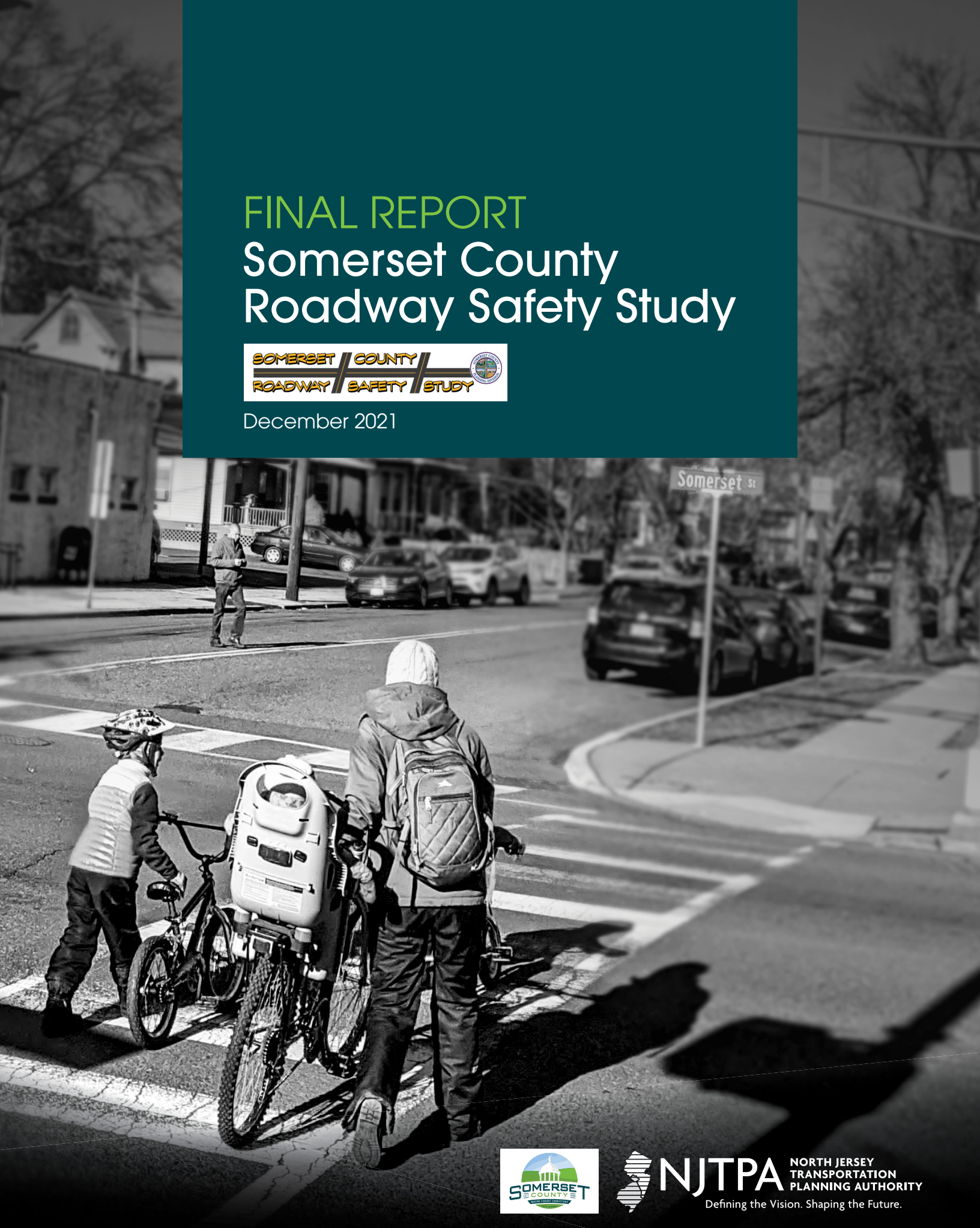
FINAL REPORT
Somerset County Roadway Safety Study

SOMERSET COUNTY ROADWAY SAFETY STUDY

December 2021



NJTPA NORTH JERSEY TRANSPORTATION PLANNING AUTHORITY

Defining the Vision. Shaping the Future.

Executive Summary

The Somerset County Roadway Corridor Safety Analysis study conducted Road Safety Audits (RSAs) on five County roadway corridors and developed recommendations to improve safety for all roadway users, whether walking, biking, driving, or traveling by transit. The County conducted the study as part of the North Jersey Transportation Planning Authority's (NJTPA's) subregional studies grant program. Intersection and corridor crash rankings from the NJTPA Network Screening List (NSL), an equity analysis to screen for underserved communities, and comprehensive public and stakeholder outreach informed the selection of the five corridors. The following five locations underwent Road Safety Audits:

1. Finderne Avenue/Main Street (CR 533) in Bridgewater Township, MP 29.60-30.60
2. Franklin Boulevard (CR 617) in Franklin Township, MP 0.00-1.00
3. Main Street (CR 533) in Millstone Borough, MP 25.14-25.87
4. Greenbrook Road (CR 636) in North Plainfield Borough, MP 0.70-1.97
5. Somerset Street (CR 626) in Raritan Borough, MP 0.00-0.67

In response to the COVID-19 pandemic, many agencies restricted in-person travel and working/gathering in groups. Therefore, the project team conducted the in-field RSA review in a socially distanced manner, while pre- and post-audit meetings were held virtually via video conferencing to orient the RSA team and recap road safety observations.

Public and stakeholder outreach was also conducted virtually. An online mapping tool was used to gather input on areas of concern. Five virtual meetings were held, three for stakeholders and two for the public, to gather feedback and present findings. The road safety audit recommendations proposed in this report are presented for consideration of further development through many different paths, such as locally or regionally funded concept development studies; the NJTPA's Local Safety Engineering Assistance Program; incorporation into a planned County or municipal project; or through other means. While the recommendations herein seek to improve roadway safety, they should be thoroughly evaluated for feasibility and practicability and designed as appropriate by the roadway owner (County and Municipal) and/or a professional engineer for conformance to all applicable codes, standards, and best practices.

Finderne Avenue/Main Street (CR 533) in Bridgewater Township

This audit recommended investigating the feasibility of a road diet, which would reduce the number of vehicle travel lanes, on Main Street from Finderne Avenue to Chimney Rock Road, possibly extending eastward of this study area. Reducing the number of vehicle travel lanes and converting to a center two-way left turn lane, would create enough space for vehicle lane, bike lane and buffer in each direction of travel. A road diet would result in safety and mobility improvements for pedestrians and cyclists who use the corridor.

Franklin Boulevard (CR 617) in Franklin Township

Previous planning studies called for a road diet with bike lanes on Franklin Boulevard from Route 27 to Hamilton Street. This study explored the feasibility of adding bike lanes but found that since the curb-to-curb cartway width is limited at approximately 44 to 46 feet, there would not be a buffer and the bike lanes would be of substandard width. An alternate road diet option would include narrow shoulders in each direction that transition to curb extensions, which reduce pedestrian crossing distances at intersections and improve pedestrian visibility.

Main Street (CR 533) in Millstone Borough

These recommendations focus on improving pedestrian infrastructure, including implementing Leading Pedestrian Intervals (LPIs), which give pedestrians time to cross before vehicles get a green light; curb extensions; and continued maintenance of the sidewalk. The recommendations also include bridging the gap in the sidewalk that exists between Amwell Road (CR 514) and North River Street. The Borough is seeking to acquire the needed right-of-way for this improvement via redevelopment or acquisition of a vacant residential property located off the east side of Main Street. The Borough commented that State intervention would likely be needed to obtain property, or an easement, to construct this new sidewalk along the east side of Main Street. State intervention is needed for property acquisition since it is a financial hardship for the Borough to implement such an idea.

Greenbrook Road (CR 636) in North Plainfield Borough

This audit recommends making sidewalk and crosswalk upgrades at school locations to enhance pedestrian safety. Considering the location of the corridor near parks, schools, and other land uses that tend to have a relatively high share of active mode trip generation, it was recommended to stripe or construct curb extensions, refresh crosswalk striping, and/or consider the installation of Rectangular Rapid-Flashing Beacons (RRFBs) at unsignalized crossings. Daylighting or other striping on the shoulder would aid in prohibiting parking, allocating bus standing, and calming traffic speeds. At nearby signalized intersections, push-button upgrades, lighting, No Turn on Red restrictions, and LPIs are recommended. Further investigation would be necessary to implement these recommendations appropriately.

Somerset Street (CR 626) in Raritan Borough

This RSA recommends building upon the Complete Streets improvements proposed for Somerset Street as part of the Borough's active Transportation Alternative Set-Aside Program grant, under which the Borough is designing new streetscaping surrounding the Somerset Street corridor. The proposed TAP grant changes in side street circulation from two-way to one-way flow for this project provide an opportunity for ample curb extensions, allowing integrated green stormwater infrastructure that will provide a more resilient design to better receive and filter future stormwater. Additionally, RSA recommendations propose that ergonomic (or flared) crosswalks be striped between these intersection corner curb extensions to better reflect the pedestrian paths of travel at downtown intersections.

Next Steps/Conclusion

The study team worked with County Engineering to develop a list of tasks to improve traffic safety on these corridors, codified in the Implementation Matrix in the appended RSA reports. The recommendations should be shared with all responsible jurisdictions to aid in implementation. This approach recognizes a shared responsibility across numerous professions to see improved benefits in corridor crash performance beyond the anticipated reduction in crashes with the implementation of proven crash countermeasures. RideWise (the County's Transportation Management Association), law enforcement, and EMS are encouraged to continue their efforts to educate drivers, enforce traffic laws, improve response times to crashes, and reach underserved communities with these safety strategies.

Final Report Table of Contents

Report Figures

Report Tables

Disclaimer

This report has been prepared as part of the North Jersey Transportation Planning Authority (NJTPA) Subregional Studies Program with financing by the Federal Transit Administration and the Federal Highway Administration of the U.S. Department of Transportation. This document is disseminated under the sponsorship of the U.S. Department of Transportation in the interest of information exchange. The NJTPA is solely responsible for its contents.

Acknowledgments

Study Team

Somerset County Board of Commissioners
Shanel Y. Robinson
Director

Sara Sooy
Deputy Director

Melonie Marano, Paul Drake, Douglas Singleterry
Commissioners

Somerset County Office of Planning, Policy and Economic Development
Walter C. Lane, AICP/PP
Director

Kenneth Wedeen, AICP/PP
Supervising Transportation Planner, Co-Project Manager

Adam Bradford, AICP
Senior Transportation Planner - Transportation, Co-Project Manager

Somerset County Engineering
Matthew D. Loper, PE
County Engineer

Adam Slutsky, PE
Assistant County Engineer

Alicia Meyers, PE, PTOE
Principal Engineer (Traffic)

Grant Lewis, PE, PP, CME
Principal Engineer

NJTPA
Lois Goldman
Director, Long Range Transportation Planning

Blythe Eaman, AICP
Principal Planner, Subregional Planning Studies

Keith Hamas, AICP
Principal Planner, Safety Planning

Christine Mittman
Manager, Safety Programs

Aimee Jefferson, AICP
Principal Planner, Safety Programs

Stantec
Adam Catherine, PE, PTOE
Principal, Principal-In-Charge

Matthew Maher, PE, PTOE, RSP_{2I}
Senior Associate, Consultant Project Manager

Kati DiRaimondo, PE
Associate, Deputy Project Manager

Timothy Medina
Traffic Analyst

FHI Studio
Ryan Walsh, AICP, PP
Mid-Atlantic Community Engagement Manager

Michael Ahillen, AICP
Subconsultant Project Manager

Jessica Ortiz
Project Manager

Kelsey Kahn
Planner

Somerset County Planning Board

2021 Somerset County Planning Board Members

Bernard V. Navatto, Jr.
Chairman

Christopher Kelly
Vice-Chairman

Albert Ellis

John Lindner

Erika Inocencio

Sami Shaban

Shanel Y. Robinson
County Commissioner Director

Paul Drake
County Commissioner Liaison

Matthew D. Loper
County Engineer/Board Secretary

Ashok Rakhit
1st Alternate

Adam Slutsky
County Engineer Alternate

Joseph DeMarco, Esq.
Deputy County Counsel for Planning

2021 Somerset County Office of Planning, Policy and Economic Development Staff

Walter Lane, AICP/PP
Director, Office of Planning, Policy and Economic Development

Thomas D'Amico, AICP/PP
Supervising Planner

Kenneth Wedeen, AICP/PP
Supervising Transportation Planner

James Ruggieri, AICP/PP
Principal Community Planner

Katelyn A. Katzer
Principal Planner

Thomas J. Boccino, PP, LLA
Principal Planner, Open Space Preservation

Adam Bradford, AICP
Senior Planner - Transportation

Nora Fekete
Planner

Aarthy Sabesan
Manager, Office of GIS Services

Kaitlin Bundy
Manager, Cultural and Heritage

Natalie Zaman
Programs Coordinator

Robert Meyer
Special Projects Assistant

Patrice Brown
Administrative Assistant

Catherine Bunting
Administrative Assistant

Technical Advisory Committee

AARP
Christine Newman

Bridgewater Department of Public Works
Robert Fulminate

Bridgewater Police Department
Joseph Greco

Bridgewater Township
Michael Jannone
Richard Shimp
Thomas Genova
William Burr
Michael Pappas

East Millstone First Aid Squad
Christine Van Deursen
Marilynn Kampo

FHWA
Keith Skilton

Franklin Board of Education
Albert Fico

Franklin Township
Mark Healey
Vincent Dominach
Robert Vornlocker
Carl Wright

Franklin Township Police Department
James Raics
Jose Jaime

Hillsborough Reformed Church
Fred Miller

Millstone Borough
Alan Kidd
Raymond Heck

Millstone Historic District
Portia Orton

NJ TRANSIT
Elmira Bongiorno
George Klevorn
Lou Millan

NJDOT
Amon Boucher
Elise Bremer-Nei
Jeevanjot Singh
Joseph Rapp
Virgilio Tan

NJTPA
Aimee Jefferson
Blythe Eaman
Christine Mittman
Keith Hamas

North Plainfield Board of Education
Jody Karcher
Pamela Hinman
Wallace Henry

North Plainfield Borough
David Hollod
David Testa

North Plainfield Borough Police Department
Dennis Kardos

Raritan Borough
Aaron Kardon
Angela Knowles
Stan Shrek
Michael Patente
Nicolas Carra

Raritan Borough PD
Raymond Nolte

RideWise
Donna Allison
Jon Dugan

Somerset County
Adam Bradford
Adam Slutsky
Alicia Meyers
Grant Lewis
Kaitlin Bundy
Kenneth Wedeen
Matthew Loper
Natalie Zaman
Pat Marotto
Robert Sutton
Tyson Murdock
Victor Owuso
Walter Lane

VTC
Catherine Bull
Leigh Ann Von Hagan

Contributors
Township of Bridgewater
Township of Franklin
Borough of Millstone
Borough of North Plainfield
Borough of Raritan
Voorhees Transportation Center

Introduction

The Somerset County Roadway Safety Study presents recommendations to improve safety of all people on the five county roads. This report outlines the data collection, methodologies, findings, and recommendations used to address safety concerns on five corridors and explains select improvement strategies that best address the prevailing issues in each corridor. Improvement options vary from low-cost, rapid response action items to higher-cost, longer-term construction projects in need of engineering, stakeholder vetting, and funding.

