CITY OF KEENE

NEW HAMPSHIRE

KEENE ROADWAY SAFETY ACTION PLAN

2025

CONTENTS

ACKNOWLEDGMENTS

This roadway safety action plan would not have been possible without the participation, support and guidance of the following individuals and groups:

MAYOR & KEENE CITY COUNCIL

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- Bicycle/Pedestrian Path Advisory Committee
- Cheshire Medical Center
- Federal Highway Administration
- First Student, Inc.
- Harbor Care
- Home Healthcare Hospice & Community Services
- Ice Medical
- Keene Community Ice Arena
- Keene Housing Authority
- Keene State College
- Monadnock Regional Child Advocacy Center
- New Hampshire Department of Safety
- People's Linen
- River Valley Community College
- School Administrative Unit 29 (SAU 29)
- Southwestern Community Services

In addition to those mentioned above, the City of Keene extends its gratitude to the survey participants who shared their thoughts and feedback. Your input was valuable to the creation of this plan.

CITY COUNCIL ADOPTION RESOLUTION

[Insert City Council adoption resolution]

EXECUTIVE SUMMARY

The City of Keene is committed to achieving zero roadway fatalities and serious injuries by 2045. In support of this vision, the City worked with elected officials, key stakeholders, and the broader community to develop a detailed Roadway Safety Action Plan aimed at significantly enhancing transportation safety.

This plan effectively employs a Safe System Approach, recognizing the inevitability of human errors and designing safety measures accordingly to minimize the impact of crashes on human life. A proactive and shared responsibility among multiple community stakeholders underscores the core philosophy of the Safe System framework. For the sake of this plan, "roadway safety" is defined relatively broadly to include people who drive motor vehicles, ride bicycles, walk, use wheelchairs or other mobility devices, and those who use emerging "micromobility" devices such as small-scale standing e-scooters. It extends to the entire space within the public right of way, not just the paved roadway, and includes sidewalks, curb ramps, and intersections of multiple roadways and intersections of multi-use paths and roadways.

Keene's Roadway Safety Action Plan is purposefully aligned with the New Hampshire Department of Transportation's (NHDOT) 2022-2026 Strategic Highway Safety Plan (SHSP), which emphasizes safety investments and adopts the Safe System Approach to minimize crash impacts. This comprehensive five-year state plan prioritizes safety by addressing specific crash factors and informs both infrastructure and non-infrastructure projects funded through federal programs.

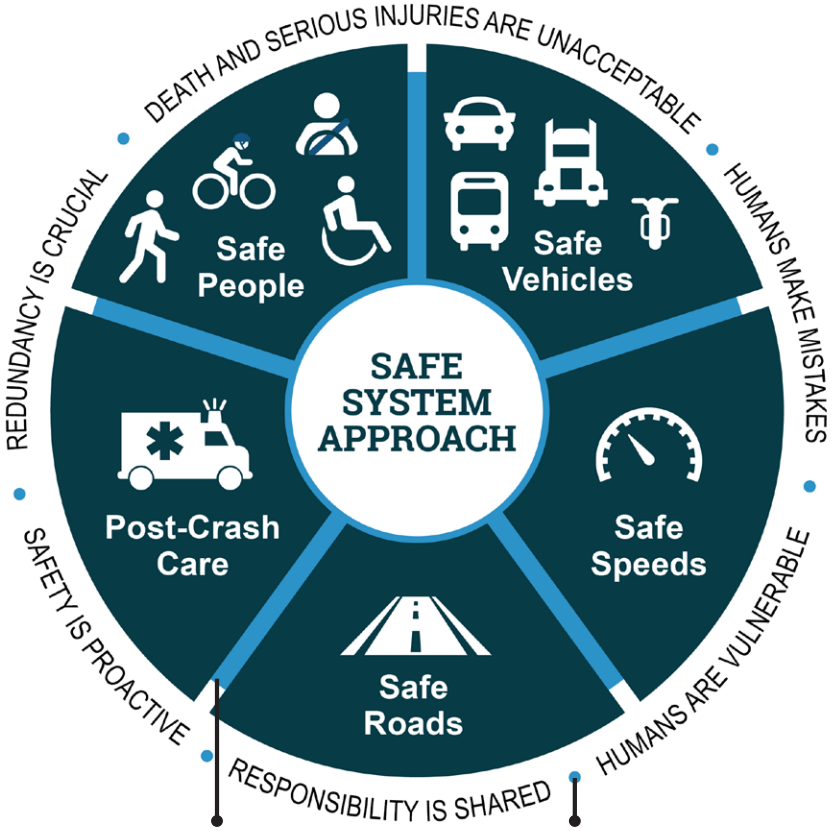
Keene's Roadway Safety Action Plan builds on existing city plans such as the Keene Comprehensive Master Plan and the Complete Streets Policy. It underscores community engagement and collaboration to ensure safety is embedded in all projects and policies, with the ambitious goal of achieving zero roadway fatalities and serious injuries by 2045. By aligning with city and regional initiatives, the Roadway Safety Action Plan creates a strong framework for development, transportation safety, and community collaboration to enhance safety and foster a connected community.

SS4A

The Safe Streets for All (SS4A) Safety Action Plan, an important initiative by the U.S. Department of Transportation (USDOT), **seeks to significantly reduce or eliminate roadway fatalities and serious injuries**. This SS4A grant program, established through the Bipartisan Infrastructure Law (BIL), allocates a total of **$5 billion in appropriated funds over 5 years** (2022 to 2026).

THE SAFE SYSTEM APPROACH

At the heart of Keene's Roadway Safety Action Plan are several key objectives geared towards strengthening the City's road safety framework. **The primary objective is to prevent crashes** that result in fatalities and serious injuries, thereby saving lives and improving the overall transportation experience for Keene's residents. Integrating the Safe System framework into all facets of transportation planning and design is another critical objective, ensuring that safety considerations are embedded in every relevant project and policy. Additionally, the plan aims to engage community partners and the public to foster a collective culture of safety. By actively involving community members and other partners in developing and implementing safety strategies, Keene hopes to cultivate a more inclusive and effective safety ecosystem.



THE PLANNING PROCESS

The plan's development involved several integral components, beginning with initial planning. This phase was marked by the engagement of local leadership, a review of statewide roadway safety initiatives, and the adoption of the Safe System Approach. Two guiding committees—the Roadway Safety Plan Committee and the Technical Advisory Committee—were established and met monthly to discuss various plan facets, ensuring both technical and community perspectives were considered.

DATA COLLECTION

A rigorous data analysis phase followed, focusing on crash data trends from 2014 to 2022. This analysis revealed 4,561 crashes on public roads in Keene, with 12% resulting in fatal, serious, or minor injuries. The majority (68%) of these crashes occurred at intersections, and 56% of crashes involving motorcycles and mopeds resulted in serious injuries or fatalities. These insights were essential in identifying key areas for improvements. The project team also reviewed current plans and policies relevant to roadway safety in Keene. The review included the Keene Comprehensive Master Plan, the Complete Streets Policy and Design Standards, and the current design for the Downtown Infrastructure Project.

COMMUNITY ENGAGEMENT

Community engagement played a pivotal role in the plan's development. Public input was gathered through a multi-layered approach, including the creation of a project web page, an online survey, and a public input map. In addition, a series of meetings were held with the project Roadway Safety Plan Committee (RSPC), the Technical Advisory Committee (TAC), key stakeholders, and the general public. Specifically, two public meetings were held: one in West Keene at Keene High School and the other in East Keene at the Keene Ice Arena, which is within walking distance of downtown. These engagements were particularly critical, allowing the project team to understand resident needs at a fine-grain level, especially from those with disabilities, parents of young children, and those without access to a private vehicle. To facilitate attendance by vulnerable road users and those without access to transportation, the City arranged for complimentary shuttle service for the public meetings.

Stakeholder meetings were conducted with groups such as the Bicycle/Pedestrian Path Advisory Committee, social service agencies, and local colleges, among others. Feedback from these sessions directly informed recommendations related to enhanced crosswalks, elimination of sidewalk gaps, improved intersection safety, better access to public transit, and the need for bicycle facilities. Public meetings further allowed residents to interact directly with City staff and consultants, providing feedback through post-it notes and map mark-ups to identify areas requiring pedestrian access, safer crossings, and improved bicyclist conditions.

An online survey, available from March 1, 2024 to early May 2024, collected responses from over 500 community members. Participants highlighted main safety concerns through over 1,800 markers and 743 individual comments on an interactive map. The survey and map feedback focused on motor vehicle safety, pedestrian and bicycle safety, and general infrastructure improvements such as better lighting and traffic signal revisions.

"Main Street has a lot of great crosswalks but it's still scary to cross because of all the lanes of traffic. I'd like to see less lanes of traffic or at least blinking pedestrian crossing lights. I walk around Keene but I would never let my kids" - RSAP Survey Respondent

OUTLINING STRATEGIES AND ACTIONS

Based on the data analysis and community input, the plan outlines specific strategies and actions to address the identified safety concerns. These include:

Improve safety for non-motorized road users

Enhance lighting and signage

Reduced conflicts at intersections

Speed management

Policies, programs and education

Targeted interventions are proposed for high-risk locations, along with policy improvements to mitigate the severity of crashes. Project recommendations focus on enhancing intersections, ensuring safety for vulnerable road users, and promoting safe driving practices in line with Safe System principles.

To support the implementation of these strategies and project recommendations, the plan identifies additional resources and opportunities. This comprehensive and multidisciplinary effort underscores the commitment of Keene's leadership and community towards achieving roadway safety for all users.

As a living document, the Roadway Safety Action Plan will be continually updated and refined as new data, projects, and technologies become available. This iterative process not only keeps the plan responsive to emerging trends and innovations but also ensures that new insights and community feedback are continuously integrated. By doing so, the plan remains dynamic, adapting to evolving safety challenges and opportunities to better achieve the goal of zero roadway fatalities and serious injuries by 2045.

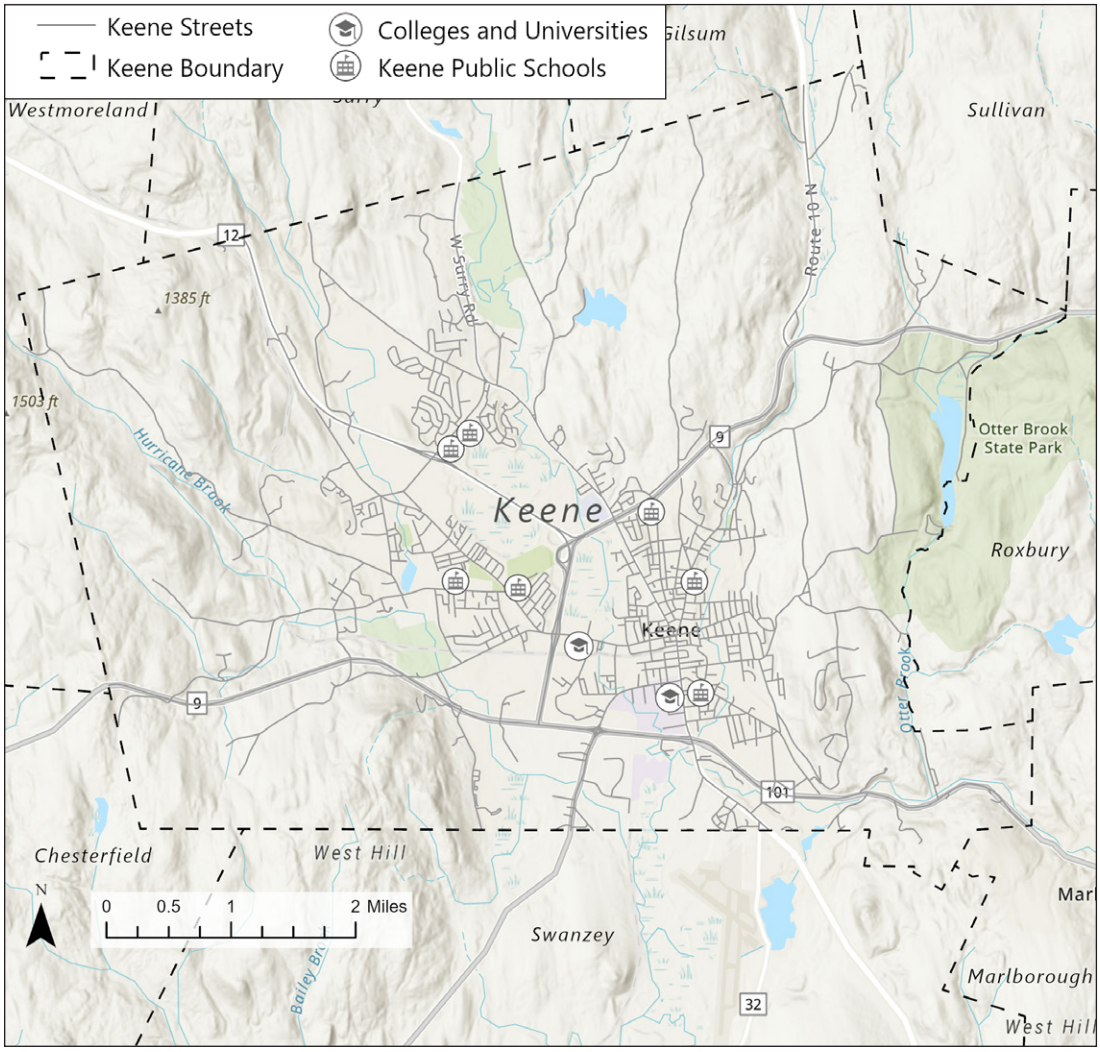
Additionally, a "Care and Maintenance" guide has been included in the action plan within the appendices section to assist the City staff in maintaining and updating the Plan.

In conclusion, the City of Keene is dedicated to fostering a safer transportation environment and addressing critical areas of roadway safety through this thoroughly designed action plan. By deploying the outlined strategies and harnessing community collaboration, Keene is poised to make significant strides toward its goal of working toward zero roadway fatalities and serious injuries by 2045.

1 | CITY OF KEENE ROADWAY SAFETY ACTION PLAN

THE CITY OF KEENE

The City of Keene, located in the Monadnock Region of southwestern New Hampshire, is home to roughly 23,000 people and major institutions such as Keene State College and the Cheshire Medical Center. The heart of the City is home to Main Street and Central Square, a critically important area contributing to Keene's economy, civil works, culture, and rich history. The city is the employment and shopping hub of Cheshire County and draws many visitors from Vermont and Massachusetts as well. Outside of the downtown area, Keene is surrounded by residential neighborhoods and commercial shopping centers alongside proximity to the Keene multi-use trail system, natural conservation and preservation areas, parks, and athletic complexes. West Street is a main artery connecting the City to Route 9, Route 10 and Route 12. Washington Street, Court Street, Marlborough Street, Winchester Street, Park Avenue and Maple Avenue are other primary corridors in Keene connecting neighborhoods, parks, and schools to downtown.



The City of Keene has a long history of community and transportation planning that goes back to the City's inception in the 18th century, when the community decided to widen what is now Main Street to accommodate growth. Keene was one of the first communities in the nation to adopt a zoning code in 1927. More recently, the City has placed an emphasis on planning for the future through the Vision Keene 20-Forward project (an update to the City's Comprehensive Master Plan), Keene Complete Streets Planning & Design Guidelines, participation in Safe Routes to School planning and education initiatives, and other similar planning efforts. These efforts, along with infrastructure projects throughout the city that prioritize traffic calming and facilities for bicyclists and pedestrians, demonstrate Keene's dedication to providing a safe and comfortable environment for all modes transportation across the City's footprint. Today, Keene is focused on supporting the downtown's success by investing in critical infrastructure and updating the streetscape and public gathering spaces along Main Street and Central Square as a part of the Downtown Infrastructure Project (DIP).

In developing the City's first Roadway Safety Action Plan, Keene is emphasizing their commitment to the City's mission and values: *"to provide services and amenities that enhance the quality of life for those who live, learn, work in, and enjoy the City of Keene."* The 2010 Keene Comprehensive Master Plan highlights the need to strengthen the City's nonmotorized vulnerable road user (VRU) infrastructure by maintaining and developing infrastructure for pedestrians and bicyclists. This need is reflected in the responses to the RSAP survey with nearly 80% of residents reporting that they either drive alone or carpool as their two main means of commuting to work—underscoring the reliance on vehicles in Keene.[1] The City continues to promote their objective for the downtown to be a "park and walk" destination, balancing both motor vehicle and non-motorized transportation.

The City has experienced a number of crashes that involve fatalities and serious injuries in the recent past, creating a strong desire to improve roadway safety. Between January 1, 2016, and December 31, 2020, the City of Keene, NH, experienced seven fatal motor vehicle accidents resulting in eight total fatalities. This equates to an annual fatality rate of 6.97 deaths per 100,000 residents. Although this rate is lower than the 2020 national average of 12.9 deaths per 100,000, it is still considered unacceptably high by the City. Also, pedestrian safety has emerged as a significant concern for the City. Within the same period, there have been at least three incidents where crashes caused incapacitating injuries to pedestrians.

SAFE STREETS AND ROADS FOR ALL (SS4A)

The Safe Streets and Roads for All (SS4A) grant program is a U.S. Department of Transportation initiative aimed at reducing roadway fatalities and serious injuries. Launched under the Bipartisan Infrastructure Law (BIL), it emphasizes a comprehensive, data-driven approach to creating safer streets. The five-year grant funding program encourages local, regional, and tribal entities to develop and execute comprehensive safety action plans.

The City of Keene received SS4A funding in 2022 to develop this Roadway Safety Action Plan. The City of Keene is committed to enhancing roadway safety due to its growing population of elderly residents and other VRUs and significant reliance on vehicles, coupled with rising concerns over pedestrian accidents. With a history of comprehensive planning and a dedication to improving infrastructure for nonmotorized and vulnerable road users, Keene aims to reduce fatalities and serious injuries through a comprehensive safety action plan that includes community engagement, cross-sector communication and coordination, crash data analysis, and project prioritization.

1 2020 Census

GOAL AND OBJECTIVES

GOAL

The goal of the Keene Roadway Safety Action Plan is to make transportation safety a top priority for City officials and staff. The Keene's Roadway Safety Action Plan aims to reduce the number of fatalities and serious injuries by 50% by 2035, working toward zero by 2045.

OBJECTIVES

- Prevent crashes resulting in roadway fatalities and serious injuries.
- Promote a Safe System Approach to transportation in Keene.
- Engage partners and the public to foster a culture of safety.

THE ROADWAY SAFETY ACTION PLAN

The remainder of this document details the steps taken to identify the crash priorities and actions to address the most severe crashes on the City of Keene's roadways. The plan includes the following:

- **Initial Planning:** An overview of the leadership committees and research conducted to set the stage for the plan development.
- **Data Analysis:** A summary of crash data trends and key safety problems.
- **Keene Engagement:** A summary of the community and leadership input.
- **Strategies and Actions:** An overview of the approaches to improving roadway safety in Keene.
- **Infrastructure Project Recommendations:** A list of projects that address the key safety problems.
- **Implementation Resources:** A list of other opportunities to support implementation of the strategies and project recommendations.

2 INITIAL PLANNING

In developing the Roadway Safety Action Plan, the City of Keene first needed to understand the landscape of roadway safety from the local, statewide, and national lens to develop a framework for the planning process. This phase included engaging local leadership for guidance, reviewing statewide roadway safety initiatives, examining City policies and design guidelines, and exploring the Safe System Approach and its application to the City.

LEADERSHIP ENGAGEMENT

The City of Keene established two committees with key responsibilities in developing, implementing, and monitoring the Roadway Safety Action Plan. The Roadway Safety Plan Committee (RSPC) was made up of a diverse group of stakeholders representing various institutions and community groups. The Technical Advisory Committee (TAC) was made up of City of Keene staff representing a variety of departments that play a role in planning, maintaining and enforcing roadway safety. While both committees provided feedback on the plan's progress and draft deliverables, the RSPC also offered input on community outreach efforts and the TAC offered input on more-technical aspects of the planning work related to engineering and maintenance issues.

ROADWAY SAFETY PLAN COMMITTEE

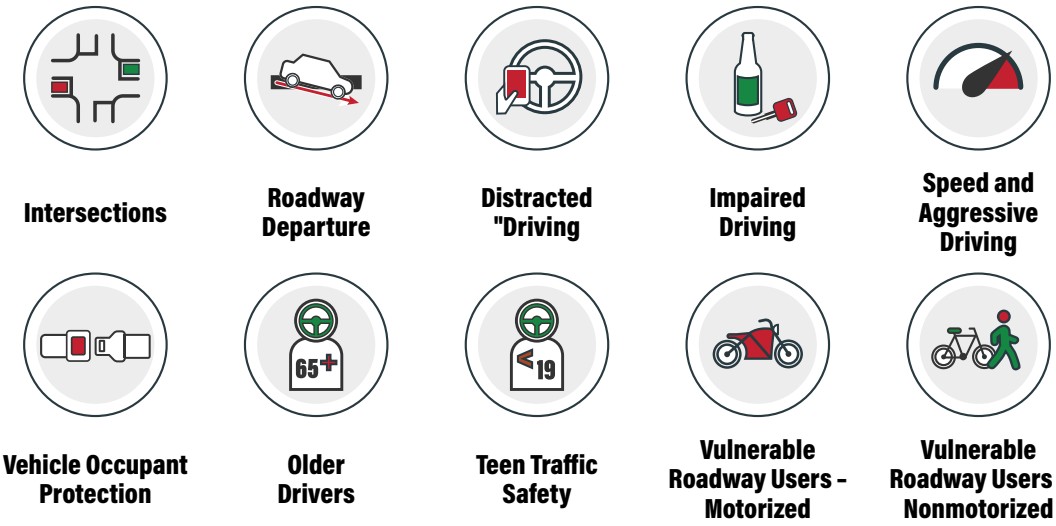
At the beginning of the planning process, the RSPC was appointed by the Mayor to provide feedback on both technical and community aspects of the Roadway Safety Action Plan. Membership included representatives from Keene City Council, the City Manager, Keene State College, the Southwest Region Planning Commission (SWRPC), the NHDOT, Keene State College, the Bicycle/Pedestrian Path Advisory Committee (BPPAC), Keene School District, and the Governor's Commission on Disability. Meeting monthly from January through June 2024 (and again in August), the RSPC's feedback was critical for finalizing the public outreach approach, generating ideas for project and program recommendations, and for making comments on draft deliverables.

TECHNICAL ADVISORY COMMITTEE

Established at the beginning of the planning process, the TAC's primary charge was to provide feedback on data requests, analysis, and other technical aspects of the Roadway Safety Action Plan. The TAC included City staff from Public Works, Community Development, City Manager's Office, Police Department, Fire Department, and the Parks and Recreation Department. The committee met monthly—staggered by two weeks from the RSPC meeting—February through June 2024 to discuss safety treatments, analysis maps, and receive updates on the work effort. TAC members are expected to continue their involvement with the implementation of safety improvements indefinitely by virtue of their roles and responsibilities to oversee and administer Keene municipal government policies and initiatives.

NEW HAMPSHIRE STRATEGIC HIGHWAY SAFETY PLAN

New Hampshire's 2022 Strategic Highway Safety Plan[2] (SHSP) is a statewide safety plan that was developed based on roadway safety data trends and contributing factors. The SHSP outlines the state's approach to addressing highway safety on public roadways and establishes a long-term vision of zero fatalities. The plan identifies 10 Critical Emphasis Areas, or topics that offer the greatest opportunity to improving roadway safety:



The City of Keene used the SHSP as a starting point for the local plan—starting with the shared goal of reducing roadway fatalities and serious injuries by focusing on the State's priorities and determining how those key crash types and risks have impacted the community. The City of Keene Roadway Safety Action Plan also followed a data-driven, multidisciplinary process in identifying the problems and strategies.

2 New Hampshire SHSP. https://www.dot.nh.gov/sites/g/files/ehbemt811/files/inline-documents/2022-2026-43246-nh-hsip-08042022.pdf

SAFE SYSTEM APPROACH

This Roadway Safety Action Plan looks toward the national movement of adopting a Safe System Approach as a best practice for solving roadway safety issues. The Safe System Approach shifts focus away from preventing crashes to accepting that humans make mistakes and developing a system that manages crashes that do occur to minimize their impact on the human body.[3] This method calls for safety in design and project planning that aims to consider safety holistically, ensuring that all elements that relate to a crash are aligned.

The Safe System Approach is focused on six principles and five elements. The principles guided the City of Keene throughout the planning process, emphasizing proactivity and shared responsibility. The City of Keene Roadway Safety Action Plan incorporates the Safe System approach with consideration given to how the elements are addressed through the prioritized projects and strategies.

3 Safe System. FHWA. https://safety.fhwa.dot.gov/zerodeaths/docs/FHWASafeSystem_Brochure_V9_508_200717.pdf

DATA ANALYSIS

3

UNDERSTANDING THE SAFETY STORY

The Keene Roadway Safety Action Plan is a data-driven effort. Detailed analysis of crash data established a baseline understanding of how, when, and where crashes are occurring. By understanding crash trends, the City of Keene can both address locations with historic crashes and proactively address locations that share risk characteristics in an effort to prevent future crashes.

The City of Keene analyzed nine years of crash data between 2014 and 2022 (data quality issues in the 2013 data prevented inclusion in the analysis). Crash data is managed by the New Hampshire Department of Motor Vehicles' (DMV) VISION Crash Records Management System (CRMS). The DMV crash data was provided to the consultant for analysis by the NHDOT and includes all crashes, including fatalities, serious injuries, minor injuries and property damage crashes, on public roadways. Crashes occurring in shopping centers and in private driveways, as well as crashes resulting in 'unknown injury' were excluded from analysis. The data source for fatal crashes was the federally maintained Fatality Analysis Reporting System (FARS).

The Keene Roadway Safety Plan focuses on addressing the most severe crashes—specifically those that align with the New Hampshire SHSP Emphasis Areas—that resulted in fatalities, serious injuries, and minor injuries. This approach allows the City of Keene to concentrate roadway safety-focused strategies on locations, policies, and programs that will have the greatest likelihood in moving towards zero fatalities and serious injuries.

The remainder of this section provides more detail on the types of analysis conducted, general trends, overlapping factors, spatial distribution of crashes, and how the results shaped the Keene Roadway Safety Action Plan recommendations.

WHAT TYPES OF CRASHES ARE HAPPENING IN KEENE

GENERAL TRENDS

Between 2014 and 2022, NHDOT data show there were 4,561 crashes that occurred on public roadways in the City of Keene. Analyzing crash data on a year-to-year basis helps identify if there is an increasing or decreasing trend in crashes. As shown in Figure 1 and Figure 2, there are stark total crash increases in 2018 and 2019, and a general increasing total crash trend after 2017 – this increasing crash trend is further discussed in the following sections. The data analysis resulted in several notable themes:

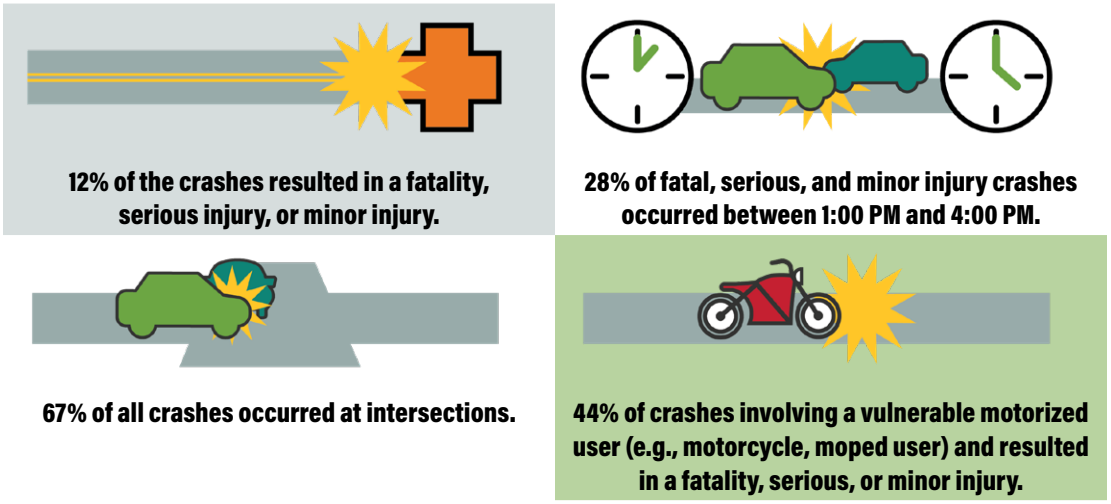
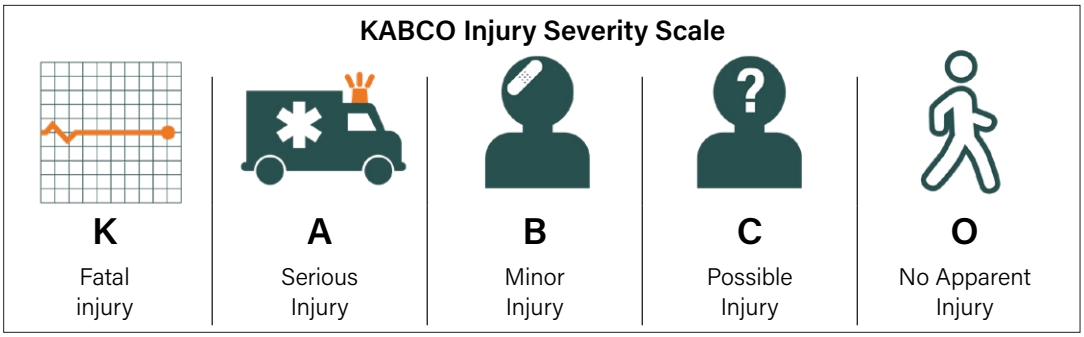


Figure 1 shows the nine-year trend for all crashes that resulted in a fatal, serious injury, minor injury, possible injury, or property damage only (total crashes). The graph also shows the combination of fatal, serious injury, and minor injury crashes (KAB Crashes) – this highlights the crashes that result in a more serious injury.[4] While total crashes rise and fall throughout the period, the most constant trend is the decreasing fatal, serious, and minor injury rate in Keene. At the beginning of the nine-year period, 25% of crashes resulted in a fatal, serious, or minor injury. By 2022, that rate fell to only 8%. While this crash rate is a positive development, there were still 40 to 80 annual fatal, serious and minor injury crashes between 2018 and 2022, much higher than the community's vision of working towards zero.

Other trends to note include the stark rise of total crashes (excluding unknown severity crashes) during 2018 and 2019. Crash totals more than doubled compared to 2017 - fatal, serious, and minor injury rates, however, remained the same. While crashes fell in 2020, they were higher than any year from 2014-2017 and continued to climb through 2022.

4 The KABCO scale is a functional measure of the injury severity for any person involved in the crash. K-Fatal Injury, A-Suspected Serious Injury, B-Suspected Minor Injury, C-Possible Injury, and O-No Apparent Injury.



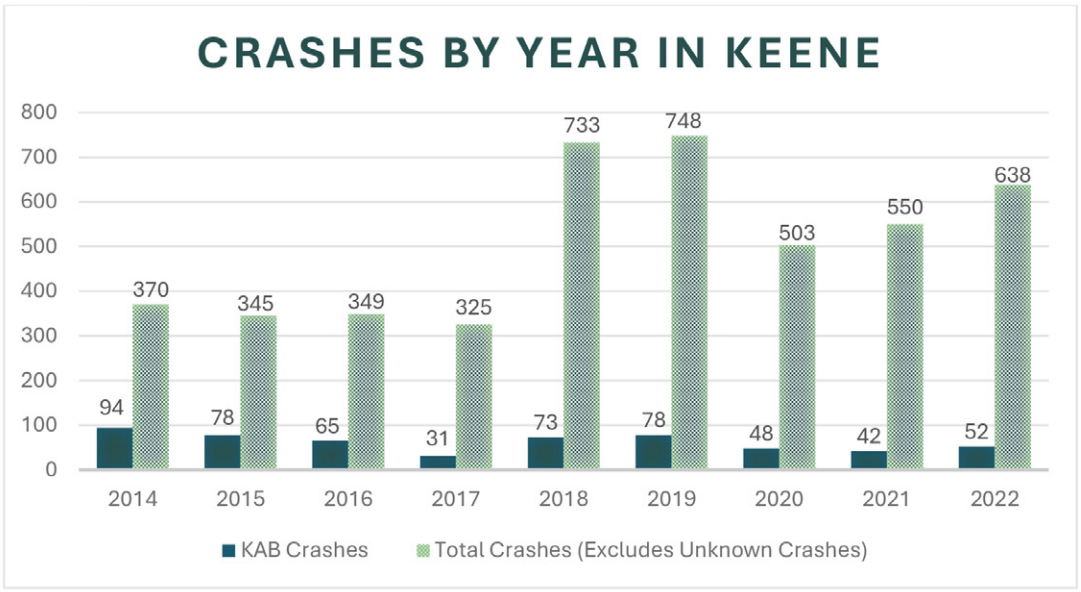


Figure 1

The stark increase in crash totals is almost entirely explained by a large increase in property damage only crashes (Figure 2). Reported property damage only crashes are low in 2017 and then spike in 2018 and 2019. In Keene, crash totals were lowest before 2018, whereas statewide data, as illustrated in Figure 3, show the opposite trend. As shown in Figure 3, statewide, total crashes are highest from 2014-2017, and then dropped in 2018. Between 2018 and 2022, total crashes remained below the peak levels of 2014-2017. Both Keene and statewide data show a drop in total crashes in 2020, followed by an upward trend from 2020 to 2022.

Figure 2 and Figure 3 show crashes with unknown severity. These crashes were excluded from the analysis in Keene; however, it is useful to visualize these crashes for the purposes of revealing underlying data trends. Both figures show a similar significant increase of unknown severity crashes in 2017. This rise may be attributed to the New Hampshire Department of Motor Vehicles (DMV) transitioning from the IDMS to its current VISION database, which resulted in some unavoidable overlap between the IDMS and VISION datasets for that year.

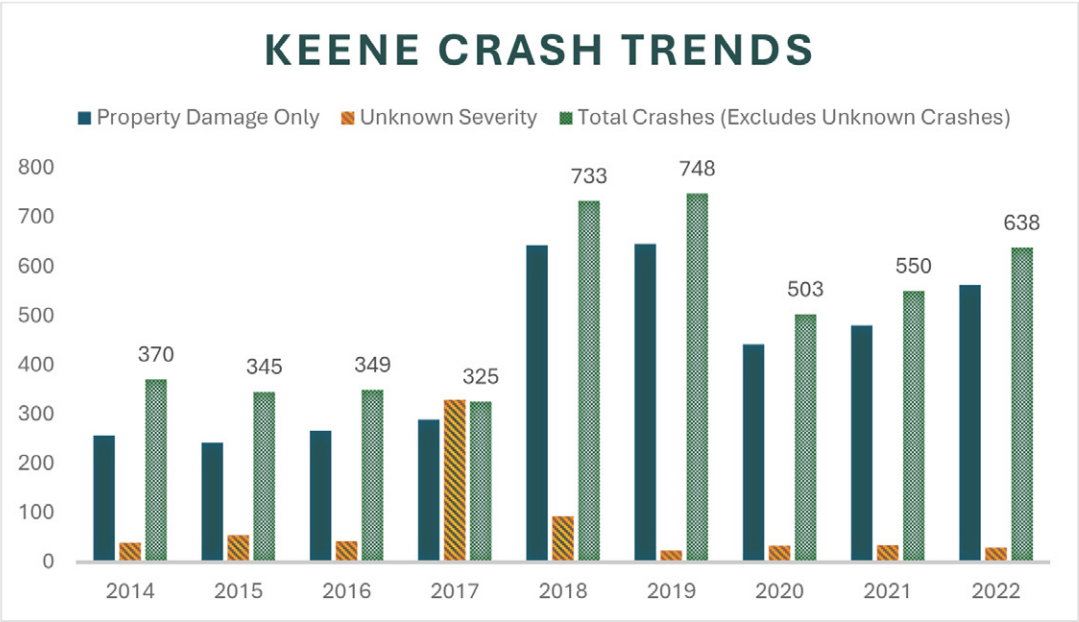


Figure 2

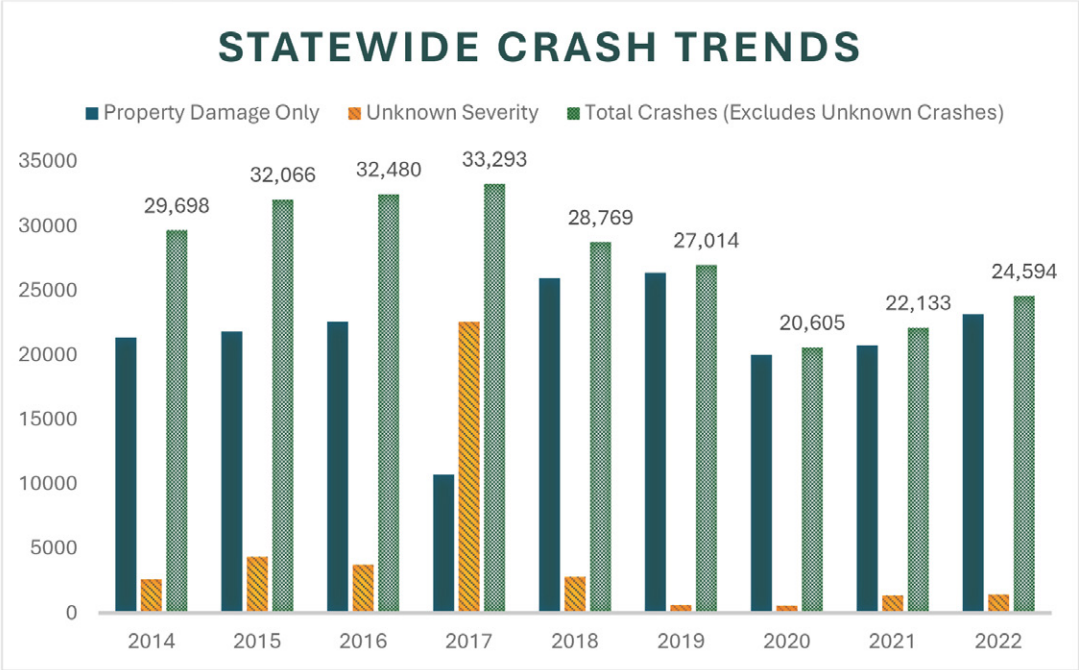


Figure 3

In summary, while Keene shows an opposite trend in total crashes before 2018 in comparison to the rest of the State, both experienced property damage only crashes peaking in 2018 and 2019. Keene observed a more marked increase, with property damage only crashes more than doubling compared to 2014-2016. Statewide, New Hampshire appears to have experienced data quality issues in 2017 that resulted in the mis-

categorization of crashes as unknown severity. These noted factors do not impact the City of Keene's analysis in a meaningful way, due to the focus on crashes that resulted in a fatal, serious injury, or minor injury.

