated facility for bicyclists and pedestrians. At the intersection shown below, pedestrian safety is enhanced through high visibility crosswalk striping, median islands that provide a refuge, and improved sidewalks and curb ramps.

Midland Avenue and Farview Avenue (Map ID# P-6)



Implementation	Estimate
1. Extend median to provide island for pedestrian refuge (2 vegetated)	\$20,000
2. Upgrade crosswalks to continental stripe (310' at 10' wide)	\$15,500
3. Add concrete sidewalk (225' at 5' wide)	\$13,500
4. Add new curb ramps with detectable warning surface (4)	\$14,000
5. Relocate bus stop to far side and install bus shelter (1)	\$1,000
6. Add bike lanes (500' intersection approach from 3 directions)	\$9,000
7. Add a shared use path adjacent to the roadway (270' depicted)	\$100,000
8. Install pedestrian countdown signals (8 modules)	\$7,200
Total	\$180,200

Note: Estimated costs are for improvements as depicted with estimated quantities provided. Bus shelter is assumed to be provided by NJ TRANSIT. For unit costs of individual facility types, see Chapter 4 and Chapter 5.

Table 6.12: Pedestrian Improvements in Paramus

MAP ID	Corridor Name	Jurisdiction (State, County, Municipal or Private)	Location / Cross Street	Jurisdiction (State, County, Municipal or Private)	Add Curb Extension	Reduce Curb Radius	Upgrade Crosswalk Striping	Add Crosswalk Striping	Add In-Street Pedestrian Crossing Sign	Install Pedestrian Signals	Convert to Pedestrian Countdown Signals	Install Detectable Warning Surface	Add Curb Ramp	Improve Curb Ramp	Add Bus Shelter	Relocate Bus Stop	Install Warning Beacon	Install HAWK Signal	Widen Sidewalk	Remove Sidewalk Impediment	Add Mid-Block Crossing	Add Median Island	Improve Median Island	Add Traffic Signal	Add Bike/Ped Bridge	Improve Bike/Ped Bridge
P-1	Pascack Road	C	Linwood Avenue	C			●																			
P-2	Paramus Road	C	Reid Way	M			●										●									
P-3	Paramus Road	C	Midland Avenue	M			●	●			●				●							●				
P-4	From Road	M	Mack Drive	P				●						●												
P-5	Midland Avenue	M	From Road	M			●		●		●			●												
P-6	Farview Avenue	C	Midland Avenue	C/M			●			●					●							●				
P-7	Midland Avenue	C	Spring Valley Road	M			●			●																
P-8	Farview Avenue	C	Century Road	M			●															●				
P-9	Paramus Road	C	Garden State Plaza Parkway	P			●			●	●											●				

See Conceptual Design

Table 6.13: Sidewalk Improvements in Paramus

Corridor	Side	Jursidiction (County or Municipal)	Extent From	Extent To	Recommendation	Segment Length (Feet)
Paramus Rd	Northbound	C	Ridgewood Ave	Bergen Community College Rd	Fill Gaps in Sidewalk Network	6997
Paramus Rd	Southbound	C	Ridgewood Ave	Bergen Community College Rd	Fill Gaps in Sidewalk Network	7043
Country Club Rd	Northbound	M	Midland Ave	Odabash Way	Sidewalk Proposed	1677
Country Club Rd	Southbound	M	Midland Ave	Odabash Way	Sidewalk Proposed	1673
Linwood Ave	Westbound	C	Pascack Rd	Ridgewood border	Sidewalk Proposed	3043
Linwood Ave	Eastbound	C	Ridgewood border	Pascack Rd	Sidewalk Proposed	2589
Midland Ave	Westbound	M	Abbott Rd	Farview Ave	Sidewalk Proposed	652
Midland Ave	Westbound	M	Paramus Rd	western border	Sidewalk Proposed	239
Odabash Way	Westbound	M	Paramus Rd	Country Club Rd	Sidewalk Proposed	5200
Odabash Way	Eastbound	M	Paramus Rd	Country Club Rd	Sidewalk Proposed	5378
Paramus Rd	Southbound	C	Linwood Ave	Ridgewood Ave	Sidewalk Proposed	2946
Paramus Rd	Northbound	C	Bergen Community College Rd	Century Rd	Sidewalk Proposed	4328
Paramus Rd	Southbound	C	Bergen Community College Rd	Century Rd	Sidewalk Proposed	4226
Paramus Rd	Southbound	C	Century Road	Farmington Lane	Sidewalk Proposed	3998
Pascack Rd	Westbound	C	Oradell Ave	northern border	Sidewalk Proposed	5398
Pascack Rd	Eastbound	C	Oradell Ave	northern border	Sidewalk Proposed	5735
Spring Valley Rd	Southbound	M	Rt 4 Overpass		Sidewalk Proposed	1633
Spring Valley Rd	Northbound	M	Rt 4 Overpass		Sidewalk Proposed	1672

Table 6.14: Bicycle Improvements in Paramus (Panel 1 of 3)

Roadway	Jurisdiction (State, County or Municipal)	Limit From	Limit To	Segment Length (Feet)	Recommended Bike Improvements	Average Annual Daily Traffic (AADT)	Existing Roadway Width (Feet)	Existing Shoulder Width (Feet)	Existing Number of Lanes	Recommended Number of Lanes	Recommended Road Diet (Yes)	Existing Lane Width (Feet)	Recommended Lane Width (Feet)	Change in Lane Width (Feet)	Existing Speed Limit (MPH)	Recommended Speed Limit (MPH)	Change in Speed Limit (MPH)	Existing Parking (Yes)	Existing Median (Yes)	Existing Level of Stress	Level of Stress with Recommendation	Change in Level of Stress
Century Rd	M	Spring Valley Rd	CR 61 (Farview Ave)	2146	BL	11000	39	2	2			19.5	11	-8.5	25	25				2	1	-1
E Ridgewood Ave	C	Paramus Road	Irving Street	520	BL	11000	29	2	2			14.5	10.5	-4	25	25				2	2	
E Ridgewood Ave/Oradell Ave	C	Forest Ave	Pascack Rd	2721	BL	11000	44	4	3	Y		11	11		35	35				4	3	-1
Forest Ave	C	north border	north of Firsch court	14653	BL	9200	48	4	3	Y		12	12		40	35	-5			4	3	-1
Forest Ave	C	north of Firsch court	Spring Valley Ave	2521	BL	9200	52	4	3	Y		13	12	-1	25	25		Y		3	2	-1
Farview Ave	C	Midland Ave	Ridgewood Ave	3301	BL	9000	48	4	3	Y		12	12		40	35	-5			4	3	-1
Farview Ave	C	Midland Ave	Ardale Rd	12381	BL	15000	30	2	2			15	11	-4	35	35				4	3	-1
Farview Ave / Rochelle Ave	C	Ardale Rd	RR Ave	1621	BL	9000	30	2	2			15	11	-4	30	30				3	2	-1
Midland Ave	C	east border	Farview Ave	5532	BL	9000	34	2	2			17	11	-6	35	35				4	3	-1
Pascack Rd	C	north border	Soldier Hill Rd	2779	BL	9000	40	2	2			20	11	-9	40	35	-5			4	3	-1
Pascack Rd	C	Oradell Ave	Ridgewood Ave	2061	BL	9000	48	4	3	Y		12	12		40	35	-5	Y		4	3	-1
Ridgewood Ave	C	N Farview Ave	Forest Ave	2191	BL	9000	41	2	2			20.5	11.5	-9	25	25				2	1	-1
Ridgewood Ave	C	Forest Ave	Spring Valley Rd	2431	BL	9000	36	2	2			18	11	-7	25	25				2	1	-1
Soldier Hill Rd	M	Forest Ave	Pascack Rd	4348	BL	9000	44	4	3	Y		11	11		35	35				4	3	-1
Spring Valley Rd	M	Midland Ave	Lawrence Dr	5309	BL	9000	30	2	2			15	11	-4	25	25				2	2	
Spring Valley Rd	M	Lawrence Dr	Century Rd	2302	BL	9000	37	2	2			18.5	11	-7.5	25	25				2	1	-1
Midland Ave	M	Farview Ave	Roedel Dr	1635	SUP	9000	36.9	3	3			12.3	12.3		35	35				4	1	-3
Midland Ave	M	Roedel Dr	Setter Dr	1783	SUP	9000	44	4	4			11	11		35	35				4	1	-3
Midland Ave	M	Setter Dr	Ramp to Rt 17	1275	SUP	9000	36	3	3			12	12		35	35				4	1	-3

See Conceptual Design

For Recommended Bike Improvements:

PBL = Protected Bike Lane

BL = Bike Lane

SUP = Shared Use Path

SLM = Shared Lane Marking

SU = Legal Shared Use (status quo)

Table 6.14: Bicycle Improvements in Paramus (Panel 2 of 3)

Roadway	Jurisdiction (State, County or Municipal)	Limit From	Limit To	Segment Length (Feet)	Recommended Bike Improvements	Average Annual Daily Traffic (AADT)	Existing Roadway Width (Feet)	Existing Shoulder Width (Feet)	Existing Number of Lanes	Recommended Number of Lanes	Recommended Road Diet (Yes)	Existing Lane Width (Feet)	Recommended Lane Width (Feet)	Change in Lane Width (Feet)	Existing Speed Limit (MPH)	Recommended Speed Limit (MPH)	Change in Speed Limit (MPH)	Existing Parking (Yes)	Existing Median (Yes)	Existing Level of Stress	Level of Stress with Recommendation	Change in Level of Stress
Midland Ave	M	Ramp to Rt 17	Community College	2233	SUP	9000	34		2	2		17	17		35	35				4	1	-3
Midland Ave	M	Community College	Paramus Road	4628	SUP	9000	34		2	2		17	17		35	35				4	1	-3
A&S Dr	M	Ring Road	Winters Ave	467	SLM	5000	46		4	4		11.5	11.5		25	25				3	3	
Bergen County S110 / Highland Ave	C	Linwood Ave	Ridgewood Ave	3453	SLM	5000	37		2	2		11.5	11.5		35	35	Y			4	4	
Country Club Road	M	Country Club Road	Midland Ave	1773	SLM	3000	22		2	2		11	11		25	25				2	2	
E Ridgewood Ave/Oradell Ave	C	Winters Ave	Highland Ave	855	SLM	11000	44		4	4		11	11		35	35				4	4	
From Rd	M	Ring Road south of mall	E Midland Ave	1848	SLM	3000	42		3	3		14	14		25	25				2	2	
From Rd	M	Ring Road north of mall	Ring Road south of mall	2251	SLM	3000	38		2	2		19	19		25	25				2	2	
Linwood Ave	C	Rt 17 overpass west side	507/Maple Ave	822	SLM	9000	30		2	2		15	15		25	25				2	2	
Linwood Ave	C	CR 63 (Pascack Rd)	Rt 17 overpass east side	2568	SLM	9000	30		2	2		15	15		25	25				2	2	
Linwood Ave	C	Rt 17 overpass east side	Rt 17 overpass west side	92	SLM	9000	24		2	2		12	12		25	25		Y		2	2	
Odabash Way	M	Paramus Road	Country Club Road	347	SLM	3000	32		2	2		16	16		25	25				2	2	
Odabash Way	M	Paramus Road	Country Club Road	5156	SLM	3000	32		2	2		16	16		25	25				2	2	
Ring Road	M	Sears Dr	A&S Dr	2147	SLM	5000	34.5		3	3		11.5	11.5		25	25				2	2	
Ring Road	M	Rt 17	Sears Dr	954	SLM	2000	34.5		3	3		11.5	11.5		25	25				2	2	
Savior Ave/Winters Ave	M	Valley Health Plaza	E Ridgewood Ave	1098	SLM	5000	40		4	4		10	10		25	25				3	3	
Spring Valley Ave	M	Spring Valley Road	Farview Ave	1377	SLM	5000	21		2	2		10.5	10.5		25	25				2	2	
Spring Valley Rd	M	Century Rd	Howland Ave	471	SLM	9000	37		2	2		18.5	18.5		25	25				2	2	
Spring Valley Rd	M	Ridgewood Ave	Midland Ave	1502	SLM	9000	30		2	2		15	15		25	25				2	2	
Spring Valley Rd	M	Howland Ave	Brockfield Ave	1563	SLM	9000	28		2	2		14	14		25	25				2	2	

Table 6.14: Bicycle Improvements in Paramus (Panel 3 of 3)

