

HIGHTSTOWN BOROUGH
MOBILITY MASTER PLAN



HIGHTSTOWN BOROUGH MOBILITY MASTER PLAN

DECEMBER 2020





ACKNOWLEDGMENTS

The project team would like to recognize and express appreciation to the numerous individuals who contributed information, attended a meeting or workshop, sent in a comment, or otherwise participated in the development of the Hightstown Borough Mobility Master Plan through the NJDOT Local Technical Assistance Program.

Special thanks to the **Community Advisory Board** for their time in developing this plan and their on-going commitment to making Hightstown Borough a safe and enjoyable place for walking and bicycling.

PROJECT TEAM

The Office of Bicycle and Pedestrian Programs, New Jersey Department of Transportation & the Borough of Hightstown, Mercer County, New Jersey .



WITH



AND



Disclaimer:

This publication has been financed with federal funds provided by the United State Department of Transportation's Federal Highway Administration as administered by the New Jersey Department of Transportation (NJDOT). The United States Government assumes no liability for its contents or its use thereof.

Cover Photos: Stokes Creative Group, Inc.



COMMUNITY ADVISORY BOARD HIGHTSTOWN BOROUGH

Bev Asselstine
COMPLETE STREETS COMMITTEE/PLANNING BOARD

Joe Balcewicz
PLANNING BOARD (BIKE COMMITTEE)

George Chin
CONSTRUCTION OFFICE

Joe Cicalese
COMPLETE STREETS COMMITTEE/COUNCIL

Brian Clissold
COMPLETE STREETS COMMITTEE / WEST WINDSOR
BICYCLE AND PEDESTRIAN ALLIANCE

Alex Costantino
COMPLETE STREETS COMMITTEE

Frank Gendron
POLICE DEPARTMENT

Geetanjali Jain
HEALTH DEPARTMENT

Stacey Judge
PARKS AND RECREATION COMMISSION / SPRINGPOINT
MEADOW LAKES

Keith LePrevost
HIGHTSTOWN HOUSING AUTHORITY

Ken Lewis,
DEPARTMENT OF PUBLIC WORKS

Steve Misura,
COUNCIL/COMPLETE STREETS COMMITTEE

Lawrence D. Quattrone
HIGHTSTOWN MAYOR

Carmela Roberts,
BOROUGH ENGINEER

Jill Swanson,
HEALTH DEPARTMENT

Debra Sopronyi,
BOROUGH ADMINISTRATOR

Tim Troxler,
COMPLETE STREETS COMMITTEE

Dave Zaiser,

COMPLETE STREETS COMMITTEE/ENVIRONMENTAL COMMISSION

Van Delfino,
BICYCLE RACK

Jerry Foster,
GREATER MERCER TMA/WEST WINDSOR BICYCLE &
PEDESTRIAN ALLIANCE

Christina Fowler,
DOWNTOWN HIGHTSTOWN / COUNCIL-ELECT

Leslie Koppel,
RISE, COMMUNITY ACTION AGENCY

Matt Lawson,
MERCER COUNTY PLANNING DEPARTMENT

Diane McKernan,
DOWNTOWN HIGHTSTOWN

Allison Park,
PEDDIE SCHOOL

Bill Riviere,
OFFICE OF BICYCLE AND PEDESTRIAN PROGRAMS,
NJDOT

Walter Schmidlin,
EAST WINDSOR TOWNSHIP

Paul Todd,
EAST WINDSOR REGIONAL SCHOOL DISTRICT/BOARD OF
EDUCATION, HIGHTSTOWN BOROUGH

Jim Truslow,
PEDDIE SCHOOL

Matt Zochowski,
MERCER COUNTY PLANNING DEPARTMENT





TABLE OF CONTENTS

EXECUTIVE SUMMARY	VII
INTRODUCTION	1
Overview	2
Why Plan for Walking and Bicycling?.....	3
Vision & Goals	4
Plan Organization.....	4
EXISTING CONDITIONS & EVALUATION	5
Overview.....	6
Pedestrian & Bicycle Infrastructure	14
Key Destinations.....	20
Crash Analysis.....	22
Related Plans & Studies.....	30
Field Investigation	34
Summary of Findings.....	35
OUTREACH SUMMARY	49
Overview.....	50
Community Advisory Board.....	50
Wikimapping	54
Community Survey.....	58
Visioning Workshop.....	61
Public Information Center	64
RECOMMENDATIONS.....	67
Overview.....	68
Proposed Bicycle & Pedestrian Network.....	68
Engineering Recommendations.....	70
Priority Corridors	72
Priority Intersections	85
Programmatic Recommendations	95



DESIGN GUIDELINES.....	101
Overview	102
Corridor/Roadway Improvements.....	103
Intersection Improvements	105
Bicycle Network Improvements.....	110
 IMPLEMENTATION & FUNDING	 113
Overview.....	114
Maintenance	114
Implementation Matrix.....	115
Funding Sources	121
 NEXT STEPS.....	 129
Next Steps.....	130
 APPENDICES.....	 131
Appendix A: Outreach Materials	
Appendix B: Typical Unit Costs Matrix	
 MAPS	
Map 1: Study Area.....	7
Map 2: Roadway Network.....	11
Map 3: Land Use	12
Map 4: Transit Network.....	13
Map 5: Road & Sidewalk Capital Improvements	15
Map 6: Existing Parks & Greenways.....	16
Map 7: East Windsor Bicycle and Pedestrian circulation plan	17
Map 8: Mercer County Bikeway Analysis	19
Map 9: Key Destinations Map.....	21
Map 10: Crash Heat Map (2014-2018).....	22
Map 11: Total Crashes (2014-2018).....	23
Map 12: Pedestrian & Bicyclist Crashes (2014-2018)	27
Map 13: NJ 33 Bicycle and Pedestrian Crashes (2014-2018).....	29
Map 14: Wikimapping - Barriers/Unsafe Routes.....	56
Map 15: Wikimapping - Current/Desired Routes	57
Map 16: Proposed Bicycle and Pedestrian network	69
Map 17: Priority Corridors	73
Map 18: Priority Intersections.....	85

TABLES

Table 1: Crashes by Severity (2014-2018).....	22
Table 2: Crashes by Crash Type (2014-2018)	24
Table 3: Crashes by Road System type (2014-2018)	25
Table 4: Top 10 High Crash Corridors	26
Table 5: Top 10 High Crash Intersections	26
Table 6: Crashes by Median Type (2014-2018)	26
Table 7: Pedestrian and Bicycle Crashes (2014-2018)	28
Table 8: Wikimapping Comments By Category	54

FIGURES

Figure 1: Mobility Plan Timeline (Revised).....	2
Figure 2: Hightstown Demographics (Source: US Census 2017 ACS 5-year estimates)	9
Figure 3: Overall Crashes (2014-2018).....	22
Figure 4: Crashes by Light Condition (2014-2018)	24
Figure 5: Crashes by Month (2014-2018)	25
Figure 6: Respondent’s Connection to Hightstown	58
Figure 7: Age of Survey Respondents.....	58
Figure 8: Reasons for Walking And Bicycling.....	59
Figure 9: Why Do You Walk or Bicycle?	59
Figure 10: Barriers to Walking and Bicycling	60
Figure 11: Respondents Travel Mode	60
Figure 12: Desired improvements	60
Figure 13: Virtual Visioning Workshop Statistics.....	61
Figure 14: Vision & Goals Survey Results	62
Figure 15: NJDOT Complete Streets Design Guide: Bicycle Facility guidance table.....	70
Figure 16: Pedestrian Improvement Recommendation Matrix.....	71
Figure 17: Potential Funding Sources Matrix	122

Note:

This plan was developed during a time where direct contact with the community was not feasible. The project team utilized creative tools to engage the community throughout the development. The project team provided online access to videos, mapping tool and other outreach mechanisms. Paper copies were provided to engage communities that would otherwise have difficulty accessing the online tools. Event exhibits and materials were placed in high-visibility locations such as parks, Borough Hall and downtown.



EXECUTIVE SUMMARY





OVERVIEW

In 2019, the Borough of Hightstown was selected to participate in the New Jersey Department of Transportation’s Office of Bicycle and Pedestrian Programs Local Technical Assistance Program. The goal of the program is to foster the development of active transportation in communities throughout New Jersey by providing technical assistance and professional services to municipalities. This plan builds upon past efforts within the Borough to create an integrated and connected multi-modal transportation network that provides safe and accessible bicycle and walking facilities for people of all ages and abilities. To achieve the vision of a safe, accessible and complete transportation network, the plan will:

- Develop and build consensus for a Community Vision for bicycling and walking in Hightstown
- Evaluate the Borough’s bicycle and pedestrian network, identify needs and opportunities focusing on access to key destinations and the central business district
- Identify a Priority Bicycle and Pedestrian Network, including both on- and off-road opportunities
- Develop typical improvement Concepts, focused on major linkages to the central business district and travel along and across State Route 33 and major county roads



In 2014, the Borough adopted a Complete Streets Policy to further support the development of safe streets for everyone. This plan incorporates the recently completed Mercer County Bicycle Plan recommendations for Hightstown and hopes to complement that plan.

The recommendations in this plan are developed at the planning level and per the most current design standards. Advancing these recommendations will require detailed analysis, community consensus, plan development, preliminary and final design and right-of-way assessment.

VISION & GOALS

A vision statement and goals were developed for the Hightstown Mobility Master Plan. They were developed through a community-wide outreach effort. The vision for the Hightstown Mobility Master Plan is below:

Hightstown Borough is a community with a multi-modal network for all users that provides safe choices for walking, bicycling, public transit, and recreation. The Borough has a complete sidewalk and bicycle network to access key destinations within the Borough such as the downtown, schools, parks/ greenways and commercial areas and has a robust network of trails for local and regional connectivity.



GOALS

Goals help identify what needs to be accomplished to realize the overall vision. Four goals were identified by the community for the Mobility Master Plan:



SAFETY

Develop a safe and continuous bicycle and pedestrian network



ACCESSIBILITY

Improve access and mobility for people of all ages and abilities to connect to local destinations



RECREATION

Provide recreation options to encourage walking and bicycling in Hightstown Borough



REGIONAL CONNECTIVITY

Improve connectivity to/with adjacent communities

PLAN ORGANIZATION

This report is organized into seven chapters as follows:

Chapter 1: Introduction

Chapter 2: Existing Conditions & Evaluation

Chapter 3: Outreach Summary

Chapter 4: Recommendations

Chapter 5: Design Guidelines

Chapter 6: Implementation & Funding

Chapter 7: Next Steps

STUDY AREA

Hightstown Borough is a 2.1 square mile municipality located in eastern Mercer County, New Jersey. The community was settled in the mid-1700's and underwent a period of sustained growth and prosperity during the 19th century as a vital transportation hub along the Camden and Amboy Railroad. Hightstown is home to many historic homes and properties from this era that contribute to the character of the community.

Hightstown boasts of a well-connected and lively downtown central business district with a number of local businesses, restaurants, and attractions centered around Peddie Lake.





COMMUNITY ADVISORY BOARD

The Community Advisory Board guided the project team throughout the development of this plan. The project team facilitated two community advisory board meetings including the kick-off meeting, and a network and concepts review meeting. The Community Advisory Board members are listed on page iii of this plan.



- Community Advisory Board Kick-Off Meeting
- Visioning Workshop (virtual)
- Vision and Goals Survey
- Wikimapping
- Community Survey (Online and paper)
- Concept Review Community Advisory Board Meeting (virtual)
- Public Information Center (virtual)

The input from the community helped develop the plan and was supplemented by the existing conditions analysis and evaluation. Due to the COVID-19 pandemic, the project team employed innovative methods to engage the public including a “Virtual Visioning Workshop” that provided opportunities for the community to participate virtually and provided in-person opportunities with safety protocols to those unable to participate virtually.

The project team presented draft concepts and a draft network to the Community Advisory Board that were refined based on input received. The preliminary concepts were presented to the public at a “Virtual” Public Information Center.

COMMUNITY OUTREACH

The project team developed a multi-prong approach to involve the community in developing the plan. To engage the public, the project team developed project flyers and outreach tools/materials that were posted on the Borough’s Complete Streets Committee webpage.

The following outreach tools were utilized and two public meetings and two community advisory board meetings were conducted throughout the project:

PUBLIC MEETINGS



VIRTUAL VISIONING WORKSHOP

175
PEOPLE LOADED/
WATCHED VIDEO

NUMBER OF
UNIQUE USERS: 110
DURING A SINGLE DAY





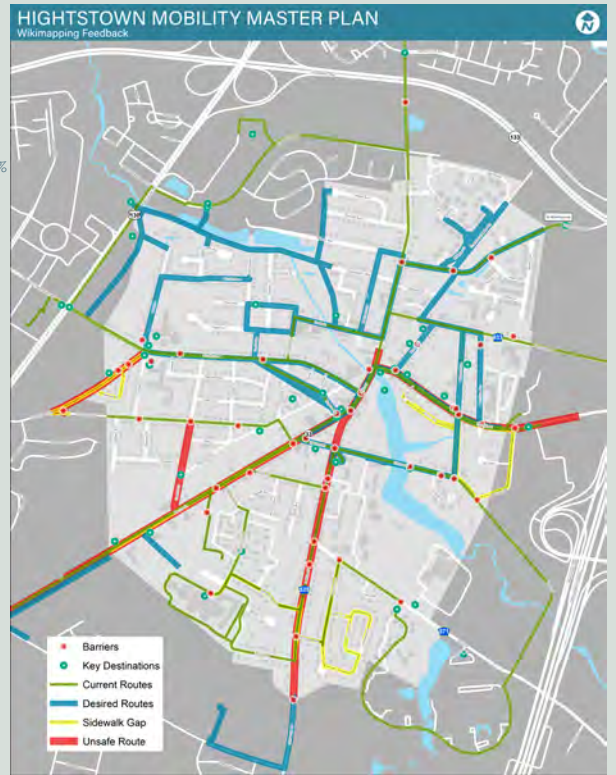
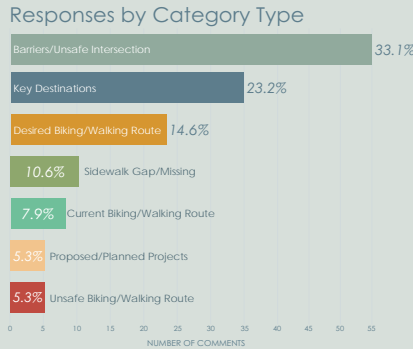
COMMUNITY OUTREACH SUMMARY

WIKIMAPPING



Total Number of Comments:
151

Number of Barriers identified:
49



KEY TAKEAWAYS

The majority of the current walking/biking routes identified are located in the southern portion of the borough whereas, most "Desired Routes" are in the north with a fair amount within the downtown area. Routes marked as "Unsafe" were primarily located in the southern portion of the borough most notably RT 33 (Mercer Street), CR-539 (South Main Street), Dutch Neck Road, and Summit Street.

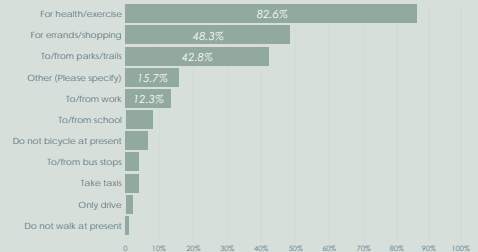


COMMUNITY SURVEY

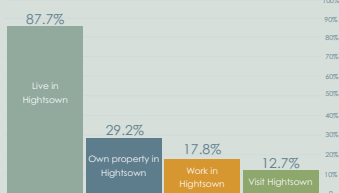
236 TOTAL RESPONSES
INCLUDING 50 SPANISH LANGUAGE RESPONSES

DO YOU WALK OR BIKE IN HIGHTOWN?
 ONLY WALK - 44.9%
 YES, BOTH - 43.6%
 ONLY DRIVE - 3.8%
 TAKE TAXIS - 3.4%
 ONLY BICYCLE - 3.0%
 NO - 1.3%

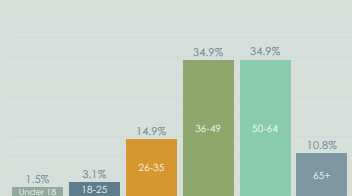
Why do you walk or bicycle?



Respondent's Connection to Hightstown



Age of Survey Respondents



50% WALK OR BICYCLE DAILY DURING WARM WEATHER



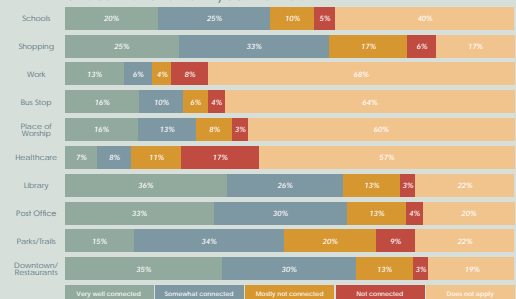
TOP-5 DESIRED IMPROVEMENTS

1. Safe pedestrian crossings
2. Continuous sidewalk network
3. On-road bicycle facilities
4. Off-road/protected bicycle facilities
5. Curb extensions (or other traffic calming measures) to slow vehicular traffic

TOP-5 BARRIERS TO WALKING/BICYCLING

1. Incomplete sidewalk network
2. Streets feel unsafe for cycling
3. Lack of crosswalks and crossings feel unsafe
4. Lack of adequate bicycle facilities
5. Road surfaces are poor

How connected/walkable/bikeable are the following types of destinations from your home?





EXISTING CONDITIONS AND EVALUATION

The project team conducted an assessment of the existing conditions which included a demographic profile of Hightstown, existing bicycle and pedestrian environment, crash data analysis, a list of key destinations, review of related plans and studies, field visits and a summary of findings.

Based on the results of the data collection efforts, field visits, and stakeholder input, the project team identified initial focus areas (corridors and intersections) to be analyzed. The Complete Streets Committee provided feedback on the initial focus areas and recommended priority corridors and intersections for this plan.

PRIORITY CORRIDORS

Bicycle facility recommendations for the priority corridors were identified based on the available roadway width, speed, and traffic volume data. These will require additional design and analysis prior to implementation. Improvements along key county roadways identified by the Mercer County Bicycle Plan were incorporated into the overall bicycle and pedestrian network.

The bicycle improvements identified for the priority corridors include shared lane markings, bicycle lanes (striped and buffered), advisory bicycle lanes and shared use paths.

The following priority corridors were evaluated further and the project team developed recommendations to improve the bicycle and pedestrian environment for all users:

- NJ Route 33 / Mercer Street / Franklin Street
- Summit Street
- East and West Ward Street
- Bank Street

PRIORITY INTERSECTIONS

The intersection improvements shown on the following pages provide planning level concepts that will require additional design and analysis prior to implementation. The improvements focus primarily on low-cost and easy to implement strategies. In locations where improvements are expensive and are longer term, an alternate low-cost option has been provided.

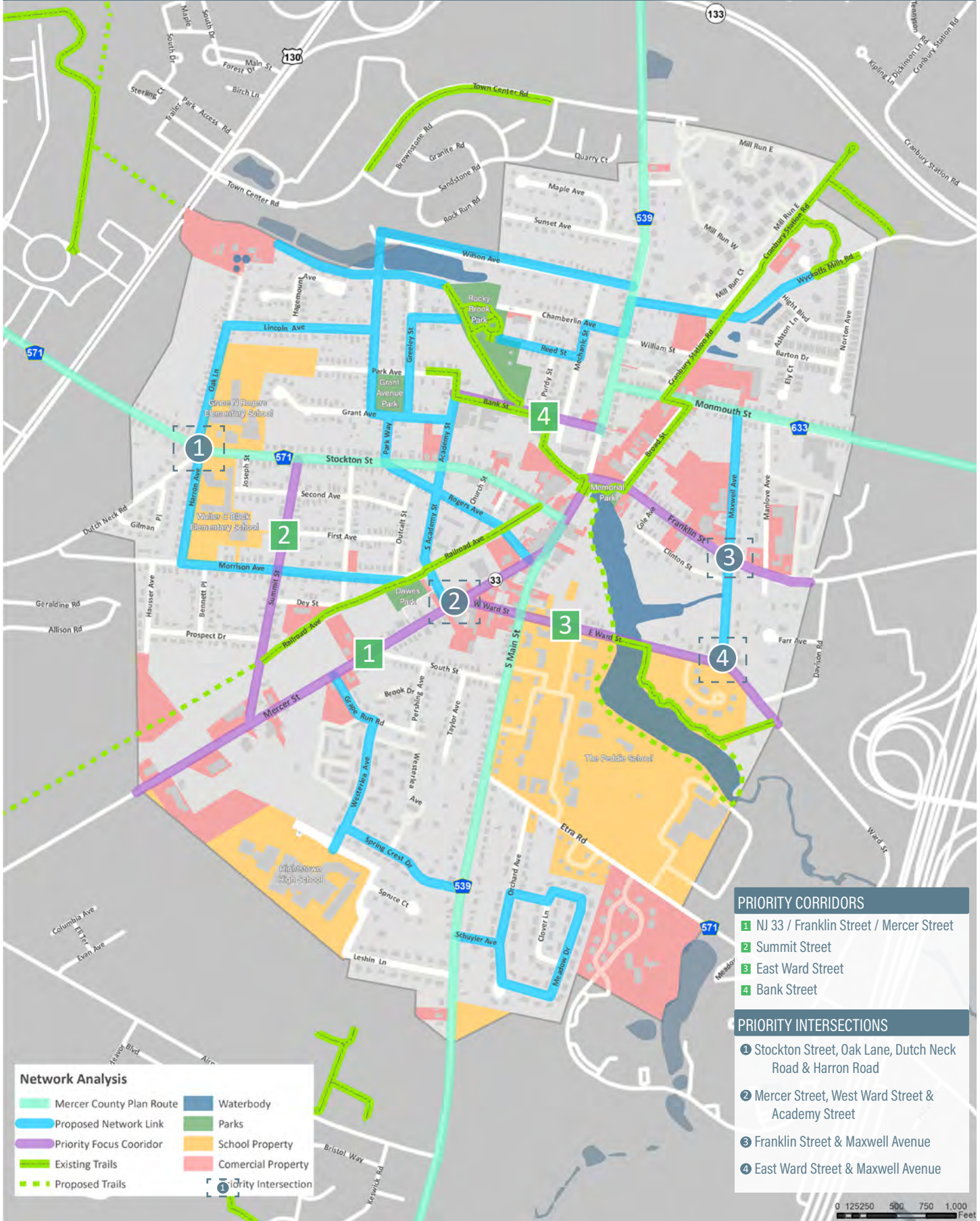
The following intersections were prioritized because they link key destinations, have multiple crashes, were identified during field investigation, and prioritized based on the stakeholder input from the WikiMap, community survey and the Complete Streets Committee.

- NJ Route 33/Mercer Street, West Ward Street & S. Academy Street
- NJ 33/Franklin Street and Maxwell Avenue
- Maxwell Avenue and East Ward Street
- Stockton Street, Oak Lane, Dutch Neck Road, Harron Avenue near the elementary schools

RECOMMENDATIONS

Based on the latest design guidance from NJDOT, National Association of City Transportation Officials (NACTO) and Federal Highway Administration (FHWA), the team developed concept level recommendations for each of the priority corridors and intersections to improve the walking and bicycling environment. The recommendations primarily focus on routes and intersections that connect key bicycle and pedestrian destinations. A borough-wide bicycle and pedestrian network was also identified, for future consideration outside of this Mobility Master Plan effort, that will build on the existing (and planned) network of greenways and trails with additional network links along key routes (See Map 16: Proposed Bicycle and Pedestrian Network).

PROPOSED BICYCLE AND PEDESTRIAN NETWORK MAP



Network Analysis

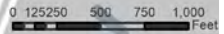
- Mercer County Plan Route
- Proposed Network Link
- Priority Focus Corridor
- Existing Trails
- - - Proposed Trails
- Waterbody
- Parks
- School Property
- Commercial Property
- 1 Priority Intersection

PRIORITY CORRIDORS

- 1 NJ 33 / Franklin Street / Mercer Street
- 2 Summit Street
- 3 East Ward Street
- 4 Bank Street

PRIORITY INTERSECTIONS

- 1 Stockton Street, Oak Lane, Dutch Neck Road & Harron Road
- 2 Mercer Street, West Ward Street & Academy Street
- 3 Franklin Street & Maxwell Avenue
- 4 East Ward Street & Maxwell Avenue





The recommendations are categorized into engineering recommendations or physical infrastructure improvements and programmatic recommendations that include the four “E”s (Education, Evaluation/Planning, Encouragement and Enforcement) measures recommended for the Mobility Master Plan. When implemented together, these measures will improve the travel for users of all ages and abilities in the Borough.

Engineering recommendations include built environment concepts that can be considered for future final design and construction to enhance and expand the existing Hightstown infrastructure.

Programmatic recommendations include strategies that aim to educate all users, foster a safe walking and bicycling culture and measure progress related to the bicycling and walking environment. The programmatic recommendations include educational programs, speeding campaigns, training programs, bicycling programs and events, evaluation metrics and policies.

PROPOSED BICYCLE & PEDESTRIAN NETWORK

The compact size of Hightstown makes it an excellent candidate for bicycling and walking to key destinations within the Borough. There already exists off-road greenway/paths in the Borough and there are several planned/existing bicycle improvements on County Roads per the recently completed Bicycle Master Plan. This network of greenway/paths and the recent County Road improvements provides opportunity to develop a borough-wide network that provides bicycle and pedestrian access to the key destinations in the Borough.

Based on the team’s analysis of existing roadway network and the DVRPC’s Bicycle Level of Stress analysis, the project team identified additional links that could provide a complete bicycle and pedestrian network within and around the Borough. (See Proposed Bicycle and Pedestrian Network Map).

DESIGN GUIDANCE

The report also includes design guidelines from the latest guidance from the NJDOT Complete Streets Design Guide. The recommendations of this plan are supplemented by a set of design guidelines containing descriptions and illustrations of all the recommended design treatments. All facilities that are developed need to be MUTCD and AASHTO compliant. In addition, all recommendations should incorporate the guidance and recommended treatments in the 2020 Mercer County Bicycle Plan. Design Guidance is developed for the following improvements:

ROADWAY / CORRIDOR IMPROVEMENTS

Sidewalks and Curb Ramps

Pedestrian-Scale Lighting

Parklets

Mid-Block Crossings

Gateways

INTERSECTION IMPROVEMENTS

Crosswalks

Mini-Traffic Circles

Curb Extensions

Pedestrian Refuge Islands

RRFB (Flashing warning lights)

In-Street Crossing Sign

HAWK Signals

Pedestrian Countdown Signals

BICYCLE NETWORK IMPROVEMENTS

Shared Lanes

Traditional Bicycle Lanes

Protected Bicycle Lanes

Shared Use Paths

Advisory Bicycle Lanes



IMPLEMENTATION MATRIX

An implementation matrix that describes the overall level of effort, estimated costs, responsibility and time-frame for the priority intersection concepts was developed for the Mobility Master Plan. The implementation table should be utilized in conjunction with the Typical Units Costs Matrix (Appendix B), which includes an average unit cost for facility types.

FUNDING SOURCES

The plan also includes a general compilation of funding sources that have been, or could be used to fund improvements in Hightstown Borough. The list is not exhaustive, but identifies a selection of federal, state, and private/non-profit funding sources for pedestrian and bicycle planning, project development, and construction. For each source, links are provided to program websites that contain additional information related to: how to apply for funding, typical grant amounts, application deadlines, and eligible activities. Some funding sources may also be used to fund programmatic activities, related to safety, enforcement, and education.

NEXT STEPS

The recommendations in this plan include engineering, education, evaluation, encouragement and enforcement strategies to improve the walking and bicycling conditions in the Borough. The Borough should first focus on the priority corridors and intersections in conjunction with NJDOT and Mercer County, then work towards the rest of the recommended network and any other locations throughout the Borough.

The following actions can be undertaken to implement the recommendations of this plan:

- ✓ *Adopt the plan as an element of the Master Plan*
- ✓ *Develop initial concepts of the recommendations in the plan based on more detailed data collection, analysis, survey, community preference and coordination with Mercer County and NJDOT where needed. Consider conducting “pilot” projects / temporary installations to test recommendations and gather community feedback*
- ✓ *Obtain funding for the recommendations*
- ✓ *Adopt the latest Complete & Green Street Model policy*
- ✓ *Develop and adopt a community-focused traffic calming policy*
- ✓ *Advance recommendations on state roadways in this plan as problem statements prepared in coordination with NJDOT and DVRPC*
- ✓ *Provide a status update to NJDOT within a year of adoption of the plan*



INTENTIONALLY LEFT BLANK



Chapter 1: INTRODUCTION



OVERVIEW

In 2019, the Borough of Hightstown was selected to participate in the New Jersey Department of Transportation’s Office of Bicycle and Pedestrian Programs Local Technical Assistance Program. The goal of the program is to foster the development of active transportation in communities throughout New Jersey by providing technical assistance and professional services to municipalities. This project builds upon past efforts within the Borough to create an integrated and connected multi-modal transportation network that provides safe and accessible bicycle and walking facilities for people of all ages and abilities. To achieve the vision of a safe, accessible and complete transportation network, the plan will:

- Develop and build consensus for a Community Vision for bicycling and walking in Hightstown
- Evaluate the Borough’s bicycle and pedestrian network, identify needs and opportunities focusing on access to key destinations and the central business district
- Identify a Priority Bicycle and Pedestrian Network, including both on- and off-road opportunities
- Develop typical improvement Concepts, focused on major linkages to the central business district and travel along and across State Route 33 and major county roads

This plan aims to build on the efforts by the Complete Streets Committee in improving conditions for non-motorized travel throughout the Borough. In 2014, the Borough adopted a Complete Streets Policy to further support the development of safe streets for everyone. This plan incorporates the recently completed Mercer County Bicycle Plan recommendations for Hightstown and hopes to complement that plan.

The recommendations in this plan are developed at the planning level and per the most current design standards. Advancing these recommendations will require detailed analysis, community consensus, plan development, preliminary and final design and right-of-way assessment.

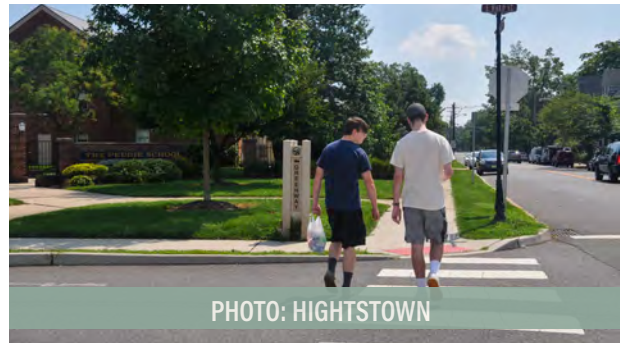


FIGURE 1: MOBILITY PLAN TIMELINE (REVISED)





WHY PLAN FOR WALKING AND BICYCLING?

Walking and bicycling are the most fundamental modes of travel for everyone. Providing safe walking and bicycling conditions allows users of all abilities irrespective of income level or ethnicity to access key destinations from employment to recreation. Complete Streets are designed keeping in mind the needs of users of all ages and abilities. This plan is developed to follow the Complete Streets philosophy and much of the design guidance is based on NJDOT Complete Streets Design Guide.

The recently completed “Complete & Green Streets For All”, Model Complete Streets Policy and Guide by New Jersey Department of Transportation defines Complete Streets as “ a means to provide a comprehensive, integrated, connected multi-modal network of transportation options through planning, design, construction, maintenance, and operation of new and retrofit transportation facilities along the entire right-of-way for all users of all ages and abilities. “All users” include pedestrians, bicyclists, persons with disabilities, motorists, movers of commercial goods, and transit vehicle users”.

It is a recommendation of this plan that Hightstown Borough adopt this new Complete Streets Model Policy that includes equity and Green Streets elements and includes best practices and project checklists that help implement Complete Streets projects.





VISION & GOALS

A vision statement and goals were developed for the Hightstown Mobility Master Plan. They were developed through a community-wide outreach effort.

VISION FOR THE HIGHTSTOWN BOROUGH MOBILITY MASTER PLAN

Hightstown Borough is a community with a multi-modal network for all users that provides safe choices for walking, bicycling, public transit, and recreation. The Borough has a complete sidewalk and bicycle network to access key destinations within the Borough such as the downtown, schools, parks/ greenways and commercial areas and has a robust network of trails for local and regional connectivity.

The vision statement is intended to guide the community throughout the process of developing and implementing the Mobility Master Plan.

GOALS

Goals help identify what needs to be accomplished to realize the overall vision. Four goals were identified by the community for the Mobility Master Plan:



SAFETY

Develop a safe and continuous bicycle and pedestrian network



ACCESSIBILITY

Improve access and mobility for people of all ages and abilities to connect to local destinations



RECREATION

Provide recreation options to encourage walking and bicycling in Hightstown Borough



REGIONAL CONNECTIVITY

Improve connectivity to/with adjacent communities

PLAN ORGANIZATION

This report is organized into seven chapters as follows:

Chapter 1: Introduction

Chapter 2: Existing Conditions & Evaluation

Chapter 3: Outreach Summary

Chapter 4: Recommendations

Chapter 5: Design Guidelines

Chapter 6: Implementation & Funding

Chapter 7: Next Steps



Chapter 2: EXISTING CONDITIONS & EVALUATION





OVERVIEW

This section includes the existing conditions analysis and evaluation conducted by the project team. It includes a demographic profile of Hightstown, existing bicycle and pedestrian environment, crash data analysis, a list of key destinations, review of related plans and studies and a summary of findings.

SETTING & CONTEXT

STUDY AREA

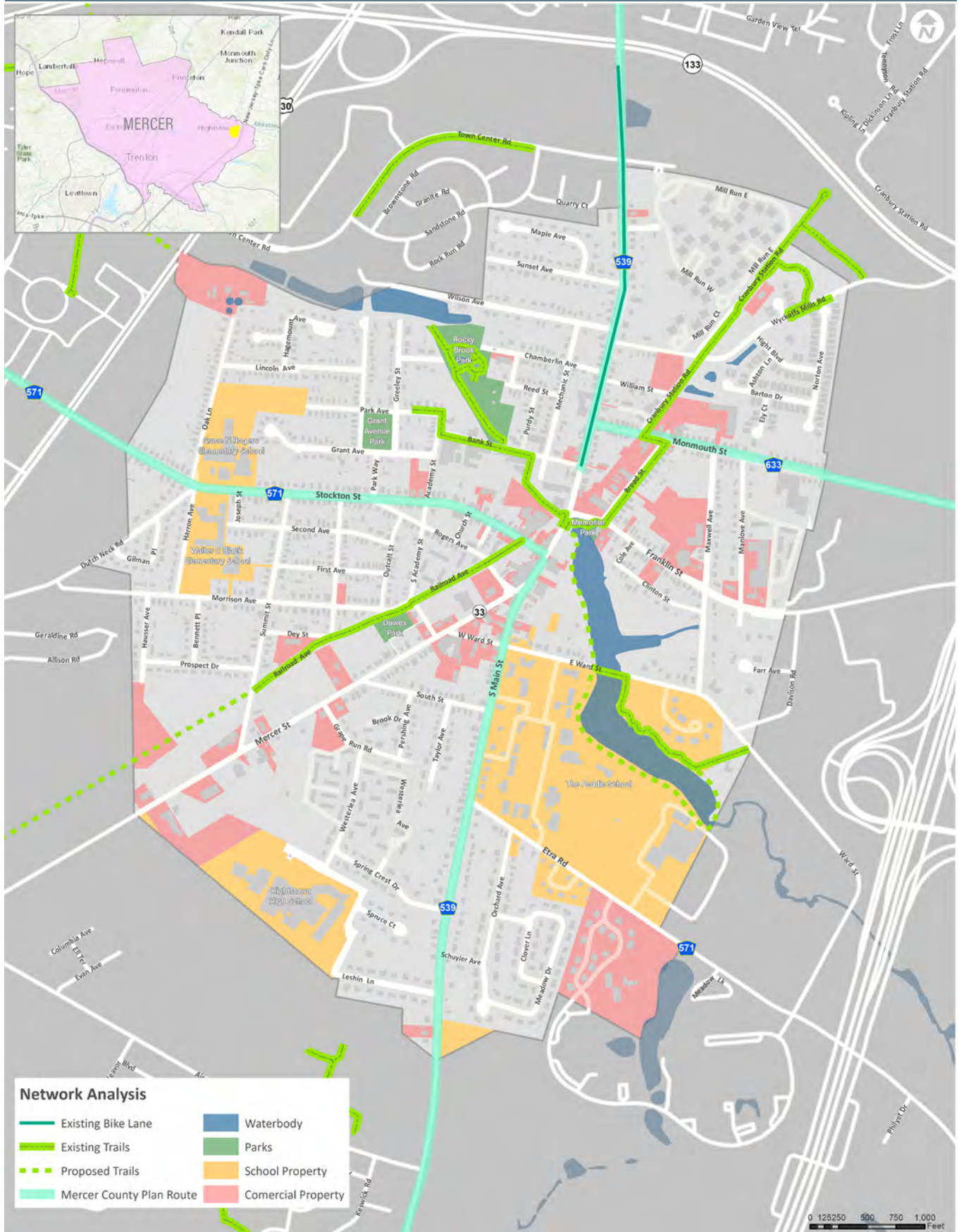
Hightstown Borough is a 2.1 square mile municipality located in eastern Mercer County, New Jersey. The community was settled in the mid-1700's and underwent a period of sustained growth and prosperity during the 19th century as a vital transportation hub along the Camden and Amboy Railroad. Hightstown is home to many historic homes and properties from this era that contribute to the character of the community.

Hightstown boasts of a well-connected and lively downtown central business district with a number of local businesses, restaurants, and attractions centered around Peddie Lake.





MAP 1: STUDY AREA





COMMUNITY PROFILE

Population Trends

According to US Census American Community Survey (ACS) 5-Year Estimates¹, the Borough of Hightstown had a total population of 5,527 comprised of 2,037 households in 2017. Over the past 5 years the total population has remained relatively consistent with only minor fluctuations from year to year. While there has been little change in overall numbers, there has been a shift in the composition of the population in terms of age distribution that indicates the borough is home to an aging population. In 2017, the median age for all residents was 36.8 which represented a 3-year increase from the prior year (33.8). Furthermore, the borough has seen a steady rise in population 65 years and older over the past five years, from 597 in 2013 to 950 in 2017. Of the 65+ population, over 67% have some sort of disability, which is slightly higher than the Mercer County figure of 65.5%.

Race & Diversity

The Borough of Hightstown is home to a culturally diverse population, particularly in terms of its concentration of Hispanic or Latino residents. Based on 2017 ACS 5-Year estimates, roughly 36% of the population can be categorized as Hispanic or Latino descent and Spanish is the primary language spoken at home for over 30% of residents. This substantial number of Spanish speaking residents is important to consider in terms of potential language barriers in order to maximize outreach efforts and the effectiveness of the mobility master plan. Furthermore, nearly 29% of Hightstown residents are foreign-born, around 6% higher than both Mercer County and New Jersey, with median age of 39 (two years older than the general population at large).

Travel Patterns

The average commute time in Hightstown was roughly 23 minutes according to 2017 ACS data, lower than the New Jersey average of 31.5 minutes. Furthermore, approximately 64% of residents drive alone to work. The number of households with no access to a vehicle (approximately 8%) was higher than both Mercer County (5.2%) and the state (6.4%). The means of travel to work provides an interesting snapshot of the borough as Hightstown is on par with the county and state in terms of walking and bicycling but well behind when it comes to public transit. The reverse is true of the category “Taxicab, motorcycle, or other” where Hightstown’s 14.3% is well above both the county (1.4%) and state (1.5%). This data confirms the anecdotes about the frequent use of taxis to commute to high school and other parts of Hightstown that are not safe to access via walking or bicycling.

Economic Characteristics

Overall, the median household income for Hightstown (\$72,973) was below both the county and state figures. In 2017, the Borough had an overall poverty rate of 11.4% with a higher rate of families living below poverty level (11.5%) versus the county (8.2%) and state (7.9%). The unemployment rate for the borough (roughly 6%) was lower than the county (7.5%) and state (7.0%) with “Retail Trade” representing the most common industry, followed closely by “Manufacturing”. The median value for property within the borough was \$274,200 with roughly 59% of residents owning versus renting.

¹ The American Community Survey (ACS) is an ongoing survey that provides vital information on a yearly basis. The ACS provides a sample dataset at 3- and 5-year intervals that can be used to highlight trends at various levels throughout the nation.

HIGHTSTOWN DEMOGRAPHICS

US CENSUS 2017 ACS 5-YEAR ESTIMATES

POPULATION TRENDS

TOTAL POPULATION

2017 **5,527**

HOUSEHOLDS

2017 **2,037**

MEDIAN AGE

2017 **36.8**

2016 **33.8**

2015 **35.2**

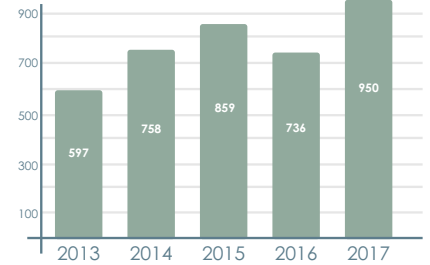
RESIDENT DISABILITY STATUS (2017)

Population Under 18	Total Population	Population Over 65
1.3%	8.2%	67.4%
Mercer Co: 4.5%	Mercer Co: 10.3%	Mercer Co: 65.5%
New Jersey: 5.2%	New Jersey: 10.5%	New Jersey: 68.0%

Age (2017)

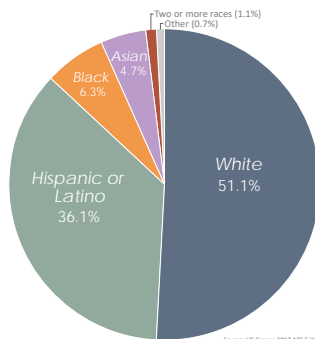
Under 5	8.6%
5 to 14	9.2%
15 to 24	9.4%
25 to 44	33.5%
45 to 64	22.1%
65 and over	17.2%

Population 65+ (2013-2017)

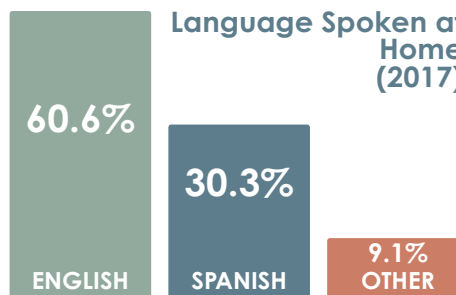


RACE & DIVERSITY

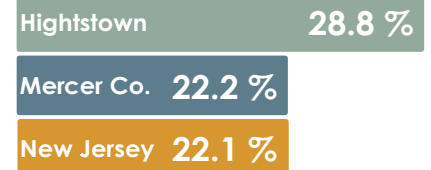
POPULATION BY RACE AND ETHNICITY (2017)



Language Spoken at Home (2017)

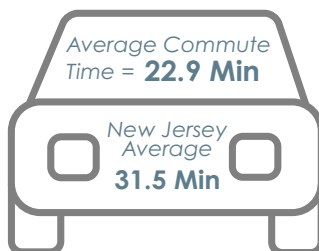


FOREIGN-BORN POPULATION



FOREIGN-BORN MEDIAN AGE **39.1**

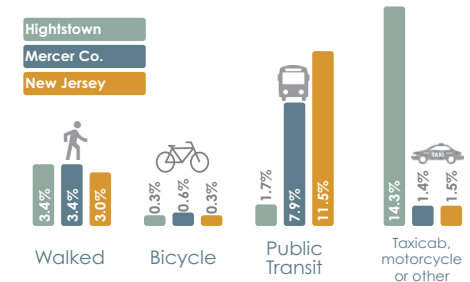
TRAVEL PATTERNS



Vehicle Availability by Household

	Zero	One	Two or more
Hightstown	7.9%	30.7%	61.4%
Mercer Co.	5.2%	21.9%	72.9%
New Jersey	6.4%	22.3%	71.3%

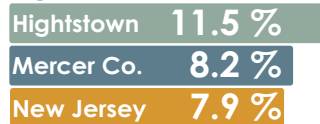
Means of Travel to Work (2017)



64.3% OF RESIDENTS DRIVE TO WORK ALONE

ECONOMIC CHARACTERISTICS

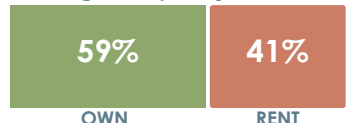
FAMILIES BELOW POVERTY LEVEL



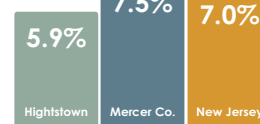
MEDIAN HOUSEHOLD INCOME **\$72,973**

Mercer County: \$77,027
New Jersey: \$76,475

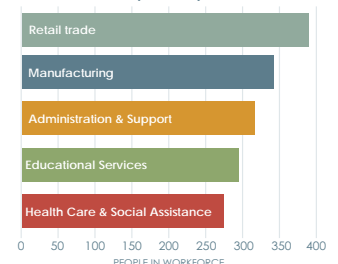
Housing Occupancy (2017)



UNEMPLOYMENT RATE



Top 5 Most Common Industries (2017)



MEDIAN PROPERTY VALUE **\$274,200**

POVERTY RATE **11.4%**

FIGURE 2: HIGHTSTOWN DEMOGRAPHICS (SOURCE: US CENSUS 2017 ACS 5-YEAR ESTIMATES)



ROADWAY NETWORK

The Borough is bordered by two major roadways with the New Jersey Turnpike (US-95) to the east and US RT 130 to the west. Exit 8 off of the Turnpike is particularly heavily utilized leading to substantial traffic volumes on and off the turnpike. Much of the traffic volume is in the form of commuters passing through Hightstown resulting in increased congestion on local roads within the Borough.

In addition, the borough is bisected by County Routes 571, 539, and 633 and State Route 33. Anecdotal reports from the Borough point to large volumes of truck traffic on many of these routes as well as reports of high-speed vehicular traffic beyond the posted 25 MPH speed limit.

While Hightstown’s centralized hub location can prove advantageous in many respects, the increased traffic volumes and truck traffic can often bisect existing biking and walking routes leading to precarious crossings and uncomfortable conditions for bicyclists and pedestrians alike.