Purpose & Need of Study

Every year, considerable resources are used to improve roadway safety and reduce crashes. The purpose of this study was to perform Road Safety Audits (RSAs) on Somerset County roadways. The corridors were selected based on public, stakeholder, and Technical Advisory Committee input, as well as crash data, equity data, and recommendations from prior County studies. An RSA is a proactive formal safety performance examination of an existing or future road or intersection by an independent and multi-disciplinary team. Typically, the safety improvements RSAs recommend can reduce fatal crashes by 10-60 percent.[1]

RSAs provide methods to achieve the following benefits[1]:

- Reduced number and severity of crashes due to safer designs.
- Reduced costs resulting from early identification and mitigation of safety issues before projects are built.
- Improved awareness of safe design practices.
- Increased opportunities to integrate multimodal safety strategies and proven safety countermeasures.
- Expanded ability to consider human factors in all facets of design.

Corridor Selection Process

The North Jersey Transportation Planning Authority's (NJTPA) Network Screening Lists (NSL) was used as a starting point to identify top crash corridors in Somerset County. The NSL is a programmatic analysis of statewide locations utilizing data for arterial county roadway corridors with the highest density of motor vehicle crashes. The project team also used supporting collision data, equity data, recommendations from prior studies, and public/stakeholder input to develop a shortlist of top crash segments. Segments with recently constructed safety improvements or locations undergoing study/design were identified through discussions with County Engineering and removed from this shortlist to target segments not currently being considered. The project team prioritized and ranked the remaining locations with more recent crash severity and frequency data (old crash data from NSL superseded with more recent crash data from the New Jersey Department of Transportation's Safety Voyager tool), traffic volume

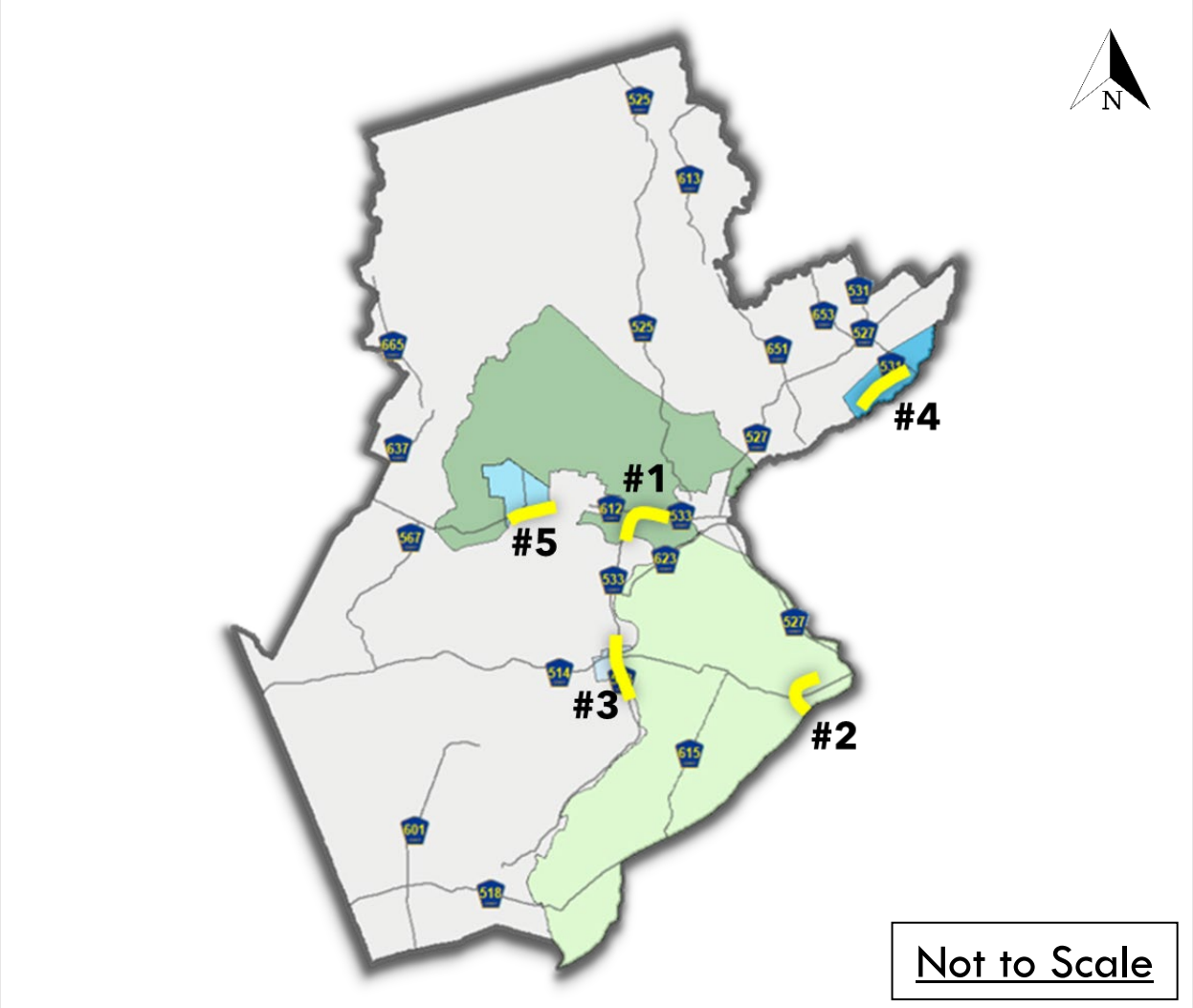
[1] Proven Safety Countermeasures - Road Safety Audits - https://safety.fhwa.dot.gov/provencountermeasures/road_safety_audit/

data from NJTPA's regional travel demand model (NJRTM-E), and environmental justice data from NJTPA. The decision-making criteria and process are detailed further on in this report.

Input on these top crash locations was obtained from the public via a virtual mapping tool and project email address and gathering information from a Technical Advisory Committee (TAC) via an initial virtual meeting. Based upon public and stakeholder input, the following five segment locations were selected for RSA review in this study:

1. Finderne Avenue/Main Street (CR 533) in Bridgewater Township, MP 29.60-30.60
2. Franklin Boulevard (CR 617) in Franklin Township, MP 0.00-1.00
3. Main Street (CR 533) in Millstone Borough, MP 25.14-25.87
4. Greenbrook Road (CR 636) in North Plainfield Borough, MP 0.70-1.97
5. Somerset Street (CR 626) in Raritan Borough, MP 0.00-0.67

Figure 1 - Selected RSA Locations



Funding of Study

Somerset County applied to the NJTPA for financial assistance to develop this plan. The NJTPA is the federally funded Metropolitan Planning Organization (MPO) for the northern New Jersey region, home to 7 million people and covering over one-half of the State's land area. The NJTPA Board includes 15 local elected officials representing 13 counties–Bergen, Essex, Hudson, Hunterdon, Middlesex, Monmouth, Morris, Ocean, Passaic, Somerset, Sussex, Union, and Warren–and the cities of Newark and Jersey City. The Board also includes a Governor's Representative, the Commissioner of the New Jersey Department of Transportation (NJDOT), the Executive Director of NJ TRANSIT, the Chairman of the Port Authority of New York & New Jersey, and a Citizen's Representative appointed by the Governor. The NJTPA conducts comprehensive long-range transportation planning and annually oversees over $2 billion in transportation investments for one of the nation's most dynamic and complex transportation systems. The NJTPA sponsors and conducts studies, assists member planning agencies (known as NJTPA "subregions"), and provides a forum for inter-agency cooperation and public input into funding decisions.

Public & Stakeholder Input

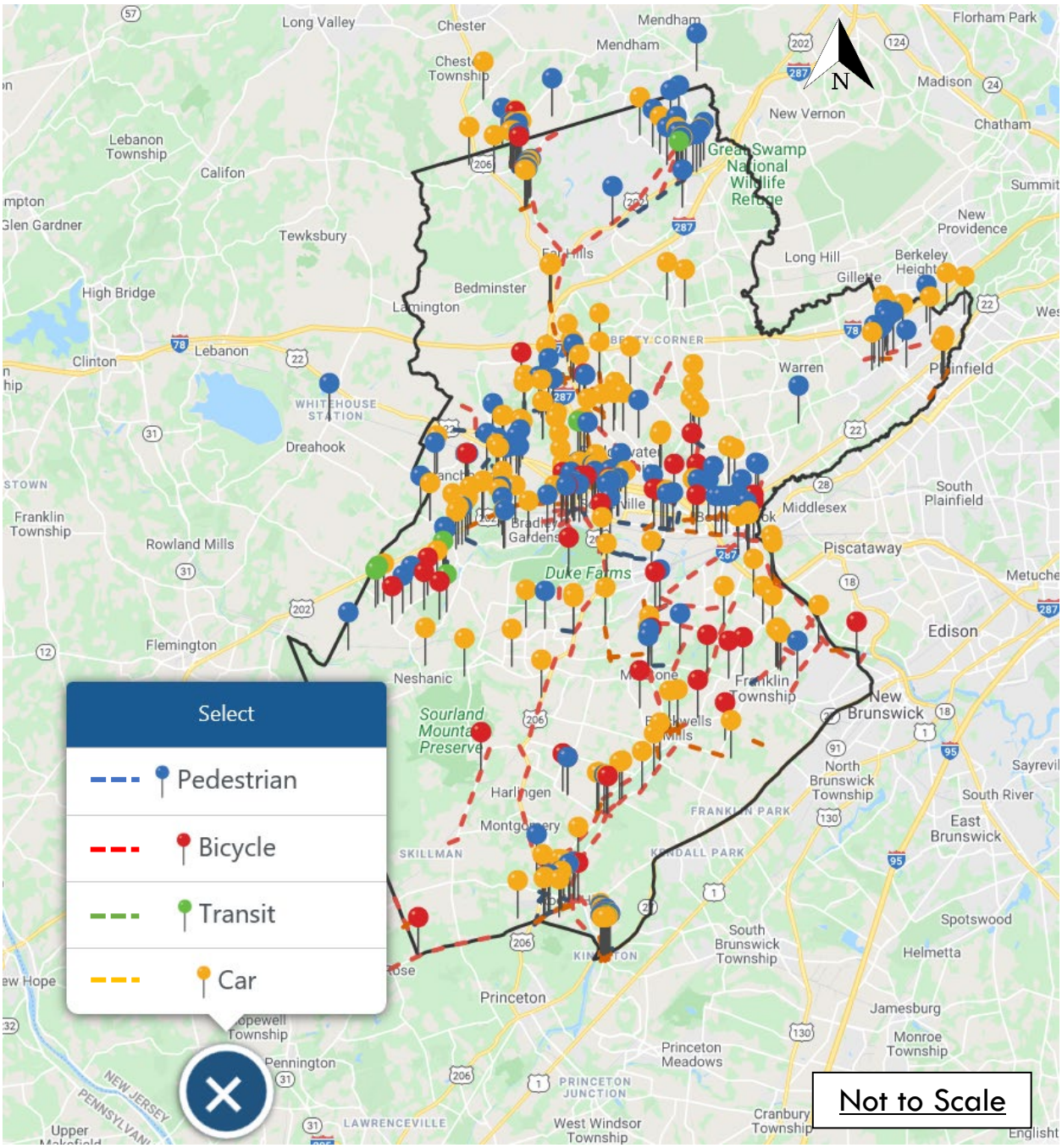
The County and project team led a multi-pronged and iterative public and stakeholder engagement effort. Originally planned to be carried out in person, public and stakeholder engagement transitioned to virtual meetings due to the COVID-19 pandemic. The primary tasks included an equity assessment, a virtual mapping exercise, three TAC meetings, and two virtual public meetings. The project team also maintained a project website and email address, as well as shared flyers and press releases to advertise meetings.

An interactive mapping tool and virtual meetings were used to engage the public and stakeholders throughout the study. This input informed the corridor selection process and the list of safety concerns and recommendations for each selected corridor location. Detailed below is an overview of each component of the public outreach undertaken.

Virtual Mapping Tool

Beginning in August 2020, the project team shared a custom, web-based interactive mapping tool to gather input on transportation issues and opportunities concerning walking, biking, driving, and taking public transit. Through the mapping tool, participants were able to write comments, place pins and draw lines on areas of concern within Somerset County. Each pin is color coordinated by transport mode. The mapping tool remained open throughout the remainder of the project, and the public continued to share feedback on the study corridor locations until the project concluded in fall 2021. By October 2021, 193 comments and 705 pins/lines were added to the interactive map.