ROADWAY SAFETY ACTION PLAN EMPHASIS AREAS

For a deeper understanding of the types of crashes happening on the roadway, the Keene Roadway Safety Action Plan analyzed the 10 Critical Emphasis Areas presented in the New Hampshire SHSP to identify how Keene performs on these key metrics, compared to Statewide performance.

The Emphasis Areas are specific roadway characteristics, behaviors, or users involved in a crash. Understanding how frequently these crash types are involved in the most serious of crashes will lead to better identifying, prioritizing, and implementing selected strategies and improvements to address roadway safety.

It is also important to note that while the data is broken down by Emphasis Area, it is challenging to pinpoint just one cause of a crash—many factors may interact to lead to a crash or contribute to the outcome. The data analysis considered both the number of crashes involving an Emphasis Area as well as the proportion of fatalities, serious, and minor injuries. In other words, there may be some crash types that occur more frequently on the roadway but are not as severe while there may be less frequent crashes that represent a larger proportion of the severe outcomes.

Through analysis, this action plan identifies Intersections, Vulnerable Motorized Users (i.e. Motorcycles), and Vulnerable Non-Motorized Users (i.e. Pedestrians and Bicyclists) as the top three priority Emphasis Areas. Analysis identified high levels of involvement from these Emphasis Areas in total crashes, and fatal, serious, and minor injury crashes. While project recommendations will target additional Emphasis Areas, these three Emphasis Areas are considered a priority based on analysis, public engagement and outreach efforts, and alignment with Keene's ongoing citywide initiatives.

> *"I have nearly been hit by reckless drivers and drivers not paying attention at the West Street/School Street intersection more times than I can count. We need better monitoring of this area. It is unsafe!"*
>
> - RSAP Survey Respondent

Figure 4 shows the total number of crashes for each Emphasis Area, excluding those categorized as unknown, represented by a striped green bar. Additionally, the solid green bar indicates the proportion of crashes that resulted in a fatal, serious, or minor injury crash for each Emphasis Area. Intersections comprise the most numerous type of crash, with 3,054 total crashes (Figure 4). While a relatively low percentage of Intersection crashes result in a fatal, serious, or minor injury (13%), the overall magnitude of involvement warrants that this Emphasis Area be a priority. Meanwhile, Vulnerable Motorized, and Vulnerable Non-Motorized Users experience the highest proportion of crashes that resulted in a fatal, serious, or minor injury (44% and 63%). Prioritizing improvements for these Emphasis Areas helps to address the users that are most likely to be killed, or seriously injured in a crash while on their way to the store, or on their way home to a loved one.

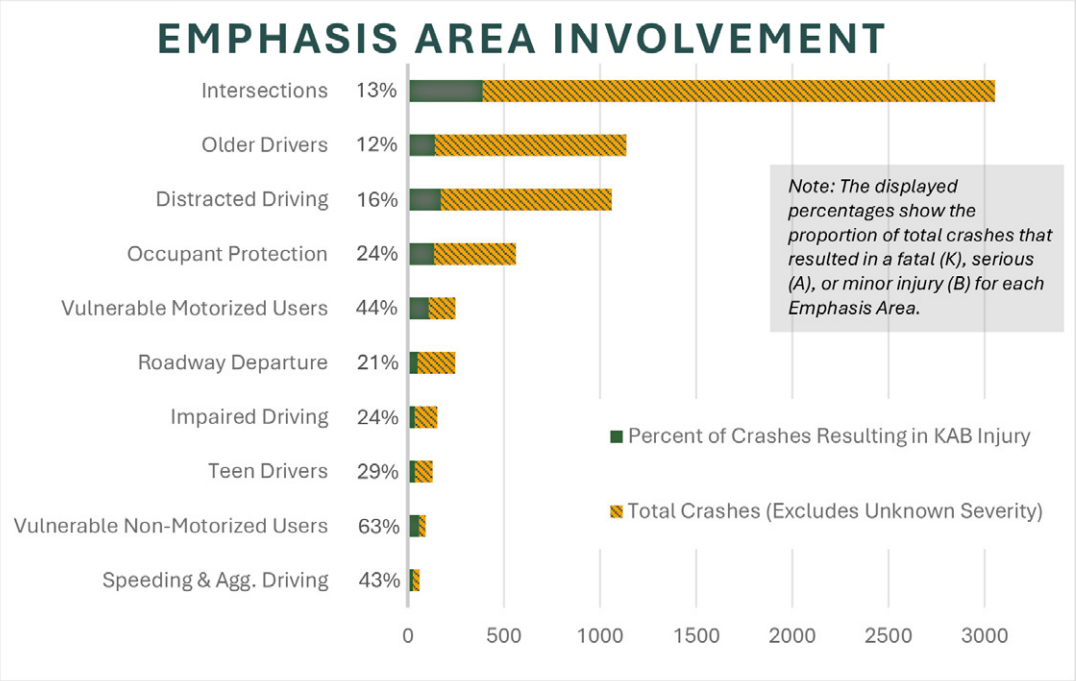


Figure 4

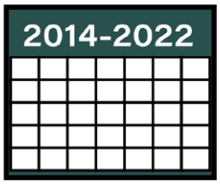
EMPHASIS AREAS

Getting to zero will require multifaceted approaches to address crashes. The following sections explore significant findings and trends associated with the 10 Emphasis Area crashes in the City of Keene.

Appendix B provides detailed maps of crash locations for the Emphasis Areas.

INTERSECTIONS

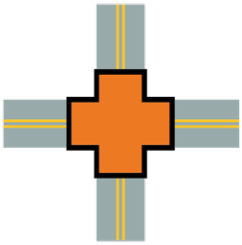
EA Definition: The junction of two or more roadways.



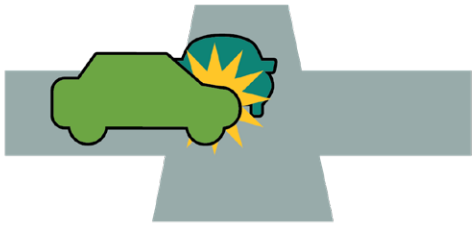
3,054 crashes occurred at intersections between 2014 and 2022.

309 crashes resulted in a fatal, serious, or minor injury.

69% of all fatal, serious, and minor injury crashes involved an intersection.



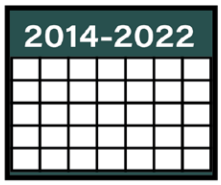
13% of all intersection-related crashes resulted in a fatality, serious, or minor injury.



72% of intersection-related crashes occurred with another motor vehicle.

VRU—MOTORIZED

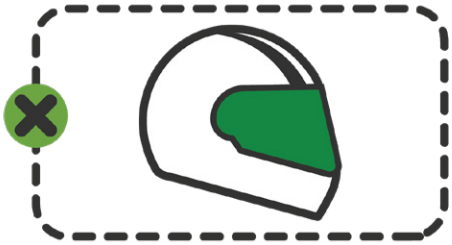
EA Definition: Crashes involving motorcyclists or other motorized vulnerable roadway users (i.e., scooters or Off-Highway Recreational Vehicles [OHRVs]).



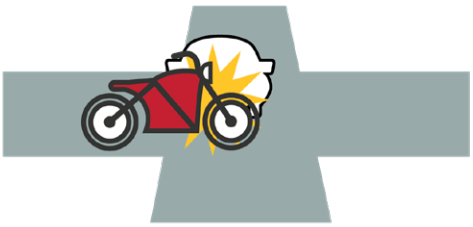
248 crashes involved vulnerable motorized users between 2014 and 2022.

109 or 44% of motorized vulnerable roadway user-related crashes resulted in a fatality, serious, or minor injury.

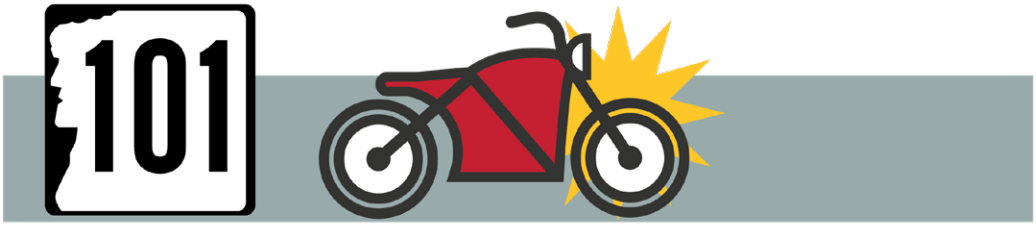
19% of all fatal, serious, or minor injury crashes in Keene involved a motorized vulnerable roadway user.



Of the 109 crashes resulting in a fatal, serious, or minor injury, **46%** involved an operator who was not wearing a helmet.



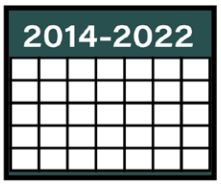
80% of Vulnerable Motorized User crashes occurred at an intersection.



The section of Route 101, from the southeastern entrance into Keene to Winchester Street, accounted for 17 out of the 109 crashes involving vulnerable motorized users. Additionally, there were another 7 crashes on Route 9/Route 10 between Winchester Street and the Westmoreland town line.

VRU—NON-MOTORIZED

EA Definition: Crashes involving pedestrians, wheelchair users, bicyclists, and e-bikes.



93 crashes involved a non-motorized vulnerable roadway user between 2014 and 2022.

59 crashes resulted in a fatal, serious, or minor injury.

11% of all fatal, serious, or minor injury crashes involved a non-motorized vulnerable roadway user.

63% of non-motorized vulnerable roadway user-related crashes resulted in a fatality, serious, or minor injury.

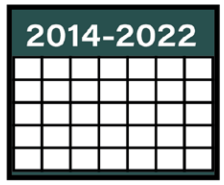
83% of the fatal, serious, and minor injury non-motorized vulnerable roadway-related crashes occurred in an intersection.

24% of non-motorized vulnerable roadway-related crashes involved distracted driving.

44% of non-motorized vulnerable roadway-related crashes occurred in dark lighting conditions

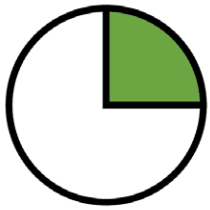
OLDER DRIVERS

EA Definition: Crashes involving drivers age 65 and older.



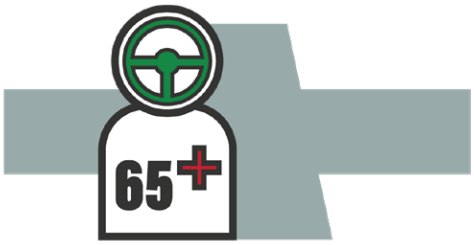
1,137 crashes involved older drivers (65+) between 2014 and 2022.

141 crashes resulted in a fatal, serious, or minor injury.



25% of all fatal, serious, or minor injury crashes involved an older driver.

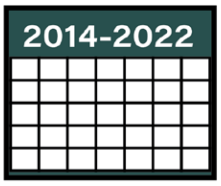
12% of older driver-related crashes resulted in a fatality, serious, or minor injury.



69% of older driver involved crashes occurred at an intersection.

OCCUPANT PROTECTION

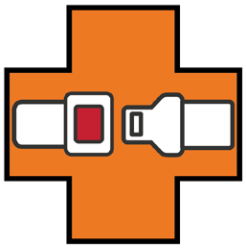
EA Definition: Vehicle occupant protection is the proper use of seat belts, child safety restraints, and other vehicle safety features that help to avoid or reduce the severity of injuries that might result from a crash.



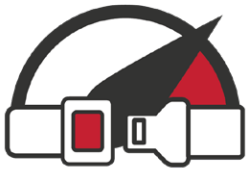
562 crashes involved improper occupant protection between 2014 and 2022.

137 crashes resulted in a fatal, serious, or minor injury.

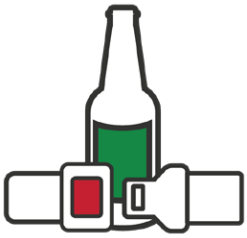
24% of all fatal, serious, or minor injury crashes involved improper occupant protection.



24%* of crashes involving improper occupant protection resulted in a fatality, serious, or minor injury.



35% of speeding crashes also involved improper occupant protection.

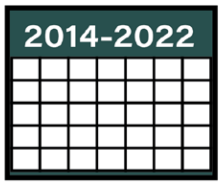


28% of impaired driving crashes also involved improper occupant protection.

*New Hampshire does not require a seatbelt to be worn by anyone age 18 or older.

SPEED AND AGGRESSIVE DRIVING

EA Definition: Speeding is driving above speed reasonable and proper for the roadway conditions.

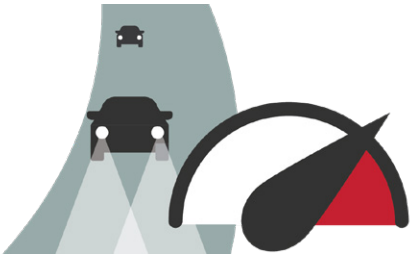


61 crashes involved a driver speeding between 2014 and 2022.

26 crashes resulted in a fatal, serious, or minor injury.

5% of all fatal, serious, or minor injury crashes involved speed or aggressive driving.

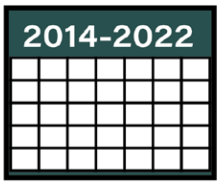
43% of speeding-related crashes resulted in a fatality, serious, or minor injury.



41% of all crashes and **46%** of fatal, serious, and minor injury crashes occurred on a curve.

DISTRACTED DRIVING

EA Definition: Any non-driving activity that a person engages in while driving that causes inattentiveness or distracts them from the primary task of driving. Four main types of distraction are visual, manual, cognitive, and drowsiness.



1,061 crashes involved distracted driving between 2014 and 2022.

172 crashes resulted in a fatal, serious, or minor injury.

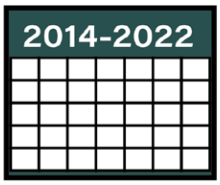
31% of all fatal, serious, and minor injury crashes involved distracted driving.

16% of distracted driving crashes resulted in a fatality, serious injury, or minor injury.

24% of distracted driving crashes involved improper occupant protection.

ROADWAY DEPARTURE

EA Definition: Crashes involving drivers drifting out of their lanes into opposing traffic or off the roadway.



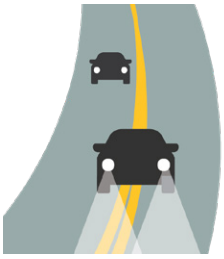
247 crashes involved roadway departure between 2014 and 2022.

51 crashes resulted in a fatal, serious, or minor injury.

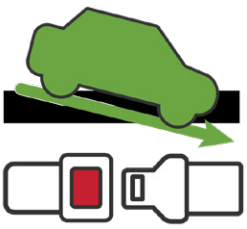
9% of all fatal, serious, and minor injury crashes involved roadway departure.

21% of roadway departure crashes resulted in a fatality, serious, or minor injury.

86% of roadway departure crashes involved a vehicle striking a fixed object.



53% of fatal, serious, and minor injury roadway departure crashes occurred on a curve.



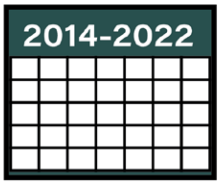
27% of roadway departure crashes involved improper occupant protection.

35% of roadway departure crashes involved distracted driving.

29% of fatal, serious, and minor injury roadway departure crashes occurred in inclement road conditions.

IMPAIRED DRIVING

EA Definition: Driving under the influence of alcohol and/or drugs.



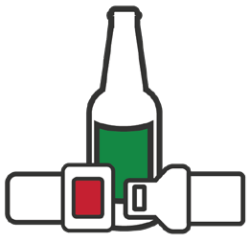
153 crashes involved impaired driving between 2014 and 2022.

36 crashes resulted in a fatal, serious, or minor injury.

6% of all fatal, serious, and minor injury crashes involved impaired driving.

24% of impaired driving crashes resulted in a fatality, serious, or minor injury.

28% of fatal, serious, or minor injury impaired driving crashes involved a roadway departure.

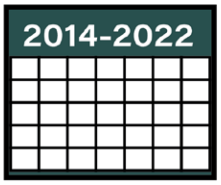


28% of fatal, serious, or minor injury impaired driving crashes involved improper occupant protection.

49% of impaired driving crashes involve a motor vehicle striking a fixed object. By comparison, for crashes not involving an impaired driver, only 9% of crashes involved a vehicle striking a fixed object.

TEEN DRIVERS

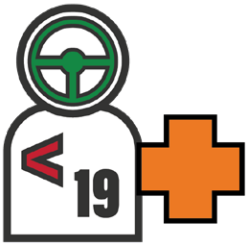
EA Definition: Crashes involving drivers 18 and under.



129 crashes involved a teen driver between 2014 and 2022.

37 crashes resulted in a fatal, serious, or minor injury.

6% of all fatal, serious, or minor injury crashes involved a teen driver.



29% of teen driver crashes resulted in a fatality, serious, or minor injury.

14% of teen driver crashes involved improper occupant protection.

38% percent of teen driver crashes involved distracted driving.

WHERE ARE THE CRASHES HAPPENING IN KEENE

The Roadway Safety Action planning process included the development of a spatial analysis of the crash data on the road network within the City limits, on all roads regardless of ownership, to identify crash trends and "hot spots." The spatial analysis identified roadways and intersections with higher crash trends over time as well as where Emphasis Area-specific crashes have occurred. The recommendations in the Keene Roadway Safety Action Plan are prioritized to address the areas with higher-than-average crash rates.

HIGH INJURY NETWORK

The High Injury Network (HIN) shows a subset of roads within Keene where there is a high percentage of fatal, serious injury crashes, and minor injury crashes have occurred. Crashes are mapped to a roadway segment, and each crash severity is multiplied by New Hampshire crash cost values—with fatal and serious injury crashes having a higher crash cost than minor injury crashes. HIN segments are normalized by dividing the crash cost by the segment length. Segments are then ranked from 1 to 15 based on the highest to lowest crash cost score. These number rankings are shown in Figure 5 as labels alongside each high-ranking HIN corridor segment. Identifying the HIN helps to prioritize where safety improvements can provide the greatest impact. The HIN accounts for roughly 5% of roads in Keene, and 43% of all fatal, serious, or minor injury crashes.

The HIN, as shown in Figure 5, is concentrated in the downtown area of Keene. The top six segments are all on Winchester Street, West Street, Main Street, or Washington Street. Across these 6 segments there were 134 fatal, serious, or minor injury crashes during the 2014-2022 period. On West Street, 14 of the 51 crashes (27%) involved an older driver, 14 (27%) involved improper occupant protection, and 8 (16%) involved a vulnerable non-motorized user.

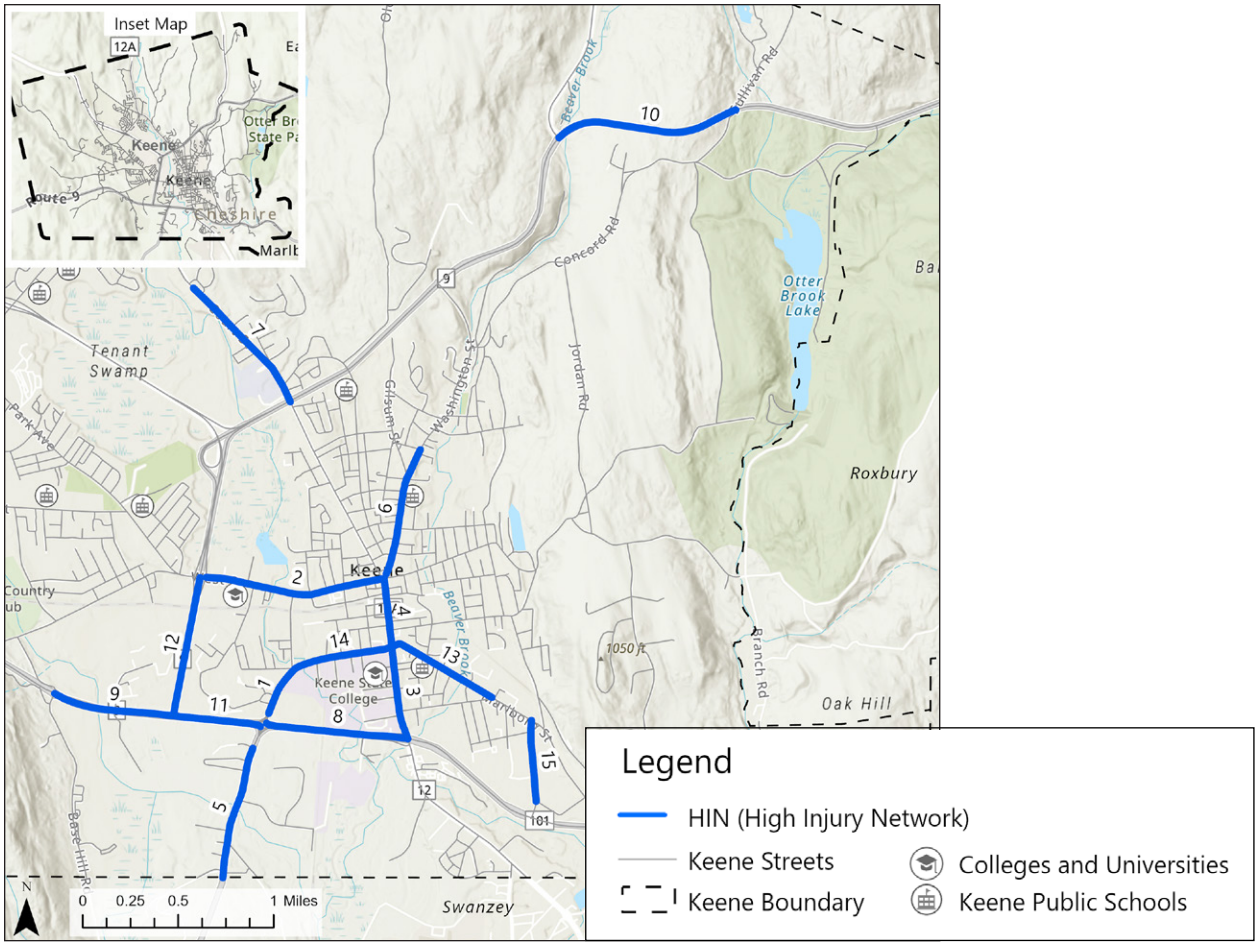


Figure 5

HEAT MAP

Figure 6 shows the "hot spots" for fatal, serious, and minor injury crashes in Keene, overlaid on Transportation Disadvantaged census tracts. The heat map assigns a weight to each crash severity based on New Hampshire crash costs, similar to the HIN analysis. While the HIN analyzes crashes on a road segment level, this analysis helps to visualize locations and intersections that may not have qualified as a HIN segment, but still have a high concentration of fatal, serious, or minor injury crashes.

The downtown core of Keene is the 'hottest' area, which can be seen in Figure 6. A noteworthy finding of the analysis is that the heat map shows overlap between the 'hot' area and the USDOT Transportation Disadvantaged census tract where there may be a higher proportion of people that may have greater transportation challenges or may require additional transportation investment due to local living circumstances. More discussion about USDOT Transportation Disadvantaged census tracts follows in the next section. Based on this analysis, a large share of the plan's Countermeasure recommendations apply to the downtown area.

Also of note are the southeastern and southwestern areas on Route 101 and Route 9 respectively. These locations are not part of the top 15 HIN corridors, but are shown in Figure 6 as having concentrations of fatal, serious, or minor injury crashes possibly because traffic speeds are higher in these areas. Ongoing analysis of these locations in future years will determine whether these hotspots persist.

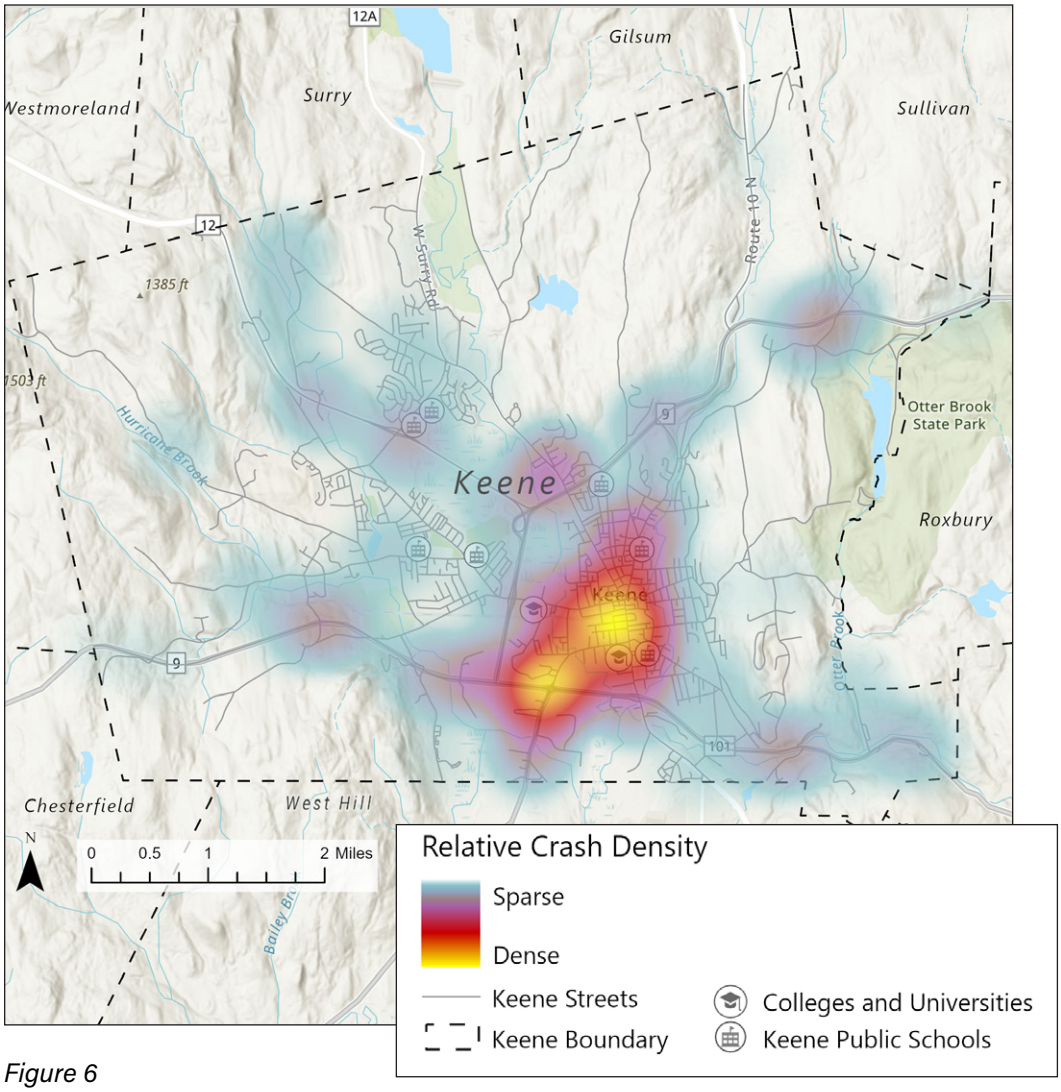


Figure 6

WHO IS DISPROPORTIONATELY IMPACTED BY CRASHES

The USDOT identifies census tracts that face a cumulative burden as a result of underinvestment in transportation, across five measures: Transportation Insecurity, Climate and Disaster Risk Burden Environmental Burden, Health Vulnerability, and Social Vulnerability. USDOT considers a census tract to be disadvantaged if the overall index score for a tract is in the 65th percentile (or higher) when compared to tracts in the state. Data from the USDOT Equitable Transportation Community (ETC) explorer were analyzed to identify tracts that were considered Transportation Disadvantaged on a statewide level.

As shown in Figure 7, 5 of the 15 HIN corridors are roads that border census tracts identified by USDOT as Transportation Disadvantaged Census Tracts, when compared to all census tracts in New Hampshire. During the 2014-2022 period, 53 KAB crashes occurred on these five corridors – zero involved a fatality, 9 resulted in a serious injury, and 44 resulted in a minor injury. These analyses help identify locations that crash data identify as a priority for safety improvements, while also showing disadvantage across several social, economic, and health measures.

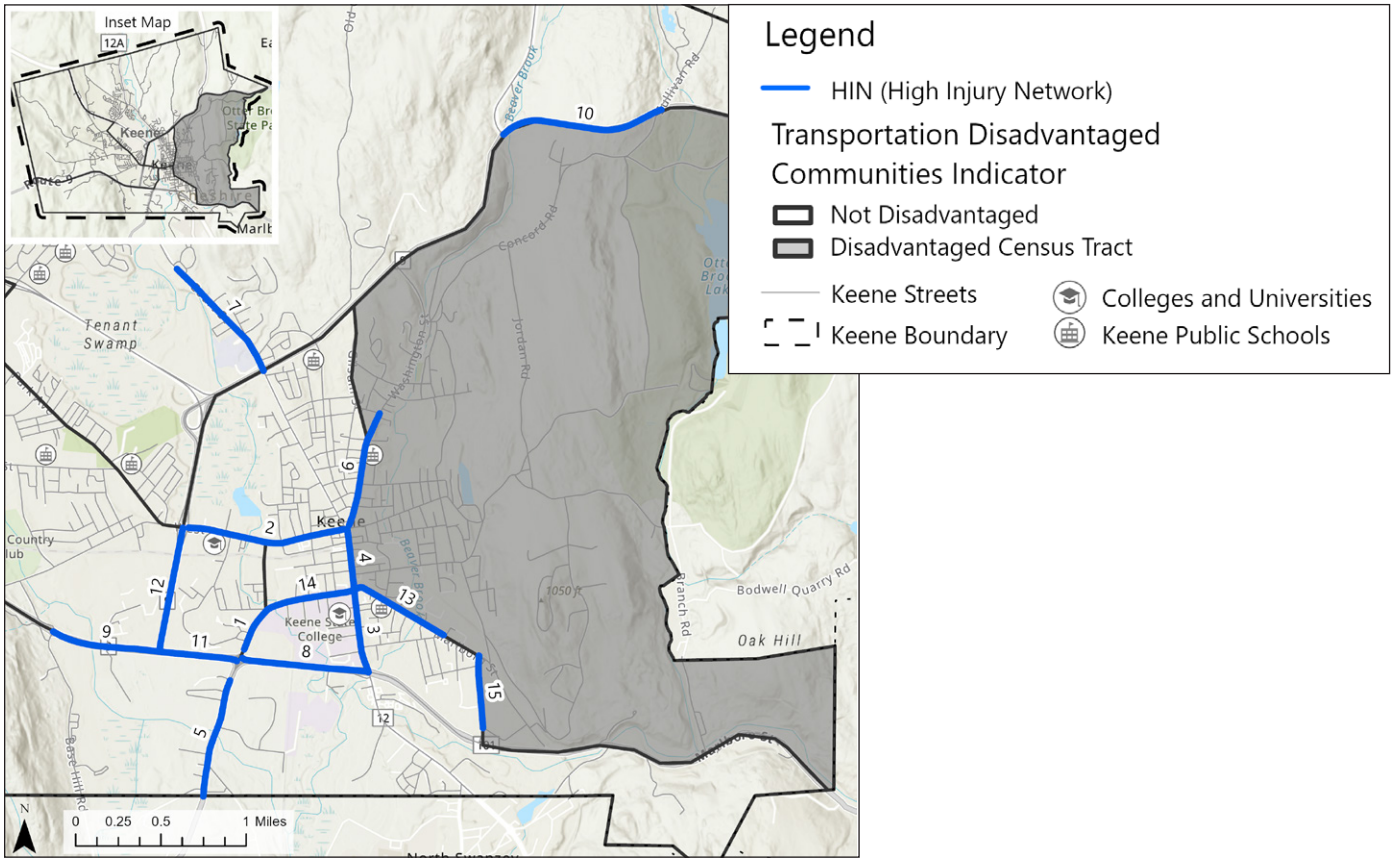


Figure 7

Census tract level data from the US Census Bureau were also analyzed to identify communities that were overrepresented in the following: poverty rate, age 65 and older rate, zero vehicle ownership household rate, disability rate, and black, indigenous and people of color (BIPOC) rate. This analysis identified overlapping trends of census tracts with low motor-vehicle ownership, and high incidence of fatal, serious, and minor injury crashes involving Vulnerable Non-Motorized Users.

Figure 8 shows census tracts where the rate of zero-vehicle households is higher than the City average. Stated another way, the dark gray indicates tracts where households are more likely to not have access to a car. When overlaid with Vulnerable Non-Motorized User crashes, it becomes clear that these crashes are occurring in areas where vehicle ownership is less common, and walking and cycling may be a person's main, or only, mode

of transportation. Keene State College students are likely a large contributing factor to the percentage of households without a motor vehicle given that both census tracts either overlap or border the campus.

Given this context, it is imperative that countermeasures address safety in the downtown area with priority to Non-Motorized Vulnerable Roadway Users. Maps provided in Appendix A show similar overlap across disability rate, poverty rate, and BIPOC rates in Keene.

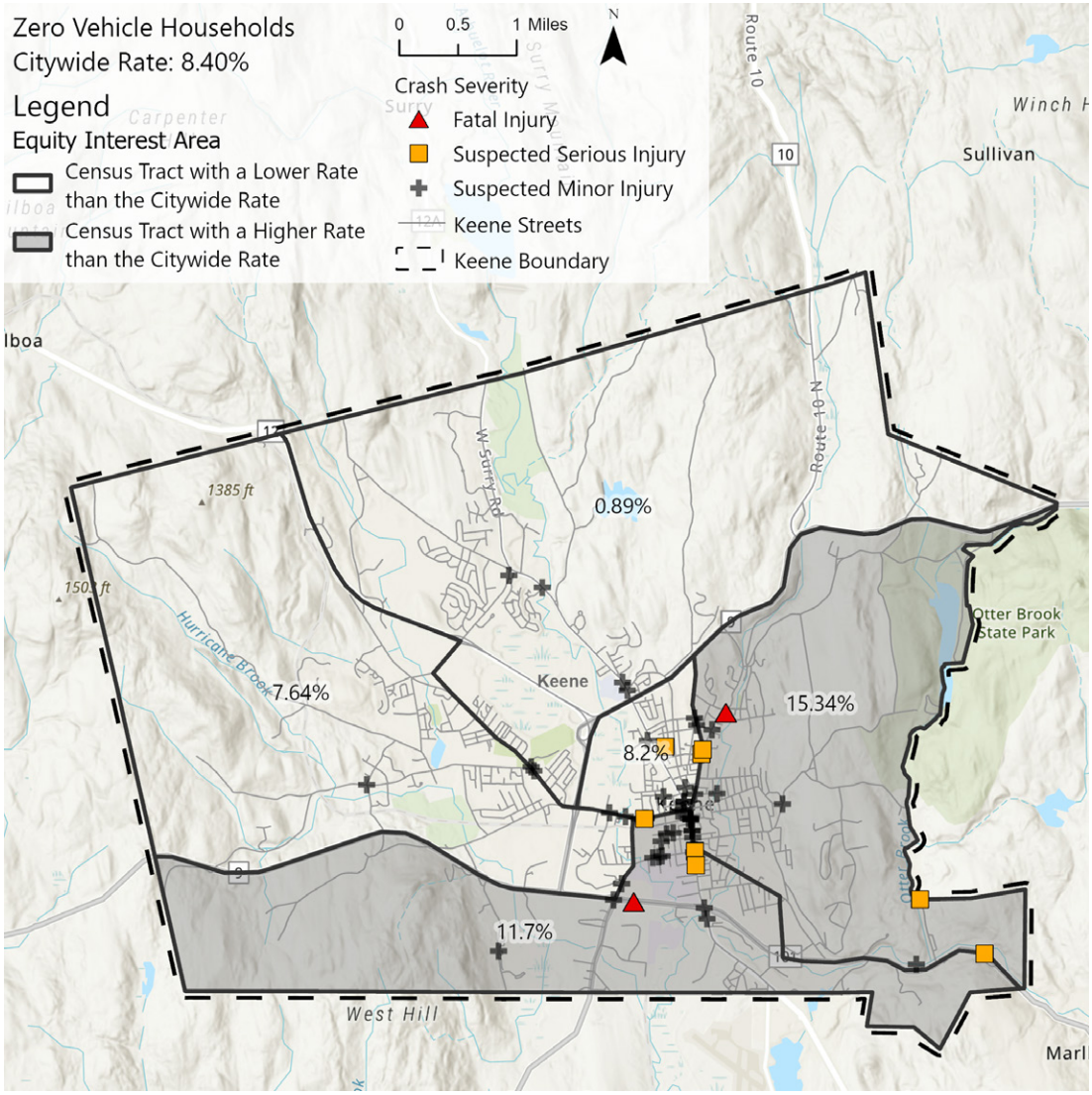


Figure 8

KEENE ENGAGEMENT

4

The Keene Roadway Safety Action Plan featured a multi-layered approach to gathering public input including the launch of a project web page, hosting an online survey and input map and hosting a series of meetings with the project Steering Committee, the Technical Advisory Committee, key stakeholders, and a pair of public meetings—one in West Keene and one within walking distance from downtown.