LAND USE

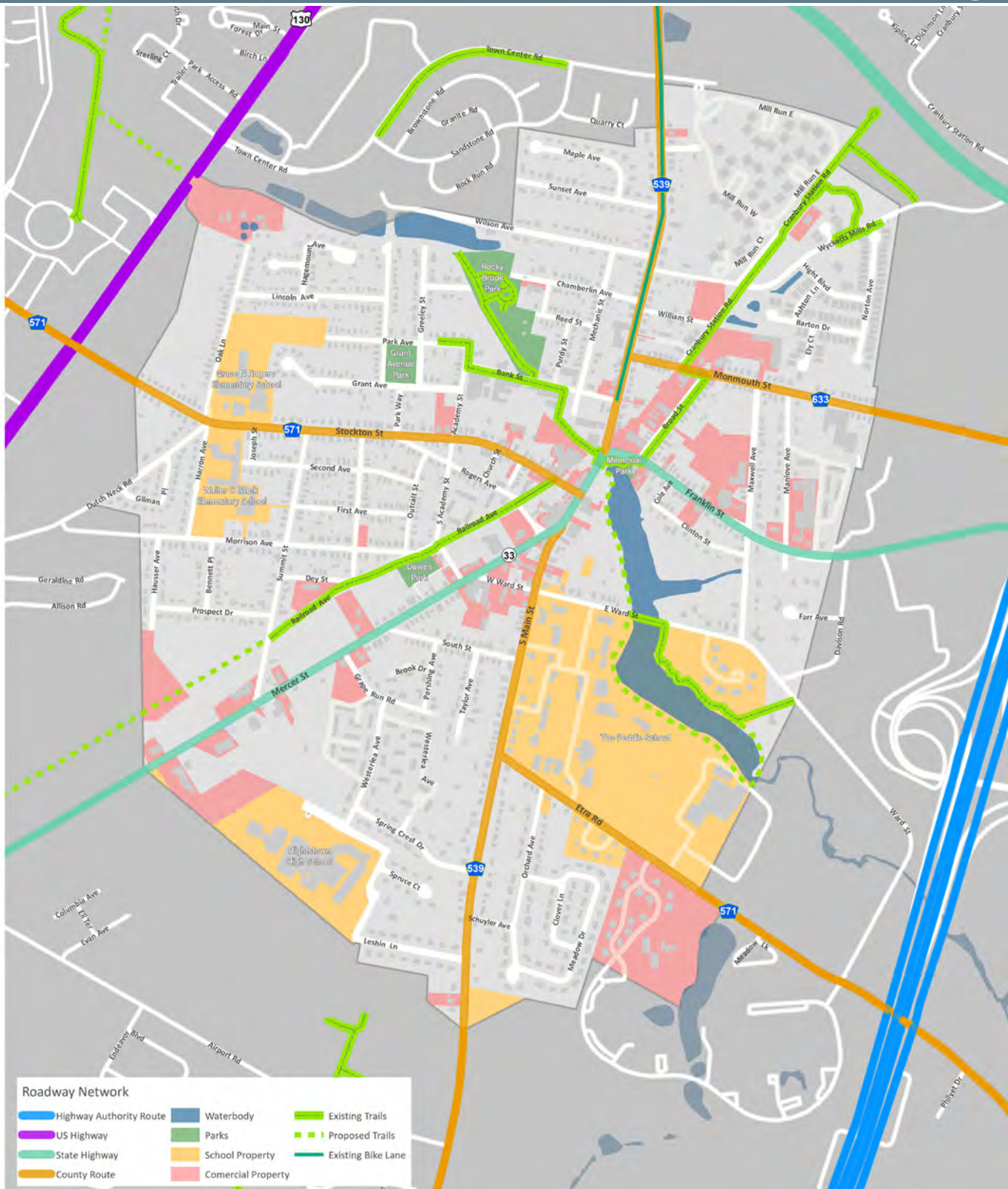
In terms of land use, much of Hightstown is currently made up of single family residential housing. The Borough also contains stretches of commercial development, specifically in the downtown area and along Mercer Street (Route 33). The borough has three of the six schools that make up the East Windsor Regional School District (Walter C. Black Elementary and Grace N. Rogers Elementary, and Hightstown High School). Although all three schools are within walking distance from all points of the Borough, pedestrian (and bicycle) access is hampered by a variety of existing conditions including lack of sidewalks/crossings and high traffic speeds.

Hightstown is also home to the Peddie School, a private coeducational boarding school comprised of 57 buildings on a 280-acre campus in the southeast corner of the borough. The school has an enrollment of approximately 550 students (9th-12th grade) as well as additional faculty who primarily live on the campus full time creating a subset population within the borough with unique walking and pedestrian needs.



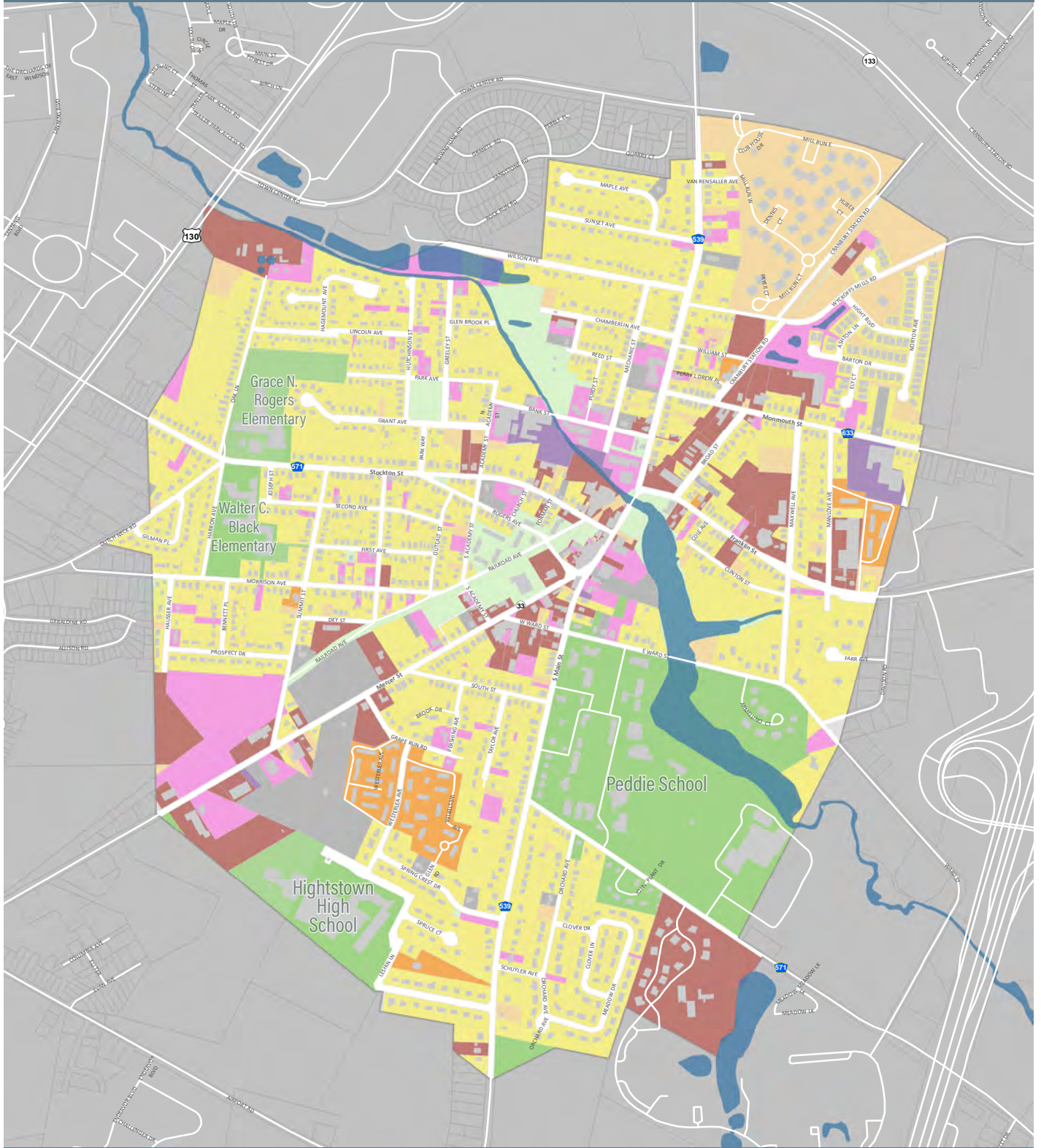


MAP 2: ROADWAY NETWORK



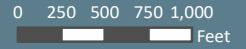


MAP 3: LAND USE



Land Use Classification

- | | | | |
|----------------------------|-----------------|-----------------|--------------|
| Vacant Land | Commercial | Public Property | Other Exempt |
| Residential, Single Family | Industrial | Farm | No Data |
| Residential, High Density | School Property | Railroad | |



4/2/2020





TRANSIT

The Borough of Hightstown is not directly served by NJTRANSIT rail service with the closest station being Princeton Junction (approximately 7 miles northwest of the borough).

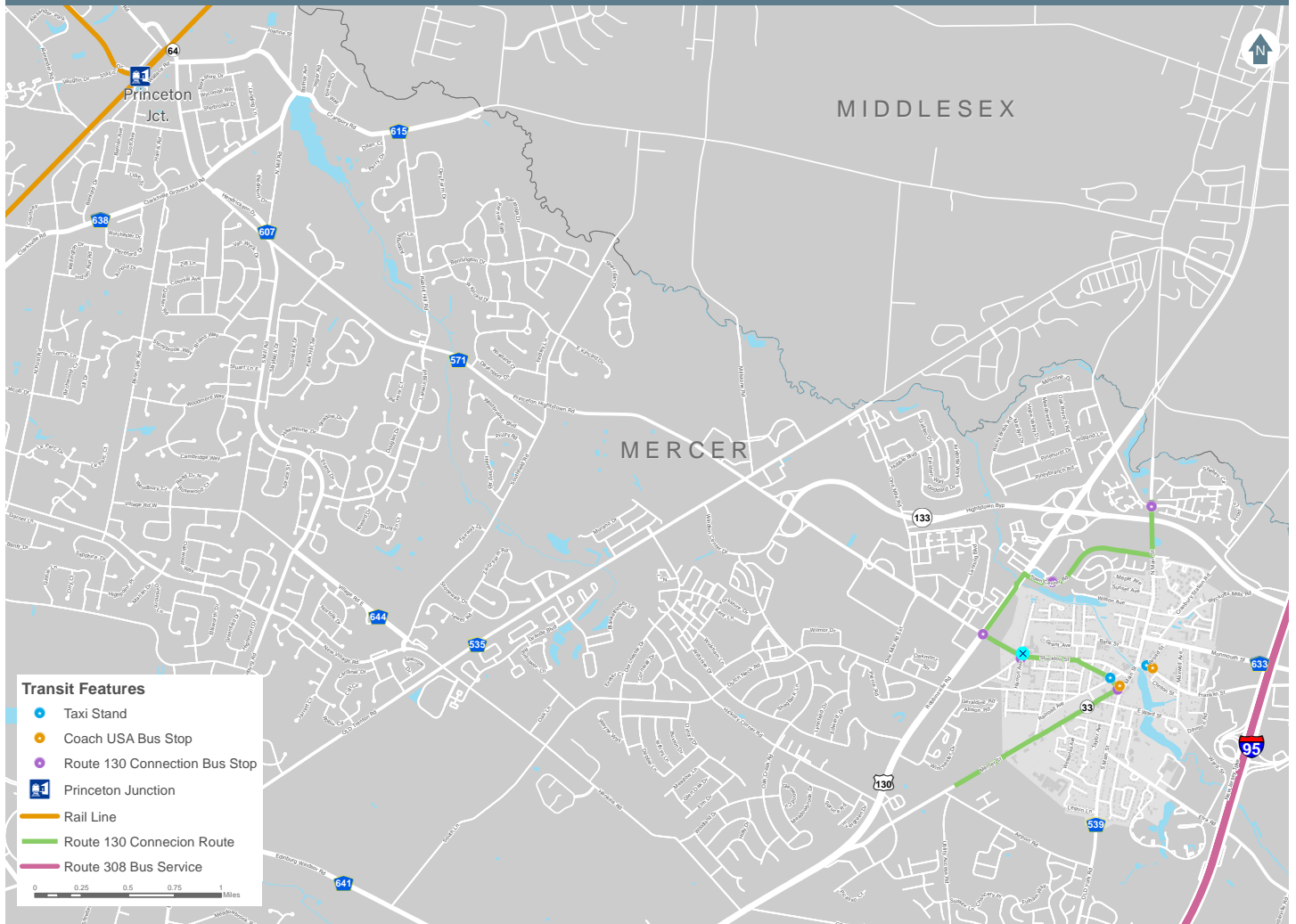
Coach USA (300 Line, 8-A Line) bus service operates along Route 571 and Route 33 with service to New York City (Port Authority and Wall Street).

Michael’s Transportation, a local private transit provider, operates within the borough and provides local commuting service to multiple locations throughout Hightstown. Mercer County Community College also operates a shuttle service between the campus and Town Center Plaza (East Windsor).

The borough is also served by private taxi service for local trips and other locations within Mercer County. The service operates out of three taxi stands locations at the intersections of:

1. Rogers Avenue west of Mercer Street
2. Broad Street/Franklin Street
3. Oak Lane/Herron Avenue/Stockton Street

MAP 4: TRANSIT NETWORK





PEDESTRIAN & BICYCLE INFRASTRUCTURE

The walking and bicycling environment along the major corridors and near key destinations in Hightstown was evaluated during a field visit, a windshield survey, and a desktop review.

SIDEWALKS

The sidewalk network in Hightstown is fairly complete along the major roadways and in and around the downtown. There are some sidewalk gaps around the High School (Springcrest Drive), NJ 33, CR 539/S Main Street, East Ward Street, Maxwell Avenue and other roadways. The Borough is actively completing the sidewalk network including sidewalk along segments of the roads listed above and others included in the Capital Improvement Plan (See Map 5 - Location Map). It is important to note that not all streets need sidewalks at all locations. Low volume, low speed residential streets are appropriate for pedestrians and cyclists without the need for sidewalks.

CROSSWALKS AND CURB RAMPS

Many intersections have continental crosswalks along the major roadways. The majority of the intersections with sidewalks have curb ramps.

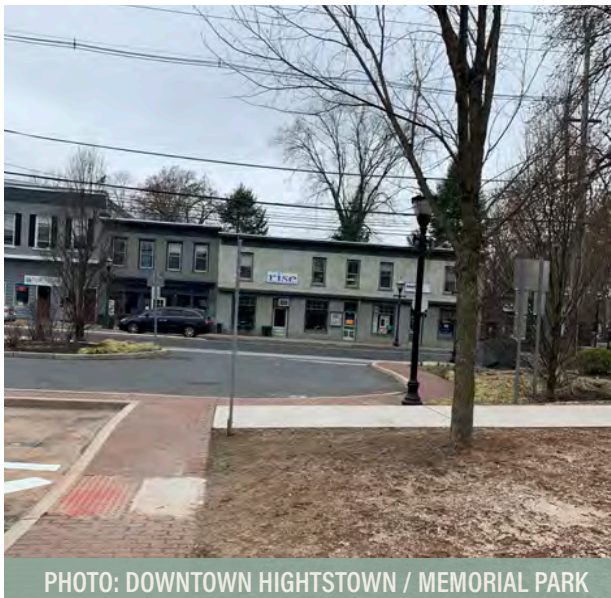


PHOTO: DOWNTOWN HIGHTSTOWN / MEMORIAL PARK

PATHS & GREENWAYS

There are several multi-use paths and greenways in the Borough that provide off-road access for pedestrians and bicyclists. The paths and trails around Rocky Brook, the abandoned Camden and Amboy Railroad right-of-way, around Peddie Lake are part of the Roger G. Cook Greenway in Hightstown.

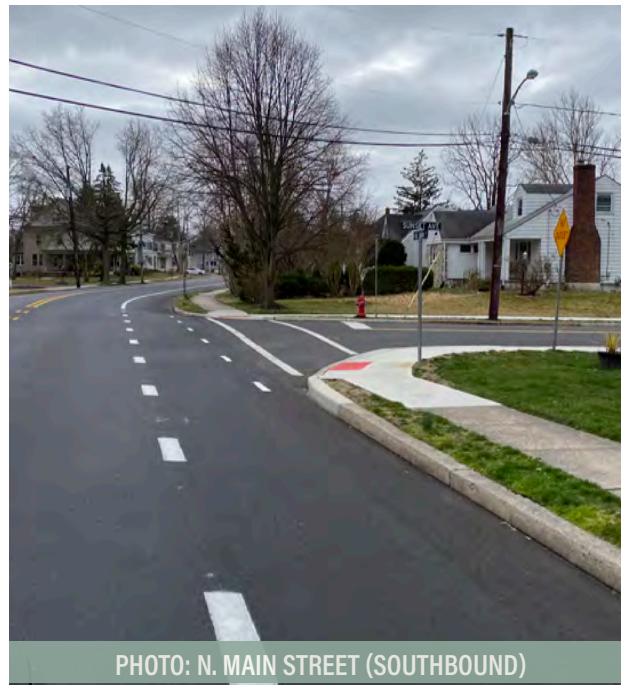
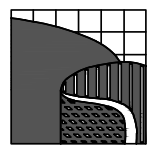
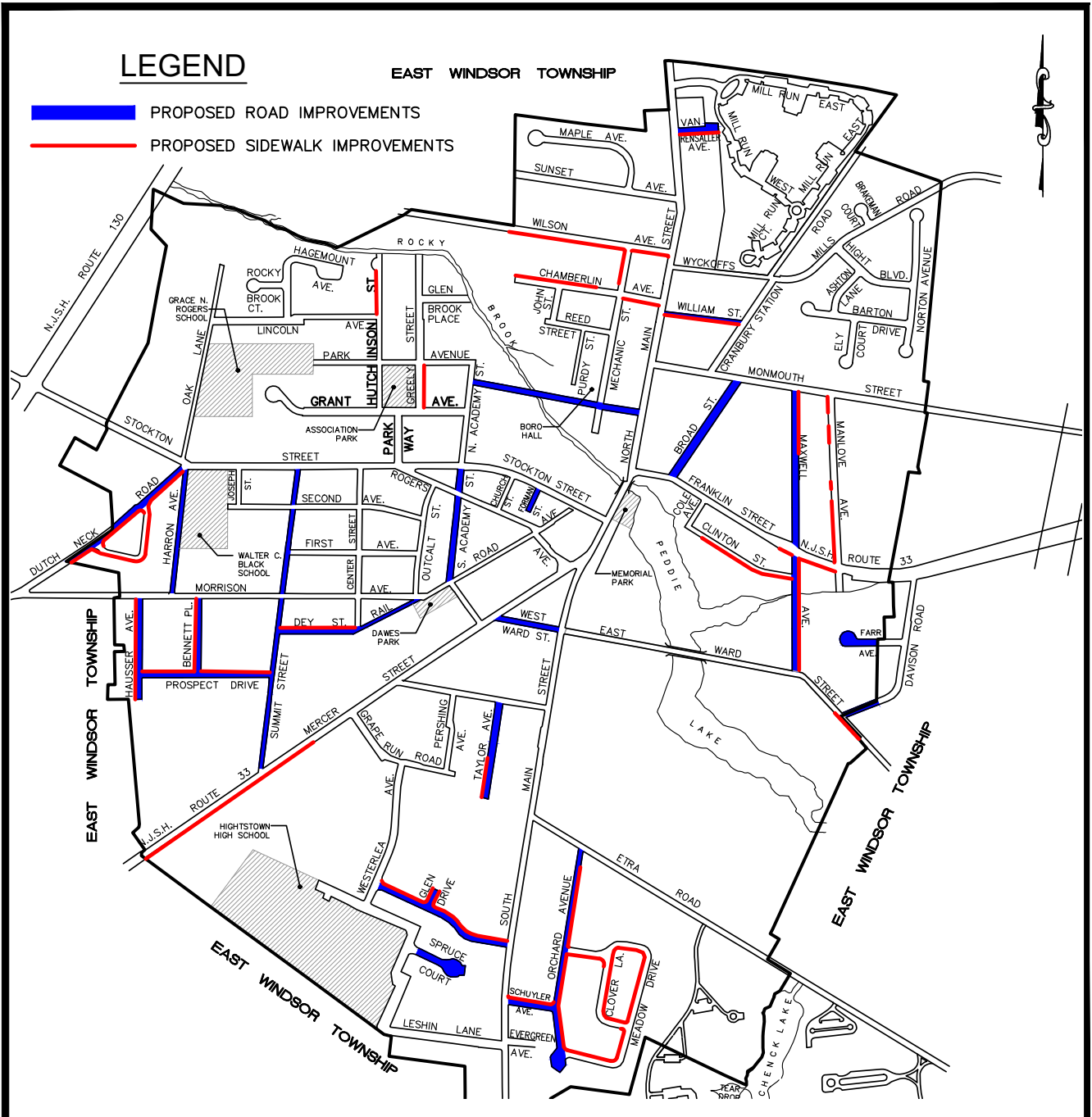


PHOTO: N. MAIN STREET (SOUTHBOUND)

The Roger G. Cook Greenway includes a cinder path along Dawes Park and Railroad Avenue, extending between Summit Street and Rogers Avenue. There are wooden gates that block motor vehicles from accessing the path. There are signs, benches, and interpretive signs along the path. The Roger G. Cook Greenway along Rocky Brook, Cranbury Station Road, around Peddie Lake and along the abandoned railroad right-of-way are important assets and provide safe opportunities for bicycle and pedestrian travel. Portions of the Roger G. Cook Greenway are on sidewalks and some off-road segments have an inconsistent surface treatment, especially around Rocky Brook and Peddie Lake.



MAP 5: ROAD & SIDEWALK CAPITAL IMPROVEMENTS



Roberts
ENGINEERING GROUP LLC
Women Business Enterprise Certified

CERTIFICATE OF AUTHORIZATION: 24GA28159100
1670 Whitehorse-Hamilton Square Rd.
Hamilton, New Jersey 08690
609-586-1141 Fax 609-586-1143
www.RobertsEngineeringGroup.com

LOCATION PLAN

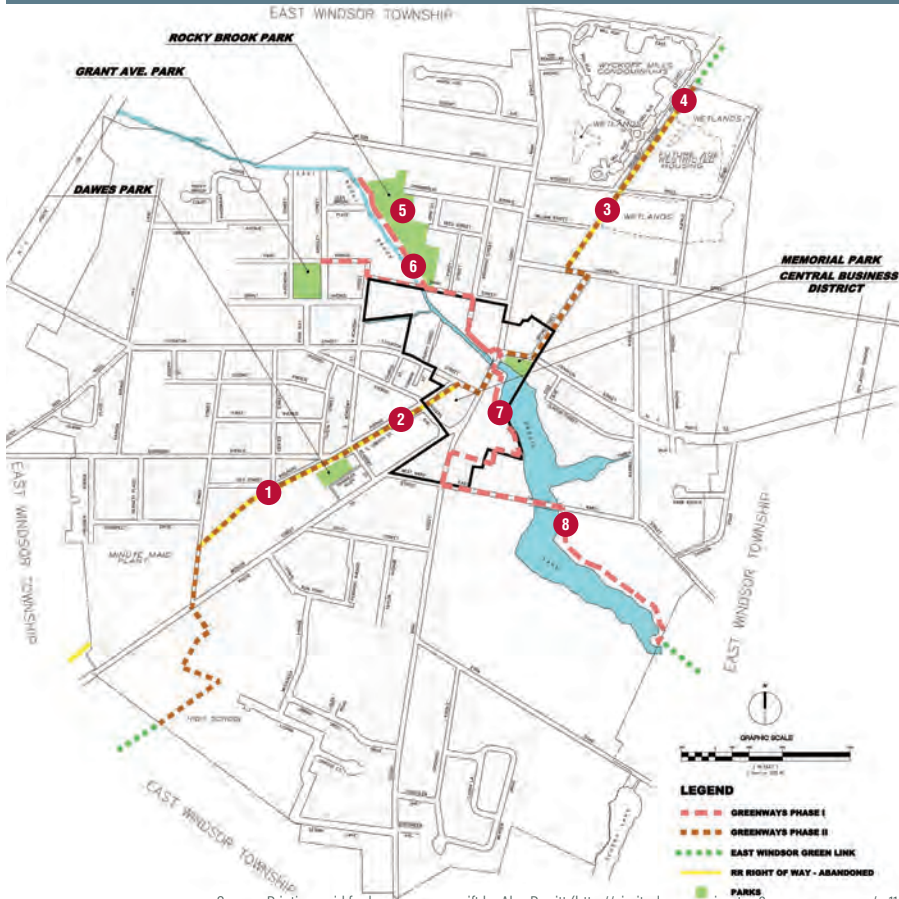
ROAD AND SIDEWALK
CAPITAL IMPROVEMENTS
BOROUGH OF HIGHTSTOWN
MERCER COUNTY, NEW JERSEY

SCALE: N.T.S.

DWG. No: H1606
DATE: 1/28/2020



MAP 6: EXISTING PARKS & GREENWAYS



Source: Printing paid for by a generous gift by Alex Perritt (<http://sj-site-legacy-migrate.s3.amazonaws.com/ml104120.pdf>)

Roger G. Cook Greenway Map



HIGHTSTOWN GREENWAY WALKING BRIDGE

A recently-built bridge across Peddie Lake in downtown Hightstown provides access across the Peddie Lake Dam. It was built to replace a 100 year old structure that had become unsafe and was designed to celebrate the history of Memorial Park.

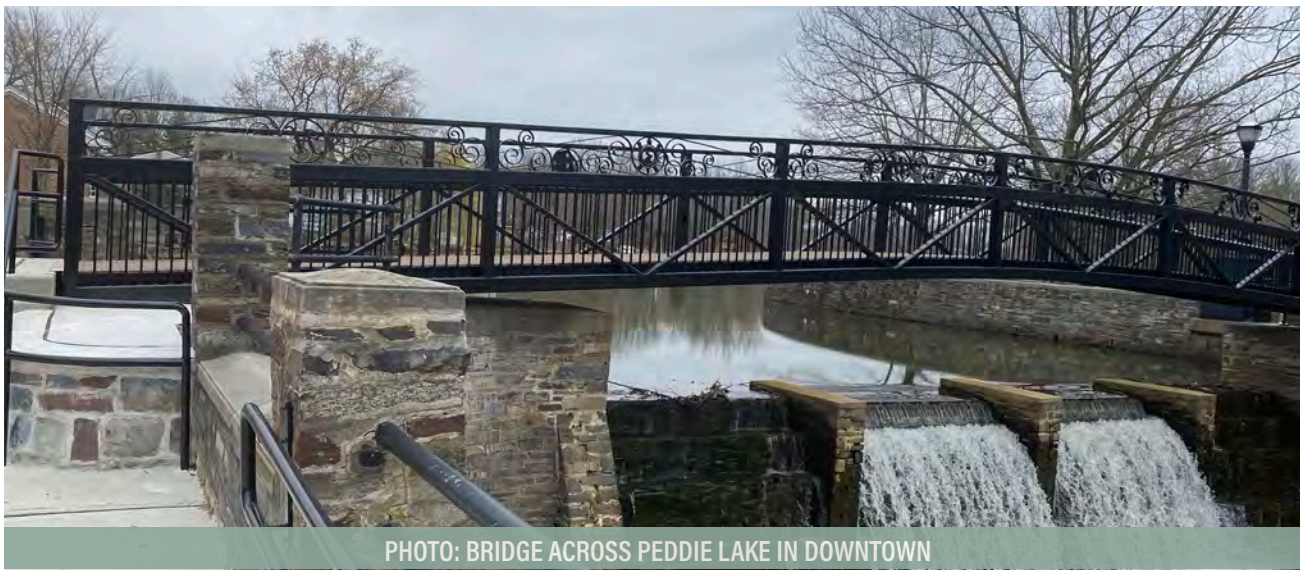


PHOTO: BRIDGE ACROSS PEDDIE LAKE IN DOWNTOWN



REGIONAL TRAILS

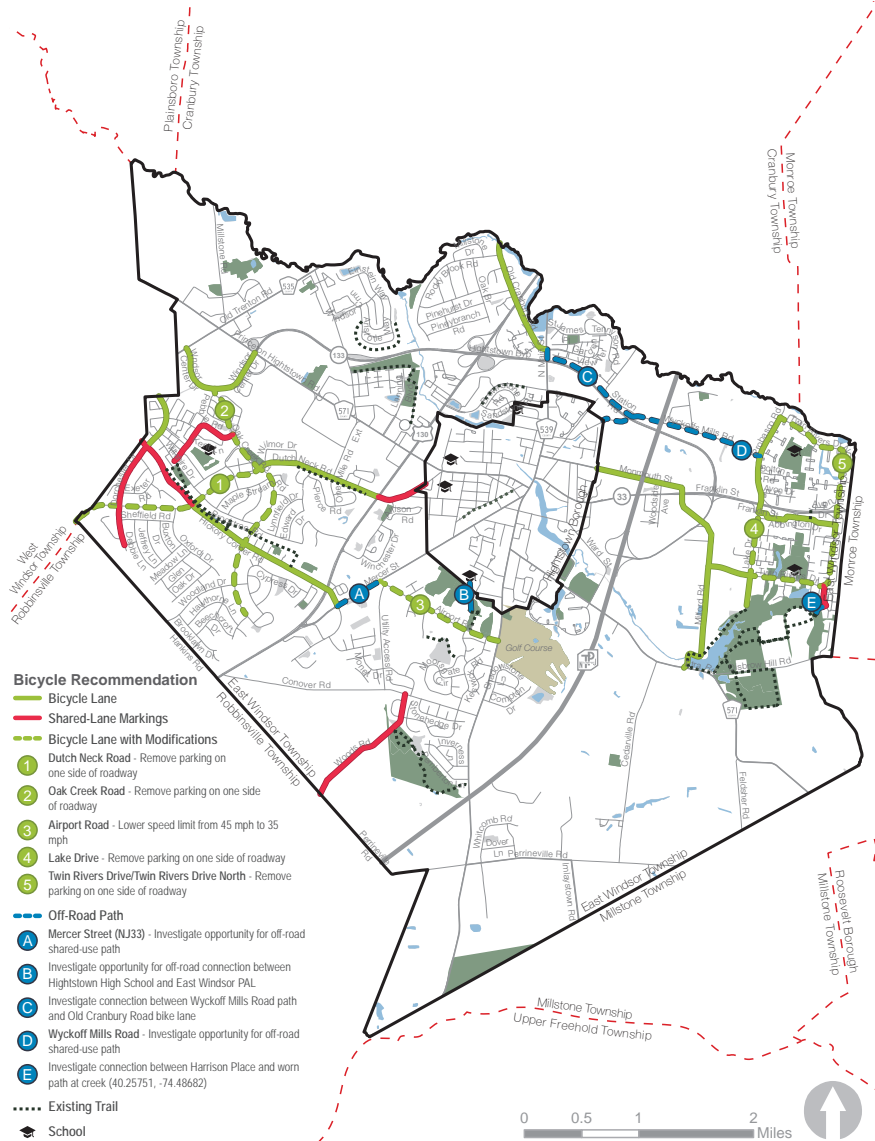
The Roger G. Cook Greenway is envisioned to connect to the East Windsor Green Link and provide connections to the future segment of the Union Transportation Trail in East Windsor. In February 2020, East Windsor Township was awarded a \$450,000 state grant for an extension of the Union Transportation Trail through the township. The NJDOT Bikeway's Grant Program will help develop a 3.2 mile extension of the Union Transportation Trail between Old York Road and Airport Road.



PHOTO: UNION TRANSPORTATION TRAIL

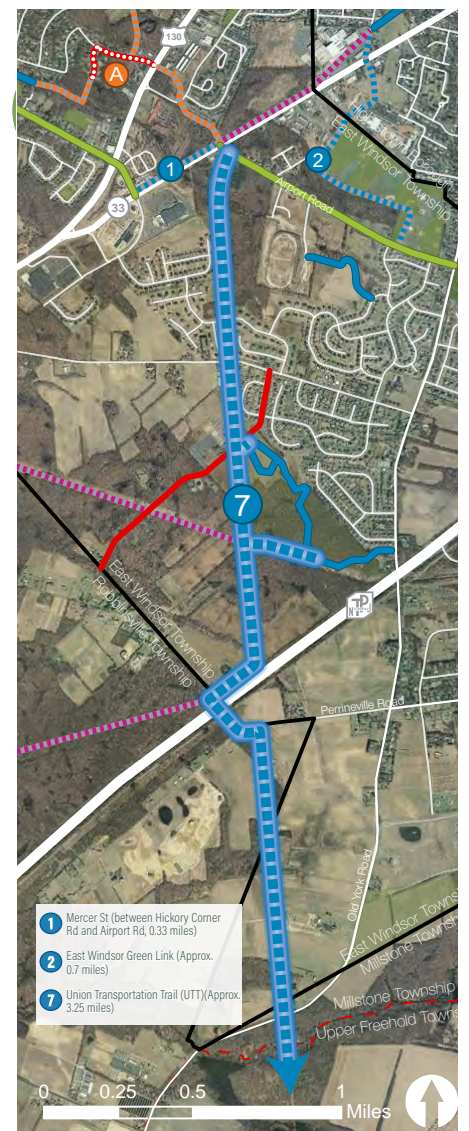
Source: Monmouth County Parks

MAP 7: EAST WINDSOR BICYCLE AND PEDESTRIAN CIRCULATION PLAN



Source: East Windsor Township; Bicycle and Pedestrian Circulation Study (2016)

Proposed UTT alignment and interconnections





BICYCLE INFRASTRUCTURE

Recently, the County installed bicycle lanes on North Main Street in the Borough. The County also proposed enhancing Stockton Street and Monmouth Street by adding shared lane markings or sharrows to alert drivers of potential bicyclists and indicate a safe position for bicycling in the roadway.

Stockton Street (CR 571) Bicycle Sharrow Improvements Route 130 to Grace N. Rogers Elementary School



Source: Mercer County/Hightstown Borough

BIKEABILITY SCORE ANALYSIS

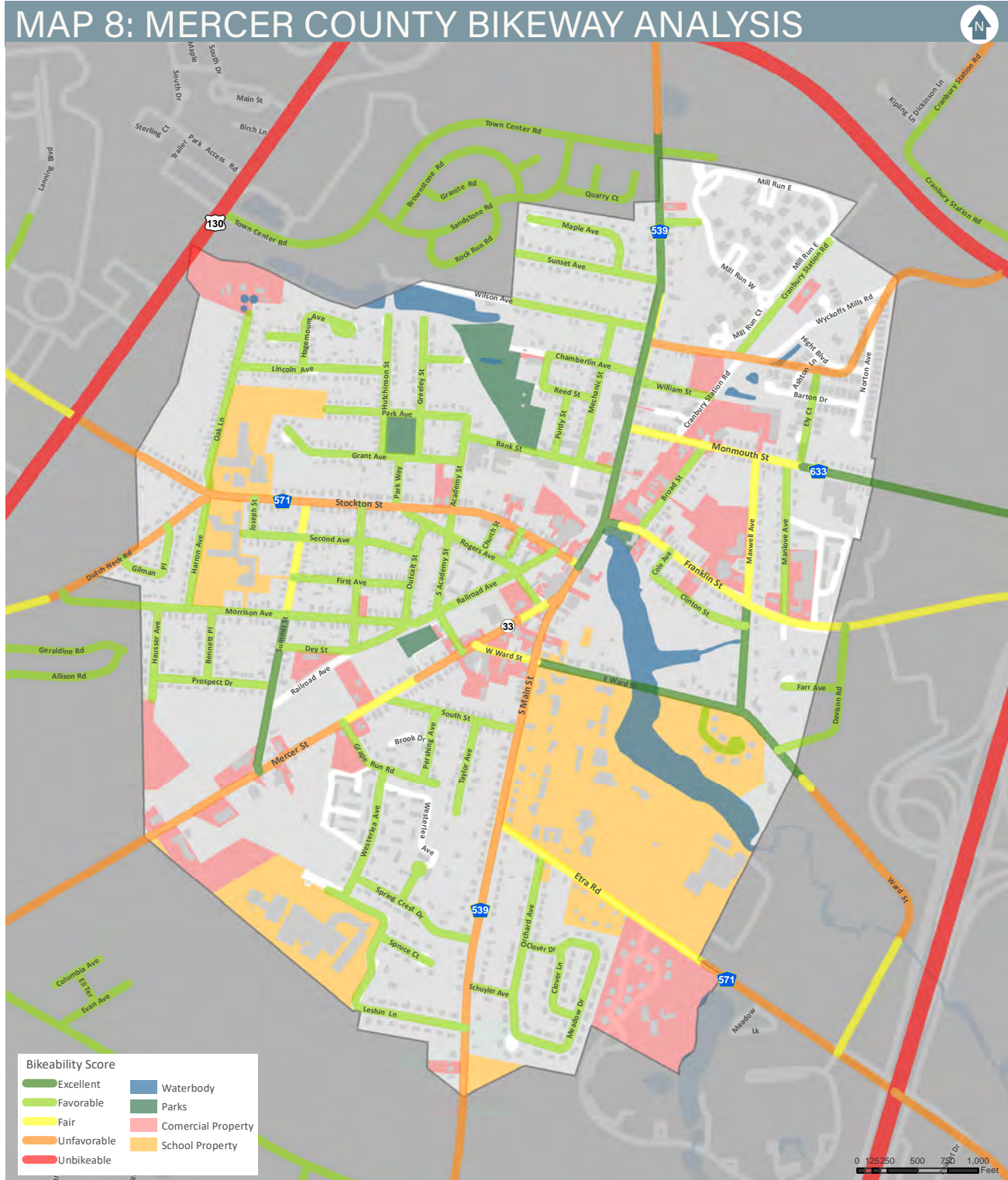
In 2009, in cooperation with Mercer County, the Delaware Valley Regional Planning Commission (DVRPC) underwent an extensive effort to develop a quantitative “Bikeability Score¹” to evaluate the biking comfort levels for Mercer County Roadways.

The Bikeability Score process utilizes the Bicycle Level of Service (BLOS) model to evaluate roadways based on a variety of factors including traffic volume, traffic speed, presence of usable shoulder, and pavement width to provide an estimate of how comfortable it is to bike along a given roadway. After calculating initial scores for each roadway, the results were made available for public comment and scores were adjusted based on user feedback to more accurately reflect existing conditions.

¹ <https://www.dvrpc.org/webmaps/MercerBLOS/>



Based on the analysis, there were five roadways within the borough that received an “Unfavorable” bikeability score: Mercer Street (NJ 33), Stockton Street (CR 571), South Main Street (539), Dutch Neck Road, and Wyckoff Mills Road. (See Map 8: Mercer County Bikeway Analysis).



Source: Mercer County: <https://www.dvrpc.org/webmaps/MercerBLOS/>



KEY DESTINATIONS

Key destinations and activity generators were identified and mapped based on input from the Community Advisory Board. This list was then modified based on input from the community through the various outreach tools. These destinations provide an understanding of the key travel corridors and help determine where bicycle and pedestrian infrastructure should be proposed and developed. The destinations include parks, schools, restaurants, municipal amenities, community services, transit locations and places of worship. Given the compact size of Hightstown and concentration of destinations in the downtown, all destinations are within a walking or bicycling distance of the residential areas. Activity generators are listed below:

PARKS & RECREATION

- MEMORIAL PARK
- PEDDIE LAKE
- ROCKY BROOK PARK
- ASSOCIATION PARK
- DAWES PARK
- GREENWAY ENTRANCES
- EAST WINDSOR POLICE ATHLETIC LEAGUE

SCHOOLS

- WALTER C. BLACK ELEMENTARY
- GRACE N. ROGERS ELEMENTARY
- HIGHTSTOWN HIGH SCHOOL
- PEDDIE SCHOOL

RESTAURANTS/RETAIL

- DOWNTOWN RESTAURANTS & SHOPS
- BREWERY
- SHOP RITE
- MOVIE THEATER
- WAREHOUSES
- WALMART
- TARGET

MUNICIPAL BUILDINGS

- PUBLIC LIBRARY
- POST OFFICE
- PUBLIC WORKS
- POLICE/FIRE DEPARTMENT
- EMERGENCY MANAGEMENT
- FUTURE BOROUGH HALL

COMMUNITY SERVICES

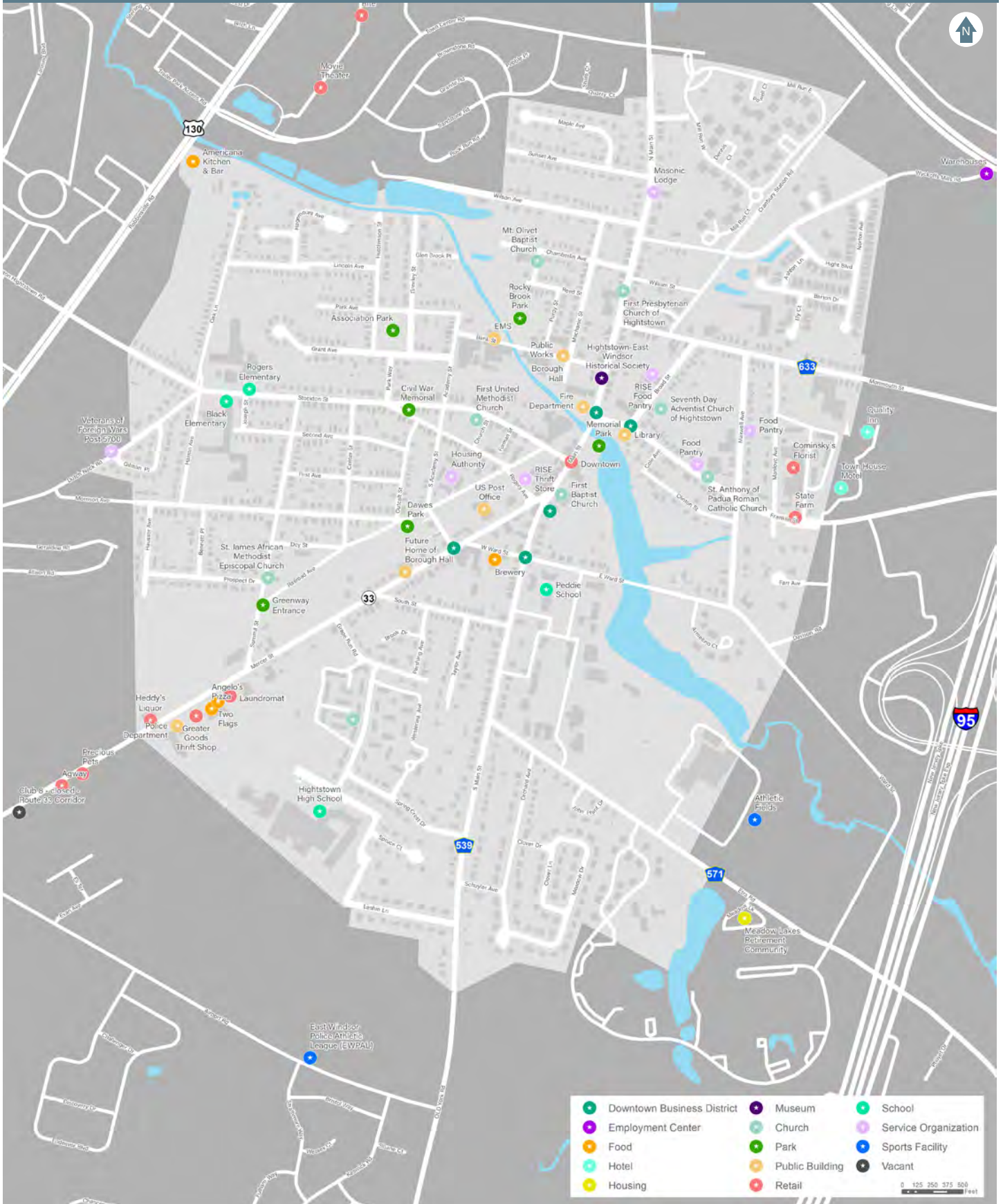
- RISE COMMUNITY ACTION AGENCY
- RISE FOOD PANTRY
- HOUSING AUTHORITY

PLACES OF WORSHIP

- ST ANTHONY CATHOLIC CHURCH
- FIRST UNITED METHODIST CHURCH
- METHODIST EPISCOPAL CHURCH
- MT OLIVET BAPTIST CHURCH
- FIRST PRESBYTERIAN CHURCH
- FIRST BAPTIST CHURCH
- 7TH DAY ADVENTIST CHURCH



MAP 9: KEY DESTINATIONS MAP





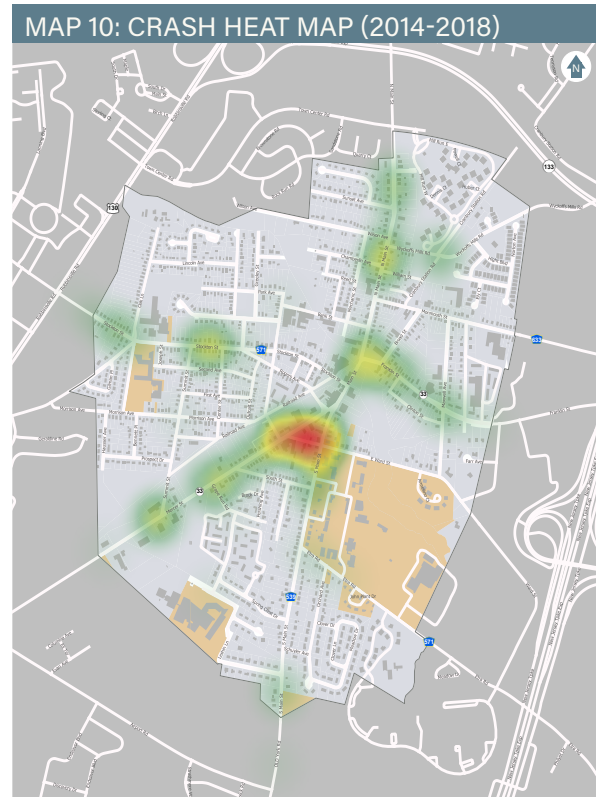
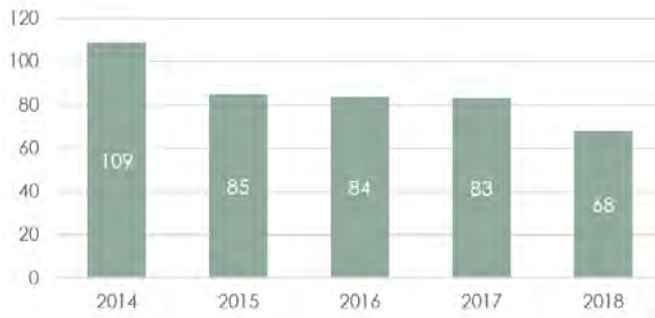
CRASH ANALYSIS

The following crash analysis utilizes crash data gathered from NJDOT’s Safety Voyager System. Crash records from 2014-2018 were reviewed for the Borough of Hightstown. While the focus of this project is to analyze pedestrian and bicyclist safety, all vehicle crash records were reviewed to better understand the overall roadway safety in Hightstown Borough. Furthermore, certain categories were then compared to respective crash averages for Mercer County to establish a baseline comparison.

OVERALL CRASH TRENDS

According to Safety Voyager data, there were a total of 429 total crashes within Hightstown Borough from 2014-2018. Of these crashes, seven involved pedestrians (1.6% of total crashes) and twelve (2.8%) involved a pedalcyclist (scooter, skateboard, or bicyclist), which was 2.3% higher than the county average. Overall, the total number of crashes have decreased over the 5-year period (Figure 3).