Figure 2 - Virtual Mapping Tool



The feedback received on this tool was used throughout the project. First, the project team considered corridors that had received an abundance of feedback when selecting the RSA locations. Next, the input was shared with the TAC members, RSA participants, and public meeting attendees when considering potential improvements to the corridors. Last, the public input was used in developing recommendations, and was documented in the RSA reports.

Technical Advisory Committee Meetings

A TAC identified by the County met three times over the course of the study. The list of TAC members is included in the Acknowledgments section of this report. The committee included a mix of local, state, regional, and federal stakeholders, as well as community leaders such as representatives from transportation management associations, transit agencies, emergency management, public works, and municipal engineering/planning departments.

All three meetings were held virtually via the Zoom conferencing platform. Meetings covered introducing the study, identifying concerns in the five selected RSA corridors, and gathering information on proposed recommendations.

TAC Meeting 1

The first meeting, held on Wednesday, August 19, 2020, introduced the project team. The project team provided an overview of the study, presented the public involvement plan, and summarized the feedback received from the online mapping tool. The project team explained the RSA process and the technical analysis used in the development of the shortlist. Several questions were then posed to the committee members, which asked how the shortlist of RSA corridors should be prioritized. Analysis factors included vehicle crash history, pedestrian/bicycle crash history, environmental justice/Title VI populations, and previous studies. After a brief discussion, the committee was asked a final question regarding which corridors should be selected to be advanced in the RSA process.

TAC Meeting 2

The second meeting was held on Thursday February 18th, 2021, and focused on identifying areas of concern on the five selected corridors, as well as potential safety improvements. This meeting format consisted of a 45-minute presentation with interactive breakout rooms. The presentation included the following topics: project background, summary of selected corridors, description of potential safety measures, and a discussion of demonstration projects, which are short-term, low-cost, temporary roadway projects used to pilot potential long-term design solutions to improve walking/bicycling and public spaces (e.g., parklets, pilot programs, green stormwater infrastructure, etc.). During the breakout rooms, participants were asked to review the 10 safety measures discussed during the presentation. They were then asked to rate the effectiveness and ease of implementation of each safety measure according to the corridor. Participants were also asked to identify specific areas within each corridor that were areas of concern.

Figure 3 - TAC Meeting #2 Corridor Improvement Survey

Somerset County Roadway Safety Study: TAC Meeting 2

* 1. Which corridor are you discussing?

- ◯ Finderne Ave/Main St (CR 533) in Bridgewater Township
- ◯ Franklin Blvd (CR 617) in Franklin Township
- ◯ Somerset St (CR 626) in Raritan Borough
- ◯ Greenbrook Rd (CR 636) in North Plainfield Borough
- ◯ Main Street (CR 533) in Millstone Borough

2. **Lighting**

Please rate the anticipated effectiveness in creating a safer transportation environment.

0 Not effective to Very effective 10

3. Does your group have any comments they would like to share?

4. Please rate the anticipated ease of implementation. You may wish to consider cost, potential for community pushback, and timeline

0 From Easy to Hard to Implement 10

5. Does your group have any comments they would like to share?

Next

TAC Meeting 3

The final meeting was held on Tuesday August 3, 2021, and focused on gathering feedback on proposed recommendations for the five corridors. This meeting format also consisted of a 45-minute presentation with interactive breakout rooms. The presentation included the following topics: project background, project status, identification of needs, and proposed safety measures by corridor. The meeting was then divided into five breakout rooms, one for each of the selected corridors. Each breakout room discussed a specific set of recommendations pertaining to that corridor. Participants were asked to provide their general reactions to the proposed recommendations and whether they would accomplish the goals of the study. Potential barriers or other ways to accomplish study goals were also discussed.

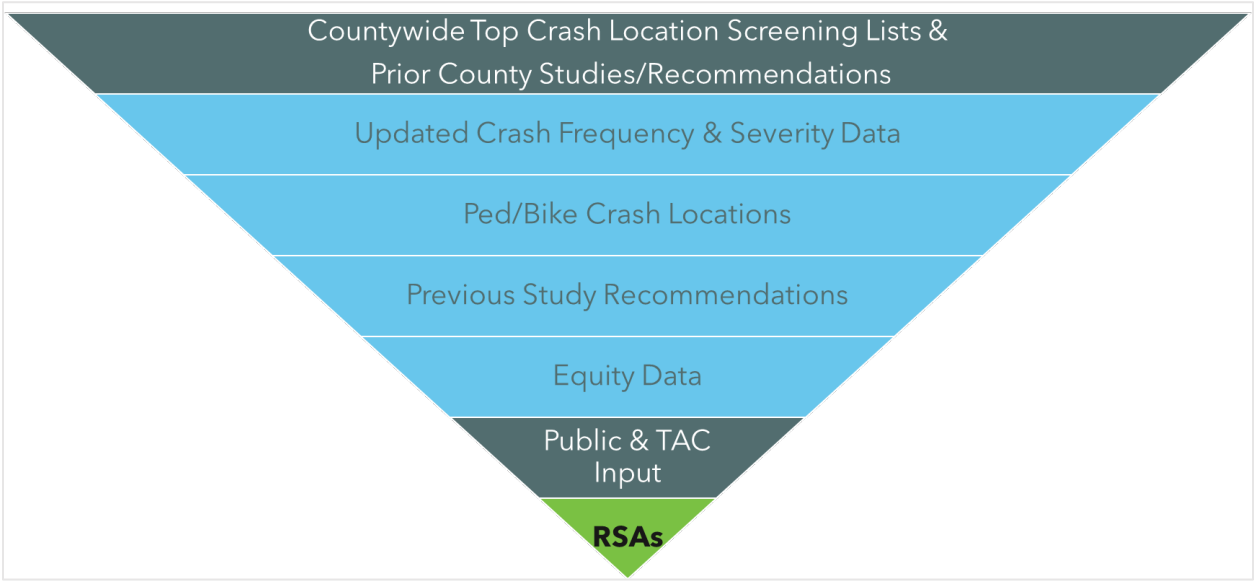
Public Meetings

Two virtual public meetings were held for community input.

Public Meeting 1

The first meeting was held on November 12, 2020, with 59 participants in attendance. At this meeting the project team provided an overview of the study, stating the purpose and need. The project team presented statistics of crashes on County jurisdiction roadways, which showed a steady increase of crashes over the past 10 years. The project team explained the RSA process and the technical analysis used in the development of the shortlist of corridors. The project team explained the process for selecting the five corridors where RSAs would be conducted. Following the presentation, attendees were split into breakout rooms to discuss one of the five corridors selected for RSAs or to provide general comments.

Figure 4 - Selection Process Slide from Public Meeting #1



Public Meeting 2

The second public meeting was held on Wednesday September 29, 2021, with 29 participants in attendance. At this meeting, the project team presented on the project background, project status, identification of needs, and proposed safety measures for each corridor. The meeting was then divided into five breakout rooms, one for each of the selected corridors. Each breakout room discussed a specific set of recommendations pertaining to that corridor. Participants were asked to provide their general reactions to the proposed safety recommendations and whether they would accomplish the goals of the study. Potential barriers or other ways to accomplish study goals were also discussed.

Data Collection

As noted earlier, the NJTPA's NSL crash ranking list for Somerset County was used to identify the high-crash county roadway segments. This list is assembled utilizing 2012 through 2016 crash data history, roadway volume data, and crash severity data. This data also served to inform the RSA process in determining the existing crash hotspots, multimodal needs, and environmental justice needs at each reviewed corridor location. The data collection process undertaken is detailed below.

Crash Data

The study incorporated reportable crash information resulting in any combination of fatality, injury, or property damage. The datasets used for this analysis were sourced from local law enforcement responses to reported vehicular crashes. To be entirely inclusive in obtaining complete crash information, the data was accumulated using three distinct resources: NJDOT's Safety Voyager, New Jersey Division of Highway Traffic Safety (NJDHTS) Crash Analysis Tool, and the NJDOT raw crash tables. The project team compared the three sources to identify and discard duplicate records and include only distinct records to produce a complete and comprehensive representation of the crashes within the extent of each corridor.

Figure 5 - NJDOT Safety Voyager - Sample Crash Data (Greenbrook Road, North Plainfield Borough)

This analysis evaluated crash attributes such as crash type and severity as a percentage of the total crashes to achieve a more robust understanding of the locations compared to the crash activity on the County roadway system. The project team then mapped all crashes along the segments onto collision diagrams, which can be found in Appendix D, providing a quick spatial overview of crash clustering patterns.

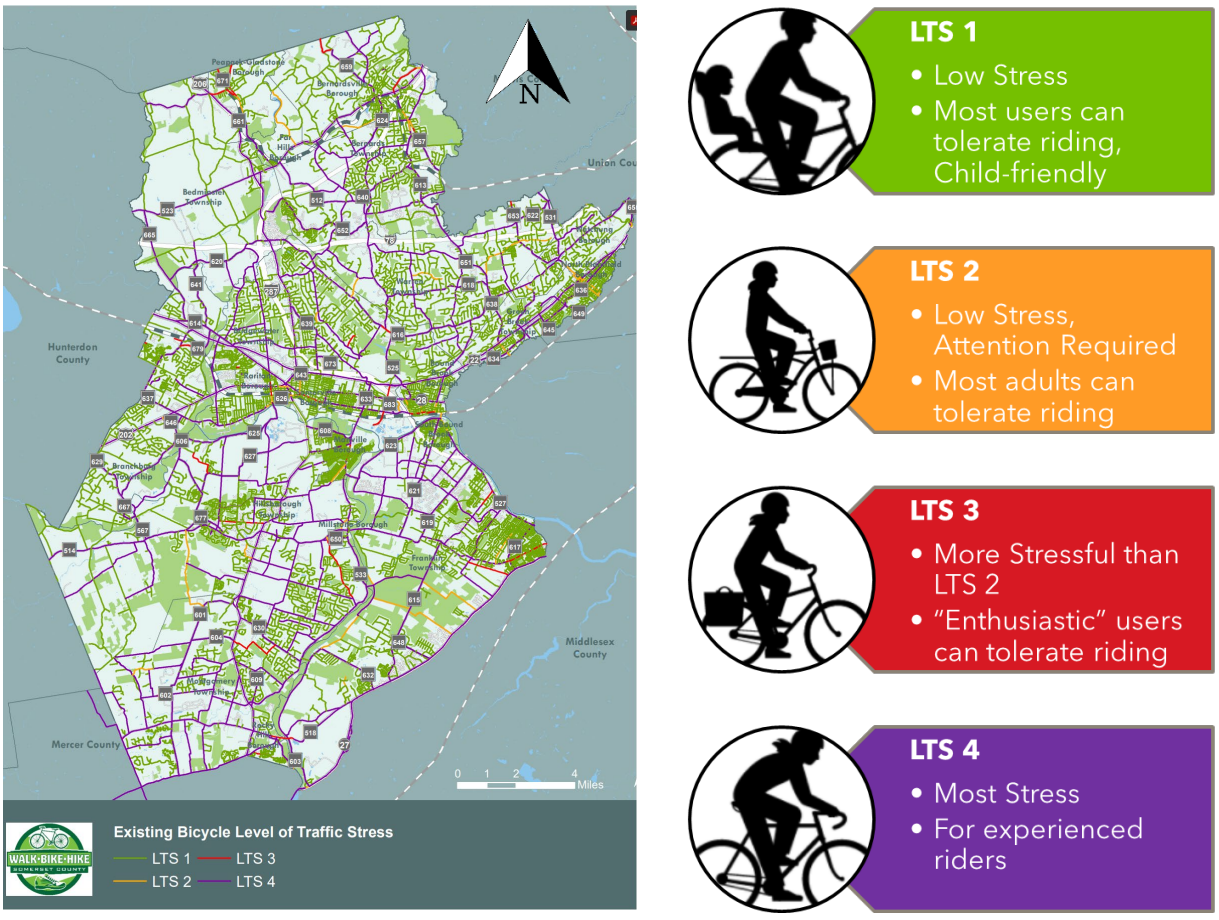
Volume Data

Average Annual Daily Traffic (AADT) data was collected using NJDOT count stations. This count data was further refined using the NJTPA NJRTM-E travel demand model.

Multimodal Data

Existing bicycle and pedestrian accommodations were reviewed utilizing the most current available Google StreetView imagery. The project team obtained Level of Stress[2] data, specific to bicyclists, from the Somerset County's WalkBikeHike (2019) study to measure the comfort level for cyclists, given the stress created by roadway conditions such as volume, speed, and proximity of automobile traffic[3]. Additionally, sidewalk and roadway widths were obtained using Google Satellite imagery. Site visits were made to all selected corridors to confirm these accommodations. Bus and rail services for each of the selected corridors were obtained from NJ TRANSIT databases as well as from the Somerset County Department of Transportation.

