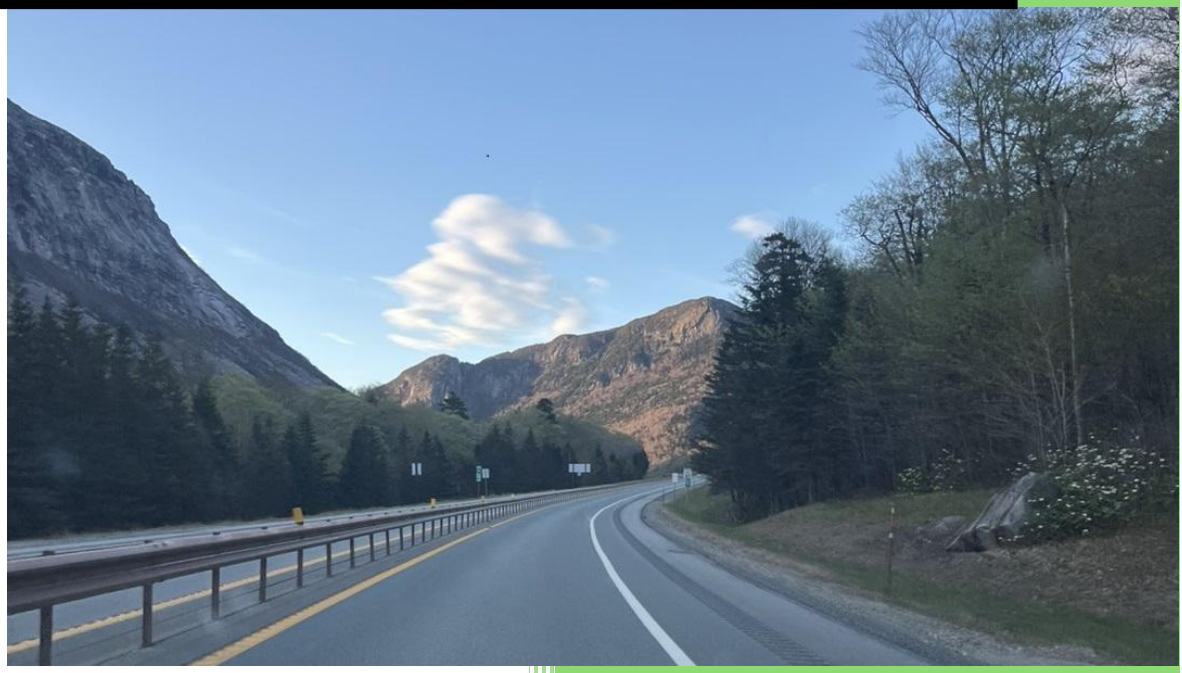
2025

North Country Council Transportation Safety Action Plan



NORTH COUNTRY COUNCIL
COMMUNITY PLANNING AND DEVELOPMENT

NADO Research Foundation

Adopted:

June 19, 2025

Acknowledgements

This plan was made possible by funding provided by the FHWA and the FTA, administered through the NH Department of Transportation. This plan was also made possible by the support of the National Association of Development Organizations (NADO) for their assistance in preparing the in-depth crash mapping and analysis. Thank you to the FHWA, FTA, NHDOT, and NADO staff for your time and expertise assisting with this process.

Cover Photo, Taylor Roy, 2025

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Preface

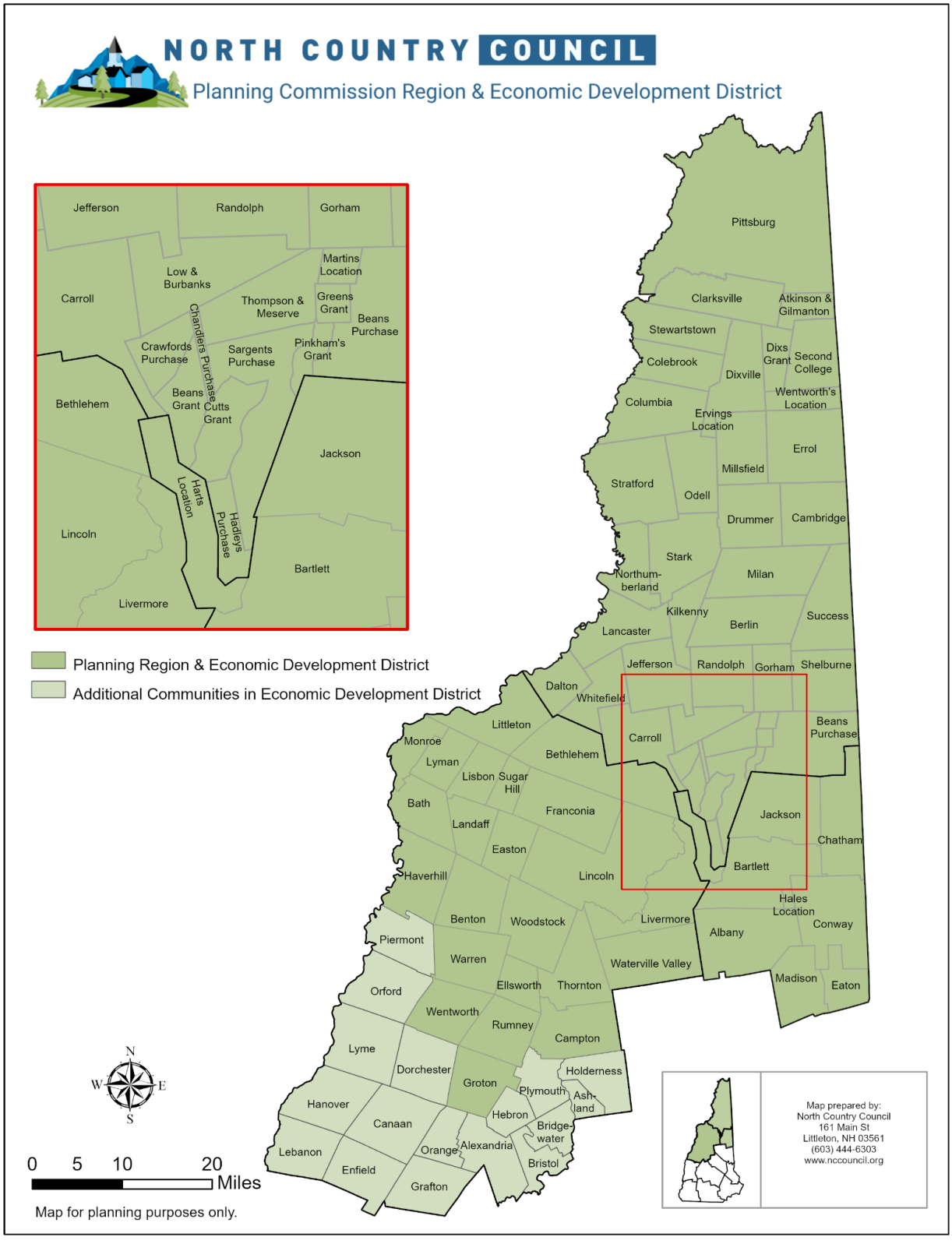
Established in 1973, North Country Council has been providing land use, transportation, environmental, and economic development planning services for over 40 years. We are one of nine Regional Planning Commissions established by NH RSA 36:46, that serves 50 communities across Coos County and the northern halves of Carroll and Grafton Counties. The Council plays an advisory role to local governments in order to promote coordinated planning, orderly growth, efficient land use, and transportation access. The Council supports the region and its individual communities in addressing challenges and seizing opportunities. We do so by providing technical assistance and ongoing forums for regional collaboration. Our services assist the region in planning for a better future and finding practical solutions to identified challenges. In addition to being a Regional Planning Commission, North Country Council is a federally-designated Economic Development District by the US Economic Development Administration, through which we assist communities in accessing certain federal funding opportunities.