FIGURE 3: OVERALL CRASHES (2014-2018)



CRASH SEVERITY

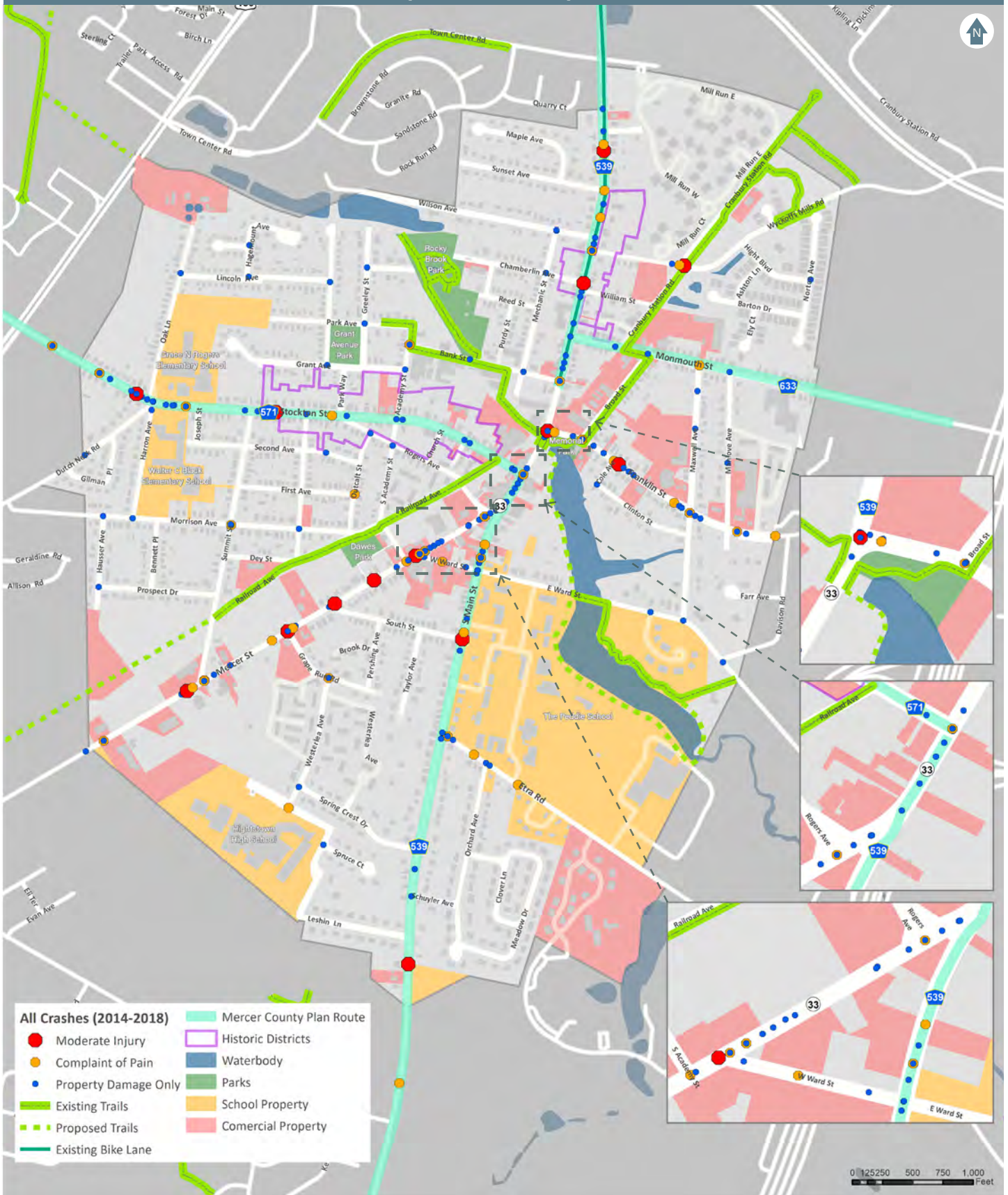
In terms of crash severity, there were no reported fatal crashes within the Borough from 2014-2018 (Table1). There were 72 crashes that resulting in some sort of injury ranging from “Incapacitated”, “Moderate Injury”, or “Complaint of Pain”. Overall, approximately 17% of crashes resulted in injury, which was roughly 4% less than the county average.

TABLE 1: CRASHES BY SEVERITY (2014-2018)

Crash Severity	CRASH COUNT		PERCENTAGE		
	Borough	County	Borough	County	Comparison
Killed	0	127	0.0%	0.2%	-0.2%
Injury	72	12,313	16.8%	20.8%	-4.5%
Property Damage Only	357	46,767	83.2%	79.0%	+4.2%
Grand Total	429	9,482	100.0%	100.0%	



MAP 11: TOTAL CRASHES (2014-2018)





COLLISION TYPES

The majority of crashes were categorized as “Struck Parked Vehicle”, accounting for nearly 23% of the total crashes within the borough from 2014-2018. When compared to crash averages for Mercer County, this type was overrepresented by roughly 10%. “Same Direction – Rear End” was the second highest crash type accounting for around 21% of total crashes, approximately 10% lower than the county average. “Right Angle” (+5.1%), “Backing” (+4.5%) and “Pedalcyclist” (+2.3%) crashes are also overrepresented crash types when compared to county data.

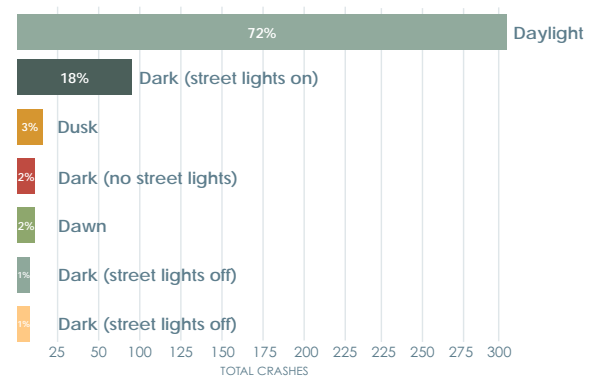
TABLE 2: CRASHES BY CRASH TYPE (2014-2018)

CRASH TYPE	CRASH COUNT		PERCENTAGE		
	Borough	County	Borough	County	Comparison
Struck Parked Vehicle	98	7,488	22.8%	12.6%	+10.2%
Same Direction - Rear End	88	17,986	20.5%	30.4%	-9.9%
Right Angle	80	8,037	18.6%	13.6%	+5.1%
Fixed Object	47	7,219	11.0%	12.2%	-1.2%
Backing	37	2,413	8.6%	4.1%	+4.5%
Same Direction - Sideswipe	22	7,192	5.1%	12.1%	-7.0%
Opposite Direction (Head On)	17	1,514	4.0%	2.6%	+1.4%
Pedalcyclist	12	307	2.8%	0.5%	+2.3%
Opposite Direction (Sideswipe)	8	613	1.9%	1.0%	+0.8%
Pedestrian	7	768	1.6%	1.3%	+0.3%
Left Turn/U Turn	5	1,273	1.2%	2.2%	-1.0%
Other	4	785	0.9%	1.3%	-0.4%
Non-fixed Object	2	625	0.5%	1.1%	-0.6%
Animal	1	2,688	0.2%	4.5%	-4.3%
Overtaken	1	299	0.2%	0.5%	-0.3%
Grand Total	429	59,207	100.0%	100.0%	

ROADWAY AND LIGHT CONDITIONS

The majority of crashes (78%) took place during dry and clear roadway conditions, which was consistent with the county figure of 75%. In terms of light conditions, a majority (72%) of crashes occurred during daylight conditions, roughly 2% higher than the Mercer County average. This was followed by “Dark (street lights on) at approximately 18%.

FIGURE 4: CRASHES BY LIGHT CONDITION (2014-2018)

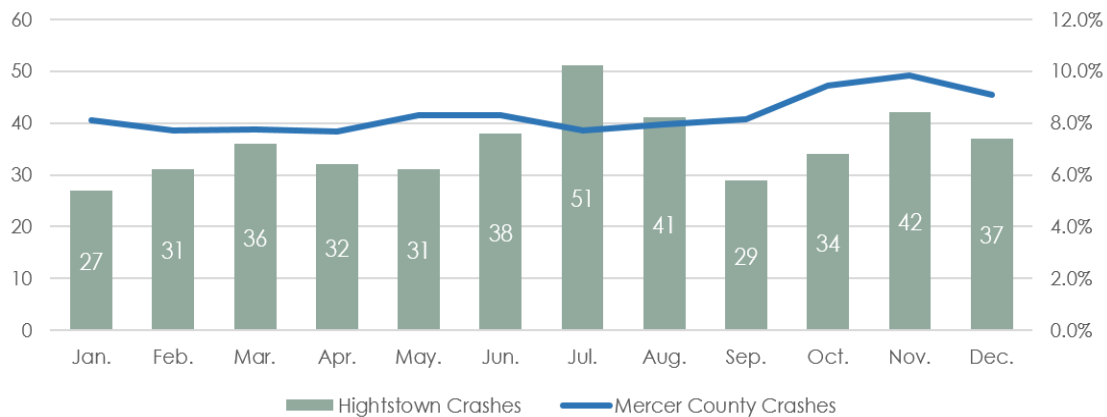




TEMPORAL TRENDS

Of the 429 total crashes from 2014-2018, July had the highest crash total (51) and also represented the most overrepresented month when compared to Mercer County averages (+4.2%) over the same time period (Figure2). In terms of day of the week, Friday accounted for the highest percentage (approximately 18%) of crashes with the remainder of crashes distributed relatively evenly over the rest of the days.

FIGURE 5: CRASHES BY MONTH (2014-2018)



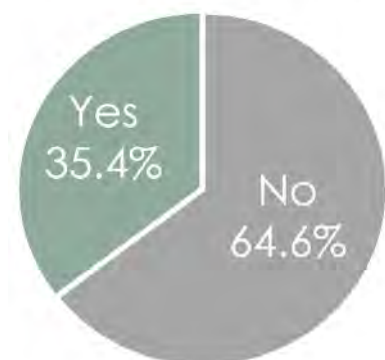
LOCATION

Over 37% of total crashes in Hightstown took place on state highway roadways, which was roughly 13% higher than the county average. This was followed by county roads, accounting for roughly 30% of total crashes (roughly 6% higher than Mercer County), and municipal roads around 24% of total crashes (approximately 11% lower than the county) (Table 3). Approximately 35% of crashes in Hightstown from 2014-2018 took place at an intersection. This figure was roughly 8% higher than the county figure (28%) during this time span.

TABLE 3: CRASHES BY ROAD SYSTEM TYPE (2014-2018)

ROAD SYSTEM	CRASH COUNT		PERCENTAGE		
	Borough	County	Borough	County	Diff.
State Highway	160	14,516	37.3%	24.5%	+12.8%
County	128	13,967	29.8%	23.6%	+6.2%
Municipal	102	20,516	23.8%	34.7%	-10.9%
Private Property	24	3,030	5.6%	5.1%	+0.5%
Municipal Auth. Park	9	254	2.1%	0.4%	+1.7%
U.S. Gov. Property	6	99	1.4%	0.2%	+1.2%
Interstate	0	4,626	0.0%	7.8%	-7.8%
Other	0	2,199	0.0%	3.7%	-3.7%
Grand Total	429	59,207	100.0%	100.0%	

Crash at Intersection?



The vast majority (82%) of crashes took place on roads with a posted speed limit of 25 MPH, including 5 of the 7 total crashes involving pedestrians. This could indicate the need for traffic calming measures on some of the high-injury streets throughout the borough.

In terms of high crash corridors, NJ 33 accounted for over 42% of total crashes within Hightstown including nearly 46% of injury crashes. Along this road, the intersection with Ward Street, was the site of 17 crashes accounting for over 21% of crashes on the corridor. NJ 33 was followed by Mercer County Route 539, which had around 18% of total crashes (nearly 24% of injury crashes). County Route 571 had the third highest crash count with 43 crashes, 10% of total crashes. The remaining seven of the top-10 high crash corridors combined accounted for just over 12% of all crashes.

The intersection of Route 539 & Ward Street had the highest crash count among intersections followed by NJ 33 & Summit Street and NJ 33 & Maxwell Avenue with 10 crashes each. Combined, these three intersections accounted for approximately 8% of the total crashes in Hightstown from 2014-2018.

TABLE 4: TOP 10 HIGH CRASH CORRIDORS

70% OF
CRASHES

#	CORRIDOR	COUNT	%
1	NJ 33	181	42.2%
2	ROUTE 539	76	17.7%
3	ROUTE 571	43	10.0%
4	MORRISON AVENUE	10	2.3%
5	MERCER COUNTY 633	8	1.9%
6	WARD STREET	8	1.9%
7	SUMMIT STREET	7	1.6%
8	WYCKOFF MILL ROAD	7	1.6%
9	LESHIN LANE	6	1.4%
10	ROGERS AVENUE	6	1.4%
Grand Total		352	82.0%

TABLE 5: TOP 10 HIGH CRASH INTERSECTIONS

#	INTERSECTION	COUNT	%
1	ROUTE 539/WARD STREET	14	3.3%
2	NJ 33/SUMMIT STREET	10	2.3%
3	NJ 33/MAXWELL AVENUE	10	2.3%
4	NJ 33/GRAPE RUN ROAD	8	1.9%
5	NJ 33/ STOCKTON STREET (CR 571)	7	1.6%
6	ROUTE 539/ETRA ROAD (CR 571)	6	1.4%
7	NJ 33/ ROGERS AVENUE	5	1.2%
8	NJ 33/WEST WARD STREET	5	1.2%
9	ROUTE 571/ROGERS AVENUE	5	1.2%
T10	ROUTE 571/ACADEMY STREET	4	0.9%
T10	NJ 33/BROAD STREET	4	0.9%
T10	ROUTE 571/SUMMIT STREET	4	0.9%
Grand Total		82	19.1 %

Approximately 42% of crashes occurred on roads with painted median, which was 36% higher than the number for the county (Table 5).

TABLE 6: CRASHES BY MEDIAN TYPE (2014-2018)

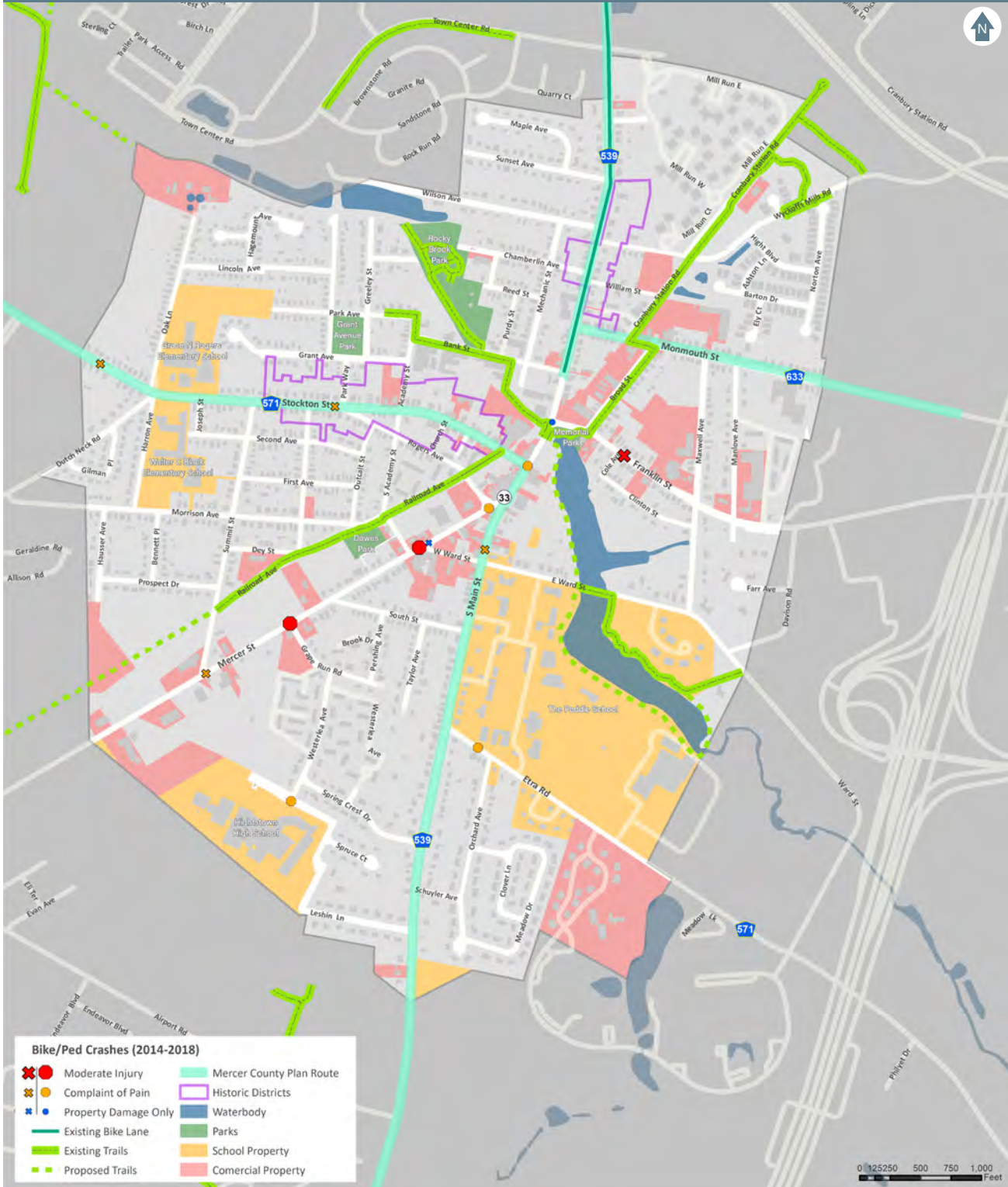
MEDIAN TYPE	CRASH COUNT		PERCENTAGE		Diff.
	Borough	County	Borough	County	
None	235	38,081	54.8%	64.3%	-9.5%
Painted Median	182	3,744	42.4%	6.3%	+36.1%
Curbed Median	6	3,448	1.4%	5.8%	-4.4%
Barrier Median	3	10,251	0.7%	17.3%	-16.6%
Other	3	3,683	0.7%	6.2%	-5.5%
Grand Total	429	59,207	100.0%	100.0%	



PEDESTRIAN AND BICYCLIST CRASHES

There were seven pedestrian crashes and 12 bicyclist crashes reported in Hightstown from 2014-2018. These 19 combined crashes represent 4.4% of the total crashes in Hightstown during this time span.

MAP 12: PEDESTRIAN & BICYCLIST CRASHES (2014-2018)





PEDESTRIAN AND BICYCLIST CRASHES (CONTINUED)

In terms of severity, more than 63% of pedestrian and bicycle crashes resulted in injury (3 “Moderate Injury, 9 “Complaint of Pain).

Similar to the trend among all crashes, approximately 79% of pedestrian and bicycle crashes took place on roadways with a posted speed limit of 25 MPH.

In contrast to findings for all crashes, over 68% of pedestrian and bicycle crashes occurred at intersections. This is the opposite trend seen among total crashes and points toward potential opportunities to improve pedestrian safety at intersections.

From 2014-2018, 15 of the 19 pedestrian or bicycle crashes took place during daylight and 14 of 19 occurred on dry road conditions.

Crash at Intersection?

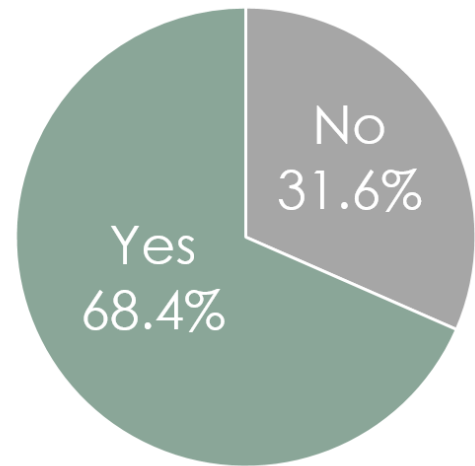


TABLE 7: PEDESTRIAN AND BICYCLE CRASHES (2014-2018)

#	Crash Type	Year	Month	Day	Time	Severity	Intersection?	Primary Street
1	Pedestrian	2016	October	Monday	3:20 PM	Property Damage	No	NJ 33
2	Pedestrian	2017	November	Friday	6:16 PM	Moderate Injury	Yes	NJ 33
3	Pedestrian	2017	August	Thursday	5:50 PM	Complaint of Pain	No	NJ 33
4	Pedestrian	2017	October	Wednesday	5:33 PM	Complaint of Pain	Yes	NJ 33
5	Pedestrian	2018	November	Friday	3:11 PM	Moderate Injury	Yes	NJ 33
6	Pedestrian	2017	December	Monday	7:13 AM	Complaint of Pain	No	Route 571
7	Pedestrian	2016	November	Tuesday	7:21 AM	Complaint of Pain	No	Westerlea Avenue
8	Bicyclist	2016	July	Friday	10:31 AM	Moderate Injury	No	NJ 33
9	Bicyclist	2016	October	Friday	9:25 PM	Property Damage	Yes	NJ 33
10	Bicyclist	2016	July	Saturday	6:14 PM	Complaint of Pain	Yes	NJ 33
11	Bicyclist	2017	March	Wednesday	7:21 AM	Property Damage	Yes	NJ 33
12	Bicyclist	2018	September	Friday	6:56 PM	Property Damage	No	NJ 33
13	Bicyclist	2018	June	Tuesday	8:10 PM	Property Damage	Yes	NJ 33
14	Bicyclist	2018	August	Thursday	7:37 PM	Property Damage	Yes	NJ 33
15	Bicyclist	2014	August	Sunday	2:45 PM	Property Damage	Yes	Route 539
16	Bicyclist	2014	December	Wednesday	7:14 AM	Complaint of Pain	Yes	Route 539
17	Bicyclist	2015	December	Wednesday	6:45 AM	Complaint of Pain	Yes	Route 539
18	Bicyclist	2015	January	Saturday	3:15 PM	Complaint of Pain	Yes	Route 571
19	Bicyclist	2016	November	Monday	7:56 PM	Complaint of Pain	Yes	Route 571

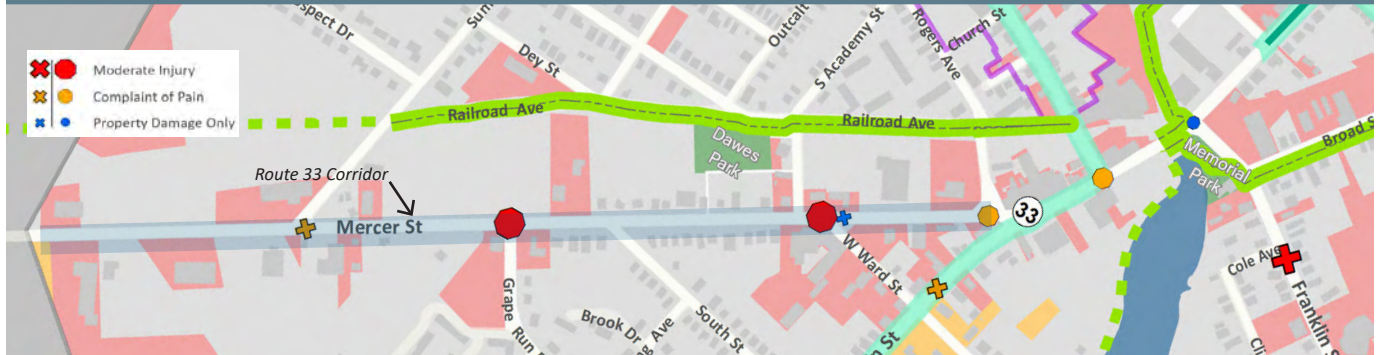


HIGH CRASH LOCATIONS

From 2014-2018, the majority (63%) of pedestrian/bicyclist crashes occurred along the NJ Route 33 corridor. Among these 12 crashes, there were three that resulted in “Moderate Injury”, which represents all such injuries within the borough.

Both the number and severity of pedestrian and bicycle crashes within the Route 33 corridor suggest the need for additional investigation into the contributing factors and possible safety measures that could be implemented.

MAP 13: NJ 33 BICYCLE AND PEDESTRIAN CRASHES (2014-2018)



Cross Street	Milepost	Road System	Median Type	Speed Limit	Lighting	Surface	Weather
Franklin Street	14.28	State Highway	None	25	Daylight	Dry	Clear
Grape Run Road	13.75	State Highway	Painted	35	Dark (street lights on)	Dry	Clear
NA	14.21	State Highway	Curbed	25	Daylight	Dry	Clear
Rogers Avenue	14.11	State Highway	Painted	25	Daylight	Dry	Clear
West Ward Street	13.99	State Highway	None	25	Daylight	Dry	Clear
Orchard Avenue	34.03	County	Painted	25	Daylight	Dry	Clear
Leshin Lane	NA	Municipal	None	25	Daylight	Wet	Rain
Cole Avenue	14.4	State Highway	Painted	25	Daylight	Dry	Clear
Grape Run Road	13.75	State Highway	None	35	Dark (street lights on)	Dry	Clear
Summit Street	13.59	State Highway	Painted	40	Daylight	Dry	Clear
Grape Run Road	13.75	State Highway	Painted	35	Daylight	Wet	Overcast
Broad Street	14.34	State Highway	Painted	25	Daylight	Wet	Rain
Stockton Street (CR 571)	14.21	State Highway	Painted	25	Daylight	Dry	Clear
Stockton Street (CR 571)	14.21	State Highway	None	25	Daylight	Dry	Clear
Ward Street	51.83	County	Barrier	25	Daylight	Dry	Clear
Ward Street	51.83	County	Painted	25	Daylight	Wet	Rain
Ward Street	51.83	County	Painted	25	Dark (street lights on)	Dry	Fog
Oak Lane	35.12	County	Painted	25	Daylight	Wet	Overcast
Academy Street	34.74	County	Painted	25	Dark (street lights on)	Dry	Clear



RELATED PLANS & STUDIES

MERCER COUNTY BICYCLE MASTER PLAN (2020)

Mercer County has recently completed a new County Master Plan Element entitled “Mercer County 2020 Bicycle Master Plan”. The Bicycle Master Plan is a sub-element to the County’s Mobility Element and as directed in and was prepared in accordance with the Mercer County Complete Streets Resolution (No. 2012-249).

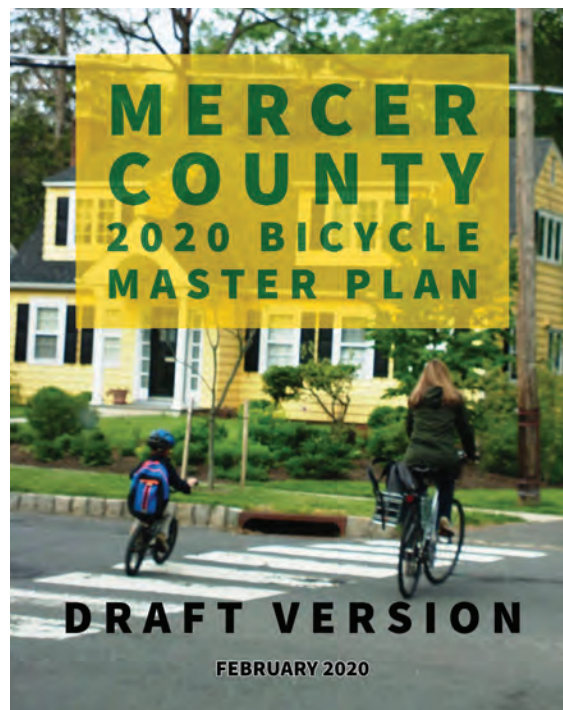
The plan provides guidance to the County’s capital program with a goal to enhance the county’s roadways to enable safe access and mobility, not only for motorists, but also for pedestrians, bicyclists, and transit users of all ages and abilities. The plan proposes a “C5” strategy that focuses on a set of 5 goals to guide the County’s efforts to create a county-wide bicycle plan that is: Continuous, Complete, Connected, Comfortable, and Convenient.

The plan specifies the following objectives to advance the stated goals:

- Consider roadway conditions of all county routes
- Demonstrate conceptual designs and identify opportunities
- Identify and separate road segments into short-, medium-, and long-term project horizons based on a set of criteria

The plan also proposes a set of specific goal targets to advance efforts and track progress within the county:

- Build at least 30 miles of bike facilities by end of 2025.
- Double the bicycle commuting mode share in Mercer County by 2030.
- Improve safety for pedestrians and bicyclists by reducing bicycle & pedestrian crashes on County roads by 50% by 2030.
- Encourage biking and walking events to promote healthy, active living and to enjoy the associated economic and environmental benefits.



Source: Mercer County 2020 Bicycle Master Plan

- Enhance the connectivity of adjacent off-road and on-road bikeways and walking trails.
- Achieve a minimum of Level of Traffic Stress 3 rating on improvement projects, targeting LTS 1 & 2.
- Establish a working relationship with local planners, engineers and officials as well as with NJDOT staff for efficient project advancement and coordination.

While the plan employs a county-wide scope that applies to all county routes and municipalities, there are some specific mentions of Hightstown within the plan. During the planning process, Hightstown was one of five sites chosen to host a public open house meeting to provide information about the project and solicit input from local residents. Through these meetings, County Route 571 (between Hightstown and Princeton) was identified as a priority corridor to receive improved bicycle facilities. The plan also mentions the future planned expansion of the Union Transportation Trail (currently a 9-mile trail in Monmouth County) that will eventually have a terminus in downtown Hightstown.



MERCER COUNTY TRAILS PLAN (2020)

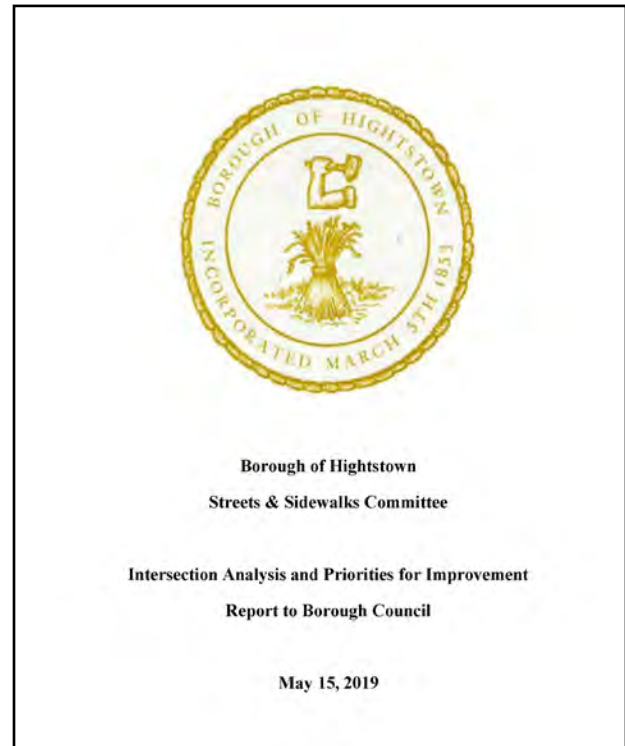
The Greater Mercer Trails Plan was prepared to support the development of a multi-modal network of trails and paths throughout the county to serve a variety of transportation needs and essential links to important community resources and attractions. The plan is an ever-evolving document that serves as a framework to help guide municipalities as they implement trail initiatives in their communities. The plan endeavors to create an extensive network of regional trail connections including an additional 700 miles of new bicycle and pedestrian facilities throughout the county. In conjunction with the plan, a Design Book was also created to provide technical guidance for planners, engineers, elected officials, and the general public in efforts to expand bicycle and pedestrian facilities within their community.



Source: Mercer County Trails Plan (2019)

HIGH POINT CAPE MAY BIKE ROUTE

This 238-mile on-road route traverses the entire state of New Jersey (north/south) and highlights the state's varied geography and natural resources. The route serves as a "spine" through the center of the state and provides the opportunity for communities to expand upon the route with their own bicycle trails and routes to create an interrelated connected network throughout the state. The route provides links among multiple communities and connections to important historic, recreational, and scenic resources in a wide variety of settings. The route runs directly through downtown Hightstown (via S. Main Street./County Route 539) and provides important linkages to communities to the north and south.



Source: Hightstown Intersection Analysis and Priority Improvement Report (2019)

HIGHTSTOWN COMPLETE STREETS COMMITTEE INTERSECTION ANALYSIS AND PRIORITIES FOR IMPROVEMENT REPORT (2019)

Beginning in 2018, the Hightstown Complete Streets Committee undertook an extensive analysis to assess existing intersections and sidewalks throughout the Borough to identify priority areas and provide guidance for future capital infrastructure improvements. The ultimate goal of the study is to serve as a resource to improve the safety of intersections and sidewalks and to provide a continuous network throughout the Borough.

The Committee utilized data on missing sidewalks and street segments in need of repair to create the following set of 14 priority intersections for more in-depth inspection and analysis.

- Franklin Street (Route 33) and Maxwell Avenue, with recommendations for Maxwell Avenue and Ward Street
- Franklin Street (Route 33) and Broad Street
- North Main Street (County Route 539) and Monmouth Street (County Route 633)
- South Main Street (County Route 539) and Etra south



Road (County Route 571)

- South Main Street (County Route 539) and Springcrest Drive
- South Main Street (County Route 539) and Leshin Lane
- Mercer Street (State Route 33) and Grape Run Drive
- Stockton Street (County Route 571), Harron Avenue, Oak Lane and Dutchneck Road

Downtown:

- Franklin Street (Route 33) and Main Street (County Route 539)
- Stockton Street (County Route 571) and Main Street (Route 33, County Route 539)
- Mercer Street (Route 33) and South Main Street (County Route 571)
- Mercer Street (Route 33) and Rogers Avenue (Truck Route for County Route 571)
- Ward Street (County Routes 571 and 539) and Mercer Street (Route 33) and Academy Street

In addition to desktop analysis, the study also included a downtown walk audit to assess the existing conditions of identified downtown intersections through first hand inspection. Through

the audit, a number of findings and issues were identified including:

- Unsafe crosswalks – misaligned, unmarked, low visibility, etc.
- Downtown had the highest concentration of crashes (including those involving pedestrians and injuries)
- High vehicle speeds on approaches to Downtown

Through this process, the Committee developed a series of actions steps including the preparation of a proposal for Technical Assistance that led to the development of this Mobility Master Plan.

BOROUGH OF HIGHTSTOWN MAIN STREET REDEVELOPMENT PLAN (2015, REVISED 2020)

The Main Street Redevelopment plan provides a framework for the continuing improvement and revitalization efforts of the identified 81 parcels in the downtown area. The plan identifies three (3) sub-areas:

1. Bank Street: proposed mixed-use redevelopment.
2. South Academy Street: proposed residential infill redevelopment.
3. Route 33: proposed downtown commercial parking and streetscape redevelopment.



Source: Borough of Hightstown Main Street Development Plan (2015)



The plan proposed a series of recommendations related to pedestrian and bicycle infrastructure including streetscape enhancements to increase safety and aesthetic appeal in the downtown area, increased sidewalk network pedestrian access to greenways, and design standards for pedestrian/bicycle facilities. The plan also emphasizes the importance of designing circulation strategies that prioritize pedestrian pathways over vehicle traffic and provides for an increased pedestrian network and connections to downtown.

HIGHTSTOWN, NJ SCHOOL TRAVEL PLAN (2014)

In 2014, East Windsor Regional School District and the Borough of Hightstown released an updated school travel plan for Walter C. Black Elementary and Grace N. Rogers Elementary School. The plan provides guidance for faculty, staff, students and parents regarding travel policies related to arrival/dismissal procedures, on campus parking, and pedestrian and bicycle accessibility. The plan also made a series of recommendations to improve pedestrian infrastructure, including sidewalk improvements, and to create a safer walking environment on school properties and in surrounding neighborhoods. The plan outlines two primary goals for improving pedestrian and bicycle safety through infrastructure improvements:

1. Improve safety for existing walkers
2. Create new safe walking areas within one mile of the school, by eliminating hazardous conditions

The plan also proposed specific recommendations for each school based on each of the primary goals.

Walter Black Elementary

1. Improve safety for existing walkers:
 - » Replace deteriorated sidewalks on the south side of Stockton Street (CR571).
 - » Add new sidewalk on west side of Joseph Street.
2. Create New Safe Walking areas:
 - » New sidewalk connecting the greenway trail to Mercer Street along the east side of Summit Street.
 - » Connect missing sidewalks on both sides of Dutch Neck Road and north side of

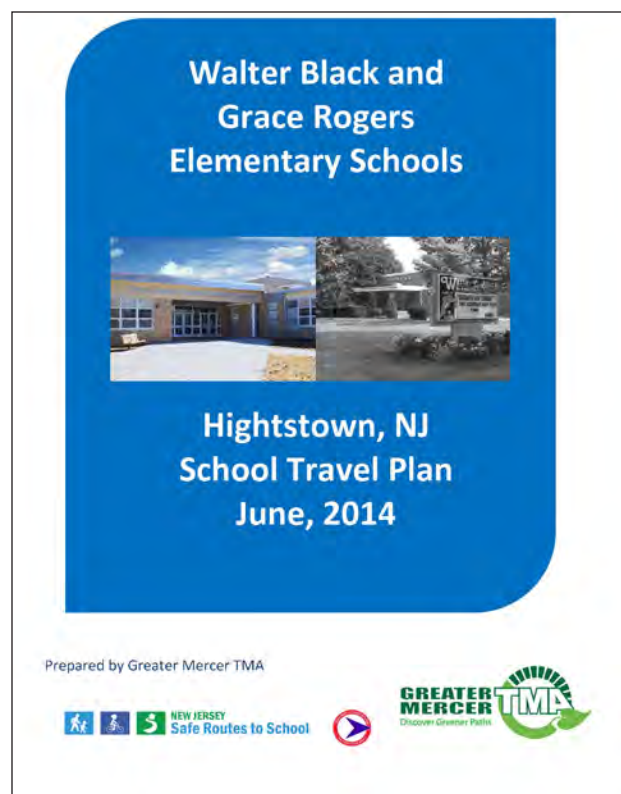
Morrison Avenue (students currently bussed from these locations)

- » Install roundabout at existing intersection of Dutch Neck Road, Stockton Street, Oak Lane and Harron Avenue.

Grace Rodgers Elementary

1. Improve safety for existing walkers:
 - » Replace deteriorated sidewalks on the north side of Stockton Street.
2. Create new safe walking areas
 - » Add sidewalk connection on Lincoln Avenue and Hutchinson Street to complete network for homes/residents adjacent to school grounds

The plan also provides an implementation plan that evaluates potential engineering countermeasures based on action type, responsibility, time frame, and cost. Estimates were based on the Safe Routes to School (SRTS) Implementation Cost sheet prepared by New Jersey Safe Routes to School in 2014.



Source: Walter Black and Grace Rogers Elementary School Travel Plan (2014)



EAST WINDSOR AND HIGHTSTOWN ROUTE 33 CORRIDOR REVITALIZATION PLAN (2012)

This plan was a joint effort between the Township of East Windsor and Borough of Hightstown to explore and analyze potential options to revitalize the existing Route 33 Corridor that runs between the two municipalities. The stated goal of the plan is to “optimize the development potential of the Corridor by encouraging a synergy of existing and proposed uses that compliment each other, in a context sensitive manner.” The plan identified a number of key strategies to achieve these goals including a proposal to create four distinct land use/zoning categories within the corridor:

- Gateway Retail: capitalize on gateway location for each township.
- Big Box Retail: opportunities for larger scale retail supported by restaurants and smaller retail.
- Downtown Retail: create human scale walkable “Main Street” style development at both ends of corridor.
- Planned Campus Development: redevelopment of former Minute Maid property to low scaled planned campus development.

The plan also contains a circulation component that includes recommendations to increase a “strong pedestrian/bicycle network that links to sites within and outside the corridor”. One of the key concepts for accomplishing this goal is to create an “interconnected network of trails and sidewalks including extension of existing bikeways.”



Source: East Windsor and Hightstown: Route 33 Corridor Revitalization Plan (2012)

FIELD INVESTIGATION

In March 2020, NV5 conducted a field visit with the Complete Streets Committee in Hightstown. The team toured Hightstown to confirm the Complete Streets Committee priority locations and existing conditions. The project team conducted the field visit by car, on foot and on a bicycle.

The field visit provided the team with insights into the key issues and barriers in Hightstown related to walking and bicycling safely.



PHOTO: PEDESTRIAN CROSSING BEACON
AT GRAPE RUN ROAD & NJ 33



SUMMARY OF FINDINGS

The following is a list of opportunities and constraints based on the existing conditions analysis:

- There is heavy traffic and speeding vehicles entering the Borough from the main thoroughfares (CR 571, Route 33, CR 633, CR 539 and Etra Road) .
- The downtown area has high traffic volume with heavy truck traffic and limited right of way pushing cars onto neighboring streets that are not designed for higher volumes. Walking and bicycling through the downtown is particularly challenging given the multiple modes competing for a limited right of way.
- The flashing beacons at the crosswalk across Route 33/ Mercer Street at Grape Run Road (across from the cemetery) have proven to be an effective means of mitigating motorists' failure to yield the right of way for the many High School-bound pedestrians attempting to



PHOTO: ROGER G. COOK GREENWAY

cross Route 33. This addition has made it easier for High School students to walk and bicycle to school.

- The earthen trail through Rocky Brook Park includes minor 'floating boardwalk' segments that were installed to minimize environmental impacts and maximize the walking surface stability. The installation of this 'plastic' manufactured lumber boardwalk allows the surface to rise with the occasional flood water from the Rocky Brook. There is a similar boardwalk path on the north side of Wyckoff Mills Road, east of Brakeman Court.
- There is a path along the eastern bank of Peddie Lake, roughly parallels to Armellino Court, extending between E. Ward Street and the Peddie sports fields.
- The intersection of Franklin Street and Maxwell Avenue is another major intersection where cars were observed speeding and is a frequent route for pedestrians to the High School and downtown.



PHOTO: DOWNTOWN HIGHTSTOWN



- The intersection of CR 571/ Stockton Street, Oak Lane, Harron Avenue, and Dutch Neck Road is a difficult pedestrian crossing due to speeding vehicles and the complex intersection with five roads. Elementary school students are bused to this school despite being within walking distance. There is potential to reconfigure the intersection, possibly with a mini-traffic circle or roundabout. However, these treatments would likely not address the circulation concerns due to the alignment of Dutch Neck Road. Various options of one-way configurations, including making Dutch Neck Road one-way to the southwest, and making Harron Avenue one-way to the north, were considered. This would require further study, and coordination with East Windsor since any diversion of traffic would affect the neighboring municipality.
- The project team also drove through Etra road around Peddie School and Meadow Lakes as these were roads identified by Hightstown as needing traffic calming measures.
- The project team bicycled through the downtown to Peddie School to get a better understanding of the biking conditions. While the right of way is available and some of the paths are great for biking, there is opportunity to make walking and bicycling to and from downtown and other key destinations safer and part of a connected network. Several intersections are difficult to cross on a bicycle due to heavy traffic and narrow right-of-way.

INITIAL FOCUS AREAS

Based on the initial data collection efforts, certain corridors and intersections were reviewed in detail. The following corridors were evaluated further:

- Ward Street
- NJ Route 33 (Mercer Street & Franklin Street)
- Stockton Street (CR 571)
- Summit Street
- Bank Street

In addition, the following intersections were identified because they link key destinations, have multiple crashes and were identified during field

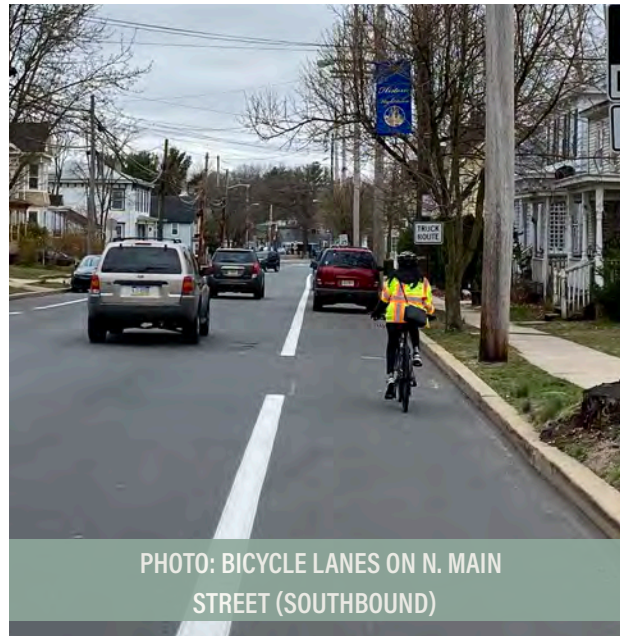


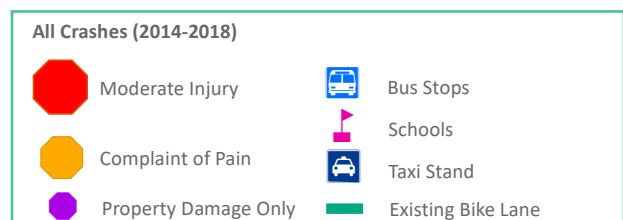
PHOTO: BICYCLE LANES ON N. MAIN STREET (SOUTHBOUND)

investigation by the Borough and through previous studies.

- Stockton Street, Oak Lane, Dutch Neck Road, Harron Avenue near the elementary schools
- Franklin Street and Main Street Intersection in the downtown
- Rogers Avenue, NJ 33 & South Main Street Intersection
- NJ Route 33/Mercer Street & West Ward Street
- Franklin Street & Maxwell Avenue
- Maxwell Avenue & East Ward Street

The corridor and intersection profiles in the following pages provide a preliminary evaluation of the existing conditions within the focus areas. Additional analysis will be undertaken during the next phase and field visit.

Legend - Intersection Profiles





HIGHTSTOWN MOBILITY MASTER PLAN

EXISTING CONDITIONS: CORRIDOR PROFILES

EAST AND WEST WARD STREET

TRAFFIC VOLUME (AADT): **2,959***

SPEED LIMIT: **25 MPH**

ROADWAY WIDTH: **24-26'**

CRASHES (2014-2018): **8**

ROADWAY CHARACTERISTICS

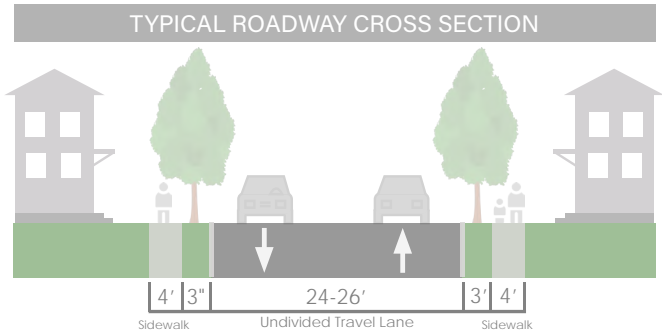
Ward Street is a municipal road classified as an urban major collector. It borders Peddie School to the south and is the southern extent of the downtown. The typical cross section is two 12-13 foot lanes with no shoulders. The speed limit changes from 40 to 25 m.p.h. on the eastbound approach to the Hightstown border and parking is not permitted on either side. A bridge over Peddie Lake provides access across and to the trail around Peddie Lake.

OPPORTUNITIES

- Sidewalk network is fairly complete on the southern side with minimal gaps. The northern side has continuous sidewalks with significant gaps towards the eastern portion towards the Borough border.
- Ward Street connects to the trail along Peddie Lake, Peddie School and Downtown
- Rated “excellent” on the bikeability score by the 2017 Mercer County Bike Network Analysis

CONSTRAINTS

- Limited right-of-way
- 8 vehicular crashes occurred between 2014-2018 along this road
- Truck traffic near downtown on West Ward Street.