Roadway	Jurisdiction (State, County or Municipal)	Limit From	Limit To	Segment Length (Feet)	Recommended Bike Improvements	Average Annual Daily Traffic (AADT)	Existing Roadway Width (Feet)	Existing Shoulder Width (Feet)	Existing Number of Lanes	Recommended Number of Lanes	Recommended Road Diet (Yes)	Existing Lane Width (Feet)	Recommended Lane Width (Feet)	Change in Lane Width (Feet)	Existing Speed Limit (MPH)	Recommended Speed Limit (MPH)	Change in Speed Limit (MPH)	Existing Parking (Yes)	Existing Median (Yes)	Existing Level of Stress	Level of Stress with Recommendation	Change in Level of Stress
Spring Valley Rd	M	Brockfield Ave	Spring Valley Ave	1945	SLM	9000	36		2	2		18	18		25	25				2	2	
Winters Ave	M	A&S Dr	Valley Health Plaza	1823	SLM	3000	36		2	2		18	18		25	25				2	2	
<p>↓ No Improvements Recommended ↓</p>																						
Century Rd	C	CR 62 (Paramus Road)	CR 79 (River Road)	83	SU	11000	45		4	4		11.25	11.25		40	35	-5			4	4	
Century Rd	M	CR 61 (Farview Ave)	GSP	2158	SU	11000	29		2	2		14.5	14.5		35	35				4	4	
Century Rd	M	GSP	CR 62 (Paramus Road)	6980	SU	11000	46		4	4		11.5	11.5		35	35				4	4	
Continental Ave	M	east border	Spring Valley Road	1314	SU	3000	35		2	2		17.5	17.5		25	25				2	2	
E Ridgewood Ave/Oradell Ave	C	Highland Ave	Route 17	1559	SU	11000	44		4	4		11	11		35	35				4	4	
E Ridgewood Ave/Oradell Ave	C	Route 17	Paramus Road	3395	SU	11000	38	1	2	2		18	18		35	35				4	4	
E Ridgewood Ave/Oradell Ave	C	Pascack Rd	Winters Ave	3868	SU	11000	44		4	4		11	11		35	35				4	4	
From Rd	M	E. Ridgewood Ave	Ring Road north of mall	2005	SU	3000	38		2	2		19	19		25	25				2	2	
Grove St	M	CR 62 (Paramus Road)	Trail Crossing	326	SU	9000	25		2	2		12.5	12.5		25	25				2	2	
Haase Ave	M	Spring Valley Road	Farview Ave	2739	SU	3000	36		2	2		11	11		25	25		Y		1	1	
Howland Ave	M	5th Ave	east border	8	SU	9000	29		2	2		14.5	14.5		25	25				2	2	
Howland Ave	M	east border	Spring Valley Road	2830	SU	9000	29		2	2		14.5	14.5		25	25				2	2	
Iris Ct	M	Saddle River Park	Paramus Road	540	SU	200	30		2	2		8	8		25	25		Y		1	1	
Paramus Rd	C	Central Ave	Paramus catholic HS	6571	SU	12000	28	2	2	2		12	12		40	40				4	4	
Paramus Rd	C	Paramus catholic HS	Iris Ct	1682	SU	12000	58	3	4	4		13	13		40	40		Y		4	4	
Paramus Rd	C	Iris Ct	Rt 4	9488	SU	12000	29	3	2	2		11.5	11.5		40	40				4	4	
Paramus Rd	C	Paramus catholic HS	Iris Ct	2412	SU	12000	58	3	4	4		13	13		40	40		Y		4	4	
Paramus Rd	C	Rt 4	Powell Lane	2800	SU	12000	60		4	4		15	15		40	35	-5	Y		4	4	
Pascack Rd	C	Cathy Anny Ct	Standish Ave	2771	SU	9000	29	2	2	2		12.5	12.5		40	35	-5			4	4	
Pascack Rd	C	Standish Ave	end median	459	SU	9000	48		4	4		12	12		40	35	-5			4	4	

For Recommended Bike Improvements:

PBL = Protected Bike Lane

BL = Bike Lane

SUP = Shared Use Path

SLM = Shared Lane Marking

SU = Legal Shared Use (status quo)

Ridgewood Village

Overview and Potential Facilities

The roadway network in Ridgewood is characterized by a loose grid of residential streets connecting to a series of north-south and east-west collectors. See the Ridgewood Village Bicycle and Pedestrian Improvements Map on the following page. Ridgewood Avenue is the main east-west collector in the Village, and even though it does not directly cross the railroad tracks, it connects to an adjacent crossing with existing bike lanes at Garber Square that provides access to the train station and the main commercial area just east of the station. Other east-west collectors include Linwood Avenue, Spring Avenue, and Grove Street. Ridgewood Avenue and Grove Street also provide connections to the Saddle River Path, a useful north-south bike and pedestrian facility connecting much of Central Bergen County. North-south collectors include Lincoln Avenue, Monroe Street, Broad Street, and Van Dien Avenue.

Pedestrian Improvement Priorities and Phasing

Based on crash analysis and public input, pedestrian safety improvements are recommended at 19 separate locations. These recommendations focus on crossing enhancements at high conflict areas. See Table 6.15. The “Map ID” column within the table corresponds to Pedestrian Improvement points as labeled on the Ridgewood Village Bicycle and Pedestrian Improvements Map. A detailed conceptual design is provided for proposed pedestrian and bicycle enhancements to occur at E. Ridgewood Avenue along Saddle River Park (Map ID# RW-19). In addition, sidewalks are proposed along portions of number of roadways to fill gaps in what should be a continuous network through the Village. See Table 6.16.

Within Ridgewood Village, there is a high crash occurrence associated with the commercial areas along Ridgewood Avenue and Franklin Avenue. There are also high crash occurrence locations at the intersection of Linwood Avenue and Maple Avenue, and at E. Glen Avenue and Maple Avenue. As such, these locations should be prioritized for improvement. Notably, at nearly all Pedestrian Improvement intersections studied in Ridgewood, there is a recommendation to either upgrade to or add **high visibility “continental” crosswalk striping**. This is a simple improvement that involves no construction and will effectively increase the visibility of pedestrians and support their right to safely use the roadways. Additionally, there is a consistent need to install **detectable warning surface** on existing curb ramps, which aids vision-impaired pedestrians in safely crossing the road. Pedestrian **warning beacons** are recommended to improve pedestrian safety at 7 intersections throughout the village.

Ridgewood Village

Bicyclist Improvement Priorities and Phasing

An effective bicycle network in Ridgewood will build upon the existing loose grid of north-south and east-west collectors. See the Ridgewood Village Bicycle and Pedestrian Improvements Map and Table 6.17.

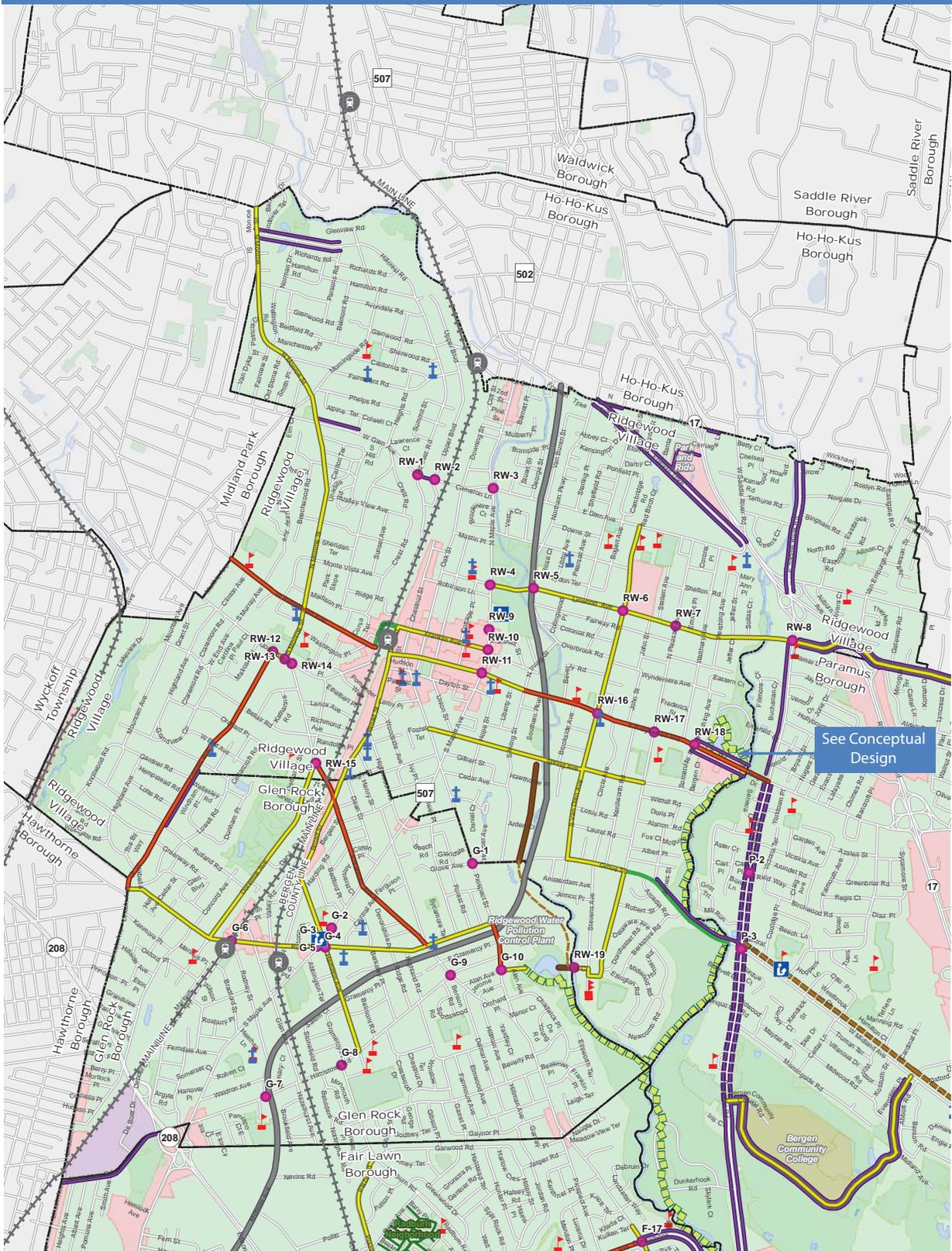
Bike lanes are recommended for Lincoln Avenue, W. Ridgewood Avenue, and E. Ridgewood Avenue. The bike lanes can be implemented by narrowing the existing travel lanes and reallocating space for bike lanes.

Although it would be ideal to implement bike lanes on the other identified key collectors in Ridgewood Village, **shared lane markings** are recommended for Monroe Street, Broad Street, Van Dien Avenue, a portion of Pleasant Avenue, Spring Avenue, Ridgewood Avenue, Franklin Avenue, and Linwood Avenue. With these recommendations, the key collectors will offer improved bicycle accommodation, however, a long-term vision and goal for these roadways should be to incorporate dedicated bicycling facilities, such as bike lanes. This will require further investigation to identify design solutions that balance the needs of all roadway users and adjacent land uses.

For bicyclists, the top priority in Ridgewood is to implement the bike lanes and shared lane markings on Ridgewood Avenue, since it is the main collector street with access to commercial and park amenities and can spur community support for further implementation. The second priority is to implement bicycle recommendations on north-south collector streets to provide access to Ridgewood Avenue. The third priority is to implement bicycle recommendations on the remaining east-west collectors to build redundancy into the system.

Ridgewood Village

Bicycle and Pedestrian Improvements Map



<p>Proposed Pedestrian Improvements</p> <ul style="list-style-type: none"> ● Pedestrian Improvement — Sidewalk Proposed — Fill Gaps in Sidewalk Network 	<p>Proposed Bicycle Improvements</p> <ul style="list-style-type: none"> — Bicycle Lanes — Protected Bike Lane — Shared Lane Markings — Shared-Use Path — Potential Road Diet 	<p>Existing Facilities</p> <ul style="list-style-type: none"> — Existing Bike Lane — Existing Multi-Use Path — Saddle River Path — Utility Right-of-Way 	<p>Other Symbols</p> <ul style="list-style-type: none"> ▭ Municipal Border 📖 Libraries ⛪ Places of Worship 🎓 Schools 🚉 Train Station 🚊 Rail Line 	<p>Land Use</p> <ul style="list-style-type: none"> 🏢 Commercial 🏠 Mixed Use
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↑
 0 0.35 0.7
 Miles

DATE: 05-06-2015

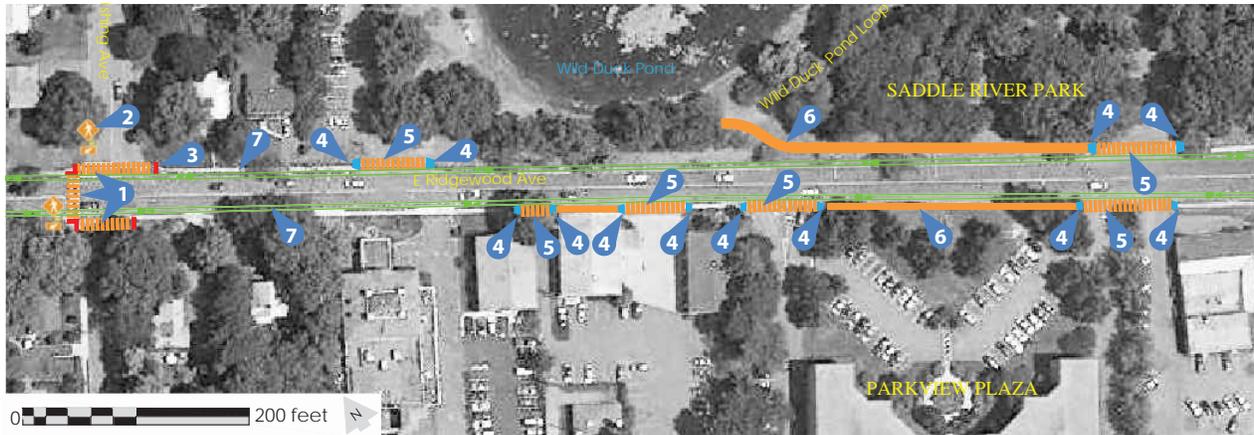
NOTE: Not all items in the standard legend may be applicable to this map.

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Conceptual Design

Ridgewood Avenue is the main east-west collector in Ridgewood and provides a cross-town connection among the train station, main commercial area, and Saddle Brook Park. The conceptual design presented below will make it safer for pedestrians to walk along and across Ridgewood Avenue to access the park. It also displays how a bike lane can fit in the fabric of the street.

E. Ridgewood Avenue at Saddle River Park (Map ID# RW-19)



Implementation	Estimate
1. Add continental crosswalk (150' at 10' wide)	\$7,500
2. Add Rectangular Rapid Flash Beacons (2)	\$15,000
3. Install detectable warning surface on curb ramps (6 panels 2'x4')	\$2,400
4. Add new curb ramps with detectable warning surface (12)	\$42,000
5. Add continental crosswalk across driveway entrances (340' at 10' wide)	\$17,000
6. Add sidewalk segments (560' at 5' wide)	\$33,600
7. Add bike lanes (1100' depicted)	\$6,800
Total	\$124,300

Note: Estimated costs are for improvements as depicted with estimated quantities provided. For unit costs of individual facility types, see Chapter 4 and Chapter 5.