Figure 6 - Level of Stress Map, WalkBikeHike (2019)



[2] Level of Stress (LTS) is an approach that quantifies the amount of discomfort that people feel when they bicycle close to traffic

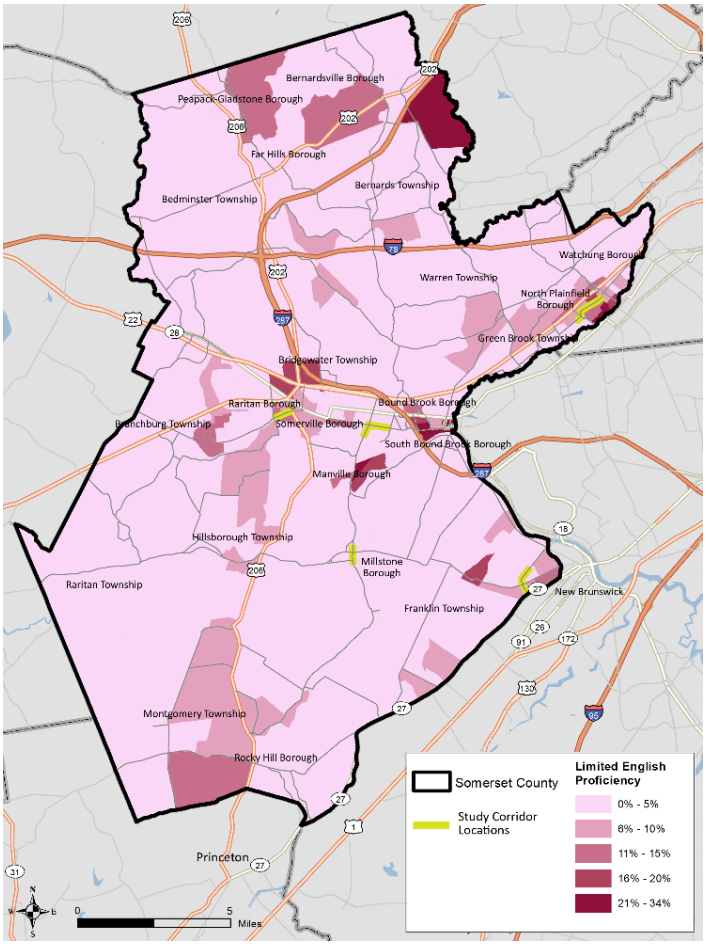
[3] WalkBikeHike - Somerset County https://www.co.somerset.nj.us/home/showpublisheddocument/35013/637045063842570000

Equity Assessment

Equity considerations received substantial focus throughout the study. Historically, environmental justice and Title VI communities have been underrepresented in decision-making related to infrastructure and are disproportionately exposed to negative impacts. The equity assessment helped to inform the needs for improvements for each corridor. The project team developed an equity assessment to outline where there are identified environmental justice and Title VI communities and how they relate to regional and statewide statistics. Factors considered in the equity assessment included:

- Race
- Low income
- Limited English Proficiency
- Population over 65
- Population under 5
- Population Aged 5-17
- People with Disabilities
- Zero Vehicle households
- Sex
- Country of Birth

Figure 7 - Equity Analysis Map



The assessment found that the demographic characteristics of Somerset County and its top 20 crash locations are similar to regional and statewide averages. However, racial minority populations are more highly concentrated near the top crash locations. As a result, the project team highlighted these locations for the TAC and recommended that the committee consider this factor when determining RSA locations. Later in the study, the project team considered the needs of all the identified populations (e.g., minority populations, low-income households, people with limited English proficiency, seniors, young children, and people with disabilities) when making recommendations. Any updates to intersection and roadway designs considered people using mobility devices or strollers.

Ranking and Selection

Examining the Top-20 crash locations for overall crash data and pedestrian/bicycle crashes was the preliminary determinant criteria for the selection process. Public and stakeholder feedback helped narrow the shortlist to the five sites selected for RSAs. The selected corridors are shown in **Figure 8**.

Figure 8 - Selected Corridors

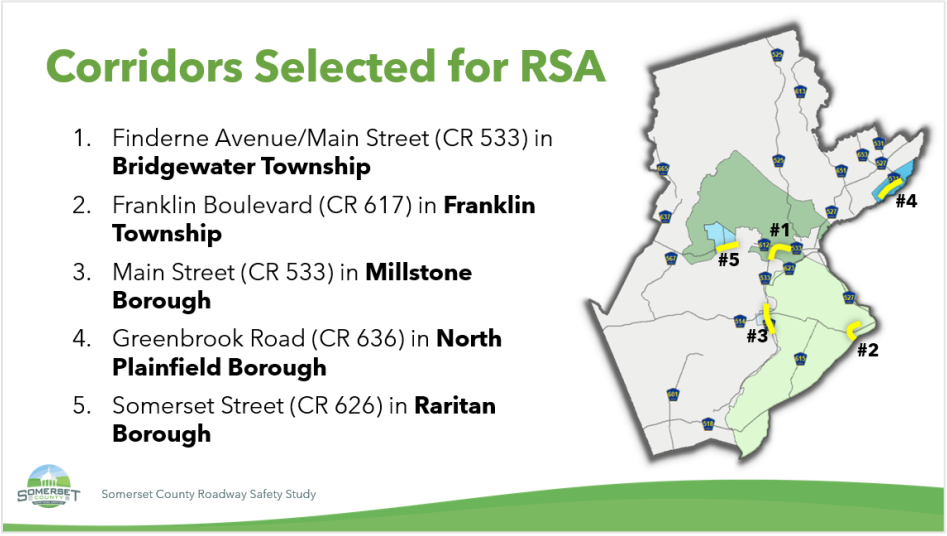
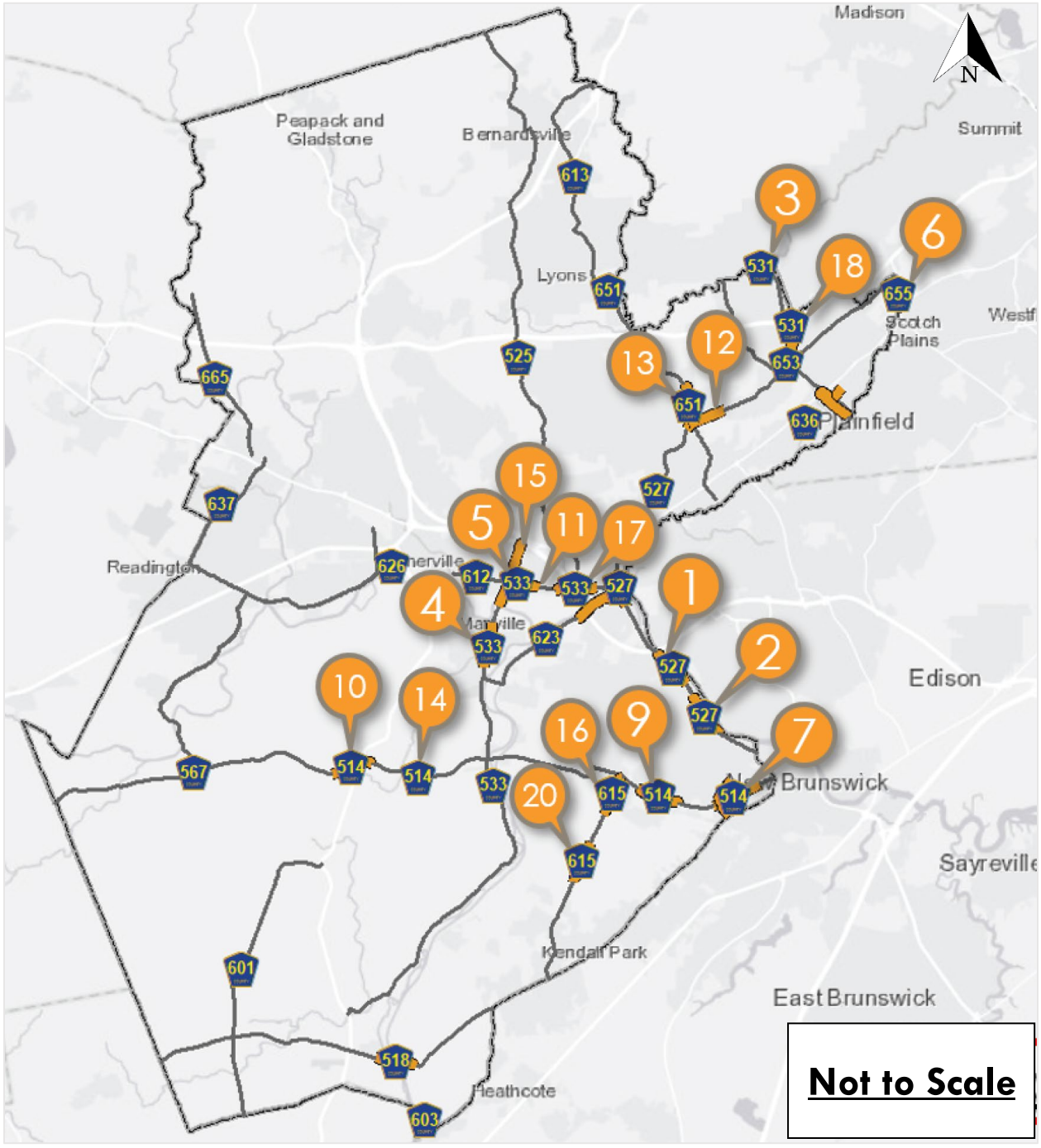


Figure 9 - Corridor Ranking and Selection Matrix

Table 2. Top 20 Somerset County Pedestrian/Bicycle Crash Locations - NJTPA Network Screening List [Updated with 2014-2018 Crash Data]

Segment Rank[1] for 2014-2018 Crash Data	NJTPA Rank[2] for Segment	Street (County Route)	Town	Milepost From	Milepost To	AADT[3]	Crash Frequency/ Severity Rating	Bus Routes	School Adjacent to Segment?	Equity Score[7]	Bike LTS[8]
1	5	S. Main St (CR 533)	Manville Borough	27.77	28.77	26,000	219	858, 859, 860, R1, R2	No	2	3
2	3	Easton Ave (CR 527)	Franklin Township	49.12	50.12	43,000	196	851, 852, 871	Yes	2	4
3	20	Main St/Mountain Ave (CR 527)	Bound Brook Borough	52.86	53.86	10,000	158	851, 852, 871, R1, R2, (Bound Brook Rail Station)	Yes	3	2
4	20	Greenbrook Rd (CR 636)	North Plainfield Borough	0.70	1.97	11,000	141	822, 872	Yes	4	4
5	18	Finderne Ave/Main St (CR 533)	Bridgewater Township	29.60	30.60	21,000	125	858, 859, 860, 871, R1, R2	No	2	4
6	4	Somerset St (CR 626)	Raritan Borough	0.00	0.67	10,000	115	871, 873	No	2	2
7	19	Mountain Ave (CR 642)	North Plainfield Borough	0.13	0.51	5,000	93	65, 114, 117, 872, 986	No	4	4

Figure 10 - NJTPA Network Screening List Top-20 Vehicle Crash Locations[4]



[4] Roadways not within County jurisdiction removed from Top 20 Screening List mapping

Table 1 - NJTPA Network Screening List Top-20 Vehicle Crash Locations[5]

NJTPA Rank for Segment	Street (County Route)	Town	Jurisdiction
1	Easton Ave (CR 527)	Franklin Township	County
2	Easton Ave (CR 527)	Franklin Township	County
3	Somerset St/Hillcrest Rd (CR 531)	Watchung Borough	County
4	Finderne Ave/Main St (CR 533)	Bridgewater Township	County
5	S. Main St (CR 533)	Manville Borough	County
6	New Providence Rd (CR 655)	Watchung Borough	County
7	Hamilton St (CR 514)	Franklin Township	County
~~8~~	~~Bonnie Burn Rd~~	~~Watchung Borough~~	~~Union County~~
9	Amwell Rd/Hamilton St (CR 514)	Franklin Township	County
10	Amwell Rd (CR 514)	Hillsborough Township	County
11	Franklin Blvd (CR 617)	Franklin Township	County
12	Mountain Blvd (CR 527)	Warren Township	County
13	Mount Bethel Rd (CR 651)	Warren Township	County
14	Amwell Rd (CR 514)	Franklin Township	County
15	Finderne Ave (CR 633)	Bridgewater Township	County
16	S Middlebush Rd (CR 615)	Franklin Township	County
17	Canal Rd (CR 623)	Franklin Township	County
~~18~~	~~Somerset St~~	~~North Plainfield Borough~~	~~Municipal~~
20	S Middlebush Rd (CR 615)	Franklin Township	County

Road Safety Audits

Pandemic Conditions & Challenges

Under normal circumstances, the RSA team would complete an in-field assessment together, traveling from site to site. However, in response to the COVID-19 pandemic, many agencies restricted in-person travel and working/gathering in groups. Additionally, social distancing requirements presented further challenges. Socially distanced solutions were crucial to keeping the study progress in motion. Nevertheless, identifying and recommending safety improvements for the study was still a necessary course of action.

The following FHWA tools and tips were employed to overcome the potential challenges of a remote RSA activity.[6]

[5] Roadways not within County jurisdiction removed from Top 20 Screening List mapping

[6] Pedestrian and Bicyclist Road Safety Audit (RSA) Guide and Prompt Lists https://safety.fhwa.dot.gov/ped_bike/tools_solve/docs/fhwasa20042.pdf

- *Use technology to enhance communication and understanding:*
  Any virtual event relies heavily on available technology, and these RSAs were no different. The team maximized technology to collect data prior to the RSAs and gather collectively, which helped the team better understand the sites and feel connected to the rest of the RSA team. The video component helped participants to connect throughout the meetings.

- *Communicate with team members and stakeholders:*
  Every RSA participant brings a unique set of skills and experiences that are valuable to the RSA Team. As with all RSAs, it was essential to establish an environment where all felt comfortable sharing their thoughts and to provide opportunities for each team member to speak. Verbal and non-verbal communication was fostered using web cameras throughout the process. Facilitators and local organizers also asked pointed questions to specific participants to hear their thoughts or experiences. The chat function in the virtual meeting room also allowed members of the team to share links, thoughts, and questions with all participants. The entire RSA team was engaged throughout the process.