Our Mission

It is the mission of North Country Council to encourage effective community and regional planning for the development of economic opportunity and the conservation of natural, cultural and economic resources. This will be accomplished by providing information, regional advocacy, technical assistance, community education, and direct service to the region, its organizations, and political subdivisions.

NADO Technical Assistance

Starting in 2022, the North Country Council received transportation technical assistance from the National Association of Development Organizations (NADO). The goal of this technical assistance was to study the rural mobility challenges of northern New Hampshire, reach out to groups across the region to better understand local needs and concerns, and develop mobility models, treatments, and solutions that best fit the needs of the region.


NORTH COUNTRY COUNCIL
Planning Commission Region & Economic Development District
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Randolph
Gorham
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Low & Burbanks
Carroll
Thompson & Meserve
Greens Grant
Beans Purchase
Chandlers Purchase
Crawfords Purchase
Sargents Purchase
Pinkham's Grant
Beans Grant
Cutts Grant
Bethlehem
Jackson
Harts Location
Hadleys Purchase
Lincoln
Bartlett
Livermore
Pittsburg
Clarksville
Atkinson & Gilmanton
Stewartstown
Colebrook
Dixville
Dixs Grant
Second College
Wentworth's Location
Columbia
Ervings Location
Errol
Millsfield
Stratford
Odell
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Littleton
Monroe
Carroll
Beans Purchase
Lyman
Bethlehem
Lisbon
Sugar Hill
Bath
Franconia
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Planning Region & Economic Development District
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Map for planning purposes only.
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Introduction

The North Country Council Transportation Safety Action Plan (SAP) is a comprehensive data-driven plan that presents the vision for transportation safety decision-making throughout the region. The plan includes the goals and objectives to help achieve the regional safety vision, a detailed analysis of crash data, the identification of high-risk locations, and proven safety countermeasures. Developed through collaboration with regional partners and engagement with stakeholders, the plan outlines the projects, policies, and outreach strategies that will create a shared understanding of our responsibility for safety.

The Overarching goal of the North Country Safety Action Plan is to:

Reduce the number of fatal and serious injury roadway crashes by 50% by 2035, working toward 0 by 2050.

To that goal, this plan has been developed to provide crash data, public opinions about safety topics, guidance on proven countermeasures to treat known roadway safety problems, and the goals and actions to help reach the goal of zero deaths on the regional roadways by 2050. Council staff conducted an outreach effort that had approximately 270 respondents from all across the region. Survey questions included those about the opinions and perceptions on safety topics, feelings about different safety treatments and enforcement, and identifying safety concerns in regional communities.

The SAP is influenced by multiple principles and policies at the federal level, including the National Roadway Safety Strategy (NRSS) and the Safe System Approach (SSA). The below sections provide an overview of these two policies and how they influence transportation projects and planning.

The Safe System Approach

In layman terms, the "safe system approach" is like building a safety net around potentially dangerous activity, assuming people will make mistakes, and designing the system to minimize the severity of those mistakes, rather than trying to eliminate them entirely. Multiple layers of protection to keep people safe, even if they slip up a little bit, especially when it comes to road safety where human error is common.

Principles of the Safe System Approach

The Safe System approach puts safety at the forefront and designs to accommodate human mistakes and injury tolerances. A Safe System Approach to roadway safety incorporates the following principles:

Death and Serious Injuries are Unacceptable

A Safe System Approach prioritizes the elimination of crashes that result in death and serious injuries.