Table 6.15: Pedestrian Improvements in Ridgewood

MAP ID	Corridor Name	Jurisdiction (State, County, Municipal or Private)	Location / Cross Street	Jurisdiction (State, County, Municipal or Private)	Add Curb Extension	Reduce Curb Radius	Upgrade Crosswalk Striping	Add Crosswalk Striping	Add In-Street Pedestrian Crossing Sign	Install Pedestrian Signals	Convert to Pedestrian Countdown Signals	Install Detectable Warning Surface	Add Curb Ramp	Improve Curb Ramp	Add Bus Shelter	Relocate Bus Stop	Install Warning Beacon	Install HAWK Signal	Widen Sidewalk	Remove Sidewalk Impediment	Add Mid-Block Crossing	Add Median Island	Improve Median Island	Add Traffic Signal	Add Bike/Ped Bridge	Improve Bike/Ped Bridge
RW-1	W Glen Avenue	C	Hillcrest Road	M	●												●									
RW-2	W Glen Avenue	C	Upper Boulevard	M													●									
RW-3	Maple Avenue	C	E Glen Avenue	C	●	●			●	●	●															
RW-4	Maple Avenue	C	Linwood Avenue	C/M			●			●	●				●											
RW-5	Linwood Avenue	C	Northern Parkway	M			●	●			●		●													
RW-6	Linwood Avenue	C	Van Dien Avenue	M			●			●																
RW-7	Linwood Avenue	C	Pleasant Avenue	M			●		●	●																
RW-8	Linwood Avenue	C	Paramus Road	C			●			●																
RW-9	Maple Avenue	C	Ridgewood Public Library	M	●						●	●						●								
RW-10	Maple Avenue	C	Franklin Avenue	C			●		●	●		●														
RW-11	Maple Avenue	C	Ridgewood Ave	C/M			●				●															
RW-12	Godwin Avenue	C	Lincoln Avenue	C			●		●					●												
RW-13	Godwin Avenue	C	Monroe Street	M					●		●	●					●									
RW-14	Godwin Avenue	C	Ackerman Avenue	C			●	●	●		●	●					●									
RW-15	Ackerman Avenue	C	Doremus Lane	M			●				●	●					●									
RW-16	Ridgewood Avenue	C	Van Dien Avenue	M			●			●																
RW-17	Ridgewood Avenue	C	Pleasant Avenue	M			●			●																
RW-18	Ridgewood Avenue	C	Pershing Avenue	M	●	●					●						●									
RW-19	Ridgewood Avenue	C	Saddle River Park	C			●	●			●	●					●									
RW-20	Corella Court	M	Corella Foot Path	M																				●		

See Conceptual Design

Table 6.16: Sidewalk Improvements in Ridgewood

Corridor	Side	Jurisdiction (County or Municipal)	Extent From	Extent To	Recommendation	Segment Length (Feet)
E Ridgewood Ave	Westbound	C	Pershing Ave	Saddle River Pathway	Sidewalk Proposed	1281
E Ridgewood Ave	Eastbound	C	Pershing Ave	Saddle River Pathway	Sidewalk Proposed	1281
E Saddle River Rd	Northbound	C	Rt 17	northern border	Sidewalk Proposed	2853
E Saddle River Rd	Southbound	C	Rt 17	northern border	Sidewalk Proposed	2867
Franklin Turnpike	Westbound	C	Racetrack Rd	Glen Ave	Sidewalk Proposed	4506
Franklin Turnpike	Eastbound	C	Racetrack Rd	Glen Ave	Sidewalk Proposed	4444
Glen Ave	Westbound	C	Alpine Terr	Monroe St	Sidewalk Proposed	921
Grove St	Westbound	M	eastern border	Eastside Ave	Sidewalk Proposed	2058
Hillcrest Rd	Westbound	M	Morningside Rd	western border	Sidewalk Proposed	1860
Hillcrest Rd	Eastbound	M	Morningside Rd	western border	Sidewalk Proposed	1860
Linwood Ave	Westbound	C	Paramus Rd	eastern border	Sidewalk Proposed	2664
Linwood Ave	Eastbound	C	Paramus Rd	eastern border	Sidewalk Proposed	2942
Racetrack Rd	Eastbound	M	N Irving St	Nagle St	Sidewalk Proposed	500
Racetrack Rd	Eastbound	M	Rt 17	Carriage Ln	Sidewalk Proposed	246
Rt 17 Park and Ride		M			Sidewalk Proposed	1468
W Glen Ave	Eastbound	C	Hillcrest Rd	Upper Blvd	Sidewalk Proposed	379

Table 6.17: Bicycle Improvements in Ridgewood (Panel 1 of 3)

Roadway	Jurisdiction (State, County or Municipal)	Limit From	Limit To	Segment Length (Feet)	Recommended Bike Improvements	Average Annual Daily Traffic (AADT)	Existing Roadway Width (Feet)	Existing Shoulder Width (Feet)	Existing Number of Lanes	Recommended Number of Lanes	Recommended Road Diet (Yes)	Existing Lane Width (Feet)	Recommended Lane Width (Feet)	Change in Lane Width (Feet)	Existing Speed Limit (MPH)	Recommended Speed Limit (MPH)	Change in Speed Limit (MPH)	Existing Parking (Yes)	Existing Median (Yes)	Existing Level of Stress	Level of Stress with Recommendation	Change in Level of Stress
E Ridgewood Ave	C	Paramus Road	Irving Street	5162	BL	11000	29		2	2		14.5	10.5	-4	25	25				2	2	
Lincoln Ave	C	Godwin Ave	Wellesley Road	3179	BL	16300	30		2	2		15	11	-4	35	35				4	3	-1
Lincoln Ave	C	Wellseley Road	Greenway Road	1123	BL	16300	35		2	2		17.5	11	-6.5	40	40				4	4	
Prospect Street/Ackerman Ave	C	Doremus Ave	Broad Street	423	BL	9000	29		2	2		14.5	10.5	-4	25	25				2	2	
WRidgewood Ave	M	west border	Monroe St	1926	BL	5000	35		2	2		17.5	11	-6.5	25	25				2	1	-1
WRidgewood Ave	M	Monroe St	Doremus Ave	1777	BL	5000	37		2	2		18.5	12	-6.5	25	25				2	1	-1
Doremus Ave	M	Godwin Ave	Rock Rd	404	SLM	3000	29		2	2		14.5	14.5		25	25				1	1	
E Ridgewood Ave	C	Irving Street	CR 507/Maple St	1006	SLM	11000	22		2	2		11	11		25	25				2	2	
E Ridgewood Ave	M	Maple Ave	South Broad St	2042	SLM	9000	24		2	2		12	12		25	25				2	2	
Franklin Ave	C	CR 507/Maple St	Oak St	1418	SLM	11000	29		2	2		14.5	14.5		25	25				2	2	
Franklin Ave	C	Oak St	N. Broad Ave	613	SLM	11000	30		2	2		15	15		25	25				2	2	
Godwin Ave	C	S Monroe St	Lincoln Ave	325	SLM	9000	28		2	2		14	14		25	25				2	2	
Grove St	M	N Pleasant Ave	S Van Dien Ave	1288	SLM	9000	25		2	2		12.5	12.5		25	25				2	2	
Linwood Ave	C	Rt 17 overpass east side	Rt 17 overpass west side	1394	SLM	9000	24		2	2		12	12		25	25			Y	2	2	
Linwood Ave	C	CR 63 (Pascack Rd)	Rt 17 overpass east side	487	SLM	9000	30		2	2		15	15		25	25				2	2	
Linwood Ave	C	Rt 17 overpass west side	507/Maple Ave	6674	SLM	9000	30		2	2		15	15		25	25				2	2	
N. Monroe St	M	Wyckoff Ave	Wellington Rd	2546	SLM	9000	28	3	2	2		11	11		25	25				2	2	
N. Monroe St	M	W Glen Ave	Goodwin Ave	5299	SLM	9000	22		2	2		11	11		25	25				2	2	
N. Monroe St	M	Wellington Rd	W Glen Ave	2030	SLM	9000	27	1	2	2		12.5	12.5		25	25				2	2	

See Conceptual Design

For Recommended Bike Improvements:

PBL = Protected Bike Lane

BL = Bike Lane

SUP = Shared Use Path

SLM = Shared Lane Marking

SU = Legal Shared Use (status quo)

Table 6.17: Bicycle Improvements in Ridgewood (Panel 2 of 3)

Roadway	Jurisdiction (State, County or Municipal)	Limit From	Limit To	Segment Length (Feet)	Recommended Bike Improvements	Average Annual Daily Traffic (AADT)	Existing Roadway Width (Feet)	Existing Shoulder Width (Feet)	Existing Number of Lanes	Recommended Number of Lanes	Recommended Road Diet (Yes)	Existing Lane Width (Feet)	Recommended Lane Width (Feet)	Change in Lane Width (Feet)	Existing Speed Limit (MPH)	Recommended Speed Limit (MPH)	Change in Speed Limit (MPH)	Existing Parking (Yes)	Existing Median (Yes)	Existing Level of Stress	Level of Stress with Recommendation	Change in Level of Stress
North Broad Street	M	Franklin Ave	Ridgewood Ave	625	SLM	5000	28		2	2		14	14		25	25				2	2	
Prospect Street	C	Stevens Ave	Grove St	3036	SLM	9000	29		2	2		14.5	14.5		25	25				2	2	
S Van Dien Ave	M	East Glen Ave	Grove St	7422	SLM	3000	23		2	2		11.5	11.5		25	25				1	1	
South Broad Street	M	Ridgewood Ave	Ackerman Ave	2968	SLM	5000	22		2	2		11	11		25	25				2	2	
Spring Ave	M	South Van Dien Ave	Prospect St	3461	SLM	1900	23		2	2		11.5	11.5		25	25				1	1	
Spring Street	M	S. Pleasant St	South Van Dien Ave	1352	SLM	1800	23		2	2		11.5	11.5		25	25				1	1	
<p>↓ No Improvements Recommended ↓</p>																						
Bergen County 71 / Van Emburgh Ave	C	north border	East Glen Ave	2388	SU	5000	29		2	2		14.5	14.5		25	25				2	2	
Bergen County 71 / Van Emburgh Ave	C	East Glen Ave	Rt 17	1121	SU	5000	39		2	2		19.5	19.5		25	25				2	2	
E Glen Ave	C	east border	CR 75 (Saddle River Rd)	2932	SU	6100	29		2	2		14.5	14.5		25	25				2	2	
East Saddle River Road	C	north border	Rt 17	2935	SU	10000	25	1	2	2		11.5	11.5		35	35				4	4	
Franklin Tpke	C	Maple Ave	north border	354	SU	5000	24		2	2		12	12		25	25				2	2	
Franklin Tpke	C	north border	E Glen Ave	4720	SU	5000	29		2	2		14.5	14.5		25	25				2	2	
Godwin Ave	C	W. Ridgewood Ave	S. Monroe St	1015	SU	9000	18		2	2		9	9		25	25				2	2	
Godwin Ave	C	N. Broad Ave	W. Ridgewood Ave	892	SU	11000	42		4	4		10.5	10.5		25	25		Y		3	3	
Godwin Ave	C	Lincoln Ave	west border	1362	SU	9000	28		2	2		14	14		25	25				2	2	
Godwin Ave	C	Lincoln Ave	west border	1913	SU	9000	28		2	2		14	14		25	25				2	2	
Grove St	M	Trail Crossing	N Pleasant Ave	2736	SU	9000	25		2	2		12.5	12.5		25	25				2	2	
Grove St	M	S Van Dien Ave	S79/Prospect St	2026	SU	9000	25		2	2		12.5	12.5		25	25				2	2	
Grove St	M	CR 62 (Paramus Road)	Trail Crossing	60	SU	9000	25		2	2		12.5	12.5		25	25				2	2	
Hillcrest Ave	M	Parsons Road	Unnamed Road	2161	SU	3000	22		2	2		11	11		25	25				1	1	
Hillcrest Ave	M	N Monroe St	Parsons Road	1860	SU	3000	22		2	2		11	11		25	25				1	1	

Table 6.17: Bicycle Improvements in Ridgewood (Panel 3 of 3)

Roadway	Jurisdiction (State, County or Municipal)	Limit From	Limit To	Segment Length (Feet)	Recommended Bike Improvements	Average Annual Daily Traffic (AADT)	Existing Roadway Width (Feet)	Existing Shoulder Width (Feet)	Existing Number of Lanes	Recommended Number of Lanes	Recommended Road Diet (Yes)	Existing Lane Width (Feet)	Recommended Lane Width (Feet)	Change in Lane Width (Feet)	Existing Speed Limit (MPH)	Recommended Speed Limit (MPH)	Change in Speed Limit (MPH)	Existing Parking (Yes)	Existing Median (Yes)	Existing Level of Stress	Level of Stress with Recommendation	Change in Level of Stress
Hillcrest Ave	M	Unnamed Road	W Glen Ave	4082	SU	3000	22		2	2		11	11		25	25				1	1	
Linwood Ave	M	Maple Ave	Oak St	1104	SU	3000	26		2	2		13	13		25	25				1	1	
CR 507 / Maple Ave	C	north border	Harristown Road	9725	SU	11600	30		2	2		15	15		25	25				2	2	
Morningside Rd	M	Monroe St	Hamilton Rd	2845	SU	1900	36		2	2		11	11		25	25		Y		1	1	
Morningside Rd	M	Hamilton Rd	Hillcrest Rd	1333	SU	1900	36		2	2		11	11		25	25		Y		1	1	
North Irving Street/Northern Pkwy	M	Linwood Ave	East Ridgewood Ave	2640	SU	1900	23		2	2		11.5	11.5		25	25				1	1	
Northern Pkwy	M	north border	East Glen Ave	2455	SU	1900	23		2	2		11.5	11.5		25	25				1	1	
Northern Pkwy	M	East Glen Ave	Linwood Ave	1909	SU	1900	35		2	2		17.5	17.5		25	25				1	1	
Oak St	M	Robinson Ln	East Glen Ave	3287	SU	5000	33		2	2		9.5	9.5		25	25		Y		2	2	
Overbrook Drive	M	N. Van Dien Ave	North Irving Street	1234	SU	1900	35		2	2		10.5	10.5		25	25		Y		1	1	
Paramus Rd	C	Central Ave	Paramus catholic HS	1005	SU	12000	28	2	2	2		12	12		40	40				4	4	
Prospect Street	M	E. Ridgewood Ave	Dayton St	366	SU	9000	17		2	2		8.5	8.5		25	25				2	2	
Prospect Street	M	Dayton St	Maple Ave	2139	SU	9000	21		2	2		10.5	10.5		25	25				2	2	
Prospect Street	C	Maple Ave	Rock Rd	1858	SU	9000	29		2	2		14.5	14.5		25	25				2	2	
Prospect Street/Ackerman Ave	C	Godwin Ave	Doremus Ave	2234	SU	9000	29		2	2		14.5	14.5		25	25				2	2	
South Irving Street	M	East Ridgewood Ave	Grove Street	3820	SU	1900	22		2	2		11	11		25	25				1	1	
South Pleasant Ave	M	Spring Ave	Grove Street	1957	SU	4000	35		2	2		10.5	10.5		25	25		Y		1	1	
South Pleasant Ave	M	East Ridgewood Ave	Spring Ave	1137	SU	4000	35		2	2		10.5	10.5		25	25		Y		2	2	
South Pleasant Ave	M	East Glenn Ave	East Ridgewood Ave	4258	SU	4000	35		2	2		10.5	10.5		25	25		Y		1	1	
W Glen Ave/E Glen Ave	C	Oak St	N. Monroe St	3539	SU	6100	25		2	2		12.5	12.5		25	25				2	2	
W Glen Ave/E Glen Ave	C	N. Monroe St	west border	559	SU	6200	29		2	2		14.5	14.5		25	25				2	2	
W Glen Ave/E Glen Ave	C	CR 62 (Franklin Tpk)	Oak St	6365	SU	6100	30		2	2		15	15		25	25				2	2	