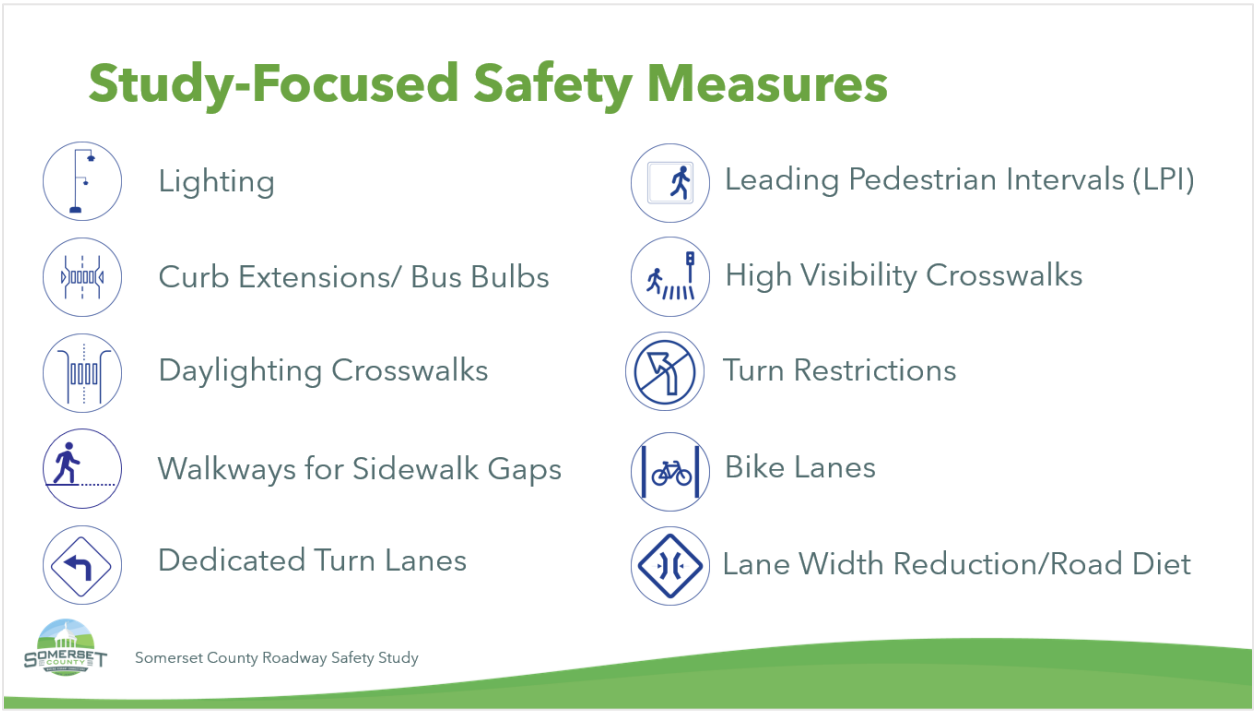
- *Incorporate in-person components:*
  In-person components are vital to the success of an RSA. The RSA team performed in-person field reviews, and before the first day of the RSAs, staff walked the study area, took preliminary photos, and made observations. The photos and experiences conveyed the characteristics of the study area to the RSA Team and helped all team members better understand the safety issues.

Safety Protocols

RSAs planned initially for Fall 2020 were postponed to Spring 2021. In addition to postponement, the County took additional steps to conduct this study safely. The start-up meetings and RSA debriefings traditionally conducted in-person were conducted virtually via video conferencing. Virtual meetings allowed for a larger group to participate in the RSA advisory and review teams. Furthermore, the essential step of in-field review was conducted in a socially distanced manner, with participants paired off in groups spaced more than six feet apart from each other. All in-field RSA participants were masked for the entire duration of the field visit to reduce the risk of disease transmission.

Pre-Audit Meeting

Figure 11 - Pre-Audit Meeting Presentation



For each RSA, the pre-audit meeting was virtually held via video conferencing the morning of the in-field audit. Background on the Somerset County Roadway Safety Study and its initiatives were provided to RSA participants. Team members were asked to provide feedback on study-focused safety measures, including corridor boundaries, roadway characteristics, multimodal components, land use, and local demographics. The team also presented public and stakeholder feedback on the corridor-specific existing conditions to the group. The steps of the RSA process, and the definition of the RSA itself, were identified. Lastly, participants were carefully educated with an orientation of the guidelines and safety for the in-field RSA observation component.

In-Field Meeting

Figure 12 - In-field RSA Review

Following their walk through the corridor, participants gathered to debrief and share their key observations. Before departing, participants were asked to complete and submit a survey rating their impression of the corridor.

During the in-field inspection, RSA participants gathered in a socially distanced manner and were briefed once again on key components to identify during their inspection. They were given a "what to look for" list and an aerial map of the corridor, which they could use to note their observations. Emphasis was placed on how roadway users may perceive or adjust behavior based on roadway characteristics. This allowed for identifying any aspects of the roadway where drivers' expectations about the road and traffic might be violated or where the layout fails to give the right message.[7]

Figure 13 - Post In-field RSA Debrief

Post-Audit Meeting

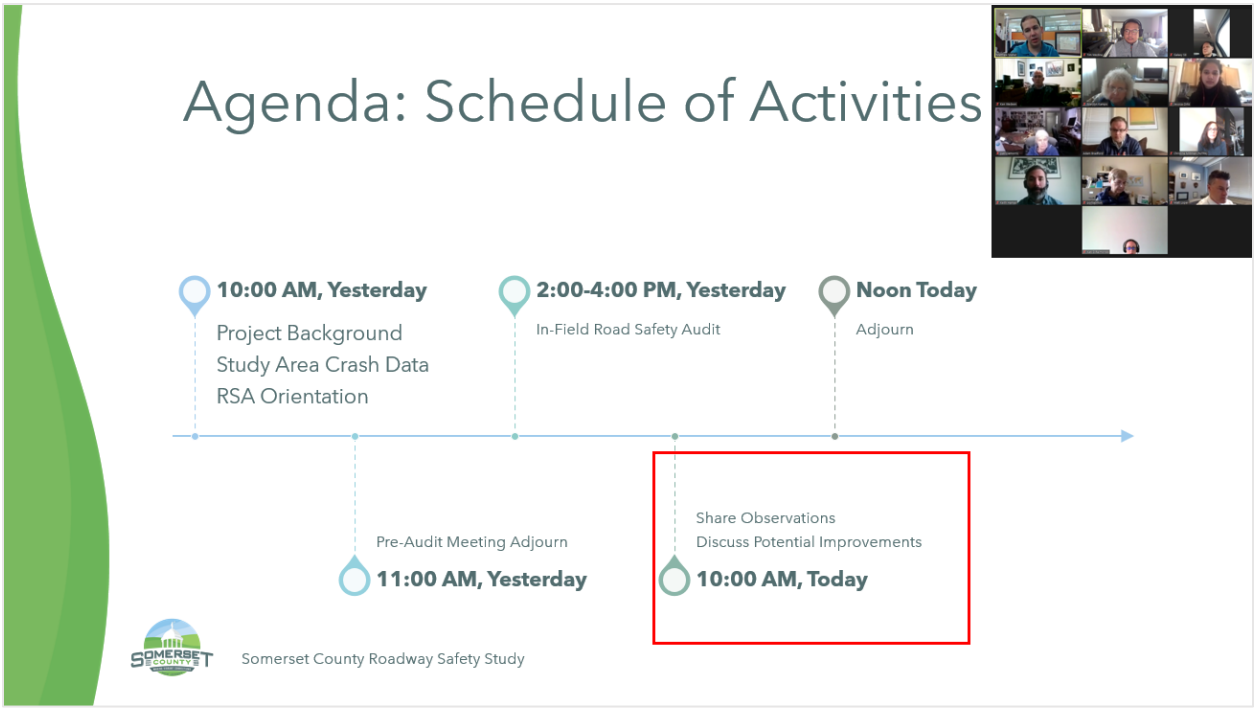
Like the Pre-Audit Meeting, this component of the RSA process was conducted virtually via video conferencing. Participants shared their observations and discussed potential improvements. The virtual presentation showcased photos participants took during the RSA and prompted discussion throughout the meeting.

[7] Alexander, G., Lunenfeld, H. 1986. *Driver expectancy in Highway Design and Traffic Operations.* Technical Report FHWA-TO-86-1. FHWA, U.S. Department of Transportation

Discussion points included but were not limited to:

- "What safety improvements do you propose for reducing crashes?"
- "What is your vision for the corridor? How should it look in 10 years?"
- "What are the short-term changes that could be made now?"

Figure 14 - Post-Audit Virtual Meeting



These meetings were held a day after the RSA was conducted. Participants said this format worked well because it gave them time to share photos, videos, and scans of their observations and allowed them to process their observations and organize their thoughts before the discussion the next day. Screen sharing allowed for quick review and consensus of RSA observations; a wider audience of stakeholders was involved in the discussion of observations and recommendations.

Identified Needs

To understand the characteristics and needs of the select locations, historical crash data revealed what collision types were the most overrepresented for each select corridor. This provided insight for what safety goals and challenges were most prevalent. Additionally, one of the many advantages of conducting an RSA site visit is the ability to walk the study segment of the corridor and obtain a pedestrian's perspective of any safety concerns. Observations of roadside signage, sight distance issues, deteriorating infrastructure, traffic patterns, and pedestrian, cyclist and driver behavior convey the information necessary to understand the characteristics and needs of the location. Recognizing the needs of the corridor helps identify potential mitigation strategies to improve safety. Summaries and photos representing some of the challenges and observations noted for each corridor are presented on the following pages.

Main Street/Finderne Avenue, Bridgewater Township, South Street to Chimney Rock Road

- 201 crashes occurred on the one-mile segment study area during the analysis period
- Two fatal fixed object collisions have occurred on this corridor, which may suggest unsafe speeds
- At the Central Avenue intersection
    - Multiple right-angle collisions, mostly resulting in injury
    - Opposite direction sideswipe crashes on the eastbound approach perhaps due to lack of striping
- At the Bridgewater Avenue/Second Street intersection
    - Multiple right-angle collisions, mostly resulting in injury
    - Cyclist collisions, indicating difficulty for non-motorized modes in crossing Finderne Avenue
- At the Main Street & Finderne Avenue intersection
    - Numerous left-turn collisions between northbound left-turn and southbound through traffic, the vast majority resulting in in injury
    - Left-turn crashes on other approaches to intersection, perhaps due to permissive left turns, which are where left turns are made through gaps in oncoming traffic
    - Five crashes between northbound and southbound traffic and crossing pedestrians and cyclists
    - Clustering of rear end crashes on the northbound, southbound, and westbound approaches to the intersection
- At the Fulton Avenue/shopping center driveway intersection
    - Multiple left-turn and right-angle collisions suggesting short gaps being taken by drivers
    - Crashes involving non-motorized modes (pedestrian/cyclist) showing crossings at this location
- Lack of turning bays at Ramsey Street/Pearl Street resulting in rear end/left-turn collisions
- At the Chimney Rock Road intersection
    - Numerous collisions between eastbound left-turn and westbound through vehicles
    - Eastbound and westbound rear end collisions between through/left-turn traffic due to lack of turn bays

Figure 15 - Collision Highlights, Finderne Avenue and Main Street

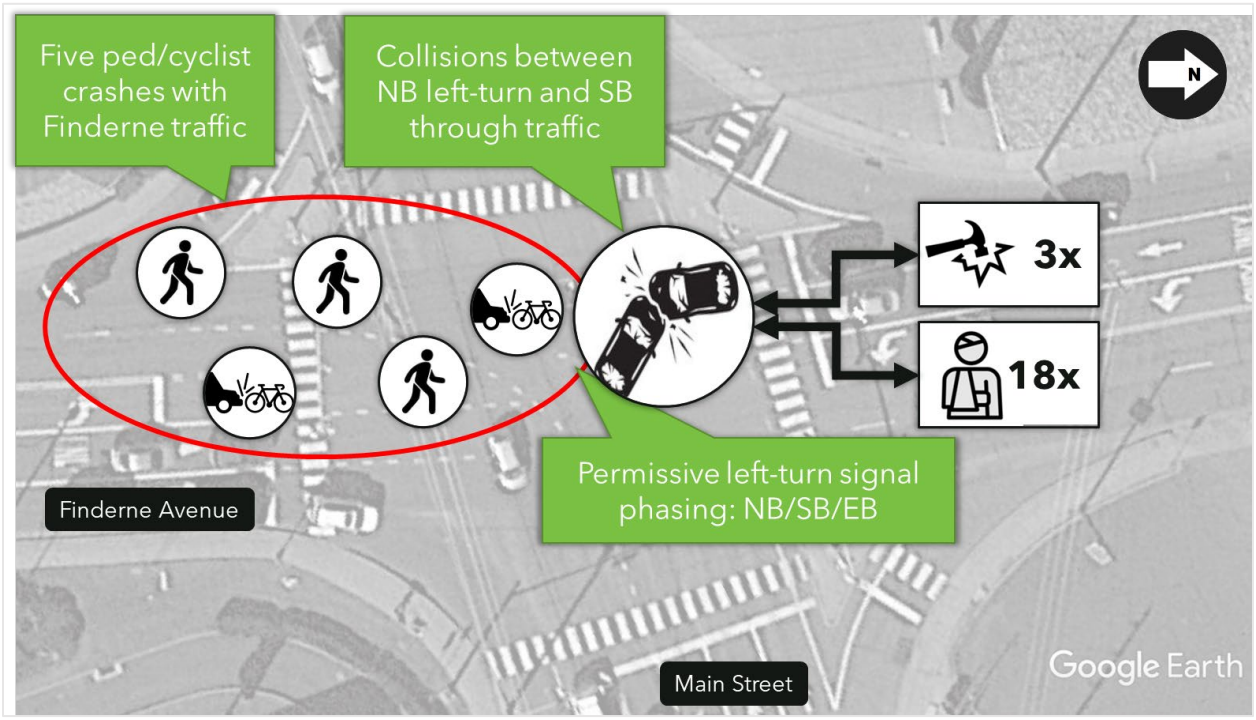


Figure 16 - Field Observations and Identified Needs, Main Street/Finderne Avenue

Close calls between northbound permissive left and southbound through traffic at Finderne Avenue & Main Street intersection