The collective input from these meetings were critical in helping the project team formulate a series of program and project recommendations to enhance local roadway safety. Without assistance from the general public—providing feedback at the public meetings and through the online input map—the project team would not have understood resident needs at such a fine grain. The engagement was particularly beneficial from those who have a disability, parents of young children, and from those without access to a private motor vehicle as those groups typically tend to be under-represented in public involvement processes yet have unique perspectives about roadway safety.

STAKEHOLDER MEETINGS

The City of Keene and the project team facilitated a series of meetings with stakeholders, whose input helped shape the Roadway Safety Action Plan. The meetings/interviews were kept small to allow enough time for detailed discussion and idea sharing. Stakeholder meetings included those with the Bicycle/Pedestrian Path Advisory Committee, social service agency representatives, Keene State College, Antioch University, River Valley Community College, and staff from School Administrative Unit (SAU) 29. Input from these groups led directly to recommendations such as improved crosswalks, elimination of sidewalk gaps, enhanced intersection safety, access to public transit, the need for bicycle facilities and other safety features impacting all road users.

Figure 9: Keene public meeting

Two public meetings provided the opportunity for residents to meet directly with City staff and project team, supplementing the input from the stakeholder meetings. The public meetings were held at the Blastos Community Room at Keene Ice in the evening of April 29, 2024 (see photo above) and mid-afternoon at Keene High School on April 30, 2024. Both meetings featured an introductory slide presentation and a work session over citywide maps and a downtown area inset map. Meeting participants provided feedback with post-it notes and map mark-ups, identifying areas for pedestrian access (e.g., new or maintained sidewalks), safer pedestrian crossings, and improving pedestrian visibility (e.g., lighting). Participants discussed challenges for bicyclists, noting an interest in Keene becoming a more bikeable community. Some expressed concerns related to the behavior of people driving motor vehicles such as weaving, running red lights, and many incidents of speeding. Safety concerns at schools included the identification of unsafe crossings on nearby roadways, confusing pick up/drop off circulation patterns near schools, speeding, and the need for improved walking conditions during the winter. Other safety concerns provided by the meeting participants included confusing wayfinding signs, too many vehicle travel lanes, and access management on commercial roadways.

PROJECT WEB PAGE

For the Roadway Safety Action Plan, a web page was developed and hosted on the City of Keene's web site. The page featured an overview of the Roadway Safety Action Plan, background on the funding source—USDOT's SS4A program—the project schedule, and information related to the stakeholder and committee meetings described above. To help community members understand the plan's goals, detail was provided about the Safe System Approach to transportation safety, and how the approach aligns with New Hampshire's SHSP. A gallery of roadway safety infrastructure examples ranging from separated bike lanes to various crosswalk enhancements was presented as well. Finally, the web page offered the opportunity for visitors to reach out to the City's project manager to

Figure 10: Keene webpage for the Roadway Safety Action Plan

ONLINE SURVEY

A critical engagement tool used for the Keene Roadway Safety Action Plan included an online survey. The survey featured 15 questions that asked participants to help the project team better understand residents' and visitors' experiences when walking, driving, bicycling, or using a mobility device in Keene. The survey was made available to community members on March 1, 2024, and was open until early May 2024.

Respondents were asked to provide information on their demographics, the mode of transportation they use most often, and how safe they feel with different modes of transportation. The survey also provided space for respondents to suggest potential roadway improvements. A full list of the questions and summary of the answers is available in Appendix C.

In addition to the questions, respondents had the option to add markers to an interactive map to highlight locations in the City where they feel unsafe using any mode of transportation and ideas where they would like to see safety improvements. Suggestions for potential improvements included traffic signal revisions, new or repaired sidewalks, striped bike lanes, crosswalk safety features, enhanced lighting, or other infrastructure ideas provided by respondents. A total of 528 individuals completed the online survey, with just over 1,800 markers and 743 unique comments expressing safety concerns and/or ideas for improvements, as shown in Figure 11.

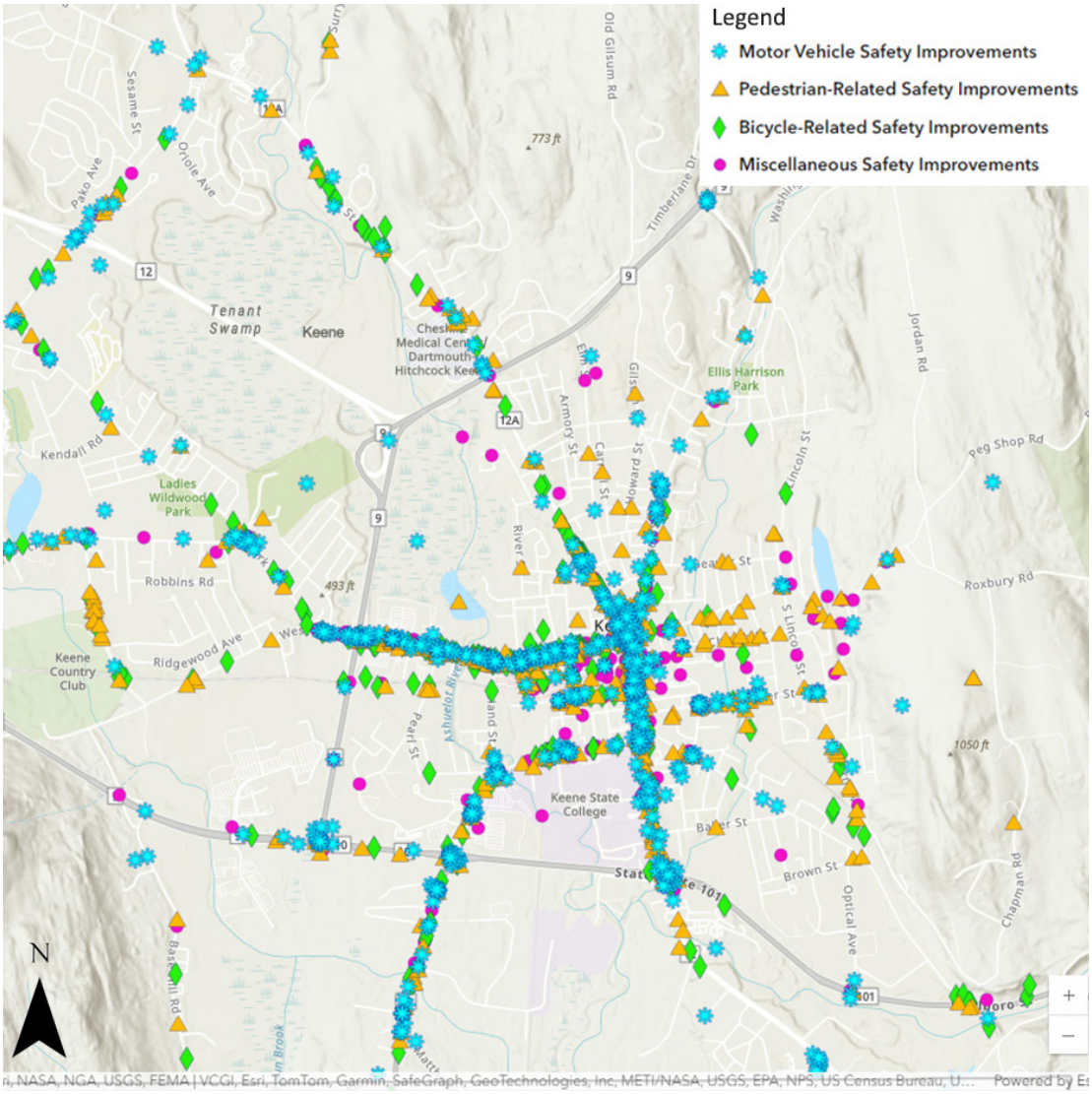


Figure 11: Map of safety improvement requests from survey

Some key takeaways from the input include:

- Of the 1,837 individual markers placed:
  - 37% related to motor vehicle safety concerns
  - 24% for pedestrian safety
  - 23% for bicycle safety
  - 17% were in the miscellaneous category (many of which focused on need for improved lighting)
- Approximately 160 markers were placed within or adjacent to Central Square itself with over 100 more along upper Main Street, expressing significant interest in safety improvements in the heart of downtown.

- Other corridors receiving many dozens of markers and comments—especially related to motor vehicle safety—included West Street, South Main Street, Winchester Street/ Route 10, lower Court Street, state highway intersections, and the Arch Street/Park Avenue intersection.
- Besides Main Street and West Street, markers and comments related to pedestrian and bicycle safety were heavily focused on Arch Street, Bradford Road, Park Avenue, Maple Avenue, Court Street, Emerald Street, Winchester Street, Washington Street, rail-trail roadway crossings, and a handful of streets on Keene's east side

SUMMARY OF INPUT

Stakeholder input was a crucial step in developing the City of Keene Roadway Safety Action Plan. Community leader and resident input corroborated the data analysis as many of the online input map markers were in sync with the roadways highlighted on the HIN, including Washington Street, Main Street, Winchester Street, and West Street. The input map markers and comments made at the various meetings also aligned with several safety hot spots and key intersections identified in the crash data.

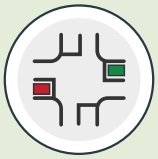
The data received from responses to both the online survey questions and the input map helped inform many of the safety-based project recommendations within the Roadway Safety Action Plan. Although many map comments were more general in nature or reflected policy recommendations (e.g., increased enforcement on Main Street), hundreds more provided input on specific roadway corridors, intersections, or crosswalk locations. This critical input highlighted the community's desire to:

- Implement traffic calming measures to slow speeds.
- Encourage safe bicycling with improvements such as bike lanes, shared use paths, and other accommodations.
- Improve lighting in key locations for pedestrian visibility, specifically around schools.
- Install new and improve existing sidewalks and sidewalk connections.
- Enhance pedestrian crossings with safety improvements such as raised medians, signage, and striping.
- Improve signage and pavement markings near roundabouts.
- Address turning concerns, such as the challenges related to making left-turns onto busy streets and discouraging right-turn-on-red movement where pedestrian traffic is prevalent.
- Install all-way stops at key locations.

5 STRATEGIES AND ACTIONS

The City's goal in developing the Roadway Safety Action Plan was to set a path for reducing roadway fatalities and serious injuries, moving towards zero by 2045. The data analysis and stakeholder input elements of the project were key phases for the plan's development, resulting in information that revealed priority safety concerns contributing to roadway crashes, overrepresented crash locations, and populations disproportionately impacted by the crashes.

As noted in Section 3 Data Analysis, the Roadway Safety Action Plan evaluated the results of the initial efforts and prioritized three primary Emphasis Areas to address in the Roadway Safety Action Plan:



Intersection safety

Vulnerable road users – non-motorized

Vulnerable road users – motorized

The City of Keene believes that implementing projects, programs, and policies that reduce these three types of crashes will significantly reduce the number of fatal, serious injury and injury crashes. And—as shown in the Data Analysis section—crash types are often interrelated; the City believes that addressing these Emphasis Areas will positively impact other types of crashes as well.

The next phase of plan development was to identify high-level approaches, or strategies, for addressing these challenges. Based on an evaluation of the data and public feedback, the following key strategies were identified:

Improve safety for non-motorized road users

Enhance lighting and signage

Reduced conflicts at intersections

Speed management

Policies, programs and education

The Potential Strategies presented in this section include activities the City of Keene along with its partners, stakeholders, and residents can implement. The strategies are based on proven safety countermeasures, policies, programs, and other approaches that reflect the Safe System principles and are applicable in contexts throughout the City. Ideally, all should be implemented but given fiscal constraints the City will need to determine the priorities internally over the long term.

Wide sidewalks on Main Street and in Central Square support outdoor dining, bike parking, and landscaping

Although far more challenging in the four-lane segments of West Street, pedestrian crossings can be difficult downtown as well

KEY STRATEGY

IMPROVE SAFETY FOR NON-MOTORIZED VULNERABLE ROAD USERS

Non-motorized, VRUs, such as pedestrians and bicyclists, are overrepresented in the most severe crashes in the City of Keene. This may be a surprise to some given the foundation of walkability and bikeability that currently exists in Keene. As a small City with a historic core, a network of interconnected streets with sidewalks on both sides enhance access to Central Square, shopping/eating throughout downtown, and to the various institutions nearby. Few cities in New England feature a full-service grocery store—the Monadnock Food Co-op—in the heart of downtown, drawing people on all modes of transportation. As one of the widest Main Streets in the US, Keene's Main Street features generous sidewalks that host outdoor café tables, wide-canopy street trees, and other features to promote social interaction. Cutting through the center of Main Street, the Cheshire Rail Trail (CRT) provides additional options for residents and visitors to travel throughout the city core without an automobile.

The thousands of Keene State College students and staff create foot traffic downtown and along Emerald Street and Winchester Street. Additional foot traffic is generated by those living in group homes, shelters, and apartment buildings near downtown. The high levels of pedestrian activity helps businesses and builds additional vibrancy downtown. The CRT and the perpendicular Ashuelot Rail Trail bring additional non-motorized traffic, especially many bicyclists, into downtown as well. These two trails are the spines of a trail network that extends dozens of miles throughout the city and into neighboring communities. It is along the roadway spines; however, that challenges for pedestrians and bicyclists can be most acute. Despite the availability of sidewalks, crossing Keene's collector and arterial roadways can be a challenge, at both signalized and unsignalized intersections. The foundation for much of the commentary made throughout the planning process involved the challenges of crossing West Street, lower Main Street, Court Street, Winchester, and many other streets whether on foot or by bicycle.

Much of the stakeholder input focused on improving pedestrian safety, specifically on enhanced crossings and additional space for VRUs. Data showed that non-motorized VRU crashes were concentrated in downtown Keene, predominately on the HIN corridors of West Street, Washington Street, and Main Street.

POTENTIAL STRATEGIES

Improve safety at intersections and mid-block crossings

There are many pedestrian crossing points through the City of Keene, specifically corridors like Main Street where there are 15 pedestrian crossing points from Court St/Washington St to the Marlboro/Winchester roundabout. Many of the roads with active pedestrian activity also have two traffic lanes in each direction. Challenges like center median left turn lanes and high traffic volumes contribute to pedestrian safety and accessibility challenges. Evaluating intersections to ensure they are safe for pedestrian use can include measures such as pedestrian signals, adequate crossing times, and clear visibility. More frequent mid-block crossings on busy roadways such as West Street or Washington Street may need to be considered as well.

Create additional and dedicated space for vulnerable roadway users

Clear and distinct separation of transportation modes reduces conflict points and is a key component of the Safe System Approach. Sidewalks and bicycle lanes, for instance, create separation with roadways for vulnerable users. Other roadway characteristics like traffic volumes, speeds, multiple-lane merges, and on-street parking contribute to crash severities and the feeling of safety.

Prioritize vulnerable roadway user facility maintenance

Sidewalks that are present and properly maintained can significantly reduce the risk of pedestrian crashes, especially in communities with a higher percentage of zero-vehicle households. This also addresses equity concerns by providing safe travel for all users. The City of Keene can prioritize and schedule maintenance for the existing pedestrian and bicycle facilities. Other actions would include securing the necessary equipment to perform the maintenance.

Transit stop placement

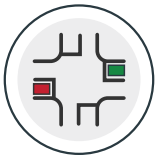
Transit stops should be positioned in locations that are safe and accessible for all users, including the elderly, children, and those with disabilities. This includes considerations for adequate lighting, clear signage, and easy access to crosswalks and pedestrian pathways. Currently, most transit stops in Keene do not have dedicated space for the bus to pull over and some occur on private property. More pull-outs like the one in front of the Keene Public Library, along with enhanced signage, would lead to a more efficient system and encourage more transit use.

EMPHASIS AREAS ADDRESSED

Older drivers

Younger drivers

VRU - non-motorized



Intersections

Flashing solar-powered all way stop sign to alert motorist of the upcoming intersection.

LED street lighting to enhance nightime visibility for pedestrains and motorist.

KEY STRATEGY

ENHANCED LIGHTING AND SIGNING

Innovative technologies, such as flashing stop signs and enhanced street lighting, can improve visibility and increase alertness among drivers. Lighting improves the safety for all users but is especially important for those traveling outside of vehicle—44% of non-motorized vulnerable roadway-related crashes in the City of Keene occurred in dark lighting conditions. Lighting was a key topic for stakeholders who focused on improved conditions near schools, where younger drivers and younger pedestrians are often present. Based on comments from the community, a handful of enhanced lighting projects are recommended for pedestrian access and safety along Main Street/Central Square, Church Street, Maple Avenue, Marlborough Street, Winchester Street, and Water Street. Lighting improvements specifically for motor vehicle visibility is recommended on sections of NH Route 9 and NH Route 101 as well. Older driver crashes have historically occurred on either NH Route 101, Franklin Pierce Highway, or NH Route 12, roadways that are generally more rural in nature. Signage, specifically larger font signage, has been shown to improve older driver awareness and could prove effective for enhancing driver awareness.

POTENTIAL STRATEGIES

Enhanced Street Lighting

Per stakeholder and community input, a number of roadways in Keene are in need of enhanced lighting. This would include the future installation of new street lights, replacement bulbs using brighter where appropriate (and longer lasting) LEDs, and/or strategic relocation of lighting where it is needed most: at intersections and crosswalks. In some cases, street lighting exists but spacing between lights in Keene tends to be 250 feet or more, whereas 100-200 feet is ideal depending on context, surrounding land use, height of the light poles, and the type of fixture used.

Improved wayfinding

Navigating the built environment using any mode of transportation is enhanced with wayfinding signage in an urban/suburban context such as Keene. For pedestrians, bicyclists, and drivers, clear and strategically placed signs can guide individuals to key destinations such as downtown, civic buildings, schools, transit stops, and parks. They help to reduce confusion and enhance the overall accessibility of the City for both residents and visitors. Wayfinding signs often include maps, orientation directions, and distance markers that help people make informed decisions about their routes, promoting walkability. For motor vehicle drivers, wayfinding signage provides vital information about traffic directions, road names, and points of interest. This helps to mitigate traffic congestion and crashes, especially at complex intersections, roundabouts, and highway on/off ramps, leading to smoother traffic flow and reduced travel times.

EMPHASIS AREAS ADDRESSED

KEY STRATEGY

REDUCED CONFLICTS AT INTERSECTIONS

Conflicts are most prevalent at intersections with multiple travel lanes and/or with turn lanes. The City of Keene could create projects that clearly delineate spaces for different road users at intersections. Movement of different road users through the intersection can be controlled in time as well. That would involve delineation of left-turn lanes and exclusive turn signals (rather than permissive) at some intersections. It could also mean establishment of more exclusive pedestrian crossing phases at busy intersections with heavy demand for turns. The West Street/Island Street junction is a good example of a signalized intersection that requires drivers to yield to oncoming traffic before turning left. Exclusive left turn phases would mitigate conflicts and improve safety. Additionally, installation of pedestrian countdown timers—along with an exclusive pedestrian (and bicycle) crossing phase—will enhance access and safety for vulnerable road users.

Additional strategies to reduce conflicts are also possible, including the development of more roundabouts in the City, incorporation of more "right-in/right-out" intersections with side streets along busy roads, and additional No Right Turn on Red restrictions.

POTENTIAL STRATEGIES

Roundabouts

Currently, seven modern roundabouts reside in the City of Keene. This does not include the traffic circle at the head of Main Street in Central Square. All seven roundabouts were built in the last 20 years, including the two on Winchester Street which were completed in early 2024. Although crashes still occur at these locations, the slower speeds required to pass through them lead to fewer serious crashes that involve an injury or fatality. Per FHWA's Crash Reduction Factors Manual and the FHWA's Office of Safety Proven Safety Countermeasures brochure, roundabouts can reduce fatal and injury crashes by 82% at two-way Stop-controlled intersections, and 78% at signalized intersections. Other benefits of roundabouts include reduced delay for motorists and pedestrians, aesthetic enhancements due to the rebuilt streetscape, along with reduced emissions. The Roadway Safety Action Plan recommends that the City of Keene continue to plan for more roundabouts at both signalized and unsignalized intersections, including:

- Route 101 with Swanzey Factory Road (NHDOT intersection, already programmed into the TIP)
- Route 10/Winchester Street intersections at Krif Road (part of NHDOT-funded project #40666)
- Route 101/Main Street (NHDOT intersection)
- Route 12/Route 32 (NHDOT intersection)
- Route 12/Wyman Road (NHDOT intersection)
- Route 9/Ash Brook Road/Production Avenue
- Route 9/101 and Route 10/12 (near Home Depot)
- Route 9/Route 10 (NHDOT intersection)
- Route 9/Washington Street (NHDOT intersection)
- Summit Road/Maple Avenue
- West Street/Gilbo Avenue
- West Street/West Street Shopping Center
- West Street/Route 9 ramps (NHDOT intersections)

More right-in/right-out only side streets

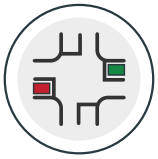
The presence of the seven roundabouts—with more being planned by the City of Keene and/or NHDOT—opens up the opportunity to restrict left turns from side streets and driveways onto busy roadways, especially those with commercial land uses. Eliminating these left turns bring significant safety benefits for drivers. Requiring "right-in/right-out" intersections is more feasible when drivers have the opportunity to reverse direction at a near-by roundabout. Future implementation of the ten roundabout conversions above will open up additional opportunity to incorporate more "right-in/right-out" intersections where feasible.

Restrict right turns on red

In commercial districts and neighborhoods with significant pedestrian traffic, permitting motorists to take right turns at red lights can create safety hazards for pedestrians and bicyclists. Although legally required to come to a full stop before turning, many motorists only look for motor vehicle traffic coming from their left prior to turning. Restricting right turns on red (through prominent signage and perhaps a promotional campaign) downtown, near Keene State College and along West Street would create a disincentive for drivers to roll through red lights when turning right and disregarding pedestrians in the crosswalk.

EMPHASIS AREAS ADDRESSED

VRU - non-motorized



Intersections

KEY STRATEGY

SPEED MANAGEMENT

Establishing safe speeds is one of key elements of the Safe System Approach—reductions in speed have been proven to have more positive impacts on the survivability of a crash. In the City of Keene, speed has historically contributed to a small proportion of the crashes yet results in more fatalities, serious, and minor injuries than many other safety concerns. Speed-related crash locations, as shown in the Appendix B maps, occur throughout the City of Keene—and more may be occurring than are currently recorded. Crash reports capture crashes where speeding, or traveling above the posted speed limit, occur. However, a vehicle may be traveling the speed limit but the speed is not appropriate for the context, such as an area with high pedestrian activity. Keene's Complete Streets Design Guidelines include a category of Streets called "Slow Streets" specifically for the downtown area to address this issue. For this reason, the Roadway Safety Action Plan focuses on strategies that encourage slower speeds through design elements and implementing countermeasures that are appropriate to the roadway use and users. Speed is one of the most significant contributors to the outcome of a crash and safer speeds will positively impact all roadway users.

POTENTIAL STRATEGIES

Manage speeds through design

There are many roads in the City with design elements that encourage drivers to travel at unsafe speeds. Motorists on four lane roads have been reported to switch lanes to pass slower vehicles or avoid turning traffic. Although currently planned to remain a four-lane roadway, West Street for example could be converted from four lanes to three between the Route 9/10/12 ramps and School Street as part of NHDOT's future project. These types of projects remove the option to pass slower moving vehicles and reduce speeds.

Implement traffic calming measures

Traffic calming measures, or physical changes to the roadway, are more overt strategies to slowing traffic, such as speed tables and horizontal deflection (e.g., chicanes). Such measures are often successful on residential streets, near schools, and other areas with high-non-motorized roadway user activities. These are also effective increasing visibility of pedestrians.

EMPHASIS AREAS ADDRESSED

VRU - non-motorized

Speeding and Aggressive Driving

PLANS, POLICIES, PROGRAMS, EDUCATION, AND MULTIJURISDICTIONAL COORDINATION

KEY STRATEGY

Implementing a Safe System Approach and making significant strides towards zero roadway fatalities and serious injuries will also require non-infrastructure efforts. Two of the key principles in the Safe System Approach emphasize this idea: redundancy is crucial, and safety is a shared responsibility. Plans, policies, programs, and education are the responsibility of many City agencies and leaders and community members. Changing informal and formal processes to include safety considerations will impact how the City of Keene makes decisions now and, in the future, contributing to a shared culture of safety.

POTENTIAL STRATEGIES

Plans

Comprehensive Master Plan (Vision Keene 20-Forward)

The Comprehensive Master Plan includes components that align with the FHWA Safe System Approach. One component is **Connected Mobility**, which aims to enhance regional and local connectivity through transportation and recreation networks. Actions within this component include promoting walkable and bikeable communities, expanding and integrating regional trail systems, and exploring alternative transportation modes. Another component is **Vibrant Neighborhoods**, which aims to cultivate dynamic neighborhoods that reflect their unique identity. Efforts here include developing infrastructure that supports residents at all life stages, enhancing community amenities, and improving social infrastructure.

To better align with the FHWA Safe System Approach, we recommend more explicitly integrating safety goals into each strategic pillar, particularly within Connected Mobility and Vibrant Neighborhoods. This could involve specific measures to reduce traffic fatalities and serious injuries. A detailed safety analysis using state and local crash data to identify high-risk areas and prioritize interventions is also recommended. This aligns with the Safe System Approach's emphasis on data-driven decision-making. Increasing community engagement around safety issues is important. Workshops or surveys can help identify safety concerns and gather input on proposed measures. Systemic safety improvements, such as traffic calming measures, enhanced pedestrian crossings, and protected bike lanes, should be part of a comprehensive strategy to create a safer transportation network. Ensuring that safety improvements are equitably distributed, particularly in underserved neighborhoods with higher rates of traffic incidents, is essential for comprehensive safety.

Complete Streets Design Guidelines

The Complete Streets Design Guidelines emphasize designing roads for all users, including motorists, pedestrians, bicyclists, and transit users, aligning with the FHWA Safe System Approach's focus on safety for all road users. Features like curb ramps, audible signals, extended crosswalk times, and smooth and unobstructed sidewalks are highlighted to

improve accessibility and safety. The document underscores the importance of managing vehicle speeds, particularly in high pedestrian activity areas, to enhance safety. This includes designing streets to encourage slower speeds in downtown and residential areas.

Different street typologies, such as Slow Streets, Gateway Streets, Bicycle Streets, and Neighborhood Streets, are defined with specific design recommendations to balance the needs of users. The guidelines suggest incorporating elements like bike lanes, sharrows, and pedestrian-friendly crossings to create a safer environment. Additionally, they stress the importance of designing streets that support the surrounding land use and transportation context, ensuring the design meets the area's needs.

To improve these guidelines, incorporating more data-driven approaches to identify high-risk areas and prioritize safety improvements could enhance their effectiveness. This includes using crash data, traffic volumes, and speed studies to inform design decisions. While the guidelines cover various design elements, a more systemic approach to safety improvements, addressing potential issues network-wide rather than reacting to specific incidents, could be beneficial. Enhancing community engagement efforts, especially with vulnerable populations, can ensure the guidelines meet everyone's needs. Additionally, educational campaigns about the benefits and use of Complete Streets can foster community support and compliance. Establishing a robust framework for monitoring and evaluating the performance of implemented Complete Streets projects will help identify areas for further improvement and ensure that safety goals are met.

Policies

The City of Keene will identify and pursue opportunities to advance policies that address roadway safety needs in the City. One such example in recent years was the adoption of a Complete Streets resolution and a set of guidelines in 2015 that help to increase the welcomeness of the roadway network for all users. There are opportunities to develop other policies to help guide the implementation of treatments and activities to enhance safety, such as those that address speed management and those that direct maintenance activities. Some initial policies to consider include those that address installation of stop signs at uncontrolled three-way intersections, centerline pavement markings and fog lines, placement and frequency of uncontrolled crosswalks across arterial roadways, rectangular rapid flashing beacons at uncontrolled crossings, marked crosswalks at four-way stop-controlled intersections, and application of fluorescent yellow-green signs.

Programs

The City of Keene will establish programs to further the goals of this safety plan and to respond to community concerns. One example is a Rapid Response Team which is tasked to review all fatal or serious injury crashes and to identify actions to address critical concerns. Another example is a community ambassador program that establishes and maintains partnerships with community organizations and businesses to address roadway

safety. Another example is a program that focuses on identifying, pursuing, and executing demonstration activities that test the feasibility of new projects, analyses, and technologies such as beacons actuated by passive detection, pedestrian counters, high stress networks, and automated counters.

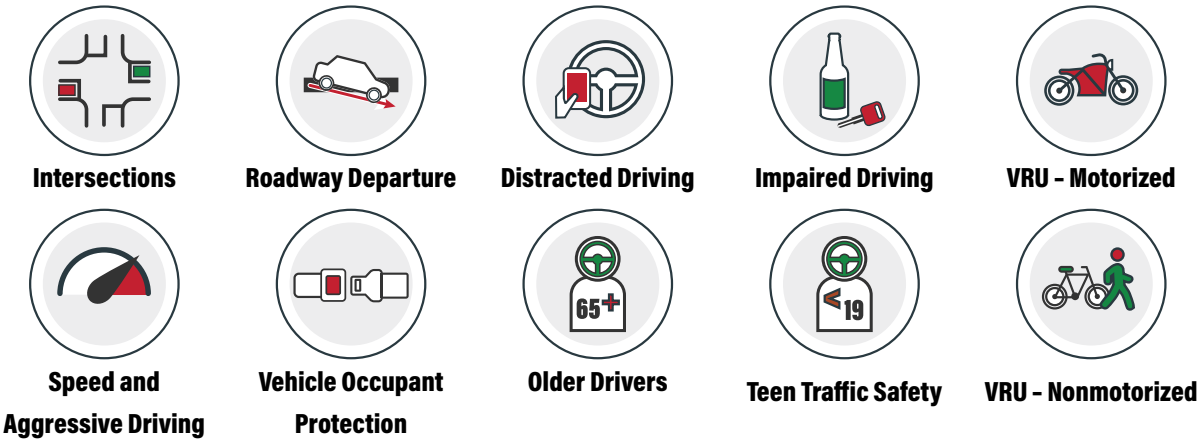
Education

The City of Keene will conduct activities that promote public awareness and build a culture of roadway safety. Such activities can help to encourage the use of seat belts and helmets, identify driver education opportunities for young and older drivers, educate users on the benefits and functionality of engineering treatments such as roundabouts, and promote awareness of bus safety and nighttime visibility. One source of funding for these activities is the New Hampshire Office of Highway Safety, which in turn is supported by federal funds for behavioral safety from the National Highway Traffic Safety Administration. Education activities can address concerns identified from data analysis and public outreach, for example, teen driver crashes and impaired driving have been concentrated on highly traveled streets in downtown, while motorized vulnerable roadway user crashes have been concentrated on Winchester Street. The City will work with partners to establish specific activities throughout the implementation of the plan.

Multijurisdictional Coordination

The City of Keene will look for opportunities to coordinate efforts stemming from this safety plan with other agencies. This includes integration of efforts from the five-year New Hampshire SHSP, the annual New Hampshire Highway Safety Improvement Program (HSIP) and Highway Safety Plan (HSP) project priorities. The City of Keene will also work with other communities within Cheshire County as well as others in the Southwest Region Planning Commission service area to look for regional opportunities for safety improvements, particularly jointly funded safety activities and safety messaging. In addition, the priorities stemming from the City's safety plan will help to inform discussions of other efforts at all these other agencies.

EMPHASIS AREAS ADDRESSED



Strategy Matrix

Potential Project Components (See Description Below)	Strategies				
	Improve VRU Safety	Lighting and Signing	Reduce Conflicts at Intersections	Speed Management	Policies, Programs, and Education
Road Diet	✓			✓	
Speed Tables, Speed Humps	✓			✓	
Traffic Control Devices	✓	✓	✓	✓	
Bump Outs	✓		✓	✓	
Enhanced Signage		✓	✓		✓
Bike Lanes	✓				
Traffic Operations		✓	✓	✓	✓
Pavement Markings					✓





Potential Project Components (See Description Below)	Strategies				
	Improve VRU Safety	Lighting and Signing	Reduce Conflicts at Intersections	Speed Management	Policies, Programs, and Education
Parking Changes	✓		✓		✓
Enhanced Lighting	✓	✓	✓		✓
Crosswalk Signage	✓	✓	✓		✓
Medians and Pedestrian Refuge Islands	✓				✓
Restricted Turning Movements	✓		✓		✓
Enhanced Crosswalks	✓		✓		✓
Roundabouts			✓	✓	✓
Horizontal Deflection				✓	✓

Description of Potential Project Components

Road Diet

Typically, the reconfiguration of a four-lane roadway to three lanes: one travel lane in each direction, left turn lanes within the center, and bike lanes on each side. Some road diets may be asymmetrical however, with two travel lanes in one direction and one travel lane in the other.

Example of an asymmetrical road diet with two lanes of travel, a separated bike lane, and parking in Somerville, MA

Speed Tables/Speed Humps

Discrete raised areas of a roadway causing a vertical deflection for motor vehicles, which strongly encourages drivers to slow down on the approach. Speed humps that are wide enough to encompass a larger area, sometimes an entire intersection and its associated crosswalks, are considered "speed tables."

Speed table/raised crosswalk on Winchester St in Keene, NH

Traffic Control Devices

This includes mechanical devices such as traffic signals and signs intended to control traffic movements (e.g., STOP signs and yield signs).

Traffic control device example from Burlington, VT

Bump outs

These are extensions of the adjacent curbing that "bump out" out into the roadway—typically at intersections—creating a visual pinch point that encourages slower motor vehicles speeds. Bump outs can be considered paved extensions of the adjacent sidewalk or contain landscape elements.

Example bump out in Great Barrington, MA

Enhanced Signage

Additional advisory and warning signs that enhance the presence of crosswalks, shared traffic lanes with bicyclists, and other elements to motor vehicle drivers.

Enhanced signage example from Lexington, MA

Bike Lanes

Designated lanes within the roadway for exclusive use by bicyclists. Typically 5'-6' wide, bike lanes may also include buffers, either striping only or with barrier elements such as raised medians or a row of parked cars.

Bike lane along Holland St in Somerville, MA

Traffic Operations

These include improvements to signal timing and phasing, clear and straightforward signage and pavement markings that can reduce the likelihood of collisions at busy intersections. Simplification of complicated traffic patterns as well as ensuring adequate acceleration, deceleration and weaving space should be considered as well.

A leading pedestrian interval signal in Cambridge, MA

Pavement Markings

Markings on a roadway using paint, an epoxy, or thermoplastic which help to define travel/turn lanes, parking areas, bicycle lanes, crosswalks, railroad crossings, stop/yield lines, and flush medians.

Roadway markings in Boston, MA

Roundabouts Typically used as a replacement to traffic signals at four-way intersections, roundabouts can improve traffic flow, reduce maintenance costs, and reduce serious injury crashes by slower traffic speeds. While pedestrians and bicyclists can be easily accommodated in single-lane roundabouts, two lane roundabouts require careful design consideration to promote safety at crossings for vulnerable road users.

Roundabout in Keene, NH

Enhanced Lighting

This includes the replacement of existing light fixtures for brighter lighting, more frequent light fixtures along the length of the street, and/or more concentrated light at intersections or crosswalks.