For Recommended Bike Improvements:

PBL = Protected Bike Lane

BL = Bike Lane

SUP = Shared Use Path

SLM = Shared Lane Marking

SU = Legal Shared Use (status quo)

Rochelle Park Township

Overview and Potential Facilities

The roadway network in Rochelle Park is characterized by a loose grid of residential streets connecting to a series of east-west collectors. See the Rochelle Park Township Bicycle and Pedestrian Improvements Map on the following page. Rochelle Avenue is a key north-south collector providing access to Farview Avenue and the Garden State Plaza in Paramus, and Market Avenue and Saddle Brook to the South. State Route 17 is the main north-south highway connecting with Lodi Borough to the south and Paramus to the north. Passaic Street and Central Avenue are key east-west collectors providing access to commercial and residential areas. Central Avenue also provides a connection to the Saddle River Path via Lotz Lane, a useful north-south bike and pedestrian facility connecting much of Central Bergen County.

Pedestrian Improvement Priorities and Phasing

Based on crash analysis and public input, pedestrian safety improvements are recommended at 7 separate locations. These recommendations focus on crossing enhancements at high conflict areas. See Table 6.18. The “Map ID” column within the table corresponds to Pedestrian Improvement points as labeled on the Rochelle Park Township Bicycle and Pedestrian Improvements Map. A detailed conceptual design is provided for proposed pedestrian and bicycle enhancements to occur at the intersection of Rochelle Avenue and Central Avenue (Map ID# RP-5). In addition, sidewalks are proposed along Rochelle Avenue to fill gaps in what should be a continuous network through the Township. See Table 6.19.

Within Rochelle Park Township, there is a high crash occurrence associated with the commercial areas along Rochelle Avenue. As such, these locations should be prioritized for improvement. Notably, at most Pedestrian Improvement intersections studied in Rochelle Park, there is a recommendation to either upgrade to or add **high visibility “continental” crosswalk striping**. This is a simple improvement that involves no construction and will effectively increase the visibility of pedestrians and support their right to safely use the roadways. Additionally, there is a consistent need to install **detectable warning surface** on existing curb ramps, which aids vision-impaired pedestrians in safely crossing the road. **Pedestrian countdown signals** are recommended to improve pedestrian safety at 3 signalized intersections throughout the village. In addition to pedestrian enhancements focused at high conflict areas, sidewalks along portions of Rochelle Avenue and a new pedestrian and bicycle bridge across the Saddle River at Railroad Avenue within the County Park are proposed to help create a continuous network through the Borough and improve access to the existing Saddle River path.

Rochelle Park Township

Bicyclist Improvement Priorities and Phasing

An effective bicycle network in Rochelle Park will build upon the existing loose grid of north-south and east-west collectors. See the Rochelle Park Township Bicycle and Pedestrian Improvements Map and Table 6.20.

Bike lanes are recommended for a short stretch of Farview Avenue between the Paramus Borough line and Passaic Street, and can be implemented by narrowing the existing travel lanes and reallocating space for bike lanes.

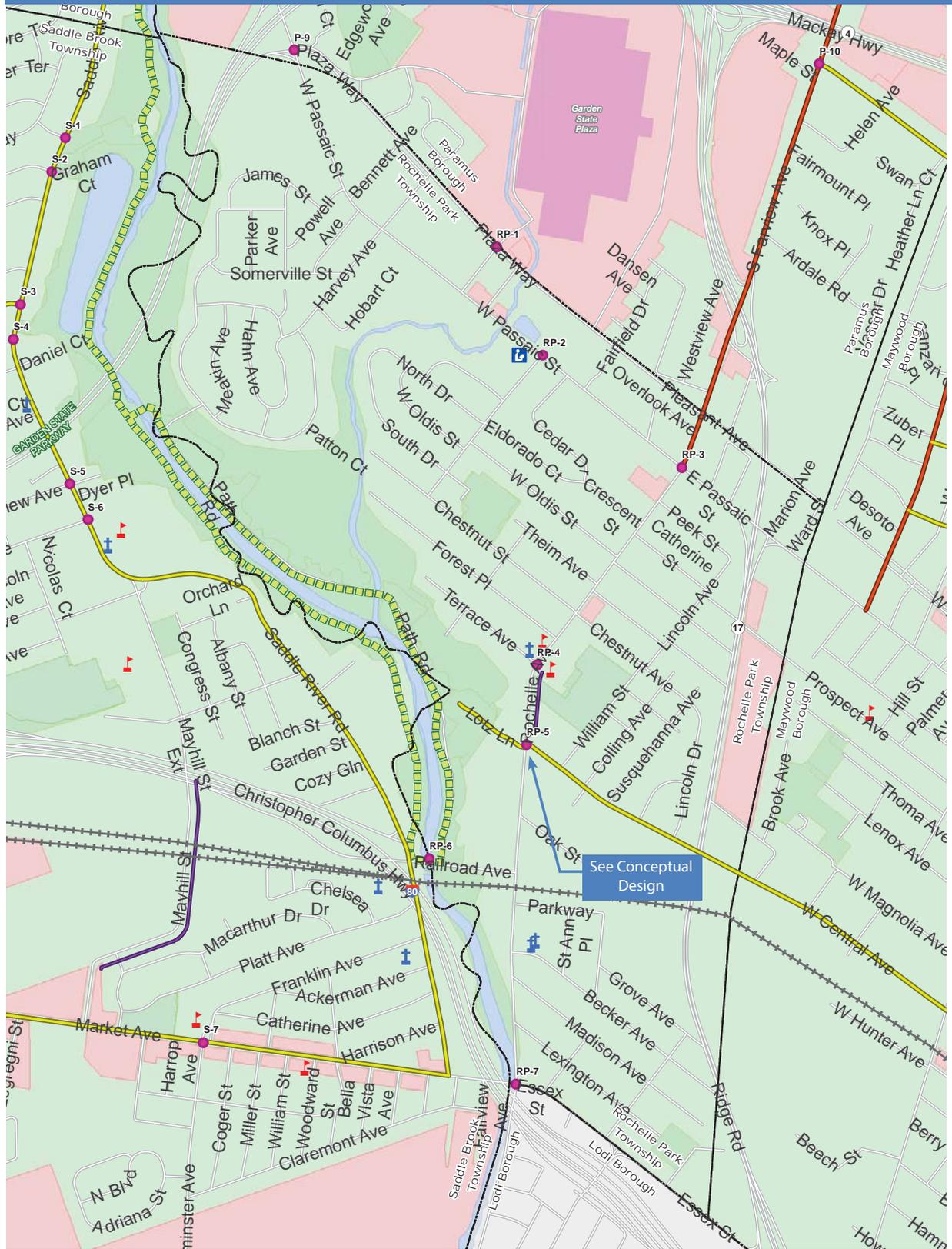
Although it would be ideal to implement bike lanes on the other identified key collectors in Rochelle Park Township, **shared lane markings** are recommended for Central Avenue and Lotz Lane. Central Avenue does not meet the minimum width for bike lanes to be installed; however, its existing 35 MPH speed limit makes it eligible to designate the roadway with shared lane markings. Lotz Lane is a 25 MPH local roadway that provides a connection to the Saddle River Path. With these recommendations, there is some improvement in bicycle accommodation, however, a long-term vision and goal for these roadways should be to incorporate dedicated bicycling facilities, such as bike lanes. This will require further investigation to identify design solutions that balance the needs of all roadway users and adjacent land uses.

Notably, although it is the prime north-south collector, Rochelle Avenue is not recommended for inclusion in the bicycle network at this time because it is perceived locally as a dangerous roadway. A long-term vision and goal should be established for Maywood Avenue to accommodate bicycle travel so that it can be included as a major link in Rochelle Park's bicycle network.

For bicycles, the top priority in Rochelle Park is to implement the shared lane markings on Central Avenue and Lotz Avenue, since these roads are the main collector streets with access to commercial and park amenities and can spur community support for further implementation.

Rochelle Park Township

Bicycle and Pedestrian Improvements Map



- | | | | | |
|---|--------------------------------------|----------------------------|-------------------------|-----------------|
| Proposed Pedestrian Improvements | Proposed Bicycle Improvements | Existing Facilities | Municipal Border | Land Use |
| ● Pedestrian Improvement | — Bicycle Lanes | — Existing Bike Lane | — Libraries | — Commercial |
| — Sidewalk Proposed | — Protected Bike Lane | — Existing Multi-Use Path | — Places or Worship | — Mixed Use |
| — Fill Gaps in Sidewalk Network | — Shared Lane Markings | — Saddle River Path | — Schools | |
| | — Shared-Use Path | — Utility Right-of-Way | — Train Station | |
| | — Potential Road Diet | | — Rail Line | |

DATE: 05-06-2015

NOTE: Not all items in the standard legend may be applicable to this map.

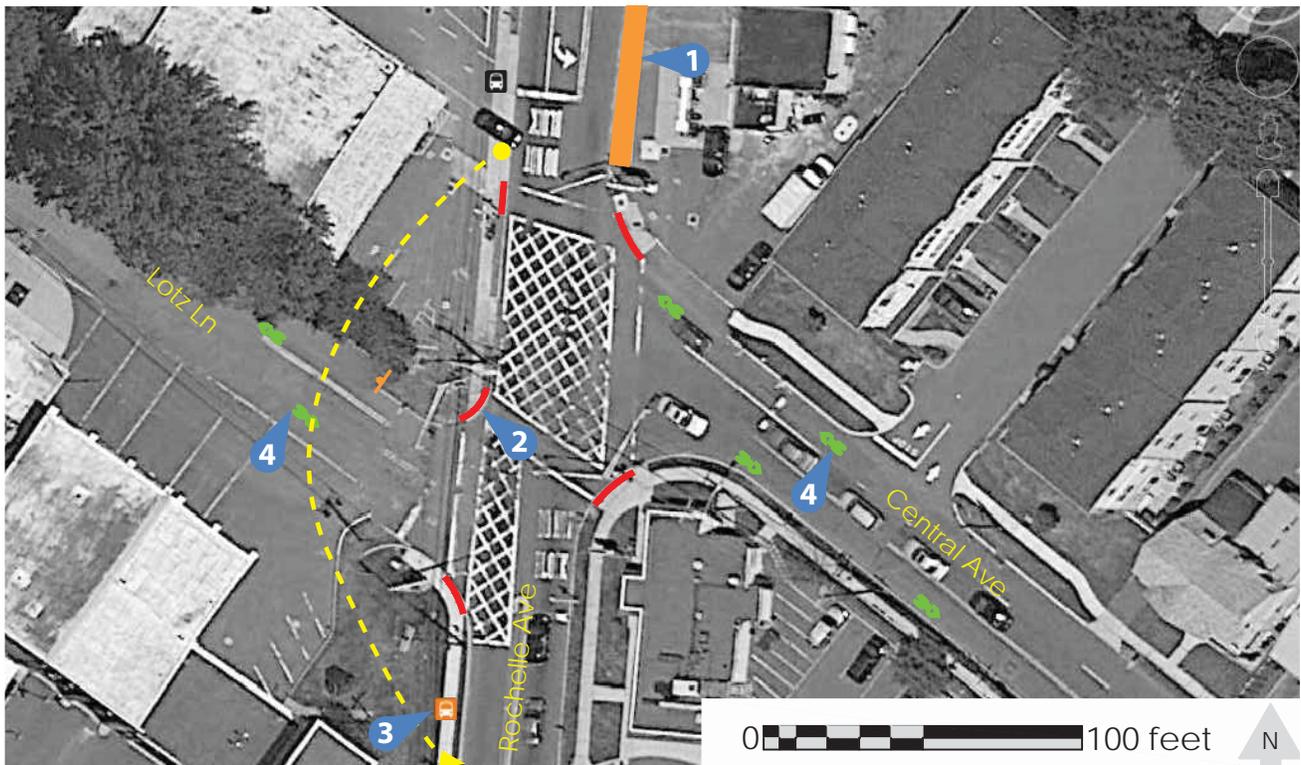


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Conceptual Design

Rochelle Avenue is the main north-south collector in Rochelle Park and Central Avenue is the main east-west collector in the southern portion of the Township. Pedestrian safety is enhanced at this intersection by filling sidewalk gaps, upgrading curb ramps, and relocating the bus stop to the far side location. Standard crosswalk striping is recommended to remain at this intersection, since it provides visual contrast to the existing cross-hatch pattern striped to the roadway for fire station access. Bicycle access is enhanced with shared lane markings along Central Avenue. Shared lane markings are also recommended on Lotz Lane to provide a bicycle connection to the Saddle River Path.