Source: US Department of Transportation, National Roadway Safety Strategy. FHWA-SA-20-015.

Humans Make Mistakes

People will inevitably make errors and decisions that can lead or contribute to crashes, but the transportation system can be designed and operated to mitigate certain types and levels of human mistakes to avoid death and serious injuries when a crash happens.

Human are Vulnerable

Human bodies have physical limits for tolerating crash forces before death or serious injury occurs, so it is critical to design and operate a transportation system that is human-centric and accommodates physical human vulnerabilities.

Responsibility is Shared

All stakeholders – including government at all levels, industry, non-profit/advocacy, researchers, and the general public – are vital to preventing fatal and serious accidents on our roadways.

Safety is Proactive

Proactive tools should be used to identify and address safety issues in the transportation system, rather than waiting for crashes to occur and reacting afterwards.

Redundancy is Crucial

Reducing risks requires that all parts of the transportation system be strengthened, so that if one part fails, the other parts still protect people.

Objectives of the Safe System Approach

Implementation of the Safe System Approach will be focused around five holistic objectives to the Safe System Approach principles:

Safer People

Encourage safe, responsible driving and behavior by people who use our roads and create conditions that prioritize their ability to reach their destination unharmed.

Safer Roads

Design roadway environments to mitigate human mistakes and account for injury tolerances, to encourage safer behaviors, and to facilitate safe travel by the most vulnerable users.

Safer Vehicles

Expand the availability of vehicle systems and features that help to prevent crashes and minimize the impact of crashes on both occupants and non-occupants.

Safer Speeds

Promote safer speeds in all roadway environments through a combination of thoughtful, equitable, context appropriate roadway design, appropriate speed-limit setting, targeted education, outreach campaigns, and enforcement.

Post-Crash Care

Enhance the survivability of crashes through expedient access to emergency medical care, while creating a safe working environment for vital first responders and preventing secondary crashes through robust traffic incident management practices.

What goes into a Safety Action Plan?

A Safety Action Plan is a specific policy document that needs to meet certain federal requirements. Below are the seven (7) requirements that a Safety Action Plan (or possibly a Local Road Safety Plan (LRSP) must meet to be considered eligible for certain types of federal funding.

The Safe Streets and Roads for All (SS4A) requires communities to self-certify that their Action Plans are eligible for the program when applying for Implementation Grants and certain supplemental planning and demonstration activities.

The Council has worked over the past eight months to fulfill these seven (7) requirements to provide communities with the data and support they need to access new types of funding to implement important road safety projects.

1. Leadership Commitment and Goal Setting

Leadership commitment and goal setting is an official public commitment (e.g., resolution, policy, ordinance) by a high-ranking official and/or governing body (e.g., mayor, city council, Tribal council, metropolitan planning organization [MPO] policy board) to an eventual goal of zero roadway fatalities and serious injuries.

The commitment must include a goal and timeline for eliminating roadway fatalities and serious injuries achieved through one, or both, of the following:

1. The target date for achieving zero roadway fatalities and serious injuries, or
2. A percentage reduction of roadway fatalities and serious injuries by a specific date with an eventual goal of eliminating roadway fatalities and serious injuries.

2. Planning Structure

A planning structure is a committee, task force, implementation group, or similar body charged with oversight of the Action Plan development, implementation, and monitoring.

3. Safety Analysis

Safety analysis is an analysis of existing conditions and historical trends that provides a baseline level of crashes involving fatalities and serious injuries across a jurisdiction, locality, Tribe, or region.

It includes an analysis of locations where there are crashes and the severity of the crashes, as well as contributing factors and crash types by relevant road users (e.g., motorists, pedestrians, transit users). Analysis of systemic and specific safety needs is also performed, as needed (e.g., high-risk road features, specific safety needs of relevant road users, public health approaches, analysis of the built environment, demographics, and structural issues).

To the extent practical, the analysis should include all roadways within the jurisdiction, without regard for ownership. Based on the analysis performed, a geospatial identification of higher-risk locations is developed (a high-injury network or equivalent).

4. Engagement and Collaboration

Engagement and collaboration involve robust engagement with the public and relevant stakeholders, including the private sector and community groups, that allows for both community representation and

feedback. Information received from engagement and collaboration is analyzed and incorporated into the Action Plan.

5. Policy and Process Changes

Policy and process changes include assessment of current policies, plans, guidelines, and/or standards (e.g., manuals) to identify opportunities to improve how processes prioritize transportation safety. The Action Plan discusses implementation through the adoption of revised or new policies, guidelines, and/or standards, as appropriate.

6. Strategy and Project Selections

Strategy and project selections include the identification of a comprehensive set of projects and strategies—shaped by data, the best available evidence and noteworthy practices, and stakeholder input—that will address the safety problems described in the Action Plan. These strategies and countermeasures focus on a Safe System Approach and effective interventions and consider multidisciplinary activities. To the extent practicable, data limitations are identified and mitigated.

7. Progress and Transparency

Progress and transparency is a method to measure progress over time after an Action Plan is developed or updated, including outcome data. It's a means to ensure ongoing transparency is established with residents and other relevant stakeholders.

Ten-Year Transportation Improvement Program (Ten Year Plan)

NHDOT's Ten Year Transportation Improvement Plan (TYP), also known as the "Ten Year Plan," is updated biennially and includes all of NH DOT's programmed projects over a ten-year planning horizon. The NHDOT is required by RSA 228:99 and RSA 240 to propose a plan for improvements to the state's transportation system. TYP project eligibility is based on the functional classification of roadways. Projects must be located on roads that are classified as Highways, Arterials, and Collectors in order to be eligible for federal funding through the TYP. Projects located on local roads may be eligible for specific types of funding through the TYP.