Enhanced lighting example in a commercial district in Arlington, MA

Crosswalk Signage

Signs indicating the presence of a crosswalk should be located at the crosswalk itself with an advanced warning sign installed 100' to 125' prior to crosswalk for each direction of travel.

Crosswalk signage and RRFB in Medford, MA

Medians/Pedestrian Refuge Islands

While medians are continuous raised areas in the approximate center of a roadway, pedestrian refuge islands are short segments of raised median at crosswalk locations. The intent is to provide a refuge for pedestrians between each direction of motor vehicle traffic, something most critical on roadways with more than two travel lanes.

Example of a refuge island in Concord, NH

Restricted Turning Movements

Restricting left turn movements (and occasionally right turns) at intersections can improve safety for all users by removing a critical conflicting movements that can lead to crashes. Restrictions can also be used as access management strategy, such as allowing only "right-in, right-out" turns into and out of commercial sites (which can work well when nearby roundabouts allow for change of direction easily).

Right-In/Right-Out Channelization in Bedford, NH

Enhanced Crosswalks

Enhancements include restriping with more durable pavement markings, the installation of rectangular rapid flashing beacons (RRFBs), bump outs, and/or pedestrian refuge islands. Crosswalks can also be combined with speed humps as a raised crosswalk. Each option is intended to improve compliance to crosswalk yielding laws and/or to slow traffic speeds.

Example of an enhanced crosswalks in Arlington, MA

Parking Changes

Revisions to on-street parking configuration that can include changing from angled parking to parallel, restricting parking along the roadway, or conversion to loading zones.

Parking was restricted in the reconstruction of Rt 1 in Wiscasset, ME

Horizontal Deflection

These are roadway design features that require motorists to make a lateral shift in direction over a short segment of roadway. This encourages slower speeds and a greater awareness of conditions along the roadway. Deflection is created with the installation of median islands, chicanes on each side of the road, and travel lane realignment to achieve the lateral shift.

Example of horizontal deflection to calm traffic in Portland, OR

6 INFRASTRUCTURE PROJECT RECOMMENDATIONS

To assist the City of Keene in prioritizing nearly 190 roadway infrastructure project recommendations to enhance safety, the Roadway Safety Action Plan used 10 evaluation criteria. (Revised policies, programs, and education related to the use of streets, trails, and sidewalks also contributes to roadway safety and is covered in a different section of the report.) The criteria were developed in coordination with the project team, the RSPC, and the TAC. The prioritization methodology assigned a score of 1-5 for each criterion, with some criteria weighted more heavily to reflect their relative importance to meeting the City's goals for the plan.

It is important to note that the numerical scoring results are meant to inform implementation priorities and should not be interpreted as a strict sequential order for project implementation, from the highest scoring to the lowest. In some cases, high scoring projects may take several years to implement (due to cost and engineering complexity). Conversely, medium-to-low scoring projects that are less expensive can be implemented opportunistically in conjunction with previously established maintenance or repaving projects, or combined as a suite of improvements projects.

For more information on this Roadway Safety Action Plan or recommend a roadway safety improvement, please go to https://keenenh.gov/roadsafety or contact Public Works at 603-352-6550.

EVALUATION CRITERIA AND METHODOLOGY

The 10 evaluation criteria are both quantitative and qualitative. Quantitative criteria are those that can be derived from GIS-based data sources, such as the number of nearby crashes or the distance/proximity to schools and parks. Qualitative criteria are those that require some level of judgment from the project team to evaluate, such as the level of community support received, or the order-of-magnitude cost for each anticipated project. To establish hierarchy among the ten criteria, some criteria were given a weight of 2, so that their scores were twice as impactful as other criteria. Criteria weighing was also developed in coordination with the project team, the RSPC, and the TAC. The evaluation criteria along with the weighting is shown below. Qualitative criteria are shown in *italics.*

KEY ISSUE	CRITERIA	WEIGHT
CRASHES	Number of reported KAB crashes within 150 feet of the project recommendation	2
HIGH INJURY NETWORK	Recommendation sits within 150 feet of a roadway that is part of the High Injury Network	1
EMPHASIS AREAS ADDRESSED	Total number of the key "Emphasis Areas" (as defined by the crash data) addressed by the project recommendation	1
CRASH REDUCTION	Demonstrated Crash Reduction Factor (CRF) for individual recommendation	2
EQUITY	Recommendation sits in, or within 150 feet of, a Transportation Disadvantaged census track	2
KEY CITY DESTINATIONS	*Recommendation sits within ¼ mile of a K-12 school, senior living facility, health care facility, park, recreation center, subsidized housing developments, or community resource center.*	*2*
COST/BENEFIT CONSIDERATIONS		
COMMUNITY SUPPORT	*Project Need as expressed through the number of comments or project requests made by the public, stakeholders, and/or committee members during the Roadway Safety Action Plan process*	*2*
PROJECT COST	*Order-of-magnitude cost based on project type, length/scale, and technical difficulties*	*1*
EASE OF IMPLEMENTATION	*Qualitative assessment of the political will and fundraising opportunities available for implementation*	*1*
	Qualitative assessment of the City staff capacity available for implementation	*1*

Each of the criteria above features a scoring rubric to help the project team establish scoring for the nearly 190 project recommendations. Cumulative scores helped to inform the selection of 25 high priority projects shown below. The diverse group of recommendations enhance safety for motor vehicle drivers, pedestrians, bicyclists, and micromobility users (e.g., e-scooters).

HIGHEST PRIORITY INFRASTRUCTURE PROJECT RECOMMENDATIONS

The table and map (Figure 12) include the 25 highest priority project recommendations to improve roadway safety in Keene. **Presented in alphabetical order (by primary street name)**, the table includes the project category, the City District and primary/secondary streets it lies upon, whether on a state or local road, and miscellaneous notes. Projects that have been recently completed, are currently in design, or are already funded through the City's capital budget or NHDOT are not included (refer to the section immediately following Figure 12). This includes a number of needed safety improvements identified on segments of Main Street and Central Square that are part of the Downtown Infrastructure Project and those along West Street that are part of a NHDOT-funded project #43543 that will include a major redesign of the roadway between School Street and the Rt. 9/10/12 ramps.

25 Highest Priority Project Recommendations

#	TRANSPORTATION MODE	CATEGORY	CITY DISTRICT	PRIMARY AND SECONDARY STREET	NOTES
1	Pedestrian	Crosswalk improvements	North Side	Court St at Ingalls St	Potential east bump out with RRFBs
2	Pedestrian	New sidewalk	Down-town	Gilbo Ave from West St to School St	Removes a sidewalk gap in front of the Colony Mill and the Center of Keene
3	Misc. (All Modes)	Traffic calming	Down-town	Island St from West St to Winchester	Consider speed humps in coordination with emergency services
4	Bicycle	Bicycle facility	Down-town	Main St roundabout at Winchester St	Widen adjacent sidewalks for multi-use when bike lanes are striped on Main St
5	Pedestrian	Crosswalk improvements	Down-town	Main St at Eagle Ct	Shift traffic lanes south to improve driver sight lines to oncoming pedestrian traffic
6	Motor Vehicle	Intersection safety	East Side	Roxbury St at Lincoln St	Stop control for all approaches (pending further analysis)
7	Misc. (All Modes)	Traffic calming	East Side	Roxbury St, Main St to Lincoln St	Traffic calming measures and locations TBD
8	Pedestrian	Sidewalk im-provements	East Side	Roxbury St, Main St to Rob-in Hood Park	Sidewalk repairs needed in various locations

#	TRANSPORTATION MODE	CATEGORY	CITY DISTRICT	PRIMARY AND SECONDARY STREET	NOTES
9	Motor Vehicle	Intersection geometry	North Side	Washington St at Gilsum St	Gilsum St to "T" into Washington (short term: use striping and delineator posts)
10	Pedestrian	Crosswalk improvements	North Side	Washington St at Greenlawn St	Potential bump out and RRFBs in front of the Franklin School
11	Pedestrian	Crosswalk improvements	North Side	Washington St at Walnut St	Potential bump out on the west side of intersection
12	Bicycle	Bike lanes	Down-town	Washington St, Central Sq to Spring St	Parking protected bike lanes by converting angled parking to parallel on east side
13	Bicycle	Bike lanes	North Side	Washington St, Central Sq to Concord Rd	Narrowing of travel lanes to 10'-10.5' in order to widen the bike lanes/shoulder space
14	Pedestrian	New crosswalk	North side	Washington St at Woodbury St	New high-visibility crosswalk
15	Motor Vehicle	School pick up/ drop off	Down-town	Washington St at Spring (Gath-ering Waters School)	Improved system for pick up and drop off needed for safety
16	Misc. (All Modes)	Traffic calming	East Side	Water St, Main St to Eastern Ave	Traffic calming measures and locations TBD
17	Motor Vehicle	Improved signage on inter- section approach	East Side	Water St at Eastern Ave	Warning signs needed for westbound cars coming down the hill
18	Pedestrian	Sidewalk im-provements	Down-town	Water St, Willow St to Crossfield St	Tactile warning panels needed along sidewalk to meet ADA
19	Misc. (All Modes)	Intersection lighting	East Side	Water St at Grove St	Improved lighting needed at intersection
20	Bicycle	Crosswalk improvements	Down-town	West St at Island St/Jon-athan Daniel's Trail	Widen west crosswalk for shared use and consider an exclusive crossing phase

#	TRANSPORTATION MODE	CATEGORY	CITY DISTRICT	PRIMARY AND SECONDARY STREET	NOTES
21	Motor Vehicle	Intersection improvements	Down-town	West St at Gilbo Ave/Ashuelot St	Install left-turn signal heads and revise phas-ing for all inter- section approaches
22	Motor Vehicle	Intersection improvements	Down-town	West St at Island St	Install pedestrian count-down timers and revise signal timing
23	Motor Vehicle	Roundabout conversion	Down-town	West St at Gilbo Ave	Long-term conversion of signalized intersection
24	Motor Vehicle	Intersection signage	Down-town	Winchester St at Island St	Evaluate the need to revise the orientation of current crosswalk signage
25	Bicycle	Crosswalk improvements	Down-town	Winchester St at Ashuelot Rail Trail	Long-term replacement of flashing signs with RRFBs for consistency of trail crossings

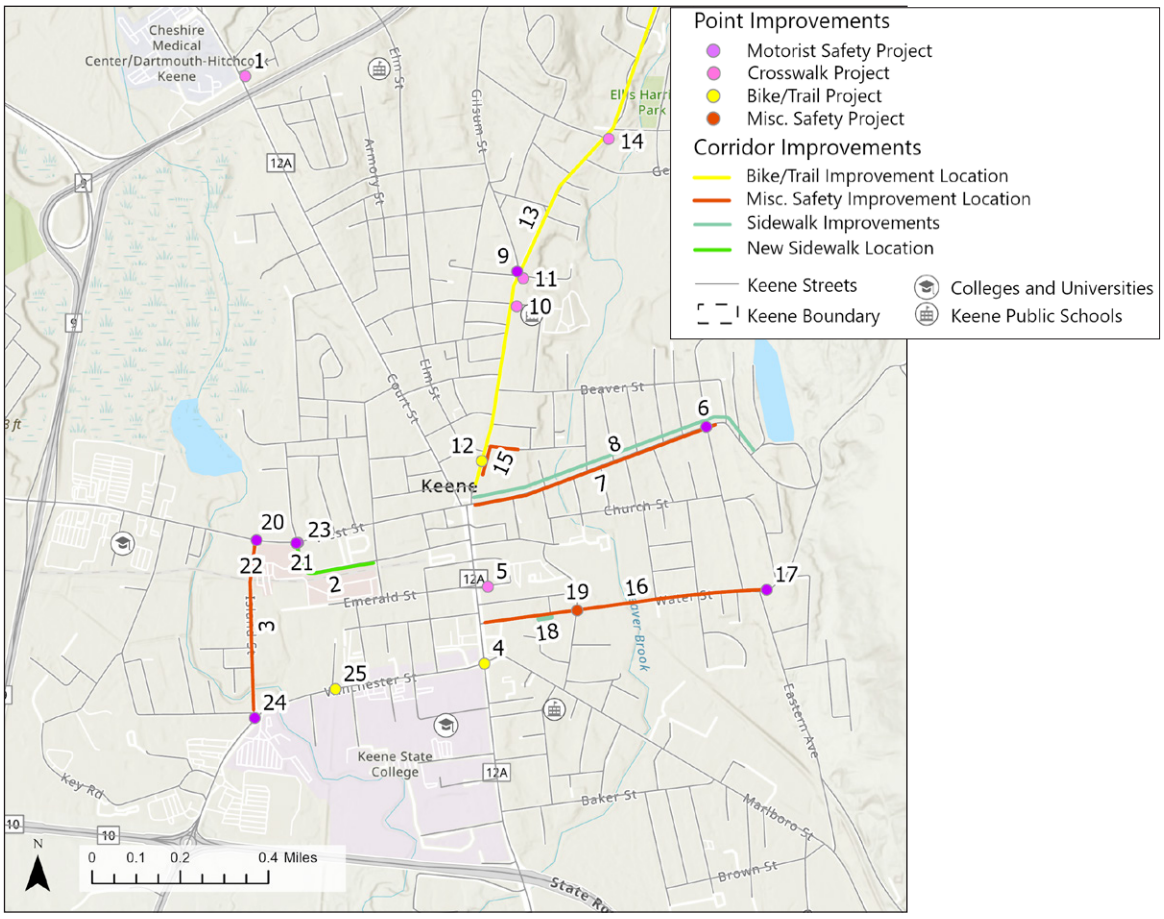


Figure 12

INFRASTRUCTURE PROJECTS CURRENTLY UNDER CONSTRUCTION OR FUNDED

The table below includes a list of infrastructure project recommendations that are either 1) Recently completed, 2) currently under construction, 3) will be funded through New Hampshire DOT (via the State TYP), or 4) are programmed in the City of Keene's Capital Improvement Program (CIP) from which the City is seeking funding for the project. If the list of projects below were integrated with the highest priority projects shown above, many of them would be ranked near the top of the lists.

Mode	Category	Sub-Category	City District	Primary Street	Secondary Street	Jurisdiction*	Notes
Bike/Trail	Shared-use path	Trail bridge improvements	Downtown	Ashuelot Rail Trail	Ashuelot River	City	Bridge decking in need of repair; currently programmed in the City's Capital Improvement Program
Pedestrian	Sidewalk	Sidewalk improvements	East side	Beaver St	Washington St to Oak St	City	Included in the City's Capital Improvement Program for reconstruction in 2029
Bike/Trail	Intersection	New bike accommodations	Downtown	Central Sq		City	Separated bike lanes in conjunction with Central Square redesign
Pedestrian	Crosswalk	Crosswalk improvements	Downtown	Central Sq		City	Improvements at all crosswalks in coordination with Downtown Improvement Project
Motor Vehicle	Intersection	Signage/ pavement markings	Downtown	Central Sq		City	Done in conjunction with Central Square redesign
Motor Vehicle	Intersection	Signal timing change	Downtown	Central Sq		City	Done in conjunction with Central Square redesign
Misc	Intersection	Lighting	Downtown	Central Sq	At all crosswalks	City	New lighting in conjunction with Central Square redesign
Bike/Trail	shared-use path	Trail bridge improvements	North side	J. Daniels Trail	Ashuelot River	City	Already part of a planned trail bridge maintenance program
Bike/Trail	Roadway	New bike accommodations	Downtown	Main St	Winchester to West/Roxbury	City	Separated bike lanes in conjunction with Main Street redesign
Pedestrian	Crosswalk	Crosswalk improvements	Downtown	Main St	Church St	City	Potential RRFBs or raised crosswalk in conjunction with Main Street redesign
Pedestrian	Crosswalk	Crosswalk improvements	Downtown	Main St	Dunbar St	City	Potential RRFBs or raised crosswalk in conjunction with Main Street redesign
Bike/Trail	Crosswalk	Crosswalk improvements	Downtown	Main St	Cheshire Rail Trail	City	Speed table at trail crossing in conjunction with Main Street redesign
Motor Vehicle	Intersection	Left-turn challenges	Downtown	Main St	Emerald St / Eagle Ct	City	Improvements needed for turning left onto Main St from Water St (done in conjunction with Main Street redesign.)
Pedestrian	Sidewalk	Sidewalk improvements	Downtown	Main St	north of Winchester St	City	Done in conjunction with Main Street redesign
Pedestrian	Crosswalk	Crosswalk improvements	Downtown	Main St	Various crosswalks	City	Potential RRFBs (or potential raised crosswalk) in conjunction with Main St redesign
Misc	Intersection	Lighting	Downtown	Main St	Water St	City	Done in conjunction with Main Street redesign
Pedestrian	Crosswalk	Crosswalk improvements	Downtown	Main St (north leg)	Marlboro St	City	Existing crosswalk should be relocated further north and/ or with RRFB
Bike/Trail	Roadway	New bike accommodations	City Fringe	Maple Ave	Court St to Park Ave	UC	Recent project reduced travel lanes to 10' to widen shoulders
Pedestrian	Crosswalk	Crosswalk improvements	Downtown	Marlboro St	Grove St	City	Installation of RRFBs and/or curb extensions
Pedestrian	Crosswalk	New crosswalk	East side	Marlboro St	310 Marlboro St (vicinity)	City	To be completed as part of NHDOT-funded project #42515 (2025)
Bike/Trail	Roadway	Bike lane improvements	West Keene	Park Ave	West St to Summit Rd	City	Project recently completed in 2022
Motor Vehicle	Intersection	Left-turn challenges	City Fringe	Route 101	Swanzey Factory Rd	State	Warning signage, roundabout and relocate approaches on NH Route 101; to be completed as part of NHDOT-funded project #41590
Pedestrian	Sidewalk	New sidewalk	City Fringe	Route 101	near Rocky Brook Motel	State	NHDOT has proposed installing 5' paved shoulders as part of Project #41590
Motor Vehicle	Intersection	Roundabout	City Fringe	Route 9/101	Route 10/12	State	To be completed as part of NHDOT-funded signalized intersection project 44357; potentially a future roundabout
Pedestrian	Sidewalk	Sidewalk improvements	Downtown	S Main St	Winchester St to Rt. 101	City	Portions of project are part of NHDOT Project 40666
Motor Vehicle	Intersection	All-way stop conversion	Downtown	Water St	Grove St	City	Project recently completed
Bike/Trail	Crosswalk	Crosswalk improvements	East side	Water St	Cheshire Rail Trail	City	Project recently completed
Pedestrian	Crosswalk	Crosswalk improvements	East side	Water St	Carpenter St	City	Potential RRFBs to be potential city funded project
Pedestrian	Crosswalk	New crosswalk	West Keene	West St	Pearl St	City	Likely part of future NHDOT-funded project #43543
Bike/Trail	Roadway	New bike accommodations	DT/West Keene	West St	School St to Park Ave	City	Bike lanes to be a likely part of future NHDOT-funded project #43543
Pedestrian	Sidewalk	Sidewalk improvements	DT/West Keene	West St	School St to Rt 9/10/12 ramps	City	Likely part of future NHDOT-funded project #43543
Motor Vehicle	Intersection	New left turn signal heads	Downtown	West St	School St	City	Install left-turn signal heads (with revised phasing) for all directions; likely part of future NHDOT-funded project #43543
Misc	Roadway	Traffic calming	DT/West Keene	West St	School St to Rt 9/10/12 ramps	City	Likely part of future NHDOT-funded project #43543
Motor Vehicle	Intersection	Left-turn challenges	West Keene	West St	Pearl St	City	Likely part of future NHDOT-funded project #43543
Pedestrian	Sidewalk	Sidewalk improvements	Downtown	West St	School St (south leg)	City	SW and SE corners of intersection in need of ADA upgrades; likely part of future NHDOT-funded project #43543
Pedestrian	Crosswalk	New crosswalk	West Keene	West St	Route 9/10/12 NB ramps	City	Likely part of future NHDOT-funded project #43543
Motor Vehicle	Intersection	Left-turn challenges	West Keene	West St	Starbucks Driveway	City	As part of future NHDOT-funded project #43543, consider right turn only at the exit driveways
Motor Vehicle	Intersection	Left-turn challenges	West Keene	West St	Richardson Ct	City	Likely part of future NHDOT-funded project #43543
Pedestrian	Sidewalk	New sidewalk	City Fringe	Winchester St	Kit St to Market Basket	UC	To be completed as part of NHDOT-funded project #40666
Pedestrian	Sidewalk	Sidewalk improvements	Downtown	Winchester St	Island St to KSC	City	Replacement of southern southwalk recently completed
Motor Vehicle	Intersection	Left-turn challenges	City Fringe	Winchester St	Kit St	UC	To be completed as part of NHDOT-funded project #40666
Motor Vehicle	Roadway	Access management	City Fringe	Winchester St	200' N of Krif Rd to Bradco St	UC	Access management needed to minimize the very wide curb cuts (To be completed as part of NHDOT-funded project #40666)
Motor Vehicle	Intersection	Left-turn challenges	City Fringe	Winchester St	Fairbanks St / Wetmore St	UC	Right-in/right-out restriction to both Fairbanks and Wetmore St (To be completed as part of NHDOT-funded project #40666)

*Jurisdiction = City, State, Urban Compact (UC)

7 IMPLEMENTATION RESOURCES

This Roadway Safety Action Plan provides the City of Keene with an important knowledge base from which to launch into implementation strategies and taking steps toward improving safety. There are a variety of funding sources that could be pursued depending on the nature of the planned actions. The City may pursue state or Federal funding to support supplemental planning efforts, construct safety infrastructure, or enhance multimodal transportation. Safety needs identified through this plan may be eligible for funding through regional, state, and federal grant programs.

See the *U.S. Department of Transportation's Transit, Safety, and Highway Funds – Pedestrian and Bicycle Funding Opportunities* for additional resources and potential eligibility for pedestrian and bicycle activities and projects under U.S. DOT surface transportation and funding programs:

NEW HAMPSHIRE HIGHWAY SAFETY IMPROVEMENT PROGRAM (HSIP)

This is the core Federal-aid program with the purpose of achieving significant reductions in traffic fatalities and serious injuries. This includes infrastructure-related projects, selected and justified by proven data-driven approaches. The program currently has $9,000,000 available annually and the Project Selection Process is a data-driven process that consists of three steps starting with an eligibility determination, then prioritization of selected projects, and finally optimization of the prioritized list of eligible projects within the annual budget. This is done in conjunction with the HSIP committee consisting of NHDOT staff, FHWA staff, MPO, RPC and a Local agency representative.

CONGESTION MITIGATION & AIR QUALITY (CMAQ)

CMAQ is a Federal program, administered by the NHDOT Bureau of Planning and Community Assistance, that specifically provides financial assistance for air quality improvement and congestion mitigation projects. Project may include transit investments, and infrastructure improvements that improve traffic flow. They also fund transportation-focused bicycle and pedestrian improvements that will result in a reduction in single-occupant vehicle travel. CMAQ grants are currently awarded on a four-year cycle, provide up to 80% of project funding and require a local match.

SAFE STREETS AND ROADS FOR ALL (SS4A) GRANT PROGRAM

This is a five-year program that funds regional, local, and tribal initiatives through grants to prevent roadway deaths and serious injuries. After completing Planning projects applicants can pursue Demonstration and Implementation projects.

TRANSPORTATION ALTERNATIVES PROGRAM

The goal of the federally-funded Transportation Alternatives Program (TAP) is to provide choices for non-motorized users that are safe, reliable, and convenient. TAP grants often help fund off-road bike and pedestrian facilities. TAP grants are currently awarded on a four-year cycle, provide up to 80% of project funding and require a local match.

RECREATIONAL TRAILS PROGRAM

Recreational Trails Program (RTP) is a competitive grant program that offers funding for quality public trail projects throughout New Hampshire. Limited grants are available for motorized, non-motorized and diversified trails. Eligible projects include maintenance and restoration of existing trails, purchase and lease of trail construction and maintenance equipment, construction of new trails, development and rehabilitation of trailside and trailhead facilities and trail linkages. RTP funds come from the Federal Highway Trust Fund and the program in New Hampshire is administered by the Bureau of Trails under the NH Department of Natural & Cultural Resources.

ACTIVE TRANSPORTATION INFRASTRUCTURE INVESTMENT PROGRAM (ATIIP)

The Active Transportation Investment Program (ATIIP) is a new competitive grant program created by Section 11529 of the Bipartisan Infrastructure Law enacted as the Infrastructure Investment and Jobs Act (Pub.L.117-58) to construct projects to provide safe and connected active transportation facilities in active transportation networks or active transportation spines.

FHWA will award Planning and Design grants for eligible applicants to develop plans for active transportation networks and active transportation spines. Projects seeking Planning and Design grants must have planning and design costs of at least $100,000 to be eligible.

FHWA will award Construction grants to eligible applicants to construct projects to provide safe and connected active transportation facilities in an active transportation network or active transportation spine. Projects seeking Construction grants must have total costs of at least $15 million to be eligible.

MONADNOCK ALLIANCE FOR SUSTAINABLE TRANSPORTATION (MAST)

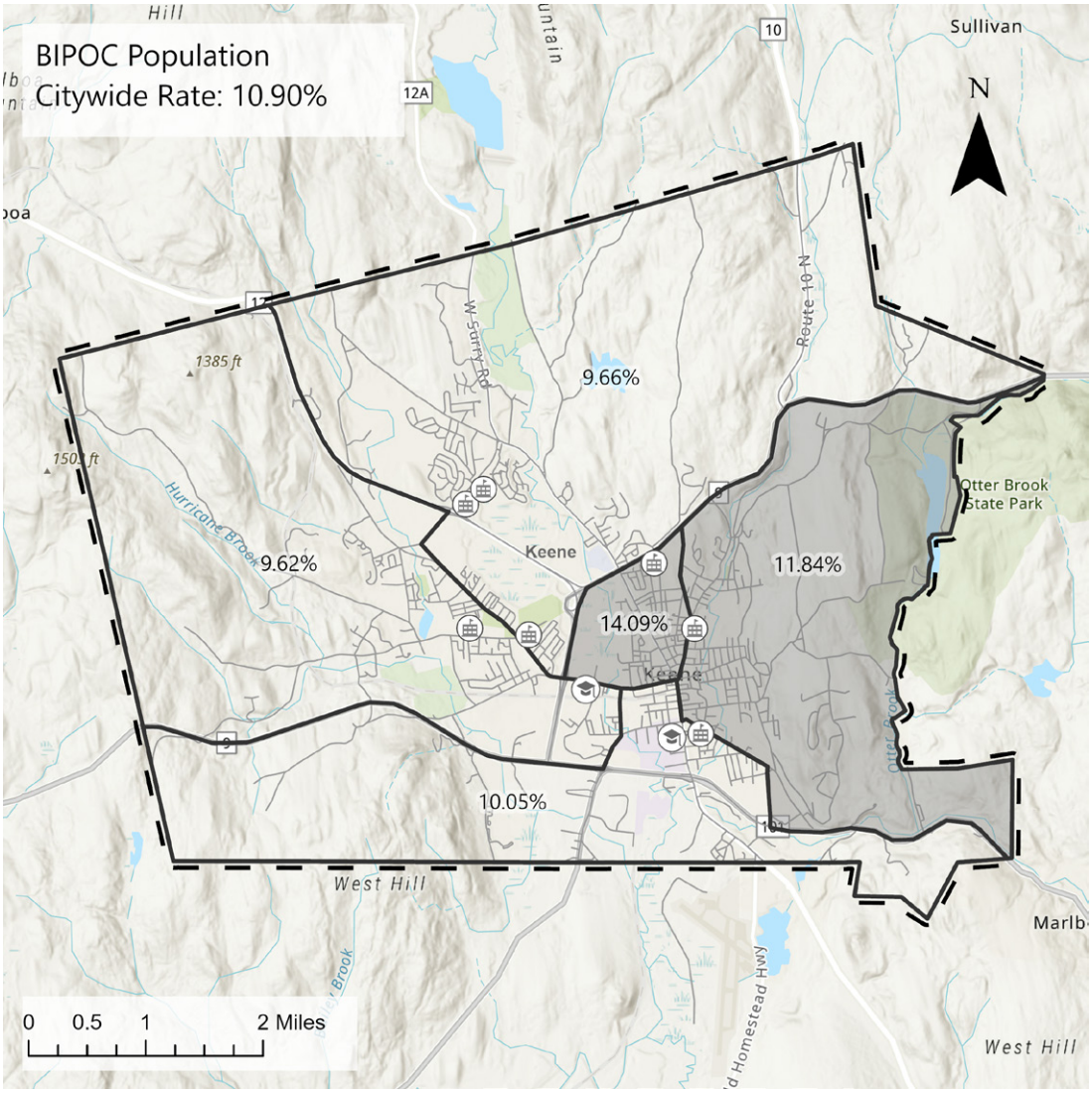
The Monadnock Alliance for Sustainable Transportation (MAST) offers Complete Streets Implementation Grant opportunity to support transportation projects in the Monadnock Region of New Hampshire. This grant aims to enhance the environmental, economic, and physical health of the community by promoting safe and accessible transportation for all users, including pedestrians, cyclists, drivers, and public transit riders.

MAST has allocated $100,000 to communities that have adopted a complete streets policy for infrastructure-related grants as well as non-infrastructure purposes such as planning, preliminary engineering, community education, “pop-up” or temporary projects, demonstration events, and encouragement activities.

APPENDICES

8 APPENDIX A: EQUITY ANALYSIS

Percent of Population that is Black, Indigenous, or a Person of Color (BIPOC), by Census Tract

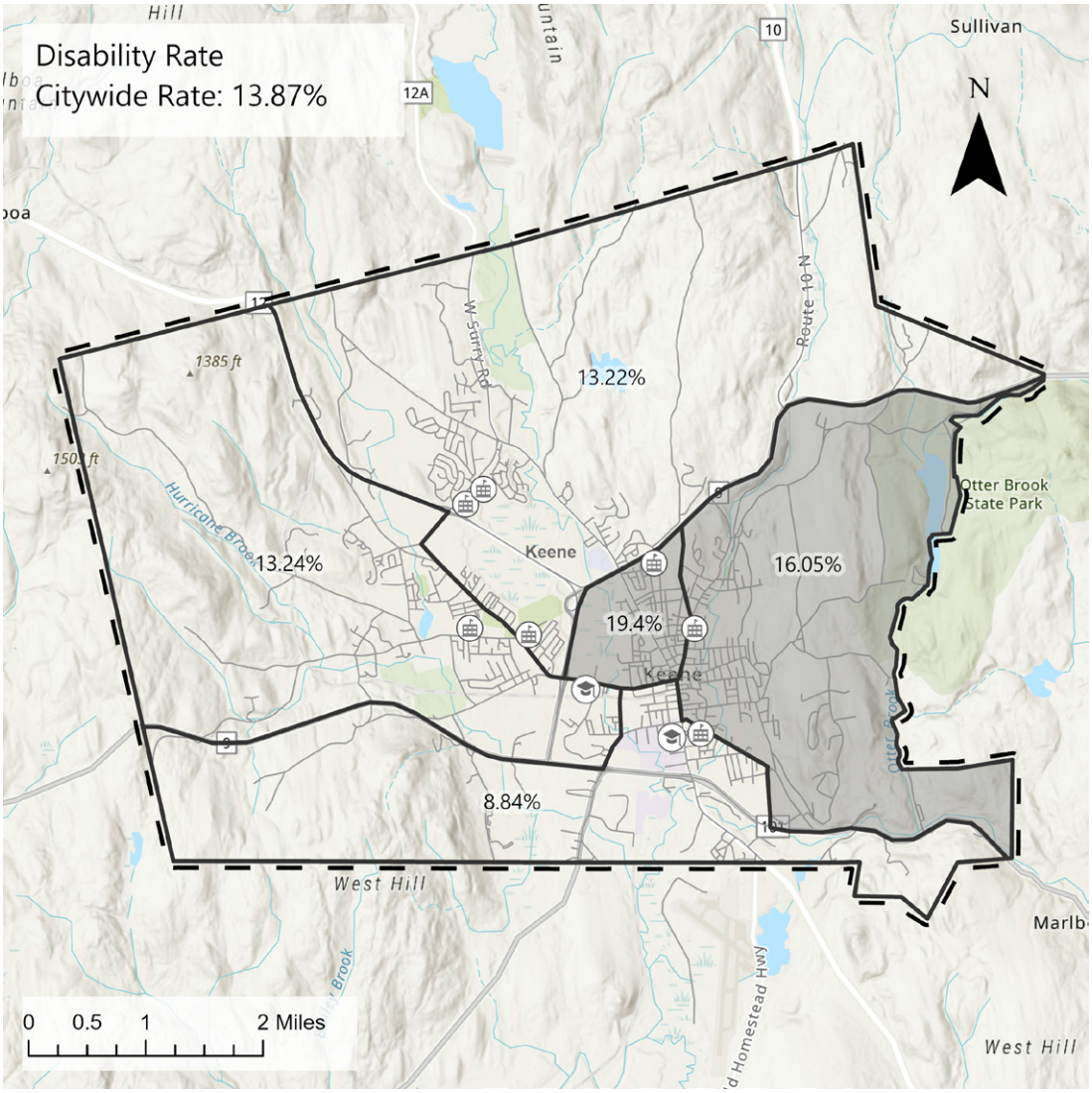


Legend

Equity Interest Area

- Census Tract with a Lower Rate than the Citywide Rate
- Census Tract with a Higher Rate than the Citywide Rate
- Keene Streets
- Keene Boundary
- Colleges and Universities
- Keene Public Schools

Percent of Population that has a Disability, by Census Tract



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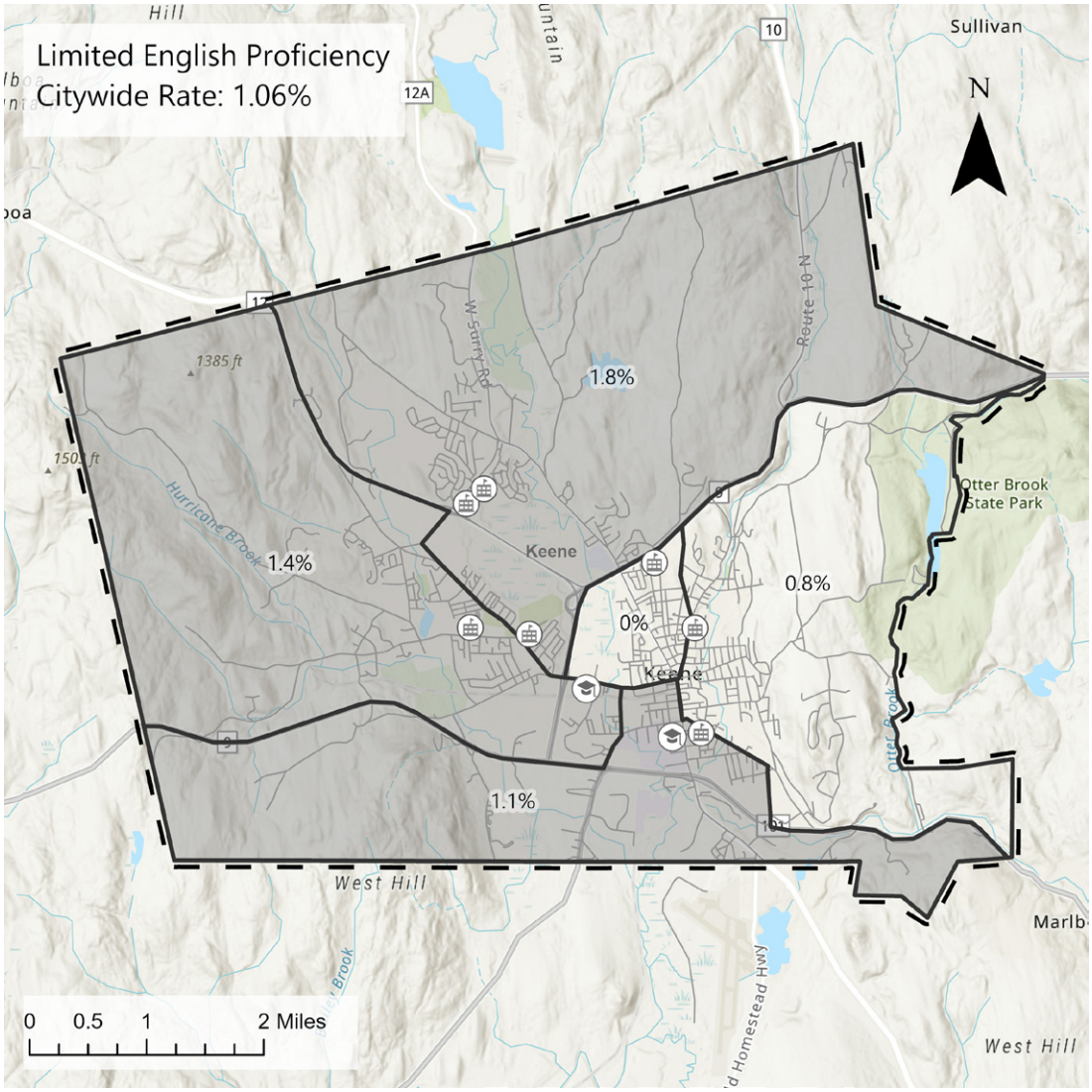
Equity Interest Area