Rochelle Avenue and Central Avenue (Map ID# RP-5)



Implementation	Estimate
1. Fill in sidewalk gaps (55' depicted at 5' wide)	\$3,300
2. Install detectable warning surface on curb ramps (6 panels at 2'x4')	\$2,400
3. Relocate bus stop to far side of Rochelle Ave and add shelter (1)	\$1,000
4. Add shared lane markings (500' approach from 2 directions)	\$2,400
Total	\$7,700

Note: Estimated costs are for improvements as depicted with estimated quantities provided. Bus shelter is assumed to be provided by NJ TRANSIT. For unit costs of individual facility types, see Chapter 4 and Chapter 5.

Table 6.18: Pedestrian Improvements in Rochelle Park

MAP ID	Corridor Name	Jurisdiction (State, County, Municipal or Private)	Location / Cross Street	Jurisdiction (State, County, Municipal or Private)	Add Curb Extension	Reduce Curb Radius	Upgrade Crosswalk Striping	Add Crosswalk Striping	Add In-Street Pedestrian Crossing Sign	Install Pedestrian Signals	Convert to Pedestrian Countdown Signals	Install Detectable Warning Surface	Add Curb Ramp	Improve Curb Ramp	Add Bus Shelter	Relocate Bus Stop	Install Warning Beacon	Install HAWK Signal	Widen Sidewalk	Remove Sidewalk Impediment	Add Mid-Block Crossing	Add Median Island	Improve Median Island	Add Traffic Signal	Add Bike/Ped Bridge	Improve Bike/Ped Bridge
RP-1	Roosevelt Avenue	M	Plaza Way	P				●				●						●								
RP-2	Passaic Street	C	Berdan Street	M			●		●		●			●												
RP-3	Passaic Street	C	Rochelle Avenue	C		●	●			●	●											●				
RP-4	Rochelle Avenue	C	Terrace Avenue	M			●		●		●															
RP-5	Rochelle Avenue	C	W Central Avenue	C							●			●	●											
RP-6	Railroad Avenue	C	Saddle River	C																				●		
RP-7	Rochelle Avenue	C	Essex Street	C		●	●		●		●		●													

See Conceptual Design

Table 6.19: Sidewalk Improvements in Rochelle Park

Corridor	Side	Jurisdiction (County or Municipal)	Extent From	Extent To	Recommendation	Segment Length (Feet)
Rochelle Ave	Northbound	C	W Central Ave	Terrace Ave	Sidewalk Proposed	523

Table 6.20: Bicycle Improvements in Rochelle Park

Roadway	Jurisdiction (State, County or Municipal)	Limit From	Limit To	Segment Length (Feet)	Recommended Bike Improvements	Average Annual Daily Traffic (AADT)	Existing Roadway Width (Feet)	Existing Shoulder Width (Feet)	Existing Number of Lanes	Recommended Number of Lanes	Recommended Road Diet (Yes)	Existing Lane Width (Feet)	Recommended Lane Width (Feet)	Change in Lane Width (Feet)	Existing Speed Limit (MPH)	Recommended Speed Limit (MPH)	Change in Speed Limit (MPH)	Existing Parking (Yes)	Existing Median (Yes)	Existing Level of Stress	Level of Stress with Recommendation	Change in Level of Stress
Rochelle Ave / Farview Ave	C	Ardale Rd	RR Ave	512	BL	9000	30		2	2		15	11	-4	30	30				3	2	-1
Bergen County 44 / Central Ave	C	Rochelle Ave	Maywood Ave	2151	SLM	9000	29		2	2		14.5	14.5		35	35				4	4	
Lotz Lane	M	Saddle River Park	Rochelle Ave	687	SLM	1000	22		2	2		11	11		25	25				1	1	
↓ No Improvements Recommended ↓																						
Essex Street	C	east border	Riverview Ave	454	SU	27600	40		4	4		10	10		30	30				4	4	
Market St/Essex Street	C	Riverview Ave	Saddle River Road	715	SU	27600	30		2	2		15	15		30	30				3	3	
Paramus Rd	C	Rt 4	Powell Lane	1615	SU	12000	60		4	4		15	15		40	35	-5	Y		4	4	
Passaic St	C	Powell Lane	east border	4613	SU	12000	30		2	2		15	15		35	35				4	4	
Rochelle Ave	C	E. Passaic Street	south border	5714	SU	9000	30		2	2		15	15		35	35				4	4	

For Recommended Bike Improvements:

PBL = Protected Bike Lane

BL = Bike Lane

SUP = Shared Use Path

SLM = Shared Lane Marking

SU = Legal Shared Use (status quo)

See Conceptual Design

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Saddle Brook Township

Overview and Potential Facilities

The roadway network in Saddle Brook is characterized by a loose grid of residential streets connecting to a series of north-south and east-west collectors. See the Saddle Brook Township Bicycle and Pedestrian Improvements Map on the following page. Market Avenue is the main east-west collector in the Township, and provides convenient access to commercial areas between the Elmwood Park Borough line and Saddle River Road. Midland Avenue and Saddle River Road are two key north-south collectors that bound the eastern and western fringe of the Township. Midland Avenue provides access to commercial and residential areas within Saddle Brook and regional access to Fair Lawn to the north, and Garfield City to the south. Saddle River Road is a regional thoroughfare and also provides a connection to the Saddle River Path, a useful north-south bike and pedestrian facility connecting much of Central Bergen County. Other key north-south roads include Fairlawn Parkway and North 5th Street.

Pedestrian Improvement Priorities and Phasing

Based on crash analysis and public input, pedestrian safety improvements are recommended at 8 separate locations. These recommendations focus on crossing enhancements at high conflict areas. See Table 6.21. The “Map ID” column within the table corresponds to Pedestrian Improvement points as labeled on the Saddle Brook Township Bicycle and Pedestrian Improvements Map. A detailed conceptual design is provided for proposed pedestrian and bicycle enhancements to occur at the intersection of Market Street and Westminster Avenue (Map ID# S-5). In addition, sidewalks are proposed along Midland Avenue, Market Street, and Mayhill Street to fill gaps in what should be a continuous network through the Township. See Table 6.22.

Within Saddle Brook Township, there is a high crash occurrence associated with the commercial areas along Market Street. As such, these locations should be prioritized for improvement. Notably, at most Pedestrian Improvement intersections studied in Saddle Brook, there is a recommendation to either upgrade to or add **high visibility “continental” crosswalk striping**. This is a simple improvement that involves no construction and will effectively increase the visibility of pedestrians and support their right to safely use the roadways. Additionally, **pedestrian countdown signals** are recommended to improve pedestrian safety at 3 signalized intersections and **warning beacons** are recommended for 4 unsignalized intersections throughout the Township.

Saddle Brook Township

Bicyclist Improvement Priorities and Phasing

An effective bicycle network in Saddle Brook will build upon the existing loose grid of north-south and east-west collectors. See the Saddle Brook Township Bicycle and Pedestrian Improvements Map and Table 6.23.

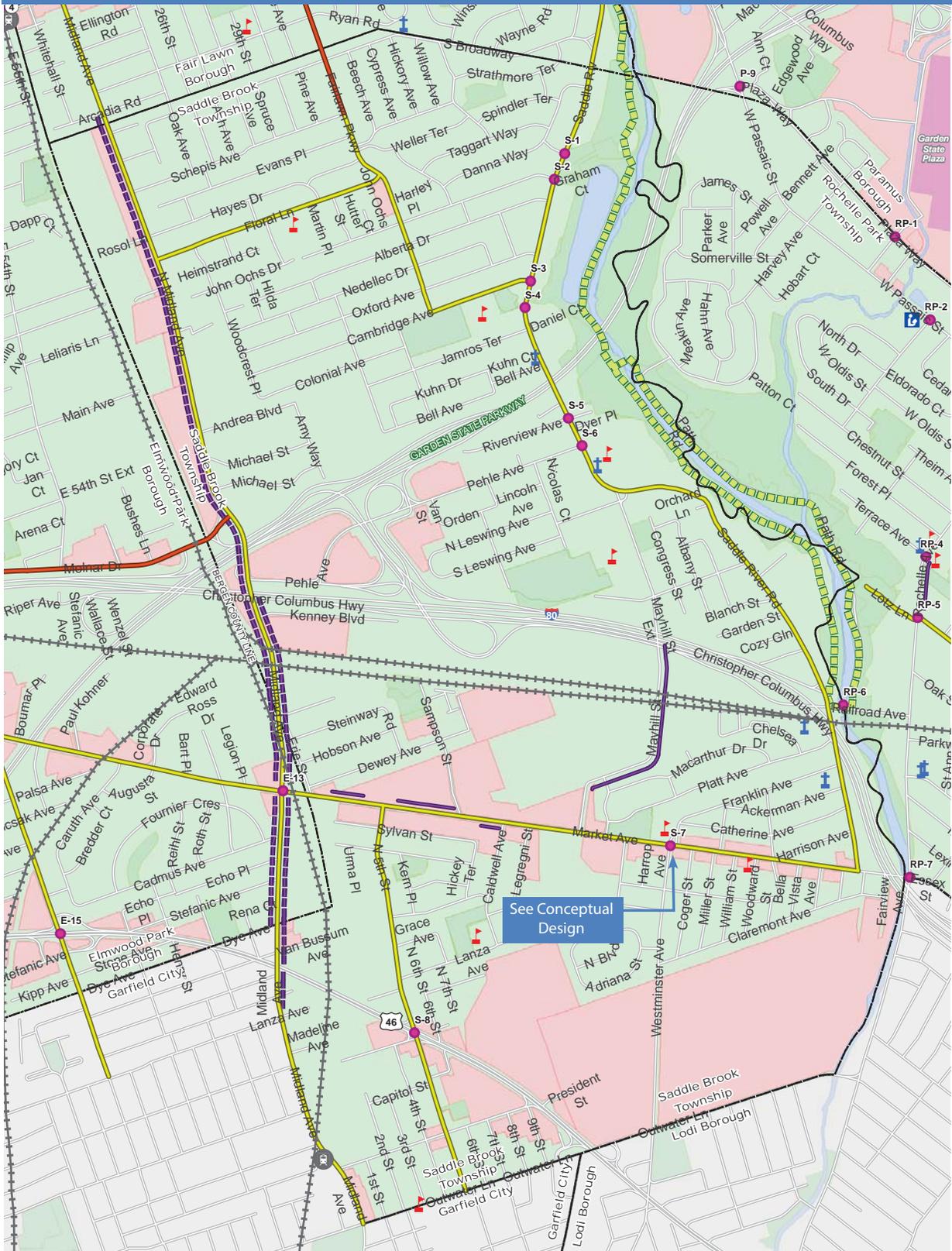
Bike lanes are recommended on segments of Fairlawn Parkway and Molnar Drive as they enter Saddle Brook Township. However, south of Schepis Avenue, Fairlawn Parkway does not meet the minimum width for bike lanes to be installed, but its existing 25 MPH speed limit makes it eligible to designate the roadway with **shared lane markings**. Molnar Drive is recommended for bike lanes from the Elmwood Park Borough line east to Midland Avenue that can be implemented by narrowing the existing travel lanes and reallocating space for bike lanes.

Although it would be ideal to implement bike lanes on the other identified key collectors in Saddle Brook Township, **shared lane markings** are recommended for Midland Avenue, Saddle River Road, and Market Street due to dense land use patterns and a varying roadway profile that is at points insufficiently wide to implement bike lanes. With these recommendations, there is some improvement in bicycle accommodation and access to the Township's main commercial areas, however, a long-term vision and goal for these roadways should be to incorporate dedicated bicycling facilities, such as bike lanes. This will require further investigation to identify design solutions that balance the needs of all roadway users and adjacent land uses.

For bicyclists, the top priority in Saddle Brook is to implement the shared lane markings on Market Street, since it is the main collector street with access to commercial and park amenities and can spur community support for further implementation. The second priority is to implement bicycle recommendations on north-south collector streets to providing access to regional destinations and the Saddle River path. The third priority is to implement bicycle recommendations on the remaining roadways, in order to build redundancy into the system. The two locations where bicycle lanes are proposed (Fairlawn Parkway and Molnar Drive) should be prioritized and coordinated with Elmwood Park Borough and Fair Lawn Borough, respectively.

Saddle Brook Township

Bicycle and Pedestrian Improvements Map



- | | | | | |
|---|--------------------------------------|----------------------------|-------------------------|-----------------|
| Proposed Pedestrian Improvements | Proposed Bicycle Improvements | Existing Facilities | Municipal Border | Land Use |
| ● Pedestrian Improvement | — Bicycle Lanes | — Existing Bike Lane | ▭ Libraries | ■ Commercial |
| — Sidewalk Proposed | — Protected Bike Lane | — Existing Multi-Use Path | ⛪ Places of Worship | ■ Mixed Use |
| — Fill Gaps in Sidewalk Network | — Shared Lane Markings | ▭ Saddle River Path | 🚦 Schools | |
| | — Shared-Use Path | — Utility Right-of-Way | 🚉 Train Station | |
| | — Potential Road Diet | | — Rail Line | |

DATE: 05-06-2015

NOTE: Not all items in the standard legend may be applicable to this map.