*NJDOT Traffic Count Data (05/30/2018)



HIGHTSTOWN MOBILITY MASTER PLAN

EXISTING CONDITIONS: CORRIDOR PROFILES

NJ 33 - BOROUGH BORDER TO SCHOOL ZONE & MAXWELL AVE TO BORDER

TRAFFIC VOLUME (AADT): **10,395***

SPEED LIMIT: **35 - 45 MPH**

ROADWAY WIDTH: **40'**

CRASHES (2014-2018): **59**

ROADWAY CHARACTERISTICS

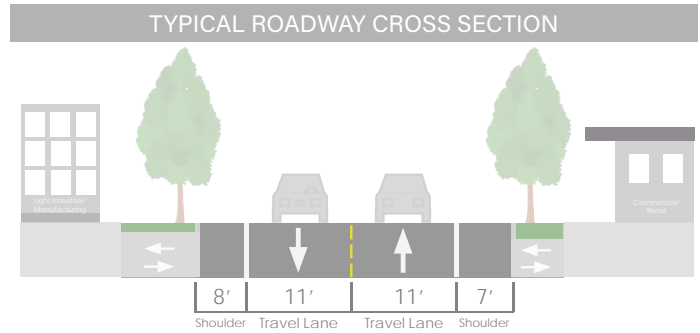
NJ 33 is a state roadway that runs in a southwest to northeast orientation through from the Borough border with East Windsor to Downtown Hightstown and then east to the eastern border. The section from the borough border to Summit Street is two lane roadway with a 45 m.p.h. speed limit that decreases to 35 m.p.h. at the intersection with Summit Street. There are 7' shoulders along each travel lane with parking prohibited on both sides. The section from Maxwell Avenue to the eastern border is also similar in cross section with a 35 m.p.h. speed limit.

OPPORTUNITIES

- Mix of uses along the corridor including residential, commercial/retail, and light industrial/manufacturing
- Wide, marked shoulders could provide space for pedestrian and/or bicycle facilities
- Pedestrian crossing signal installed for crossing NJ 33 at Grape Run Road

CONSTRAINTS

- High number of vehicular crashes and 63% of bicyclist and pedestrian crashes (2014-2018) in Hightstown occurred along NJ 33
- No sidewalk network along this stretch (worn goat paths adjacent to road)
- Speeding vehicles and heavy truck traffic
- Curb cuts with wide turning movements for vehicle entering/exiting businesses and warehouses
- Rated "unfavorable" on the bikeability score by the 2017 Mercer County Bike Network Analysis



*NJDOT Traffic Count Data (09/04/2019)



HIGHTSTOWN MOBILITY MASTER PLAN

EXISTING CONDITIONS: CORRIDOR PROFILES

NJ 33 - SCHOOL ZONE TO MAXWELL AVENUE

TRAFFIC VOLUME (AADT): **17,080***

SPEED LIMIT: **25 - 35 MPH**

ROADWAY WIDTH: **40'**

CRASHES (2014-2018): **122**

ROADWAY CHARACTERISTICS

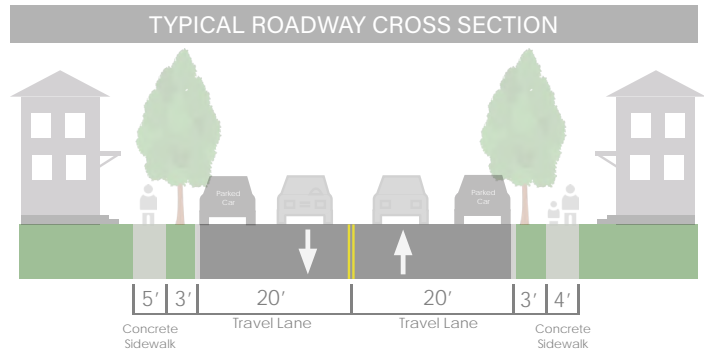
NJ 33 is a state roadway that runs through the Hightstown Downtown. It is a two lane roadway with a 35 m.p.h. speed limit that changes to 25 m.p.h. through downtown Hightstown. There are no shoulders and parking is permitted on both sides closer to downtown. Key destinations are located along NJ 33 including the downtown, greenways, memorial park, bus stops for Coach USA and Route 130 bus routes.

OPPORTUNITIES

- Sidewalk network is mostly complete within Hightstown Downtown with gaps mostly towards the border
- Potential to connect to recently installed bicycle lanes on North Main Street

CONSTRAINTS

- High number of vehicular crashes and 63% of bicyclist and pedestrian crashes (2014-2018) in Hightstown occurred along NJ 33
- Speeding vehicles and heavy truck traffic
- Downtown right-of-way is limited with complex intersections and multiple travel modes
- Rated "unfavorable" on the bikeability score by the 2017 Mercer County Bike Network Analysis



*NJDOT Traffic Count Data (05/14/2019)



HIGHTSTOWN MOBILITY MASTER PLAN

EXISTING CONDITIONS: CORRIDOR PROFILES

STOCKTON STREET (CR 571)

TRAFFIC VOLUME (AADT): **8,142***

SPEED LIMIT: **25 MPH**

ROADWAY WIDTH: **30'**

CRASHES (2014-2018): **47**

ROADWAY CHARACTERISTICS

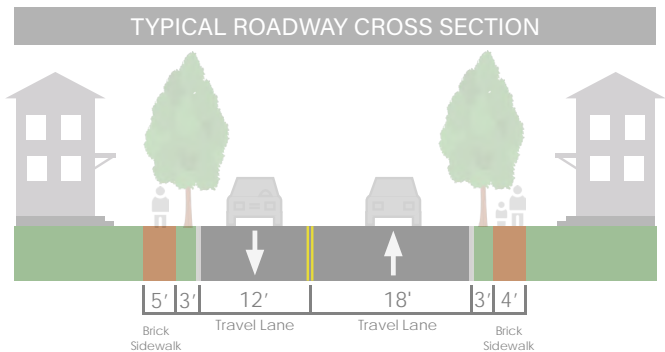
Stockton Street/CR 571 is a county road classified as an urban minor arterial. It is a two lane roadway with parking restricted westbound from 2:00-6:00 PM and no shoulders. The sidewalk network is mostly complete with minor gaps. Two elementary schools are located on Stockton Street. Speeding vehicles and heavy truck traffic was observed. Stockton Street from the East Windsor border to Rogers Avenue is part of the truck route system.

OPPORTUNITIES

- Sidewalk network is mostly complete
- Potential to connect to key destinations such as the elementary schools, Association Park, and downtown
- County is active in improving roadway and intersection along this road such as sharrows/shared lane markings

CONSTRAINTS

- Speeding vehicles, truck traffic as portion of the road is part of the truck route system
- Complex intersection with limited pedestrian facilities near elementary schools
- High number of vehicular crashes and two bicyclist crashes between 2014-2018
- Rated "unfavorable" on the bikeability score by the 2017 Mercer County Bike Network Analysis



*NJDOT Traffic Count Data (11/13/2018)



HIGHTSTOWN MOBILITY MASTER PLAN

EXISTING CONDITIONS: CORRIDOR PROFILES

SUMMIT STREET

TRAFFIC VOLUME (AADT): **2,138***

SPEED LIMIT: **25 MPH**

ROADWAY WIDTH: **26'**

CRASHES (2014-2018): **8**

ROADWAY CHARACTERISTICS

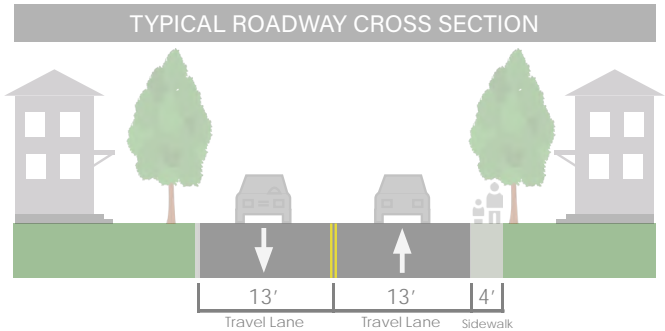
Summit Street is a two-lane municipal road with a 25 m.p.h. speed limit. It is classified as a urban major collector roadway. Summit is categorized as a through street in the Hightstown zoning code. The intersection at Morrison Avenue is four-way stop controlled. Parking is permitted on both sides.

OPPORTUNITIES

- Potential to connect to Roger G. Cook Greenway along the abandoned railroad right-of-way
- Connector between two main thoroughfares, Stockton Street and NJ 33
- Portion of the corridor rated “excellent” on the bikeability score by the 2017 Mercer County Bike Network Analysis

CONSTRAINTS

- Cut-through / shortcut road around downtown
- Heavy traffic and high vehicular speeds observed
- Stretches of missing sidewalk along corridor
- Road striping faded in many areas of corridor
- Portion of the corridor is rated "fair" on the bikeability score by the 2017 Mercer County Bike Network Analysis



*NJDOT Traffic Count Data (06/18/2018)



HIGHTSTOWN MOBILITY MASTER PLAN

EXISTING CONDITIONS: CORRIDOR PROFILES

BANK STREET

TRAFFIC VOLUME (AADT): **UNKNOWN**

SPEED LIMIT: **25 MPH**

ROADWAY WIDTH: **28'**

CRASHES (2014-2018): **6**

ROADWAY CHARACTERISTICS

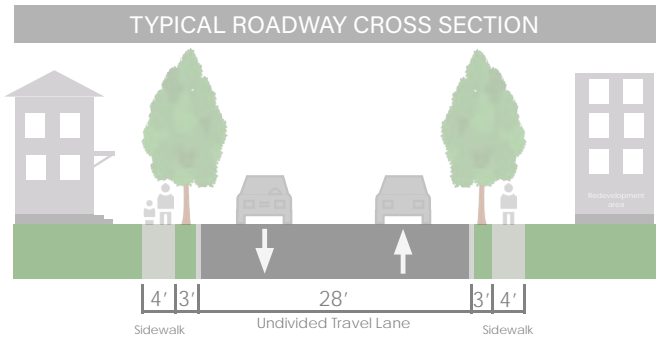
Bank Street is a municipal roadway with a 25 m.p.h. speed limit. It is adjacent to the 7-acre Hightstown Rug Mill redevelopment area that will be developed in phases. Bank Street is a designated through street in the Hightstown Zoning code. Parking is prohibited on both sides.

OPPORTUNITIES

- Adjacent to planned redevelopment area
- No on-street parking permitted along corridor
- Connection to downtown, Rocky Brook Park, Association Park and Roger G. Cook Greenway
- Sidewalk network mostly complete
- Rated “favorable” on the bikeability score by the 2017 Mercer County Bike Network Analysis

CONSTRAINTS

- Right-of-way is limited.
- Redevelopment area construction may limit travel temporarily.
- Proposed on-street parking as part of redevelopment may increase conflict with bicycle traffic going eastbound on Bank Street.

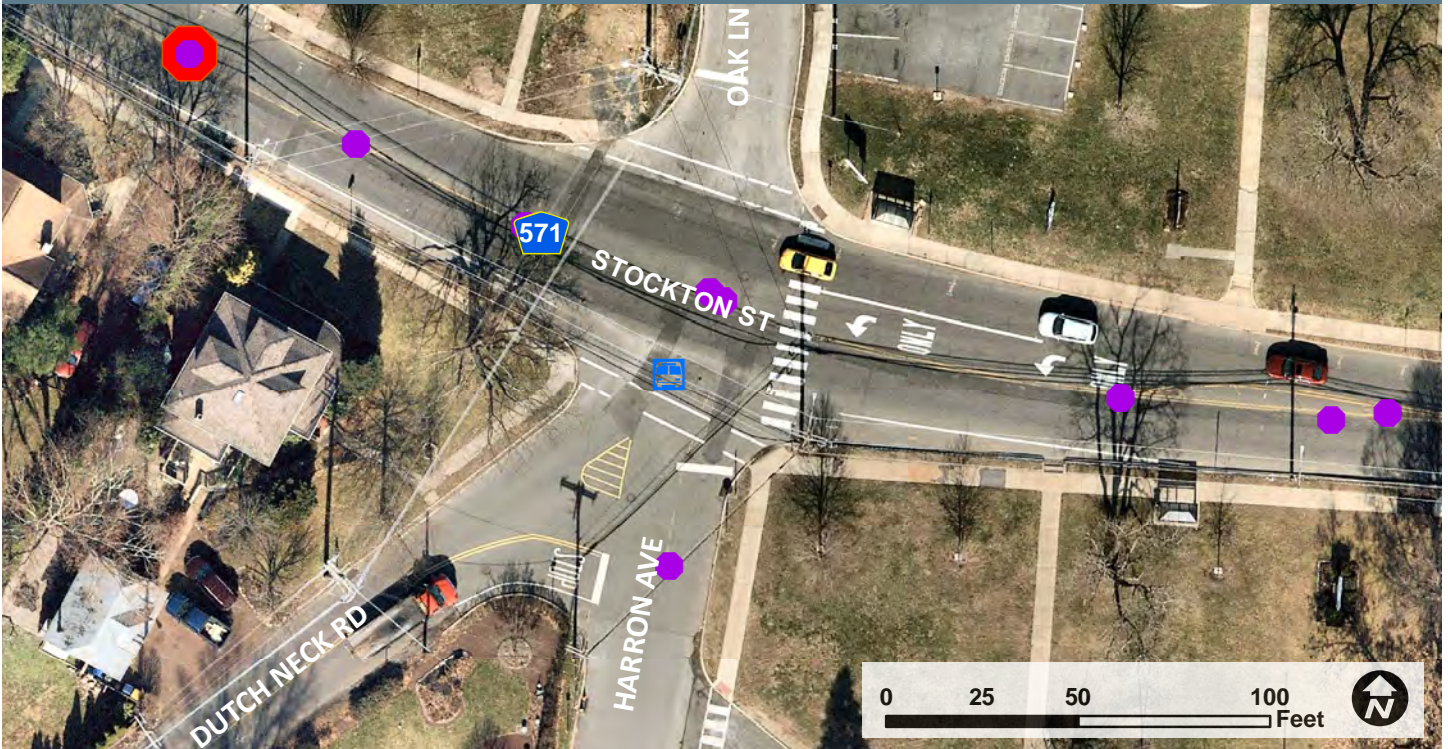


*NJDOT Traffic Count Data (05/14/2019)



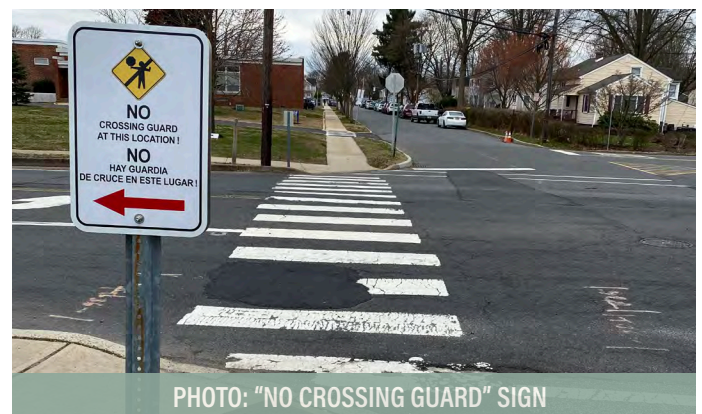
HIGHTSTOWN MOBILITY MASTER PLAN

EXISTING CONDITIONS: INTERSECTIONS



1. STOCKTON STREET, OAK LANE, DUTCH NECK ROAD, HARRON AVENUE

- Unsignalized intersection with curb ramps on all corners. The southwest corner curb ramp is missing a detectable warning surface.
- Crosswalks are marked on three legs with continental striping across Stockton Street.
- Important link between the residential areas and the elementary schools. School students are bussed or driven to the elementary schools despite being within walking distance. School zone ends at the western extent of this intersection.
- Coach USA bus stops are also located on both sides of Stockton Street to the east.
- There is a “no crossing guard at this location” sign on the northeast and southeast corners. In 2019, the crossing guard was moved from this location to the Joseph Street intersection for school foot traffic to avoid intersection.
- Sidewalks exist at all corners but there are gaps along Harron Avenue and Dutch Neck Road
- Stockton Street/CR 571 is an approach road into Hightstown from the west from Route 130; and vehicles were observed speeding and truck traffic was observed through this intersection.





HIGHTSTOWN MOBILITY MASTER PLAN

EXISTING CONDITIONS: INTERSECTIONS



2. FRANKLIN STREET (NJ 33) AND MAIN STREET (CR 539)

- This is a signalized T-intersection with pedestrian signal heads on two of three crossings. There have been almost 20 crashes at this intersections (2014-2018).
- There are multiple modes within a limited right-of-way including trucks, passenger vehicles, bicycles and pedestrians. Downtown is the core of Hightstown with many destinations and access to transit bus stops, taxi stands, Peddie Lake, Roger G. Cook Greenway, Borough Hall, and Memorial Park among many others. Sidewalk bicycle riding is also prevalent in downtown.
- Crosswalks are marked on all approaches except across Main Street on the southern side. Curb ramps with detectable warning surfaces are present at all corners and the sidewalk network is complete. There is a median at this intersection that is not ADA-compliant.
- Pedestrian push-buttons are present at the northeast and southeast corners.
- Recently installed bicycle lanes on North Main Street terminate to the north of this intersection.

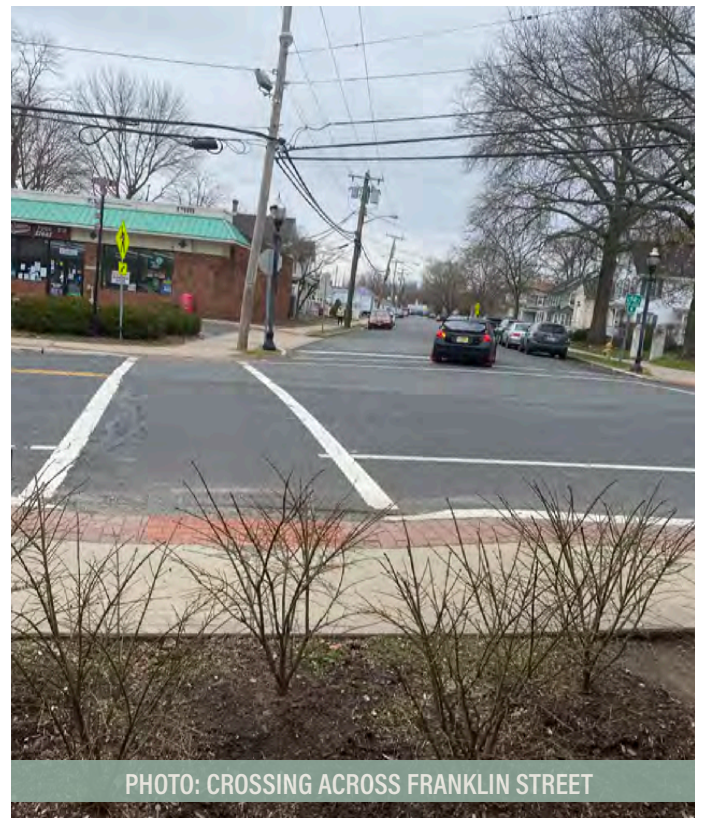
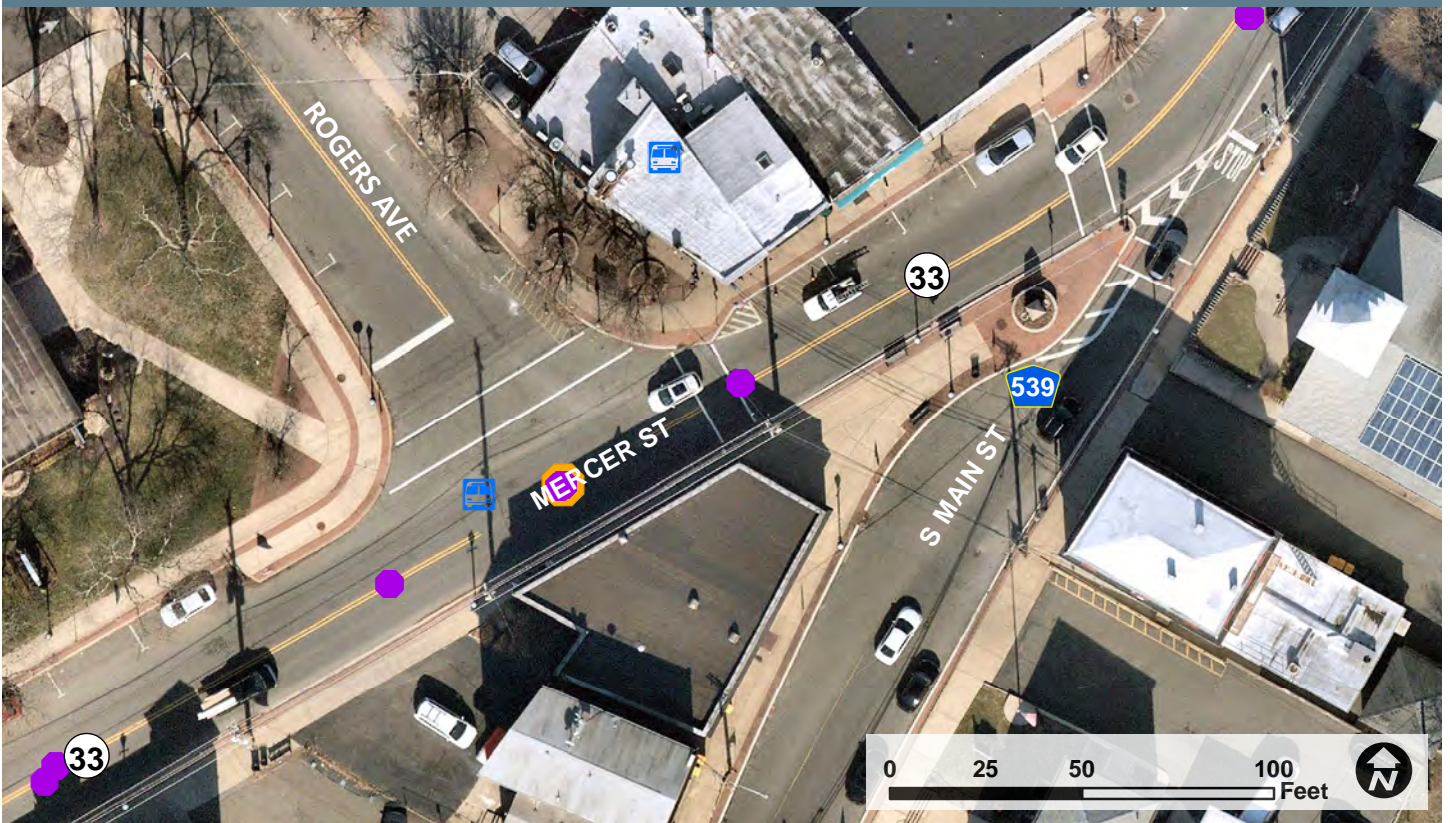


PHOTO: CROSSING ACROSS FRANKLIN STREET



HIGHTSTOWN MOBILITY MASTER PLAN

EXISTING CONDITIONS: INTERSECTIONS



3. ROGERS AVENUE, MERCER STREET (NJ 33) AND SOUTH MAIN STREET (CR 539) INTERSECTION

- Unsignalized intersection at both Rogers Avenue and South Main Street. Vehicular access from Rogers Avenue and South Main Street onto NJ 33 is stop-controlled.
- Southbound vehicular access is prohibited from Main Street to South Main Street.
- This is an important bicycle and pedestrian link between downtown and the residential areas, Peddie School and Lake, and the Roger G. Cook Greenway along the abandoned railroad.
- Crosswalks are marked at all approaches except the western approach across NJ 33. Curb ramps with detectable warning surfaces are present at all corners except on the northwest corner across Rogers Avenue. The sidewalk network is complete with benches and pedestrian scale lighting on the pedestrian refuge beyond the intersection with South Main Street with ADA-compatible curb ramps.
- Parking is permitted on the three streets (Rogers Avenue, NJ 33 and South Main Street) with built curb extensions on NJ 33.

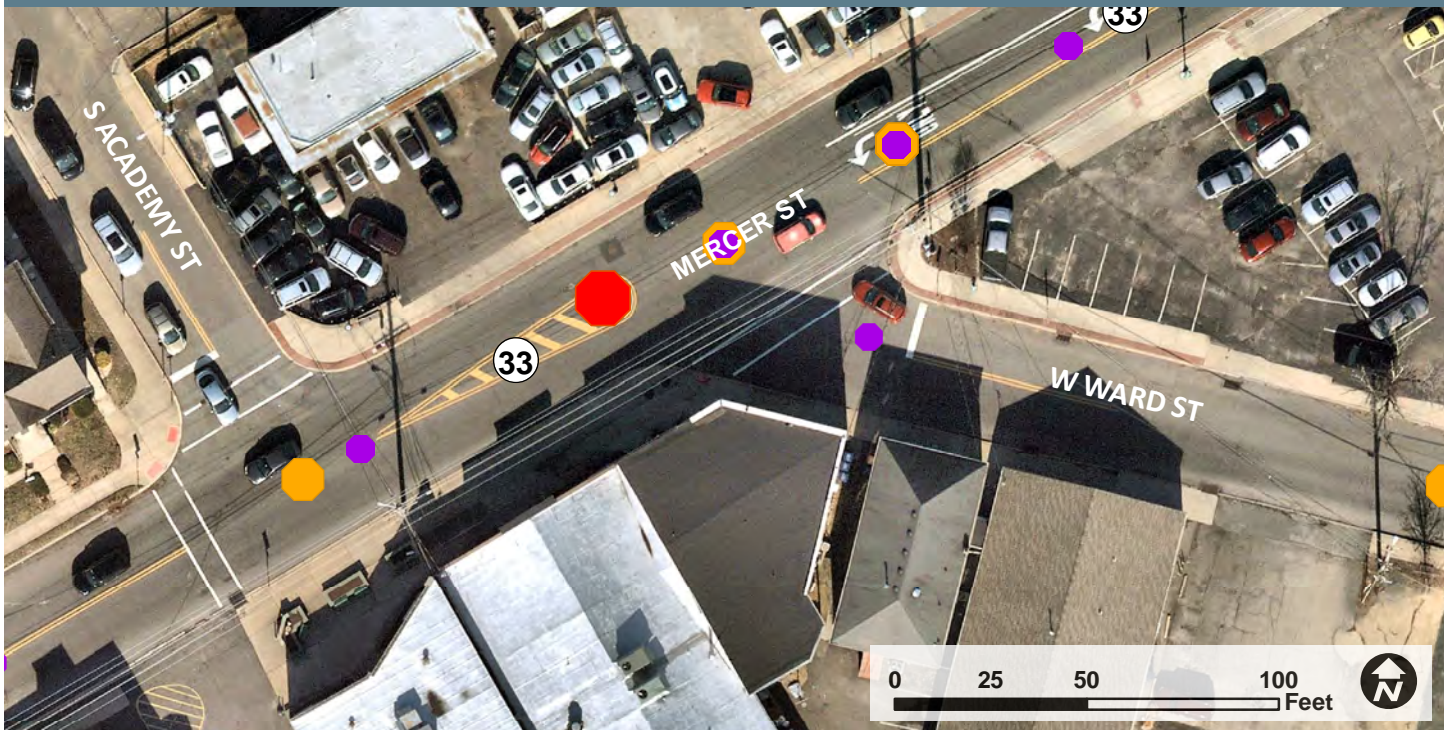


PHOTO: S. MAIN STREET (ONE-WAY) LOOKING NORTH



HIGHTSTOWN MOBILITY MASTER PLAN

EXISTING CONDITIONS: INTERSECTIONS



4. NJ 33/MERCER STREET AND WEST WARD STREET AND S. ACADEMY STREET

- Both intersections are unsignalized with stop control on S. Academy and West Ward Street.
- Curb ramps are present on all corners with two curb ramps missing detectable warning surfaces (northwest corner curb ramp at S. Academy Street and the southwest corner curb ramp at West Ward Street).
- Crosswalks are marked on three approaches except across NJ 33 on the east side at S. Academy Street and on both sides at West Ward Street.
- Important link between the residential areas, downtown, Dawes Park, and the Peddie School.
- Sidewalk network is complete at the intersections with some benches on NJ 33.
- There is a left-turn only lane at West Ward Street and a striped median to the west of the West Ward Street intersection.

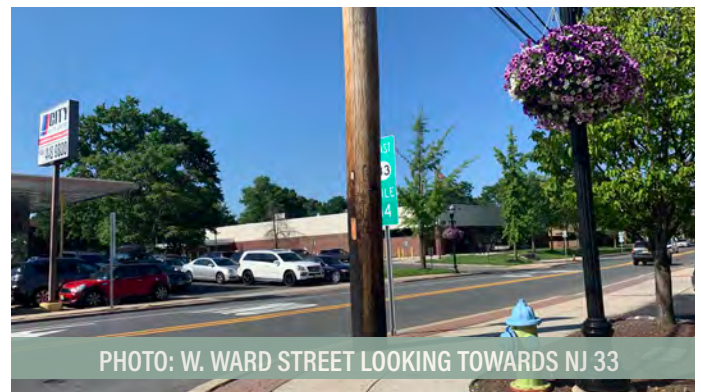


PHOTO: W. WARD STREET LOOKING TOWARDS NJ 33

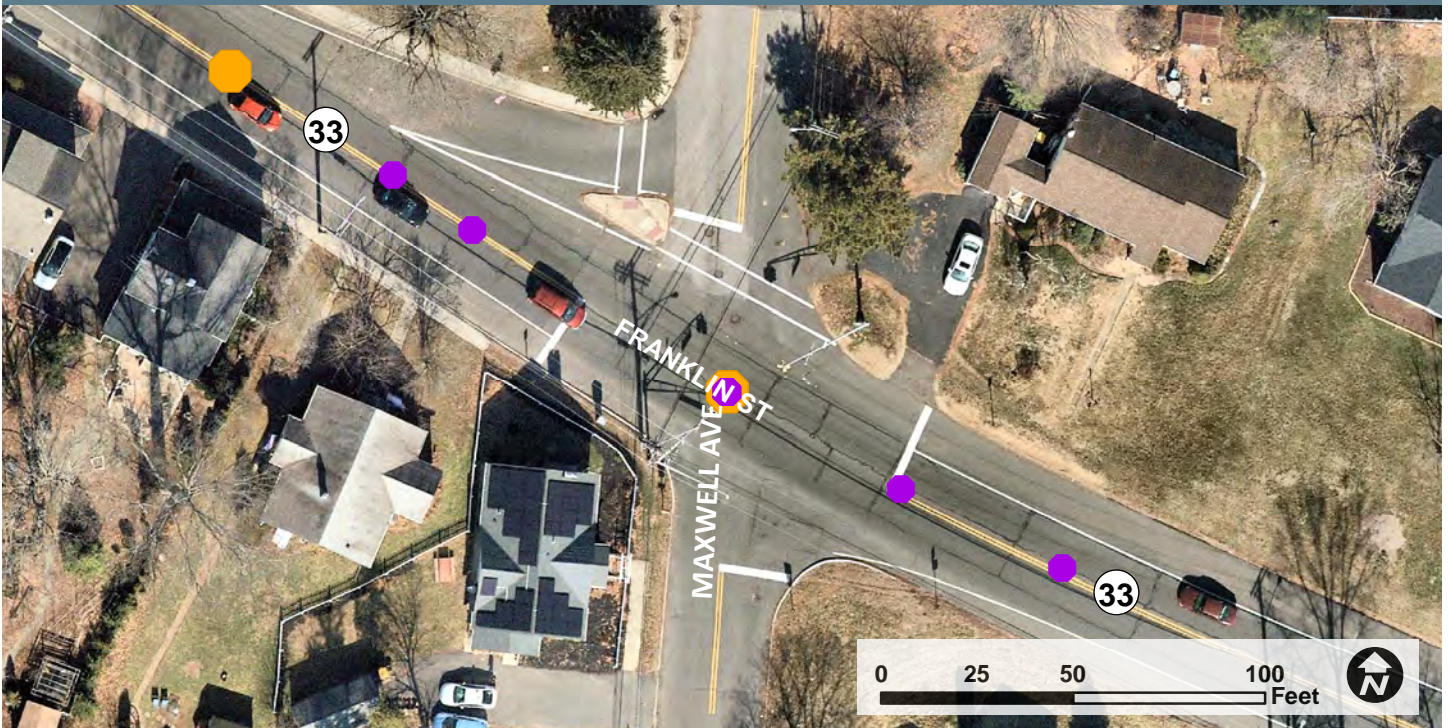


PHOTO: NJ 33 (NORTHBOUND)



HIGHTSTOWN MOBILITY MASTER PLAN

EXISTING CONDITIONS: INTERSECTIONS



5. FRANKLIN STREET AND MAXWELL AVENUE

- Signalized intersection with no turn on red from Maxwell Avenue onto NJ 33 from the south. Vehicles turning right from Maxwell Avenue onto NJ 33/Franklin Street are permitted to turn on red via a narrow right-turn slip lane that appears not to be a standard design.
- It is an important crossing for access to downtown from the residential areas and is a popular walking route to the High School.
- Sidewalks are only present on NJ 33/Franklin Street on the north side going into downtown.
- The speed limit changes from 35 m.p.h from the east to 25 m.p.h. at this intersection going into downtown Hightstown.
- Curb ramps with detectable warning surfaces are present only on the northwest corner and on the splitter island.
- Crosswalks are marked only to cross NJ 33/Franklin Street on the splitter island and to the east across Maxwell Avenue but there are no marked crosswalks across NJ 33/Franklin Avenue.
- There are pedestrian push buttons on the northeast corner and on the southwest corner with no pedestrian signal heads.





HIGHTSTOWN MOBILITY MASTER PLAN

EXISTING CONDITIONS: INTERSECTIONS



6. MAXWELL AVENUE & EAST WARD STREET

- Unsignalized three legged “T” intersection with stop control on Maxwell Avenue.
- There is a continuous sidewalk network along the southern edge of E Ward Street that provides connection to downtown Hightstown in the westbound direction. There are no sidewalks on the northern portion of E Ward Street and no sidewalk on either side of Maxwell Avenue.
- All turns have very wide radii that facilitate high speed turning movements, especially for turns onto Maxwell that are not stop controlled.
- There are no pedestrian crossings over any of the legs of the intersection.
- Property south of the intersection is part of The Peddie School campus and produces increased foot traffic from student and faculty
- Future connection to Greenway off of Maxwell Avenue will make the intersection an important part of the pedestrian and bicycle network.



PHOTO: WIDE TURNING RADII FROM E WARD STREET ONTO MAXWELL AVENUE



PHOTO: MAXWELL AVENUE LOOKING SOUTH



Chapter 3: OUTREACH SUMMARY





OVERVIEW

This section provides a summary of the outreach conducted to-date and the results of those outreach tools to help inform the recommendations and concepts for the Hightstown Borough Mobility Master Plan. The project team developed a multi-prong approach to involve the community in developing the plan. This included developing a community advisory board consisting of representatives from the various organizations in the Borough.

To engage the public, the project team developed project flyers and outreach tools/materials that were posted on the Borough's Complete Streets Committee webpage.

The following outreach tools and meetings are summarized in this section:

- Community Advisory Board Kick-Off Meeting
- Virtual Visioning Workshop
- Vision and Goals Survey
- Wikimapping
- Community Survey (Online and paper)
- Public Information Center

The input from the community helped develop the plan and was supplemented by the existing conditions analysis and evaluation. Due to the COVID-19 pandemic, the project team employed innovative methods to engage the public including a "Virtual Visioning Workshop" that provided opportunities for the community to participate virtually and provided in-person opportunities with safety protocols to those unable to participate virtually.

The project team presented draft concepts and a draft network to the Community Advisory Board that were refined based on input received. The preliminary concepts were presented to the public at a "Virtual" Public Information Center.

COMMUNITY ADVISORY BOARD

The Community Advisory Board guided the project team throughout the development of this plan. The project team facilitated two community advisory board meetings including the kick-off meeting, and a network and concepts review meeting. The Community Advisory Board members are listed on page 3 of this plan.



KICK OFF MEETING

Overview

On Thursday, December 12, 2019 the Borough of Hightstown hosted the Community Advisory Board & Project Kick-Off Meeting. The meeting took place at the Fire House Community Room and served as an opportunity to convene various community stakeholders and introduce the Project Team (NJDOT, NV5, and Stokes Creative Group) heading up the efforts in Hightstown. See Appendix A for meeting summary.





Mapping Activity

The group participated in an interactive exercise to identify priority destinations and community assets, preferred pedestrian and bicyclist routes (including existing pedestrian and bicyclist facilities), and potential barriers that pose issues for pedestrians and bicyclists.

A large map of the Borough study area was used by the attendees to identify and detail existing

conditions and areas of concern by highlighting various features such as: key destinations, current/desired walking and biking routes, current/planned projects, and existing barriers.

Information collected during this exercise was input into the Wikimapping platform to serve as a basemap to be built upon for documenting community input.



PUBLIC OUTREACH SUMMARY

WIKIMAPPING

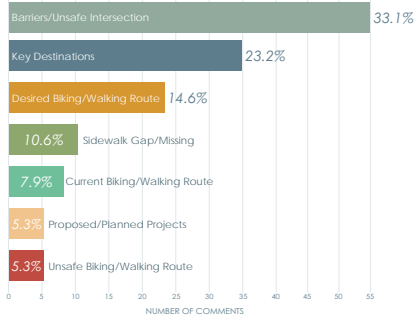
Total Number of Comments:

151

Number of Barriers identified:

49

Responses by Category Type



KEY TAKEAWAYS

The majority of the current walking/biking routes identified are located in the southern portion of the borough whereas, most "Desired Routes" are in the north with a fair amount within the downtown area. Routes marked as "Unsafe" were primarily located in the southern portion of the borough most notably RT 33 (Mercer Street), CR-539 (South Main Street), Dutch Neck Road, and Summit Street.

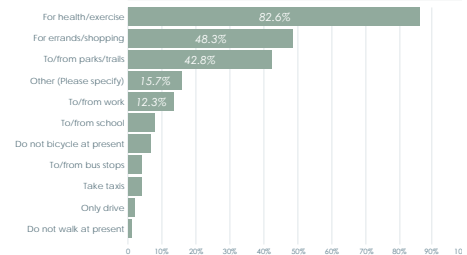


COMMUNITY SURVEY

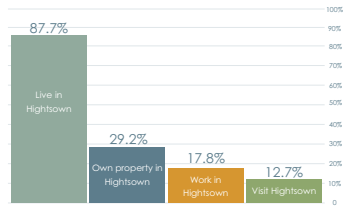
236 TOTAL RESPONSES
INCLUDING 50 SPANISH LANGUAGE RESPONSES

DO YOU WALK OR BIKE IN HIGHTSTOWN?
 ONLY WALK - 44.9%
 YES, BOTH - 43.6%
 ONLY DRIVE - 3.8%
 TAKE TAXIS - 3.4%
 ONLY BICYCLE - 3.0%
 NO - 1.3%

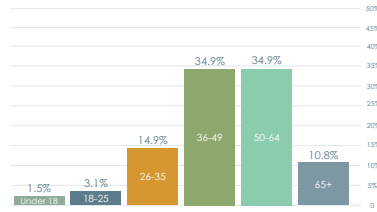
Why do you walk or bicycle?



Respondent's Connection to Hightstown

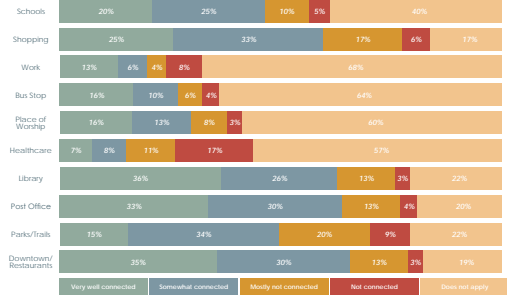


Age of Survey Respondents



50% WALK OR BICYCLE DAILY DURING WARM WEATHER

How connected/walkable/bikeable are the following types of destinations from your home?



TOP-5 DESIRED IMPROVEMENTS

1. Safe pedestrian crossings
2. Continuous sidewalk network
3. On-road bicycle facilities
4. Off-road/protected bicycle facilities
5. Curb extensions (or other traffic calming measures) to slow vehicular traffic



TOP-5 BARRIERS TO WALKING/BICYCLING

1. Incomplete sidewalk network
2. Streets feel unsafe for cycling
3. Lack of crosswalks and crossings feel unsafe
4. Lack of adequate bicycle facilities
5. Road surfaces are poor



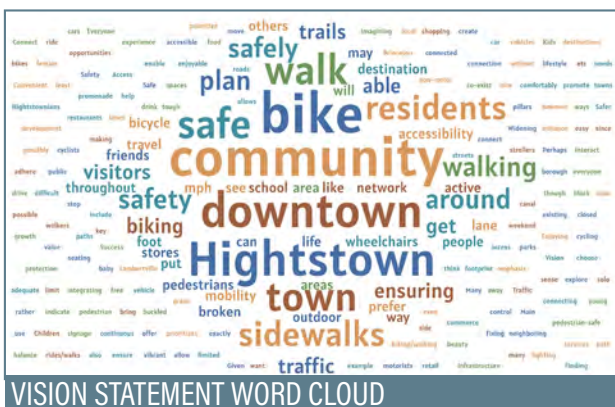
VIRTUAL VISIONING WORKSHOP



175

PEOPLE LOADED/
WATCHED VIDEO

NUMBER OF
UNIQUE USERS: 110
DURING A SINGLE DAY



VISION STATEMENT WORD CLOUD

IDENTIFIED GOALS:



- SAFETY**
Develop a safe and continuous bicycle and pedestrian network
- ACCESSIBILITY**
Improve access and mobility for people of all ages and abilities to connect to local destinations
- RECREATION**
Provide recreation options to encourage walking and bicycling Hightstown Borough
- REGIONAL CONNECTIVITY**
Improve connectivity to/with adjacent communities

PUBLIC MEETINGS



COMMUNITY ADVISORY BOARD (CAB) MEETING - 10/27/2020

VIRTUAL NETWORK AND CONCEPT REVIEW MEETING

The Community Advisory Board (CAB) was comprised of a diverse collection of community stakeholders representing a cross section of the Borough of Hightstown who volunteered their time to make the Mobility Master Plan a reality. Members ranged from local/regional elected officials, nonprofit organizations, representatives from area schools, local business owners, among other interested citizens. On October 27th 2020, members of this group took part in a virtual meeting via Zoom to discuss project updates, offer feedback, and approve the concepts and recommendations developed by the project team. The comments and feedback collected throughout the meeting and afterwards (through digital feedback form) were compiled by the project team and integrated into the final plan.

15 CAB MEMBERS
ATTENDED

NUMBER OF FEEDBACK
FORMS RECEIVED: 8

VIRTUAL PUBLIC INFORMATION CENTER - 11/10/2020



VIRTUAL INFORMATION CENTER

Due to ongoing threat of the COVID-19 crisis, initial plans for an in-person Public Information Center were altered to a digital format to ensure the safety of all participants. Overall, 31 attendees (including the project team) took part in a virtual public meeting via Zoom to provide an overview of the project and discuss proposed recommendations. The meeting was recorded and hosted on the Borough website to provide an opportunity to participate for those who were unable to attend the live event.

31

ATTENDEES





WIKIMAPPING

OVERVIEW

As part of the community outreach efforts, the project team developed an online interactive mapping platform through the program “Wikimapping” to allow community members to provide input regarding the existing conditions for walking and bicycling within the Borough. Respondents were encouraged to share their personal knowledge and experiences walking and bicycling in Hightstown by adding comments (points and lines) to the map to indicate key destinations, current/desired routes, unsafe routes, gaps in the sidewalk network, and barriers/unsafe intersections.

The Wikimap was hosted on the Borough’s website and remained live and open for comments from (February 24, 2020 to July 6, 2020). During this timespan, there were 151 total comments

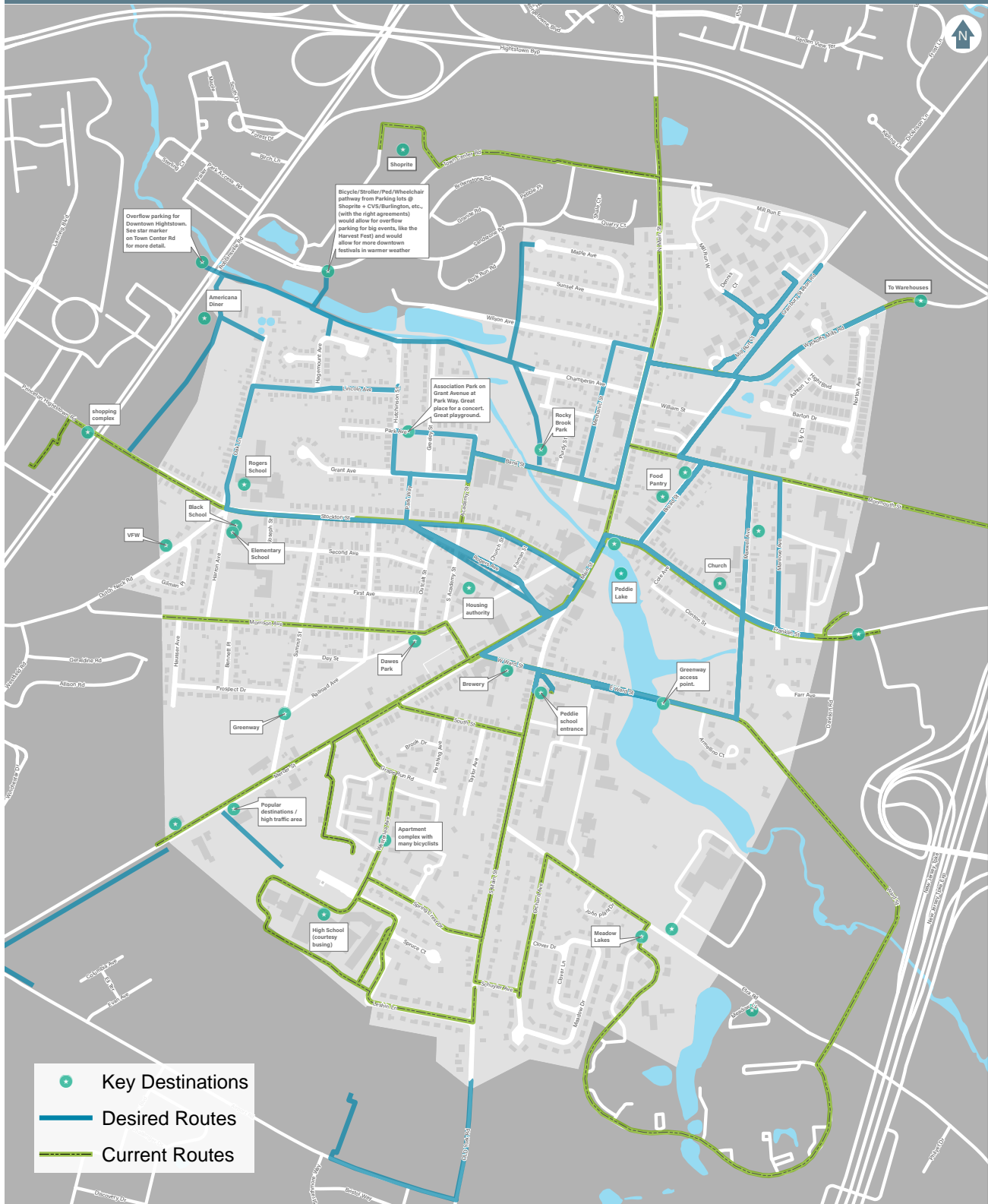
submitted. The majority of comments focused on either Barriers/Unsafe Intersections (33.1%) or Key Destinations (23.2%).