- Census Tract with a Lower Rate than the Citywide Rate
- Census Tract with a Higher Rate than the Citywide Rate
- Keene Streets
- Keene Boundary
- Colleges and Universities
- Keene Public Schools

Percent of Population with Limited English Proficiency, by Census Tract

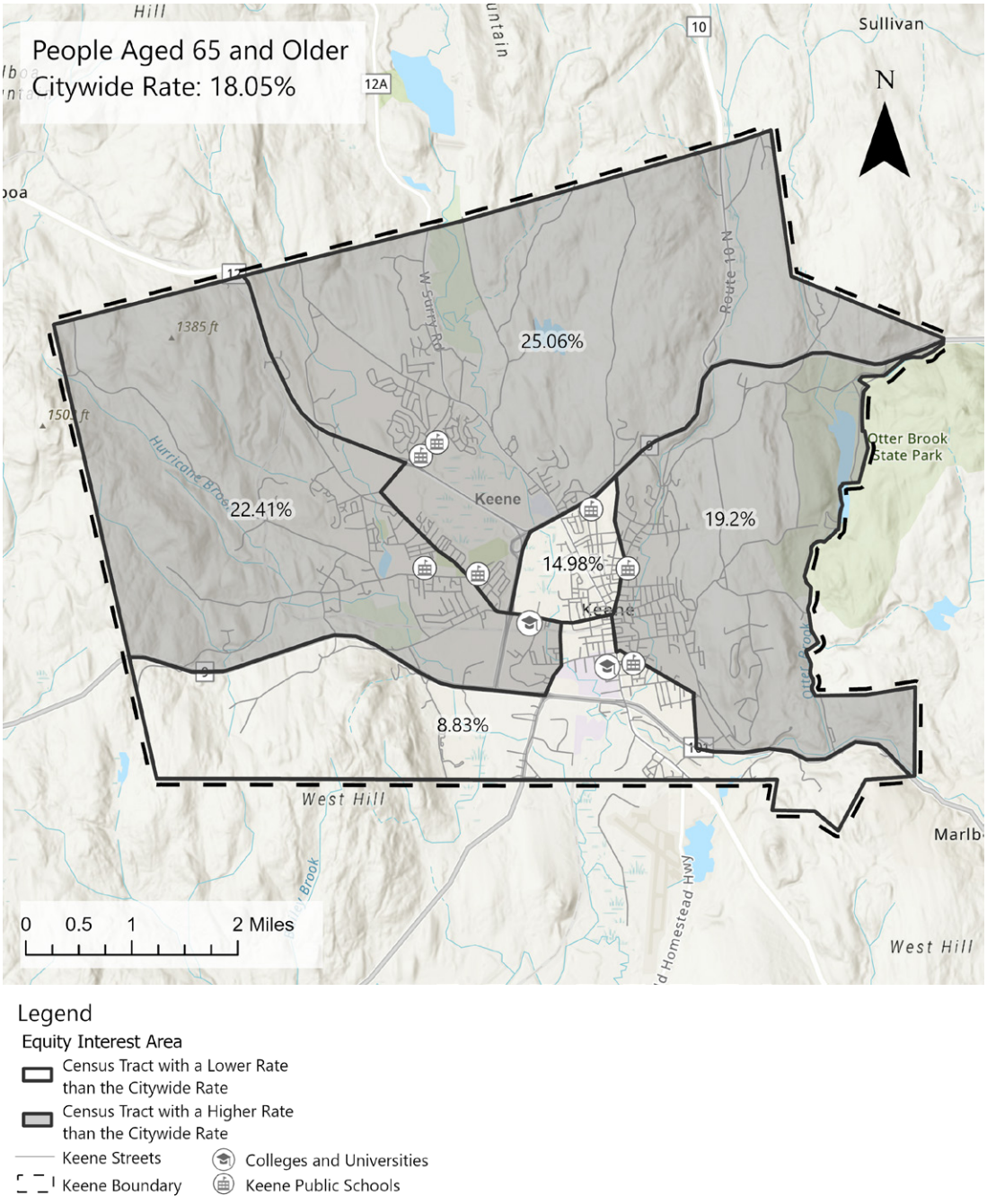


Legend

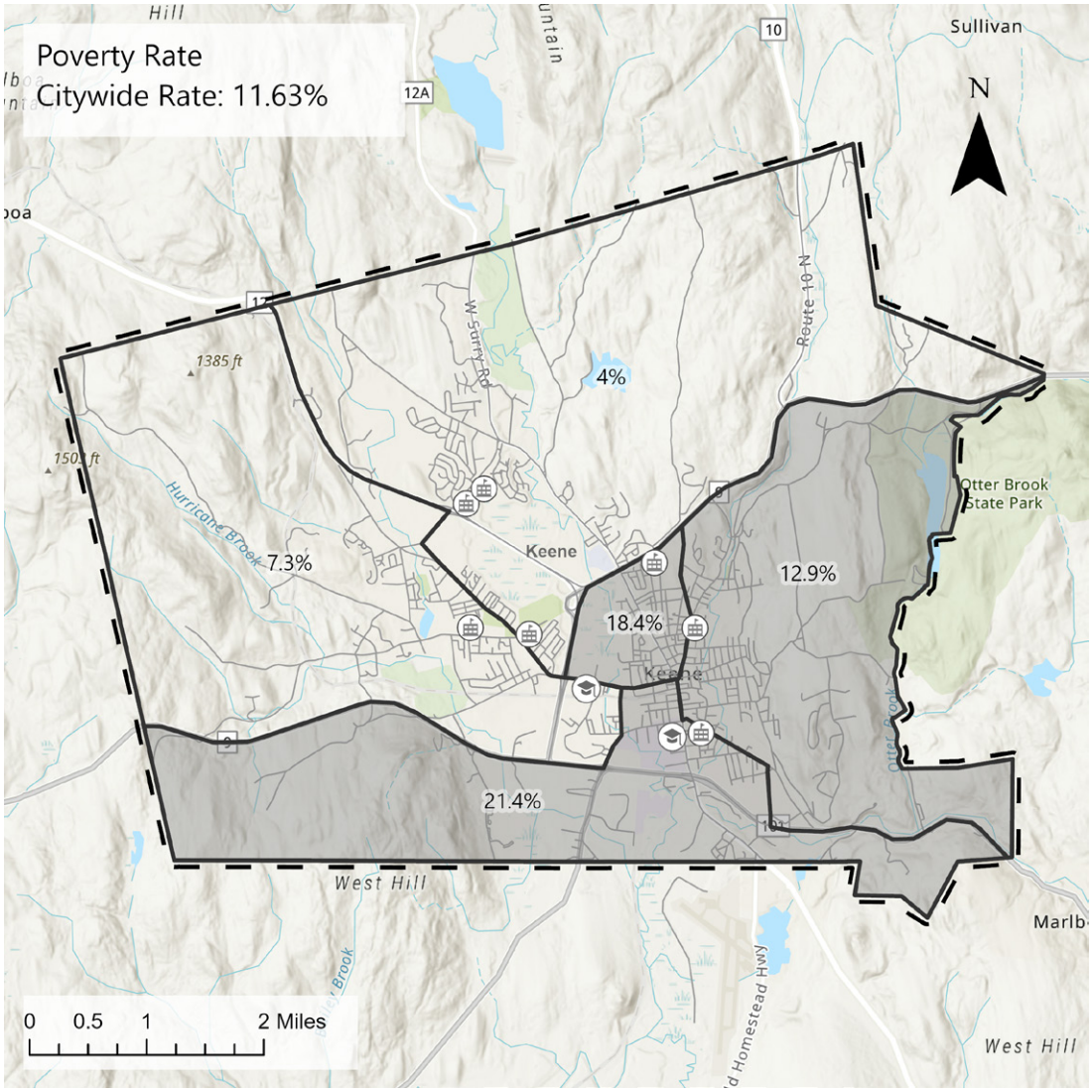
Equity Interest Area

- Census Tract with a Lower Rate than the Citywide Rate
- Census Tract with a Higher Rate than the Citywide Rate
- Keene Streets
- Keene Boundary
- Colleges and Universities
- Keene Public Schools

Percent of Population that is Aged 65 Years Old or Older, by Census Tract



Percent of Population is Below the Poverty Level, by Census Tract

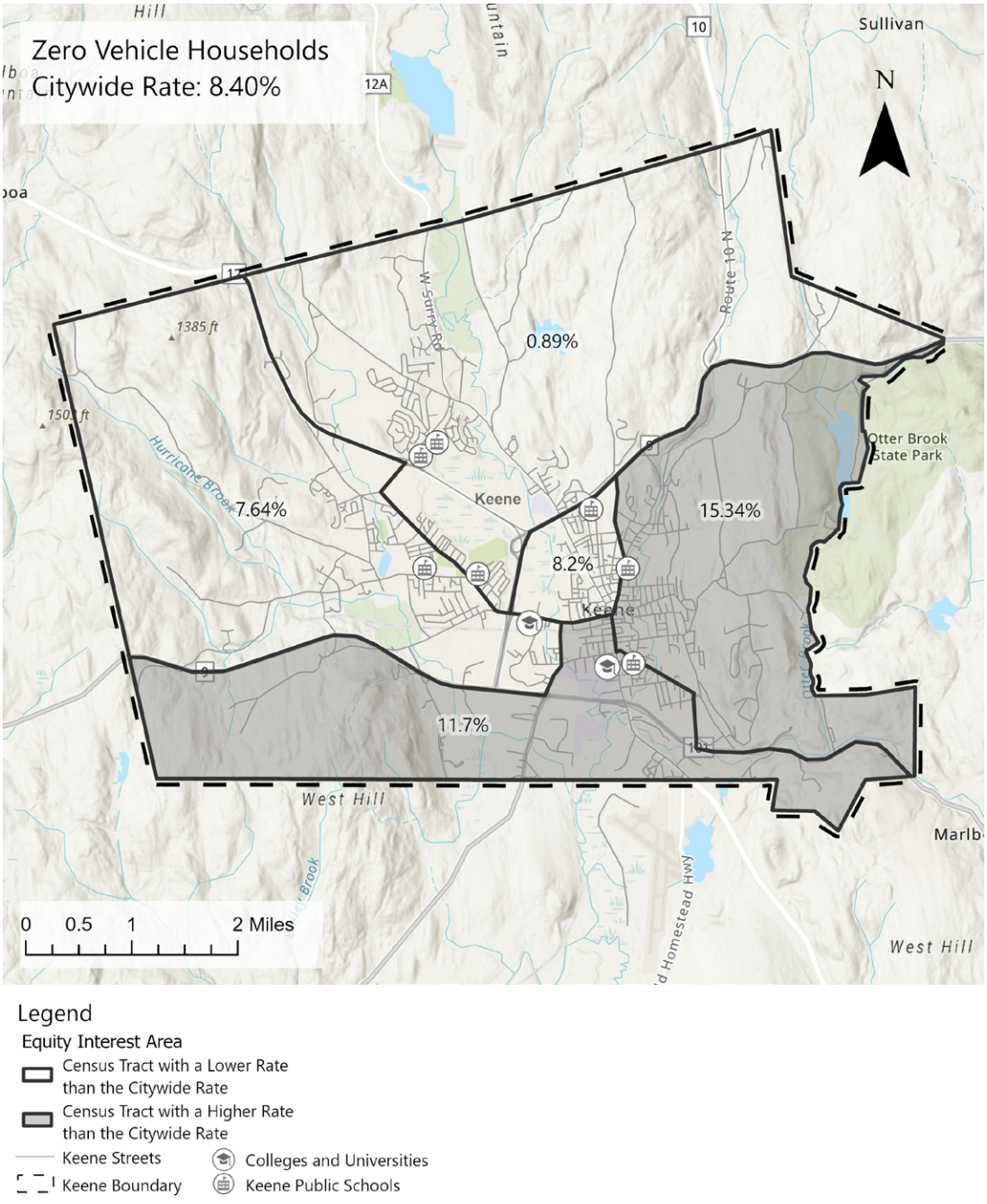


Legend

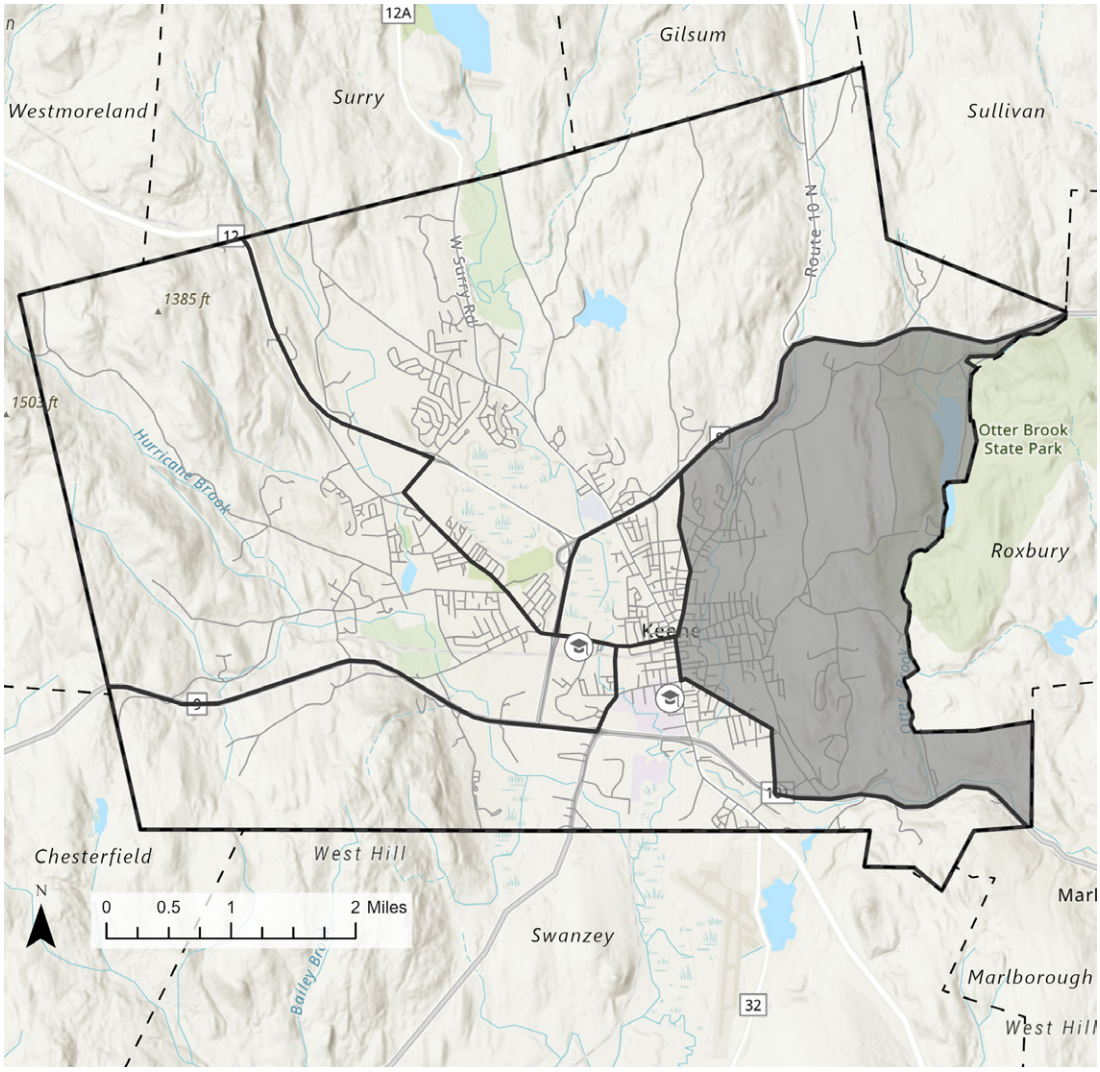
Equity Interest Area

- Census Tract with a Lower Rate than the Citywide Rate
- Census Tract with a Higher Rate than the Citywide Rate
- Keene Streets
- Keene Boundary
- Colleges and Universities
- Keene Public Schools

Percent of Households That Do Not Have Access to a Motor Vehicle, by Census Tract



Census Tracts Designated by the US Department of Transportation as 'Transportation Disadvantaged', State Results[7]



Legend

Equity Interest Area

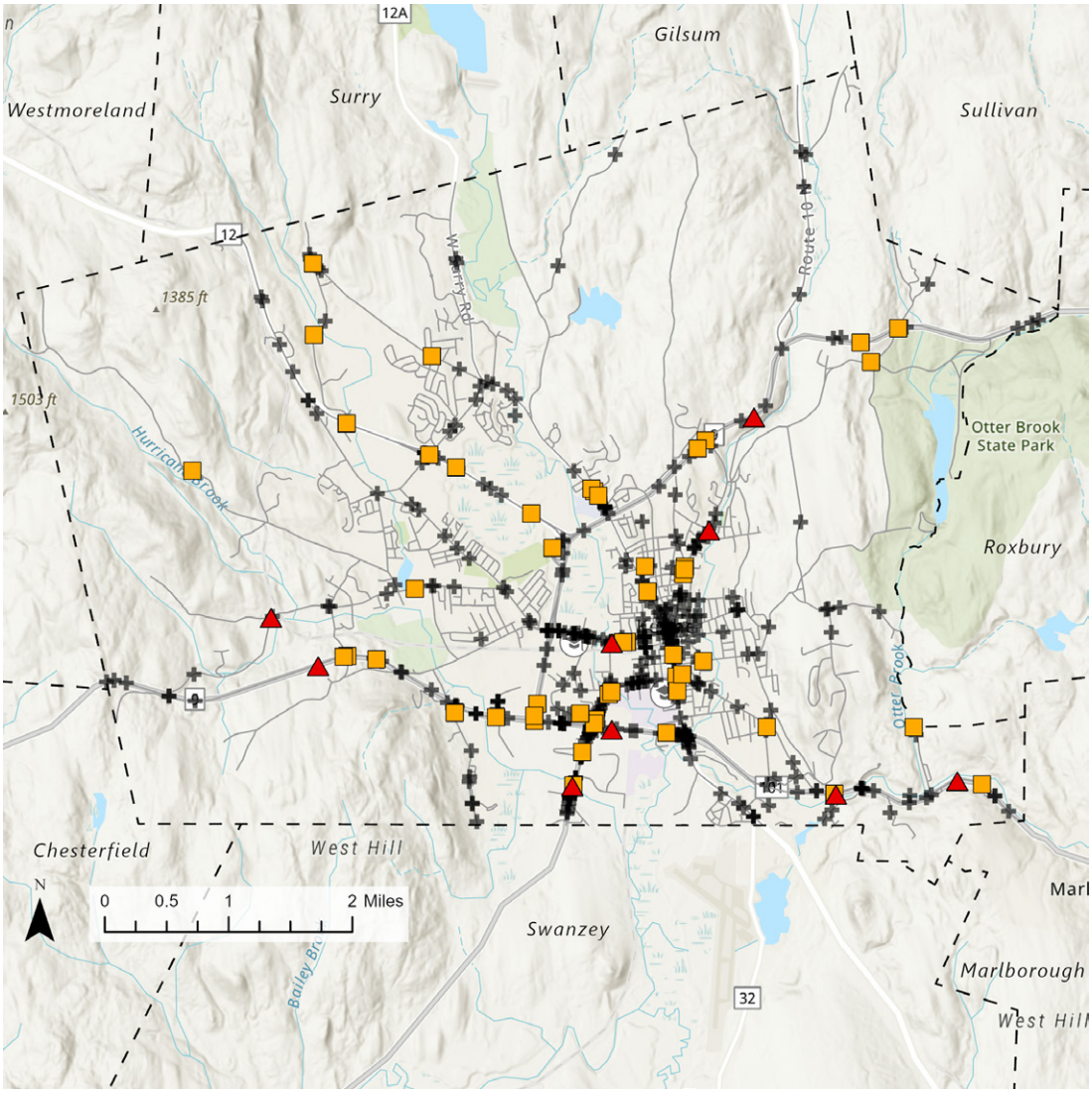
- Census Tract with a Lower Rate than the Citywide Rate
- Census Tract with a Higher Rate than the Citywide Rate
- Keene Streets
- Keene Boundary
- Colleges and Universities
- Keene Public Schools

7 USDOT ETC Explorer https://experience.arcgis.com/experience/0920984aa80a4362b8778d779b090723/page/ETC-Explorer---State-Results/

APPENDIX B: EMPHASIS AREA CRASH MAPS

9

All Crashes Resulting in a Fatal, Serious Injury, or Minor Injury, 2014-2022

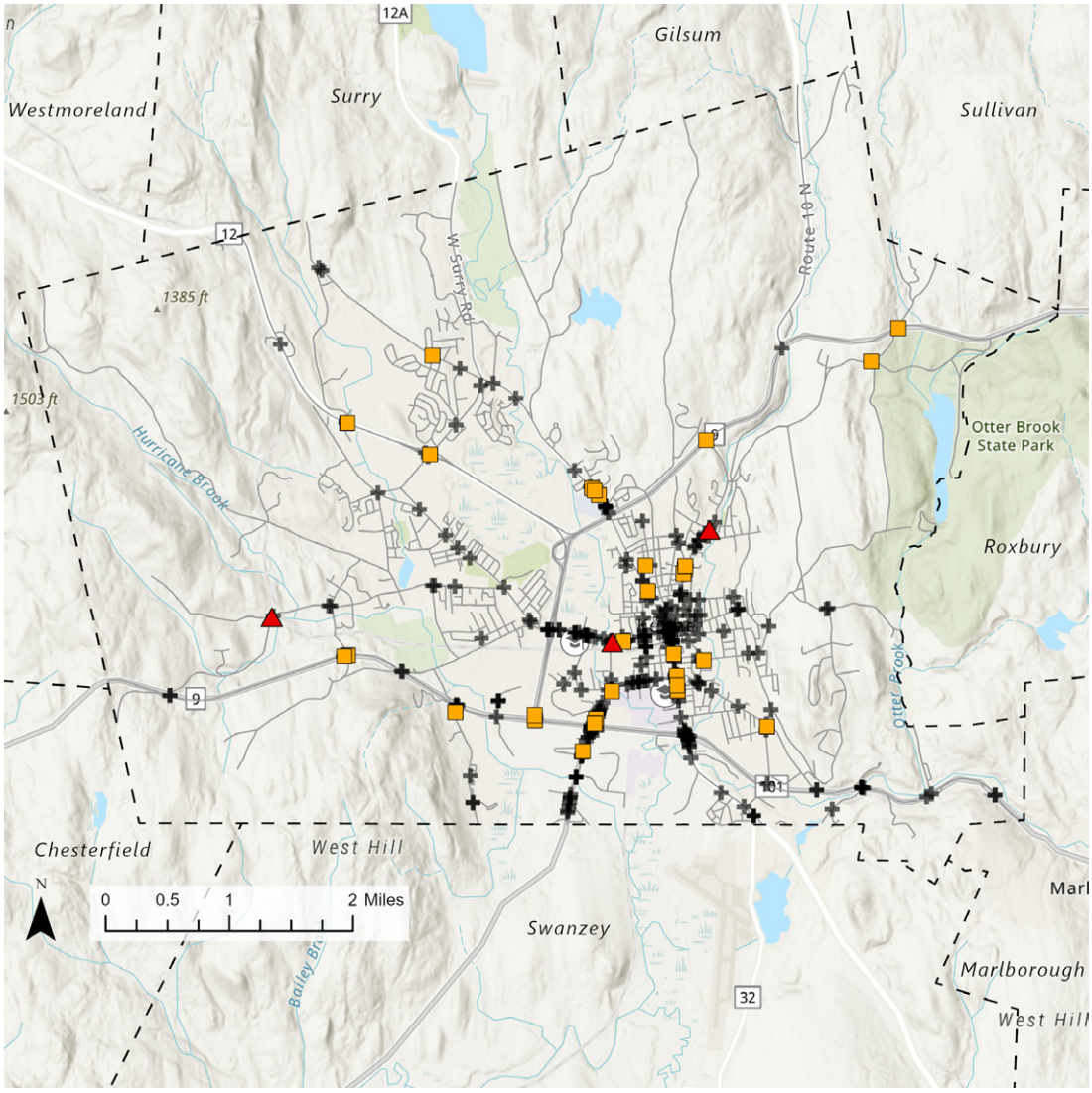


Legend

Crash Severity

- Fatal Injury
- Suspected Serious Injury
- Suspected Minor Injury
- Keene Streets
- Keene Boundary
- Colleges and Universities
- Keene Public Schools

Intersection Crashes Resulting in a Fatal, Serious Injury, or Minor Injury, 2014-2022

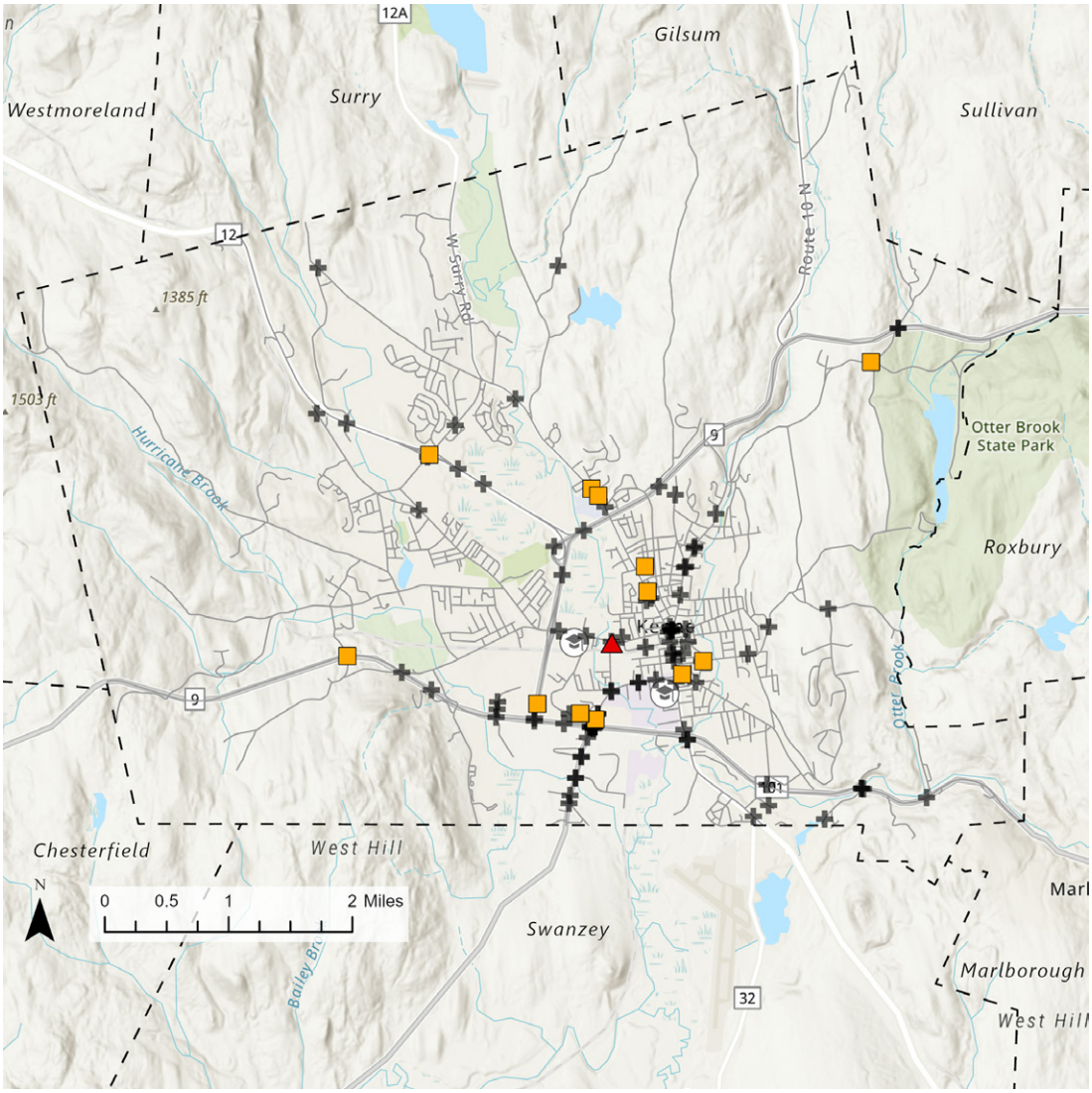


Legend

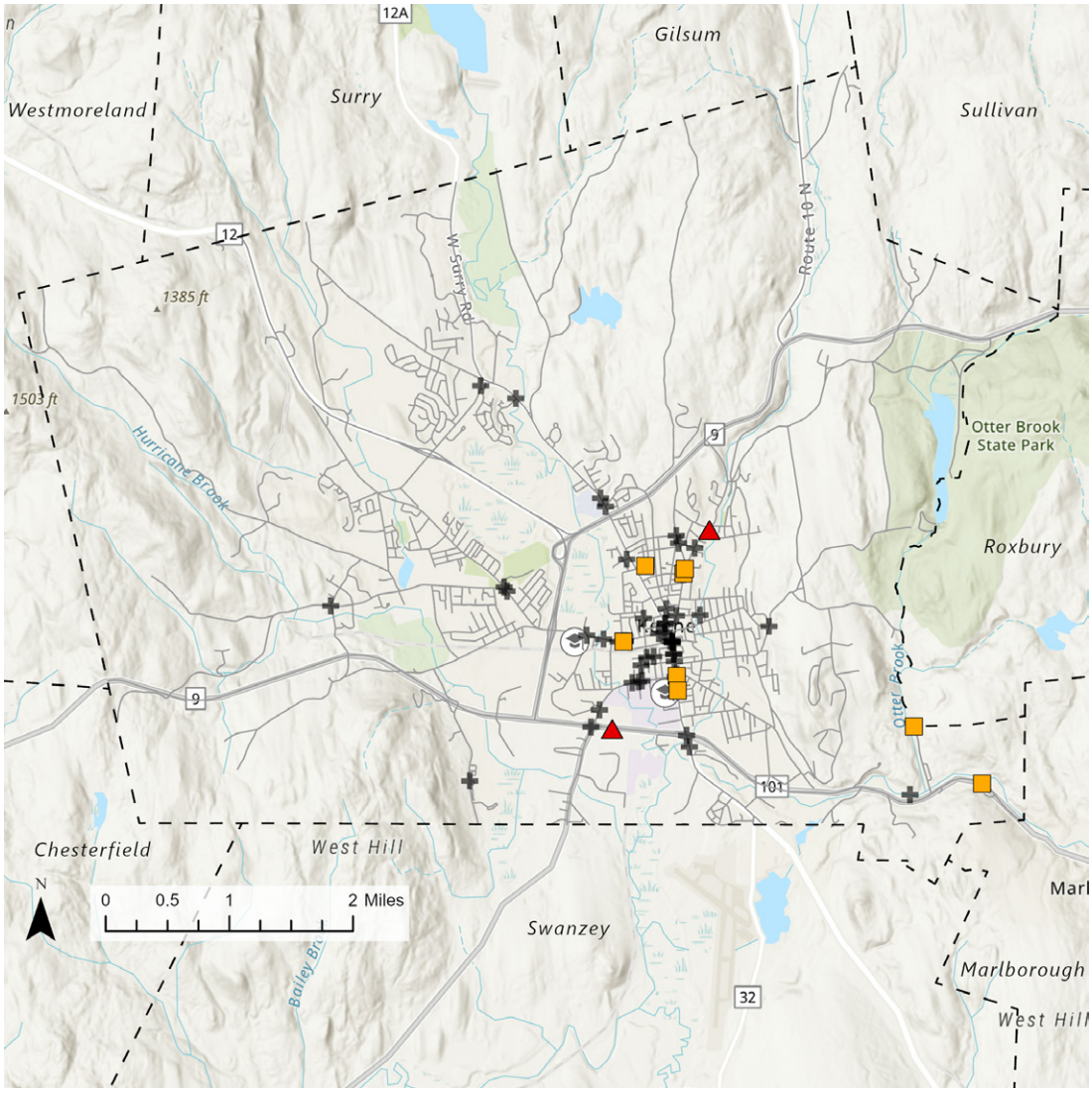
Crash Severity

- Fatal Injury
- Suspected Serious Injury
- Suspected Minor Injury
- Keene Streets
- Keene Boundary
- Colleges and Universities
- Keene Public Schools

Vulnerable Motorized User Crashes Resulting in a Fatal, Serious Injury, or Minor Injury, 2014-2022



Vulnerable Non-Motorized User Crashes Resulting in a Fatal, Serious Injury, or Minor Injury, 2014-2022

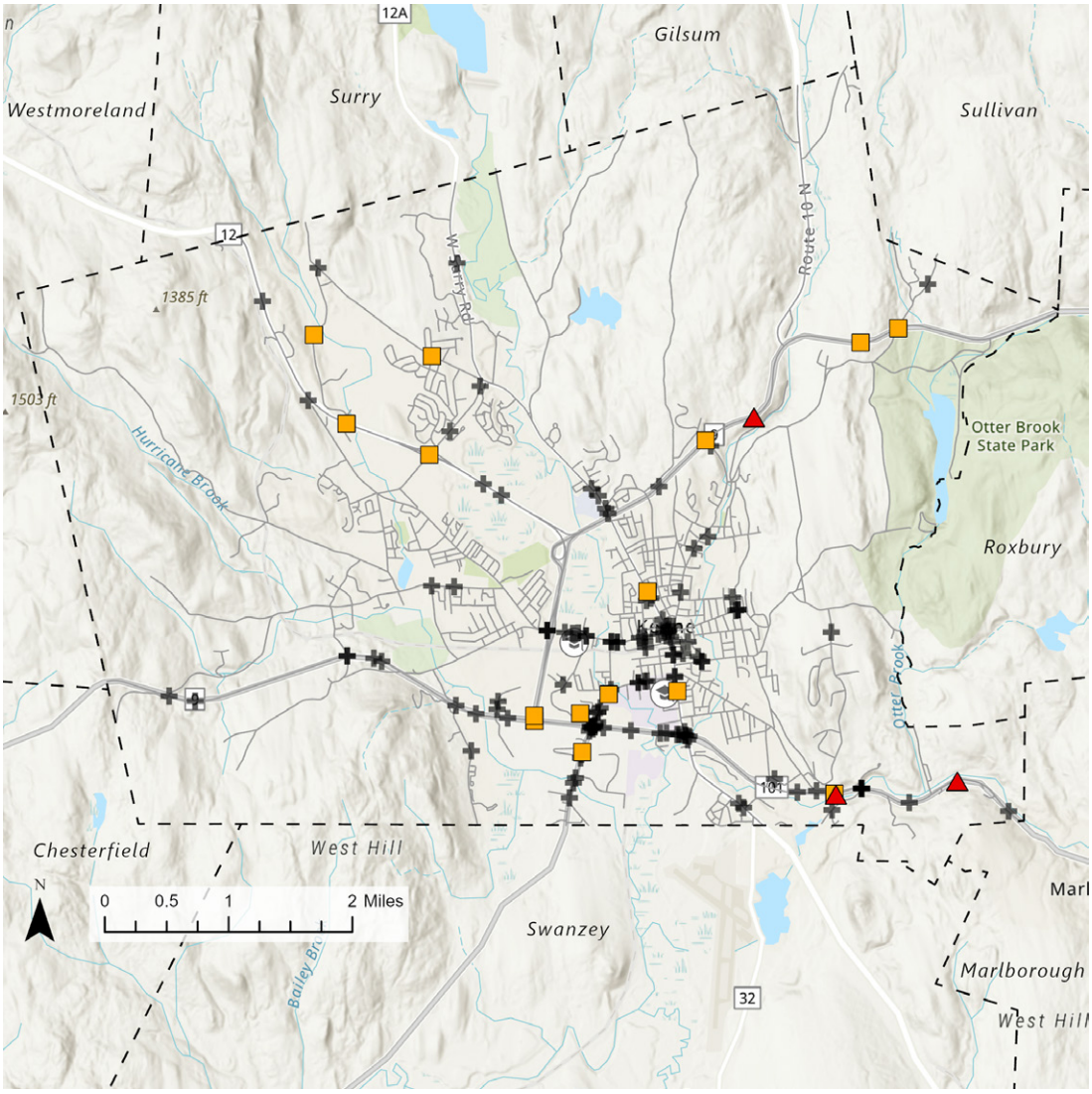


Legend

Crash Severity

- Fatal Injury
- Suspected Serious Injury
- Suspected Minor Injury
- Keene Streets
- Keene Boundary
- Colleges and Universities
- Keene Public Schools

Older Driver Crashes Resulting in a Fatal, Serious Injury, or Minor Injury, 2014-2022