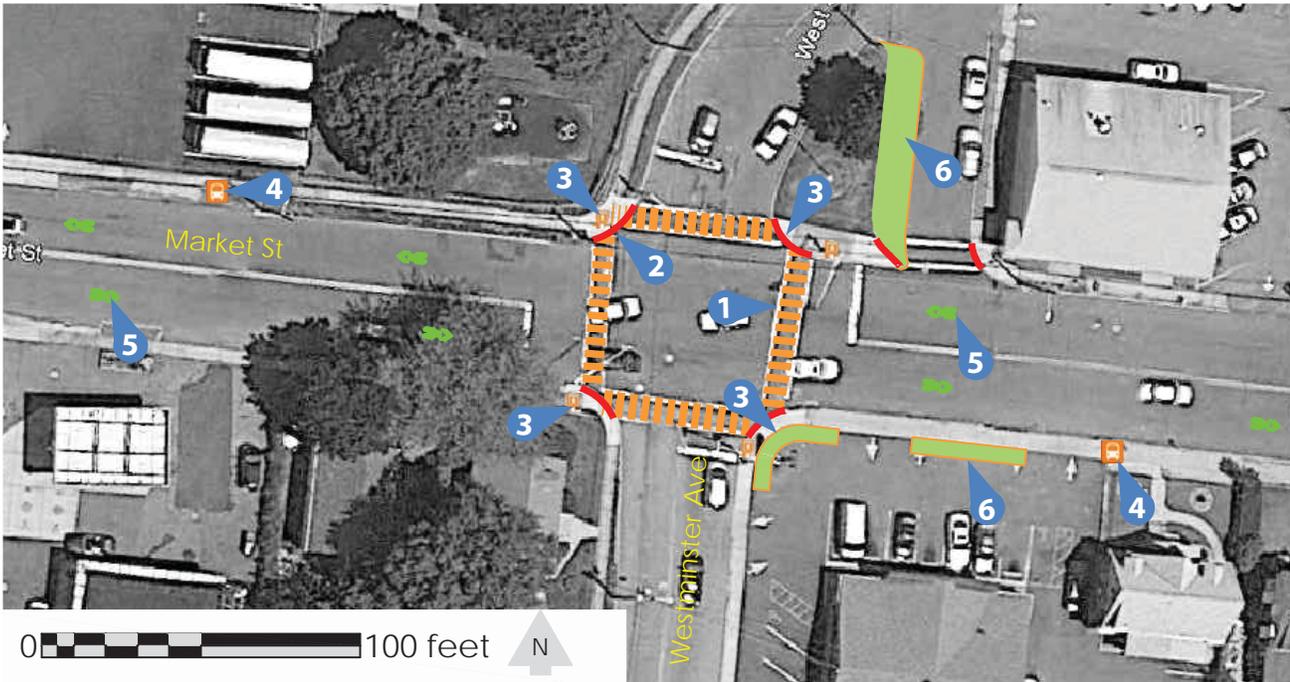


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Conceptual Design

Market Street is the main east-west collector in Saddle Brook and is lined with commercial activity. Bicycle mobility along Market Street is enhanced through shared lane markings. At the intersection with Westminster Avenue, pedestrian safety is enhanced through high visibility crosswalk striping combined with pedestrian countdown signals.

Market Street and Westminster Avenue (Map ID# S-5)



Implementation	Estimate
1. Upgrade crosswalks to continental stripe (200' at 10' wide)	\$10,000
2. Install detectable warning surface on curb ramps (10 panels 2'x4')	\$4,000
3. Install pedestrian countdown signals (8 modules)	\$7,200
4. Add bus shelters (2)	\$1,000
5. Add shared lane markings (500' intersection approach from 2 directions)	\$2,400
Total	\$24,600
6. Long term: consider adding raised planters for traffic calming and pedestrian safety	\$25,000
Long Term Total	\$49,600

Note: Estimated costs are for improvements as depicted with estimated quantities provided. Bus shelters are assumed to be provided by NJ TRANSIT. For unit costs of individual facility types, see Chapter 4 and Chapter 5.

Table 6.21: Pedestrian Improvements in Saddle Brook

MAP ID	Corridor Name	Jurisdiction (State, County, Municipal or Private)	Location / Cross Street	Jurisdiction(State, County, Municipal or Private)	Add Curb Extension	Reduce Curb Radius	Upgrade Crosswalk Striping	Add Crosswalk Striping	Add In-Street Pedestrian Crossing Sign	Install Pedestrian Signals	Convert to Pedestrian Countdown Signals	Install Detectable Warning Surface	Add Curb Ramp	Improve Curb Ramp	Add Bus Shelter	Relocate Bus Stop	Install Warning Beacon	Install HAWK Signal	Widen Sidewalk	Remove Sidewalk Impediment	Add Mid-Block Crossing	Add Median Island	Improve Median Island	Add Traffic Signal	Add Bike/Ped Bridge	Improve Bike/Ped Bridge
S-1	Saddle River Road	C	Louis Street	M													●									
S-2	Saddle River Road	C	Graham Terrace	M			●	●					●				●									
S-3	Saddle River Road	C	Cambridge Avenue	M													●									
S-4	Saddle River Road	C	Pehle Lake Trail Access	M				●					●					●			●					
S-5	Saddle River Road	C	Birk St	M			●	●									●									
S-6	Saddle River Road	C	Pehle Avenue	M			●		●	●																
S-7	Market Street	C	Westminster Avenue	C			●			●		●			●											
S-8	Route 46	S	N 5th Street	M			●			●													●			

See Conceptual Design

Table 6.22: Sidewalk Improvements in Saddle Brook

Corridor	Side	Jurisdiction (County or Municipal)	Extent From	Extent To	Recommendation	Segment Length (Feet)
Midland Ave	Southbound	C	Elmwood Park border	Arcadia Rd	Fill Gaps in Sidewalk Network	6772
Midland Ave	Northbound	C	Elmwood Park border	I-80	Fill Gaps in Sidewalk Network	1675
Midland Ave	Northbound	C	Madeline Ave	Elmwood park border	Fill Gaps in Sidewalk Network	787
Market Street	Westbound	C	Sampson St	5th St	Sidewalk Proposed	636
Market Street	Eastbound	C	Caldwell Ave	one block west	Sidewalk Proposed	210
Market Street	Westbound	C	507 Market Street	525 Market Street	Sidewalk Proposed	355
Mayhill St	Northbound	M	Market Street	I-80	Sidewalk Proposed	2103

Table 6.23: Bicycle Improvements in Saddle Brook

Roadway	Jurisdiction (State, County or Municipal)	Limit From	Limit To	Segment Length (Feet)	Recommended Bike Improvements	Average Annual Daily Traffic (AADT)	Existing Roadway Width (Feet)	Existing Shoulder Width (Feet)	Existing Number of Lanes	Recommended Number of Lanes	Recommended Road Diet (Yes)	Existing Lane Width (Feet)	Recommended Lane Width (Feet)	Change in Lane Width (Feet)	Existing Speed Limit (MPH)	Recommended Speed Limit (MPH)	Change in Speed Limit (MPH)	Existing Parking (Yes)	Existing Median (Yes)	Existing Level of Stress	Level of Stress with Recommendation	Change in Level of Stress
Fairlawn Pkwy	M	Broadway	Schepis Avenue	775	BL	5000	60		2	2		30	11	-19	25	25				1	1	
Molnar Drive	M	Midland Rd	Staedler Lane	395	BL	5000	39		2	2		19.5	11	-8.5	25	25				2	1	-1
5th Street	M	Market St	US 46	2635	SLM	7000	36		2	2		11	11		35	35		Y		4	4	
5th Street	M	US 46	Outwater Ln	1830	SLM	7000	36		2	2		11	11		30	30		Y		2	2	
Cambridge Avenue	M	Saddle River Rd	Fair Lawn Pkwy	1180	SLM	3000	13		1	1		13	13		25	25				1	1	
Fairlawn Pkwy	M	Schepis Avenue	Cambridge Avenue	2474	SLM	5000	31		2	2		15.5	15.5		25	25				2	2	
Floral Lane	M	Fairlawn Pkwy	N Midland Ave	2692	SLM	5000	30		2	2		8	8		25	25		Y		1	1	
Market St	C	Miller St	Legion Pl	4604	SLM	27600	47		2	2		23.5	23.5		30	30				3	3	
Market St/Essex Street	C	Saddle River Rd	Miller St	1636	SLM	27600	30		2	2		15	15		30	30				3	3	
Midland Ave	C	I-80	Outwater Ln	970	SLM	11000	29	2	2	2		12.5	12.5		25	25				2	2	
Midland Ave	C	Outwater Ln	south border	3004	SLM	11000	39		2	2		19.5	19.5		25	25				2	2	
North Midland Ave	C	Molnar Dr	I-80	4637	SLM	11000	41		4	4		10.3	10.3		25	25				3	3	
Saddle River Road	C	Pellington Dr	Market St	1075	SLM	15600	29		2	2		14.5	14.5		35	35				4	4	
↓ No Improvements Recommended ↓																						
Bergen County 42 / Outwater Ln	C	Westminster Place	Midland Ave	2127	SU	5000	29		2	2		14.5	14.5		25	25				2	2	
Bergen County 42 / Outwater Ln	C	Main St	Westminster Place	1014	SU	5000	24		2	2		12	12		25	25				2	2	
Bergen County 65 / Westminster Ave	C	Market St	US 46	3201	SU	3000	29		2	2		14.5	14.5		25	25				2	2	
Claremont Ave	M	Hollywood Ave	Westinster Ave	2411	SU	1900	36		2	2		11	11		25	25		Y		1	1	
Market St/Essex Street	C	Riverview Ave	Saddle River Road	522	SU	27600	30		2	2		15	15		30	30				3	3	
Mayhill St	M	Rochelle Pkwy	Rail Road Tracks	1145	SU	5000	29		2	2		14.5	14.5		25	25				2	2	
Mayhill St	M	Rail Road Tracks	Unnamed Road	1436	SU	5000	39		2	2		19.5	19.5		25	25				2	2	
Mayhill St	M	Unnamed Road	Market St	565	SU	5000	45		4	4		11.3	11.3		25	25				3	3	
Mayhill St	M	Saddle River Rd	Rochelle Pkwy	1294	SU	5000	22		2	2		11	11		25	25				2	2	
VFW DR / Hollywood Ave	M	Claremont Ave	Market St	258	SU	1900	36		2	2		11	11		25	25		Y		1	1	

For Recommended Bike Improvements:

PBL = Protected Bike Lane

BL = Bike Lane

SUP = Shared Use Path

SLM = Shared Lane Marking

SU = Legal Shared Use (status quo)

See Conceptual Design

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CHAPTER 7

IMPLEMENTATION

Introduction

The *Central Bergen County Bicycle & Pedestrian Plans* recommend transportation improvements that, if implemented, will contribute to Complete Streets in Bergen County. The plans will serve as a ‘starting point’ for future planning, design, construction, maintenance, and operation of enhanced pedestrian and bicycle facilities in the region.

Each municipality has a dedicated section that can be lifted out of this report and used for their own initiatives. Recommendations that traverse municipal boundaries may be coordinated with County staff. Projects that are along County roadways will be led by the County and coordinated with each of the local municipalities. The recommendations in this chapter are useful for both the County and the individual municipalities as they proceed to project implementation.

The following elements are each a matter of normal business for the County and municipalities and represent an opportunity to contribute to Complete Streets principles, policies, plans, and built projects. These include:

- Planning, Zoning, and Land Development
 - Master Plan
 - Zoning Ordinance
 - Land Development and Site Plan Review
- Project Selection
- Project Development, Design, and Delivery
- Construction
- Maintenance
- Operations

Complete Streets Principles and Approach

Complete Streets is an approach to planning and design that ensures that roadways are planned, designed, constructed, maintained, and operated for all users of all abilities -- not just motor vehicles. This includes pedestrians, bicyclists, motor vehicle drivers, emergency vehicles, public transportation riders and operators, and commercial goods/freight drivers. The Complete Streets approach is an inherent component of the *Central Bergen County Bicycle & Pedestrian Plans*.

The following section provides an introduction to the many considerations of Complete Streets planning, design, construction, maintenance, and operations. It is a non-exhaustive list intended to catalyze discussion within and among the County and municipalities that have participated in the *Central Bergen County Bicycle & Pedestrian Plans*. This section pertains to Complete Streets considerations that are associated with policy (Complete Streets policy, code or ordinance, land use and zoning, master plan/planning studies) or the physical state of the roadway (maintenance and access management, intersection treatments and traffic signals, corridor segments, and parking management).

Complete Streets Policy

In Bergen County, the formal endorsement of Complete Streets principles by the County and/or municipalities, along with policies and procedures that influence the planning, design, construction, maintenance, and operation of new, retrofitted, or reconstructed roadways is a necessary step to ensure that Complete Streets are present in the built roadway environment.

Implementation of Complete Streets occurs both as policy and as physical construction. Generally, the first step in Complete Streets implementation is to develop a Complete Streets policy. The policy provides organizational direction and identifies updates, as necessary, to the procedures, standards, processes, and performance measures that govern the planning, design, construction, maintenance, and operation of new, retrofitted, or reconstructed roadways. Policies express an intention to create bicycle and pedestrian-friendly places, recognizing the need and increasing the likelihood that more will be done in the future. Many municipalities in New Jersey have elected to show their commitment to all users of public rights-of-way by the adoption and implementation of a Complete Streets policy.

Code and Ordinances

Establish pedestrian and bicycle responsibilities:

- Assign pedestrian and bicycle accommodations as a duty of an appropriate department (e.g. engineering or planning) and assign staff to address pedestrian and bicycle issues.
- Create a Complete Streets advisory group to advise staff and agencies (e.g. planning board, zoning board) on projects and programs to address pedestrian and bicycle needs.
- List “active transportation” as an element of the comprehensive health program to be developed and implemented by the department of health or other similar unit.
- Provide training and information on bicycle and pedestrian laws and operations to the public and staff.
- Establish a police on bikes unit.

- **Don't** include mandatory (or remove provisions that mandate) bicycle licensing or registration requirements.
- **Don't** implement (or remove provisions that implement) bike bans (e.g. restrictions on biking to school).
- Adopt a bicycle parking ordinance that requires bicycle parking as part of new development and redevelopment, within public parking lots and garages, and at key commercial or commuter locations.
- Prohibit bicycle parking on sidewalks, sidewalk areas, and bicycle travel facilities.
- Seek status as a Bicycle Friendly Community from the League of American Bicyclists.
- Seek status as a Walk Friendly Community from Walk Friendly Communities.

Land Use and Zoning

Inform developers of the requirements relative to bicycle and pedestrian access and safety and what is to be included in site development and subdivision plans.

- Allow for mixed use development.
- Provide options for pedestrian and bicycle-friendly streetscapes and roadway design requirements.
- Incentivize bicycle and pedestrian amenities in exchange for increased floor area ratio, additional square footage, and reduced parking requirements.
- In shopping centers, offer incentives for architectural treatments that protect pedestrians from the elements, such as canopies or arcades.
- Require applicants to complete missing sidewalks as a condition for site plan and zoning approvals.