TABLE 8: WIKIMAPPING COMMENTS BY CATEGORY

Comment Category	Count	%
Barriers / Unsafe Intersection	50	33.1%
Key Destinations	35	23.2%
Desired Biking/Walking Route	22	14.6%
Sidewalk Gap/Missing	16	10.6%
Current Biking/Walking Route	12	7.9%
Proposed/Planned Projects	8	5.3%
Unsafe Biking/Walking Route	8	5.3%
Grand Total	151	100.0%



MAP 15: WIKIMAPPING - CURRENT/DESIRED ROUTES

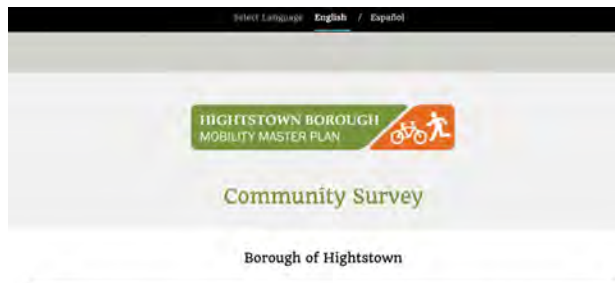




COMMUNITY SURVEY

The project team developed a community survey to engage Hightstown residents and gauge the current state of walking and bicycling within the Borough. The survey was available in both English and Spanish and was hosted in digital format via the project website.

During the pandemic, the project team provided paper copies of the English and Spanish surveys at strategic events such as the drive-up taxi home food distribution event organized by RISE to increase participation from the community. Due to the on-going pandemic, outreach with the under 18 population was limited. The Community Advisory Board provided information on routes used by high school and Peddie School students.



We want to improve walking and bicycling in the Borough of Hightstown. Please fill out this survey and accompanying [WikiMap](#) to help us understand the walking and bicycling environment in Hightstown and your thoughts on how to improve it.
La encuesta está disponible en español. Seleccione español del menú en la esquina superior derecha.

1. How are you connected to Hightstown? Check ALL that apply.

- I live in Hightstown
- I own a property or business in Hightstown
- I work in Hightstown (full-time or part-time)
- I visit Hightstown

2. Do you walk or bicycle within the Borough of Hightstown?

- Yes, both
- Only Bicycle
- Only drive
- Only walk
- No
- Take taxis

PHOTO: COMMUNITY SURVEY EXCERPT

There were a total of 236 completed surveys, including 50 Spanish language responses, that were collected via paper surveys. The complete survey results are in the Appendix A.

SURVEY RESPONDENTS

Over 87% of respondents reported that they live in Hightstown while nearly 30% report owning property within the Borough. Around 18% of respondents reported that they work in Hightstown. In terms of age, the majority of respondents fell within two age brackets 36-49 (34.9%) and 50-64 (34.9%), meaning that approximately 70% of respondents were between 36 and 64 years of age.

FIGURE 6: RESPONDENT'S CONNECTION TO HIGHTSTOWN

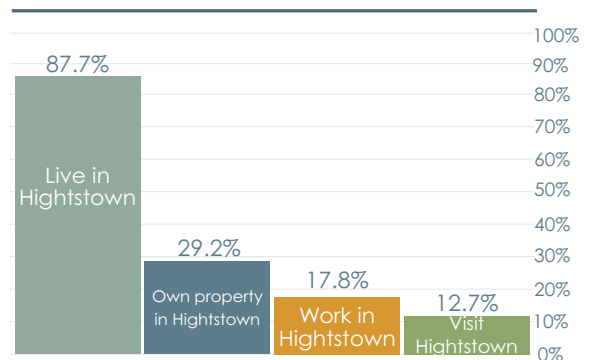
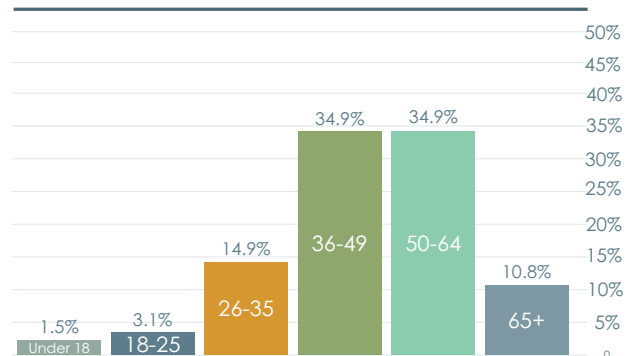


FIGURE 7: AGE OF SURVEY RESPONDENTS



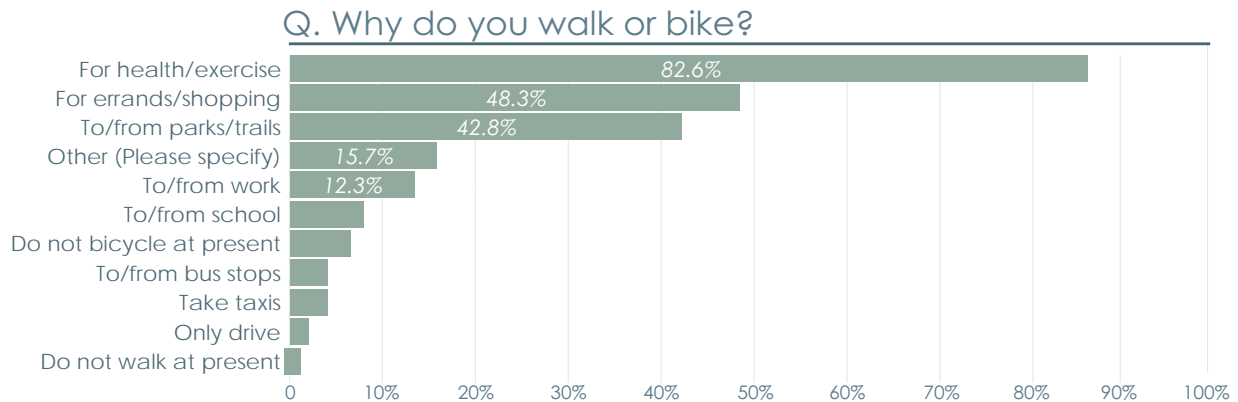
236 TOTAL RESPONSES 
INCLUDING 50 SPANISH LANGUAGE RESPONSES

WALKING AND BICYCLING RESPONSES

Over 50% of respondents reported that they walk or bicycle daily during warm weather. More than 82% indicated that they walk or bike “For exercise” followed by “For Errands/Shopping” at 48%. Only 12% of respondents indicated that they walk or bike “To/From Work” and 9% said “To/From School” possibly indicating a lack of comfortable routes to places of employment and schools.

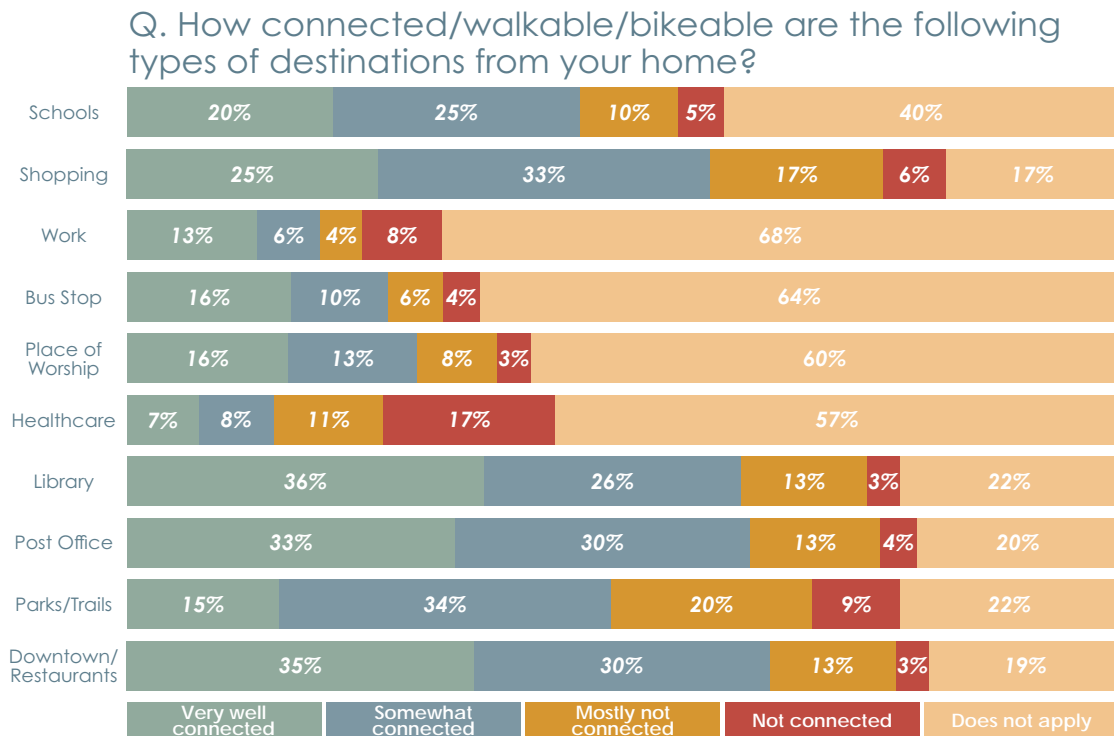
50% WALK OR BICYCLE DAILY DURING WARM WEATHER 

FIGURE 8: REASONS FOR WALKING AND BICYCLING



This trend was also reflected when respondents were asked about how well connected certain destinations were within the Borough. Only 20% of respondents felt that schools were “Very Well Connected” while only 13% indicated that work destinations fit this category. In contrast, approximately 36% of respondents found that the library was “Very Well Connected” followed by Downtown/Restaurants at 35%.

FIGURE 9: WHY DO YOU WALK OR BICYCLE?





Respondents were asked to identify how they travel in Hightstown. Less than half (45%) only walk in Hightstown and another 45% walk and bicycle in the Borough. This is evidence of the Borough's earlier successes in improving walking and bicycling conditions. About 4% only drive in Hightstown and 3% only bicycle. More than 3% take taxis in Hightstown Borough per the survey results.

Survey users were also asked about the existing barriers to walking and bicycling as well as what potential improvements they would like to see. For each category, respondents were given a list of barriers and improvements and asked to rank them in order of their priority.

FIGURE 10: BARRIERS TO WALKING AND BICYCLING

TOP-5 BARRIERS TO WALKING/BICYCLING



1. Incomplete sidewalk network
2. Streets feel unsafe for cycling
3. Lack of crosswalks/crosswalks feel unsafe
4. Lack of adequate bicycle facilities
5. Road surfaces are poor

In terms of barriers, the top issue indicated was "Incomplete Sidewalk Network" with around 34% of respondents ranking it as their #1 or #2 priority. This was followed by "Streets feel unsafe for cycling" with 26% ranking it #1 or #2.

FIGURE 11: RESPONDENTS TRAVEL MODE

DO YOU WALK OR BIKE IN HIGHTSTOWN?

- ONLY WALK - 44.9%
- YES, BOTH - 43.6%
- ONLY DRIVE - 3.8%
- TAKE TAXIS - 3.4%
- ONLY BICYCLE - 3.0%
- NO - 1.3%

FIGURE 12: DESIRED IMPROVEMENTS



TOP-5 DESIRED IMPROVEMENTS

1. Safe pedestrian crossings
2. Continuous sidewalk network
3. On-road bicycle facilities
4. Off-road/protected bicycle facilities
5. Curb extensions (or other traffic calming measures) to slow vehicular traffic

For desired improvements, "Safe Pedestrian Crossings" was selected as the highest priority with over 52% ranking it #1 or #2. This was followed closely by a desire for a "Continuous sidewalk network".

VISIONING WORKSHOP

In May 2020, due to the on-going pandemic, the project team in collaboration with the Hightstown Complete Streets Committee and NJDOT developed a plan for a “Virtual Visioning Workshop” in lieu of an in-person Visioning Workshop. This included a video recording to present the findings to date, capture input from the community about the overall mobility plan vision statement and priority goals using an additional community engagement tool,

(Google form).

Information about the engagement tools, the video and the Google form was posted on the Borough website on the main page and on the Complete Streets Committee page. More than 170 viewers watched the video.



FIGURE 13: VIRTUAL VISIONING WORKSHOP STATISTICS



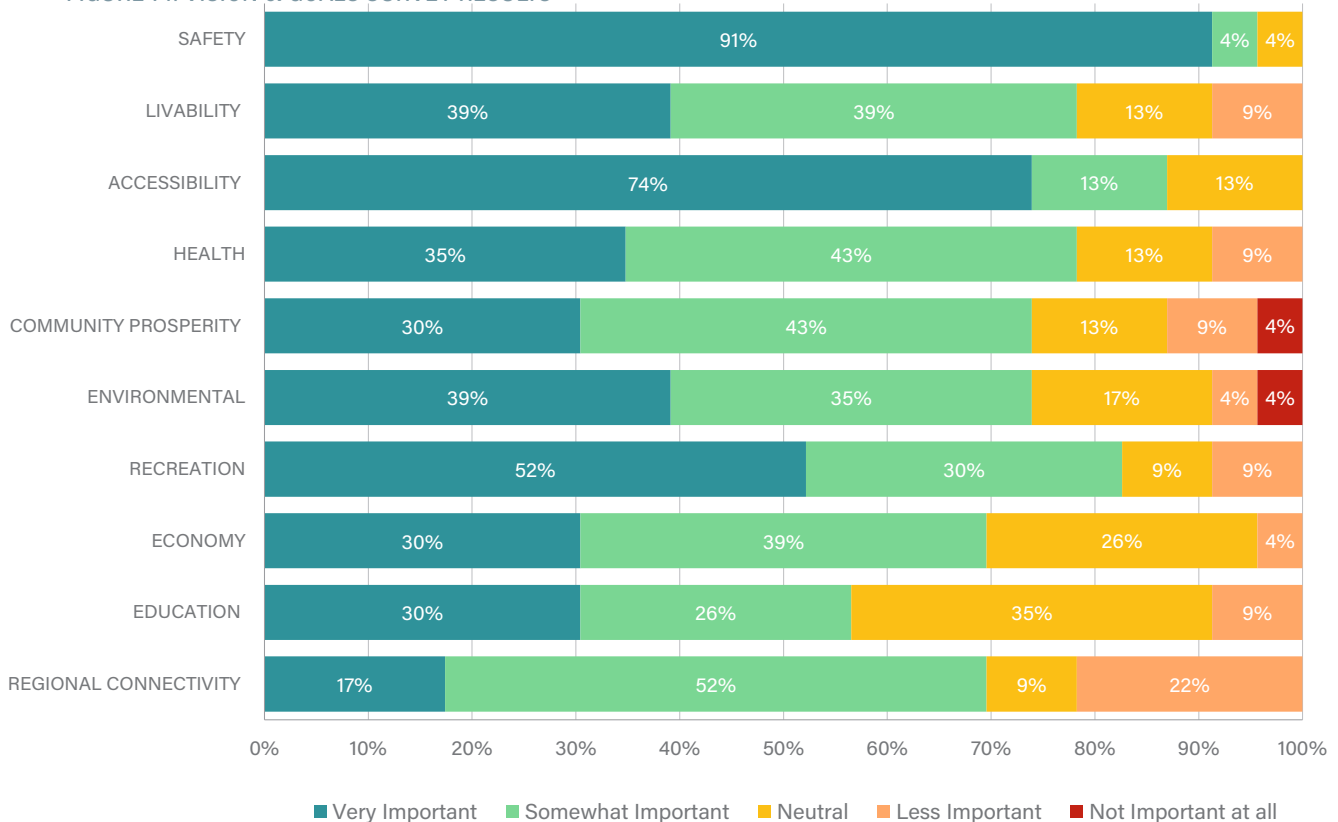
VISION AND GOALS

The Vision and Goals input form was developed in English and Spanish to allow for maximum participation. There were 23 responses provided via the google forms.

The project team worked with the Borough's Complete Streets Committee to build upon the Visioning Workshop results and developed a vision statement and priority goals.



FIGURE 14: VISION & GOALS SURVEY RESULTS





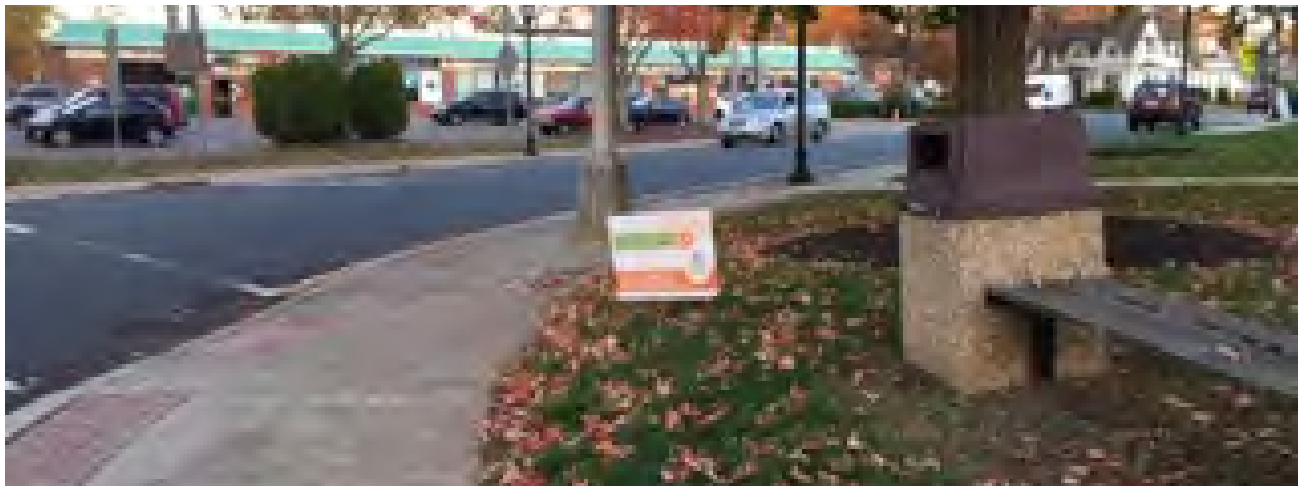
PUBLIC INFORMATION CENTER

On November 10, 2020, the project team facilitated an online “Public Information Center” to present the draft recommendations including the Priority Bicycle and Pedestrian Network, planning level concepts to improve conditions in the Borough and to provide opportunity for community input. The online meeting was attended by 24 members of the community. An online feedback form was developed to gather feedback after the meeting in addition to the open comments during the meeting. Additionally, the meeting was recorded and a link to the meeting video and the q/a video was posted on the Borough website.



PUBLIC INFORMATION CENTER VIDEO

The project team also provided exhibits advertising the Public Information Center meeting in various high-activity locations within the Borough.





The feedback form was available for 2 weeks for input and the feedback was incorporated into the final Mobility Master Plan. The project team received additional feedback via email from the community.

HIGHTSTOWN BOROUGH
MOBILITY MASTER PLAN

PUBLIC INFORMATION CENTER FEEDBACK FORM

Thank you for participating in the Hightstown Mobility Master Plan project! If you attended the Public Information Center, please provide your feedback below to help us finalize this plan! If you did not attend the Public Information Center on 11/10/2020, please view the meeting video (posted on the Borough website) to review the concepts and recommendations prior to providing your input.

THIS IS YOUR PLAN AND WE WANT YOUR INPUT (your answers will be anonymous).

DEADLINE TO SUBMIT THIS FORM IS 11/24/2020!

* Required

PRELIMINARY BICYCLE & PEDESTRIAN NETWORK

Any comments / recommendations for the PRELIMINARY BICYCLE AND PEDESTRIAN NETWORK? *



INTENTIONALLY LEFT BLANK



Chapter 4: RECOMMENDATIONS





OVERVIEW

This section includes the recommendations developed for the Hightstown Mobility Master Plan to achieve the overall vision and goals. The recommendations aim to improve the walking and bicycling conditions in the Borough based on the analysis of existing conditions, community input and direction from the Complete Streets Committee and the Community Advisory Board.

The recommendations are categorized into engineering recommendations or physical infrastructure improvements and programmatic recommendations that include the four “E”s (Education, Evaluation/Planning, Encouragement and Enforcement) measures recommended for the Mobility Master Plan. When implemented together, these measures will improve the travel for users of all ages and abilities in the Borough.

Engineering recommendations include built environment concepts that can be considered for future final design and construction to enhance and expand the existing Hightstown infrastructure. An implementation matrix that lists all the recommended actions with the estimated costs, time-frame for completion and responsibility is in Chapter 6: Implementation and Funding.

Programmatic recommendations include strategies that aim to educate all users, foster a safe walking and bicycling culture and measure progress related to the bicycling and walking environment. The programmatic recommendations include educational programs, speeding campaigns, training programs, bicycling programs and events, evaluation metrics and policies.



PHOTO: ROGER G. COOK GREENWAY

PROPOSED BICYCLE & PEDESTRIAN NETWORK

The compact size of Hightstown makes it an excellent candidate for bicycling and walking to key destinations within the Borough. There already exists off-road greenway/paths in the Borough and there are several planned/existing bicycle improvements on County Roads per the recently completed Bicycle Master Plan. This network of greenway/paths and the recent County Road improvements provides opportunity to develop a borough-wide network that provides bicycle and pedestrian access to the key destinations in the Borough.

Based on the team’s analysis of existing roadway network and the DVRPC’s Bicycle Level of Stress analysis, the project team identified additional links that could provide a complete bicycle and pedestrian network within and around the Borough. (See Map 16: Proposed Bicycle and Pedestrian Network).

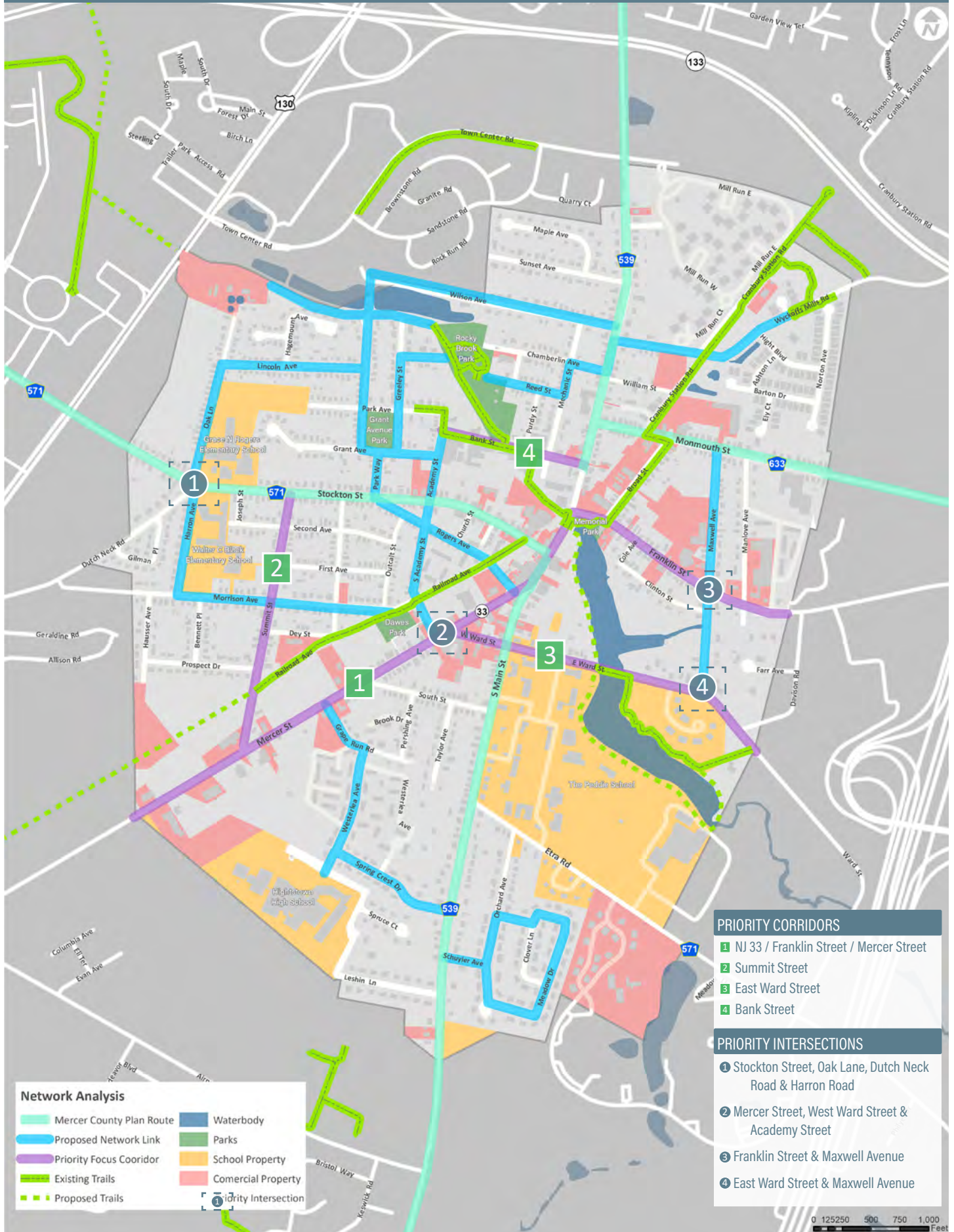
The Borough should focus on the following identified network links:

- continue efforts to connect to the Union Transportation Trail as shown in the Map 16.
- The Roger G. Cook Greenway should be extended between Stockton Street and Rogers Avenue and path around the Lake should be completed.
- Walking and bicycling connections should be made to the commercial shopping center on Route 130 along Rocky Brook.
- Explore building a bridge over Rocky Brook from Hutchinson Street to Wilson Avenue or Glen Brook Drive to Reed Street.

NETWORK IMPROVEMENTS

A set of improvements are recommended for the priority bicycle and pedestrian network. These include improvements to address pedestrian safety and conditions as shown in Figure 16: Pedestrian Improvement Recommendation Matrix. For bicycle facilities recommendations, the project team recommends that the Borough utilize the guidance provided in the latest NJDOT Complete Streets Design Guide.

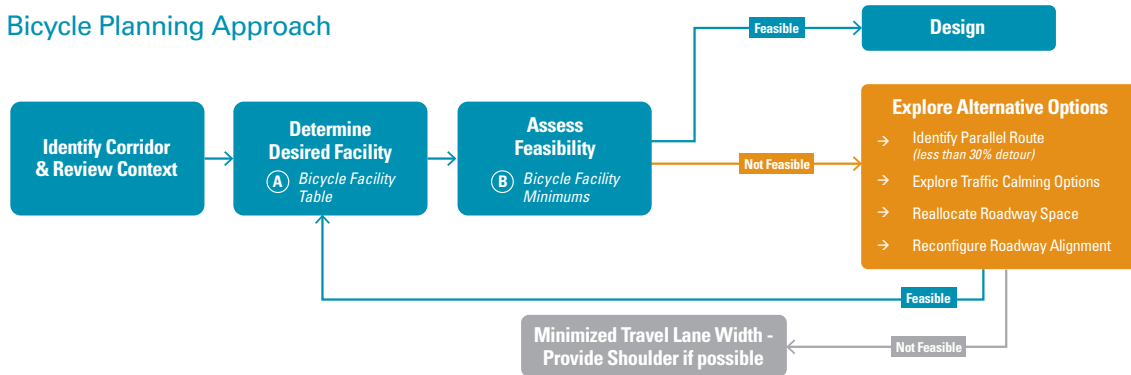
MAP 16: PROPOSED BICYCLE AND PEDESTRIAN NETWORK





The Bikeway Selection Guidance table (Figure 15) below from the NJDOT Complete Streets Design Guide provides guidance on bicycle facility selection based on roadway characteristics such as ADT (average daily traffic) and 85th percentile speed. This table can help the Borough determine facility types for the other network links in the priority bicycle and pedestrian network as shown on Map 16. The recommendations for the priority corridors are supplemented by design guidance in Chapter 5: Design Guidelines.

Bicycle Planning Approach



A Bicycle Facility Table

ADT	85TH PERCENTILE SPEED ¹						
	≤ 20	25	30	35	40	45	≥50
≤ 2,500	ABCDEF	A ² BCDEF	CDEF	CDEF	CDEF	DEF	F
2,500–5,000	BCDEF	BCDEF	CDEF	CDEF	DEF	DEF	F
5,000–10,000	B ³ CDEF	B ³ CDEF	CDEF	DEF	DEF	EF	F
10,000–15,000	DEF	DEF	DEF	DEF	EF	EF	F
≥15,000	DEF	DEF	DEF	EF	EF	F	F

A: Shared Street/Bicycle Boulevard **B:** Shared-lane Markings **C:** Bicycle Lane **D:** Buffered Bicycle Lane
E: Separated Bicycle Lane **F:** Shared-use Path

¹If data not available, use posted speed

²Bicycle boulevards are preferred at speeds ≤25 mph

³Shared-lane markings are not a preferred treatment with truck percentages greater than 10%

FIGURE 15: NJDOT COMPLETE STREETS DESIGN GUIDE: BICYCLE FACILITY GUIDANCE TABLE

ENGINEERING RECOMMENDATIONS

Based on the results of the data collection efforts, field visits, and stakeholder input, the project team identified initial focus areas (corridors and intersections) to be analyzed. The Complete Streets Committee provided feedback on the initial focus areas and recommended priority corridors and intersections for this plan. Based on the latest design guidance from NJDOT, National Association of City Transportation Officials (NACTO) and Federal Highway Administration (FHWA), the team developed concept level recommendations for each of the corridors and intersections to improve the walking and bicycling environment.

The recommendations primarily focus on routes and intersections that connect key bicycle and pedestrian destinations. A borough-wide bicycle and pedestrian network was also identified, for future consideration outside of this Mobility Master Plan effort, that will build on the existing (and planned) network of greenways and trails with additional network links along key routes (See Map 16: Proposed Bicycle and Pedestrian Network).

PEDESTRIAN IMPROVEMENTS

Recommendations for pedestrian improvements are summarized in Figure 15 - Pedestrian Improvements Recommendation Matrix. The recommendations are categorized by treatments that can be applied to all roadway segments and intersections, including signalized intersections, although application will vary as appropriate to context and land use. Each treatment is described in the design guidelines including information on general considerations, design characteristics, as well as photos and/or diagrams of typical applications.






PEDESTRIAN IMPROVEMENTS	RECOMMENDATIONS FOR PRIORITY BIKE/PEDESTRIAN NETWORKS				
	Commercial/ Retail	Residential	<1/4 Mile from Parks, Schools, Transit	History of Frequent Speeding	History of Ped / Bike Crashes
					
<i>ROADWAY SEGMENTS</i>					
Sidewalks and Curb Ramps	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Pedestrian-Scale Lighting	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Parklets	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>	
Mid-Block Crossings	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>
Gateways	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<i>ALL INTERSECTIONS</i>					
Crosswalks	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Mini-Traffic Circles	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Curb Extensions	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Pedestrian Refuge Islands	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
RRFB (Flashing warning lights)	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
In-Street Crossing Sign	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
HAWK Signals	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<i>AT SIGNALIZED INTERSECTIONS ONLY</i>					
Pedestrian Countdown Signals	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

FIGURE 16: PEDESTRIAN IMPROVEMENT RECOMMENDATION MATRIX



DOWNTOWN HIGHTSTOWN

The recommendations in this plan focus on the priority locations identified and approved by the Complete Streets Committee. At the time of development of this plan, the Borough received funding for a downtown area circulation plan that incorporated the downtown and the redevelopment area. It was therefore determined that the efforts of this Mobility Plan focus on other problem locations and corridors in Hightstown. NJ 33 (Mercer Street and Franklin Street) was prioritized for this plan and the corridor concepts focus primarily on low-cost and low-impact recommendations. Given the limited right of way on NJ 33 in Downtown, the project team evaluated the possibility of adding bicycle lanes or shared use paths on NJ 33 through downtown. However, the initial analysis indicated that a dedicated facility will have significant parking and right-of-way impacts. It is recommended that the upcoming downtown area circulation project further evaluate a dedicated bicycle facility.



PHOTO: DOWNTOWN HIGHTSTOWN

PRIORITY CORRIDORS

The project team, with input from the Complete Streets Committee, identified priority corridors for input based on the existing conditions analysis, outreach results and field work. Bicycle facility recommendations for the priority corridors were identified based on the available roadway width, speed, and traffic volume data. These will require additional design and analysis prior to implementation. Improvements along key county roadways identified by the Mercer County Bicycle Plan were incorporated into the overall bicycle and pedestrian network.

The bicycle improvements identified for the priority corridors include shared lane markings, bicycle lanes (striped and buffered), advisory bicycle lanes and shared use paths.

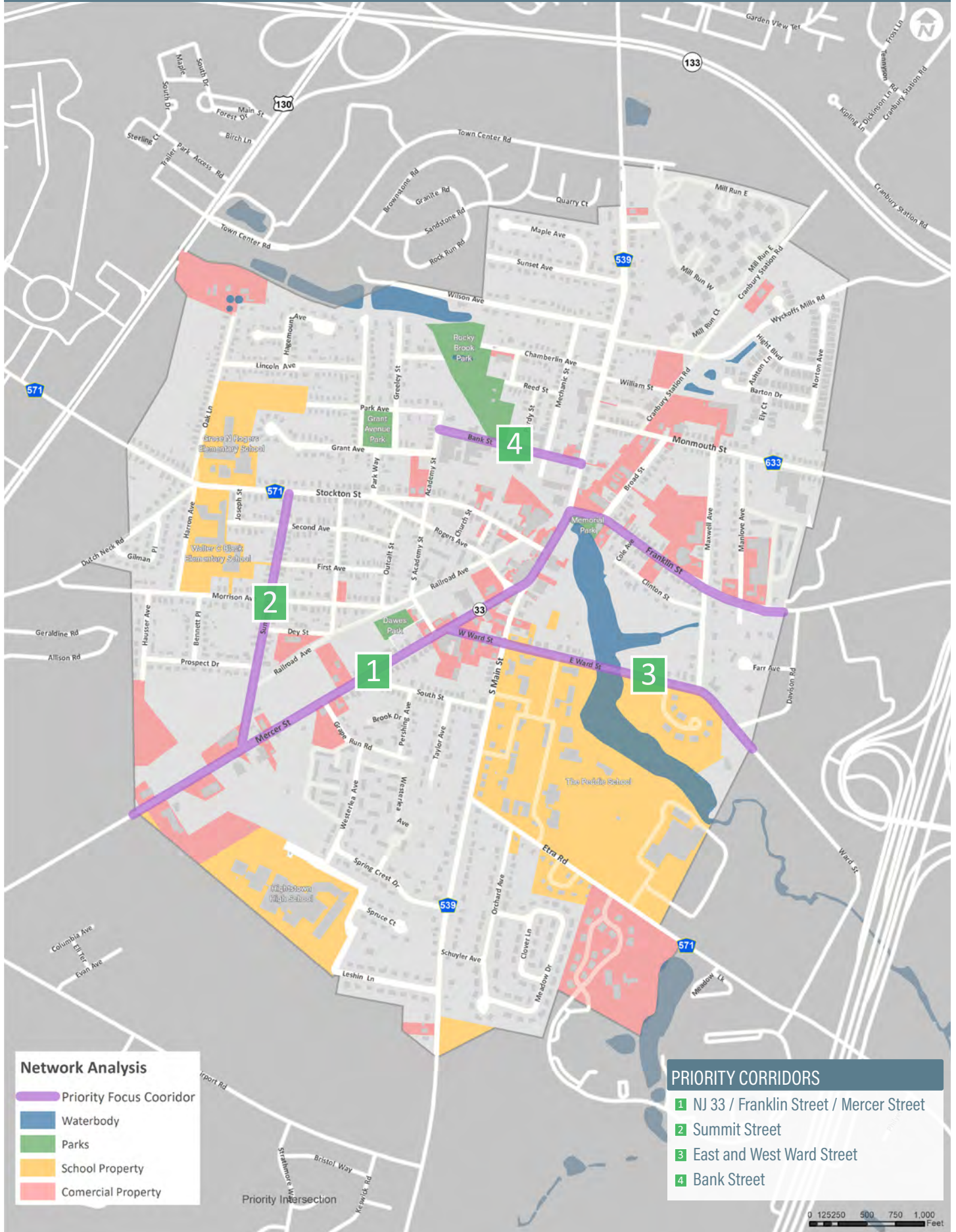
The following corridors were evaluated further and the project team developed recommendations to improve the bicycle and pedestrian environment for all users:

1. NJ Route 33 / Mercer Street / Franklin Street
2. Summit Street
3. East and West Ward Street
4. Bank Street



PHOTO: EAST WARD STREET

MAP 17: PRIORITY CORRIDORS



Network Analysis

- Priority Focus Corridor
- Waterbody
- Parks
- School Property
- Commercial Property

PRIORITY CORRIDORS

- 1 NJ 33 / Franklin Street / Mercer Street
- 2 Summit Street
- 3 East and West Ward Street
- 4 Bank Street



NJ 33 - BOROUGH BORDER TO SCHOOL ZONE & MAXWELL AVE TO BORDER

TRAFFIC VOLUME (AADT): **10,395***

SPEED LIMIT: **35 - 45 MPH**

ROADWAY WIDTH: **40'**

CRASHES (2014-2018): **59**

ROADWAY CHARACTERISTICS

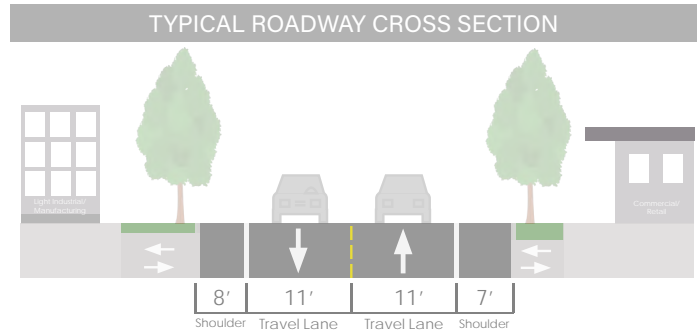
NJ 33 is a state roadway that runs in a southwest to northeast orientation through from the Borough border with East Windsor to Downtown Hightstown and then east to the eastern border. The section from the borough border to Summit Street is two lane roadway with a 45 m.p.h. speed limit that decreases to 35 m.p.h. at the intersection with Summit Street. There are 7' shoulders along each travel lane with parking prohibited on both sides. The section from Maxwell Avenue to the eastern border is also similar in cross section with a 35 m.p.h. speed limit.

OPPORTUNITIES

- Mix of uses along the corridor including residential, commercial/retail, and light industrial/manufacturing
- Wide, marked shoulders could provide space for pedestrian and/or bicycle facilities
- Pedestrian crossing signal installed for crossing NJ 33 at Grape Run Road

CONSTRAINTS

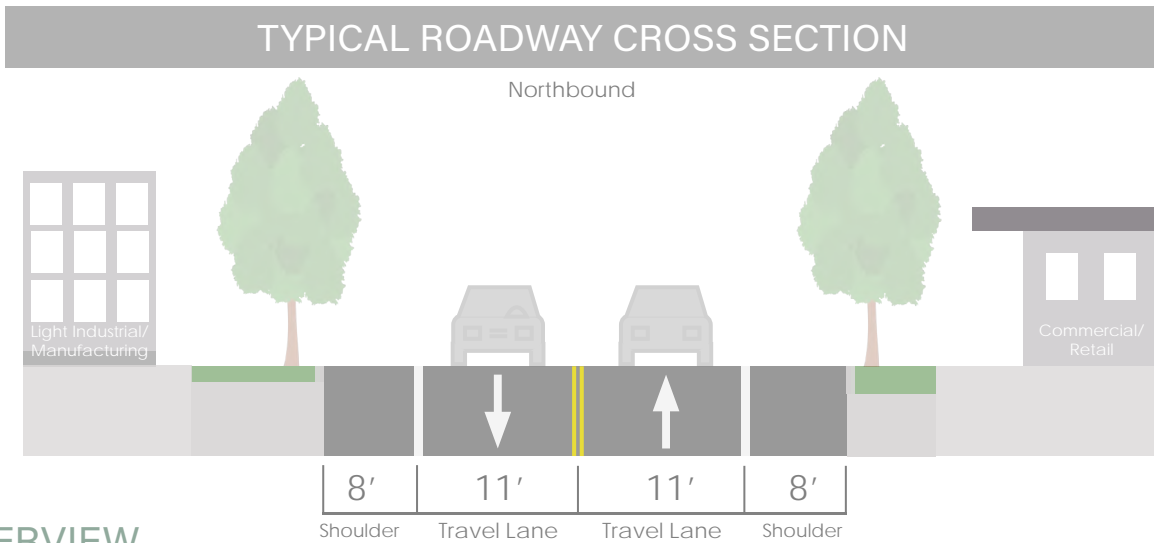
- High number of vehicular crashes and 63% of bicyclist and pedestrian crashes (2014-2018) in Hightstown occurred along NJ 33
- No sidewalk network along this stretch (worn goat paths adjacent to road)
- Speeding vehicles and heavy truck traffic
- Curb cuts with wide turning movements for vehicle entering/exiting businesses and warehouses
- Rated "unfavorable" on the bikeability score by the 2017 Mercer County Bike Network Analysis



*NJDOT Traffic Count Data (09/04/2019)



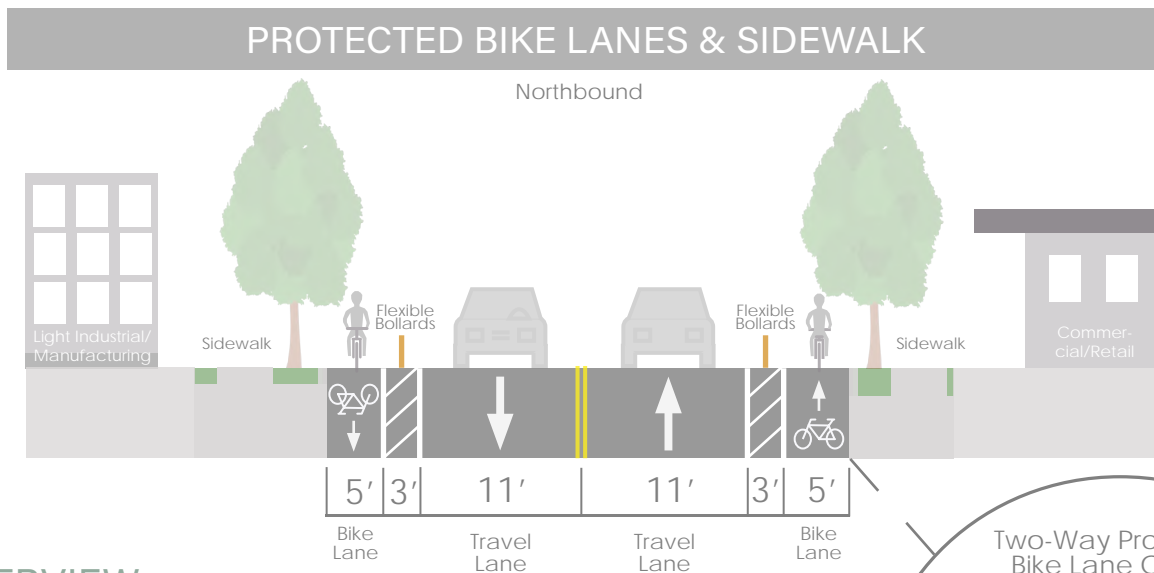
EXISTING CONDITIONS - NJ 33 (BOROUGH BORDER TO SCHOOL ZONE & MAXWELL AVE TO BORDER)



OVERVIEW

The section of NJ 33 from the school zone to the borough border hosts a mix of uses including light industrial/warehousing and retail/commercial. The speed limit increases from 35 MPH to 45 MPH as you approach the borough border with shoulders (8 ft) in both directions. The sidewalk network ends at Summit Street with no sidewalks from this point to the borough border. In addition, there is no sidewalk from Maxwell Avenue to the borough border to the east.

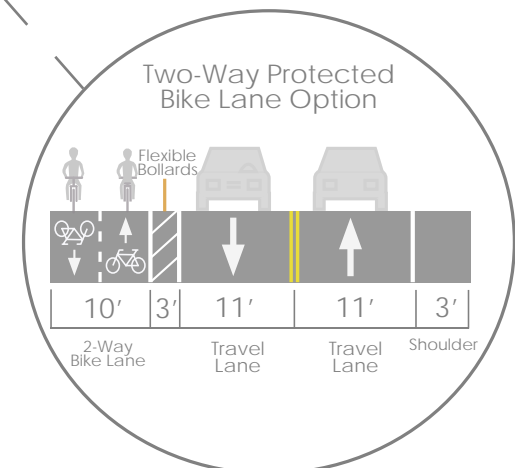
PROPOSED IMPROVEMENTS - NJ 33 (BOROUGH BORDER TO SCHOOL ZONE & MAXWELL AVE TO BORDER)



OVERVIEW

The overall roadway width provides opportunity for treatments to calm traffic, for bicycle facilities and to increase safety for all users.

- Protected bike lanes in each direction (buffer with flexible bollards).
- Complete sidewalk network on either side of roadway.
- Secondary option: Add a two-way protected bike lane on the northern side to allow a traditional sized snow plow or street sweeper to fit along the combined bicycle lanes, inside the bollards.
- Consider a reduction in the posted speed limit on NJ 33.





NJ 33 - SCHOOL ZONE TO MAXWELL AVENUE (MERCER STREET AND FRANKLIN STREET)

TRAFFIC VOLUME (AADT): **17,080***

SPEED LIMIT: **25 - 35 MPH**

ROADWAY WIDTH: **40'**

CRASHES (2014-2018): **122**

ROADWAY CHARACTERISTICS

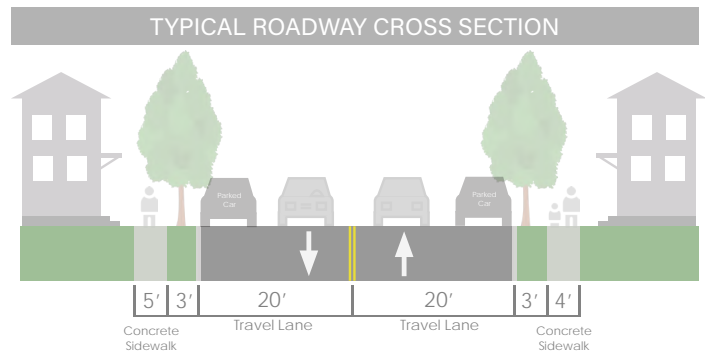
NJ 33 is a state roadway that runs through the Hightstown Downtown. It is a two lane roadway with a 35 m.p.h. speed limit that changes to 25 m.p.h. through downtown Hightstown. There are no shoulders and parking is permitted on both sides closer to downtown. Key destinations are located along NJ 33 including the downtown, greenways, memorial park, bus stops for Coach USA and Route 130 bus routes.