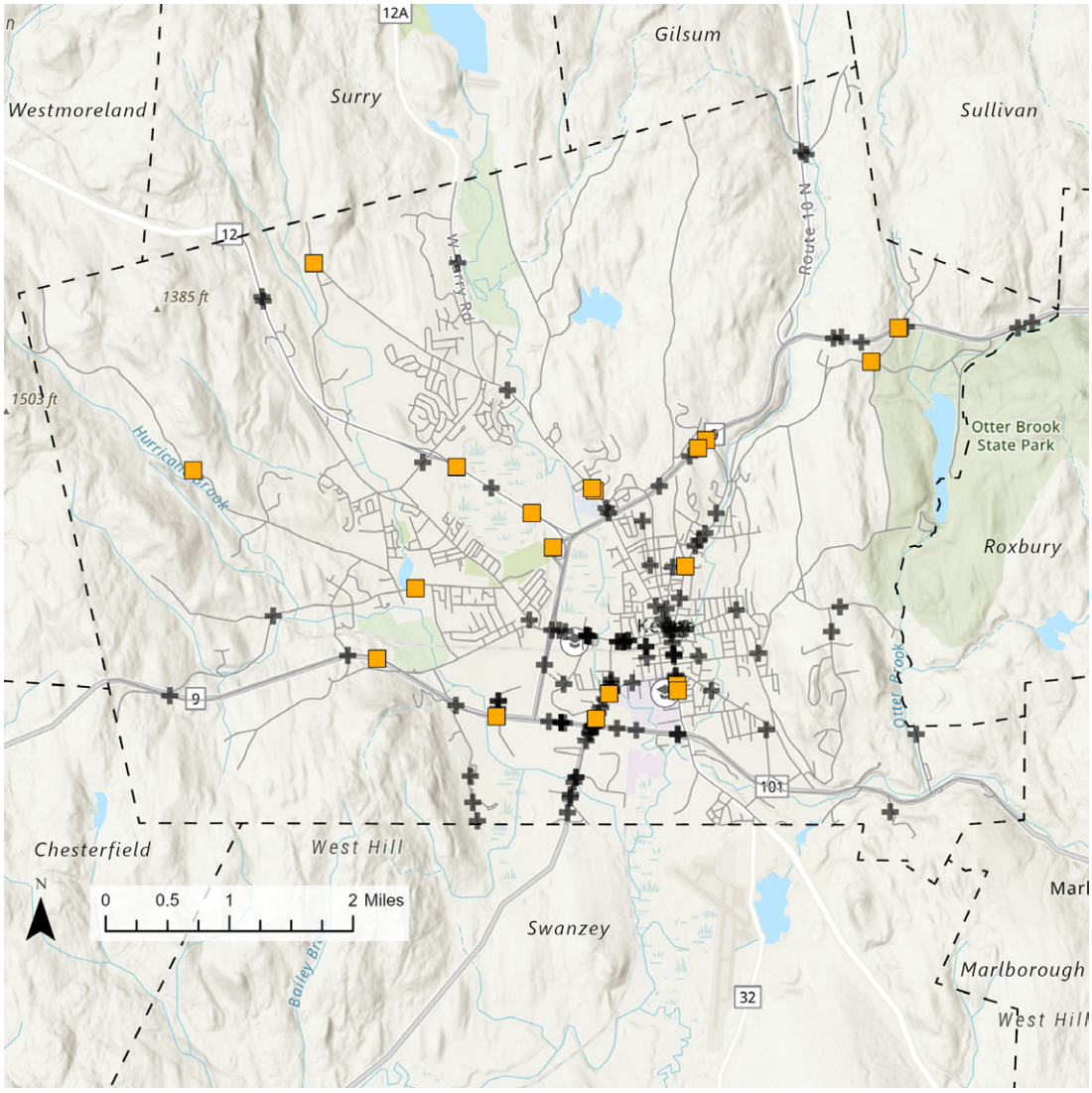


Legend

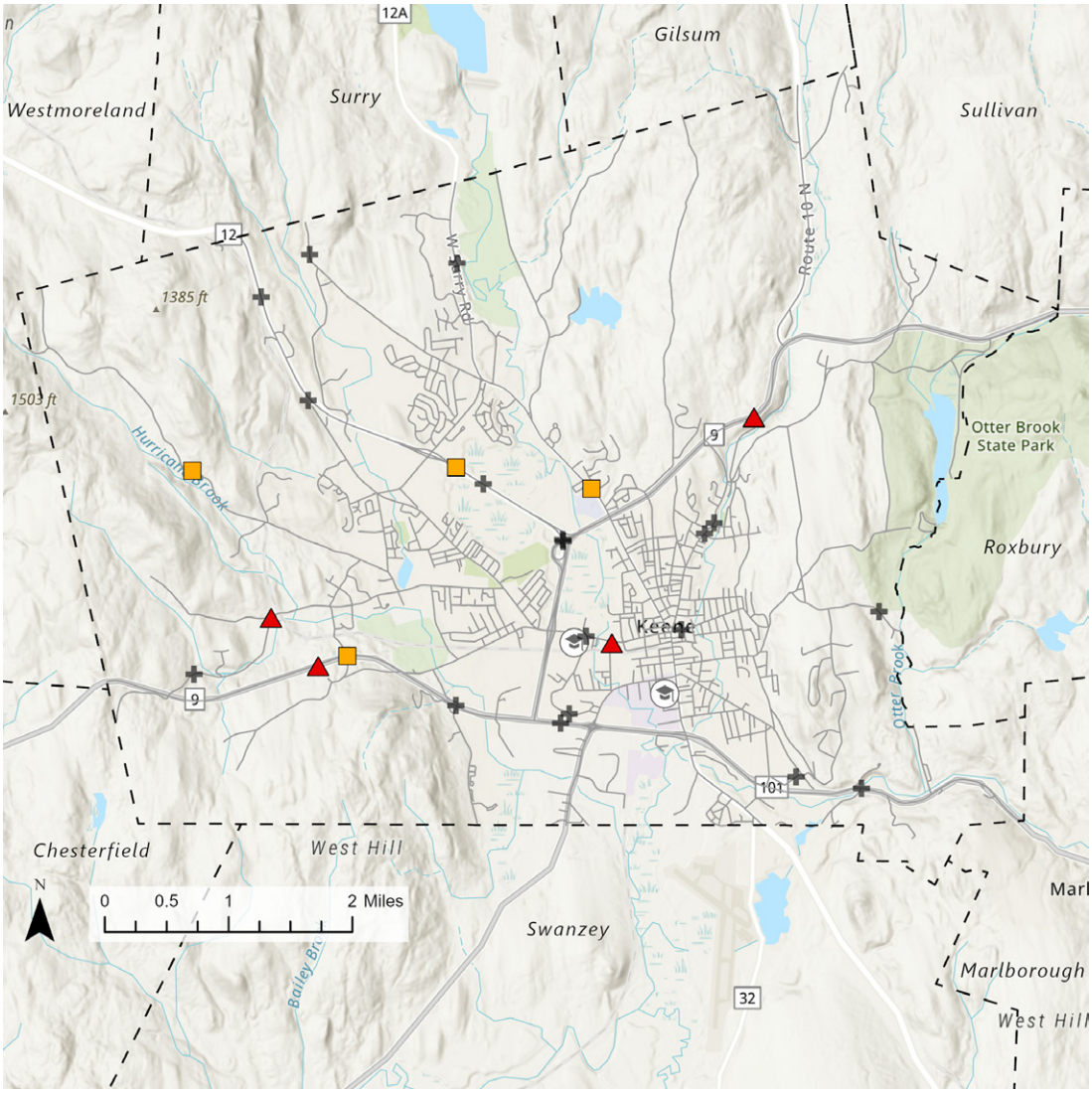
Crash Severity

- Fatal Injury
- Suspected Serious Injury
- Suspected Minor Injury
- Keene Streets
- Keene Boundary
- Colleges and Universities
- Keene Public Schools

Improper Occupant Protection Crashes Resulting in a Fatal, Serious Injury, or Minor Injury, 2014-2022



Speeding & Aggressive Driving Crashes Resulting in a Fatal, Serious Injury, or Minor Injury, 2014-2022

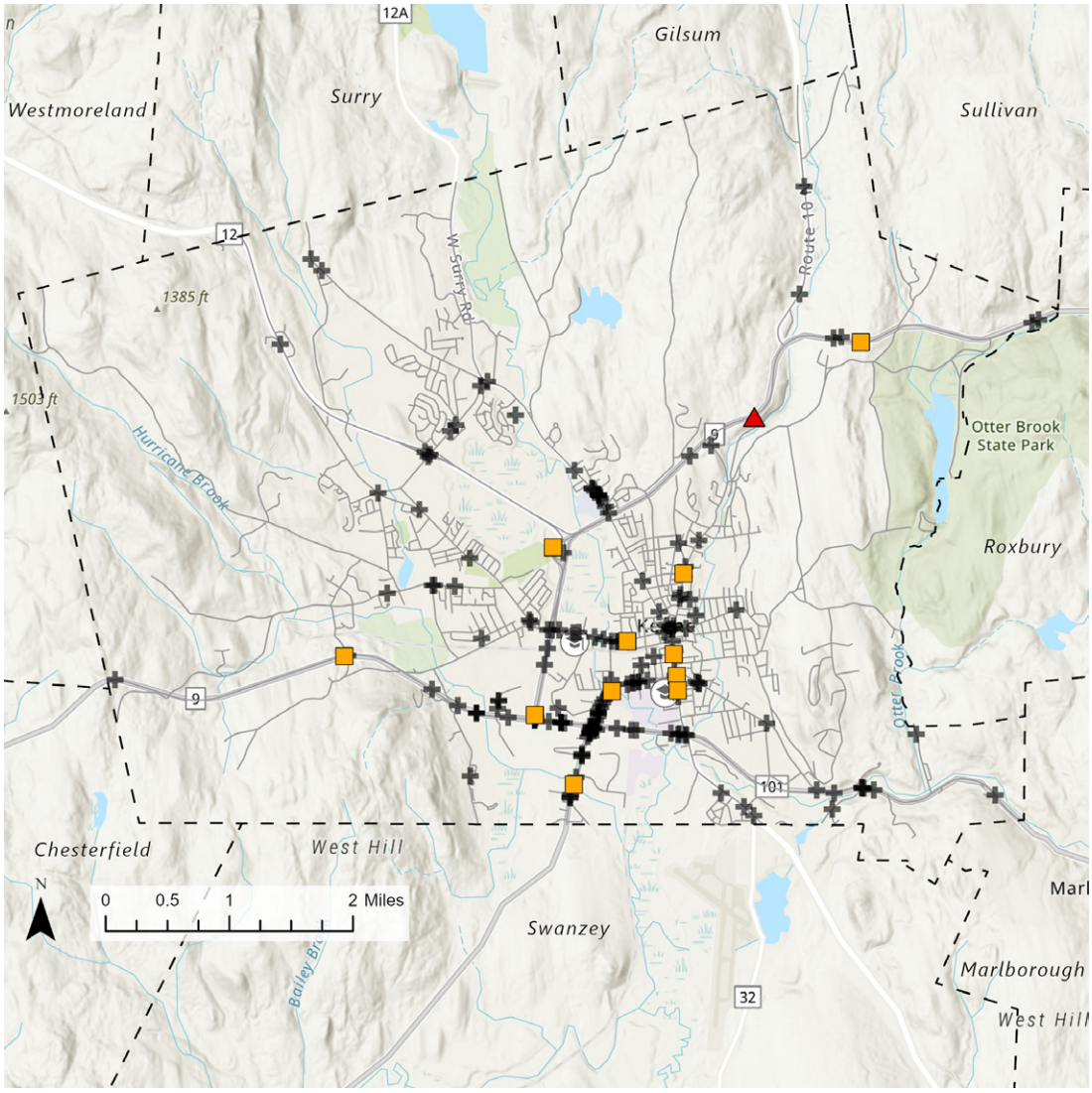


Legend

Crash Severity

- Fatal Injury
- Suspected Serious Injury
- Suspected Minor Injury
- Keene Streets
- Keene Boundary
- Colleges and Universities
- Keene Public Schools

Distracted Driving Involved Crashes Resulting in a Fatal, Serious Injury, or Minor Injury, 2014-2022

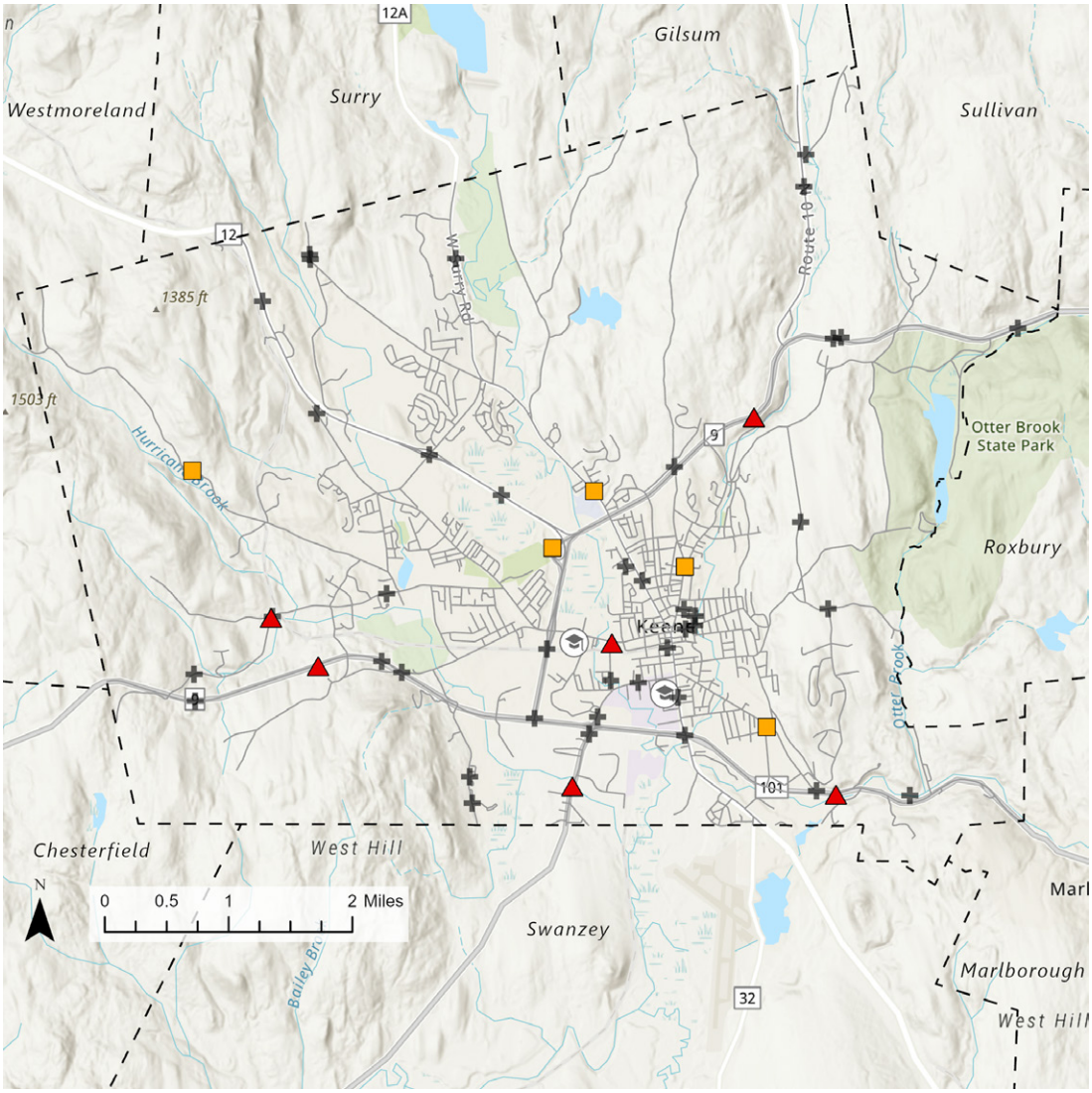


Legend

Crash Severity

- Fatal Injury
- Suspected Serious Injury
- Suspected Minor Injury
- Keene Streets
- Keene Boundary
- Colleges and Universities
- Keene Public Schools

Roadway Departure Involved Crashes Resulting in a Fatal, Serious Injury, or Minor Injury, 2014-2022

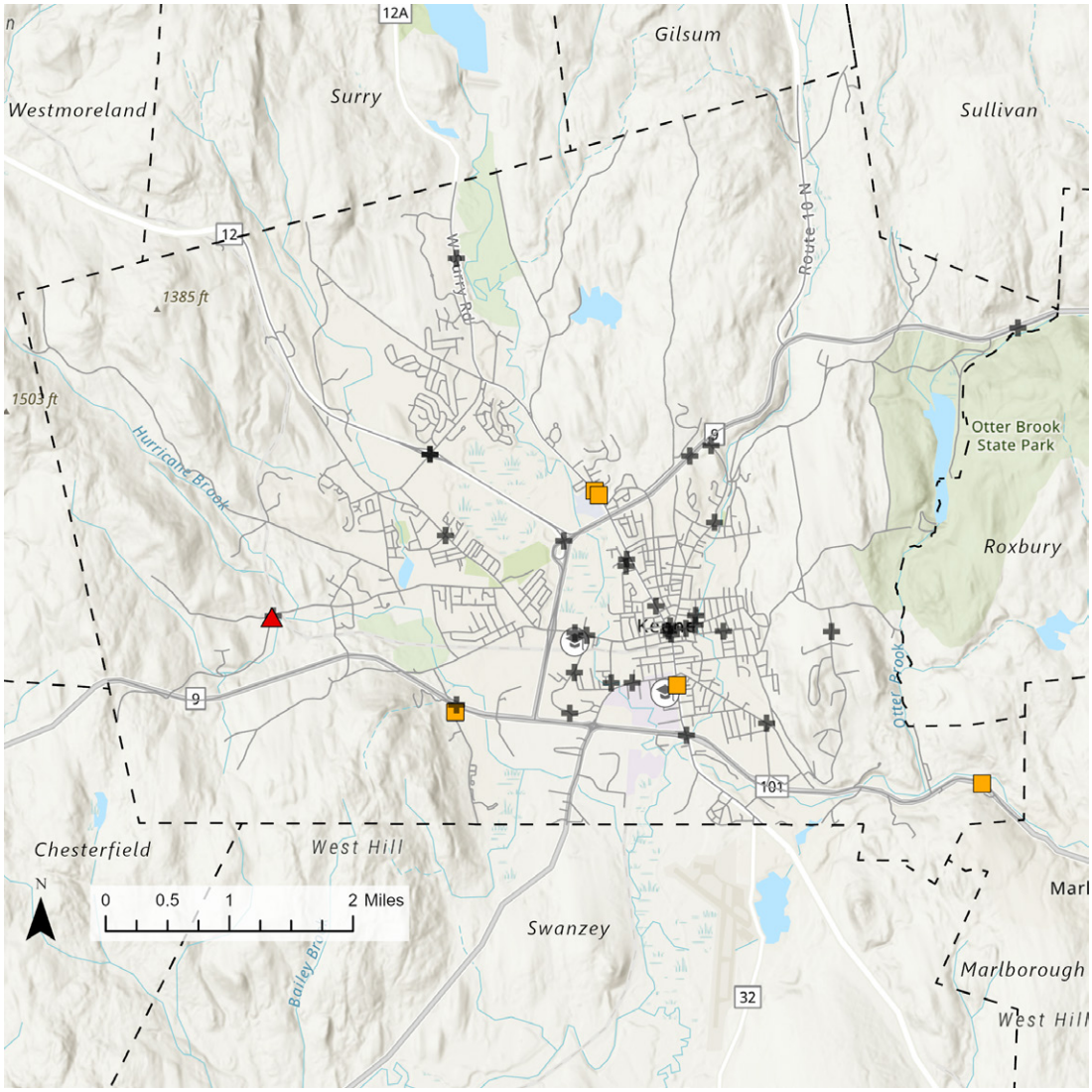


Legend

Crash Severity

- Fatal Injury
- Suspected Serious Injury
- Suspected Minor Injury
- Keene Streets
- Keene Boundary
- Colleges and Universities
- Keene Public Schools

Impaired Driving Involved Crashes Resulting in a Fatal, Serious Injury, or Minor Injury, 2014-2022

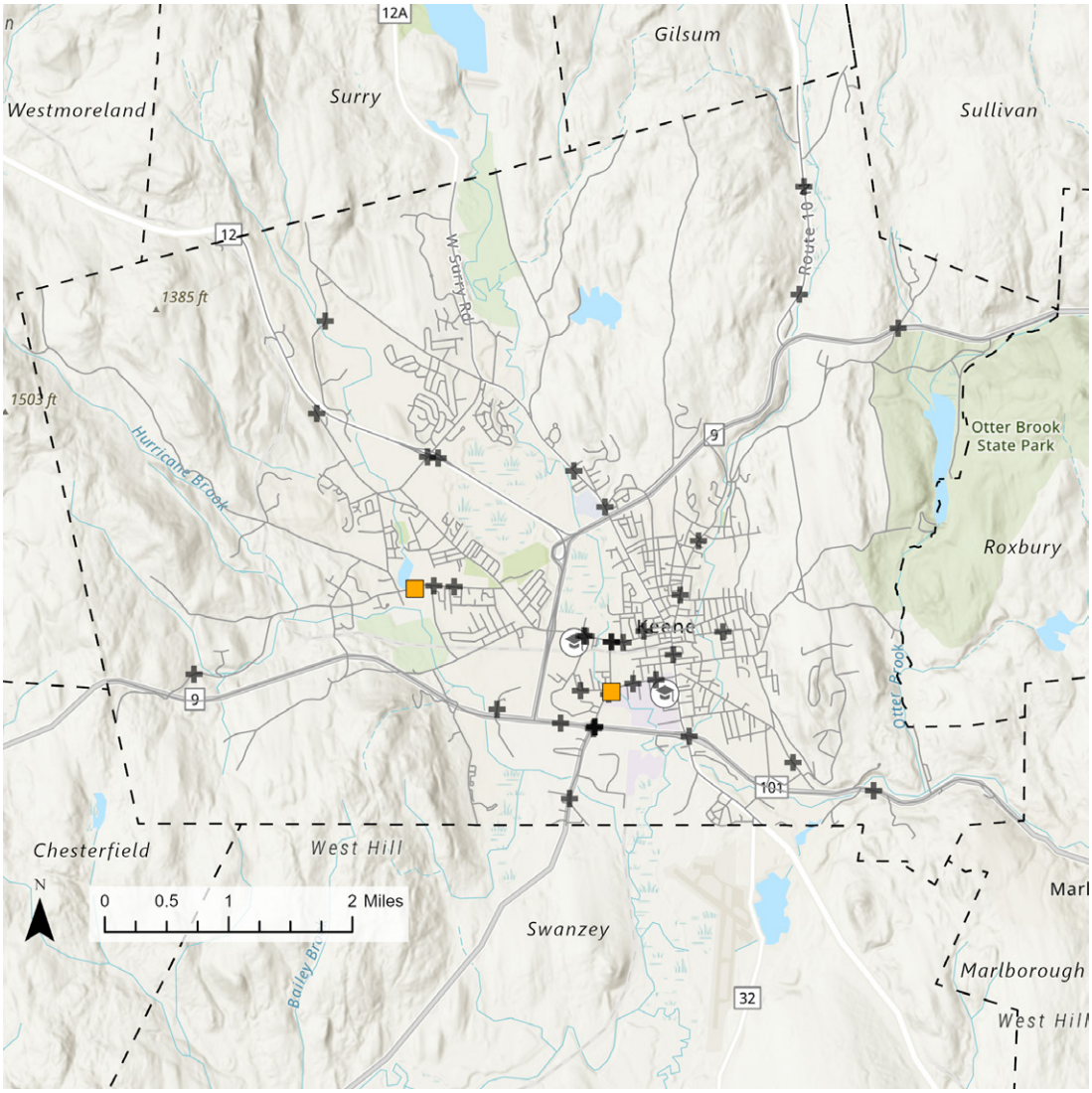


Legend

Crash Severity

- Fatal Injury
- Suspected Serious Injury
- Suspected Minor Injury
- Keene Streets
- Keene Boundary
- Colleges and Universities
- Keene Public Schools

Teen Driver Involved Crashes Resulting in a Fatal, Serious Injury, or Minor Injury, 2014-2022



Legend

Crash Severity

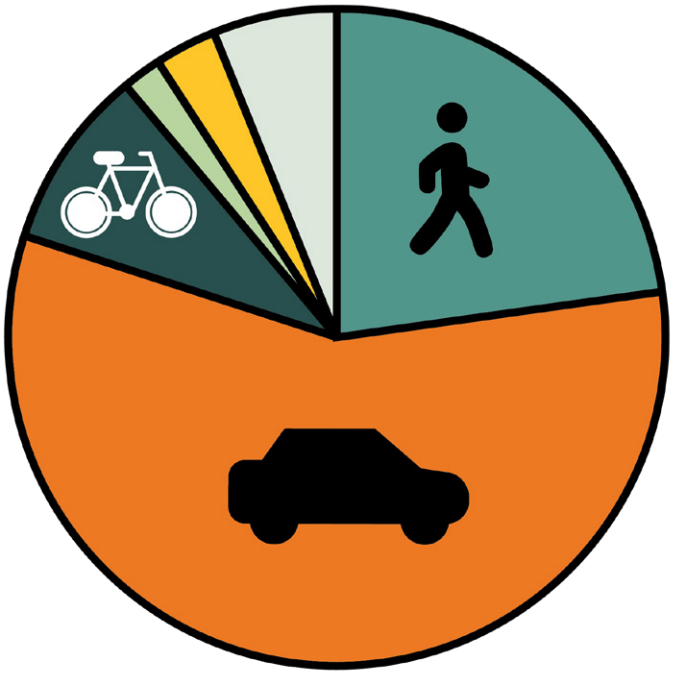
- Fatal Injury
- Suspected Serious Injury
- Suspected Minor Injury
- Keene Streets
- Keene Boundary
- Colleges and Universities
- Keene Public Schools

10 APPENDIX C: SURVEY RESULTS

QUESTION 1

In a typical week during warmer weather months, please estimate the percentage of your trips made in Keene using each mode of travel.

Driving Trips	57.2%
Walking trips (includes mobility devices)	23.0%
Bicycle Trips	8.5%
Trips on Public Transit	1.8%
Trips via other modes, e.g. carpooling	3.2%
Skipped/did not answer	6.3%
	100.0%

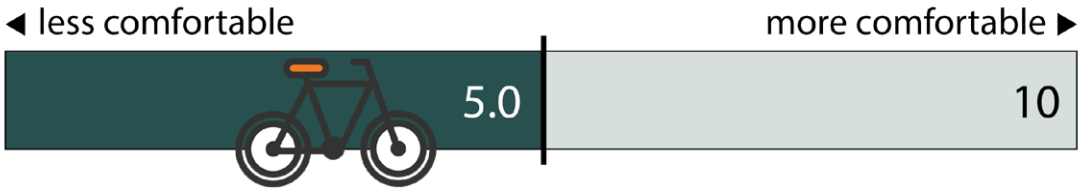


QUESTIONS 2 – 5

On a scale of 1-10, how comfortable and safe do you feel:

Q2:...while walking or using a mobility device in Keene? 439 responses

Q3:....while riding a bicycle in Keene? 303 responses



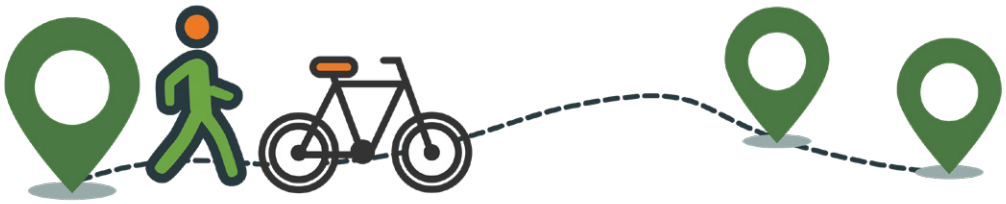
Q4:....at roadway crossings while using the trail network in Keene? 432 responses

Q5:....while driving a motor vehicle in Keene? 432 responses

QUESTION 6

If you drive regularly for most or all of your trips, what barriers prevent you from walking or bicycling more frequently? (Top 3)

Distance to typical destinations **45.1%**



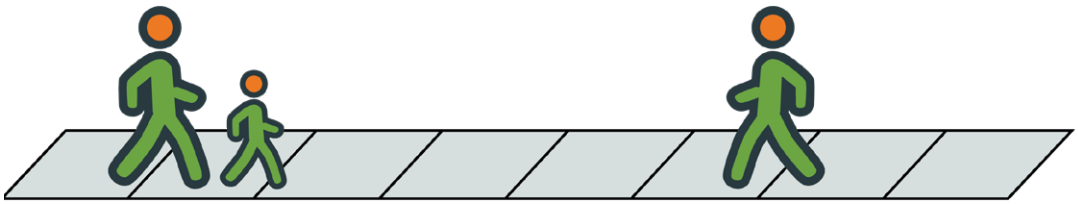
Convenience of a car; inconvenience of walking or bicycling **42.6%**

Difficulty carrying all the items I need **26.9%**

Concerns about traffic safety (e.g. traffic speed)	26.3%
Lack of sidewalks and/or safe road crossings	23.9%
Don't like walking and biking in bad weather	23.7%
Lack of bicycle infrastructure such as well-connected bike lanes and trails	20.5%
Lack of good lighting at night	15.5%
Other	8.9%

QUESTIONS 7

If you had $100 to spend on transportation safety infrastructure and programs in Keene, how would you spend it?

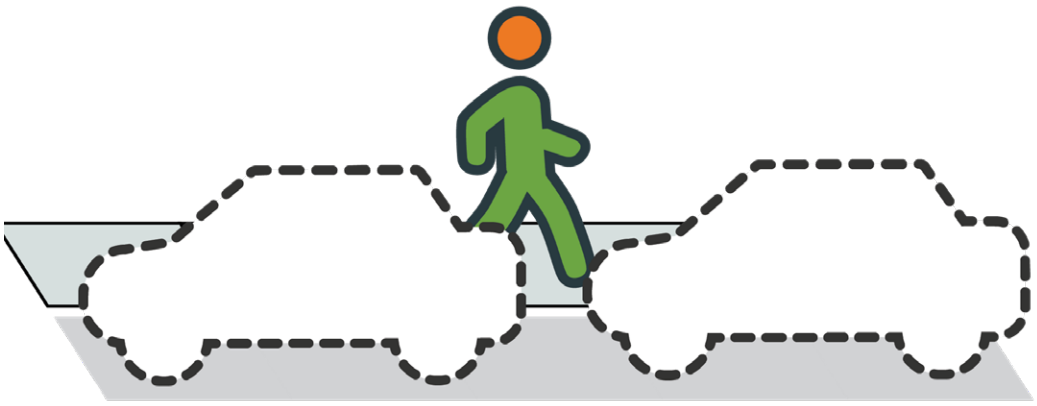


Improving or adding new sidewalks	**$19.84**	**17.3%**
Enhanced road striping and pavement markings	$16.01	14.0%
Enhanced enforcement	$13.37	11.7%
More trails and multi-use paths	$11.88	10.4%
Better winter maintenance	$11.60	10.1%
Neighborhood traffic calming measures	$11.13	9.7%
More roundabouts at busy intersections	$8.75	7.6%
Improving or adding new traffic signals	$7.56	6.6%
More on-street bike lanes	$7.56	6.6%
Education and safety training programs	$6.80	5.9%
	$114.50*	100.0%

* The survey did not limit responses to a maximum of $100, therefore many participants exceeded this amount, resulting in an average of $114.50. Additionally, the percentages displayed are calculated based on this average budget of $114.50.

QUESTION 8

Sometimes changes need to be made to roadways to accommodate people bicycling and walking safely, requiring a balanced approach. When sidewalks and/or bike lanes are desired on a roadway, which strategies should be considered first? (512 responses ranked the options as preference #1-8, with #1 being the most desirable).



Removing or decreasing parking (typically on one side of the street)	**3.1**
Slowing down driving speeds through traffic calming measures	**3.2**
Narrowing travel lanes on roads to minimum standards (10 feet)	**3.3**
Changing street travel direction or creating one-way streets	3.8
Reducing number of vehicle travel lanes (on roads with >2 lanes)	4.8
Remove grass strips and trees	5.5
Acquiring private property	6.2
None of the below options	6.2

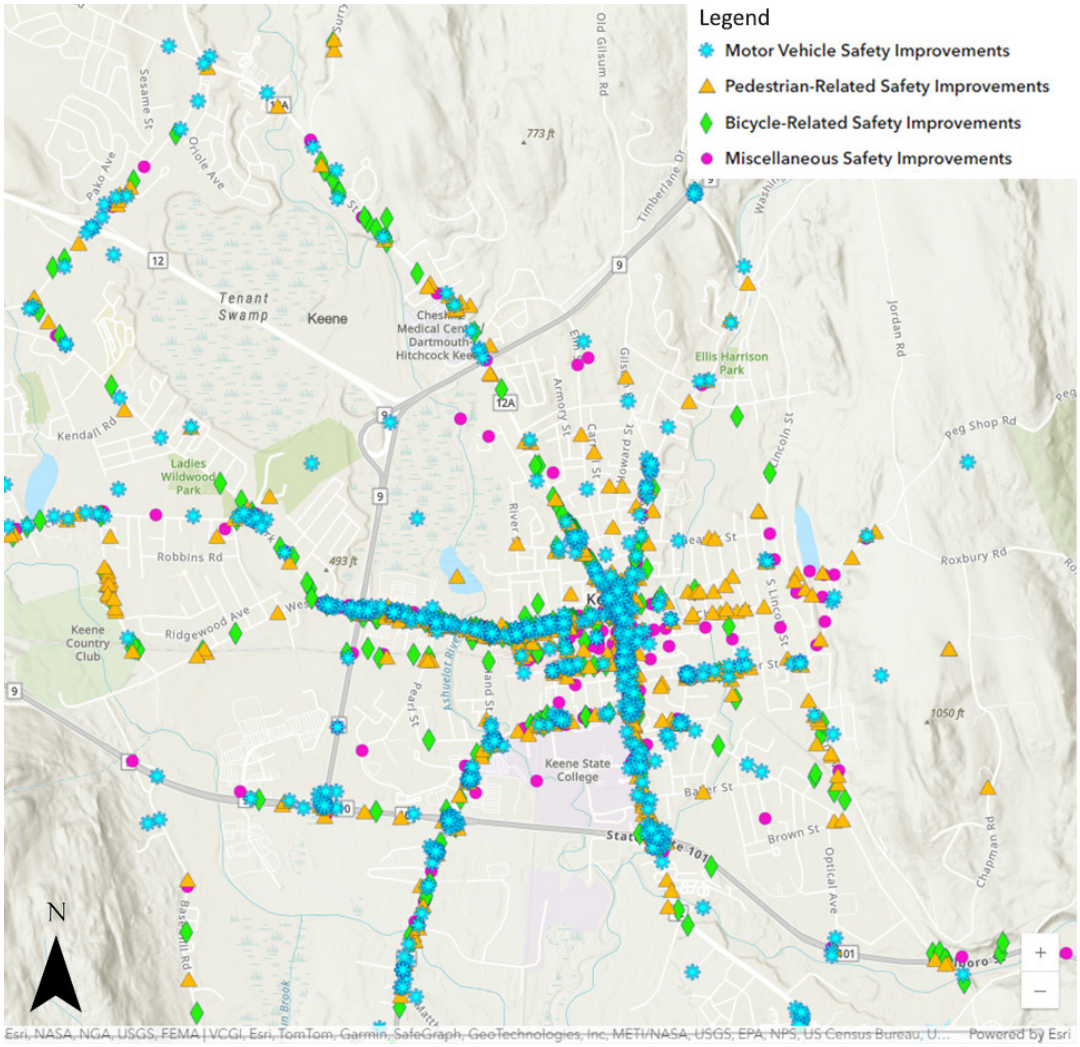
QUESTION 9

Of the destinations listed below, which are the top three in need of better pedestrian and bicycle infrastructure?

West Street	**56.4%**
Upper Main Street	35.4%
Central Square	34.3%
Streets near elementary schools	30.3%
Lower Main Street	23.5%
Arch Street/near KHS	22.4%
Maple Ave/near KMS	19.5%
Local Streets in Neighborhoods	15.2%
Other	10.6%

QUESTION 10

We are interested to learn about your priorities for safety improvements related to getting around Keene. Provide up to 3 locations where you have safety concerns or suggested improvements for (driving, walking, bicycling, and misc.)



QUESTION 11

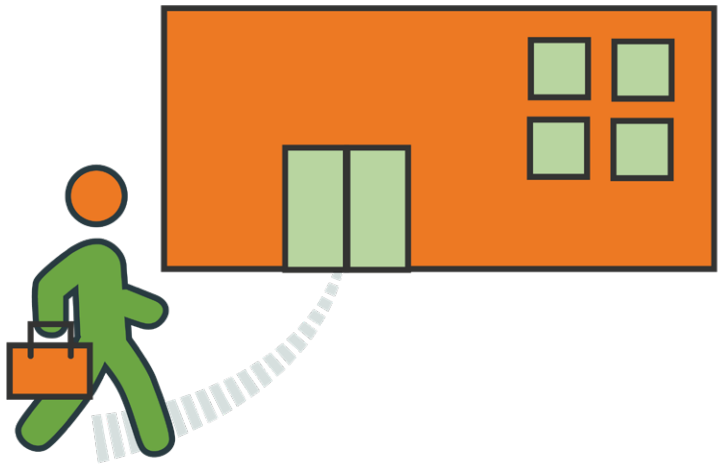
Are you a Keene resident?