Master Plans and Planning Studies

Include bicycle and pedestrian access and safety in all planning activities, including the master plan, redevelopment plans, and the transportation element. These plans should:

- Identify existing and proposed elements of the bicycle and pedestrian network.
- Inventory problem locations and gaps in network.
- Identify crash locations involving pedestrians and bicyclists.
- Include specific recommendations for pedestrian and bicycle facilities.
- Incorporate or refer to standards, specifications, and design guidelines.
- Identify funding responsibility for proposed improvements.
- Encourage the linking of residential development and commercial areas or other residential areas, even when no roadway linkages are present, by means of segments or shared use paths.

Maintenance and Accessibility

Develop maintenance procedures that ensure, preserve, or enhance accessibility and safety for pedestrians, bicyclists, and transit users of all ages and abilities. For example, bike lanes should be included in snow clearing, debris removal, and any other relevant maintenance activities. Each project design should be coordinated with appropriate accessibility strategies that consider the placement of sidewalks, ramps, crosswalks, transit stops, and other elements.

- Consider pedestrian access and safety in bus stop siting.
- Establish bus stops in pairs near intersections, across the road from one another.
- Provide sidewalks and crosswalks to enable transit patrons to walk to and from the stop when they get on and off the bus.
- Provide shelter and amenities such as benches and trash receptacles at bus stops.
- Street furniture, such as bike racks or benches, should be considered as part of all projects as long as they do not impede any user.
- Analyze railroad stations to ensure safety, access, and accommodation for bicyclists and pedestrians of all ages and abilities.
- When designing a facility that includes or crosses an existing or future transit route, ensure that the appropriate pedestrian and ADA access is provided to and from the transit stops.
- Analyze school locations to ensure safety, access, and accommodation for students who bicycle or walk to school.
- Participate in Safe Routes to School and Safe Routes to Transit programs.

Intersection Treatments and Traffic Signals

Design intersections to be self-evident, safe, and accessible to all users. Integrate analysis of the level of service provided at traffic signals for pedestrians, bicyclists, and transit operations with traditional level of service applied to motor vehicles. Design intersections and traffic signals that provide safety, accessibility, and operational benefits to pedestrians, bicyclists, and transit operations.

- Manage driver turning speed by keeping intersection curb radii as small as possible.
- Minimize crossing distances by squaring off skewed intersections and providing curb extensions, median refuges, and limiting curb radii.
- Install pedestrian countdown signals.
- Develop bike facility intersection treatments on a case by case basis.
- Align lanes so that the number of approach and departure lanes are equal and appropriately opposed to one another; limit the number of approach lanes to as few as necessary.
- Traffic detectors that sense bicycles should be provided for all arterial/arterial, arterial/collector, and collector/collector intersections. Induction loop detectors should be identified by a stencil of a bicycle and the words 'Bicycle Detector' painted on the road surface.
- When loop detectors or other passive traffic detectors are installed, traffic signalization should be set to accommodate bicycle speeds.
- Bicycle-sensitive loop detectors or other passive traffic detectors are preferred over a push-button signal actuator for detecting bicyclists and activating the signal.

Corridor Segments

Design corridors that facilitate safe and effective travel for all users by providing bicycle and pedestrian facilities.

- Locate pedestrian mid-block crossings and waiting areas within motor vehicle operators' sight triangles and provide a reasonable crossing distance.
- Separate cyclists from fast speeds and high volume motor vehicle traffic.
- Prioritize cyclists traveling straight through an intersection over turning drivers.
- Design for the proper context. In urban or suburbanized areas, bike lanes are desirable. In rural areas, a paved shoulder can suffice.
- In areas with on-street parking, bicycle traffic should be accommodated outside the “door zone” by proper placement of shared lane markings or bike lanes and buffers.
- Installation of bike lanes may require establishing and enforcing parking restrictions.
- Roadways with speed limits of 35mph or less are acceptable for sharing between motor vehicles and bicycles, preferably accompanied by shared lane markings, which can be supplemented with signs (“bicycle may use full lane”; “share the road with bicycle”).
- To the extent possible, adjacent roadway links should have similar bicycle accommodations.
- Traffic calming elements such as landscaping, street trees, and narrowing of lanes should be considered where safe and appropriate.
- Lowering speed limits may require implementation of active (such as speed humps) or passive (such as signs and striping) traffic calming devices.

Parking Management

- Don't place parking between the sidewalk and building frontages.
- Limit curb cuts to enhance the pedestrian experience, increase space for on-street parking, buffer street traffic, increase space for landscaping, and reduce pedestrian and vehicle conflicts.
- Promote parking facilities that serve multiple businesses rather than individual stores each with their own parking facility. This reduces inefficiency and increases flexibility.
- Provide well-marked pedestrian pathways with alternate paving and raised crosswalks within large parking lots.

Project Implementation Priorities

A key to Complete Streets implementation is the timely and effective translation of good policy intentions into real world improvements.

The *Central Bergen Bicycle & Pedestrian Plans* identify a variety of improvements that facilitate or support bicycling and walking on a network of roadway corridors that provides access throughout the study area. Most of these improvements are low-cost, low-impact projects that can be implemented with minimal disruption within the existing constraints of traffic and roadway conditions. This pool of projects can be implemented relatively quickly and can be used to “jump start” Complete Streets in Central Bergen County.

The following four types of improvements should be implemented in the short term. These have been selected because they make significant contributions to the completion of pedestrian and bicycle networks in the study area. They are:

1. Conceptual designs developed for each of the municipalities in the Central Bergen County study area
 - Both pedestrian and bicycle
 - Provide geographic equity
 - Represent a variety of project types
2. Recommendations that link low stress “islands”
 - Mainly bicycle
 - Focused on low traffic stress (bicycle) network completion/expansion
3. Recommendations that are in proximity to crash “hotspot” locations
 - Mainly pedestrian
 - Safety oriented
4. Recommendations that reduce a level of traffic stress from a 3 or a 4 to a 1 or a 2
 - Mainly bicycle
 - Focused on low bicycle stress network completion/expansion

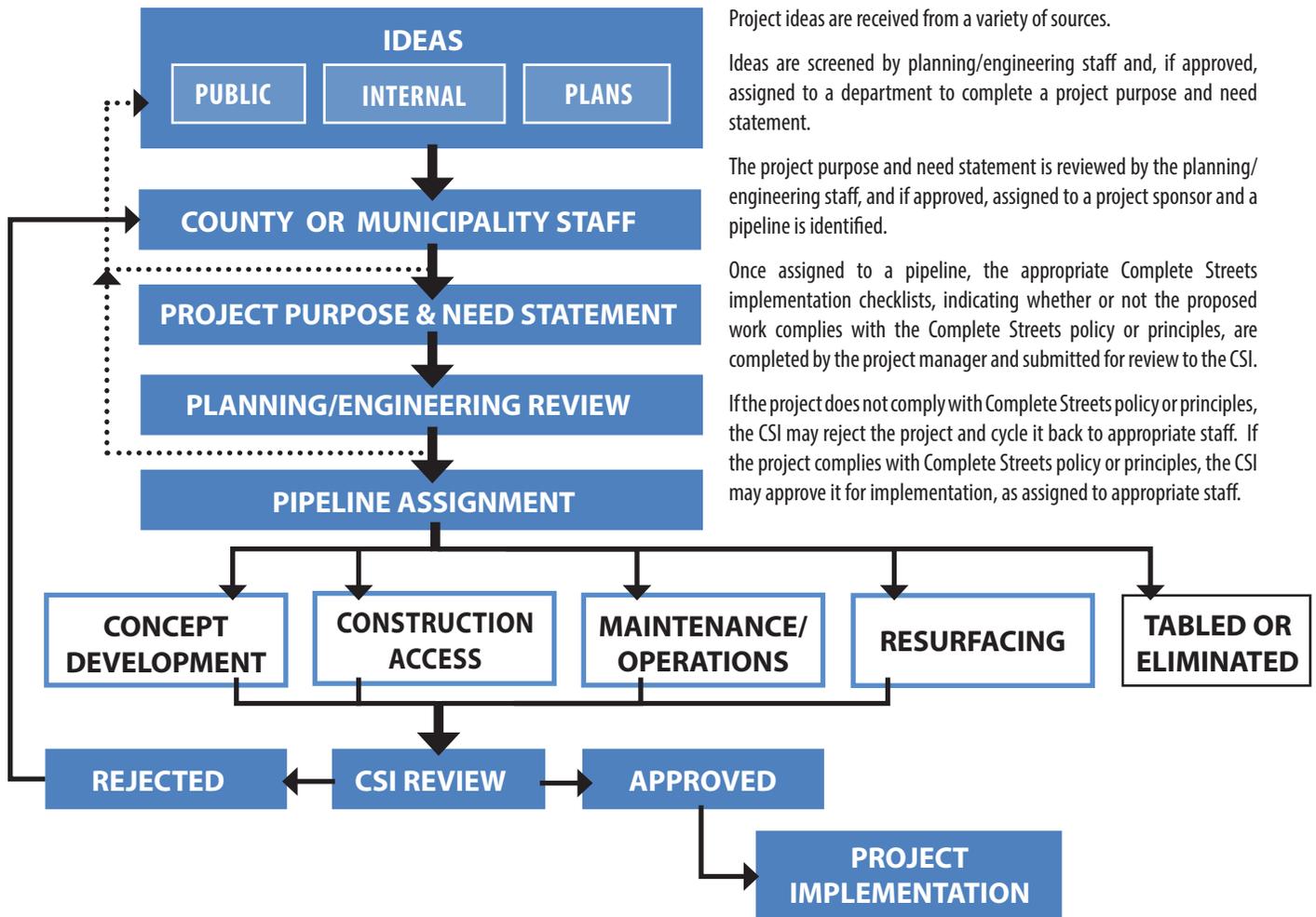
Project Development and Delivery

Ultimately, the successful implementation of the *Central Bergen Bicycle & Pedestrian Plans* is dependent upon continuous consideration of all users of the public rights-of-way. This is a directive to be made at the organizational level that would pervade aspects of decision-making throughout the project development and delivery process. To incorporate such a systemic approach, it is recommended that the County and municipalities consider adopting a formal capital project delivery pipeline process such as that depicted below.

A key component to implement Complete Streets within a capital project delivery pipeline process is to establish a Complete Streets Implementation (CSI) Committee composed of various staff from engineering, planning, maintenance/public works, planning, and health departments, etc. The CSI Committee would safeguard and promote Complete Streets priorities by reviewing projects in their concept development, construction access, and maintenance/operations lifecycles. The CSI Committee would also review resurfacing projects, which often provide an opportunity for incremental Complete Streets improvements.

Components of the capital project delivery pipeline process, such as the project purpose and need statement and Complete Streets implementation checklists, are explained beginning on the following page.

Sample Capital Project Delivery Pipeline Process



Project Purpose and Need Statement

A project purpose and need statement would be completed by an initiator of the proposed project (either internal to the county or municipality, or an external party with a vested interest). The project purpose and need statement describes the proposed project area, existing conditions, local context, the purpose for implementing a change within the project area, and the need for such change. The project purpose and need statement will be reviewed and assigned to the appropriate pipeline of the capital project delivery pipeline process.

Complete Streets Implementation Checklists

Complete Streets implementation calls for use of checklists that pertain to Complete Streets accommodations for all users (e.g. pedestrians, children, elderly, bicyclists, motorist, transit, truck, or freight movement). Complete Streets implementation checklists would assist project managers, designers, and consultants in planning, designing, retrofitting, constructing, maintaining, and resurfacing street and sidewalk projects that are compatible with the Complete Streets policy or principles. Use of the checklists will engage the CSI Committee to ensure that appropriate accommodations are provided as projects advance through the capital project delivery pipeline process. The checklists apply to all projects within public rights-of-way, including roadways and bridges. They are intended to be utilized at the earliest stages of the capital project delivery pipeline process to ensure that Complete Streets principles are routinely incorporated into each project and remain a part of all project decision phases. The Complete Streets implementation checklists are associated with each pipeline and include:

- Complete Streets Concept Development and Design Checklist
- Complete Streets Construction Access Checklist
- Complete Streets Resurfacing Project Checklist
- Complete Streets Maintenance and Operations Checklist

The manager of the project would be responsible for completing the checklist and must work with the designer to ensure that the checklist has been completed prior to advancement of the project through the capital project delivery pipeline process.

The Complete Streets implementation checklists are tools that can be used by managers and designers to ensure that all alternatives considered, including and especially the selected alternative, reflect compliance with the Complete Streets policy or principles. Each item to be addressed in the checklist should be completed, including a brief description documenting how the item is to be considered. Supporting documentation can be appended.

In the absence of a formal capital project delivery pipeline process, the Complete Streets implementation checklists can still work for project managers as an internal review of projects to ensure compliance with the Complete Streets policy or principles. Example checklists begin on the next page.

COMPLETE STREETS CONCEPT DEVELOPMENT AND DESIGN CHECKLIST

This checklist is to be completed by the project manager once the Project Purpose and Needs Statement have been completed and the project has been assigned to Concept Development. For each question, please identify whether the Complete Streets consideration is currently addressed, not addressed, or not applicable and/or provide a description of how the item will be addressed for this proposed project. Attach any necessary documentation to support your answer.