Sidewalk on north side of Main Street often interrupted by wide asphalt curb cuts and parked/standing vehicles

Cycling on Finderne Avenue restricted to narrow multiuse path over bridge with minimal delineation from travel lanes

Heavily used cycling route lacking updated wayfinding to connect local communities

Franklin Boulevard, Franklin Township, Somerset Street to Viking Avenue

- 214 crashes occurred within the one-mile segment study area during the analysis period
- At the Somerset Street intersection
  - Numerous fixed object collisions on the northwest intersection corner with a pedestrian signal pole
  - Numerous sideswipe collisions on the southbound approach due to narrow lanes
  - Crashes on southbound Route 27 including rear ends and crashes with left-turn and cross-street traffic
- Crashes between northbound traffic and traffic trying to turn on from Fuller Street
- At the Hamilton Street intersection
  - Heavy volume of rear end collisions on the eastbound approach to the intersection
  - Crashes between vehicles in the eastbound approach queue to the intersection and vehicles looking to turn out of a strip mall
  - Significant amount of right-angle and left-turn collisions involving eastbound traffic
  - Numerous crashes at this intersection involving pedestrian and cyclist traffic (half on east crosswalk)
  - Numerous fixed object collisions with signal pole on southeast intersection corner
  - Numerous sideswipe collisions just south of intersection, both same and opposite directions
- Northbound and southbound rear end collisions and cyclist crashes clustered in front of Hillcrest Elementary School driveway
- Numerous struck parked vehicle and fixed object collisions at Matilda Avenue intersection

Figure 17 - Collision Highlights, Franklin Boulevard and Hamilton Street

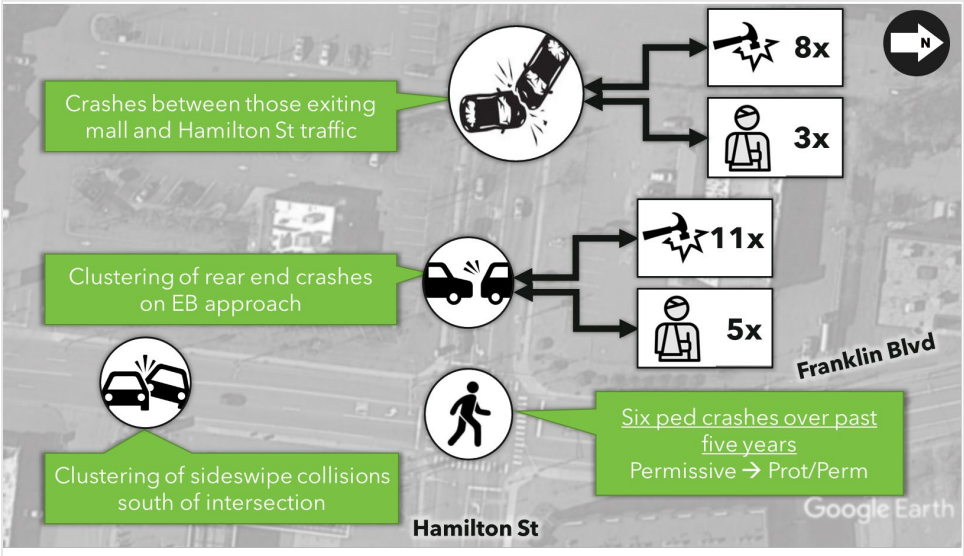


Figure 18 - Field Observations and Identified Needs, Franklin Boulevard

School signage to be upgraded; bike lane not adequately striped

Gap in sidewalk connectivity between Fuller Street and Somerset Street

Heavy vehicles encroaching onto Somerset Street left turn lane onto Franklin Boulevard

Sidewalk interrupted by wide curb cuts and vehicles encroaching on pedestrian paths

Main Street, Millstone Borough, Yorktown Road to Beardslee Road

- 35 crashes occurred on the 0.67-mile segment study area during the analysis period
- Clustering of rear end collisions on the northbound, eastbound, and westbound approaches to the intersection
- Struck fixed objects on the northwest and southeast corners of the intersection
- Two animal crashes occurring just south of the intersection

Figure 19 - Collision Highlights, Main Street and Amwell Road

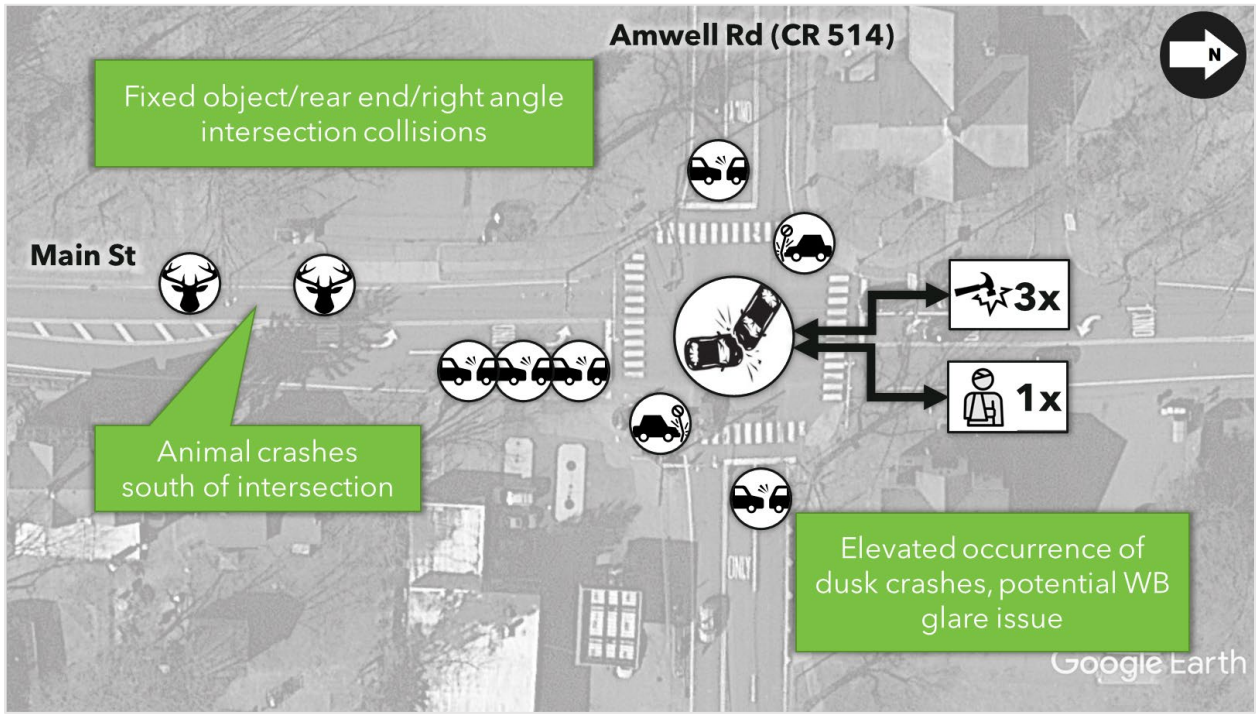


Figure 20 - Field Observations and Identified Needs, Millstone Borough

Brick paver sidewalks need to be reset and repaired along corridor

Gaps in pedestrian connectivity and pavement drop-offs on side of road

Signal at Amwell Road & Main Street lacks pedestrian countdown signal heads

Branches obstructing signage along Main Street

Greenbrook Road, North Plainfield, Harrington Avenue to Somerset Street

- 100 crashes occurred on the 1.27-mile segment study area during the analysis period
- At the West End Avenue intersection
  - Numerous right-angle and left-turn collisions, some involving injuries
  - Two pedestrian crashes occurred at this intersection, located next to two schools
- Three fixed object collisions involving westbound traffic heading into the double S-curve near Crosson Place
- Right-angle collisions, resulting in injuries, have occurred at the intersection with Harrison Avenue
- At the Wilson Avenue intersection
  - Right-angle and left-turn collisions
  - Rear end crashes involving traffic on the southbound approach
- At the Grove Street intersection
  - Four pedestrian crashes are clustered at this intersection
  - Crashes with parked vehicles occurring on Grove Street north and south of the intersection
- At the Duer Street intersection
  - Right-angle collisions, mainly involving eastbound traffic, clustered at this intersection
  - Bicycle and pedestrian crashes have been reported at this location
- Crashes between parked vehicles and westbound traffic have occurred from Stone Street and Grove Street

Figure 21 - Collision Highlights, Greenbrook Road

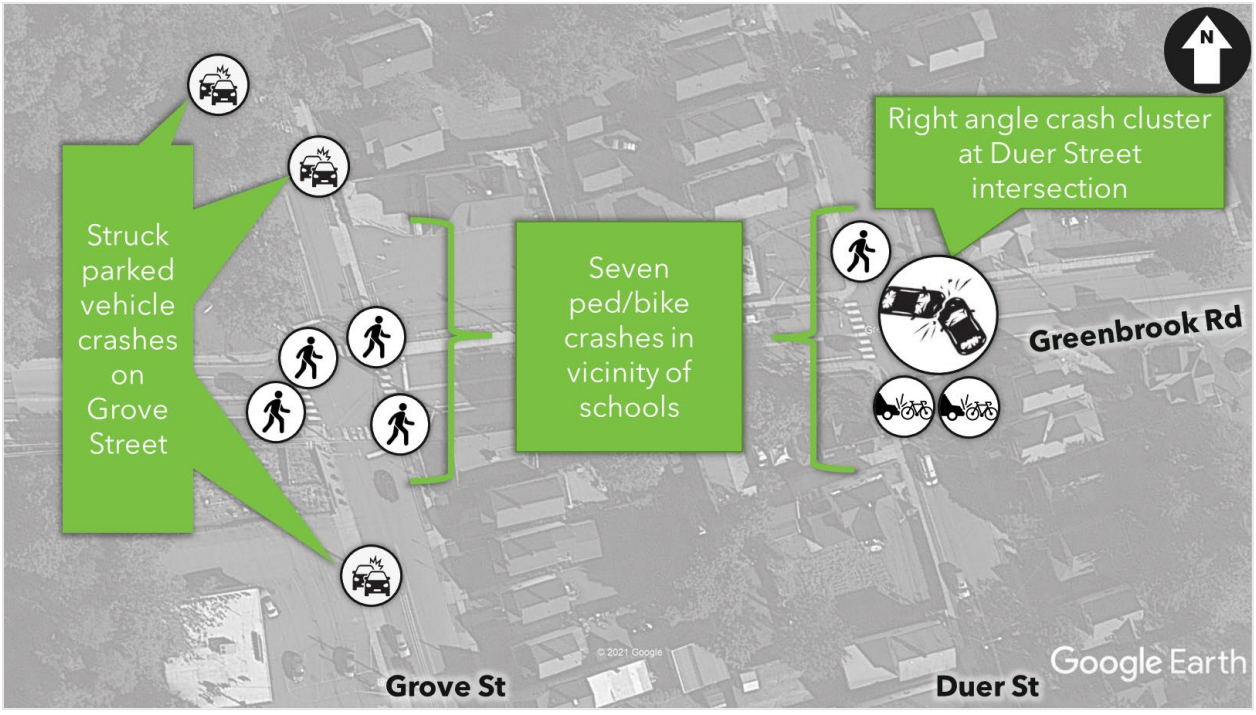


Figure 22 - Field Observations and Identified Needs, Greenbrook Road

Severe sidewalk heaving at locations with mature trees

Branches and foliage at the northwest corner of West End Avenue intersection impairing motorists sight distance should be trimmed back

Steep driveway pitch that slopes toward street near Judges Lane

Parked vehicles block motorists' sight line to pedestrians at Duer Street

Somerset Street, Raritan Borough, 1st Avenue / Lyman Street to US 206

- 144 crashes occurred within the 0.67-mile segment study area during the analysis period.
- At the First Avenue intersection
  - Two crashes involving cyclists perhaps due to nearby recreational destinations
  - Multiple rear end crashes occurring on the northbound, southbound, and westbound approaches
- Struck parked vehicle and sideswipe crashes clustered between Nevius and Codington streets
- Pedestrian crashes clustered at Anderson, Doughty, Thompson, and Codington streets
- Multiple right-angle crashes at the Thompson Street signalized intersection
- At the Route 206 intersection
  - Multiple crashes involving pedestrians crossing the south side of intersection, including one fatal
  - Multiple right-angle crashes, which tend to involve injuries due to high speed on Route 206
  - Multiple right-angle crashes between the eastbound queue and vehicles from strip mall on southwest corner
  - Numerous rear end collisions on northbound, southbound, and eastbound approaches to the intersection resulting in injuries