The biennial TYP update process includes requesting regional priorities from the State's regional planning commissions (RPCs) and metropolitan planning organizations (MPOs). These priorities are submitted to NHDOT by North Country Council in the form of the Regional Transportation Improvement Program (RTIP). As part of this process, each RPC and MPO is given a regional funding allocation for new TYP projects. The funding allocation is formula-based using the resident population of each RPC/MPO planning region and the total lane miles of federal-aid eligible roadways. For the most recent solicitation period, FY 2027-2036, North Country Council's planning region was allocated $7.18 million for new TYP projects out of a statewide funding pool of $60 million.

Once the regional priorities are received from the RPCs and MPOs, NHDOT prepares the draft TYP for the Governor's Advisory Commission on Intermodal Transportation (GACIT). GACIT consists of the five members of New Hampshire's Executive Council. GACIT, in coordination with NHDOT and the regional planning commissions (RPCs), performs public hearings on the draft TYP around the state before submitting a revised draft TYP to the Governor.

Regional Transportation Improvement Program (RTIP)

Every two years, the Council prepares a **Regional Transportation Improvement Program (RTIP)**. The **RTIP** for State Fiscal Years (FY) 2025-2034 consists of regionally significant programmed and proposed transportation projects for the North Country Council planning region. The RTIP supplements the Council's 2023 Regional Transportation Plan (RTP) by listing programmed and proposed projects that support the transportation-related priorities for the region.

The RTIP is not intended to be an all-encompassing list of transportation projects in North Country Council's planning region. The RTIP is focused on projects and funding sources for which the Council is asked to weigh in by NH DOT, such as the TYP and Transportation Alternatives Program (TAP), which funds bicycle and pedestrian projects. Types of transportation projects that are not included in the RTIP include locally-funded projects, standard maintenance projects on state-maintained roadways and bridges, transit-related projects, and rail projects. The development of the **RTIP** is a collaborative and iterative process that involves local communities, North Country Council, the New Hampshire Department of Transportation (NHDOT), and North Country Council's Transportation Advisory Committee (TAC).

Existing Safety Plans and Policies

Local Safety Plans

Communities across our region have included transportation in their long-range planning for many years. Transportation concerns and goals have spanned a wide variety of topics including bicycle and pedestrian projects, congestion mitigation, and state route intersection safety. The following section includes descriptions of local plans that are focused on transportation or have transportation goals.

Berlin: A Master Plan for Berlin (2022)

The City of Berlin wrote a master plan in 2022 and includes the following goals to enhance road-user safety and access to transportation in their community. It also includes strategies to help increase accessibility when walking, rolling, and biking. They are focused on investing in a city-wide transportation network that suits everyone's needs. This would also include making the transportation options safe and equitable for everyone by using tactical urbanism. Complete and green streets in Berlin will lead to more "active transportation" like walking, running, and biking. But to achieve complete streets they will also need to improve ADA accessibility in places like sidewalks, trails, parks, and the connections between places in town.

Colebrook: Master Plan for the Town of Colebrook, NH (2013)

The town of Colebrook last updated their master plan in 2013 and includes multiple strategies on how to increase transportation options in their community and revitalize their current network. Current transportation options in town are limited, and private vehicles is the main method of commuting. Some strategies to increase transportation options in Colebrook included a North Country Rideshare Carpool matching program and boosting bus service through Tri-County Cap that takes residents to doctor appointments. Main Street is also an important area of focus for the town. They have proposals to make streetscape improvements that increase pedestrian safety and improved parking downtown, which would help with access to stores and centers of community activity. Revitalizing sidewalks, roadway design, and implementing traffic calming measures can make it safer for both pedestrians and drivers.

Conway: Master Plan (2024)

The town of Conway last updated their Master Plan in 2024. The goal of the Master Plan is to make the town a more inviting and accessible place for both residents and visitors by making transportation enhancements. Transportation-related goals include increasing public transportation infrastructure and creating connections between village areas for pedestrians, cyclists, and roadway users. Managing traffic congestion and parking in village areas is also highlighted as a goal for the town.

Littleton: Littleton Master Plan (2020)

Littleton last updated their master plan in 2020. The transportation section of the plan focuses on adopting complete streets initiatives that can make it safer for roadway users and pedestrians like traffic calming measures. This would also include updating roadway infrastructure and reducing impervious surfaces which can lead to flooding. Increasing trails and sidewalks between village areas can improve user experience. Parking should be improved and be accompanied by the addition of EV charging stations. Lastly, they want to continue to support North County Transit and public transportation services.

Lancaster: Master Plan | Transportation Chapter (2011)

The Town of Lancaster last updated their master plan in 2011 and have clear efforts to keep their town walkable and safe by implementing roadway enhancements and design improvements. They want to make the intersection of Rt.2 and Rt.3 safer along with repairs to bridges and increased parking for visitors on Main St. This would improve traffic flow and make it easier for visitors to park near shops and restaurants.

Gorham: 2020 Master Plan

The Gorham 2020 Master plan includes a vision of the future which includes "pedestrian safety features, planters, visible sources of information, benches, and lighting to provides a welcoming, positive feel." Gorham experiences traffic congestion during peak times due to the unique characteristic that the local highway network requires local and regional travelers to share a significant portion of the major town arterial roads. They want to also officially dedicate Main Street (US 2/NH 16) as a shared roadway between cyclists and drivers, considering the increase of bicycle use on the roadway for commuting and recreation. Part of the official designation would be improved pavement markings for bicyclists (sharrows) as well as increase driver awareness of pedestrian crossings with layered alternative methods. There is also a desire to improve sidewalks for pedestrian safety and accessibility due to the current poor conditions of walkways resulting in users traveling on the roadway or on narrow shoulders.