	Concept Development Checklist Consideration	YES	NO	N/A	Comments/ Explanation of How Item is being Addressed
Context	What is the existing roadway cross-section and speed limit?				
	What is the street type (arterial, collector, main street, mixed use, residential, industrial)? What is the AADT?				
	Is the project in a school zone, truck route, historic district, etc.?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Is it a high accident area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Are there particular needs (pedestrian, children, elderly, bicyclists, motorist, transit, truck, or freight movement) in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Are there any planning documents that address bicyclist, pedestrian, transit user, or freight movement facilities within or proximate to the study area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Are there safe and accessible accommodations for bicyclists to travel on, along, and across the current facility?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Are there safe/accessible accommodations for pedestrians (including ADA compliance) to travel on, along, and across the current facility?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Is there transit service (bus, rail, etc.) within the study area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Are there safe and accessible accommodations for transit users on, along, or crossing the current facility?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Proposed Complete Streets Accommodations	What is the proposed roadway cross-section and speed limit?				
	Does the proposed design follow all applicable and current design standards or guidelines, and best practices for bicycle and pedestrian facilities and ADA compatibility?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Is the proposed design compatible with land use and density within the project area, including any special zoning districts?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Does the proposed design accommodate the travel needs of all street users to the major sites, destinations, and trip generators within or proximate to the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Does the proposed design support recommendations from other planning documents related to the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Will bicycle, pedestrian, and transit users be accommodated along the facility? If yes, which of the following facilities will be included?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	<input type="checkbox"/> Accessible sidewalk curb ramps	<input type="checkbox"/> Crosswalks	<input type="checkbox"/> Pedestrian countdown signals	<input type="checkbox"/> Signs	<input type="checkbox"/> Shared lane markings
	<input type="checkbox"/> Curb extensions	<input type="checkbox"/> Pedestrian scale lighting	<input type="checkbox"/> Bike Lanes	<input type="checkbox"/> Bike compatible shoulders	<input type="checkbox"/> Other

Problem Statement

Was a formal Problem Statement prepared? Yes No

Date of Problem Statement: Attached Yes No Not Available.

COMPLETE STREETS CONCEPT DEVELOPMENT SIGN-OFF

Concept Development Checklist Statement of Compliance	YES	NO
The Preliminary Preferred Alternative (PPA) accommodates all users and is consistent with Complete Streets principles.	<input type="checkbox"/>	<input type="checkbox"/>
Note: There should be a "sign off" by whomever filled out the concept development checklist or that person's supervisor. Signature: _____		
<p>If YES, forward to Complete Streets Implementation (CSI) Committee with any supporting documentation for concurrence. If NO, Fill out the appropriate Exemption form(s) and forward checklist, and exemption forms to CSI Committee for review/concurrence.</p>		

CSI Committee Concurrence and Disposition:

Note: The CSI Committee must concur with the Statement of Compliance or, if an exemption is being sought, concur with the exemption before the project can advance to Engineering/Design, or the CSI Committee must determine what additions or changes to the project must be incorporated before the project can advance to Engineering/Design.

Signature: _____ Date: _____

Print Name: _____

Signature: _____ Date: _____

Print Name: _____

Signature: _____ Date: _____

Print Name: _____

COMPLETE STREETS CONSTRUCTION ACCESS CHECKLIST

The purpose of this section is to ensure that project officials maintain adequate access for all users during the construction of each project, which may be done by keeping some facilities open for traffic or by providing clear detour routes. For each question, please identify whether the Complete Streets consideration is currently addressed, not addressed, or not applicable and provide a description of how the item will be addressed. Attach any necessary documentation to support your answer.

	Construction Checklist Consideration	YES	NO	N/A	Comments/Explanation of How the Item will be Addressed
Maintenance of access	During construction, will safe access be maintained for all users, including pedestrians, bicyclists, transit users, and delivery vehicles?	<input type="checkbox"/>	<input type="checkbox"/>		
Detour Routes	Will detour routes for all users on site or nearby be provided and clearly marked, including advanced warning signs?	<input type="checkbox"/>	<input type="checkbox"/>		

CONSTRUCTION PROJECT MANAGER SIGN-OFF

Construction Checklist Statement of Compliance	YES	NO
The Construction Traffic Plan accommodates all users. Signature: _____	<input type="checkbox"/>	<input type="checkbox"/>
If YES , forward to Complete Streets Implementation (CSI) Committee with any supporting documentation for concurrence. If NO , Fill out the appropriate Exemption form(s) and forward checklist, and exemption forms to CSI Committee for review/concurrence		

CSI Committee Concurrence and Disposition:

Note: The CSI Committee must concur with the Statement of Compliance or, if an exemption is being sought, concur with the exemption before the project can advance to Engineering/Design, or the CSI Committee must determine what additions or changes to the project must be included in the "Maintenance of Traffic" plan before construction can proceed.

Signature: _____ Date: _____

Print Name: _____

Signature: _____ Date: _____

Print Name: _____

Signature: _____ Date: _____

Print Name: _____

COMPLETE STREETS RESURFACING PROJECT CHECKLIST

The purpose of this section is to ensure that all resurfacing projects incorporate the intent of the Complete Streets Policy. To be filled out by County DPW.

	Resurfacing Checklist Consideration	YES	NO	N/A	Comments
Context	Are there existing accommodations for bicyclists, pedestrians (including ADA) and transit users traveling on, along or across the existing facility?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Are there planning documents that address bicycle, pedestrian or transit user conditions or needs proximate to the proposed resurfacing area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Does the current facility comply with ADA requirements for non-motorized travel?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Is there a high incidence of bicycle or pedestrian crashes within the project limits?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Have bicycle and pedestrian considerations been identified with the project limits?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Are there existing transit facilities within project limits (stops, stations, etc.)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Are there bicycle racks, shelters, or bike lockers available at existing land uses adjacent to the project?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Are there street trees, planters, buffer strips or other environmental enhancements?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Proposed Bicyclist, Pedestrian & Transit Accommodations	Does the proposed design accommodate bicycle travel along and across the facility?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Does the proposed design accommodate pedestrians travel along and across the facility, including ADA compliance?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Does the proposed design accommodate transit users in coordination with the relevant transit authority?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Does the proposed design include landscaping, street trees, planters, buffer strips, or other environmental enhancements?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	During resurfacing, will safe access be maintained for all users, including pedestrians, bicyclists, transit users, and delivery vehicles?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Does the proposed design worsen any bicycle or pedestrian facility? If yes, why?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Are any of the following pedestrian, bicycle and transit facilities included? If yes, please identify which ones will be included.				
	<input type="checkbox"/> Accessible sidewalk curb ramps	<input type="checkbox"/> Crosswalks	<input type="checkbox"/> Pedestrian Countdown Signals	<input type="checkbox"/> Signs	<input type="checkbox"/> Shared lane markings
<input type="checkbox"/> Curb extensions	<input type="checkbox"/> Pedestrian scale lighting	<input type="checkbox"/> Bike Lanes	<input type="checkbox"/> Bike compatible shoulders	<input type="checkbox"/> Other	

COMPLETE STREETS IMPLEMENTATION COMMITTEE SIGN-OFF

Resurfacing Checklist Statement of Compliance	YES	NO
This resurfacing project accommodates all appropriate users consistent with its context. Signature: _____	<input type="checkbox"/>	<input type="checkbox"/>
If YES , forward to Complete Streets Implementation (CSI) Committee with any supporting documentation for concurrence. If NO , Fill out the appropriate Exemption form(s) and forward checklist, and exemption forms to CSI Committee for review/concurrence.		

CSI Committee Concurrence and Disposition:

Note: The CSI Committee must concur with the Statement of Compliance before the project advances to construction or must agree on what additions or changes need to be incorporated into the project before it can advance to construction.

Signature: _____ **Date:** _____

Print Name: _____

Signature: _____ **Date:** _____

Print Name: _____

Signature: _____ **Date:** _____

Print Name: _____

COMPLETE STREETS MAINTENANCE AND OPERATIONS CHECKLIST

To be completed, and processed at the time of completion of the Maintenance Work Order and prior to the commencement of the work.

	Maintenance and Operations Checklist Consideration	YES	NO	N/A	Description of How the Item will be Addressed (Required)
<i>Pedestrian Accommodations</i>	Are there existing pedestrian accommodations in the vicinity of the work?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Will pedestrian features be adversely affected during the course of maintenance work?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	If yes (above), will accommodation be restored or improved as a result of maintenance activity?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Will pedestrian access be maintained or otherwise provided for during the course of the maintenance work?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<i>Bicycle Accommodations</i>	Are there existing bicycle accommodations in the vicinity of the work?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Will bicycle features be adversely affected during the course of maintenance work?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	If yes (above), will accommodation be restored or improved as a result of the maintenance activity?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Will bicycle access be maintained or otherwise provided for during the course of the maintenance work?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<i>Transit Access Accommodations</i>	Are there existing transit access accommodations in the vicinity of the work?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Will transit access features be adversely affected during the course of maintenance work?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Will transit access be maintained or otherwise provided for during the course of the maintenance work?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

COMPLETE STREETS MAINTENANCE AND OPERATIONS DPW SIGN-OFF

Maintenance and Operations Checklist	YES	NO
Statement of Compliance		
The proposed maintenance work, including providing for maintenance of the traffic (as needed), accommodates all users and is in accordance with Complete Streets principles. Signature: _____	<input type="checkbox"/>	<input type="checkbox"/>
If YES , forward to Complete Streets Implementation (CSI) Committee with any supporting documentation for concurrence. If NO , Fill out the appropriate Exemption form(s) and forward checklist, and exemption forms to CSI Committee for review/concurrence.		

CSI Committee Concurrence and Disposition:

Note: The CSI Committee must concur with the Statement of Compliance before the project is implemented or must agree on what additions or changes to the work must be made before the maintenance work can proceed.

Signature: _____ **Date:** _____

Print Name: _____

Signature: _____ **Date:** _____

Print Name: _____

Signature: _____ **Date:** _____

Print Name: _____

Complete Streets Bicycle Facility Design Selection Guide

The following table presents typical guidelines as a starting point for selecting bicycle facilities. This table can be useful to project managers in early stages of project development to assess bicycle facility options for a particular set of roadway characteristics, in this case, two-way roadways with one travel lane in each direction, and the travel way not including parking areas. Final design selection requires further study of state-of-the-practice standards and guidelines including AASHTO *Guide for the Development of Bicycle Facilities*, Manual on Uniform Traffic Control Devices (MUTCD), and the National Association of City Transportation Officials (NACTO) *Urban Street Design Guide* and *Urban Bikeway Design Guide*. Determining the feasibility of altering or adjusting the available travel way or modifying the posted speed limits may enable different facility options to be considered.

	√	Key Roadway Dimension	√	Posted Speed Limit	√	Traffic Volume (AADT)	
Shared Lane Marking 		n/a	<input type="checkbox"/>	≤35 MPH	<input type="checkbox"/>	<3,000	<input type="checkbox"/> Generally Applicable
		n/a	<input type="checkbox"/>	≤35 MPH	<input type="checkbox"/>	>3,000	<input type="checkbox"/> Possible
		n/a	<input type="checkbox"/>	>35 MPH	<input type="checkbox"/>	n/a	<input type="checkbox"/> Generally Not Applicable
Shared lane markings (SLMs) are appropriate for lower speed, lower volume roads. They are not considered a bicycle-specific facility, but are road markings used to indicate a shared lane environment for bicycles and cars. SLMs alert motorists to the presence and predicted lateral placement of bicyclists in the travel lane, and are likely to appeal to more advanced cyclists that are comfortable riding on most roads. SLMs are best employed as connecting segments among more robust bicycle infrastructure on roads with a speed limit less than 35 MPH and traffic volume less than 3,000 vehicles per day.							
Bike Lane 	<input type="checkbox"/>	>30' travel way	<input type="checkbox"/>	25-30 MPH	<input type="checkbox"/>	>3,000	<input type="checkbox"/> Generally Applicable
	<input type="checkbox"/>	>30' travel way	<input type="checkbox"/>	30-40 MPH	<input type="checkbox"/>	>3,000	<input type="checkbox"/> Possible
	<input type="checkbox"/>	<30' travel way	<input type="checkbox"/>	>40 MPH	<input type="checkbox"/>	<3,000	<input type="checkbox"/> Generally Not Applicable
Bike lanes (BLs) are facilities that designate space for the exclusive use of bicyclists in the roadway. (BLs) are often striped in the roadway adjacent to the travel lane and the curb or parallel parking. The minimum width is 4' when adjacent to a flat area, or 5' when adjacent to a curb, parked car, or other type of vertical barrier. Typically, the minimum conditions for a curbed, two-lane roadway appropriate for BLs are a minimum width of 32' (two 11'-wide travel lanes plus two 5'-wide bicycle lanes) and a speed limit less than 40 miles per hour. BLs are typically not necessary on very low volume roadways, where shared use is typically adequate. BLs offer bicyclists a greater sense of safety than shared lane markings.							
Protected Bike Lane 	<input type="checkbox"/>	≥42' travel way	<input type="checkbox"/>	n/a	<input type="checkbox"/>	>3,000	<input type="checkbox"/> Generally Applicable
	<input type="checkbox"/>	≥38' travel way	<input type="checkbox"/>	n/a	<input type="checkbox"/>	>3,000	<input type="checkbox"/> Possible
	<input type="checkbox"/>	<38' travel way	<input type="checkbox"/>	n/a	<input type="checkbox"/>	<3,000	<input type="checkbox"/> Generally Not Applicable
Protected bike lanes (PBLs) designate space for the exclusive use of bicyclists in the roadway that is physically separated from other travel modes by a painted buffer area or vertical buffer treatment (such as parked cars, planters, or bollards). PBLs require more space than standard bike lanes and are typically 9'-wide in each direction, including a 5' bicycle area and 4' buffer area. Typically, the minimum conditions for a curbed, two-lane roadway appropriate for PBLs are a minimum width of 42' (two 12'-wide travel lanes plus two 9'-wide PBLs). PBLs are appealing to bicyclists of all abilities. When considering PBLs, designers must balance the need for an increased amount of roadway space as compared to other bicycle facilities.							
Shared Use Path 	<input type="checkbox"/>	>25' right-of-way	<input type="checkbox"/>	n/a	<input type="checkbox"/>	n/a	<input type="checkbox"/> Generally Applicable
	<input type="checkbox"/>	≥15' right-of-way	<input type="checkbox"/>	n/a	<input type="checkbox"/>	n/a	<input type="checkbox"/> Possible
	<input type="checkbox"/>	<15' right-of-way	<input type="checkbox"/>	n/a	<input type="checkbox"/>	n/a	<input type="checkbox"/> Generally Not Applicable
Shared use paths create a separated, off-road facility to accommodate travel by bicyclists and pedestrians. Shared use paths may be located adjacent to a roadway within the same right-of-way or be constructed on independent rights-of-way, such as parks or utility corridors. Shared use paths are often a preferred facility type for families, children, or novice bicycle riders.							

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BERGEN NEW JERSEY

County