Figure 23 - Collision Highlights, Somerset Street and Route 206

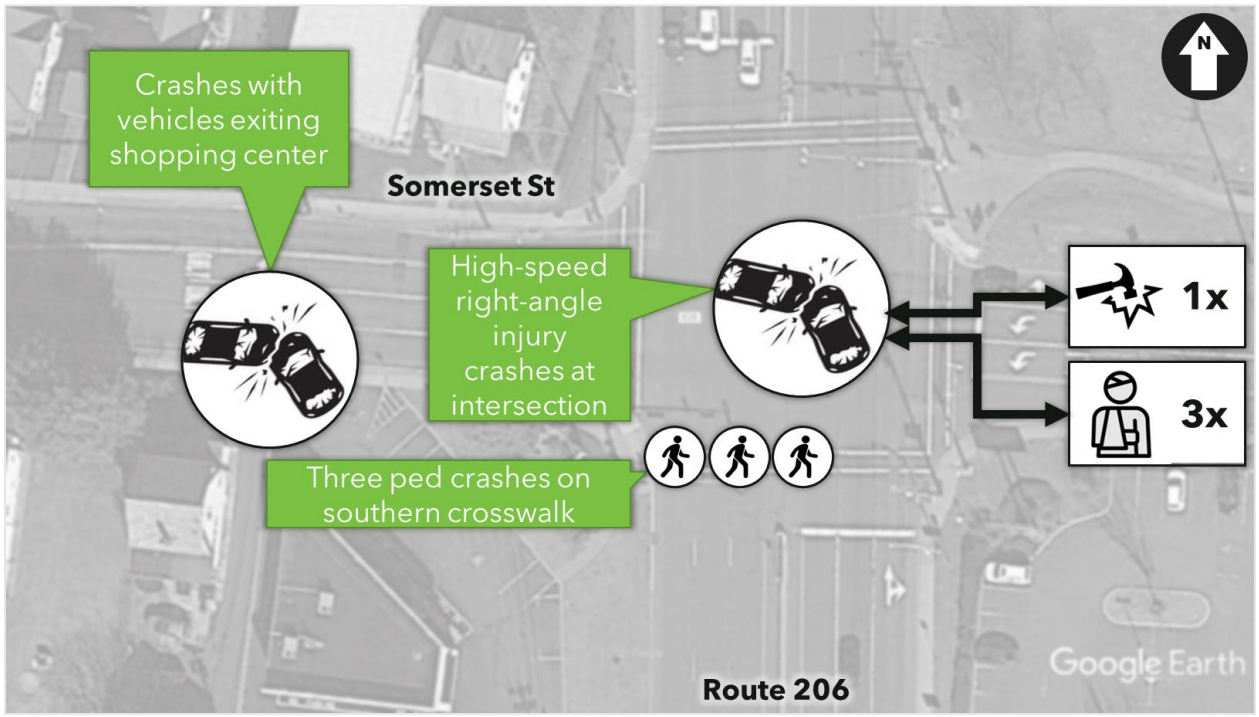


Figure 24 - Field Observations and Identified Needs, Somerset Street

Signs are blocked by roadside tree branches

Crosswalk pavement and striping may benefit from updating for better pedestrian/motorist visibility

Ponding near crossings indicates drainage problems

Stop bar on Route 206 South is set too far back

Study Recommendations

Somerset County has had previous successes utilizing local and regional programs to develop recommendations for transportation improvements consistent with the NJTPA's long range transportation plan. Ultimately, they actively participate in concept programs to encourage further development. The team examined relevant recent studies to apply concepts consistent with regional planning goals while developing RSA recommendations to mitigate the concerns each specific corridor presents.

County Studies Reviewed

Raritan Sustainable Economic Development Plan (2021)

The Plan is a 10-year economic, land-use and multi-modal vision for Downtown Raritan. Created through extensive community engagement, the plan presents a people-centered approach to economic development. It calls for creating inclusive public spaces that welcome people of all ages and abilities; for new development that respects the community's character; and strengthening the Borough's relations with existing and future businesses.

Circulation Plan Element & Bicycle and Pedestrian Safety Plan (2020)

This circulation plan element summarizes the future traffic impact to Raritan Borough based on current land use and traffic data. It also proposes a set of recommended road improvements that may be needed to serve anticipated future traffic volumes. To lessen any impacts additional traffic will have on the pedestrian experience in the Borough, this plan offers a section on Bicycle and Pedestrian Safety, goals for achieving safe passage, and recommendations to achieve those goals.

WalkBikeHike (2019)

The Walk Bike Hike study is designed to improve multimodal mobility and safety for Somerset County travelers of all ages and abilities. The findings and candidate improvements of the Framework Strategy will guide the development of convenient, equitable, and interconnected travel routes, facilities, and networks, over time, and in a collaborative manner. It includes more than 220 potential improvements, totaling almost 275 miles of new facilities across Somerset County. Concepts from this study were utilized for all the selected corridors.

Raritan Borough Street Smart Pedestrian Safety Campaign (2019)

Street Smart NJ is a public education, and awareness campaign developed by the NJTPA and funded through the Federal Highway Administration.

Supporting Priority Investment in Somerset County Phase III Study (2017)

The Supporting Priority Investment in Somerset County study supports opportunities for local and regional smart growth, preservation, economic revitalization, and resiliency planning initiatives through tactical alignment of land use, resources, programs, policies, and investment decisions; and conveys a clear investment message regarding local and regional land use priorities to both public and private sectors. Concepts from this study were utilized for Franklin Boulevard in Franklin Township, Main Street in Millstone Borough, Greenbrook Road in North Plainfield Borough, and Somerset Street in Raritan Borough.

Regional Center Pedestrian, Bicycle and Greenways Systems Connection Plan (2009)

This study involved developing a plan to provide a comprehensive analysis of the Regional Center of Somerset County by reviewing and assessing vehicular traffic and other multi-modal travel opportunities, including walking and bicycling. Concepts from this study were utilized for Main Street/Finderne Avenue in Bridgewater Township and Somerset Street in Raritan Borough.

Raritan Borough Master Plan Updated (2003)

This circulation plan element summarizes the future traffic impact to Raritan Borough based on current land use and traffic data. It also proposes a set of recommended improvements that may be needed to serve anticipated future traffic.

National/State Publications Reviewed

National and state publications were assessed with the goal of aligning concepts and recommendations with the most common safety initiatives. These reviews helped the team identify proven concepts and ideas and apply them to each study corridor. This section provides visualizations of some of the larger proposed safety measures on the corridors. Visualizations of these safety measures, along with accompanying descriptions on how these ideas seek to improve safety for vehicular, pedestrian, and cyclist travel, are adapted from the following state and national videos and publications:

- New Jersey Pedestrian and Bicycle Resource Center video library, 202117
- Cross County Connection TMA video library, 202118
- NJDOT Technology Transfer video library, 202119
- NJDOT Safe Routes to School video library, 202120
- 2017 State of New Jersey Complete Streets Design Guide, NJDOT, 2017
- Proven Safety Countermeasures, FHWA, 2017
- Small Town and Rural Multimodal Networks, FHWA, 2016
- Separated Bike Lane Planning and Design Guide, FHWA, 2015
- New Jersey School Zone Design Guide, NJDOT, 2014
- Urban Bikeway Design Guide 2nd Edition, National Association of City Transportation Officials, 2014
- Urban Street Design Guide, National Association of City Transportation Officials, 2012

Larger Recommendations by Corridor

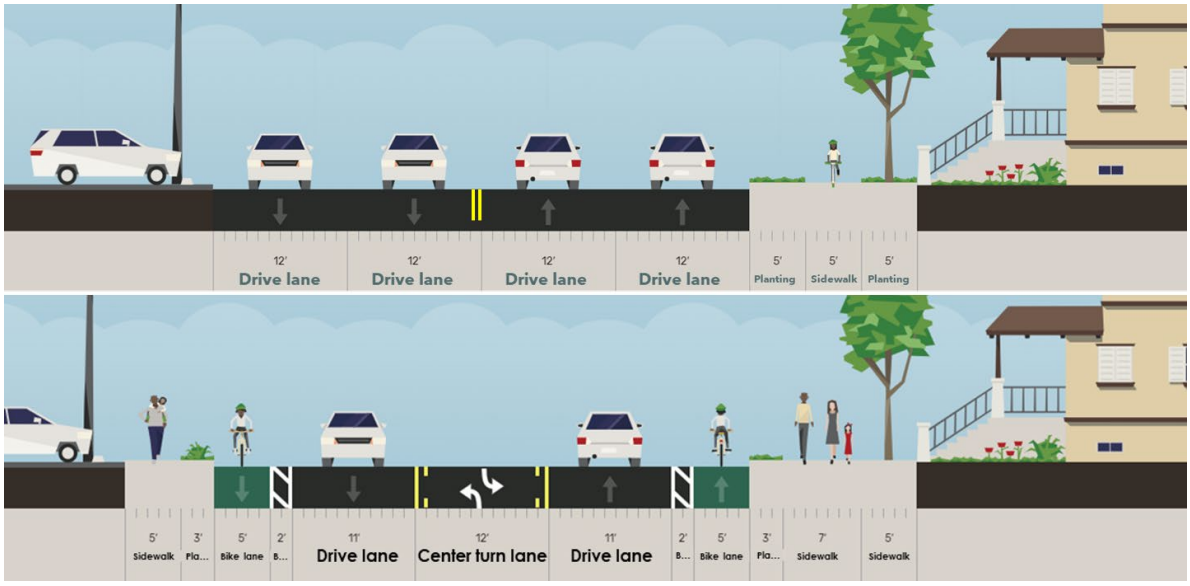
The larger recommendations for the corridors, such as road diets and pedestrian infrastructure, were derived from the observations noted by the RSA team. Detailed information on each of these larger recommendations are found on the following pages.

Road Diet

While this roadway corridor has a vehicle-centric design with two lanes of travel in each direction, both Main Street and Finderne Avenue act as a conduit of intercity pedestrian and cyclist travel between the downtowns of Somerville, Bound Brook, and Manville. Redesigning Main Street to accommodate a road diet, which is a technique in transportation planning whereby the number of travel lanes and/or effective width of the road is reduced in order to achieve systemic improvements, would potentially result in significant safety and mobility improvements for those who use the corridor via active modes of travel such as walking and cycling.

If the roadway AADT is above 20,000, FHWA recommends further analysis to justify feasibility of a road diet. Since Main Street has an AADT (vehicle volume) of 21,000, thorough intersection-by-intersection capacity analysis, design, administrative approval, and public vetting is needed to ensure the efficacy and success of the road diet. A four-lane to three-lane road diet, where properly implemented, could result in a 19-47percent [8] reduction in total crashes. Standard types of crashes on a four-lane section of roadway such as Main Street include "ghosting" right-angle crashes (where left-turn vehicles cannot see an approaching vehicle in the right lane due to a stopped opposing left-turn vehicle) and "lane shopping" crashes where vehicles jump from the left lane to right lane and back to aggressively pass slower vehicles.

Figure 25 - Example of Road Diet[9]



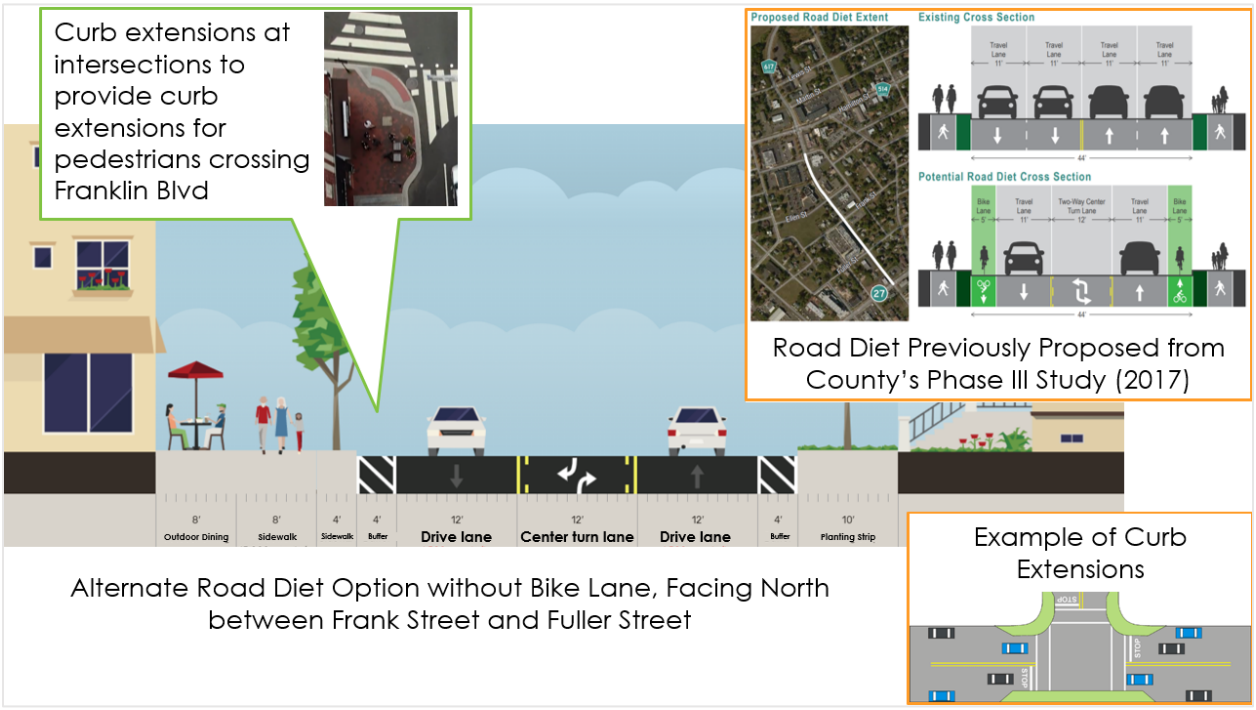
8 FHWA. (2017). Proven Safety Countermeasures. https://safety.fhwa.dot.gov/provencountermeasures/.
9 Created with Streetmix - Interview-Report-TSTC-StreetMix-v7-20-16.pdf (njtpa.org)

Road Diet

As recommended in the WalkBikeHike and Supporting Priority Investment in Somerset County Phase III studies, the County could consider a redesign of Franklin Boulevard from two travel lanes in each direction to one travel lane and one bike lane in each direction with a two-way left-turn lane. Thorough intersection-by-intersection capacity analysis, design, administrative approval, and public vetting is needed to ensure the efficacy and success of the road diet.

As previously noted, reducing the road from four to three lanes could result in a 19-47 percent[10] reduction in total crashes. Like Main Street, standard crashes on Franklin Boulevard include "ghosting" right-angle and "lane shopping" crashes.