OPPORTUNITIES

- Sidewalk network is mostly complete within Hightstown Downtown with gaps mostly towards the border
- Potential to connect to recently installed bicycle lanes on North Main Street

CONSTRAINTS

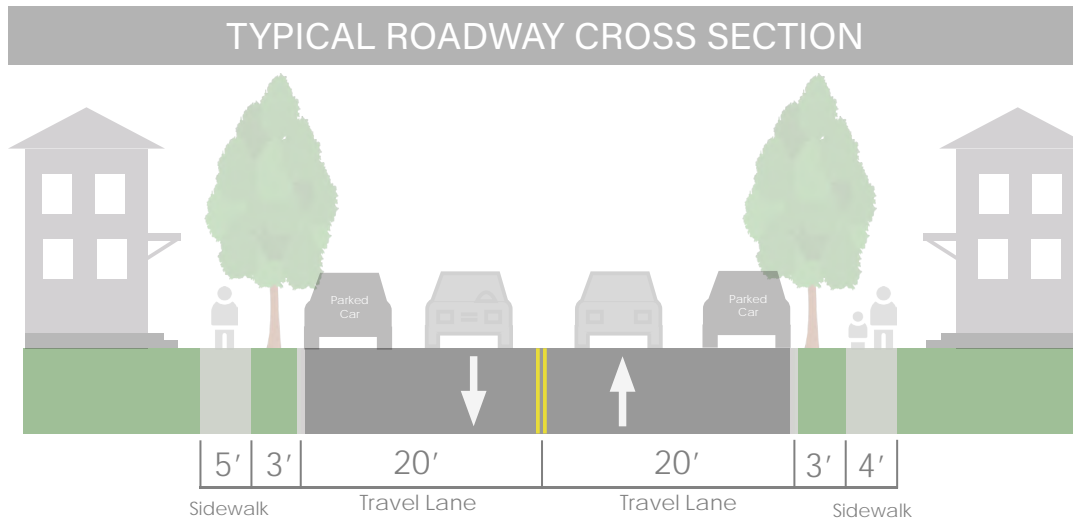
- High number of vehicular crashes and 63% of bicyclist and pedestrian crashes (2014-2018) in Hightstown occurred along NJ 33
- Speeding vehicles and heavy truck traffic
- Downtown right-of-way is limited with complex intersections and multiple travel modes
- Rated "unfavorable" on the bikeability score by the 2017 Mercer County Bike Network Analysis



*NJDOT Traffic Count Data (05/14/2019)



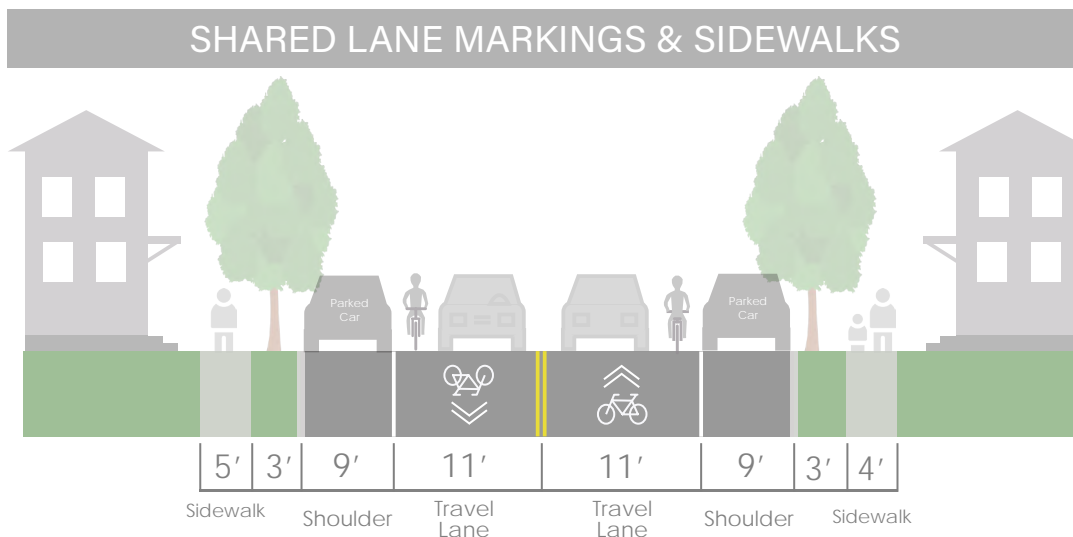
EXISTING CONDITIONS - NJ 33 (SCHOOL ZONE TO MAXWELL AVENUE MERCER STREET & FRANKLIN STREET)



OVERVIEW

The section of NJ 33 from Downtown to the school zone between Grape Run Road and Summit Street is primarily residential with wide travel lanes (20 ft) with parking permitted on each side. The section has a speed limit of 25 MPH that transitions to 35 MPH beyond the school zone (25 MPH during school hours only). The high AADT (including substantial truck traffic) presents a significant obstacle for pedestrians and bicyclists. Franklin Street from Maxwell Avenue to Broad Street has a similar 25 m.p.h. speed limit with on-street parking.

PROPOSED IMPROVEMENTS - NJ 33 (SCHOOL ZONE TO MAXWELL AVENUE MERCER STREET & FRANKLIN STREET)



OVERVIEW

Proposed improvements to this section aim to serve as traffic calming measures and alert motorists of potential bicycle activity. Improvements include:

- Striping of shoulder to demarcate lane width and provide visual cue to slow vehicle speed.
- Addition of shared lane marking symbols along each travel lane.
- Fill sidewalk gaps along corridor and consider 5' width for new sidewalks where feasible.
- Consider a reduction in the posted speed limit on NJ 33.



SUMMIT STREET

TRAFFIC VOLUME (AADT): **2,138***

SPEED LIMIT: **25 MPH**

ROADWAY WIDTH: **26'**

CRASHES (2014-2018): **8**

ROADWAY CHARACTERISTICS

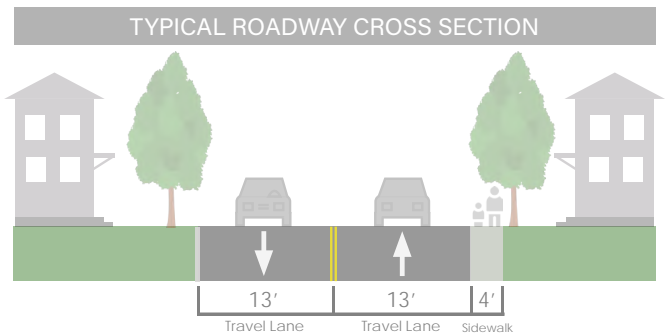
Summit Street is a two-lane municipal road with a 25 m.p.h. speed limit. It is classified as a urban major collector roadway. Summit is categorized as a through street in the Hightstown zoning code. The intersection at Morrison Avenue is four-way stop controlled. Parking is permitted on both sides.

OPPORTUNITIES

- Potential to connect to Roger G. Cook Greenway along the abandoned railroad right-of-way
- Connector between two main thoroughfares, Stockton Street and NJ 33
- Portion of the corridor rated “excellent” on the bikeability score by the 2017 Mercer County Bike Network Analysis

CONSTRAINTS

- Cut-through / shortcut road around downtown
- Heavy traffic and high vehicular speeds observed
- Stretches of missing sidewalk along corridor
- Road striping faded in many areas of corridor
- Portion of the corridor is rated "fair" on the bikeability score by the 2017 Mercer County Bike Network Analysis

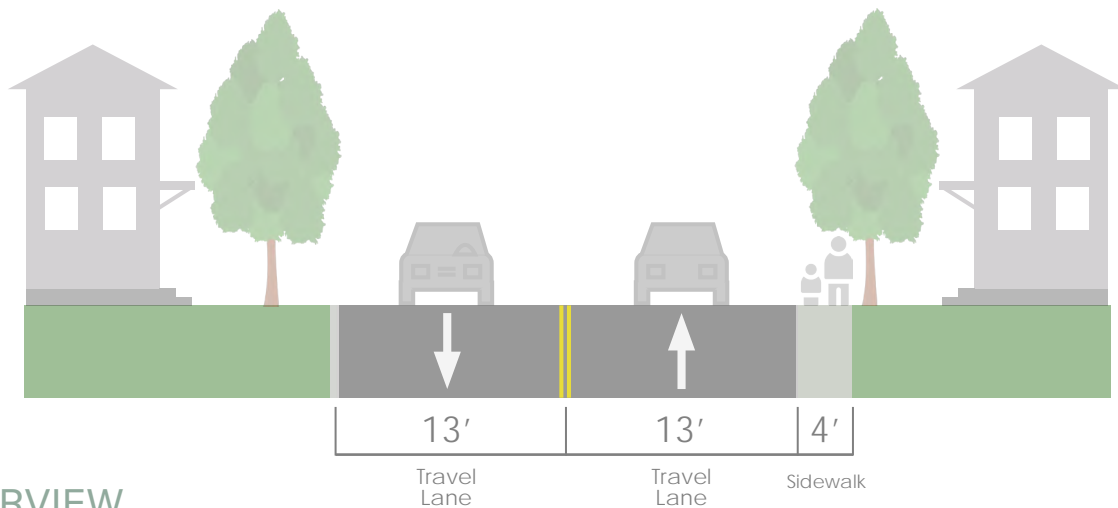


*NJDOT Traffic Count Data (06/18/2018)



EXISTING CONDITIONS - SUMMIT STREET

TYPICAL ROADWAY CROSS SECTION

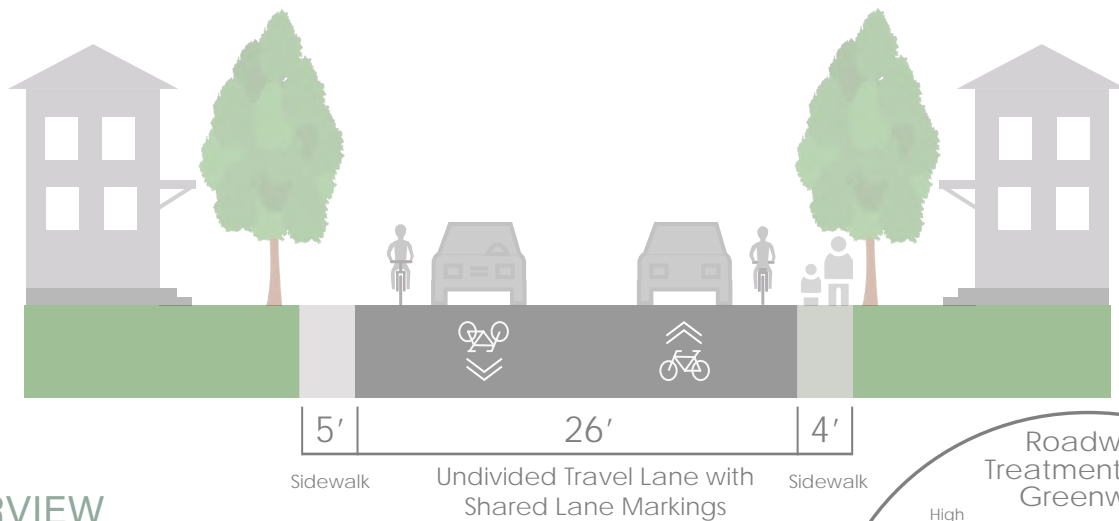


OVERVIEW

Summit Street is a residential roadway with a low AADT and a speed limit of 25 MPH throughout. The roadway has significant gaps in the sidewalk network including no sidewalk facilities on either side of the roadway from the greenway access point southbound to NJ 33.

PROPOSED IMPROVEMENTS - SUMMIT STREET

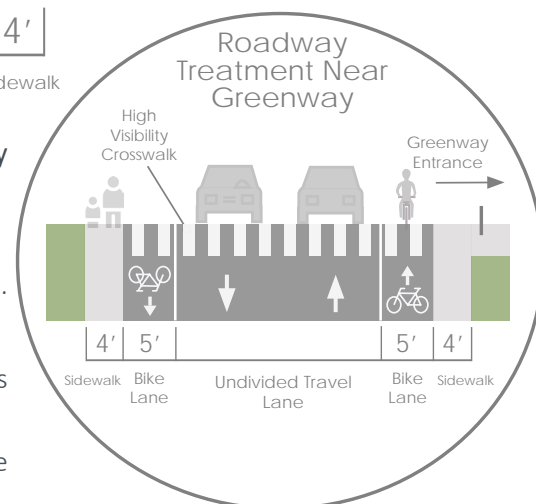
SHARED LANE MARKINGS & SIDEWALKS



OVERVIEW

Summit Street provides an important connection to the Railroad Ave Greenway segment and serves as a walking route for Hightstown High School students.

- Remove centerline striping and add shared lane markings.
- Evaluate for 4-way stop at intersection with 2nd Street and Summit Street.
- Install high visibility crosswalk at Greenway entrance.
- Fill sidewalk gaps along corridor and consider 5' width for new sidewalks where feasible.
- Conventional bike lanes from Greenway entrance to NJ 33 are recommended to provide safe access to and from NJ 33.





EAST & WEST WARD STREET

TRAFFIC VOLUME (AADT): **2,959***

SPEED LIMIT: **25 MPH**

ROADWAY WIDTH: **24-26'**

CRASHES (2014-2018): **8**

ROADWAY CHARACTERISTICS

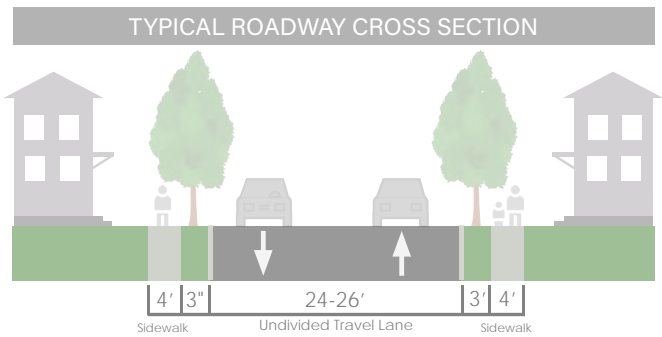
Ward Street is a municipal road classified as an urban major collector. It borders Peddie School to the south and is the southern extent of the downtown. The typical cross section is two 12-13 foot lanes with no shoulders. The speed limit changes from 40 to 25 m.p.h. on the eastbound approach to the Hightstown border and parking is not permitted on either side. A bridge over Peddie Lake provides access across and to the trail around Peddie Lake.

OPPORTUNITIES

- Sidewalk network is fairly complete on the southern side with minimal gaps. The northern side has continuous sidewalks with significant gaps towards the eastern portion towards the Borough border.
- Ward Street connects to the trail along Peddie Lake, Peddie School and Downtown
- Rated “excellent” on the bikeability score by the 2017 Mercer County Bike Network Analysis

CONSTRAINTS

- Limited right-of-way
- 8 vehicular crashes occurred between 2014-2018 along this road
- Truck traffic near downtown on West Ward Street.

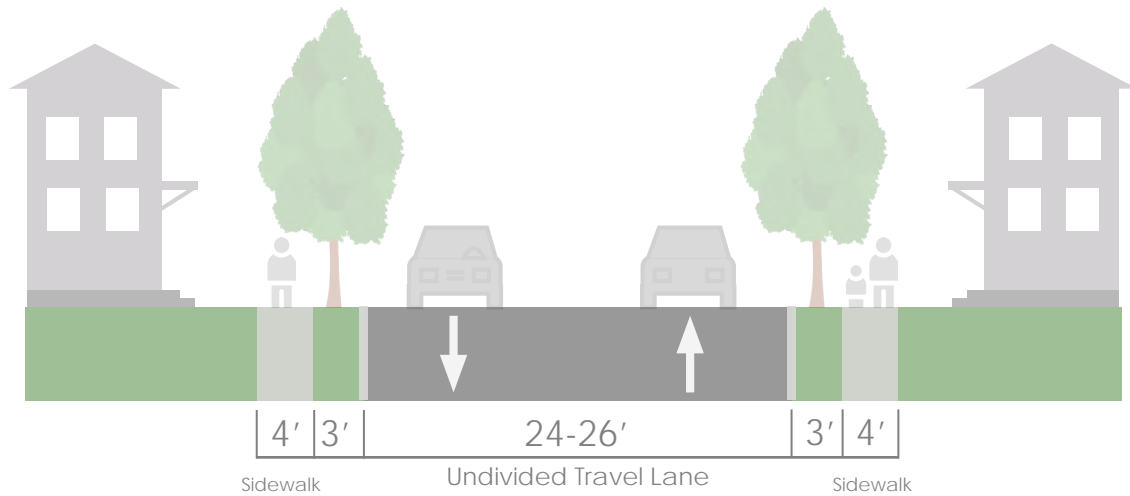


*NJDOT Traffic Count Data (05/30/2018)



EXISTING CONDITIONS - EAST/WEST WARD STREET

TYPICAL ROADWAY CROSS SECTION

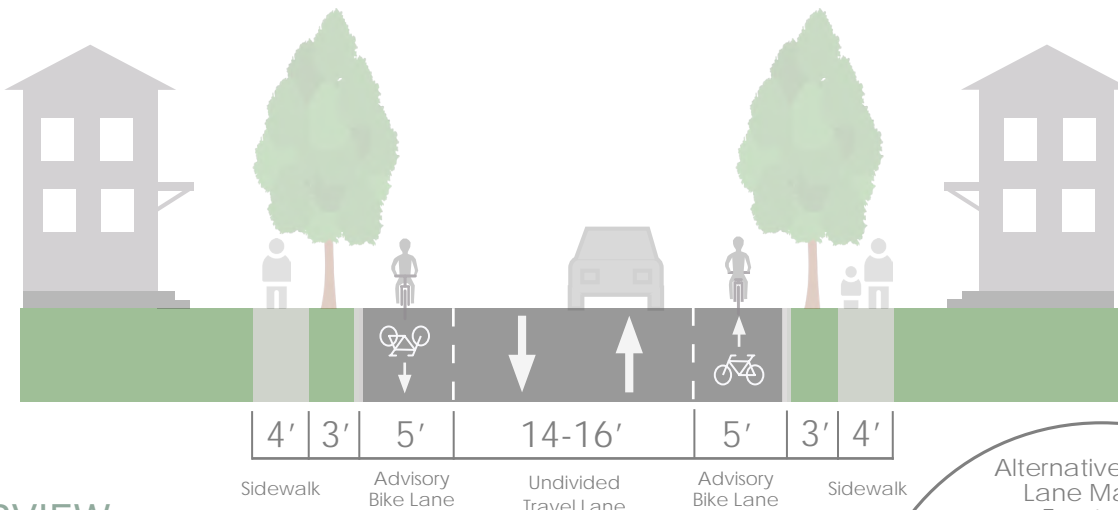


OVERVIEW

East Ward Street is a local, residential roadway that borders the Peddie School to the south (with access to local Greenway trails) and provides access to downtown Hightstown to the west. Due to its location, the roadway has substantial pedestrian traffic from local residents and Peddie School students and faculty.

PROPOSED IMPROVEMENTS - EAST/WEST WARD STREET

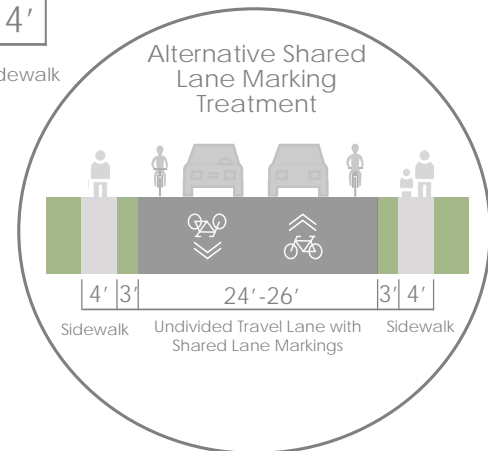
ADVISORY BIKE LANES & SIDEWALK



OVERVIEW

The roadway width provides the opportunity for Advisory Bike Lanes. This treatment can provide traffic calming effects and increased level of comfort for vulnerable users. Parking restrictions may need to be considered on the eastern portion of corridor. Shared lane marking could provide a potential alternative.

- Narrow, undivided center travel lane where motorists can use edge lane when approaching traffic from opposite direction
- 5' advisory bike lane in both direction provide ample room for cyclists and increase awareness for motorists
- Work with County to restrict trucks on West Ward Street





BANK STREET

TRAFFIC VOLUME (AADT): **UNKNOWN**

SPEED LIMIT: **25 MPH**

ROADWAY WIDTH: **28'**

CRASHES (2014-2018): **6**

ROADWAY CHARACTERISTICS

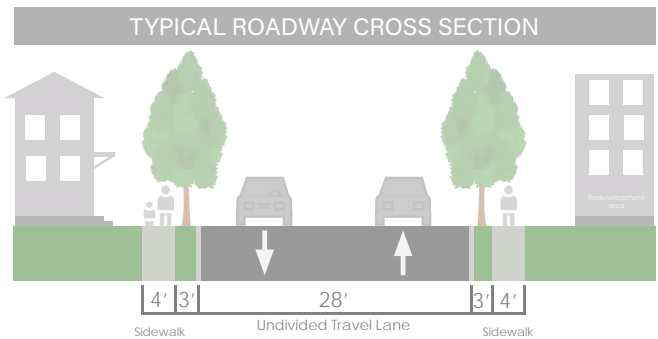
Bank Street is a municipal roadway with a 25 m.p.h. speed limit. It is adjacent to the 7-acre Hightstown Rug Mill redevelopment area that will be developed in phases. Bank Street is a designated through street in the Hightstown Zoning code. Parking is prohibited on both sides.

OPPORTUNITIES

- Adjacent to planned redevelopment area
- No on-street parking permitted along corridor
- Connection to downtown, Rocky Brook Park, Association Park and Roger G. Cook Greenway
- Sidewalk network mostly complete
- Rated “favorable” on the bikeability score by the 2017 Mercer County Bike Network Analysis

CONSTRAINTS

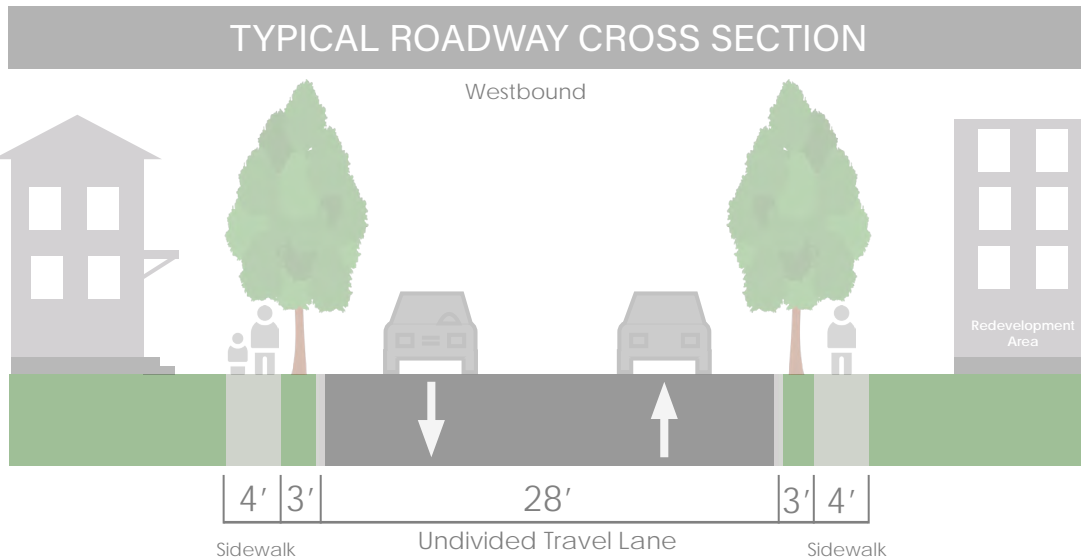
- Right-of-way is limited.
- Redevelopment area construction may limit travel temporarily.
- Proposed on-street parking as part of redevelopment may increase conflict with bicycle traffic going eastbound on Bank Street.



*NJDOT Traffic Count Data (05/14/2019)



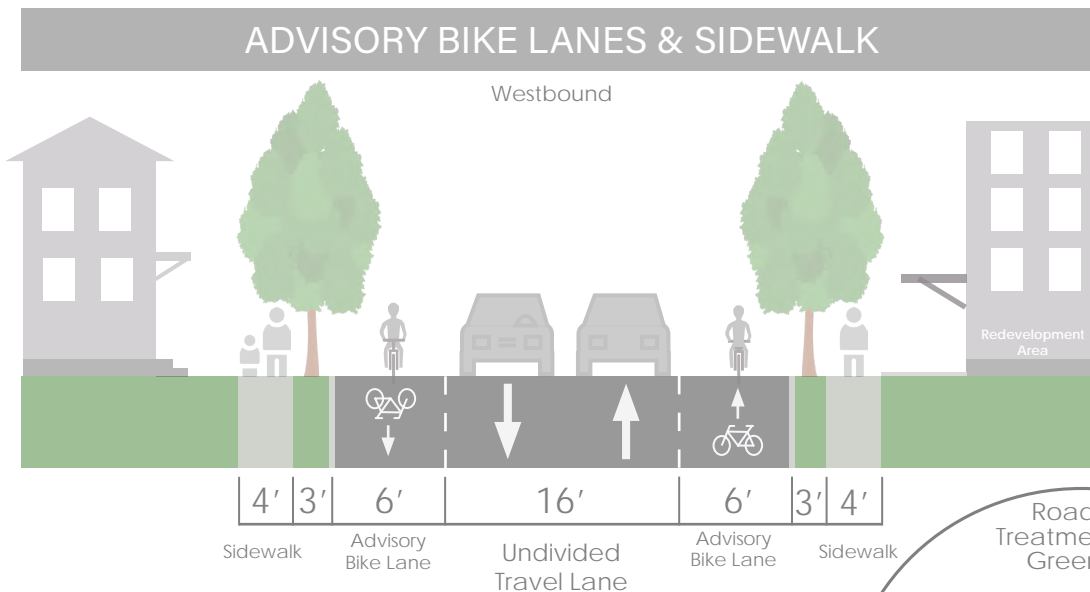
EXISTING CONDITIONS - BANK STREET



OVERVIEW

Bank Street is a local roadway that borders the future Bank Street Redevelopment Area to the south and connections to the Rocky Brook Park/Greenway to the north. The location and future plans for redevelopment present an opportunity and underscore the importance to improve conditions for pedestrians and bicyclists along the roadway.

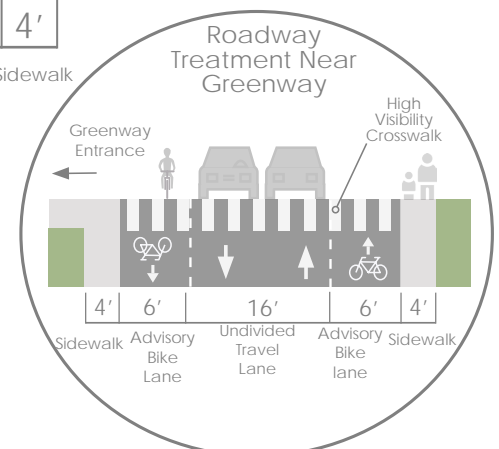
PROPOSED IMPROVEMENTS - BANK STREET



OVERVIEW

Due to the roadway width (28') and current parking restrictions Advisory Bike Lane treatment is recommended here.

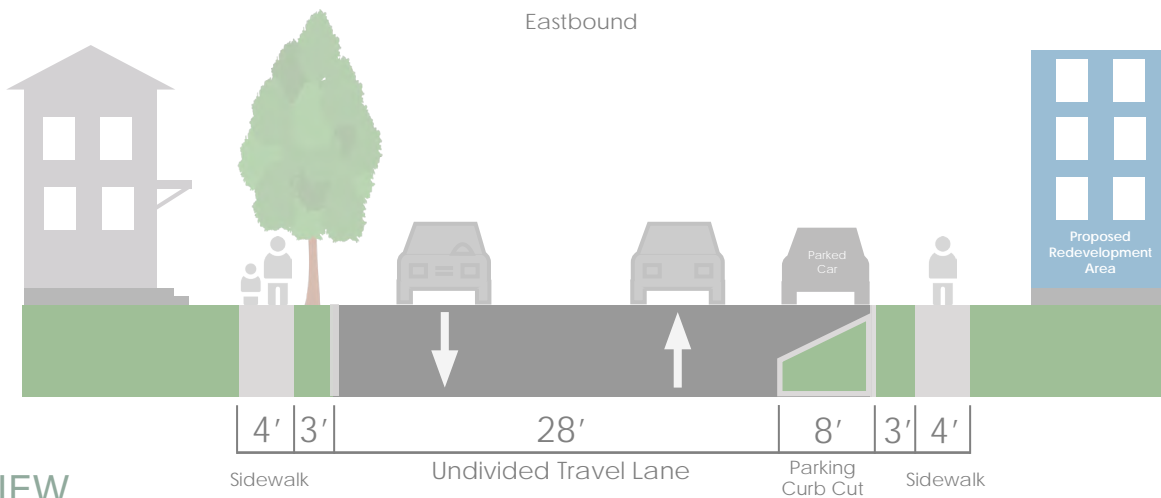
- An Advisory Bike Lane treatment could provide traffic calming effects and increase safety and comfort for pedestrians and bicyclists
- This treatment could be combined with a high visibility crosswalk to better facilitate access to the Rocky Brook Park/Greenway connection





EXISTING CONDITIONS - BANK STREET

PROPOSED REDEVELOPMENT ROADWAY CROSS SECTION

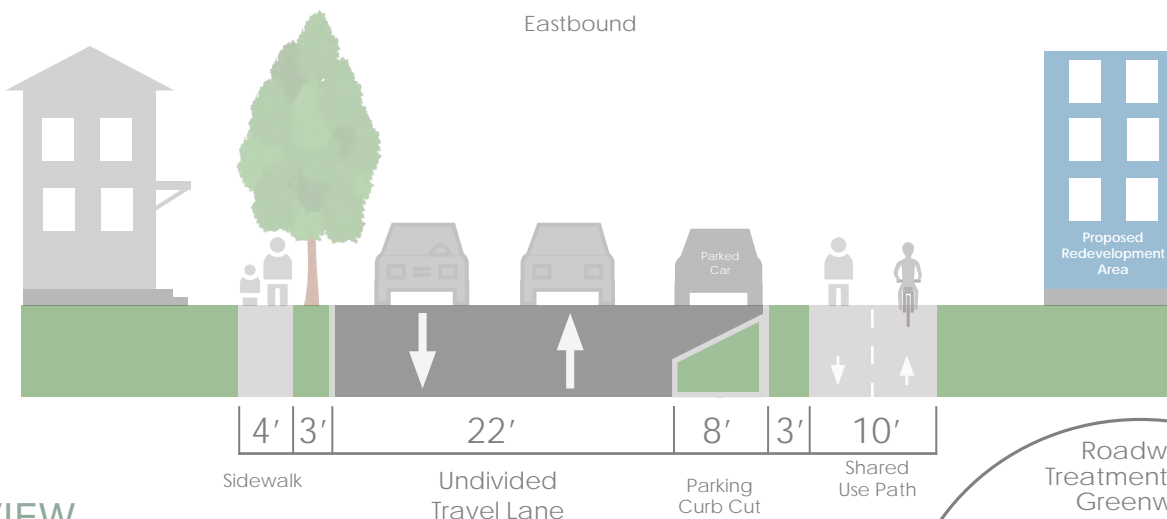


OVERVIEW

Bank Street is a local roadway that borders the future Bank Street Redevelopment Area to the south and connections to the Rocky Brook Park/Greenway to the north. The location and future plans for redevelopment present an opportunity and underscore the importance to improve conditions for pedestrians and bicyclists along the roadway.

PROPOSED IMPROVEMENTS - BANK STREET

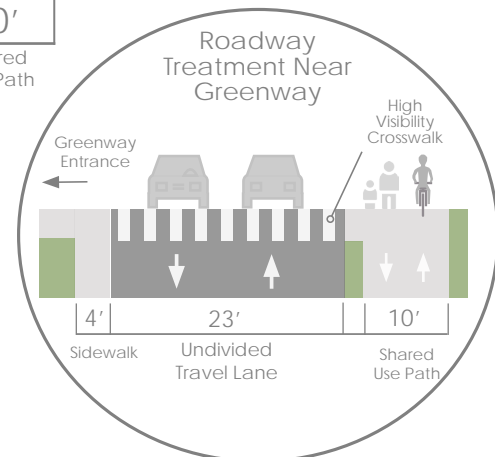
SHARED USE PATH



OVERVIEW

The roadway width and inclusion in future development plans also presents the opportunity to install a shared use path along the corridor.

- Planned curb cuts for parking as part of the redevelopment could provide opportunity to expand sidewalk into 10' shared use path.
- Reducing roadway (by relocating curb) to a 22' undivided travel lane provides traffic calming effects and the parking acts as a buffer for the shared use path.
- A connection to the greenway can be provided with a high-visibility crosswalk at the greenway entrance at Rocky Brook Park.



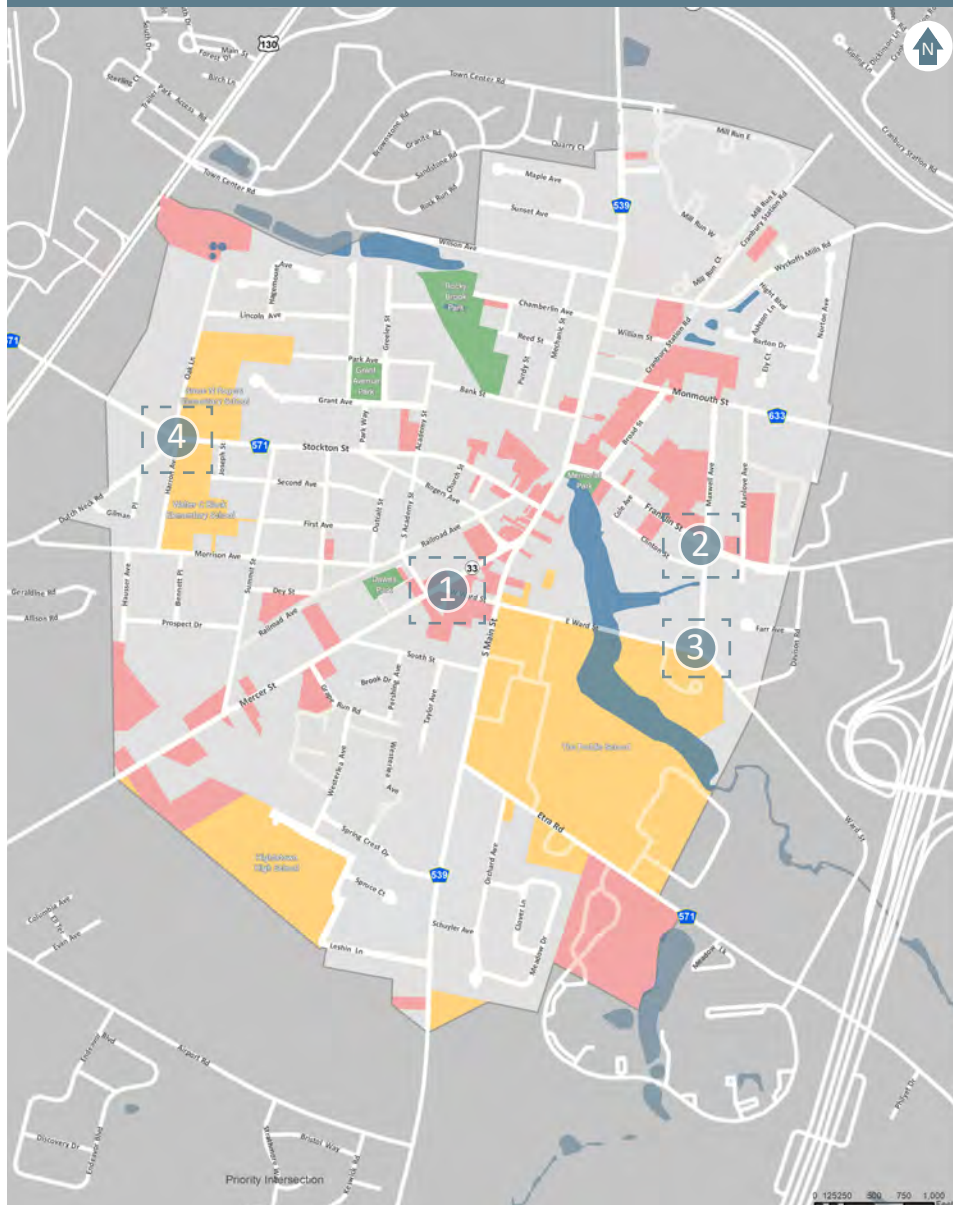
PRIORITY INTERSECTIONS

The intersection improvements shown on the following pages provide planning level concepts that will require additional design and analysis prior to implementation. The improvements focus primarily on low-cost and easy to implement strategies. In locations where improvements are expensive and are longer term, an alternate low-cost option has been provided.

The following intersections were prioritized because they link key destinations, have multiple crashes, were identified during field investigation, and prioritized based on the stakeholder input from the WikiMap, community survey and the Complete Streets Committee.

5. NJ Route 33/Mercer Street, West Ward Street & S. Academy Street
6. NJ 33/Franklin Street and Maxwell Avenue
7. Maxwell Avenue and East Ward Street
8. Stockton Street, Oak Lane, Dutch Neck Road, Harron Avenue near the elementary schools

MAP 18: PRIORITY INTERSECTIONS

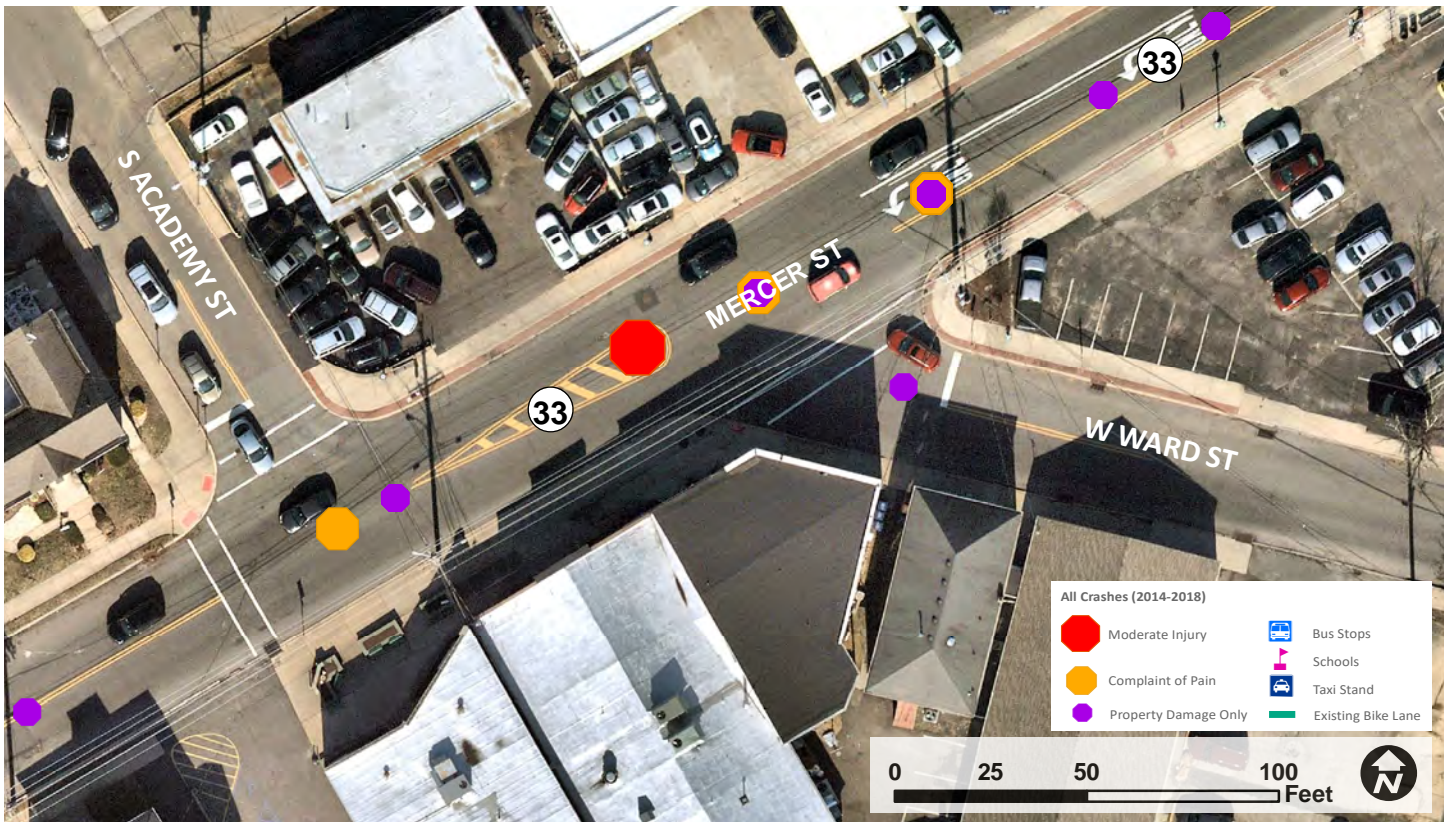


PRIORITY INTERSECTIONS

- 1 Mercer Street, West Ward Street & Academy Street
- 2 Franklin Street & Maxwell Avenue
- 3 East Ward Street & Maxwell Avenue
- 4 Stockton Street, Oak Lane, Dutch Neck Road & Harron Road

Network Analysis

- 1 Priority Focus Intersection
- Waterbody
- Parks
- School Property
- Commercial Property



EXISTING CONDITIONS

1. NJ 33/MERCER STREET AND WEST WARD STREET AND S. ACADEMY STREET

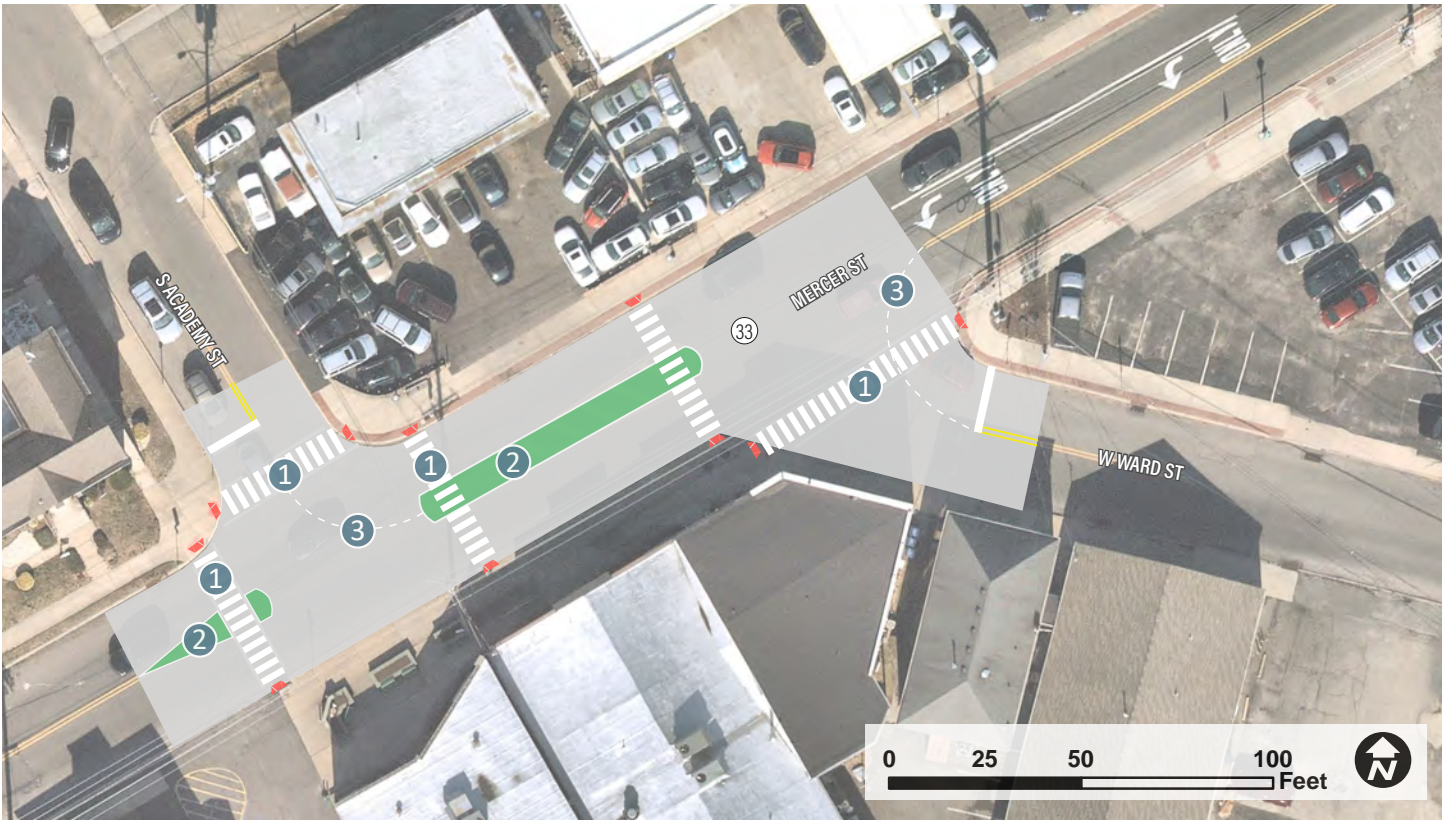
- Both intersections are unsignalized with stop control on S. Academy and West Ward Street.
- Curb ramps are present on all corners with two curb ramps missing detectable warning surfaces (northwest corner curb ramp at S. Academy Street and the southwest corner curb ramp at West Ward Street).
- Crosswalks are marked on three approaches except across NJ 33 on the east side at S. Academy Street and on both sides at West Ward Street.
- Important link between the residential areas, downtown, Dawes Park, and the Peddie School.
- Sidewalk network is complete at the intersections with some benches on NJ 33.
- There is a left-turn only lane at West Ward Street and a striped median to the west of the West Ward Street intersection.



PHOTO: WEST WARD STREET LOOKING TOWARDS NJ 33



PHOTO: NJ 33 (NORTHBOUND)



PROPOSED TREATMENT

The intersection of Mercer Street, West Ward Street, and South Academy Street hosts a combination of problematic features including high traffic volumes and vehicle speeds. Converting the existing striped median to a painted (Phase 1) or built (Phase 2) pedestrian refuge island would serve the dual purpose of decreasing crossing distance for pedestrians and passive traffic calming by reducing roadway width and alerting vehicles to the presence of pedestrians. Truck traffic on West Ward Street should be restricted.