Lisbon: 2020 Master Plan

Within Lisbon's 2020 Master Plan there are stated desires to work cooperatively with NH DOT to improve bicycle and pedestrian safety in the village area, at the intersection of US 302/School St, and the intersection of US 302/NH 117. Actionable safety improvements identified at the intersection of US 302/NH 117 include restoration of the previously removed streetlight and improved or additional signage to warn drivers when NH 117 comes to an end.

Lincoln: 2016 Master Plan

Transportation safety and improvements referenced in the Lincoln 2016 Master Plan include expanding trail systems linking Loon Mountain to the Village Center and reduce traffic congestion in the village during busy season and events by providing public bus/shuttles along Main St and Route 3. Trail linkages will be multi-modal for use by pedestrians and bicycles encouraging alternative transportation options.

Bethlehem: 2016 Master Plan

Bethlehem's 2016 Master Plan includes a goal for overall maintenance of the transportation system to provide a safe, functioning, and well-maintained system which implements the land use plan and includes consideration of roads, parking, sidewalks, and non-motorized trails.

Regional Plans

Transportation is a core focus of The Council's work. Transportation is a major piece of our Regional Plan (last updated in 2014, with another edition due in the next year), as well as the Regional Transportation Plan and the Coordinated Plan. Presented below are an overview, the goals and objectives, and the key findings from each plan.

A Plan for New Hampshire's North Country (2014)

Plan Overview

The 2014 Regional plan analyzed the region's needs, circumstances, opportunities, goals and priorities over time. The guiding principles of the plan are sustainability, resilience, and health.

Goals and Objectives

Vision statements will help guide the North Country in the coming years and strategies to complete the intended goals for transportation.

- Improve educational and cultural opportunities including transportation, technology, communication, employee training, and the economy.
- Have transportation and affordable housing choices for everyone.
- Increase the number of young people and improve wages, housing choices, and overall well-being.

Key Findings

- Improve safety and accessibility to transportation in communities
- Traffic calming improvements that increase pedestrian safety and manage traffic along roadways
- Enhance scenic byways by improving self-guided tours and accommodating the growing number of visitors to the region
- Promote main street improvements in communities to promote walkability and access to stores and shops
- Transit options should be expanded and accessible
- Maintain and access roads and sidewalks to promote safety and prevent natural hazard destruction to roads like flooding
- Cater transportation improvements to both populated and rural communities in the region

Regional Transportation Plan (2023)

Plan Overview

The 2023 Regional Transportation Plan developed by the North Country Council provides a guide for transportation decisions and planning efforts for communities throughout the region and analyzes goals and objectives to help achieve transportation goals. This plan serves as a helpful resource for residents, local officials, and other stakeholders that informs and guides transportation policies and decision-making.

Goals and Objectives

- Increase collaboration at the local, regional, state, and federal levels to enhance transportation project outcomes
- Preserve, maintain, and improve the existing transportation system and reduce serious injuries and deaths on the regional transportation network
- Create a transportation system that provides access to housing, employment, amenities, and services regardless of age or ability
- Connect transportation decisions with land-use decisions

Key Findings

- Encourage the adoption of Complete Streets policies at the local level and the use of the Safe Systems Approach

- Implement bicycle and pedestrian improvements and traffic calming measures in our town and village centers
- Consider accessible infrastructure such as sidewalks, signage, road markings, and beacons in all roadway construction projects
- Include a variety of housing types in local land use codes that offer a diverse array of affordability levels

Coordinated Public Transit and Human Services Transportation Plan (2021)

Plan Overview

The 2021 Coordinated Plan developed by North Country Council lays the foundation for the region's public transit and human services transportation. The rural communities in the region face unique challenges and many people's basic needs are not often met.

Goals and Objectives

There were prior goals kept from the 2014 coordinated plan that were still relevant and there were also new ones added. Some goals include...

- Supporting services
- Information and outreach
- Coordination/Volunteers
- Alternate services

Key Findings

- Expand service coverage 7-days a week and make transit vehicles ADA accessible
- Invest in more drivers for carpool and rideshare programs
- Making and coordinating transportation services within the region
- Building relationships with all stakeholders
- Make new connections with transportation officials
- Discuss public transportation infrastructure and policy development at the statewide level with all regional stakeholders
- Collaborate with all transportation groups to help drivers around the region

Statewide Safety Plans

Strategic Highway Safety Plan 2022-2026

Plan Overview

The 2022-2026 New Hampshire Strategic Highway Safety Plan (SHSP) is an outline of the overarching, long-term approach and the mission details to implementing the Strategic Highway Safety Plan and its timeline.

Goals and Objectives

- Create a safety culture where one death on a New Hampshire roadway is too many
- Reduce the number of fatalities and serious injuries by 50% by 2035, working towards zero by 2025
- Use data-driven methods to select and implement appropriate countermeasures that will reduce crashes on all New Hampshire roads

Key Findings

- Summer and fall are peak travel seasons in New Hampshire; the increase in traffic on the roads correlates with the number of observed fatalities
- Uses 2015 to 2019 crash data to prioritize future actions
- Prioritizes focus areas in speeding, impaired driving, vulnerable road users, and teen/elder driver safety
- Collaborate strategies across education, enforcement, engineering, and emergency services

New Hampshire Pedestrian and Bicycle Plan 2023

Plan Overview

The New Hampshire Pedestrian and Bicycle Plan acts as a blueprint for improving safety, access, and culture for pedestrians and bicyclists who use NH roadways. It outlines key actions to be implemented over the course of the next ten years and identifies infrastructure recommendations and changes in planning practices.