Yes	**79.7%**
No	19.7%
If yes, which Ward do you live in?	
Ward 1	10.1%
Ward 2	17.8%
Ward 3	16.1%
Ward 4	14.0%
Ward 5	**20.8%**
Skipped/did not answer	21.2%
	100.0%

QUESTION 12

Do you work in Keene?

Yes	**56.6%**
No	41.1%
Skipped/did not answer	2.3%
	100.0%



QUESTION 13

What is your age?

<20	1.1%
20-39	20.2%
40-59	33.0%
60-79	**39.6%**
>79	4.6%
Skipped/did not answer	1.5%
	100.0%

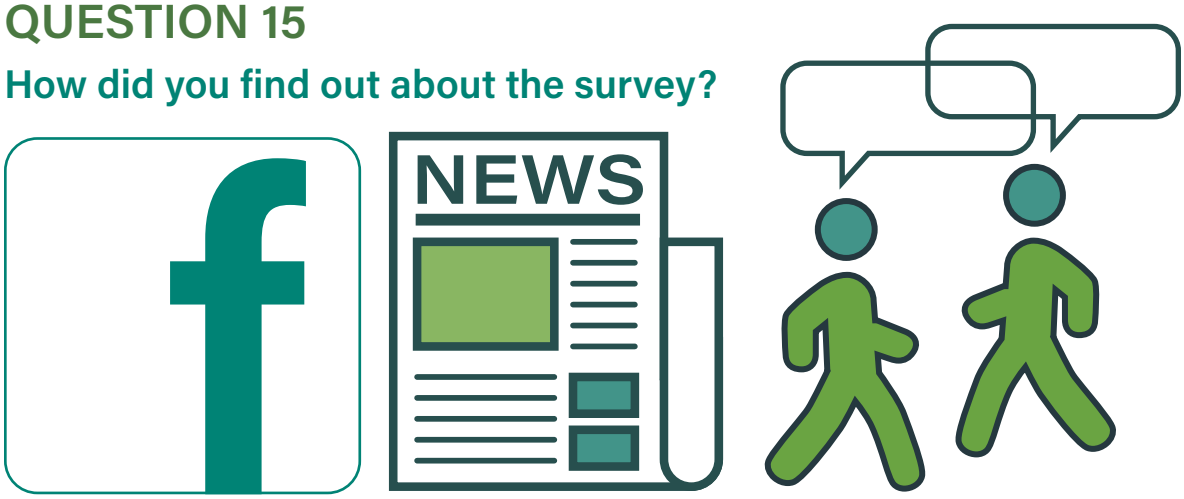
QUESTION 14

What type of housing do you live in?

Single family home	**75.4%**
Apartment	12.3%
Townhouse/condo	7.0%
Mobile home	1.3%
Prefer not to answer	3.2%
Skipped/did not answer	0.8%
	100.0%

QUESTION 15

How did you find out about the survey?



From a social media post	**21.0%**
From a local newspaper or radio station	12.1%
The link was emailed to me from a friend or colleague	6.4%
From the keenenh.gov web page	5.5%
Through word of mouth	3.0%
From a posted flier	0.0%
Other	4.7%
Skipped/did not answer	47.3%
	100.0%

11 | APPENDIX D: HIGH INJURY NETWORK (HIN) CORRIDORS TABLE

RANK	STREET NAME	FROM STREET/LOCATION	TO STREET/ LOCATION	FATAL CRASHES (K)*	SERIOUS CRASHES (A)*	MINOR CRASHES (B)*	KAB* CRASHES	LENGTH (MILES)
1	Winchester Street	NH Route 101	Pearl Street	0	2	16	18	0.26
2	West Street	Franklin Pierce Highway	Main Street	1	2	48	51	0.94
3	Main Street	NH Route 101	Winchester Street	0	3	8	11	0.49
4	Main Street	Winchester Street	Main Street	0	1	16	17	0.36
5	Winchester Street	Lucinda Terrace	Kit Road	1	2	19	22	0.70
6	Washington Street	Central Square	Washington Avenue	0	3	12	15	0.68
7	Court Street	Franklin Pierce Highway	Westminster Court	0	3	17	20	0.79
8	NH Route 101	Winchester Street	Main Street	1	1	15	17	0.74
9	Route 9	Base Hill Road	Franklin Pierce Highway	0	2	10	12	0.64
10	Route 9	Gilsum Road	Sullivan Road	0	3	6	9	0.98
11	NH Route 101	Hwy 12/Franklin Pierce Hwy	Winchester Street	0	0	15	15	0.46
12	Route 9	NH Route 101	West Street	0	2	4	6	0.74
13	Marlboro Street	Main Street	Baker Street	0	1	8	9	0.60
14	Winchester Street	Pearl Street	Main Street	0	0	15	15	0.53
15	Optical Avenue	NH Route 101	Marlboro Street	0	1	2	3	0.43
TOTAL				**3**	**26**	**211**	**240**	**9.35**

*The KABCO scale is a functional measure of the injury severity for any person involved in the crash. K-Fatal Injury, A-Suspected Serious Injury, B-Suspected Minor Injury, C-Possible Injury, and O-No Apparent Injury.

APPENDIX E: LIST OF PROJECT RECOMMENDATIONS BY STREET

12

Roadway Safety Project Suggestions (Sorted by PRIMARY STREET)

Mode[1]	Category	Sub-Category	City District[2]	Primary Street	Secondary Street	Juris.[3]	PC or $[4]	Notes
Pedestrian	Crosswalk	Crosswalk improvements	Downtown	Adams St	Elliot St	City	no	Potential RRFBs in front of Wheelock School
Bike/Trail	Shared-use path	Trail bridge improvements	North side	Appel Way Trail	Ashuelot River	City	YES	Decking for two bridges in need of repair; long term replacement project (currently programmed in the City's Capital Improvement Program)
MV	Intersection	Signage/sight distance	City Fringe	Arch St	Whitcombs Mill Rd	City	no	Sight distance and STOP sign and stop bar visibility improvements
Misc	Roadway	Traffic calming	West Keene	Arch St	Park Ave to Hurricane Rd	City	no	Traffic calming measures TBD
Pedestrian	Crosswalk	New crosswalk	West Keene	Arch St	Hurricane Rd	City	no	Crosswalk in coordination with potential new Arch St sidewalk project
Pedestrian	Crosswalk	New crosswalk	West Keene	Arch St	Crossway Church parking lot	City	no	Parking lot is occasionally used as unofficial overflow parking for KHS events
Pedestrian	Sidewalk	New sidewalk	West Keene	Arch St	Hurricane Rd to Blackberry Ln	City	no	Sidewalk to be installed on the north side of Arch St and link with proposed new crosswalk where Hurrican Rd meets Arch St.
Pedestrian	Sidewalk	Sidewalk improvements	West Keene	Arch St	Blossom St	City	no	Sidewalk improvements needed in SW corner of intersection
Bike/Trail	Shared-use path	New bike accommodations	West Keene	Arch St	Park Ave to KHS	City	no	Widen sidewalk to accommodate shared use
MV	Intersection	Signage/sight distance	City Fringe	Arch St / Chesterfield Rd	Stearns Rd	City	no	Add advisory speed limit and intersection warning signs on EB approach to both the intersection and the tunnel below the rail trail
Bike/Trail	Shared-use path	Trail bridge improvements	Downtown	Ashuelot Rail Trail	Ashuelot River	City	YES	Bridge decking in need of repair; currently programmed in the City's Capital Improvement Program
Bike/Trail	Shared-use path	Trail improvements	Downtown	Ashuelot Rail Trail	Cheshire Rail Trail	City	no	Widen siewalk along Emerald St north side) and School St (west side) to 8' min, 10' ideal for shared use
Pedestrian	Sidewalk	Sidewalk improvements	East side	Beaver St	Washington St to Oak St	City	YES	Included in the City's Capital Improvement Program for reconstruction in 2029
Bike/Trail	Crosswalk	Crosswalk improvements	West Keene	Bradford Rd	Cheshire Rail Trail	City	no	Potential RRFBs at trail crossing
Misc	Roadway	Traffic calming	West Keene	Bradford Rd	West St to Arch St	City	no	Traffic calming measures TBD
Misc	Roadway	Traffic calming	East side	Carpenter St	Water St to Church St	City	no	Need to reeuce traffic speeds due to increased pedestrian activity--including children--from Pat Russell Park
Pedestrian	Sidewalk	New sidewalk	East side	Carpenter St	Water St to Russell Park	City	no	Fill in sidewalk gap on the west side of Carpentar St from Pat Russell Park to Water St
Bike/Trail	Intersection	New bike accommodations	Downtown	Central Sq		City	YES	Separated bike lanes in conjunction with Central Square redesign
Pedestrian	Crosswalk	Crosswalk improvements	Downtown	Central Sq		City	YES	Improvements at all crosswalks in coordination with Downtown Imp. Project
MV	Intersection	Signage/pavement markings	Downtown	Central Sq		City	YES	Done in conjunction with Central Square redesign
MV	Intersection	Signal timing change	Downtown	Central Sq		City	YES	Done in conjunction with Central Square redesign
Misc	Intersection	Lighting	Downtown	Central Sq	at all crosswalks	City	YES	New lighting in conjunction with Central Square redesign
Bike/Trail	Shared-use path	Trail improvements	West Keene	Cheshire Rail Trail	Kohls Plaza	City	no	Provide a formal spur trail to provide a formalized connection between the CRT and the Kohl's/Aldi plaza area
Bike/Trail	Shared-use path	Trail improvements	West Keene	Cheshire Rail Trail	Pitcher St	City	no	Upgrade trail surface to pavement from bridge to Pitcher st
Bike/Trail	Shared-use path	Trail improvements	City Fringe	Cheshire Rail Trail	Transfer Station	City	no	Trail surface in need of repair; to be completed in conjunction with future extension of the Cheshire Rail Trail
Pedestrian	Sidewalk	Sidewalk improvements	East side	Church St	Norway Ave to S Lincoln St	City	no	Project already funded through the City's Capital Improvement Program
Misc	Roadway	Lighting	East side	Church St	Gurnsey St to S Lincoln St	City	no	Very little street lighting along this segment of Church St, e.g., no fixtures currently from Edward St to Probate St (>400 ft)
MV	Intersection	Signage/sight distance	City Fringe	Concord Rd	Sullivan Rd/ Nims Rd	State	no	Add intersection warning signs for the WB approach to Nims Rd on Sullivan Rd
Pedestrian	Crosswalk	New crosswalk	North side	Concord Rd	Upper Knight St	City	no	Study needed to determine best crossing location to link the end of the existing sidewalk with Washington St Extension (from which the request was made)
Pedestrian	Crosswalk	Crosswalk improvements	North side	Court St	Ingalls St	City	no	Potential east bump out with RRFBs; also study opportunities to improve left turns from Ingalls to Court St
Bike/Trail	Roadway	New bike accommodations	North side	Court St	Central Sq to Portland St	City	no	Consider restriction of parking to one side to provide space for bike lanes
Pedestrian	Crosswalk	Crosswalk improvements	Downtown	Court St	School St	City	no	Potential RRFBs
Pedestrian	Crosswalk	New crosswalk	North side	Court St	Westview Ave	City	no	Crosswalk needed where the south side sidewalk terminates at Westview Ave
Pedestrian	Crosswalk	New crosswalk	North side	Court St	Linden St	City	no	New crosswalk will requre ADA ramp and switchback on the east side
Misc	Roadway	Traffic calming	North side	Court St	Keene Med Center to Main St	City	no	Consider less-aggressive speed humps and raised crosswalks, designed in coordination with emergency services
MV	Intersection	Left-turn challenges	North side	Court St	High St	City	no	More study needed to determine recommendation
MV	Intersection	Fire department signal clarity	Downtown	Court St	Vernon St	City	no	Additional signage needed to provide warning on approachs
Pedestrian	Crosswalk	Crosswalk improvements	North side	Court St	Crestview St	City	no	Potential west bump out with RRFBs
Pedestrian	Sidewalk	Sidewalk improvements	North side	Court St	Westview Ave to E Surry Rd	City	no	Spot improvements needed in various locations, including stop bars at Westminster Ct. and major driveways
Pedestrian	Crosswalk	New crosswalk	North side	Court St	E Surry Rd	City	no	Only needed in conjunction with sidewalk gap project in order to provide a continuous pedestrian facility along Court St
Pedestrian	Sidewalk	New sidewalk	North side	Court St	near E Surry Rd	City	no	Gap from end of SW near path to Twin Stone Bridge to the SW terminus at E Surry Rd

1. Mode = Motor Vehicle (MV), Pedestrian (Ped), Bike, or Miscellaneous (Misc)
2. City District = Downtown, East Side, North Side, West Keene, or City Fringe)
3. Jurisdiction = City, State, or Urban Compact (UC)
4. PC or $ = Is the project complete, in CIP Budget, or currently state funded? (Yes = orange)

Mode[1]	Category	Sub-Category	City District[2]	Primary Street	Secondary Street	Juris.[3]	PC or $[4]	Notes
Pedestrian	Sidewalk	New sidewalk	Downtown	Dunbar St	Main St to 56 Dunbar	City	no	New sidewalk needed
Misc	Roadway	Traffic calming	East side	Eastern Ave	Water St to Marlboro St	City	no	Potentially speed humps
Pedestrian	Sidewalk	Sidewalk improvements	East side	Eastern Ave	Marlboro St to Water St	City	no	Existing sidewalk is narrow and needs repairs
Misc	Roadway	Traffic calming	North side	Elm St	North St to Court St	City	no	Traffic calming measures TBD
MV	Intersection	All-way stop conversion	Downtown	Emerald St	School St	City	no	Stop control for all approaches
Pedestrian	Crosswalk	New crosswalk	Downtown	Emerald St	Ralston St	City	no	Crosswalk for the east approach in conjunction with all-way stop
MV	Intersection	All-way stop conversion	Downtown	Emerald St	Ralston St	City	no	Current stop control pattern is confusing to both drivers and peds
Pedestrian	Crosswalk	Crosswalk improvements	Downtown	Emerald St	Wilson St	City	no	Potential bump outs with RRFBs in front of Brewbakers
MV	Intersection	Signage/pavement markings	North side	Forest St	Chestnut St	City	no	Install STOP sign on Chestnut St on the approach to Forest St (currently an uncontrolled movement)
Pedestrian	Sidewalk	New sidewalk	Downtown	Gilbo Ave	West St to School St	City	no	Sidewalk gap in front of Colony Mill and Center of Keene
MV	Intersection	New left turn signal heads	Downtown	Gilbo Ave	School St	City	no	Long term project to eventually install left-turn signal heads and associated changes to signal phasing for all movements
Bike/Trail	Roadway	New bike accommodations	Downtown	Gilbo Ave	West St to School St	City	no	Remove 2nd westbound lane and shorten unnecessarily-long left turn lanes to provide space for bike lanes
Pedestrian	Crosswalk	New crosswalk	North side	High St	Elm St	City	no	Recommended to have new crosswalks on all four approaches (detactable warning panels currently exist at all corners)
Pedestrian	Crosswalk	New crosswalk	North side	High St	Howard St	City	no	Recommended to have new crosswalks on all four approaches (currently only on the north leg)
Misc	Roadway	Traffic calming	Downtown	Island St	Pearl/Winchester to West St	City	no	Consider speed humps along Island St in coordination w/ emergency services
Bike/Trail	Shared-use path	Trail bridge improvements	North side	Jonathan Daniels Trail	Ashuelot River	City	YES	Already part of a planned trail bridge maintenance program
Bike/Trail	Shared-use path	New trail connection	West Keene	Jonathan Daniels Trail	West St Shopping Plaza	City	no	Extend JT trail west to improve connection to West St Shopping Plaza
Bike/Trail	Roadway	New bike accommodations	Downtown	Main St	Winchester to West/Roxbury	City	YES	Separated bike lanes in conjunction with Main Street redesign
Pedestrian	Crosswalk	Crosswalk improvements	Downtown	Main St	Church St	City	YES	Potential RRFBs or raised crosswalk in conjunction with Main Street redesign
Pedestrian	Crosswalk	Crosswalk improvements	Downtown	Main St	Dunbar St	City	YES	Potential RRFBs or raised crosswalk in conjunction with Main Street redesign
Bike/Trail	Crosswalk	Crosswalk improvements	Downtown	Main St	Cheshire Rail Trail	City	YES	Speed table at trail crossing in conjunction with Main Street redesign
MV	Intersection	Left-turn challenges	Downtown	Main St	Emerald St/ Eagle Ct	City	YES	Improvements needed for turning left onto Main St from Water St (done in conjunction with Main Street redesign.)
Pedestrian	Sidewalk	Sidewalk improvements	Downtown	Main St	north of Winchester St	City	YES	Done in conjunction with Main Street redesign
Pedestrian	Crosswalk	Crosswalk improvements	Downtown	Main St	various crosswalks	City	YES	Potential RRFBs (or potential raised crosswalk) in conjunction w Main St redesign
Misc	Intersection	Lighting	Downtown	Main St	Water St	City	YES	Done in conjunction with Main Street redesign
Bike/Trail	Intersection	New bike accommodations	Downtown	Main St	Winchester St/ Marlboro St	City	no	In conjunction w new bike lanes to the north and to the south, widen adjacent sidewalks (where feasible) within the roundabout to accommodate multi-use
Pedestrian	Crosswalk	Crosswalk improvements	Downtown	Main St	Eagle Ct	City	no	Shift traffic lanes 3'-4' to the S to improve sight lines for westbound drivers approaching Main St (may require removal of one 15-min parking/loading space)
Misc	Roadway	Traffic calming	Downtown	Main St	Winchester/ Marlboro to Rt. 101	City	no	Traffic calming elements south of the roundabout to complement the Main Street redesign further north
Pedestrian	Crosswalk	New crosswalk	Downtown	Main St	Baker St	City	no	New crosswalk with median island in coordination w potential S. Main St road diet
Misc	Intersection	Lighting	Downtown	Main St	Winchester St	City	no	Improve lighting at Winchester St crosswalk (the only leg of the roundabout in which a crosswalk doesn't have at least 2 street lights immediately adjacent)
Pedestrian	Crosswalk	Crosswalk improvements	Downtown	Main St	near Hale Building	City	no	Wider refuge island (in conjunction with future road diet?)
Pedestrian	Crosswalk	Crosswalk improvements	Downtown	Main St	Elliot St	City	no	Wider refuge island (in conjunction with future road diet?)
Pedestrian	Crosswalk	Crosswalk improvements	Downtown	Main St	Commercial St	City	no	Potential RRFBs or raised crosswalk
Pedestrian	Crosswalk	Crosswalk improvements	Downtown	Main St	Water St	City	no	Potential RRFBs (or potential raised crosswalk)
Pedestrian	Crosswalk	Crosswalk improvements	Downtown	Main St	Post office	City	no	Potential RRFBs (or potential raised crosswalk)
Pedestrian	Crosswalk	Crosswalk improvements	Downtown	Main St	near Elliot Hall	City	no	Wider refuge island (in conjunction with future road diet?)
MV	Intersection	Left-turn challenges	Downtown	Main St	Baker St	City	no	Done in conjunction with any future improvements along south Main Street
Pedestrian	Crosswalk	Crosswalk improvements	Downtown	Main St (north leg)	Marlboro St	City	YES	Existing crosswalk should be relocated further north and/or with RRFB
Bike/Trail	Roadway	New bike accommodations	City Fringe	Maple Ave	Court St to Park Ave	UC	YES	Recent project reduced travel lanes to 10' to widen shoulders
MV	Intersection	Sight distance	West Keene	Maple Ave	Park Ave	City	no	Vegetation needs to be cut back for turn movements
Misc	Roadway	Lighting	City Fringe	Maple Ave	KMS to Court St	UC	no	Improved lighting needed where trees are most dense
Pedestrian	Crosswalk	Crosswalk improvements	Downtown	Marlboro St	Grove St	City	YES	Installation of RRFBs and/or curb extensions
Pedestrian	Crosswalk	New crosswalk	East side	Marlboro St	310 Marlboro St (vicinity)	City	YES	To be completed as part of NHDOT-funded project #42515 (2025)
Pedestrian	Crosswalk	New crosswalk	East side	Marlboro St	Optical Ave	City	no	Only in coodination with new Optical Ave sidewalk project
Misc	Intersection	Lighting	Downtown	Marlboro St	Jennison St	City	no	Somewhat dark zone between street lights at South St and 270 feet to the east

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3. Jurisdiction = City, State, or Urban Compact (UC)
4. PC or $ = Is the project complete, in CIP Budget, or currently state funded? (Yes = orange)

Mode[1]	Category	Sub-Category	City District[2]	Primary Street	Secondary Street	Juris.[3]	PC or $[4]	Notes
Pedestrian	Crosswalk	New crosswalk	East side	Marlboro St	Eastern Ave	City	no	New crosswalk and south landing with potential RRFB's to provide a way for pedestrians to cross Marlboro at the south end of Eastern Avenue sidewalk
MV	Intersection	Sight distance	City Fringe	Old Walpole Rd	Kennedy Dr	City	no	Clear vegetation (including tree within ROW in the SE corner) to improve sight distance
Pedestrian	Sidewalk	New sidewalk	East side	Optical Ave	Timken	City	no	West side sidewalk connects to Timken and C&S buildings
Pedestrian	Crosswalk	New crosswalk	East side	Optical Ave	Between Timken and C&S	City	no	Only in coodination with new Optical Ave sidewalk project
Bike/Trail	Roadway	Bike lane improvements	West Keene	Park Ave	West St to Arch St	City	YES	Project recently completed in 2022
Pedestrian	Crosswalk	Crosswalk improvements	West Keene	Park Ave	Royal Ave / Rowe Ave	City	no	Potential RRFBs
Pedestrian	Crosswalk	Crosswalk improvements	West Keene	Park Ave	Pine Ave	City	no	Potential RRFBs
Misc	Roadway	Traffic calming	West Keene	Park Ave	West St to Summit Rd	City	no	Consider speed humps along Island St in coordination w/ emergency services
Bike/Trail	Crosswalk	Crosswalk improvements	West Keene	Pearl St	Cheshire Rail Trail	City	no	Reduce vegetation and overgrowth
MV	Intersection	Left-turn challenges	City Fringe	Route 101	Swanzey Factory Rd	State	YES	Warning signage on NH Route 101 approaches; to be completed as part of NHDOT-funded project #41590
Pedestrian	Sidewalk	New sidewalk	City Fringe	Route 101	near Rocky Brook Motel	State	YES	NHDOT has proposed installing 5' paved shoulders as part of Project #41590
MV	Intersection	Roundabout conversion	City Fringe	Route 101	Main St	State	no	Conversion of signalized intersection (coordination with NHDOT required to prioritize funding)
Pedestrian	Crosswalk	Crosswalk improvements	City Fringe	Route 101	Winchester St	State	no	Replace yellow-orange W11-2 crosswalk signs w/ fluorescent yellow-green (FYG) - See: https://carmanah.com/resources/history-of-fluorescent-yellow-green-school-zone-signs/
MV	Intersection	Signage/pavement markings	City Fringe	Route 101	Winchester St	State	no	Coordinate with NHDOT to ensure more regular roadway striping on the approaches to and within the roundabout
Pedestrian	Crosswalk	Crosswalk improvements	City Fringe	Route 101	Main St	State	no	Crosswalk on west side of intersection needs enhanced markings and signage, along with a potential speed table for right turning vehicles from Main to Rt 101
Bike/Trail	Intersection	New bike accommodations	City Fringe	Route 101	Main St	State	no	Main St bike improvements TBD through wide intersection
Pedestrian	Sidewalk	New sidewalk	City Fringe	Route 101	Optical Ave to County Jail Rd	State	no	Consider new sidewalk as part of the NHDOT project on Rt. 101
MV	Intersection	Signage/pavement markings	City Fringe	Route 101	Main St	State	no	Double left lane identification from Main to Rt. 101 needs clarity
MV	Roadway	Signage/pavement markings	City Fringe	Route 101	Thompson Rd to County Jail Rd	State	no	Add shoulder rumble strips and signs warning of blind driveway, approaching intersections, and vehicles entering roadway
Pedestrian	Sidewalk	New sidewalk	City Fringe	Route 101	Winchester St to Ashuelot RT	State	no	8' wide sidewalk/shared use path on north side; includes ramp link to rail trail (requiring funding coordination and design collaboration with NHDOT)
MV	Intersection	Roundabout conversion	City Fringe	Route 12	Route 32	UC	no	Conversion of UNsignalized intersection
MV	Intersection	Roundabout conversion	City Fringe	Route 12	Wyman Rd	State	no	Conversion of UNsignalized intersection (requiring funding coordination and design collaboration with NHDOT)
MV	Intersection	Roundabout conversion	City Fringe	Route 9/101	Route 10/12	State	YES	To be completed as part of NHDOT-funded signalized intersection project #44357; potentially a future roundabout
MV	Intersection	Left-turn challenges	City Fringe	Route 9	Sullivan Rd	State	no	Reduce length of WB truck-climbing lane to create a LT-only lane with a 200'-long painted median to the west (similar to the left turn lane on Rt 9 WB at Rt. 123 in Stoddard)
Misc	Intersection	Lighting	City Fringe	Route 9	Route 10	State	no	Some existing light poles at the intersection do not include light fixtures
MV	Intersection	Roundabout conversion	North side	Route 9	Washington St	State	no	Conversion of UNsignalized intersection. Short term: potential channelized WB acceleration lane for left turning cars from Washington St
Pedestrian	Crosswalk	New crosswalk	City Fringe	Route 9	Whitcombs Mill Rd	State	no	Any future crosswalk will need median island and flashing beacon (more study required to better accommodate left turns to Rt 101 EB, and in conjunction with NHDOT)
MV	Intersection	Left-turn challenges	City Fringe	Route 9	Chesterfield Rd	State	no	More study needed to determine recommendation in coordination and design collaboration with NHDOT
Misc	Roadway	Traffic calming	City Fringe	Route 9	near Daniels Hill Rd	State	no	Expand length of the 40 mph speed limit zone
MV	Intersection	Lane merge	West Keene	Route 9	SB on-ramp from West St	State	no	Merge lane to potentially be extended
MV	Intersection	All-way stop conversion	East side	Roxbury St	Lincoln St	City	no	Stop control for all approaches
Misc	Roadway	Traffic calming	East side	Roxbury St	Main St to S Lincoln St	City	no	Traffic calming measures TBD
Pedestrian	Sidewalk	Sidewalk improvements	East side	Roxbury St	Main St to Robin Hood Park	City	no	Sidewalk repairs needed in various locations
Pedestrian	Crosswalk	Crosswalk improvements	East side	Roxbury St	Water St	City	no	Potential RRFBs at existing crosswalk with further study needed for additional improvements
MV	Intersection	Intersection geometry	East side	Roxbury St	Water St	City	no	More study needed to determine recommendation
Pedestrian	Sidewalk	New sidewalk	East side	Roxbury St	Water tower to Reservoir St	City	no	Extension of the existing sidewalk on Roxbury that currently terminates at Reservoir St
Pedestrian	Crosswalk	Crosswalk improvements	East side	Roxbury St	Reservoir St	City	no	Potential RRFBs
Misc	Roadway	Traffic calming	East side	S Lincoln St	Roxbury St to Water St	City	no	Traffic calming measures TBD
Pedestrian	Sidewalk	Sidewalk improvements	Downtown	S Main St	Winchester St to Rt. 101	City	YES	Portions of project are part of NHDOT Project 40666
Bike/Trail	Roadway	New bike accommodations	Downtown	S Main St	Winchester St to Rt. 101	City	no	Road diet project - 4-to-3 conversion with bike lanes
Pedestrian	Sidewalk	Sidewalk improvements	Downtown	S Main St	just south of Appleton St	City	no	Sidewalk segment to follow ped desire line between 441 and 425 Main Street to discourage pedestrians cutting diagonal across the grass
MV	Intersection	Signage/pavement markings	Downtown	School St	Winter St	City	no	STOP sign is recommended on the Winter St approach to School (currently uncontrolled movement)
MV	Intersection	Roundabout conversion	West Keene	Summit Rd	Maple Ave	City	no	Conversion of UNsignalized intersection

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4. PC or $ = Is the project complete, in CIP Budget, or currently state funded? (Yes = orange)

Mode[1]	Category	Sub-Category	City District[2]	Primary Street	Secondary Street	Juris.[3]	PC or $[4]	Notes
MV	Intersection	Intersection geometry	North side	Washington St	Gilsum St	City	no	Gilsum to "T" into Washington (short term: using striping and potential delineator posts only)
Pedestrian	Crosswalk	Crosswalk improvements	North side	Washington St	Greenlawn St	City	no	Potential bump outs and RRFBs in front of Franklin School
Pedestrian	Crosswalk	Crosswalk improvements	North side	Washington St	Walnut St	City	no	Potential bump out on west side
Bike/Trail	Roadway	Bike lane improvements	Downtown	Washington St	Central Sq to Spring St	City	no	Parking protected bike lanes by converting angled parking to parallel
Bike/Trail	Roadway	Bike lane improvements	North side	Washington St	Central Sq to Concord Rd	City	no	Narrow travel lanes to 10.5' to widen shoulder/bike lanes
Pedestrian	Crosswalk	New crosswalk	North side	Washington St	Woodbury St	City	no	New striped crosswalk
Pedestrian	Crosswalk	Crosswalk improvements	North side	Washington St	George St	City	no	Potential RRFBs installed at existing crosswalk across Washington St
Misc	Roadway	School PU/DO	North side	Washington St	Franklin Elementary School	City	no	Improvements needed for pick-up (PU) and drop off (DO) at the school
MV	Intersection	Left-turn challenges	Downtown	Washington St	Beaver St	City	no	May require removal of 1-2 parking spots on Washington St to improve sight lines for left turns from Beaver St
Pedestrian	Crosswalk	New crosswalk	Downtown	Washington St	Gathering Waters School	City	no	Potential bump outs and RRFBs
Pedestrian	Crosswalk	New crosswalk	North side	Washington St	June Street	City	no	Potentially at Citizens Way, rather than June St
Misc	Roadway	School PU/DO	Downtown	Washington St/ Spring St	Gathering Waters School	City	no	Improvements needed for pick-up (PU) and drop off (DO) at the school
MV	Intersection	All-way stop conversion	Downtown	Water St	Grove St	City	YES	Project recently completed
Bike/Trail	Crosswalk	Crosswalk improvements	East side	Water St	Cheshire Rail Trail	City	YES	Project recently completed
Pedestrian	Crosswalk	Crosswalk improvements	East side	Water St	Carpenter St	City	YES	Potential RRFBs to be potentially incorporated into NHDOT-funded project #41590
Misc	Roadway	Traffic calming	East side	Water St	Main St to Eastern Ave	City	no	Traffic calming measures TBD
MV	Intersection	Signage/sight distance	East side	Water St	Eastern Ave	City	no	Warning signs needed for westbound cars coming down the hill
Pedestrian	Sidewalk	Sidewalk improvements	Downtown	Water St	Willow St to Crossfield St	City	no	Tactile warning panels needed at the Willow St and Crossfield St inter-sections
Misc	Intersection	Lighting	East side	Water St	Grove St	City	no	Improved lighting at the intersection
Pedestrian	Crosswalk	Crosswalk improvements	East side	Water St	Eastern Ave	City	no	Potential RRFBs
Pedestrian	Crosswalk	New crosswalk	West Keene	West St	Pearl St	City	YES	Likely part of future NHDOT-funded project #43543
Bike/Trail	Roadway	New bike accommodations	DT/West Keene	West St	School St to Park Ave	City	YES	Bike lanes to be a likely part of future NHDOT-funded project #43543
Pedestrian	Sidewalk	Sidewalk improvements	DT/West Keene	West St	School St to Rt 9/10/12 ramps	City	YES	Likely part of future NHDOT-funded project #43543
MV	Intersection	New left turn signal heads	Downtown	West St	School St	City	YES	Install left-turn signal heads (with appropriate revisions to phasing) for all directions; likely part of future NHDOT-funded project #43543
Misc	Roadway	Traffic calming	DT/West Keene	West St	School St to Rt 9/10/12 ramps	City	YES	Likely part of future NHDOT-funded project #43543
MV	Intersection	Left-turn challenges	West Keene	West St	Pearl St	City	YES	Likely part of future NHDOT-funded project #43543
Pedestrian	Sidewalk	Sidewalk improvements	Downtown	West St	School St (south leg)	City	YES	SW and SE corners of intersection in need of ADA upgrades; likely part of future NHDOT-funded project #43543
Pedestrian	Crosswalk	New crosswalk	West Keene	West St	Route 9/10/12 NB ramps	City	YES	Likely part of future NHDOT-funded project #43543
MV	Intersection	Left-turn challenges	West Keene	West St	Starbucks Driveway	City	YES	As part of future NHDOT-funded project #43543, consider right turn only at the exit driveways
MV	Intersection	Left-turn challenges	West Keene	West St	Richardson Ct	City	YES	Likely part of future NHDOT-funded project #43543
Bike/Trail	Crosswalk	Crosswalk improvements	Downtown	West St	Jonathan Daniels Trail/Island	City	no	Widen west crosswalk to accommodate shared use; consider exclusive phase
MV	Intersection	New left turn signal heads	Downtown	West St	Gilbo Ave/ Ashuelot St	City	no	Install left-turn signal heads and corresponding changes to signal phasing from all four approaches to the intersection
MV	Intersection	Signal timing change	Downtown	West St	Island St	City	no	Revise signal timing as necessary and install pedestrian countdown timers
MV	Intersection	Roundabout conversion	Downtown	West St	Gilbo Ave	City	no	Conversion of signalized intersection
Misc	Sidewalk	Bus stop	West Keene	West St	Pearl St	City	no	Prominent bus stop and shelter needed adjacent to shopping plazas
MV	Intersection	Roundabout conversion	West Keene	West St	Route 9 SB ramps	State	no	Conversion of signalized intersection (may ultimately be part of NHDOT-funded project #43543)
MV	Intersection	Roundabout conversion	West Keene	West St	West St Shopping Center	City	no	Conversion of signalized intersection (may ultimately be part of NHDOT-funded project #43543)
MV	Intersection	Roundabout conversion	West Keene	West St	Route 9 NB ramps	State	no	Conversion of signalized intersection (may ultimately be part of NHDOT-funded project #43543)
MV	Intersection	Left-turn challenges	West Keene	West St	Aroma Joe's Driveway	City	no	More study needed to determine recommendation
Pedestrian	Crosswalk	Crosswalk improvements	Downtown	West St	near Keene Public Library	City	no	From School St, maintain a single EB lane for ~200 feet until after the crosswalk (restriping project in short term)
Bike/Trail	Crosswalk	Crosswalk improvements	West Keene	West St	Cheshire Rail Trail	City	no	Potential RRFBs at trail crossing
Pedestrian	Sidewalk	New sidewalk	West Keene	West St	Blossom St to CRT	City	no	Fills in a long gap in the sidewalk network
MV	Intersection	Intersection geometry	West Keene	West St	Park Ave	City	no	Grades from Park/West heading west add challenges
Pedestrian	Sidewalk	New sidewalk	City Fringe	West Surry Rd	Darling Rd to Court St	City	no	New sidewalk intended to provide an opportunity for the many dozens of residents off Darling Rd and Mnt View Rd to walk to Court St and Maple Ave
Misc	Roadway	Traffic calming	West Keene	Wheelock Park Driveway	Park Ave and Symonds School	City	no	Speed humps needed between Park Ave and entrance to Symonds School to mitigate speeding in the vicinity
Pedestrian	Sidewalk	New sidewalk	City Fringe	Winchester St	Kit St to Market Basket	UC	YES	To be completed as part of NHDOT-funded project #40666

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Mode[1]	Category	Sub-Category	City District[2]	Primary Street	Secondary Street	Juris.[3]	PC or $[4]	Notes
Pedestrian	Sidewalk	Sidewalk improvements	Downtown	Winchester St	Island St to KSC	City	YES	Replacement of southern southwalk recently completed
MV	Intersection	Left-turn challenges	City Fringe	Winchester St	Kit St	UC	YES	To be completed as part of NHDOT-funded project #40666
MV	Roadway	Access management	City Fringe	Winchester St	200' N of Krif Rd to Bradco St	UC	YES	Access management needed to minimize the very wide curb cuts; to be completed as part of NHDOT-funded project #40666
MV	Intersection	Left-turn challenges	City Fringe	Winchester St	Fairbanks St/ Wetmore St	UC	YES	Right-in/right-out restriction to both Fairbanks and Wetmore St (to be completed as part of NHDOT-funded project #40666)
MV	Intersection	Signage/pavement markings	Downtown	Winchester St	Island St	City	no	Evaluate need to revise the current installation of crosswalk signage orientation
Bike/Trail	Crosswalk	Crosswalk improvements	Downtown	Winchester St	Ashuelot Rail Trail	City	no	In long-term replace flashing signs with RRFBs for consistency at trail crossings
Pedestrian	Intersection	Crosswalk improvements	Downtown	Winchester St	Ralston St	City	no	Raised xwalk for ped safety and slow traffic to improve left turns from Ralston St
Pedestrian	Sidewalk	New sidewalk	Downtown	Winchester St	Route 101 to Rite Aid	City	no	Sidewalk needed along east side of Winchester for access to the shopping plaza from the roundabout
Misc	Intersection	Lighting	Downtown	Winchester St	Ralston St	City	no	Improved lighting on east leg, focused on existing Winchester St crosswalk
Bike/Trail	Roadway	New bike accommodations	Downtown	Winchester St	Island St to Ralston St	City	no	Only segment of Winchester St where space exists for bike lanes
MV	Intersection	Left-turn challenges	City Fringe	Winchester St	Krif Rd	UC	no	More study needed to determine recommendation