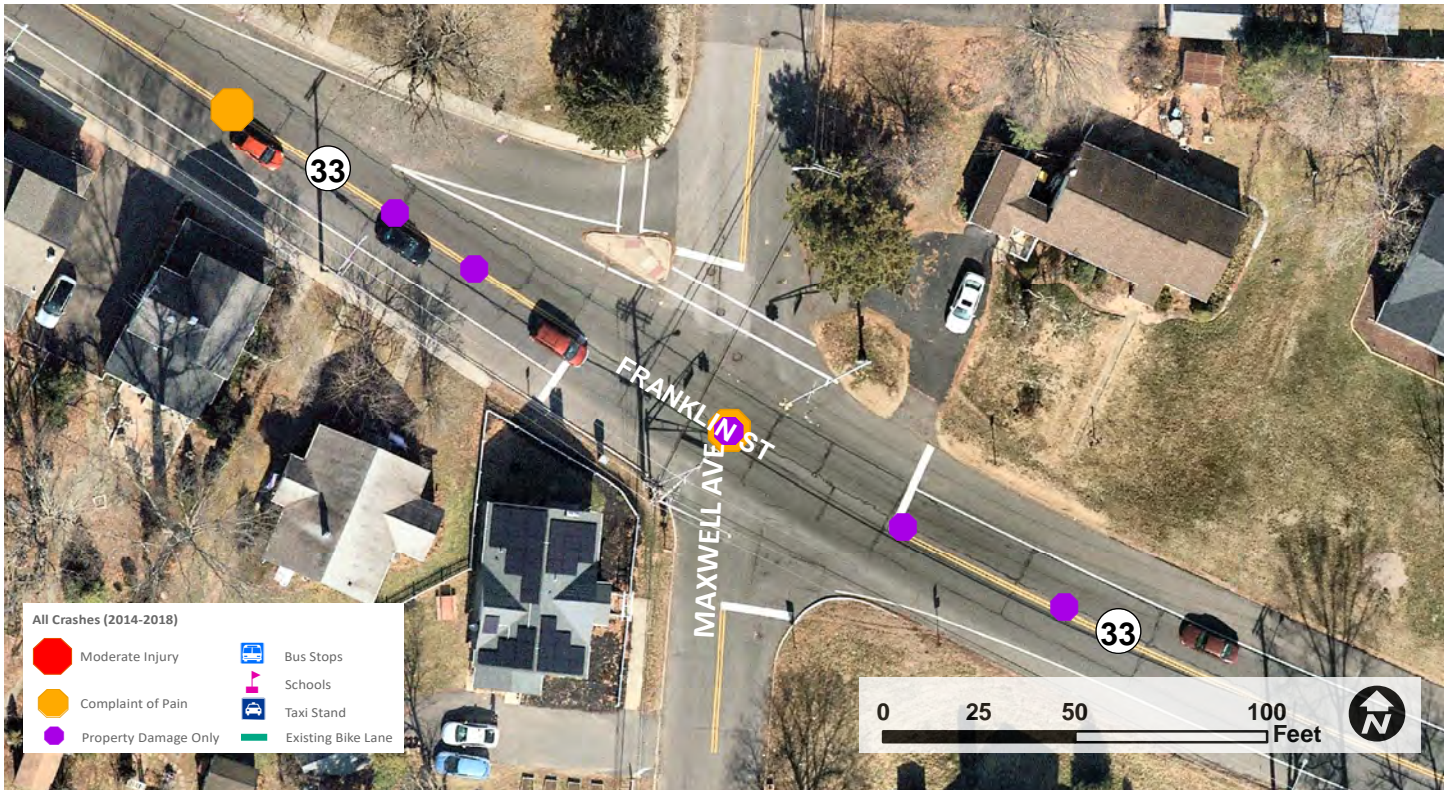
COMPONENTS

- 1 High visibility striping at pedestrian crosswalks and consider pedestrian crossing beacons
- 2 Pedestrian refuge island to reduce crossing distances and increase comfort for pedestrians
- 3 Dashed white lines to delineate turning movements

Examples of Pedestrian Refuge Islands



SOURCE: NACTO URBAN STREET DESIGN GUIDE (2013)



EXISTING CONDITIONS

2. FRANKLIN STREET AND MAXWELL AVENUE

- Signalized intersection with no turn on red from Maxwell Avenue onto NJ 33 from the south. Vehicles turning right from Maxwell Avenue onto NJ 33/Franklin Street are permitted to turn on red via a narrow right-turn slip lane that appears not to be a standard design.
- It is an important crossing for access to downtown from the residential areas and is a popular walking route to the High School.
- Sidewalks are only present on NJ 33/Franklin Street on the west side going into downtown.
- The speed limit changes from 35 m.p.h from the east to 25 m.p.h. at this intersection going into downtown Hightstown.
- Curb ramps with detectable warning surfaces are present only on the northwest corner and on the splitter island.
- Crosswalks are marked only to cross NJ 33/Franklin Street on the splitter island and to the east across Maxwell Avenue but there are no marked crosswalks across NJ 33/Franklin Street.
- There are pedestrian push buttons on the northeast corner and on the southwest corner with no pedestrian signal heads.





PROPOSED TREATMENT

The intersection of Franklin Street (NJ 33) and Maxwell Avenue provides connection to downtown Hightstown to the west and greenway connections and routes to the Peddie School and Hightstown High School to the south. The angled nature of the intersection results in lengthy pedestrian crossings and the existing slip lane on the southbound approach on Maxwell Avenue leads to an uncontrolled turning movement.

Closing off the existing slip lane and installing built curb extensions will reduce the crossing distance for pedestrians and decrease the turning radii to help slow traffic through turning movements. It is also recommended to install pedestrian crossing signals at each leg of the intersection and expand the sidewalk network in the southbound direction and eastbound directions.

COMPONENTS

- ① High visibility striping at pedestrian crosswalks
- ② Built curb extension with ADA compliant tactile warning surfaces and pedestrian actuated signals with Lead Pedestrian Interval (LPI)
- ③ Extension of sidewalk network southbound (east side of Maxwell Street) and eastbound (north and south sides of NJ 33)
- ④ Eliminate slip lane and reconfigure sidewalk network
- ⑤ Protected bike lane treatment on NJ 33



EXISTING CONDITIONS

3. MAXWELL AVENUE & EAST WARD STREET

- Unsignalized three legged “T” intersection with stop control on Maxwell Avenue.
- There is a continuous sidewalk network along the southern edge of E Ward Street that provides connection to downtown Hightstown in the westbound direction. There are no sidewalks on the northern portion of E Ward Street and no sidewalk on either side of Maxwell Avenue.
- All turns have very wide radii that facilitate high speed turning movements, especially for turns onto Maxwell that are not stop controlled.
- There are no pedestrian crossings over any of the legs of the intersection.
- Property south of the intersection is part of The Peddie School campus and produces increased foot traffic from student and faculty
- Future connection to Greenway off of Maxwell Avenue will make intersection an important part of the pedestrian and bicycle network.



PHOTO: WIDE TURNING RADII FROM E WARD STREET ONTO MAXWELL AVENUE



PHOTO: MAXWELL AVENUE LOOKING SOUTH



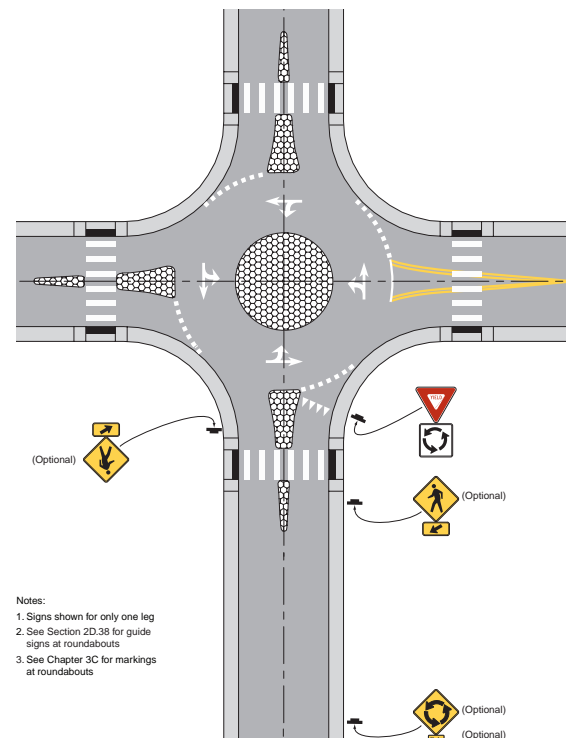
PROPOSED TREATMENT

The roadway alignment and space allotment make the intersection of Maxwell Avenue and East Ward Street and good candidate for the installation of a mini roundabout. This type of treatment would serve as a traffic calming measure for vehicles approaching from each leg. The extension of the sidewalk network along Maxwell Avenue and installation of a high visibility pedestrian crossing over East Ward increases pedestrian safety and comfort along this important walking route. Initial plans are in place for the replacement of the East Ward Street Bridge and will need to be considered.

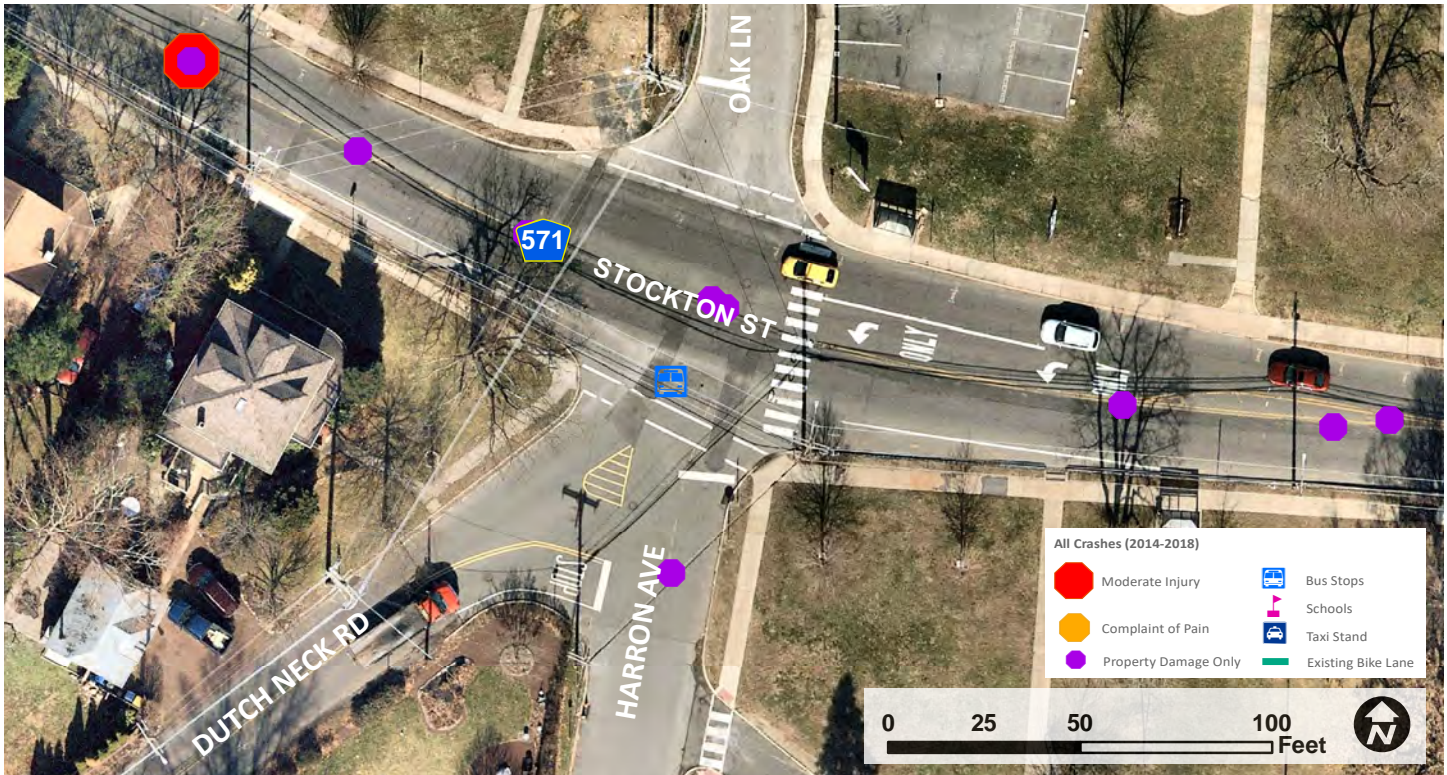
COMPONENTS

- 1 High visibility striping at pedestrian crosswalks
- 2 Mini roundabout treatment (Phase 1: Painted; Phase 2: Built)
- 3 Extension of sidewalk network on Maxwell Avenue
- 4 Advisory bike lane treatment
- 5 Recommended signage for vehicle guidance and pedestrian accommodation at mini roundabout

5 REGULATORY AND WARNING SIGNS FOR MINI ROUNDABOUTS



SOURCE: MUTCD (2009)



EXISTING CONDITIONS

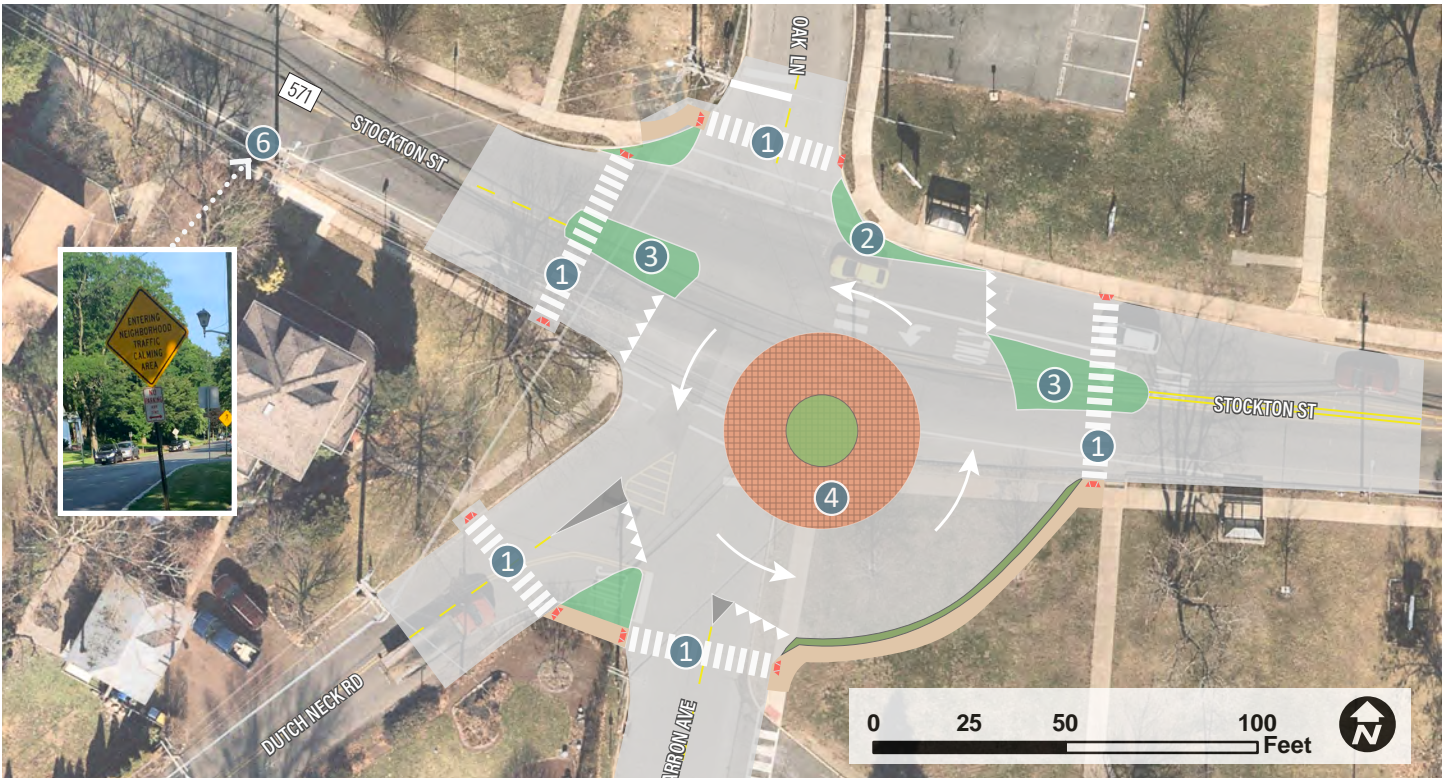
4. STOCKTON STREET, OAK LANE, DUTCH NECK ROAD, HARRON AVENUE

- Unsignalized intersection with curb ramps on all corners. The southwest corner curb ramp is missing a detectable warning surface.
- Crosswalks are marked on three legs with continental striping across Stockton Street.
- Important link between the residential areas and the elementary schools. School students are bussed or driven to the elementary schools despite being within walking distance. School zone ends at the western extent of this intersection.
- Coach USA bus stops are also located on both sides of Stockton Street to the east.
- There is a “no crossing guard at this location” sign on the northeast and southeast corners. In 2019, the crossing guard was moved from this location to the Joseph Street intersection for school foot traffic to avoid intersection.
- Sidewalks exist at all corners but there are gaps along Harron Avenue and Dutch Neck Road
- Stockton Street/CR 571 is an approach road into Hightstown from the west from Route 130; and vehicles were observed speeding and truck traffic was observed through this intersection.

PHOTO: INTERSECTION LOOKING SOUTH FROM OAK LANE



PHOTO: “NO CROSSING GUARD” SIGN



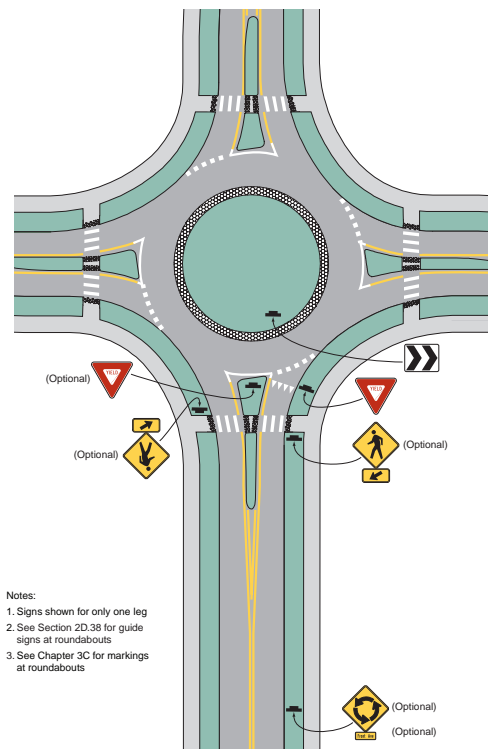
CONCEPT #1 - SINGLE LANE ROUNDABOUT

The five-legged nature of this intersection poses a particular challenge when trying to improve safety and comfort for all types of users. One potential treatment option is to convert the intersection into roundabout. Roundabouts have proven traffic calming benefits as vehicles must reduce their speed when approaching. Special consideration should be given to accommodate pedestrian crossings.

COMPONENTS

- 1 High visibility striping at pedestrian crosswalks with Rectangular Rapid Flashing Beacons (RRFBs) at crossings. Beacons can be installed within the pavement but require additional maintenance.
- 2 Built curb extensions to reduce turning radii
- 3 Built pedestrian refuge island to reduce crossing distances and increase comfort for pedestrians
- 4 Mountable truck apron with textured surface at roundabout interior to allow for emergency vehicles through movements
- 5 Advisory signage to guide vehicle traffic and alert motorists to presence of pedestrians at crossings
- 6 Install gateway/traffic calming signage at eastbound approach

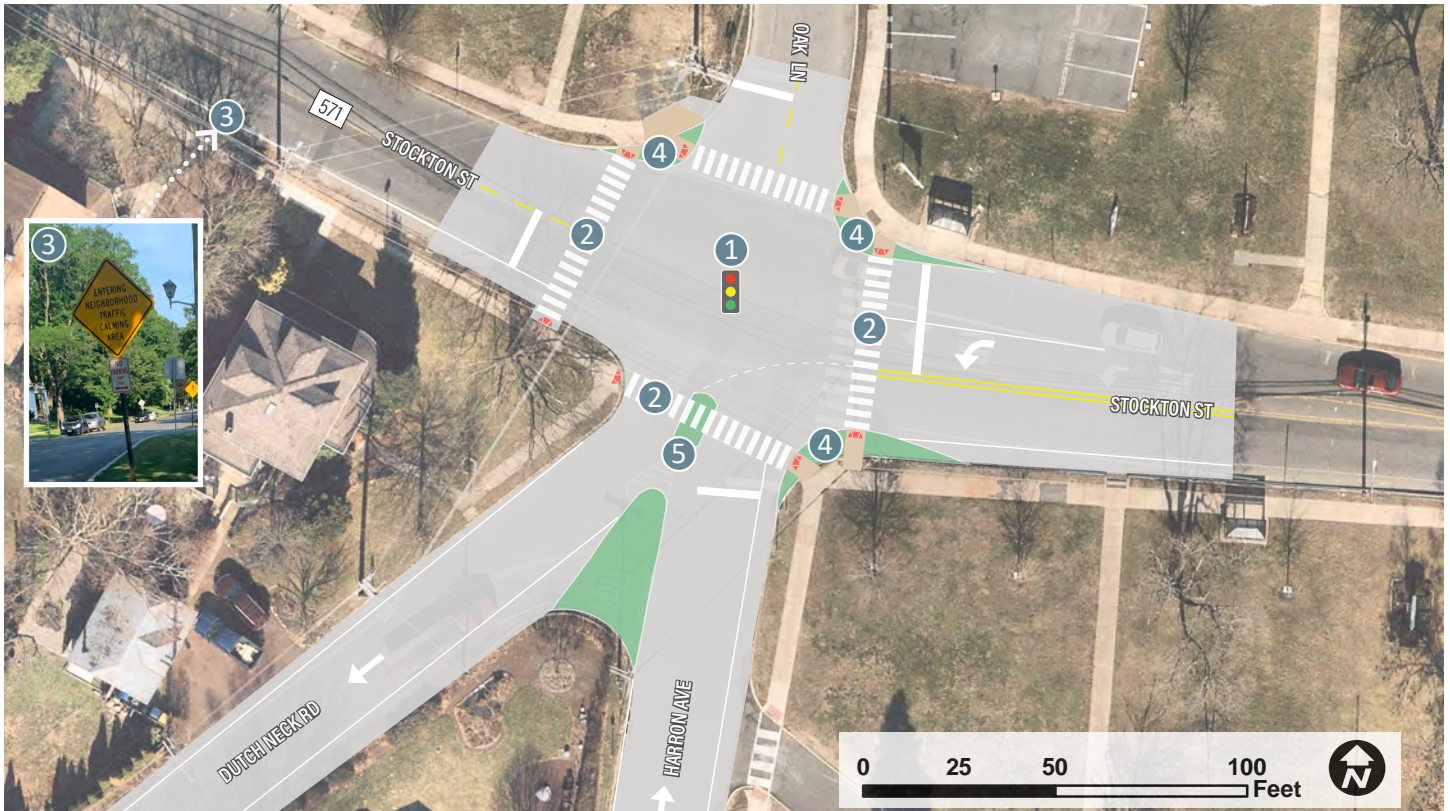
5 REGULATORY AND WARNING SIGNS FOR ONE-LANE ROUNDABOUTS



Sec. 2B.45

SOURCE: MUTCD (2009)

December 2009



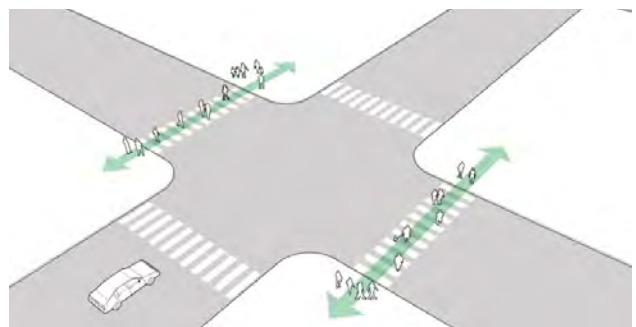
CONCEPT #2 - SIGNALIZED INTERSECTION

An alternative treatment option for this intersection is to install a traffic signal and convert Dutch Neck Road to a one-way road in the southbound direction and Harron Avenue to one-way road in the northbound direction. This would effectively turn the intersection into a 4-legged intersection with predictable traffic movement in each direction.

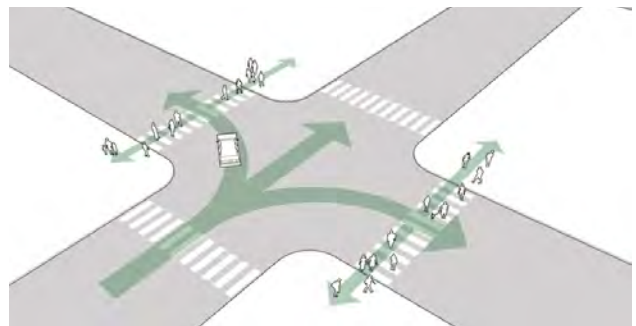
COMPONENTS

- 1 Install traffic signal (will require a signal warrant analysis) and include Lead Pedestrian Interval for Route 571/Stockton Street crossings
- 2 High visibility striping at pedestrian crosswalks
- 3 Install gateway/traffic calming signage at eastbound approach
- 4 Curb extensions (Phase 1- Painted; Phase 2- Built out) to reduce turning radii and decrease crossing distances for pedestrians
- 5 Pedestrian refuge island to reduce crossing distances and increase comfort for pedestrians

3 LEAD PEDESTRIAN INTERVAL (LPI) DIAGRAM



Phase 1: Pedestrians given a minimum 3-7 second head start entering intersection



Phase 2: Through and turning traffic yields to pedestrians in already crosswalk

Source: NACTO Urban Street design guide (2013)



PROGRAMMATIC RECOMMENDATIONS

A safe and welcoming walking and bicycling environment requires more than just the presence of facilities and amenities. Education, encouragement, enforcement, and evaluation and planning measures are needed to support and complement the engineering recommendations. These programmatic, non-infrastructure recommendations address unsafe behaviors, the development of bicycling skills, general awareness and support for walking and bicycling, and tracking strategies to guide future improvements.

This section highlights and describes the list of programmatic recommendations below that foster a culture that values walking and bicycling, with a focus on achieving goals and objectives identified throughout the Hightstown Borough Mobility Master Plan.

EDUCATION

- Street Smart NJ
- Community-Oriented Traffic Calming
- Traffic Safety Curriculum
- League of American Bicyclist’s League Cycling Instruction (LCI) program
- Signs

ENFORCEMENT

- Pedestrian Safety Enforcement Program
- New Jersey Crossing Guard Training Program
- Feedback Signs
- Police Bike Patrol

EDUCATION

The need to educate all users on their rights and responsibilities was identified as a key issue by the Community Advisory Board, public, and Borough officials. The programs and efforts discussed below focus on educating residents and visitors on safe walking, bicycling, and driving. Education plays a vital role in ensuring that recommended infrastructure and facility improvements are fully understood and properly utilized by user types. The programs listed below provide important resources to enhance safety and awareness through education.

Street Smart NJ

The Borough should implement the Street Smart NJ pedestrian safety campaign. The Street Smart NJ campaign urges motorists and pedestrians to “check their vital signs” to improve safety on the road. Materials from the campaign are available on the campaign website and may be reproduced and used without permission. Logos and local sponsorship information may be added to all artwork.

<http://bestreetsmartnj.org/>

ENCOURAGEMENT

- Bicycle Mentor Program
- Social Bicycle Rides
- Safe Routes to School (SRTS)
- Bike Rodeo
- Open Streets Event
- Annual Park(ING) Day
- Bike Sharing Programs
- Bicycle to School and Walk to School Policies

EVALUATION / PLANNING

- Complete & Green Streets Model Policy
- Snow Removal and Maintenance Policy
- Interactive Maintenance Reporting
- Tactical Urbanism
- Traffic Calming Policy



Community-Oriented Traffic Calming

A community-oriented traffic calming campaign should be implemented in Hightstown to inform drivers that they are traveling on neighborhood streets and remind drivers to slow down. Yard signs are designed to be placed on private property within front and side yards and act as an educational and awareness tool. Another example of a community-oriented program is the “20 is Plenty” campaign. “20 is Plenty” encourages drivers to drive no faster than 20 mph despite the 25 mph speed limit. At 20 mph the risk of pedestrian fatality drops to just 5% compared to 45% at 30 mph.

Traffic Safety Curriculum

An excellent way to encourage traffic safety from an early age is to implement K-8 traffic safety curriculum at local schools within Hightstown. The New Jersey Safe Routes to School Resource Center has compiled lesson plans and supporting information to enhance pedestrian and bicycle safety in schools.

www.saferoutesnj.org/resources/education/

League of American Bicyclist’s “League Cycling Instructor (LCI) Program”

The Borough should sponsor a member of the Police Department to participate in the League of American Bicyclist’s League Cycling Instructor (LCI) Program. LCIs are certified to teach the League’s Smart Cycling classes to children as well adults. The League’s goal is to help people feel more secure about getting on a bike, to raise awareness that bikes are treated as a vehicle, and to ensure that people on bikes know how to ride safely and legally.

Signs

Signs that encourage pedestrian and bicyclist safety should be installed. Examples of such signs are “Pedestrians Use Sidewalks” and “Cross at Intersections” and “Bicyclists and Skaters Keep Right”, “Go with Traffic”, “Obey all Stop Signs and Traffic Signals”.

ENCOURAGEMENT

The programs listed below can help supplement and enhance the Borough’s current activities.

Bicycle Mentor Program

The Borough should support and coordinate a bicycle mentor program where experienced bicyclists are matched with less confident bicyclists. This would encourage new/less confident bicyclists to bicycle more frequently and support the development of safe cycling skills. An example is Culture Link in Toronto, Canada, that has a program called Bike Host which matches amateur bicyclists with experience mentors who ride regularly.

Social Bicycle Rides

The Borough can support and host monthly social rides for community groups and constituents that cover various themes. For example, Kidical Mass is a global family bike ride that takes place in September - www.kidicalmass.org. The main goal of Kidical Mass is to teach kids and parents safety skills and to encourage bicycling as a means of transportation.

Safe Routes to School (SRTS)

The Hightstown SRTS program can be expanded to include other activities such as building on and updating the School Travel Plan and implementing a tracking system to monitor use.

A School Travel Plan “maps out” how to improve pedestrian and bicycle travel to and from school. Municipalities registered for Sustainable Jersey and Sustainable Jersey for Schools certification can include School Travel Plans as part of the submission requirements. When future NJDOT SRTS infrastructure grant opportunities are announced, municipalities/schools will be eligible for extra points for submitting School Travel Plans in the application.

Another example of encouraging walking and biking to school in a fun and educational way is to consider using a tracking system to monitor SRTS use. Montclair’s Edgemont Elementary School’s “Boltage at Edgemont” program is an example. The students attach a radio frequency identification tags to their backpacks which tracks their trips to school. A solar-powered Boltage “Zap” machine records the information which can be accessed online. Students can also track their miles traveled, number of calories burned, and pounds of CO2 saved by replacing a car or bus trip with walking or biking. The students are further encouraged to bike or walk to school by rewards for more trips and recognition for exceptional student achievement in the school’s PTA newsletter.

Hightstown should work towards achieving the Gold Level in the NJ Safe Routes to School Recognition Program. Municipalities and schools can either be nominated by their Safe Routes Regional Coordinator from the Greater Mercer TMA or can self-nominate for recognition as a result of involvement and commitment to Safe Routes programs in their community or schools. Recipients will be presented with a certificate or award depending on the level of recognition, and they will also be listed and promoted on the NJ SRTS website and possibly other local media and newsletters facilitated by Regional Coordinators.

<http://www.saferoutesnj.org/>

Bike Rodeo

The Borough should host Bike Rodeos at local schools in Hightstown. A Bike Rodeo is a bicycling skills event which provides an opportunity for bicyclists to practice and develop skills to ride safely and avoid accidents.

Open Streets Event

An Open Streets event can be hosted in Hightstown by temporarily closing streets to motor vehicles and focusing on activities such as a bike rodeo, fitness activities, bicycle maintenance education, and rules of the road education. An example of such an event is the Ciclovía event in New Brunswick, NJ. In New Brunswick, the Ciclovía event is hosted 3-4 times a year during which certain streets are temporarily car-free for 5 hours for families to enjoy activities along the route and to walk, bike, run, skate, and play.

Annual Park(ING) Day

The Borough should encourage participation in the annual PARK(ing) Day which is held worldwide on the third Friday in September. During this event, artists, designers, and citizens transform parking spaces into temporary public parks. Hightstown can temporarily convert one or more parking space in Downtown, such as along Main Street between Stockton Street and Rogers Avenue, into a parklet.

Bike-Sharing Programs

A bike-sharing program in Hightstown will encourage more residents and visitors to bike. The Borough should conduct a pilot evaluation of bicycle sharing program. Collingswood Bike Share is a good example of a small-scale bike share. The program operates like a library where residents can borrow a bike (for a small fee and/or a signature on an agreement and a liability waiver) and return it when done.



Bicycle to School and Walk to School Policies

The Borough should work with the Board of Education to adopt Bicycle to School and Walk to School ordinances. Adopting such policies can encourage children to walk and bike to school and build a culture of health and wellness in schools and municipalities. The NJ SRTS Resource Center has model policies that can be modified.

www.saferoutesnj.org/resources/tips-tools-and-more/

ENFORCEMENT

Consistent enforcement of traffic laws is one of the most important steps a municipality can take to keep pedestrians, bicyclists, and drivers safe. This includes enforcing crosswalks laws, speed limits, and distracted driving laws, and issuing citations to pedestrians and bicyclists who engage in illegal risk-taking behaviors. While enforcement is one way to target problem locations with repeated incidence of speeding and other violations of traffic laws, it is a recommendation of this plan to focus efforts on positive ticketing, education efforts, and on efforts that develop roadways in a way that they are self-enforcing through design.

Pedestrian Safety Enforcement Program

The Borough should utilize the Pedestrian Safety Enforcement (PSE) program sponsored by the NJ Division of Highway Traffic Safety (DHTS), with support from NJDOT, to increase driver knowledge of the “Stop and Stay Stopped for Pedestrians” law. DHTS and NJDOT offer training on PSE to local police departments that address two important contributing factors to pedestrian crashes: driver knowledge of the law and driver yielding behavior.

New Jersey Crossing Guard Training Program

The Borough’s crossing guard supervisor should attend a New Jersey Crossing Guard Training Program workshop hosted by the NJ Safe Routes to School Resource Center. These workshops are intended to assist school crossing guard supervisors with extensive training to help crossing guards perform their duties more effectively and safely. The training addresses crossing guard positioning and procedures, state and federal law and regulations, and hands-on practice. The Model Municipal Crossing Guard Policy should be adopted by the Borough.

<http://www.njcrossingguards.org/>

Feedback Signs

The Borough should continue to utilize temporary feedback signs along streets with high incidents of speeding and regularly enforce the speed limit along these corridors. These interactive signs draw the motorist’s attention to their speed limit and the road’s legal speed limit. They can be permanently mounted on signposts or temporarily installed using self-contained trailers. Feedback signs have been proven to slow down traffic.

Police Bike Patrol

The Borough should support and encourage police to use bicycles for patrol work. Police on bicycles are excellent role models, especially for children. By patrolling on bicycle, officers understand firsthand the challenges faced by bicyclists and road users and can easily educate riders and enforce rules about safety. Neighboring Point Pleasant Beach has a bicycle patrol unit.



EVALUATION / PLANNING

Evaluation and planning measures include adopting plans, policies, and measures, including assignment of staff responsibilities, necessary for implementation and prioritization of projects. The policy recommendations below are based on best practices locally and from around the country. This plan recommends the following policies be explored and adopted by Hightstown Borough:

- Complete & Green Streets Model Policy
- Snow Removal and Maintenance Policy
- Interactive Maintenance Reporting
- Tactical Urbanism
- Traffic Calming Policy

Complete & Green Streets Model Policy

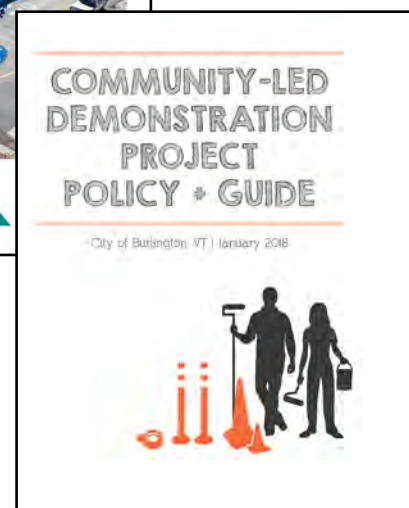
In 2019, NJDOT released “Complete & Green Streets Model Policy” that provides guidance on why and how communities can build streets for everyone. The model policy includes a ready-to-adopt resolution of support, a model policy and implementation checklists to ensure Complete Streets objectives are considered for all transportation projects. It incorporates equity, health, green streets and sustainability standards with Complete Streets policies. It is recommended that the Borough of Hightstown adopt this policy to improve and strengthen the commitment towards Complete Streets for all.

<https://www.state.nj.us/transportation/eng/completestreets/resources.shtm>



Tactical Urbanism / Demonstration Projects Program

The Borough can create a program to encourage community-led placemaking projects similar to the program created by City of Burlington, VT (<https://www.burlingtonvt.gov/DPW/Tactical-Urbanism-and-Demonstration-Projects>) and the City of Fayetteville, Arkansas (<http://fayettevillear.gov/3268/Tactical-Urbanism>). This will allow citizens to take ownership of their roadways and neighborhoods and provide a streamlined process to undertake these low-cost, short-term and easy-to-build projects. The program can make it easier to undertake pilot projects, test the improvements before building/installing permanently and engage and empower the public. Recently, the “Jersey City Pedestrian Enhancement Plan” was developed and describes several community demonstration projects conducted as part of the study.





Snow Removal and Maintenance Policy

While snow and ice removal is typically the responsibility of the abutting property owner in New Jersey, Hightstown Borough should consider taking on snow removal responsibility along identified bicycle and pedestrian routes. An excellent example of such a policy is Bernards Township, NJ. In August 2012, the township committee adopted a resolution delineating and formalizing the Township’s policy on Walking Routes to School, as well as setting primary and secondary priority status to the various routes to be cleared of snow and ice by the Township’s Department of Public Works (DPW).

Interactive Maintenance Reporting

The Borough should consider making it easier for residents to report maintenance issues through an online form or an interactive public platform such as SeeClickFix. SeeClickFix allows anyone to file a report online via a mobile phone. The issue is then available for public view, comment and governments to take care of and improve their neighborhoods. Government entities responsible for the public space become more accountable to the public by acknowledging problems and providing effective communication about solutions.

Traffic Calming Policy

The Borough should consider adopting a Borough-wide Traffic Calming Policy that allows the community to request traffic calming along streets that warrant it. A traffic calming policy defines procedures to follow when addressing public requests for traffic calming in their neighborhoods and streets.

A great local example of a traffic calming policy is Maplewood, NJ. The Traffic Calming Policy includes an overview of traffic calming guidelines to follow in response to requests for the installation of traffic calming measures on a neighborhood street.

Link to Maplewood, NJ’s policy is below:

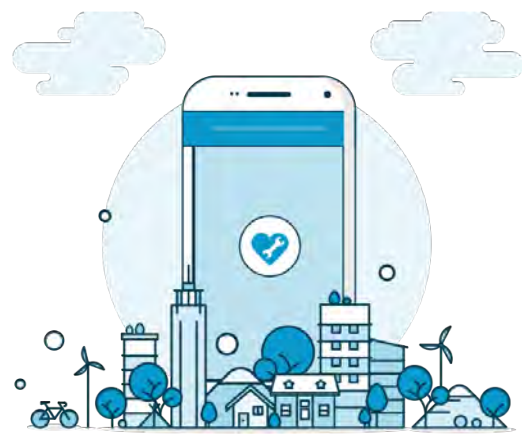
https://www.twp.maplewood.nj.us/sites/g/files/vyhlf3396/f/uploads/traffic_calming_policy_w_petition_-_revised_01-31-17.pdf


BERNARDS TOWNSHIP SCHOOL ROUTES AND SNOW REMOVAL JUNE 20, 2012



APPROXIMATE MILES	0.80
PRIMARY SNOW PLOWING	0.50
SECONDARY SNOW PLOWING	0.30
ASPHALT SIDEWALK	0.10
CONCRETE SIDEWALK	0.10
UNPAVED SIDEWALK	0.10
TOTAL SIDEWALK	0.30
TOTAL ROUTES	1.10

LEGEND	
Primary Snow Plowing	(Red line)
Secondary Snow Plowing	(Blue line)
Asphalt Sidewalk	(Green line)
Concrete Sidewalk	(Yellow line)
Unpaved Sidewalk	(Purple line)
Parcels	(Thin grey lines)
Municipal Boundary	(Dashed line)
Schools	(Red square)





Township of Maplewood
ENGINEERING DEPARTMENT

MUNICIPAL BUILDING, 574 VALLEY STREET
MAPLEWOOD, NJ 07040-2691
TELEPHONE: (973) 762-8120
FAX: (973) 762-2894
EMAIL: ENGINEER@TWP.MAPLEWOOD.NJ.US

TRAFFIC CALMING POLICY
(Revised January 31, 2017)

SUMMARY

Traffic calming measures may be appropriate in Maplewood Township where there is a documented need to:

- Reduce neighborhood cut through traffic
- Reduce traffic speeds through neighborhoods
- Accentuate pedestrian or bicycle use
- Control intersection traffic flow

The traffic calming policy provides guidelines for the following activities:

- Requests for traffic calming consideration
- Documentation of traffic calming
- Identification and approval of traffic calming strategies
- Programming of traffic calming improvements
- Design of traffic calming projects
- Evaluation of traffic calming projects



Chapter 5: DESIGN GUIDELINES





OVERVIEW

This section includes design guidelines from the latest guidance from the NJDOT Complete Streets Design Guide. The recommendations in the previous chapter are supplemented by a set of design guidelines containing descriptions and illustrations of all the recommended design treatments. The design guidelines are current as of the development of this plan and it is expected that they will continue to evolve. It is recommended that the Borough review the latest guidance at NACTO and NJDOT while advancing these recommendations. All facilities that are developed need to be MUTCD and AASHTO compliant. In addition, all recommendations should incorporate the guidance and recommended treatments in the 2020 Mercer County Bicycle Plan.





CORRIDOR/ROADWAY IMPROVEMENTS

SIDEWALKS

GENERAL CONSIDERATIONS

- Sidewalks serve as the “Backbone” of the pedestrian travel network
- Vary in their design/configuration in relationship to surrounding context (downtown, residential, commercial, etc.)
- Should be designed for universal access and ADA accessibility guidelines
- Require upkeep, maintenance, and snow or ice removal

TYPICAL APPLICATIONS / DESIGN STANDARDS

- Should be at least 5’ wide (FHWA Recommended Guidelines/Priorities for Sidewalks & Walkways)
- A sidewalk (8'-10'+) should be provided near parks, schools, and other major pedestrian generators sidewalks
- A minimum 2.5’ buffer (4' is preferred) for street furniture, utilities, etc should be provided



Frontage Zone
In locations where buildings are adjacent to the sidewalk, the frontage zone provides a buffer between passing pedestrians and opening doors and other architectural elements. The frontage zone keeps the pedestrian zone safe and clear of obstacles and obstructions.

Pedestrian Zone
The pedestrian zone is the area of the sidewalk that is intended specifically for pedestrian travel. The pedestrian zone should be free of any physical obstructions, including street furniture, plantings, and surface utilities. The quality of the sidewalk surface in the pedestrian zone is extremely important and must meet accessibility standards referenced on page 34. The material should be smooth, level, and have minimal gaps or rough surfaces.

Planted Buffer/Furnishing Zone
Where there is sufficient space, a planted buffer/furnishing zone should be established to delineate space for objects that would otherwise obstruct pedestrian movement, as well as provide a buffer for pedestrians from the adjacent roadway. This zone is where street trees, stormwater elements, street lights, signage, hydrants, benches, trash and recycling receptacles, parking meters, signal and lighting control boxes, utility poles, and other potential obstructions should be located.

Sidewalk Design Guidance (NJDOT Complete Streets Design Guide)

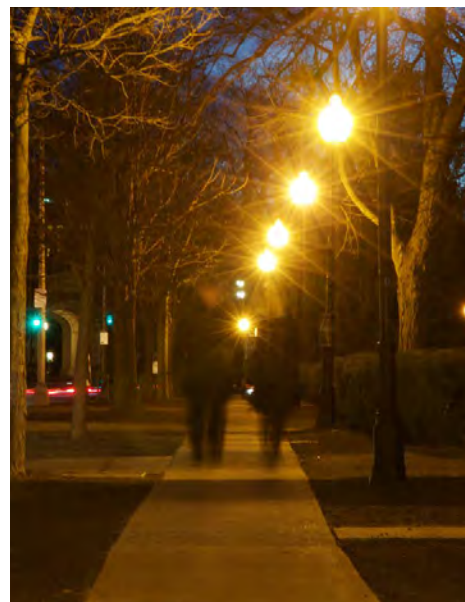
PEDESTRIAN-SCALE LIGHTING

GENERAL CONSIDERATIONS

- Appropriate and adequate lighting activity is a vital measure for pedestrian safety
- Should work in concert with roadway lighting
- Should be implemented at intersections, important points of interest, and along sidewalk corridors

TYPICAL APPLICATIONS / DESIGN STANDARDS

- Should be carefully placed so as to illuminate crosswalks and reduce glare to motorists
- Should utilize uniform lighting levels



EXAMPLES OF PEDESTRIAN SCALE LIGHTING APPLICATIONS IN PRINCETON NJ. (NJDOT COMPLETE STREETS DESIGN GUIDE)



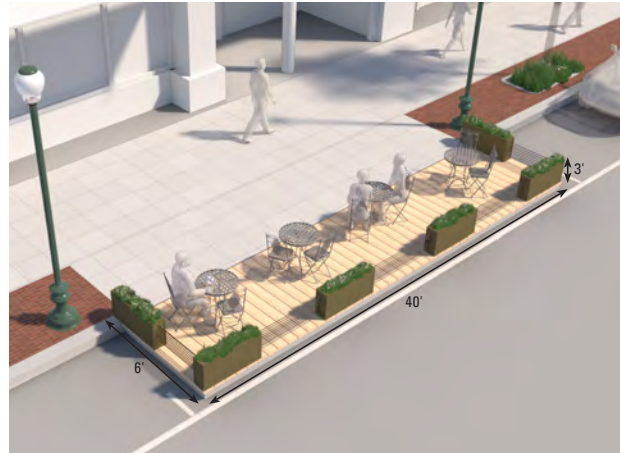
PARKLETS

GENERAL CONSIDERATIONS

- Re-purpose a portion of the street next to the sidewalk-- usually 1-2 parallel parking spaces-- as public space suitable for people to use and enjoy
- Provide amenities like seating, planting, bicycle parking, WiFi, and public art

TYPICAL APPLICATIONS / DESIGN STANDARDS

- Can be temporary or permanent in their design, materials and applications



Parklet Design Guidance (NJDOT Complete Streets Design Guide)

MID BLOCK CROSSING

GENERAL CONSIDERATIONS

- Provide safe crossing opportunities to destinations or places that are not near controlled intersections
- May incorporate additional features such as actuated warning beacons (RRFBs), signage, curb extensions, medians, etc.