Goals and Objectives

- Provide an evaluation of current conditions, including stress levels, and propose network improvements
- Updating existing policies and practices, supporting planning, design, and maintenance phases
- Identify potential projects for Regional Planning Commissions
- Direct future planning efforts, programs, policies, and transportation project development
- Satisfy federal requirements for each state transportation agency

Key Findings

- Aims to reduce serious crashes with better sidewalks, bike lanes, lighting and crossings
- Fill gaps in pedestrian and bike networks to link key areas
- Promote a “Complete Streets” approach and public education to prioritize all road users
- Provide technical support and training for communities to improve safety

Vulnerable Road User Safety Assessment 2023

Plan Overview

The New Hampshire Vulnerable Road User (VRU) Safety Assessment is a data-driven initiative aimed at reducing fatalities and serious injuries among pedestrians and cyclists. This assessment identifies high-risk areas and vulnerable populations to guide targeted interventions.

Goals and Objectives

- Enhance bike and pedestrian safety in identified high-injury areas
- Adopt best practices for infrastructure and policy
- Develop programs to provide technical assistance to local entities
- Educate stakeholders about the needs of vulnerable road users
- Improve data collect and analysis
- Invest in pedestrian and bicycle safety infrastructure

Key Findings

- The assessment emphasizes improving safety in areas with a high concentration of pedestrian and cyclist crashes

- Recommendations include implementing countermeasures including sidewalks, bike facilities, crosswalk visibility enhancements, pedestrian refuge, etc.
- Utilizes crash data from 2015 to 2019 to identify high-risk areas and vulnerable populations

HSIP Implementation Plan 2024

Plan Overview

The New Hampshire HSIP (Highway Safety Improvement Program) Implementation Plan 2024 outlines a data-driven approach to improving road safety by identifying high-risk locations, selecting effective safety projects, and allocating federal funds strategically. It supports the NH goal of reducing traffic fatalities and serious injuries by using crash data to guide investments, align with the NH Strategic Highway Safety Plan, and meet federal performance targets.

Goals and Objectives

- Identify and address high-risk locations
- Implement infrastructure improvements based on crash data
- Allocate HSIP funds to support safety projects and strategies
- Achieve significant progress in safety performance targets

Key Findings

- Identified several critical emphasis areas based on crash data analysis
- Vulnerable road users (pedestrians, cyclists, and motorcyclists) face increased crash risks
- Unsafe behaviors like speeding, impaired, and distracted driving are major factors
- Infrastructure deficiencies contribute to crash severity and frequency
- Fatal and serious injury crashes are concentrated in specific high-risk locations

Outreach Efforts

During the development of the plan North Country Council conducted outreach to all towns, transportation committees and groups, schools, drivers Education students, and residents.

An online survey was distributed for six (6) months from November 2024 to April 2025 and received 269 total responses. Below are some of the flyers that helped bring attention to the survey. To see the full list of responses in the Appendix.

The survey included various types of questions, including multiple-choice and rating options on a scale, as well as written open responses. The survey concluded with two open-response questions:

1. Are there specific places that you find particularly dangerous when traveling?
2. Do you have any additional thoughts about transportation or traffic safety you'd like to share?

In order to best answer these two open response questions, staff used qualitative analytical methods to craft a process that helped to identify recurring safety concerns, priority locations, and solutions accepted by the community. All of this information has been used to inform the SAP.

The analysis used a qualitative content analysis approach to systemically identify patterns, themes, and frequently mentioned locations. This process included:

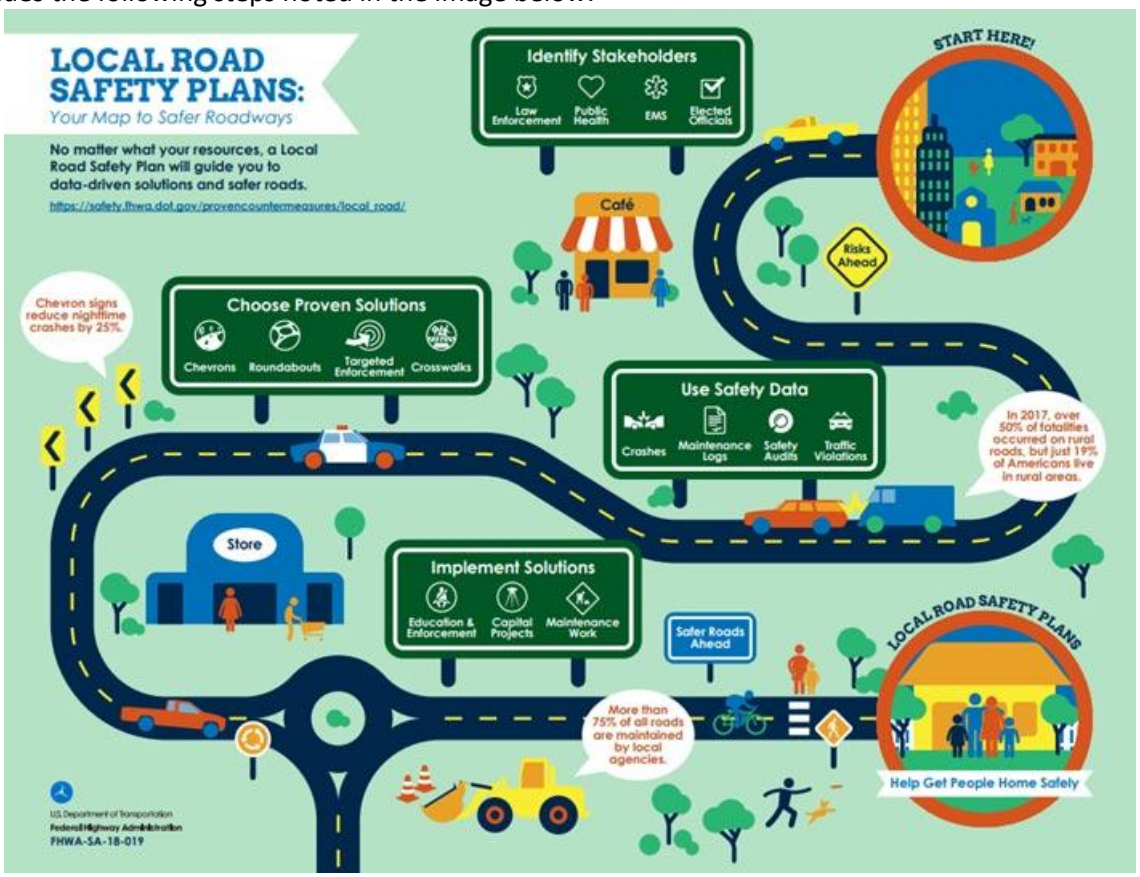
- **Codebook Development:** A detailed codebook was developed before full data set coding. It included 7 main themes with 34 specific codes. Each code included a definition and example words/phrases .
- **Pilot Coding & Refinement:** A pilot sample of responses was coded to test and refine the codebook. Clarifications were made to prevent overlap between codes to ensure consistency between themes.
- **Full Dataset Coding:** Each response was read and coded line by line. Most responses received multiple codes to reflect the layered nature of concerns. Responses were also tagged by location, where possible.
- **Thematic Aggregation:** After coding, responses were grouped by theme and subcode: road, town, or intersection, and vulnerable road user type.