Figure 26 - Example Road Diet[11]



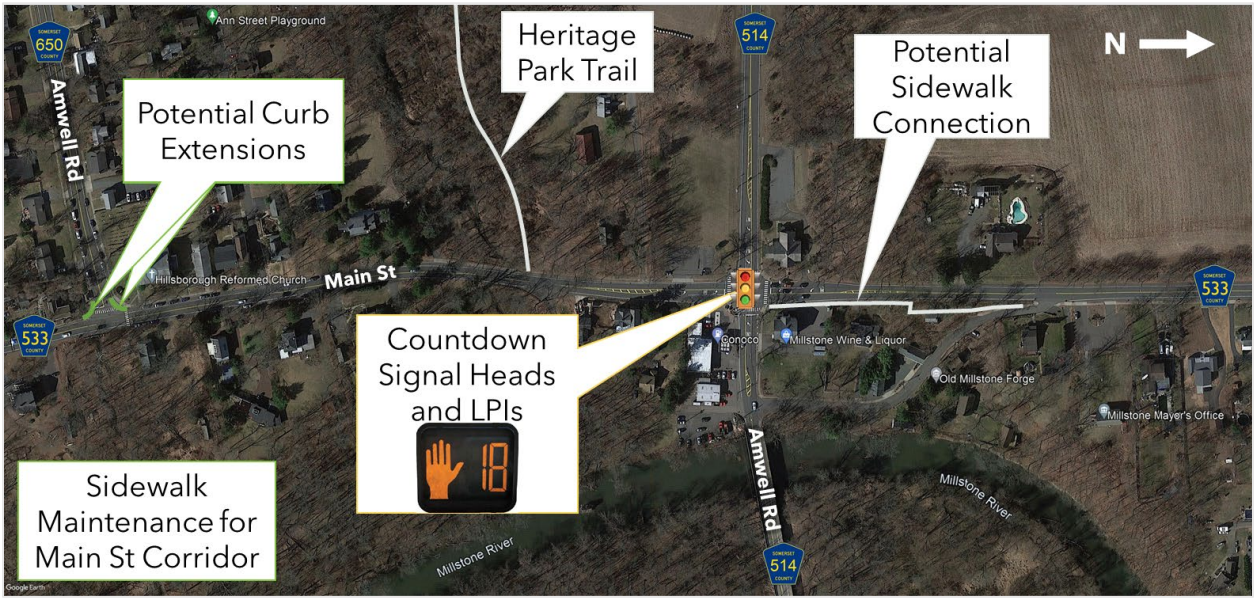
[10] FHWA. (2017). Proven Safety Countermeasures. https://safety.fhwa.dot.gov/provencountermeasures/.
[11] Created with Streetmix - Interview-Report-TSTC-StreetMix-v7-20-16.pdf (njtpa.org)

Pedestrian Connectivity/Infrastructure

Recommendations along the Main Street corridor include implementing Leading Pedestrian Intervals (LPI), which stop traffic to give pedestrians a head start, at crossings where no conflicting left-turn phasing exists to improve pedestrian safety. Other improvements include installing wayfinding to increase the visibility of historic sites within the neighborhood, implementing curb extensions at the County Route 650 intersection, and shoring up eroded pavement drop-off areas with a Safety Edge treatment, which shapes the edge of the pavement to 30 degrees instead of a vertical drop-off. Research has shown this is the optimal angle to allow drivers to re-enter the roadway safely,

The Borough is working to close the gap in sidewalk coverage between Amwell Road (CR 514) and North River Street through the redevelopment and acquisition of a vacant residential property located on the east side of Main Street. The Borough commented that State intervention, based on financial needs expressed by the current Millstone borough Mayor, would likely be needed to obtain property, or an easement, to construct this new sidewalk along the east side of Main Street to connect existing sidewalk to the north and south. Currently, pedestrians either walk along the shoulder on Main Street, or utilize the sidewalks along North River Street and Amwell Road (CR 514) to make this connection.

Figure 27 - Pedestrian Infrastructure Improvement Recommendations, Millstone, NJ



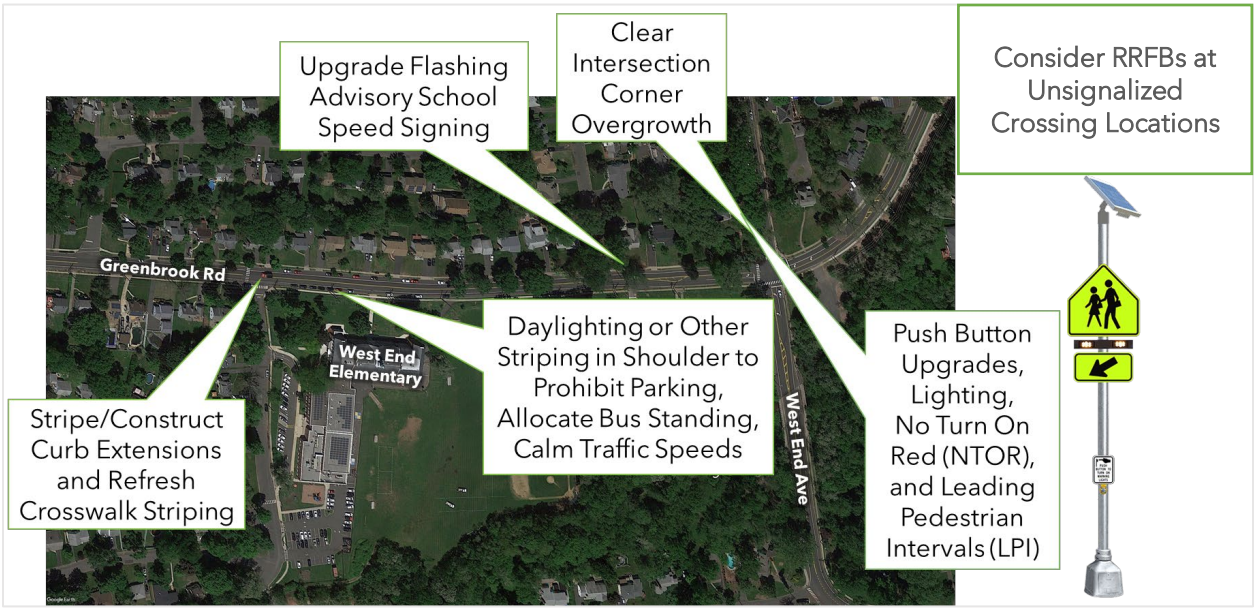
Greenbrook Road, North Plainfield Borough, Harrington Avenue to Somerset Street

Pedestrian Infrastructure

The Greenbrook Road corridor is near parks, schools, and other land uses that have a relatively high share of active transportation trips. Thus, recommendations focused on improving pedestrian infrastructure including implementing LPIs at the Grove Street and West End Avenue intersections and daylighting treatments at unsignalized intersections, which would restrict parking, to preserve sight lines between through traffic and those crossing Greenbrook Road.

Demonstration projects, that are short-term, low-cost, temporary roadway projects used to pilot potential long-term design solutions to improve walking/bicycling and public spaces, are also proposed to promote the awareness of those walking to school and installing rectangular rapid-flashing beacons (RRFBs) at locations with significant pedestrian volumes.

Figure 28 - Pedestrian Infrastructure Improvement Recommendations, North Plainfield, NJ



Curb Extensions/Daylighting

Evidence of daylighting, which increases pedestrian/driver visibility around an intersection, has faded, and vehicles were observed parking in these prohibited areas during the RSA. Continued enforcement and maintenance are needed to make this crash countermeasure effective. Curb extensions can be an effective way to entirely preclude vehicles from parking on top of intersections and provide pedestrians with a space to better establish their presence at a roadway crossing location.

As designs of these improvements on Somerset Street move forward, additional treatments that could be implemented alongside curb extensions should be considered, including ergonomic crosswalks (used to better reflect the more curved paths of pedestrian circulation at an intersection) and infiltration planters (used to act as a receptacle to filter stormwater runoff).

Figure 29 - Aerial Perspective of Daylighting and Curb Extensions, Millburn, NJ

Figure 30 - Street-level Perspective of Daylighting and Curb Extensions, Millburn, NJ[12]

[12] NJDOT / FHWA. (2017). Millburn Township,: 2017 CS. YouTube. Civic Eye Collaborative. https://www.youtube.com/watch?v=XjRPx5YhwoU.

Conclusion

To address these potential concerns, discussions were held with the RSA team and County Engineering to develop a list of tasks to improve traffic safety on the corridors, which are codified in the Implementation Matrix (Chapter VI, Subsection A) in this report. To assist the responsible jurisdictions (whether municipal, County, or separate agency) to schedule and prioritize these recommendations, the matrix organizes improvements by anticipated timeline and cost magnitude. The study team recommends sharing these proposed improvements with all responsible jurisdictions.

While the recommendations in the Implementation Matrix are centered around the engineering (and associated maintenance) of roadway features, changes to hard infrastructure alone will fall shy of the benefit that would be seen by implementing the 5E's of highway safety[13]:

- Engineering: highway design, traffic, maintenance, operations, and planning professionals;
- Enforcement: state and local law enforcement agencies;
- Education: communication professionals, educators, and citizen advocacy groups;
- Emergency response: first responders, paramedics, fire, and rescue; and,
- Equity: prioritizing the safety of vulnerable roadway users.

This approach recognizes a shared responsibility across numerous professions to reduce crashes and improve overall corridor safety. RideWise (the County's TMA), law enforcement, and EMS are encouraged to continue their efforts in educating drivers, enforcing laws, improving the response times to severe crash incidents, and reaching underserved communities with these safety strategies.

[13] Adapted from FHWA, https://safety.fhwa.dot.gov/hsip/resources/fhwasa1102/flyr3_in.cfm

Road Safety Audits

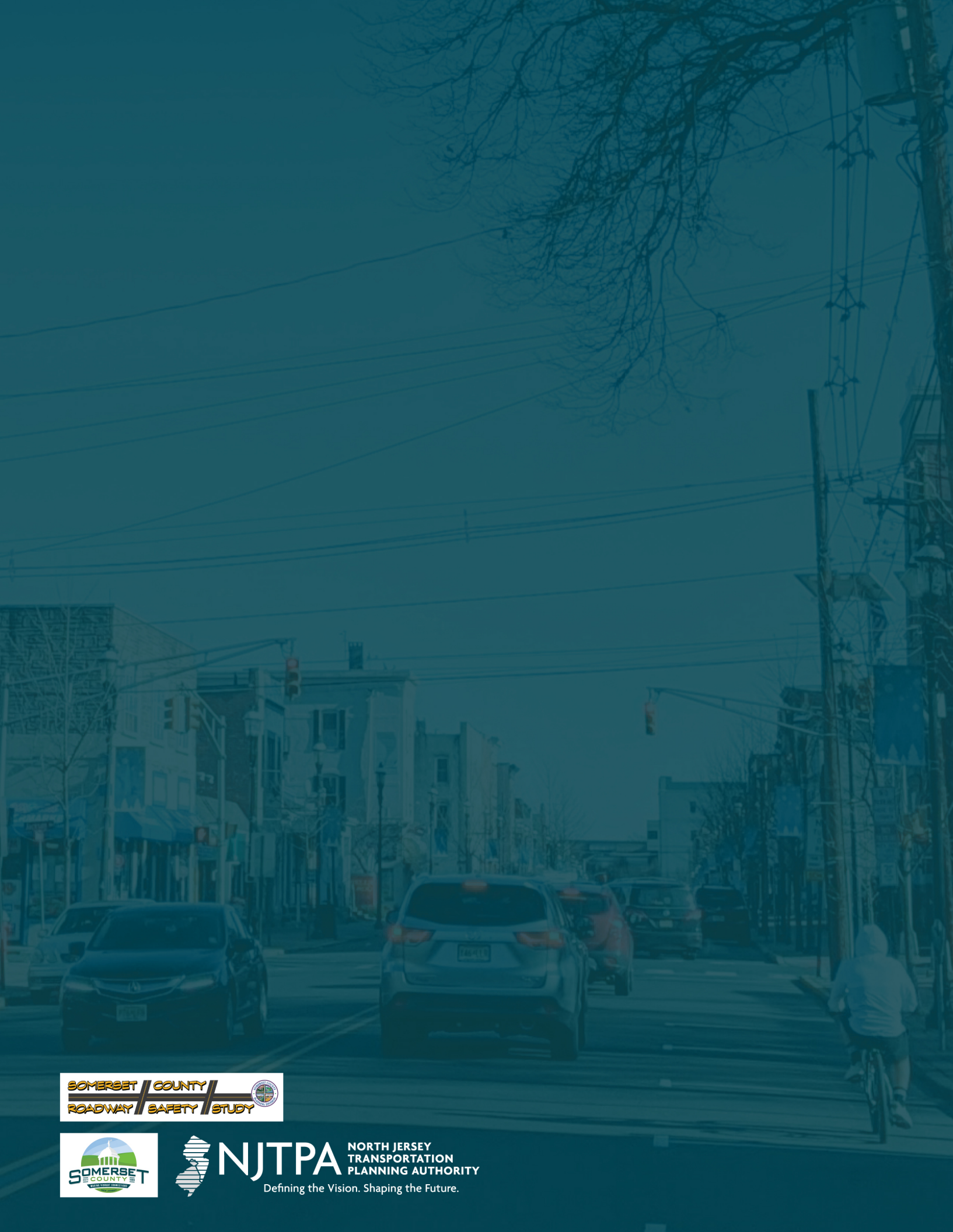
Finderne Avenue / Main Street (CR 533)
Bridgewater Township

Franklin Boulevard (CR 617)
Franklin Township

Main Street (CR 533)
Millstone Borough

Greenbrook Road (CR 636)
North Plainfield Borough

Somerset Street (CR 626)
Raritan Borough



SOMERSET COUNTY ROADWAY SAFETY STUDY

SOMERSET COUNTY

NJTPA NORTH JERSEY TRANSPORTATION PLANNING AUTHORITY

Defining the Vision. Shaping the Future.