TYPICAL APPLICATIONS / DESIGN STANDARDS

- In areas where there is significant pedestrian activity
- Stop lines should be setback 20-50 feet to ensure that a pedestrian is visible to motorists
- Raised crossings can also increase visibility and encourage motorists to stop
- Can also include dedicated markings (such as crossbike) for bicycle crossings



Mid-block Crossing with curb extension and signal actuation in Bayhead, NJ



GATEWAY TREATMENTS

GENERAL CONSIDERATIONS

- A signing and/or landscaping treatment to alert motorists that they are entering a lower speed environment and to expect pedestrians and bicyclists.
- Can be as simple as signs and landscaping

TYPICAL APPLICATIONS / DESIGN STANDARDS

- Usually supplemented with other traffic calming measures such as curb extensions or bulb-outs, public art and crosswalks
- Recommended for entrances to school zones, commercial areas or busy places of activity



Gateway treatment in Newark, NJ (NJDOT Complete Streets Design Guide)

INTERSECTION IMPROVEMENTS

HIGH-VISIBILITY RAISED CROSSWALKS

GENERAL CONSIDERATIONS

- 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
- Raised crosswalks are elongated speed humps that feature a marked crosswalk at the same elevation as the adjacent sidewalks

TYPICAL APPLICATIONS / DESIGN STANDARDS

- At roadway intersections where sidewalks or other pathways are present on both sides of the roadway
- Should be designed to minimize crossing distances and should be straight, to make them easier for people with visual impairments to navigate
- Minimum width is 6' but can be up to 15' wide at crossings with a high number of pedestrians



Raised Crosswalk Design Guidance (NJDOT Complete Streets Design Guide)



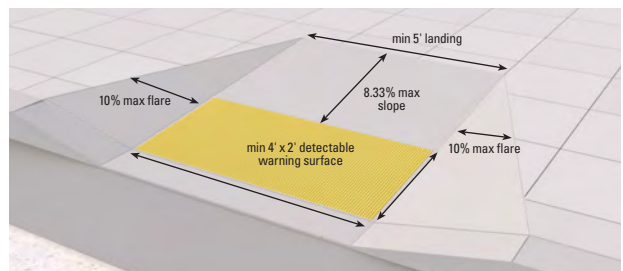
CURB RAMPS

GENERAL CONSIDERATIONS

- Provide pedestrians with a means of negotiating a change of elevation between the sidewalk and roadway
- Are especially important for people using wheelchairs, strollers, walkers, crutches, handcars, and pedestrians who have trouble stepping up and down high curbs

TYPICAL APPLICATIONS / DESIGN STANDARDS

- At all intersections with marked or unmarked crosswalks
- At all mid-block crossing locations
- At on-street accessible parking spaces



Curb Ramp Design Guidance (NJDOT Complete Streets Design Guide)

MINI TRAFFIC CIRCLES

GENERAL CONSIDERATIONS

- Typically help reduce speeds at minor intersections
- Can be installed using markings and raised islands and typically have plantings/landscaping
- Landscaping must be regularly maintained so it does not affect visibility

TYPICAL APPLICATIONS / DESIGN STANDARDS

- Crosswalks should be marked clearly to specify where pedestrians can cross.
- Minimum 15 ft clearance should be provided from the corner to the widest point on the circle
- Adequate signage should be installed



Mini-Traffic Circle, Princeton, NJ (WalkBikeNJ.com)



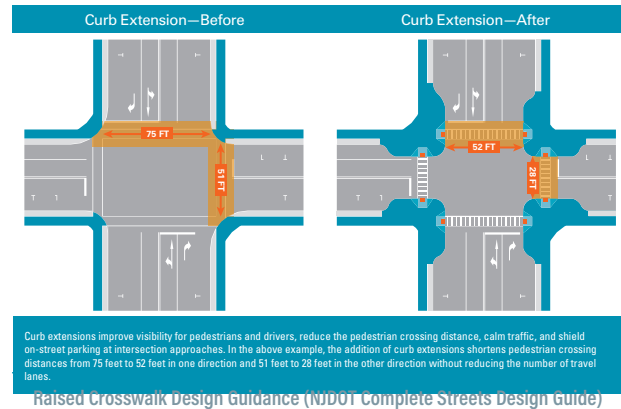
CURB EXTENSIONS (BUMPOUTS)

GENERAL CONSIDERATIONS

- Narrow the roadway by extending the curb at key intersections and mid-block locations
- Can either be “constructed”, with curbs and concrete surface, or “painted” over existing roadway pavement

TYPICAL APPLICATIONS / DESIGN STANDARDS

- Can be implemented at intersections, mid-block crossings, and transit stops on all types of streets
- Should focus on areas of high pedestrian demand where traffic calming is also a priority



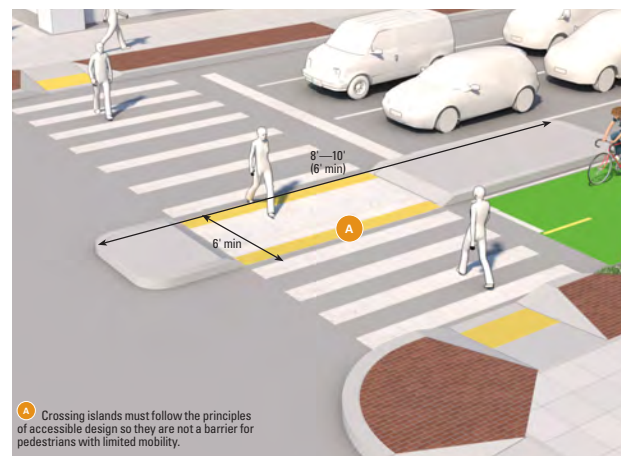
PEDESTRIAN REFUGE ISLAND

GENERAL CONSIDERATIONS

- Also known as crossing islands: Are protected spaces placed on a street at intersections or mid-block crossing locations to separate crossing pedestrians from motor vehicles
- Split the crossing distance into manageable portions

TYPICAL APPLICATIONS / DESIGN STANDARDS

- Can be used at wide intersections, irregularly shaped intersections or at intersections where two roads converge into one
- Provide a cut-through median level with roadway grade, offering a more efficient design in comparison to raised median islands



Refuge Island Design Guidance (NJDOT Complete Streets Design Guide)



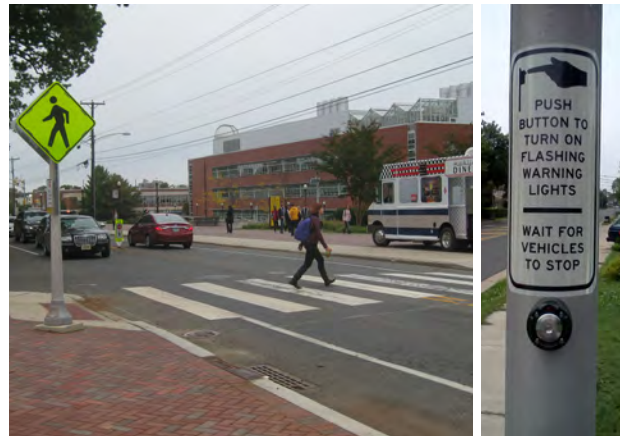
RRFB (FLASHING WARNING LIGHTS)

GENERAL CONSIDERATIONS

- Rectangular rapid flashing beacons (RRFBs) are active warning devices used to alert motorists of crossing pedestrians at uncontrolled crossings
- Remain dark until activated by pedestrians, at which point they emit a bright, rapidly flashing yellow light, which cautions drivers that pedestrians are attempting to cross the roadway

TYPICAL APPLICATIONS / DESIGN STANDARDS

- Should be installed on both the right and left sides of the crosswalk, or in a median if available, on the approach to important pedestrian crossings



Rectangular Rapid Flashing Beacon in Glassboro, NJ

IN-STREET CROSSING SIGNS

GENERAL CONSIDERATIONS

- Makes it easier for pedestrian to cross at an unsignalized crossing
- Alerts motorists of the laws regarding the pedestrian right-of-way at an unsignalized pedestrian crossing
- Can be used in conjunction with other measures such as pavement markings, etc

TYPICAL APPLICATIONS / DESIGN STANDARDS

- At unsignalized intersections and crossings
- Typically used near schools, parks and access to trails etc
- Roadway signs need to be selected and placed in accordance with the Manual on Uniform Traffic Control Devices (MUTCD)



In-Street Pedestrian Crossing Sign in Montclair, NJ



PEDESTRIAN HYBRID BEACON

GENERAL CHARACTERISTICS

- A pedestrian hybrid beacon, also known as a high-intensity actuated crosswalk or HAWK can be utilized to provide safe crossing opportunities at unsignalized crossings.
- HAWKs are a hybrid between a RRFB and a full traffic signal and cost less than pedestrian and bicycle bridges and a full traffic signal

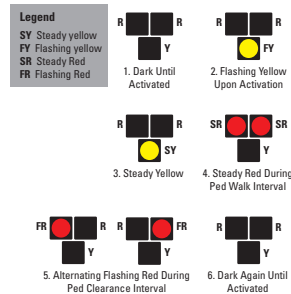
TYPICAL APPLICATIONS / DESIGN

- At unsignalized intersections and crossings, typically along roadways with heavy traffic volumes, wide cross-sections and/or high traffic speeds
- Typically used near schools, transit stops, trails, parks etc.
- To be used in conjunction with a marked crosswalk and curb ramps
- Can be combined with curb extensions



HAWK signal in Ocean City, NJ

Display Sequence for HAWK Signal



HAWK signal guidance (NJDOT Complete Street Design Guide)

PEDESTRIAN COUNTDOWN SIGNALS

GENERAL CHARACTERISTICS

- Displays the number of seconds remaining in the pedestrian crossing phase
- Help pedestrians accurately decide when it is safe to cross and when they should wait

TYPICAL APPLICATIONS / DESIGN STANDARDS

- At intersections with complex signal phasing (e.g. there is a dedicated left turn phase for motorists)
- When an exclusive pedestrian signal phase is provided
- At school zone crossings
- At intersections with pedestrian refuge



Pedestrian Countdown Signal i



BICYCLE NETWORK IMPROVEMENTS

SHARED LANES

GENERAL CONSIDERATIONS

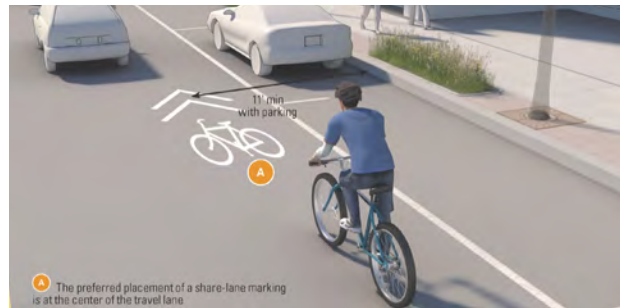
- Requires posted speed limit of 25 MPH or less.
- Not ideal for high volume roadways.
- Does not dedicate exclusive use for bicyclists.

TYPICAL APPLICATIONS / DESIGN STANDARDS

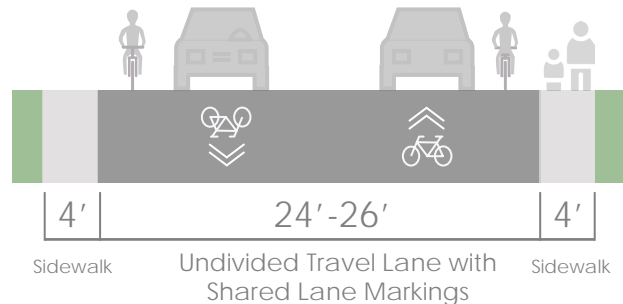
- When adjacent to parking, shared-lane markings should be placed a minimum of 11 feet from curb (4 feet without parking).
- The preferred placement of a shared-lane marking is at the center of the travel lane.

BENEFITS

- Indicates the most appropriate and safe location to ride with respect to parked cars and moving traffic.
- Reinforces the legitimacy of bicycle traffic on the street.
- Requires no restrictions on parking.
- Can be used to fill gaps in bicycle network.



Source: NJ Complete Streets Design Guide



TRADITIONAL BIKE LANES

GENERAL CONSIDERATIONS

- Requires posted speed limit of 25 MPH or less.
- Less protection for cyclist than a buffered or protected bicycle lane.
- Unfamiliarity with the treatment can lead to confusion.
- May require restrictions on parking on narrow roads.

TYPICAL APPLICATIONS / DESIGN STANDARDS

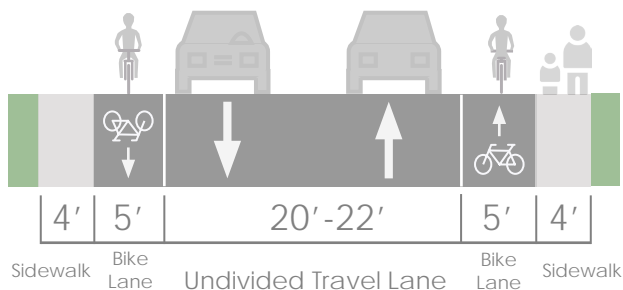
- The minimum width with no on-street parking is 5 feet adjacent to a curb, 4 feet with no curb.
- Desirable lane width adjacent to parking is 7 feet (minimum 5 feet).
- When placed next to parking lane, desirable reach from curb face to edge of bicycle lane is 14.5 feet.

BENEFITS

- Striping offers visual separation and reminds drivers that the roadway is a shared space.
- Produces a traffic calming effect due to the narrowing of the roadway width.



Source: NJ Complete Streets Design Guide





PROTECTED BIKE LANES

GENERAL CONSIDERATIONS

- Maintenance along the bike lane may require smaller equipment for plowing and sweeping operations.
- Greater parking enforcement needed to prevent parking in bicycle lanes.
- Striping may require regular maintenance.

TYPICAL APPLICATIONS / DESIGN STANDARDS

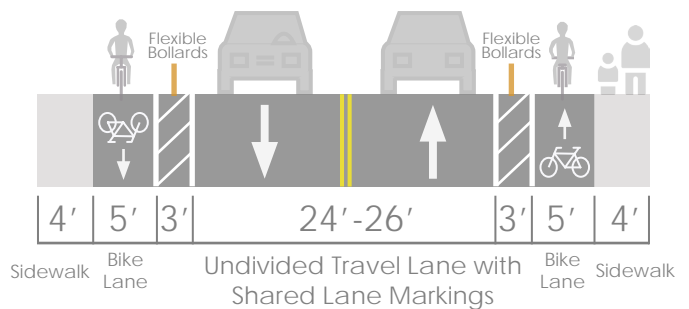
- Preferred width is 6 feet with a minimum width of 5 feet.
- Preferred width of buffer with on-street parking is 3 feet. Minimum without parking is 1.5 feet.
- Minimum with between any vertical separation and the curb is 7 feet..

BENEFITS

- Provides physical barrier between bicyclists and vehicular traffic.
- Encourage increased bicyclist use among users who do not feel comfortable riding in traffic.



Source: NJ Complete Streets Design Guide



SHARED USE PATH

GENERAL CONSIDERATIONS

- Ideal for roadways with longer blocks as additional consideration is required at driveways.
- Attract a variety of user groups who often have conflicting needs.
- Construction cost typically high.
- Environmental screening & analysis needed.

TYPICAL APPLICATIONS / DESIGN STANDARDS

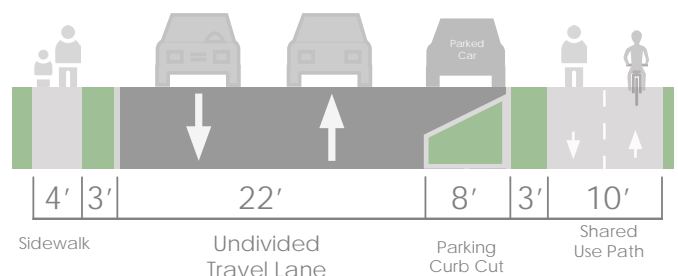
- The minimum width for a shared use path is 10 feet.
- Recommended width can differ based on context, volume, and user mix.
- Wider paths (11-14 ft) are advised where there are steep grades to provide additional passing area.

BENEFITS

- Provides complete separation from motor vehicle traffic.
- Can provide enjoyable recreational opportunities.
- Appeals to users of all ages and abilities.
- No restriction of parking necessary.



Source: NJ Complete Streets Design Guide





ADVISORY BIKE LANES

DEFINITION

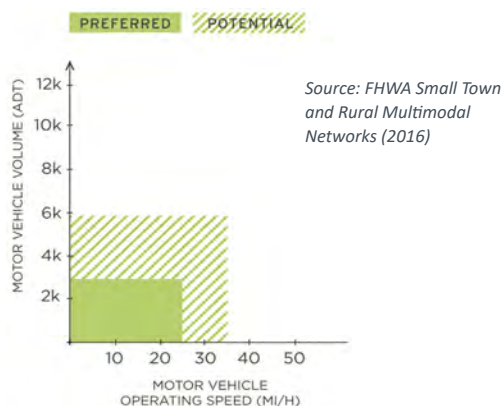
Commonly seen in other countries (including the Netherlands and England) Advisory Bike Lanes, also known as Advisory Shoulders, are beginning to gain traction in the United States. This roadway treatment converts road shoulders into usable advisory lanes for bicycles on roadways that would otherwise be too narrow for traditional bike lanes. Vehicles traveling in both directions share a two-way center travel lane that is narrowed to allow space for the advisory lanes. Vehicles must yield to bicycles when meeting approaching traffic and are permitted to enter advisory lane only when no bicycles are present.

GENERAL CONSIDERATIONS

Advisory Bike Lane treatments are context specific and a variety of factors should be considered to determine the best fit. General guidance includes:

- Most appropriate for streets with low to moderate volumes ($\leq 5,000$ ADT) and low to moderate vehicle speeds (≤ 30 MPH) (Figure 1).
- Applicable to constrained roadways that serve as network connectors with existing bicycle demand.

FIGURE 1: RECOMMEND APPLICATION STANDARDS (SPEED/VOLUME)

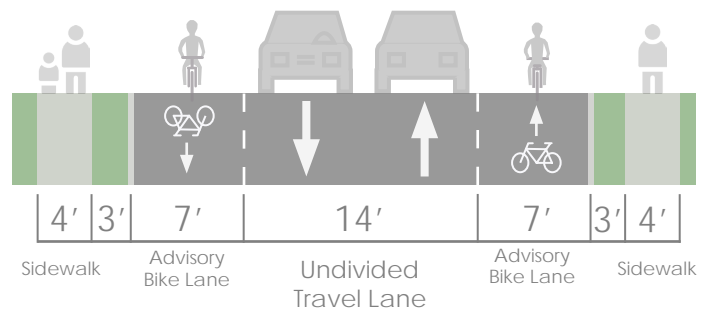


DESIGN STANDARDS

- Bike Lane: a dashed line delineates advisory lane from the two-way travel lane and indicates permitted vehicle use of lane when necessary. FHWA Recommends a lane width of 6' with a minimum 4' when no curb or gutter is present.



Advisory Bike Lane - Princeton NJ (Photo Credit: Jerry Foster, GMTMA)



- Two-Way Travel Lane: two-way travel lane width can vary based on context, but at minimum should be more narrow than two conventional lanes (20-22") and can be as narrow as a single travel lane (10-11').
- Lane Markings (Optional): Bike lane or shared lane marking can be painted within advisory lanes to delineate space and increase awareness. Contrasting pavement materials are also encouraged to further differentiate lanes.
- Regulatory/Warning Signs (Optional): Additional signage can be installed to better clarify conditions such as two-way operation (MUTCD W6-3) or yield priorities.

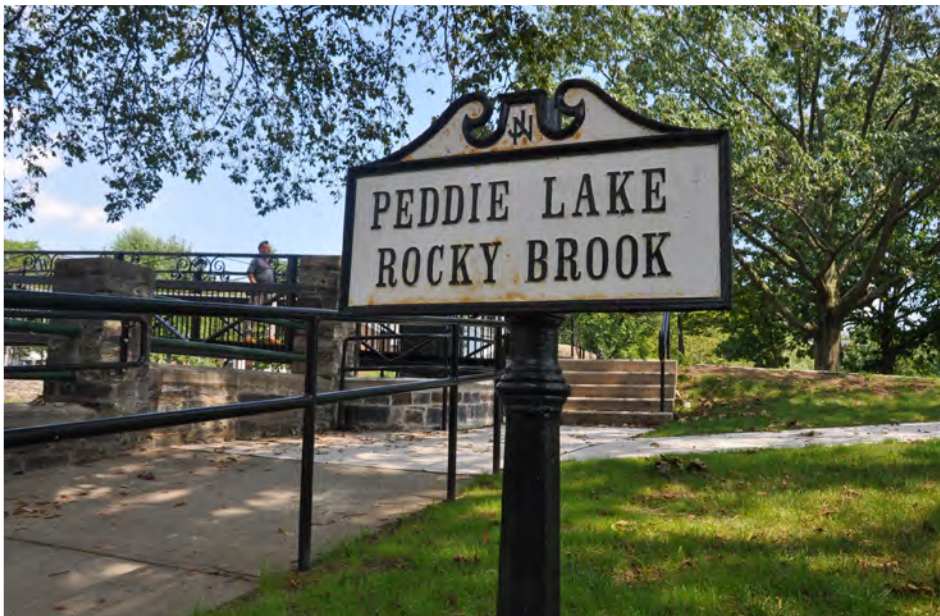
BENEFITS

- Provides usable space for bicyclists on roadways otherwise not wide enough to accommodate other types of bicycle facilities.
- Narrowed, two-way travel lane encourages traffic calming through striped width reduction.
- Increases predictability and provides defined areas for vehicles and bicycles to share confined roadway.
- Provides increased separation from motor vehicle traffic and enhances level of comfort for bicyclists (especially among vulnerable users).

Sources: "Small Town and Rural Multimodal Networks", FHWA (2016)
"Edge Lane Road Design Guide",



Chapter 6: IMPLEMENTATION & FUNDING





OVERVIEW

This section summarizes the efforts required to effectively implement the recommendations in this plan. The proposed bicycle and pedestrian network recommendations identified in the previous section are considered “planning level” and are intended to be used as a guide; further analysis will be required during the design phase. The Hightstown Borough Mobility Master Plan provides a starting point to prioritize improvement strategies. It may require updates as the surrounding context changes and as the trade-offs are justified and shared with the community.

The County should be notified and involved with any facility on County roadways as per the Mercer County Bicycle Plan. The plan describes the guidelines in advancing a segment of bikeway along a County roadway including design criteria, and procedures.

The implementation table in the following pages describes the overall level of effort, estimated costs, responsibility and time-frame for the priority intersection concepts. This table should be utilized in conjunction with the Typical Units Costs Matrix (Appendix B), which includes an average unit cost for facility types.

Bicycle and pedestrian improvements should be coordinated with scheduled road construction and can be part of larger streetscape and roadway improvements. Street resurfacing and restriping projects can be seen as opportunities to stripe on-street bicycle facilities, and crosswalks.

MAINTENANCE

The Borough must recognize that there are costs associated with maintenance and operation of both short-term and long-term measures. The majority of the recommendations are low maintenance and should only require routine maintenance efforts such as snow clearing, debris removal, and sweeping that are already required on these roads. Maintenance is typically the responsibility of the road owner unless there are other agreements in place.





IMPLEMENTATION MATRIX

ENGINEERING MEASURES - CORRIDORS

1A. NJ 33 / MERCER STREET / FRANKLIN STREET

(BOROUGH BORDER TO SCHOOL ZONE & MAXWELL AVENUE TO BOROUGH BORDER)

#	Recommended Treatment	Responsibility	Time Frame	Cost
1	Install 5', one-way protected bike lanes in each direction (eastbound and westbound lanes) with 3' hatched buffer and flexible bollards	NJDOT	Short-Term	Medium
1A	Alternative Option: Install 10', two-way protected bike lane along northern side of roadway with 3' hatched buffer and flexible bollards. Allows for traditional sized snow plow or street sweeper to fit within the combined bicycle lanes, inside the bollards.	NJDOT	Short-Term	Medium
2	Fill gaps in sidewalk network on both sides of roadway (corridor wide)	NJDOT	Short-Term	Medium
3	Consider a speed reduction in the posted speed limit on NJ 33	NJDOT	Short-Term	Low

1B. NJ 33 / MERCER STREET / FRANKLIN STREET (SCHOOL ZONE TO MAXWELL AVENUE)

#	Recommended Treatment	Responsibility	Time Frame	Cost
1	Stripe shoulder lines to demarcate lane width and provide visual cue to slow vehicle speeds	NJDOT	Short-Term	Low
2	Install painted shared lane making symbols along travel lanes in each direction	NJDOT	Short-Term	Low
3	Fill gaps in sidewalk network on both sides of roadway (corridor wide)	NJDOT	Short-Term	Medium
4	Consider a speed reduction in the posted speed limit on NJ 33	NJDOT	Short-Term	Low

TIME FRAME

Short-Term: Less than 1 year
Medium- Term: 1-2 years
Long- Term: 2 Years or more

COST

Low: <\$50,000
Medium: \$50,000- \$250,00
High: \$250,000+



2. SUMMIT STREET

#	Recommended Treatment	Responsibility	Time Frame	Cost
1	Remove centerline striping and install shared lane marking symbols along travel lanes in each direction.	Borough	Short-Term	Low
2	Evaluate feasibility for installation of a 4-way stop at intersection with 2nd Street	Borough	Short-Term	Low
3	Install high visibility crosswalk at Greenway entrance	Borough	Short-Term	Low
4	Install 5', conventional bike lanes in each directions from Greenway entrance southbound to intersection with NJ 33	Borough	Short-Term	Low
5	Fill gaps in sidewalk network on both sides of roadway (corridor wide)	Borough	Short-Term	Medium

3. EAST/WEST WARD STREET

#	Recommended Treatment	Responsibility	Time Frame	Cost
1	Narrow travel lane to a single, undivided, 14'-16' travel lane shared by motor vehicles traveling in both directions.	Borough	Short-Term	Low
2	Install 5-foot Advisory Bike Lanes in each direction	Borough	Short-Term	Low
3	Work with downtown businesses and NJDOT to restrict trucks on West Ward Street.	County	Short-Term	Low

TIME FRAME

Short-Term: Less than 1 year
 Medium- Term: 1-2 years
 Long- Term: 2 Years or more

COST

Low: <\$50,000
 Medium: \$50,000- \$250,00
 High: \$250,000+



4A. BANK STREET (EXISTING ROADWAY CONFIGURATION)

#	Recommended Treatment	Responsibility	Time Frame	Cost
1	Install 5-foot Advisory Bike Lanes in each direction and narrow travel lane to a single, undivided, 16' travel lane shared by motor vehicles traveling in both directions.	Borough	Short-Term	Low
2	Install high visibility crosswalk at Rocky Brook Park/Greenway	Borough	Short-Term	Low

4B. BANK STREET (REDEVELOPMENT ROADWAY CONFIGURATION)

#	Recommended Treatment	Responsibility	Time Frame	Cost
1	Utilize planned curb cuts in redevelopment plan to expand sidewalk into a 10' shared use path.	Borough	Short-Term	Low
2	Reduce roadway width to a single, 22' undivided travel lane	Borough	Short-Term	Low
3	Install high visibility crosswalk at Rocky Brook Park/Greenway	Borough	Short-Term	Low

TIME FRAME

Short-Term: Less than 1 year
 Medium- Term: 1-2 years
 Long- Term: 2 Years or more

COST

Low: <\$50,000
 Medium: \$50,000- \$250,00
 High: \$250,000+



IMPLEMENTATION MATRIX

ENGINEERING MEASURES - INTERSECTIONS

1. MERCER STREET (NJ33) & WEST WARD STREET & S. ACADEMY STREET

#	Recommended Treatment	Responsibility	Time Frame	Cost
1	Stripe high-visibility striping at pedestrian crosswalks and consider pedestrian crossing beacons	NJDOT / Hightstown	Short-Term	Low
2	Construct a pedestrian refuge island to reduce crossing distances and increase comfort for pedestrians	NJDOT / Hightstown	Short-Term	Medium
3	Stripe dashed white lines to delineate turning movements	NJDOT / Hightstown	Short-Term	Low

2. NJ 33/FRANKLIN STREET & MAXWELL AVENUE

#	Recommended Treatment	Responsibility	Time Frame	Cost
1	Reconstruct north west corner of the intersection to eliminate the channelized southbound right turn movement. Extend landscaped area. Reconstruct curb ramps.	NJDOT / Hightstown	Medium-Term	High
2	Stripe high-visibility striping at pedestrian crosswalks	NJDOT / Hightstown	Medium-Term	Low
3	Construct built curb extension with ADA compliant tactile warning surfaces and pedestrian actuated signals with Lead Pedestrian Interval (LPI)	NJDOT / Hightstown	Medium-Term	Medium
4	Extend sidewalk network southbound (east side of Maxwell Street) and eastbound (north and south sides of NJ 33)	NJDOT / Hightstown	Medium-Term	High
5	Install and stripe protected bike lane treatment on NJ 33	NJDOT / Hightstown	Medium-Term	Medium

TIME FRAME

Short-Term: Less than 1 year
Long-Term: 1 Year or more

COST

Low: <\$50,000
Medium: \$50,000- \$250,00
High: \$250,000+



TIME FRAME

Short-Term: Less than 1 year
Long-Term: 1 Year or more

COST

Low: <\$50,000
Medium: \$50,000- \$250,00
High: \$250,000+

3. MAXWELL AVENUE & EAST WARD STREET

#	Recommended Treatment	Responsibility	Time Frame	Cost
1	Install a mini-roundabout treatment (Phase 1: Painted; Phase 2: Built)	Hightstown	Short-Term	Medium
2	Install high-visibility striping at pedestrian crosswalks	Hightstown	Short-Term	Low
3	Extend sidewalk network on Maxwell Avenue and East Ward Street	Hightstown	Short-Term	Medium
4	Stripe advisory bike lane treatment on East Ward Street	Hightstown	Short-Term	Medium
5	Install recommended signage for vehicle guidance and pedestrian accommodation at mini roundabout	Hightstown	Short-Term	Low

4A. STOCKTON STREET ROUNDABOUT

#	Recommended Treatment	Responsibility	Time Frame	Cost
1	Construct roundabout with a mountable truck apron with textured surface to allow for emergency vehicles through movements.	Mercer County	Long-Term	High
2	Construct built curb extensions to reduce turning radii	Mercer County	Long-Term	High
3	Add built pedestrian refuge island to reduce crossing distances and increase comfort for pedestrians	Mercer County	Long-Term	High
4	Install high-visibility striping at pedestrian crosswalks with Rectangular Rapid Flashing Beacons (RRFBs) at crossings. Beacons can be installed within the pavement but require additional maintenance.	Mercer County	Long-Term	Low
5	Install advisory signage to guide vehicle traffic and alert motorists to presence of pedestrians at crossings	Mercer County	Long-Term	Low
6	Install gateway/traffic calming signage at eastbound approach	Mercer County	Long-Term	Medium



TIME FRAME

Short-Term: Less than 1 year
Long-Term: 1 Year or more

COST

Low: <\$50,000
Medium: \$50,000- \$250,00
High: \$250,000+

4B. STOCKTON STREET SIGNALIZED INTERSECTION

#	Recommended Treatment	Responsibility	Time Frame	Cost
1	Install traffic signal (will require a signal warrant analysis) and include Lead Pedestrian Interval for Route 571/Stockton Street crossings	Mercer County	Medium-Term	High
2	High visibility striping at pedestrian crosswalks	Mercer County	Medium-Term	Low
3	Install gateway/traffic calming signage at eastbound approach	Mercer County	Medium-Term	Medium
4	Curb extensions (Phase 1 - Painted; Phase 2 - Built out) to reduce turning radii and decrease crossing distances for pedestrians	Mercer County	Medium-Term	Medium
5	Pedestrian refuge island to reduce crossing distances and increase comfort for pedestrians	Mercer County	Medium-Term	Medium
6	Install gateway/traffic calming signage at eastbound approach	Mercer County	Long-Term	Medium



FUNDING SOURCES

The following is a general compilation of funding sources that have been, or could be used to fund improvements in Hightstown Borough. The list is not exhaustive, but identifies a selection of federal, state, and private/non-profit funding sources for pedestrian and bicycle planning, project development, and construction. For each source, links are provided to program websites that contain additional information related to: how to apply for funding, typical grant amounts, application deadlines, and eligible activities. Some funding sources may also be used to fund programmatic activities, related to safety, enforcement, and education. Potential funding sources are listed below and described in *Figure 17 - Potential Funding Sources Matrix* followed by detailed description of each source on subsequent pages

FEDERAL FUNDING OPPORTUNITIES

- The Fixing America’s Surface Transportation (FAST) ACT
 - » Congestion Mitigation and Air Quality Improvement (CMAQ) Program
 - » Transportation Alternatives Set-Aside
 - » Highway Safety Improvement Program (HSIP)
 - » Safe Routes to School Program (SRTS)

STATE FUNDING OPPORTUNITIES

- NJDOT – Municipal Aid
- NJDOT – County Aid
- NJDOT – Bikeway Grant Program
- New Jersey Transportation Infrastructure Bank
- NJ Division of Highway Traffic Safety Grants (HTS Grants)
 - » Comprehensive Traffic Safety Programs (CTSPs)
 - » Pedestrian Safety
 - » Other Eligible Programs

PRIVATE OR NON-PROFIT FUNDING SOURCES

- Sustainable Jersey
- Robert Wood Johnson Foundation
- The Geraldine R. Dodge Foundation

OTHER

- Impact Fees

FIGURE 17: POTENTIAL FUNDING SOURCES MATRIX

<i>Funding Source</i>	<i>Types of Facilities or Activities</i>		
	Capital Projects		Programmatic
	<i>On-Road</i>	<i>Off-Road</i>	
Federal Funding Opportunities			
The Fixing America's Surface Transportation (FAST) Act			
- Congestion Mitigation and Air Quality Improvement (CMAQ) Program	●		●
- Transportation Alternatives Set-Aside	●	●	●
- Highway Safety Improvement Program (HSIP)	●		●
- Safe Routes to School Program (SRTS)	●	●	●
State Funding Opportunities			
NJDOT – Municipal Aid	●		
NJDOT – County Aid	●		
NJDOT – Bikeway Grant Program	●	●	
New Jersey Transportation Infrastructure Bank	●	●	
NJ Division of Highway Traffic Safety Grants (HTS Grants)			●
Private or NonProfit Funding Sources			
Sustainable Jersey			●
Robert Wood Johnson Foundation			●
The Geraldine R. Dodge Foundation			●
Other			
Impact Fees	●	●	

Note:

1. Capital Projects relate to on- or off-road facility design and construction activities. On/off-road facilities are detailed and described in Appendix A – Design Guidelines. Project elements associated with on-road typically include: striped bicycle lanes, signage, sidewalks, signals, and protected on-road bicycle lanes, etc. Project elements associated with off-road facilities typically include paved paths, signage, road crossings, bridges, boardwalks, wayside exhibits, etc.

2. Programmatic Activities relate to project elements such as technical assistance, education, enforcement, safety, Safe Routes to School, promotion, and marketing.



FEDERAL FUNDING OPPORTUNITIES

THE FAST ACT

On December 4, 2015, President Obama signed the Fixing America's Surface Transportation (FAST) Act (Pub. L. No. 114-94) into law. This was the first federal law in over a decade to provide long-term funding certainty for surface transportation infrastructure planning and investment. The law provides federal transportation policy and funding for five years, authorizing \$226.3 billion in Federal funding for fiscal years 2016 through 2020 for road, bridge, bicycling, and walking improvements. (The previous federal program was known as the Moving Ahead for Progress in the 21st Century Act, or "MAP-21"). Funding programs under the FAST Act are summarized below.

www.fhwa.dot.gov/fastact/

Congestion Mitigation and Air Quality Improvement (CMAQ) Program

The CMAQ program provides a flexible funding source to State and local governments for transportation projects and programs to help meet the requirements of the Clean Air Act. Funds may be used for a transportation project or program such as construction of bicycle and pedestrian facilities that are not exclusively recreational (as they must reduce vehicle trips and therefore vehicle emissions), outreach promoting safe bicycle use, and other bicycle and pedestrian programs. CMAQ eligibilities include public transit, bicycle and pedestrian facilities, travel demand management strategies, alternative fuel vehicles, and facilities serving electric or natural gas-fueled vehicles.

<https://www.fhwa.dot.gov/fastact/factsheets/cmaqfs.cfm>

Transportation Alternatives Set-Aside

The Transportation Alternatives Set-Aside (TA Set-Aside, or TA) authorizes funding for programs and projects defined as transportation alternatives, including on- and off-road pedestrian and bicycle facilities, infrastructure projects for improving non-driver access to public transportation and enhanced mobility, community improvement activities, such as historic preservation and vegetation management, and environmental mitigation related to stormwater and habitat connectivity; recreational trail projects; safe routes to school projects; and projects for planning, designing, or constructing boulevards and other roadways largely in the right-of-way of former divided highways. The program will allocate \$850 million annually in fiscal years 2018-2020.

https://www.fhwa.dot.gov/environment/transportation_alternatives/

Highway Safety Improvement Program (HSIP)

The Highway Safety Improvement Program (HSIP) is a core Federal-aid program with the purpose to achieve a significant reduction in traffic fatalities and serious injuries on all public roads, including non-State-owned roads and roads on tribal land. The HSIP requires a data-driven, strategic approach to improving highway safety on all public roads with a focus on performance.

<https://safety.fhwa.dot.gov/hsip/>

Safe Routes to School Program (SRTS)

The Safe Routes to School Program (SRTS) is a federally funded reimbursement program administered by the New Jersey Department of Transportation (NJDOT), in partnership with the North Jersey Transportation Planning Authority (NJTPA). Under MAP-21 legislation, the Transportation Alternatives Program (TAP) funding does not provide for a standalone Safe Routes to School Program. The New Jersey Department of Transportation (NJDOT) has elected to continue funding the SRTS program separately.



Infrastructure projects may include the installation of sidewalks, crosswalks, bike lanes, multi-use paths, traffic calming measures, and other means to ensure the ease and safety of children walking or biking to school. Projects must be located within two miles of a school that serves students in grades K-8 and involve the school commute.

Any municipality, school district, or county is eligible to apply for funding after a solicitation is announced. Non-profit organizations are not eligible as direct grant recipients for the solicitation. However, non-profit organizations may partner with a local public agency that will assume responsibility and administration for the grant.

In 2016, NJDOT announced a pilot program called “Design Assistance.” The program assists LPA’s, who received funding with development of plans, specifications and estimates for their SRTS projects.

<http://www.state.nj.us/transportation/business/localaid/srts.shtm>

<http://www.njtpa.org/project-programs/project-development/safe-routes-to-school.aspx>

STATE FUNDING OPPORTUNITIES

NJDOT – Municipal Aid

In the Municipal Aid program, funds are appropriated by the Legislature for municipalities in each county based on a formula contained in legislation. Additionally, \$10 million is allotted for those municipalities that qualify for Urban Aid. Urban Aid is distributed by a formula that is computed by the New Jersey Department of Community Affairs. Each spring, the New Jersey Department of Transportation (NJDOT) announces the program for that fiscal year and invites municipalities to apply. Road improvement projects such as resurfacing, rehabilitation or reconstruction and signalization are funded and distributed by formula.

Applications receive points based on various criteria including existing road conditions, Average Daily Traffic (ADT), safety improvements, and access to nodes (schools, residential areas, employment centers, etc.). Other important criteria include the project’s readiness to construct, whether the municipality has received an allotment within the last three years, and the municipality’s award and close-out performance on previously awarded State grants.

The State pays 75% of the funds at the time of bid approval and the remainder on a reimbursement basis after acceptance by the municipality and the State of the work completed.

<http://www.state.nj.us/transportation/business/localaid/municaid.shtm>

NJDOT – County Aid

County Aid funds are appropriated by the Legislature annually for the improvement of public roads and bridges under county jurisdiction. Public transportation and other transportation projects are also included.

Each project must be included in the County’s Annual Transportation Program (ATP). In accordance with the County Aid regulations N.J.A.C. 16:20A, the ATP shall list a pool of eligible projects by name and location, including municipality, with a brief description of each project, project limits and an estimate of the construction cost.

NJDOT – Bikeway Grant Program

The New Jersey Department of Transportation’s (NJDOT) Bikeway Grant Program provides funds to counties and municipalities to promote bicycling as an alternate mode of transportation in New Jersey. A primary objective of the Bikeway Grant Program is to support the State’s goal of constructing 1,000 new miles of



dedicated bike paths (facilities that are physically separated from motorized vehicular traffic by an open space or barrier either within the highway right of way or within an independent right of way). In an effort to establish regionally connected bicycle networks, this program is available to every municipality and county throughout New Jersey. Although priority will be given to construction of new bike paths, the proposed construction or delineation of any new bicycle facility will be considered.

<http://www.state.nj.us/transportation/business/localaid/bikewaysf.shtm>

New Jersey Transportation Infrastructure Bank

The Transportation Bank is a partnership between the NJ Department of Transportation (NJDOT) and the New Jersey Infrastructure Bank (I-Bank). The goal of the Transportation Bank is to provide low interest financing for a variety of capital projects including public highways, approach roadways and other necessary land-side improvements, ramps, signal systems, roadbeds, transit lanes or rights of way, pedestrian walkways and bridges connecting to passenger stations and servicing facilities, bridges, and grade crossings.

Applications are accepted on a quarterly basis and funding is available to any local government unit (defined as county, municipality, municipal, county or regional transportation authority, or any other political subdivision of the State authorized to construct, operate, and maintain public highways or Transportation Projects) within the state.

NJ Division of Highway Traffic Safety Grants (HTS Grants)

The NJ Division of Highway Traffic Safety offers, on an annual basis, federal grant funding to agencies that wish to undertake programs designed to reduce motor vehicle crashes, injuries, and fatalities on the roads of New Jersey. Municipal, county, state government and law enforcement agencies, as well as non-profit organizations, are encouraged to apply for NJDHTS grant funding to address specific, local traffic safety issues.

Grant funding will only be awarded to programs that are in line with federal and state traffic and safety priorities to reduce car crashes, injuries and deaths.

http://www.nj.gov/oag/hts/grants/index_south.html

The grant funding is distributed under the following programs:

- Comprehensive Traffic Safety Programs (CTSPs)
 - » Comprehensive Traffic Safety Program grants address multiple traffic safety concerns within a county or region. CTSP grants include numerous tasks and strategies involving enforcement, education and engineering.
 - » Any CTSPs for the state of New Jersey fall under the Division of Highway Traffic Safety Grants. The CTSP grants include tasks involving enforcement, education and engineering to improve traffic safety. Other eligible programs for these grants include speeding, bicycle safety, school bus/pupil transportation and traffic engineering.
- Pedestrian Safety
 - » Because the proportion of pedestrian fatalities in New Jersey is 30.2% (well above the national average), pedestrian safety is a continuing priority. The goal of the pedestrian safety program area is to lower the pedestrian fatality and injury crash rates. In New Jersey, municipalities that are statistically high for pedestrian injury crashes are eligible to apply for our Pedestrian Safety Grant. The grant includes funding for overtime enforcement at pedestrian safety hot spots in the community and educational outreach throughout the community.



- Other Eligible Programs

- » Grant applications may also be submitted that utilize enforcement, education or engineering counter-measures to address other specific traffic safety issues including:

- Speed
- Aggressive Driving
- Bicycling Safety
- Crash Investigation
- Distractions
- EMS Training- relating to crash response
- Motorcycle Safety
- School Bus/Pupil Transportation
- Traffic Engineering - primarily pedestrian pavement markings and pedestrian signs, but some traffic studies will be considered.

PRIVATE OR NON-PROFIT FUNDING SOURCES

Sustainable Jersey

Sustainable Jersey is a nonprofit organization that provides tools, training and financial incentives for sustainable community initiatives. Their statewide certification program helps municipalities take steps to sustain their quality of life over the long term. In 2014, the Sustainable Jersey for Schools certification program was launched for New Jersey public schools interested in going green and conserving resources.

Participating local governments and schools voluntarily complete and document actions to earn points toward certification. Sustainable Jersey offers small grants ranging from \$2,000 to \$20,000 to assist communities and schools with completing Sustainable Jersey and Sustainable Jersey for Schools actions. To be eligible for a Sustainable Jersey or Sustainable Jersey for Schools Small Grant, a community or school must be registered or certified with Sustainable Jersey or Sustainable Jersey for Schools and have an active Green Team. The funds can only be used to implement actions that earn points in the Sustainable Jersey or Sustainable Jersey for Schools program.

Several Sustainable Jersey action items help provide sustainable transportation options. Safe Routes to School, Complete Streets Programs, Bicycle and/or Pedestrian Audits, and Bicycle and/or Pedestrian Plans can be funded. Sustainable Jersey for Schools actions related to active transportation include Pedestrian and Bicycle Safety Promotion Initiatives, Safe Routes to School District Policy, and School Travel Plan for Walking and Bicycling.

www.sustainablejersey.com/grants-resources/

Robert Wood Johnson Foundation

The Robert Wood Johnson Foundation (RWJF) invests in grantees (e.g., public agencies, universities, and public charities) that are working to improve the health of all Americans. Current or past projects in the topic area “walking and biking” include greenway plans, trail projects, advocacy initiatives, and policy development.

New Jersey Health Initiatives (www.njhi.org/) is the statewide grant making program of the Robert Wood Johnson Foundation. New Jersey Health Initiatives supports innovations and drives conversations to build healthier communities through grant making across New Jersey.

www.rwjf.org/

The Geraldine R. Dodge Foundation

The Geraldine R. Dodge Foundation provides funding for Arts, Education, Environment and Informed Communities initiatives that are innovative and promote collaboration and community-driven decision making.

Recipients may include nonprofit, community, government, and business leaders.

<http://www.grdodge.org/what-we-fund/>

OTHER FUNDING SOURCES

Impact Fees

Regulated by subdivision polices, impact fees require residential, industrial and commercial development project leaders to provide sites, improvements, and/or funds to support public amenities such as open space and trails. Impact fees may be allocated to a particular trail or greenway from land development projects if the fund is a dedicated set-aside account established to help develop a county- or borough-wide system of trails or pedestrian/bicycle infrastructure facilities.

INTENTIONALLY LEFT BLANK



Chapter 7: NEXT STEPS





NEXT STEPS

The recommendations in this plan include engineering, education, evaluation, encouragement and enforcement strategies to improve the walking and bicycling conditions in the Borough. The Borough should first focus on the priority corridors and intersections in conjunction with NJDOT and Mercer County, then work towards the rest of the recommended network and any other locations throughout the Borough.

The following actions can be undertaken to implement the recommendations of this plan:

- ✓ *Adopt the plan as an element of the Master Plan*
- ✓ *Develop initial concepts of the recommendations in the plan based on more detailed data collection, analysis, survey, community preference and coordination with Mercer County and NJDOT where needed. Consider conducting “pilot” projects / temporary installations to test recommendations and gather community feedback*
- ✓ *Obtain funding for the recommendations*
- ✓ *Adopt the latest Complete & Green Street Model policy*
- ✓ *Develop and adopt a community-focused traffic calming policy*
- ✓ *Advance recommendations on state roadways in this plan as problem statements prepared in coordination with NJDOT and DVRPC*
- ✓ *Provide a status update to NJDOT within a year of adoption of the plan*



APPENDICES





The appendix will be submitted as a separate PDF with the following items:

APPENDIX A: OUTREACH MATERIALS

- » Kickoff Meeting Memo
- » Survey results
- » WikiMapping comments

APPENDIX B: TYPICAL UNIT COSTS MATRIX

INTENTIONALLY LEFT BLANK

**HIGHTSTOWN BOROUGH
MOBILITY MASTER PLAN**



HIGHTSTOWN BOROUGH
156 BANK STREET
HIGHTSTOWN, NJ 08520