A word frequency analysis was conducted to identify the most common terms used in responses. A location-frequency table was also made to highlight areas with the highest concentration of reported concerns. A weighted word cloud was created to visualize community language around transportation risks.

All surveys and their response analysis have limitations. Responses are self-reported and reflect personal experiences and perceptions. Location references vary in specificity; some cannot be precisely mapped. The coding process, while rigorous, involves human interpretation and may introduce some subjectivity. Despite limitations, this analysis does provide value for the purposes of developing a regional Transportation Safety Action Plan. The responses and their analysis provide data-driven insight into community priorities. It also has provided geographically specific safety issues. The record of real-world experiences complements the NADO crash data provided in this document. This analysis helps inform a holistic approach to identifying the priority areas, recommended interventions, and project planning framework in this Transportation Safety Action Plan.

Safety Action Plan Approach

North Country Council used the Local Road Safety Plan (LRSP) approach to prepare the SAP. The process includes the following steps noted in the image below:



Source: Federal Highway Administration, Local Road Safety Plans

Step 1: Identify Stakeholders

The first step in the process was dedicated to identifying key stakeholders and groups in the region who would give us information essential to the plan. Leaders in this phase included TAC members and local officials. The team further identified key groups to communicate with such as school districts, drivers' education groups, and public transit riders.

Step 2: Determine Safety Problems and Areas

Once data was collected from regional crash sites and resident opinions, it was analyzed to determine priority locations and concerns. Local and Regional plans and policies were reviewed to gather further information on preferences and roadway projects. Crash types and local input highlighted areas that need to be addressed for safety by incorporating engineering, enforcement, education, and emergency response.

Step 3: Craft Goals, Actions, and Countermeasures

Goals and actions were developed through a review of the region's Transportation Plan, resident preferences, and principles of the Safe System approach. Each completed action will help communities achieve the overarching goals. Proven safety countermeasures are vital to the implementation of the goals of the SAP.

Step 4: Implement Plan

North Country Council and Municipalities will seek funding to meet the cost burdens of the goals and actions outlined in the plan. Implementation of projects will need ongoing coordination with NHDOT, partners, and municipalities.