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13 APPENDIX F: LIST OF PROJECT RECOMMENDATIONS BY SCORE

Roadway Safety Project Suggestions (Sorted by EVALUATION SCORE)

Mode[1]	Category	Sub-Category	City District[2]	Primary Street	Secondary Street	Juris.[3]	PC or $[4]	Eval. Score	Notes
Bike/Trail	Roadway	New bike accommodations	Downtown	Main St	Winchester to West/Roxbury	City	YES	70	Separated bike lanes in conjunction with Main Street redesign
Pedestrian	Crosswalk	Crosswalk improvements	Downtown	Main St (north leg)	Marlboro St	City	YES	69	Existing crosswalk should be relocated further north and/or with RRFB
Bike/Trail	Intersection	New bike accommodations	Downtown	Central Sq		City	YES	68	Separated bike lanes in conjunction with Central Square redesign
Pedestrian	Crosswalk	Crosswalk improvements	Downtown	Central Sq		City	YES	67	Improvements at all crosswalks in coordination with Downtown Imp. Project
MV	Intersection	All-way stop conversion	Downtown	Water St	Grove St	City	YES	66	Project recently completed
Pedestrian	Crosswalk	Crosswalk improvements	Downtown	Marlboro St	Grove St	City	YES	66	Installation of RRFBs and/or curb extensions
MV	Intersection	Signage/pavement markings	Downtown	Central Sq		City	YES	66	Done in conjunction with Central Square redesign
MV	Intersection	Intersection geometry	North side	Washington St	Gilsum St	City	no	66	Gilsum to "T" into Washington (short term: using striping and potential delineator posts only)
Pedestrian	Crosswalk	Crosswalk improvements	Downtown	Main St	Church St	City	YES	65	Potential RRFBs or raised crosswalk in conjunction with Main Street redesign
Pedestrian	Crosswalk	Crosswalk improvements	Downtown	Main St	Dunbar St	City	YES	65	Potential RRFBs or raised crosswalk in conjunction with Main Street redesign
Bike/Trail	Crosswalk	Crosswalk improvements	Downtown	Main St	Cheshire Rail Trail	City	YES	65	Speed table at trail crossing in conjunction with Main Street redesign
MV	Intersection	Signal timing change	Downtown	Central Sq		City	YES	64	Done in conjunction with Central Square redesign
Pedestrian	Crosswalk	Crosswalk improvements	North side	Washington St	Greenlawn St	City	no	62	Potential bump outs and RRFBs in front of Franklin School
MV	Intersection	Left-turn challenges	Downtown	Main St	Emerald St/ Eagle Ct	City	YES	60	Improvements needed for turning left onto Main St from Water St (done in conjunction with Main Street redesign.)
MV	Intersection	All-way stop conversion	East side	Roxbury St	Lincoln St	City	no	60	Stop control for all approaches
Bike/Trail	Intersection	New bike accommodations	Downtown	Main St	Winchester St/ Marlboro St	City	no	60	In conjunction w new bike lanes to the north and to the south, widen adjacent sidewalks (where feasible) within the roundabout to accommodate multi-use
MV	Intersection	Signage/pavement markings	Downtown	Winchester St	Island St	City	no	59	Evaluate need to revise the current installation of crosswalk signage orientation
Pedestrian	Crosswalk	Crosswalk improvements	Downtown	Main St	Eagle Ct	City	no	59	Shift traffic lanes 3'-4' to the S to improve sight lines for westbound drivers approaching Main St (may require removal of one 15-min parking/loading space)
Misc	Intersection	Lighting	Downtown	Central Sq	At all crosswalks	City	YES	58	New lighting in conjunction with Central Square redesign
Misc	Roadway	Traffic calming	East side	Water St	Main St to Eastern Ave	City	no	58	Traffic calming measures TBD
Pedestrian	Crosswalk	Crosswalk improvements	North side	Washington St	Walnut St	City	no	58	Potential bump out on west side
Misc	Roadway	Traffic calming	East side	Roxbury St	Main St to S Lincoln St	City	no	57	Traffic calming measures TBD
Pedestrian	Sidewalk	Sidewalk improvements	East side	Roxbury St	Main St to Robin Hood Park	City	no	57	Sidewalk repairs needed in various locations
Pedestrian	Sidewalk	Sidewalk improvements	Downtown	Main St	North of Winchester St	City	YES	56	Done in conjunction with Main Street redesign
Bike/Trail	Roadway	Bike lane improvements	Downtown	Washington St	Central Sq to Spring St	City	no	56	Parking protected bike lanes by converting angled parking to parallel
Bike/Trail	Roadway	Bike lane improvements	North side	Washington St	Central Sq to Concord Rd	City	no	56	Narrow travel lanes to 10.5' to widen shoulder/bike lanes
Pedestrian	Crosswalk	New crosswalk	West Keene	West St	Pearl St	City	YES	55	Likely part of future NHDOT-funded project #43543
Pedestrian	Crosswalk	Crosswalk improvements	Downtown	Main St	Various crosswalks	City	YES	55	Potential RRFBs (or potential raised crosswalk) in conjunction w Main St redesign
Bike/Trail	Crosswalk	Crosswalk improvements	Downtown	West St	Jonathan Daniels Trail/Island	City	no	54	Widen west crosswalk to accommodate shared use; consider exclusive phase
MV	Intersection	Signage/sight distance	East side	Water St	Eastern Ave	City	no	54	Warning signs needed for westbound cars coming down the hill
MV	Intersection	New left turn signal heads	Downtown	West St	Gilbo Ave/ Ashuelot St	City	no	53	Install left-turn signal heads and corresponding changes to signal phasing from all four approaches to the intersection
Pedestrian	Sidewalk	Sidewalk improvements	Downtown	Water St	Willow St to Crossfield St	City	no	53	Tactile warning panels needed at the Willow St and Crossfield St intersections
Misc	Intersection	Lighting	East side	Water St	Grove St	City	no	53	Improved lighting at the intersection
Pedestrian	Crosswalk	New crosswalk	North side	Washington St	Woodbury St	City	no	53	New striped crosswalk
Bike/Trail	Roadway	New bike accommodations	DT/West Keene	West St	School St to Park Ave	City	YES	52	Bike lanes to be a likely part of future NHDOT-funded project #43543
Bike/Trail	Crosswalk	Crosswalk improvements	Downtown	Winchester St	Ashuelot Rail Trail	City	no	52	In long-term replace flashing signs with RRFBs for consistency at trail crossings
MV	Intersection	Signal timing change	Downtown	West St	Island St	City	no	52	Revise signal timing as necessary and install pedestrian countdown timers

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Mode[1]	Category	Sub-Category	City District[2]	Primary Street	Secondary Street	Juris.[3]	PC or $[4]	Eval. Score	Notes
MV	Intersection	Roundabout conversion	Downtown	West St	Gilbo Ave	City	no	52	Conversion of signalized intersection
Misc	Roadway	School PU/DO	Downtown	Washington St / Spring St	Gathering Waters School	City	no	51	Improvements needed for pick-up (PU) and drop off (DO) at the school
Misc	Roadway	Traffic calming	Downtown	Island St	Pearl/Winchester to West St	City	no	51	Consider speed humps along Island St in coordination w/ emergency services
Pedestrian	Sidewalk	New sidewalk	Downtown	Gilbo Ave	West St to School St	City	no	51	Sidewalk gap in front of Colony Mill and Center of Keene
Pedestrian	Crosswalk	Crosswalk improvements	North side	Court St	Ingalls St	City	no	51	Potential east bump out with RRFBs; also study opportunities to improve left turns from Ingalls to Court St
Pedestrian	Intersection	Crosswalk improvements	Downtown	Winchester St	Ralston St	City	no	50	Raised crosswalk for ped safety and slow traffic to improve left turns from Ralston St
Pedestrian	Crosswalk	Crosswalk improvements	North side	Washington St	George St	City	no	50	Potential RRFBs installed at existing crosswalk across Washington St
Pedestrian	Crosswalk	Crosswalk improvements	East side	Roxbury St	Water St	City	no	50	Potential RRFBs at existing crosswalk with further study needed for additional improvements
MV	Intersection	Roundabout conversion	City Fringe	Route 9/101	Route 10/12	State	YES	50	To be completed as part of NHDOT-funded signalized intersection project #44357; potentially a future roundabout
Pedestrian	Sidewalk	Sidewalk improvements	DT/West Keene	West St	School St to Rt 9/10/12 ramps	City	YES	49	Likely part of future NHDOT-funded project #43543
MV	Intersection	New left turn signal heads	Downtown	West St	School St	City	YES	49	Install left-turn signal heads (with appropriate revisions to phasing) for all directions; likely part of future NHDOT-funded project #43543
Misc	Roadway	Traffic calming	DT/West Keene	West St	School St to Rt 9/10/12 ramps	City	YES	49	Likely part of future NHDOT-funded project #43543
MV	Intersection	Left-turn challenges	West Keene	West St	Pearl St	City	YES	49	Likely part of future NHDOT-funded project #43543
Pedestrian	Sidewalk	New sidewalk	Downtown	Winchester St	Route 101 to Rite Aid	City	no	49	Sidewalk needed along east side of Winchester for access to the shopping plaza from the roundabout
Misc	Intersection	Lighting	Downtown	Winchester St	Ralston St	City	no	49	Improved lighting on east leg, focused on existing Winchester St crosswalk
Pedestrian	Sidewalk	Sidewalk improvements	Downtown	West St	School St (south leg)	City	YES	48	SW and SE corners of intersection in need of ADA upgrades; likely part of future NHDOT-funded project #43543
Bike/Trail	Roadway	New bike accommodations	Downtown	Winchester St	Island St to Ralston St	City	no	48	Only segment of Winchester St where space exists for bike lanes
MV	Intersection	Roundabout conversion	City Fringe	Route 101	Main St	State	no	48	Conversion of signalized intersection (coordination with NHDOT required to prioritize funding)
Misc	Roadway	Traffic calming	Downtown	Main St	Winchester/ Marlboro to Rt. 101	City	no	48	Traffic calming elements south of the roundabout to complement the Main Street redesign further north
MV	Intersection	All-way stop conversion	Downtown	Emerald St	School St	City	no	48	Stop control for all approaches
Pedestrian	Sidewalk	New sidewalk	City Fringe	Winchester St	Kit St to Market Basket	UC	YES	47	To be completed as part of NHDOT-funded project #40666
Pedestrian	Crosswalk	New crosswalk	West Keene	West St	Route 9/10/12 NB ramps	City	YES	47	Likely part of future NHDOT-funded project #43543
Pedestrian	Crosswalk	New crosswalk	Downtown	Main St	Baker St	City	no	47	New crosswalk with median island in coordination w potential S. Main St road diet
Pedestrian	Sidewalk	Sidewalk improvements	Downtown	Winchester St	Island St to KSC	City	YES	46	Replacement of southern southwalk recently completed
MV	Intersection	Left-turn challenges	City Fringe	Route 101	Swanzey Factory Rd	State	YES	46	Warning signage on NH Route 101 approaches; to be completed as part of NHDOT-funded project #41590
Misc	Roadway	School PU/DO	North side	Washington St	Franklin Elementary School	City	no	46	Improvements needed for pick-up (PU) and drop off (DO) at the school
Pedestrian	Crosswalk	Crosswalk improvements	City Fringe	Route 101	Winchester St	State	no	45	Replace yellow-orange W11-2 crosswalk signs w/ fluorescent yellow-green (FYG) - See: https://carmanah.com/resources/history-of-fluorescent-yellow-green-school-zone-signs/
Misc	Intersection	Lighting	Downtown	Main St	Winchester St	City	no	45	Improve lighting at Winchester St crosswalk (the only leg of the roundabout in which a crosswalk doesn't have at least 2 street lights immediately adjacent)
MV	Intersection	New left turn signal heads	Downtown	Gilbo Ave	School St	City	no	45	Long term project to eventually install left-turn signal heads and associated changes to signal phasing for all movements
Misc	Roadway	Traffic calming	East side	Carpenter St	Water St to Church St	City	no	45	Need to reduce traffic speeds due to increased pedestrian activity--including children--from Pat Russell Park
Pedestrian	Crosswalk	New crosswalk	East side	Marlboro St	310 Marlboro St (vicinity)	City	YES	44	To be completed as part of NHDOT-funded project #42515 (2025)
MV	Intersection	Left-turn challenges	Downtown	Washington St	Beaver St	City	no	44	May require removal of 1-2 parking spots on Washington St to improve sight lines for left turns from Beaver St
MV	Intersection	Intersection geometry	East side	Roxbury St	Water St	City	no	44	More study needed to determine recommendation
MV	Intersection	Signage/pavement markings	City Fringe	Route 101	Winchester St	State	no	44	Coordinate with NHDOT to ensure more regular roadway striping on the approaches to and within the roundabout
Pedestrian	Crosswalk	Crosswalk improvements	City Fringe	Route 101	Main St	State	no	44	Crosswalk on west side of intersection needs enhanced markings and signage, along with a potential speed table for right turning vehicles from Main to Rt 101
Bike/Trail	Roadway	New bike accommodations	Downtown	Gilbo Ave	West St to School St	City	no	44	Remove 2nd westbound lane and shorten unnecessarily-long left turn lanes to provide space for bike lanes
Bike/Trail	Roadway	New bike accommodations	North side	Court St	Central Sq to Portland St	City	no	44	Consider restriction of parking to one side to provide space for bike lanes
Pedestrian	Sidewalk	Sidewalk improvements	East side	Church St	Norway Ave to S Lincoln St	City	no	44	Project already funded through the City's Capital Improvement Program
Bike/Trail	Roadway	New bike accommodations	Downtown	S Main St	Winchester St to Rt. 101	City	no	43	Road diet project - 4-to-3 conversion with bike lanes

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Mode[1]	Category	Sub-Category	City District[2]	Primary Street	Secondary Street	Juris.[3]	PC or $[4]	Eval. Score	Notes
Misc	Roadway	Traffic calming	East side	S Lincoln St	Roxbury St to Water St	City	no	43	Traffic calming measures TBD
Pedestrian	Crosswalk	Crosswalk improvements	Downtown	Main St	Near Hale Building	City	no	43	Wider refuge island (in conjunction with future road diet?)
Pedestrian	Crosswalk	Crosswalk improvements	Downtown	Main St	Elliot St	City	no	43	Wider refuge island (in conjunction with future road diet?)
Pedestrian	Crosswalk	Crosswalk improvements	Downtown	Main St	Commercial St	City	no	43	Potential RRFBs or raised crosswalk
Pedestrian	Crosswalk	Crosswalk improvements	Downtown	Court St	School St	City	no	43	Potential RRFBs
Pedestrian	Sidewalk	New sidewalk	City Fringe	Route 101	Near Rocky Brook Motel	State	YES	42	NHDOT has proposed installing 5' paved shoulders as part of Project #41590
Misc	Sidewalk	Bus stop	West Keene	West St	Pearl St	City	no	42	Prominent bus stop and shelter needed adjacent to shopping plazas
MV	Intersection	Left-turn challenges	City Fringe	Route 9	Sullivan Rd	State	no	42	Reduce length of WB truck-climbing lane to create a LT-only lane with a 200'-long painted median to the west (similar to the left turn lane on Rt 9 WB at Rt. 123 in Stoddard)
Pedestrian	Sidewalk	New sidewalk	East side	Optical Ave	Timken	City	no	42	West side sidewalk connects to Timken and C&S buildings
Pedestrian	Crosswalk	Crosswalk improvements	Downtown	Main St	Water St	City	no	42	Potential RRFBs (or potential raised crosswalk)
Pedestrian	Crosswalk	New crosswalk	North side	Court St	Westview Ave	City	no	42	Crosswalk needed where the south side sidewalk terminates at Westview Ave
Pedestrian	Crosswalk	New crosswalk	North side	Court St	Linden St	City	no	42	New crosswalk will require ADA ramp and switchback on the east side
MV	Intersection	Left-turn challenges	West Keene	West St	Starbucks Driveway	City	YES	41	As part of future NHDOT-funded project #43543, consider right turn only at the exit driveways
MV	Intersection	Roundabout conversion	West Keene	West St	Route 9 SB ramps	State	no	41	Conversion of signalized intersection (may ultimately be part of NHDOT-funded project #43543)
Misc	Intersection	Lighting	City Fringe	Route 9	Route 10	State	no	41	Some existing light poles at the intersection do not include light fixtures
Bike/Trail	Intersection	New bike accommodations	City Fringe	Route 101	Main St	State	no	41	Main St bike improvements TBD through wide intersection
Pedestrian	Crosswalk	Crosswalk improvements	West Keene	Park Ave	Royal Ave / Rowe Ave	City	no	41	Potential RRFBs
Pedestrian	Crosswalk	Crosswalk improvements	Downtown	Main St	Post office	City	no	41	Potential RRFBs (or potential raised crosswalk)
Pedestrian	Crosswalk	Crosswalk improvements	Downtown	Main St	Near Elliot Hall	City	no	41	Wider refuge island (in conjunction with future road diet?)
Misc	Roadway	Traffic calming	North side	Court St	Keene Med Center to Main St	City	no	41	Consider less-aggressive speed humps and raised crosswalks, designed in coordination with emergency services
Bike/Trail	Shared-use path	Trail improvements	Downtown	Ashuelot Rail Trail	Cheshire Rail Trail	City	no	41	Widen sidewalk along Emerald St north side) and School St (west side) to 8' min, 10' ideal for shared use
MV	Intersection	Roundabout conversion	West Keene	West St	West St Shopping Center	City	no	40	Conversion of signalized intersection (may ultimately be part of NHDOT-funded project #43543)
MV	Intersection	Roundabout conversion	West Keene	West St	Route 9 NB ramps	State	no	40	Conversion of signalized intersection (may ultimately be part of NHDOT-funded project #43543)
MV	Intersection	Left-turn challenges	West Keene	West St	Aroma Joe's Driveway	City	no	40	More study needed to determine recommendation
Pedestrian	Sidewalk	New sidewalk	East side	Roxbury St	Water tower to Reservoir St	City	no	40	Extension of the existing sidewalk on Roxbury that currently terminates at Reservoir St
MV	Intersection	Roundabout conversion	North side	Route 9	Washington St	State	no	40	Conversion of Unsignalized intersection. Short term: potential channelized WB acceleration lane for left turning cars from Washington St
Pedestrian	Crosswalk	New crosswalk	East side	Marlboro St	Optical Ave	City	no	40	Only in coordination with new Optical Ave sidewalk project
MV	Intersection	Left-turn challenges	City Fringe	Winchester St	Kit St	UC	YES	39	To be completed as part of NHDOT-funded project #40666
MV	Intersection	Left-turn challenges	North side	Court St	High St	City	no	39	More study needed to determine recommendation
Bike/Trail	Crosswalk	Crosswalk improvements	East side	Water St	Cheshire Rail Trail	City	YES	38	Project recently completed
MV	Intersection	Left-turn challenges	City Fringe	Winchester St	Krif Rd	UC	no	38	More study needed to determine recommendation
Pedestrian	Sidewalk	New sidewalk	City Fringe	Route 101	Optical Ave to County Jail Rd	State	no	38	Consider new sidewalk as part of the NHDOT project on Rt. 101
Pedestrian	Crosswalk	New crosswalk	Downtown	Emerald St	Ralston St	City	no	38	Crosswalk for the east approach in conjunction with all-way stop
MV	Intersection	All-way stop conversion	Downtown	Emerald St	Ralston St	City	no	38	Current stop control pattern is confusing to both drivers and peds
MV	Intersection	Fire department signal clarity	Downtown	Court St	Vernon St	City	no	38	Additional signage needed to provide warning on approachs
MV	Intersection	Signage/sight distance	City Fringe	Concord Rd	Sullivan Rd / Nims Rd	State	no	38	Add intersection warning signs for the WB approach to Nims Rd on Sullivan Rd
Misc	Roadway	Lighting	East side	Church St	Gurnsey St to S Lincoln St	City	no	38	Very little street lighting along this segment of Church St, e.g., no fixtures currently from Edward St to Probate St (>400 ft)
Pedestrian	Sidewalk	Sidewalk improvements	Downtown	S Main St	Winchester St to Rt. 101	City	YES	37	Portions of project are part of NHDOT Project 40666
Pedestrian	Sidewalk	Sidewalk improvements	East side	Beaver St	Washington St to Oak St	City	YES	37	Included in the City's Capital Improvement Program for reconstruction in 2029
Pedestrian	Crosswalk	Crosswalk improvements	Downtown	Emerald St	Wilson St	City	no	37	Potential bump outs with RRFBs in front of Brewbakers
MV	Intersection	Signage/sight distance	City Fringe	Arch St	Whitcombs Mill Rd	City	no	37	Sight distance and STOP sign and stop bar visibility improvements
MV	Intersection	Left-turn challenges	West Keene	West St	Richardson Ct	City	YES	36	Likely part of future NHDOT-funded project #43543
Pedestrian	Crosswalk	Crosswalk improvements	East side	Water St	Carpenter St	City	YES	36	Potential RRFBs to be potentially incorporated into NHDOT-funded project #41590
Pedestrian	Crosswalk	New crosswalk	Downtown	Washington St	Gathering Waters School	City	no	36	Potential bump outs and RRFBs

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Mode[1]	Category	Sub-Category	City District[2]	Primary Street	Secondary Street	Juris.[3]	PC or $[4]	Eval. Score	Notes
MV	Intersection	Signage/pavement markings	City Fringe	Route 101	Main St	State	no	36	Double left lane identification from Main to Rt. 101 needs clarity
MV	Roadway	Signage/pavement markings	City Fringe	Route 101	Thompson Rd to County Jail Rd	State	no	36	Add shoulder rumble strips and signs warning of blind driveway, approaching intersections, and vehicles entering roadway
Misc	Roadway	Traffic calming	East side	Eastern Ave	Water St to Marlboro St	City	no	36	Potentially speed humps
Pedestrian	Crosswalk	Crosswalk improvements	North side	Court St	Crestview St	City	no	36	Potential west bump out with RRFBs
Pedestrian	Crosswalk	Crosswalk improvements	Downtown	West St	Near Keene Public Library	City	no	35	From School St, maintain a single EB lane for ~200 feet until after the crosswalk (restriping project in short term)
Bike/Trail	Crosswalk	Crosswalk improvements	West Keene	Pearl St	Cheshire Rail Trail	City	no	35	Reduce vegetation and overgrowth
MV	Intersection	Sight distance	West Keene	Maple Ave	Park Ave	City	no	35	Vegetation needs to be cut back for turn movements
Pedestrian	Sidewalk	Sidewalk improvements	East side	Eastern Ave	Marlboro St to Water St	City	no	35	Existing sidewalk is narrow and needs repairs
Pedestrian	Sidewalk	New sidewalk	Downtown	Dunbar St	Main St to 56 Dunbar	City	no	35	New sidewalk needed
Pedestrian	Sidewalk	New sidewalk	East side	Carpenter St	Water St to Russell Park	City	no	35	Fill in sidewalk gap on the west side of Carpentar St from Pat Russell Park to Water St
Bike/Trail	Roadway	Bike lane improvements	West Keene	Park Ave	West St to Arch St	City	YES	34	Project recently completed in 2022
Pedestrian	Crosswalk	Crosswalk improvements	East side	Water St	Eastern Ave	City	no	34	Potential RRFBs
MV	Intersection	Signage/pavement markings	Downtown	School St	Winter St	City	no	34	STOP sign is recommended on the Winter St approach to School (currently uncontrolled movement)
Pedestrian	Crosswalk	Crosswalk improvements	East side	Roxbury St	Reservoir St	City	no	34	Potential RRFBs
Pedestrian	Crosswalk	New crosswalk	City Fringe	Route 9	Whitcombs Mill Rd	State	no	34	Any future crosswalk will need median island and flashing beacon (more study required to better accommodate left turns to Rt 101 EB, and in conjunction with NHDOT)
MV	Intersection	Roundabout conversion	City Fringe	Route 12	Route 32	UC	no	34	Conversion of Unsignalized intersection
Pedestrian	Crosswalk	Crosswalk improvements	West Keene	Park Ave	Pine Ave	City	no	34	Potential RRFBs
Misc	Roadway	Traffic calming	West Keene	Arch St	Park Ave to Hurricane Rd	City	no	34	Traffic calming measures TBD
Pedestrian	Crosswalk	Crosswalk improvements	Downtown	Adams St	Elliot St	City	no	34	Potential RRFBs in front of Wheelock School
Misc	Roadway	Lighting	City Fringe	Maple Ave	KMS to Court St	UC	no	33	Improved lighting needed where trees are most dense
MV	Intersection	Left-turn challenges	Downtown	Main St	Baker St	City	no	33	Done in conjunction with any future improvements along south Main Street
Pedestrian	Crosswalk	New crosswalk	North side	High St	Elm St	City	no	33	Recommended to have new crosswalks on all four approaches (detachable warning panels currently exist at all corners)
Pedestrian	Crosswalk	New crosswalk	West Keene	Arch St	Hurricane Rd	City	no	33	Crosswalk in coordination with potential new Arch St sidewalk project
MV	Roadway	Access management	City Fringe	Winchester St	200' N of Krif Rd to Bradco St	UC	YES	32	Access management needed to minimize the very wide curb cuts; to be completed as part of NHDOT-funded project #40666
MV	Intersection	Roundabout conversion	City Fringe	Route 12	Wyman Rd	State	no	32	Conversion of Unsignalized intersection (requiring funding coordination and design collaboration with NHDOT)
Pedestrian	Sidewalk	New sidewalk	City Fringe	Route 101	Winchester St to Ashuelot RT	State	no	32	8' wide sidewalk/shared use path on north side; includes ramp link to rail trail (requiring funding coordination and design collaboration with NHDOT)
Pedestrian	Crosswalk	New crosswalk	North side	High St	Howard St	City	no	32	Recommended to have new crosswalks on all four approaches (currently only on the north leg)
MV	Intersection	Signage/pavement markings	North side	Forest St	Chestnut St	City	no	32	Install STOP sign on Chestnut St on the approach to Forest St (currently an uncontrolled movement)
Pedestrian	Crosswalk	New crosswalk	West Keene	Arch St	Crossway Church parking lot	City	no	32	Parking lot is occasionally used as unofficial overflow parking for KHS events
Misc	Intersection	Lighting	Downtown	Main St	Water St	City	YES	31	Done in conjunction with Main Street redesign
Pedestrian	Sidewalk	Sidewalk improvements	Downtown	S Main St	Just south of Appleton St	City	no	31	Sidewalk segment to follow ped desire line between 441 and 425 Main Street to discourage pedestrians cutting diagonal across the grass
Pedestrian	Sidewalk	New sidewalk	West Keene	Arch St	Hurricane Rd to Blackberry Ln	City	no	31	Sidewalk to be installed on the north side of Arch St and link with proposed new crosswalk where Hurrican Rd meets Arch St.
Pedestrian	Sidewalk	Sidewalk improvements	West Keene	Arch St	Blossom St	City	no	31	Sidewalk improvements needed in SW corner of intersection
Bike/Trail	Roadway	New bike accommodations	City Fringe	Maple Ave	Court St to Park Ave	UC	YES	30	Recent project reduced travel lanes to 10' to widen shoulders
MV	Intersection	Left-turn challenges	City Fringe	Route 9	Chesterfield Rd	State	no	30	More study needed to determine recommendation in coordination and design collaboration with NHDOT
Misc	Intersection	Lighting	Downtown	Marlboro St	Jennison St	City	no	30	Somewhat dark zone between street lights at South St and 270 feet to the east
Misc	Roadway	Traffic calming	North side	Elm St	North St to Court St	City	no	30	Traffic calming measures TBD
Bike/Trail	Shared-use path	New bike accommodations	West Keene	Arch St	Park Ave to KHS	City	no	30	Widen sidewalk to accommodate shared use
Misc	Roadway	Traffic calming	West Keene	Wheelock Park Driveway	Park Ave and Symonds School	City	no	29	Speed humps needed between Park Ave and entrance to Symonds School to mitigate speeding in the vicinity
Bike/Trail	Crosswalk	Crosswalk improvements	West Keene	West St	Cheshire Rail Trail	City	no	28	Potential RRFBs at trail crossing
Pedestrian	Sidewalk	Sidewalk improvements	North side	Court St	Westview Ave to E Surry Rd	City	no	28	Spot improvements needed in various locations, including stop bars at Westminster Ct. and major driveways

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Bike/Trail	Crosswalk	Crosswalk improvements	West Keene	Bradford Rd	Cheshire Rail Trail	City	no	28	Potential RRFBs at trail crossing
MV	Intersection	Signage/sight distance	City Fringe	Arch St/ Chesterfield Rd	Stearns Rd	City	no	28	Add advisory speed limit and intersection warning signs on EB approach to both the intersection and the tunnel below the rail trail
Misc	Roadway	Traffic calming	City Fringe	Route 9	Near Daniels Hill Rd	State	no	27	Expand length of the 40 mph speed limit zone
Pedestrian	Crosswalk	New crosswalk	North side	Court St	E Surry Rd	City	no	27	Only needed in conjunction with sidewalk gap project in order to provide a continuous pedestrian facility along Court St
Pedestrian	Crosswalk	New crosswalk	North side	Washington St	June Street	City	no	26	Potentially at Citizens Way, rather than June St
Pedestrian	Sidewalk	New sidewalk	North side	Court St	Near E Surry Rd	City	no	26	Gap from end of SW near path to Twin Stone Bridge to the SW terminus at E Surry Rd
Bike/Trail	Shared-use path	Trail bridge improvements	North side	Appel Way Trail	Ashuelot River	City	YES	25	Decking for two bridges in need of repair; long term replacement project (currently programmed in the City's Capital Improvement Program)
MV	Intersection	Roundabout conversion	West Keene	Summit Rd	Maple Ave	City	no	25	Conversion of Unsignalized intersection
MV	Intersection	Sight distance	City Fringe	Old Walpole Rd	Kennedy Dr	City	no	25	Clear vegetation (including tree within ROW in the SE corner) to improve sight distance
Pedestrian	Crosswalk	New crosswalk	North side	Concord Rd	Upper Knight St	City	no	25	Study needed to determine best crossing location to link the end of the existing sidewalk with Washington St Extension (from which the request was made)
Misc	Roadway	Traffic calming	West Keene	Bradford Rd	West St to Arch St	City	no	25	Traffic calming measures TBD
Misc	Roadway	Traffic calming	West Keene	Park Ave	West St to Summit Rd	City	no	24	Consider speed humps along Island St in coordination w/ emergency services
Pedestrian	Crosswalk	New crosswalk	East side	Optical Ave	Between Timken and C&S	City	no	24	Only in coordination with new Optical Ave sidewalk project
MV	Intersection	Left-turn challenges	City Fringe	Winchester St	Fairbanks St / Wetmore St	UC	YES	23	Right-in/right-out restriction to both Fairbanks and Wetmore St (to be completed as part of NHDOT-funded project #40666)
Bike/Trail	Shared-use path	New trail connection	West Keene	Jonathan Daniels Trail	West St Shopping Plaza	City	no	23	Extend JT trail west to improve connection to West St Shopping Plaza
Bike/Trail	Shared-use path	Trail bridge improvements	North side	Jonathan Daniels Trail	Ashuelot River	City	YES	22	Already part of a planned trail bridge maintenance program
Pedestrian	Sidewalk	New sidewalk	City Fringe	West Surry Rd	Darling Rd to Court St	City	no	22	New sidewalk intended to provide an opportunity for the many dozens of residents off Darling Rd and Mnt View Rd to walk to Court St and Maple Ave
Pedestrian	Crosswalk	New crosswalk	East side	Marlboro St	Eastern Ave	City	no	22	New crosswalk and south landing with potential RRFB's to provide a way for pedestrians to cross Marlboro at the south end of Eastern Avenue sidewalk
Bike/Trail	Shared-use path	Trail improvements	West Keene	Cheshire Rail Trail	Kohls Plaza	City	no	22	Provide a formal spur trail to provide a formalized connection between the CRT and the Kohl's/Aldi plaza area
Pedestrian	Sidewalk	New sidewalk	West Keene	West St	Blossom St to CRT	City	no	21	Fills in a long gap in the sidewalk network
Bike/Trail	Shared-use path	Trail bridge improvements	Downtown	Ashuelot Rail Trail	Ashuelot River	City	YES	18	Bridge decking in need of repair; currently programmed in the City's Capital Improvement Program
MV	Intersection	Intersection geometry	West Keene	West St	Park Ave	City	no	18	Grades from Park/West heading west add challenges
MV	Intersection	Lane merge	West Keene	Route 9	SB on-ramp from West St	State	no	18	Merge lane to potentially be extended
Bike/Trail	Shared-use path	Trail improvements	West Keene	Cheshire Rail Trail	Pitcher St	City	no	16	Upgrade trail surface to pavement from bridge to Pitcher st
Bike/Trail	Shared-use path	Trail improvements	City Fringe	Cheshire Rail Trail	Transfer Station	City	no	15	Trail surface in need of repair; to be completed in conjunction with future extension of the Cheshire Rail Trail

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APPENDIX G: CARE AND MAINTENANCE GUIDE

13

RSAP Reporting

The Keene Roadway Safety Action Plan builds on past and ongoing efforts, strengthens partnerships, and enhances the ability to leverage limited funds and resources. Advancing the plan from planning to implementation is essential to reduce fatalities and serious injuries in the City. This section provides a process to guide implementation of the plan and evaluate success.

Data Collection and Evaluation

The plan will be evaluated based on both process and outcomes. Process evaluation involves reviewing each action in the plan and determining if progress has been made. Outcome evaluation looks at the impact of activities. For some projects, such as site-specific projects, it is straightforward to determine safety impact based on pre-construction and post-construction crash statistics. For other projects, it may be a combination of several activities that lead to a change in crash frequency. For example, a change in the frequency of impaired driving crashes may be a result of a combination of educational and enforcement initiatives. Therefore, because of the interrelationship between different safety activities in the City, fatalities and injuries will be used as the metric for annual progress in each of the emphasis areas. The City will use crash data collected by the Keene Police Department as well as data compiled and managed by NHDOT as part of the outcome evaluations. Changes in traffic volumes, crash severity, and characteristics of crashes also provide meaningful insight into the effect of safety countermeasures. The City will build on the underlying analysis conducted for the original plan and augment the analysis with new data. To inform process outcomes, the City will collect information on metrics such as activities conducted, projects completed, people engaged, etc. The City can produce a report that summarizes the process and outcomes of the various strategies and actions. An annual frequency for the report is preferred as that is consistent with how crash data is compiled.

Public Reporting

The Keene Roadway Safety Plan Committee and the Keene Municipal Service, Facilities, and Infrastructure (MSFI) Committee provided leadership in the development of the Roadway Safety Action Plan. The MSFI will continue to serve as the body to monitor the implementation of the plan and will dedicate portions of its meeting agendas to review plan progress. This includes reviewing crash statistics and implementation status of actions, recommending re-prioritization of safety priorities, and identifying potential funding opportunities that support the implementation of strategies and actions. The MSFI will also coordinate with NHDOT and the Southwest Region Planning Commission to ensure the safety activities of the City align with State and regional safety priorities. Feedback from the MSFI will also be reflected in the annual progress report.

Public Education and Awareness

The City will inform the public about the implementation of the plan through the public meetings held by the MSFI as well as through periodic updates to the City's annual report on their website. The City will periodically post messages on its website as well as its social media channels to notify the public about roadway safety or to inform them of notable upcoming events or projects. The City may also conduct periodic surveys to gauge public awareness of plan implementation and to gather feedback on emerging roadway safety issues.

Integration with the Plan

The City recognizes that some strategies may take several years to fully implement. Additionally, it may take several years to realize the benefit of the strategies through a reduction of fatal and serious injury crashes. The plan is a living document and will be reviewed on an on-going basis. Similar to the New Hampshire SHSP, a full update of the plan is anticipated to be completed every five years, or as deemed necessary by the City. However, more frequent updates to the individual strategies and actions may take place to reflect the Plan's progress and any new policies that affect implementation. The City will be the primary agency responsible for updating the plan with support from the stakeholders. The City will integrate the feedback from public reporting and its engagement activities into the plan's update.

KEENE