Step 5: Evaluate and Update Plan

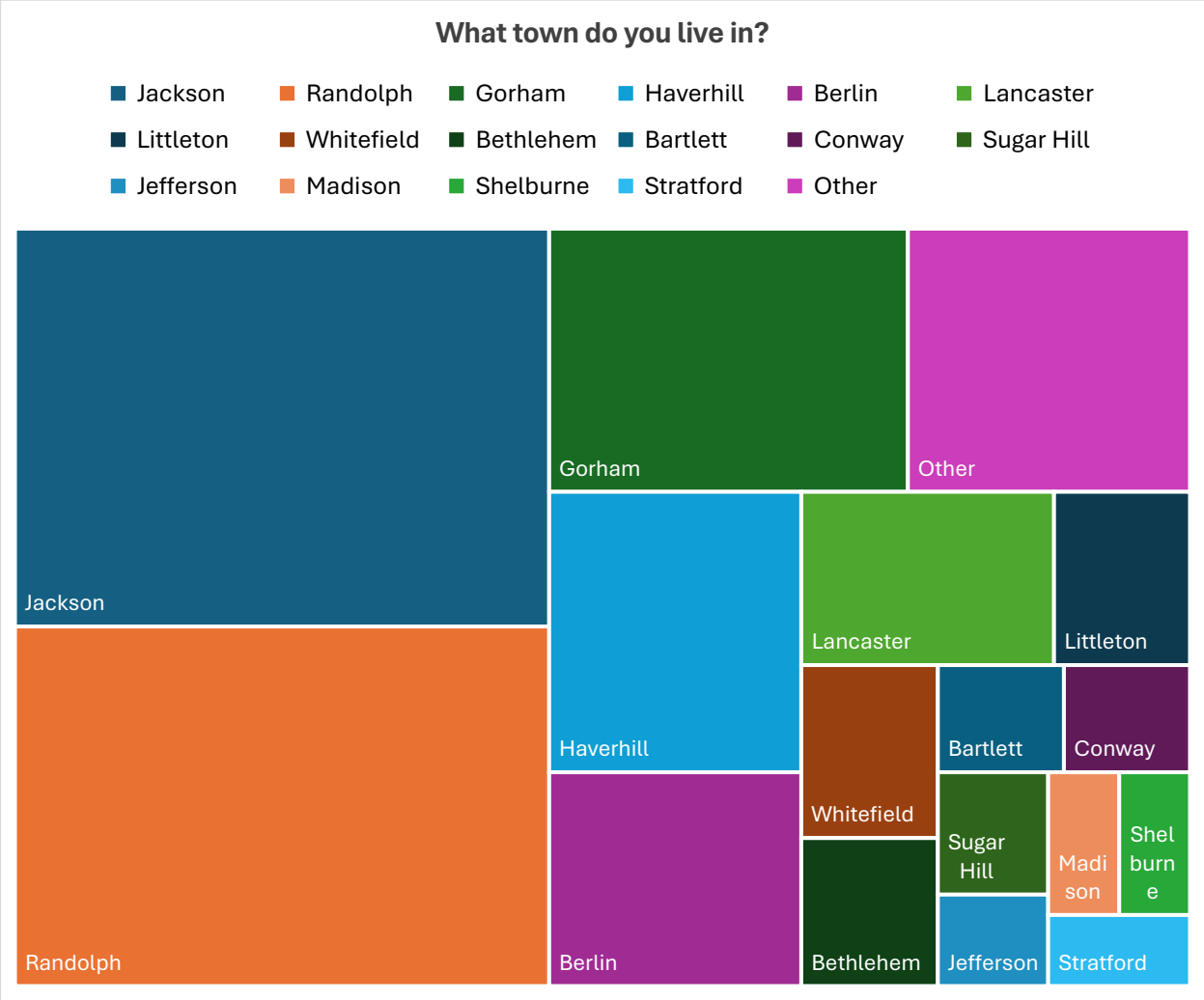
The implementation chapter of the plan includes metrics to monitor ongoing efforts in completing the actions. All goals and actions are centered around reducing fatalities and serious roadway crashes. Traditional data sources like reported crashes and resident reported data will be used to measure progress over time. Updating this plan every 5 years is essential to increasing and maintaining roadway safety.

Regional Safety Survey

The data compiled through the survey provided robust data that will be useful when planning safety projects and creating the long term vision for the safety of our transportation network. Questions included:

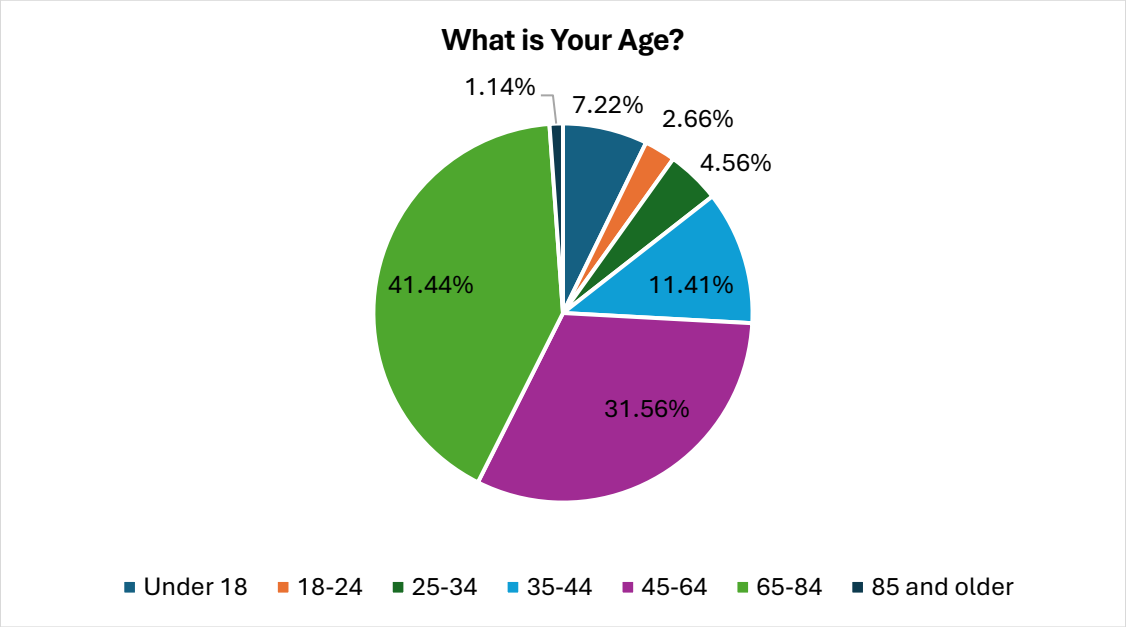
- How safe do you feel when walking, biking or rolling?
- How safe do you feel when driving at night?
- What safety strategies should be prioritized?
- What strategies would you support to decrease [XYZ dangerous behavior]?
- What infrastructure solutions would you support to increase safety?

A complete list of the survey questions can be found in the appendices.



Not all town responses are included in the graph due to volume. The towns of Albany, Carroll, Dalton, Franconia, Groton, and Northumberland had two responses each, while the towns of Bath, Campton, Easton, Errol, Landaff, Lincoln, Lisbon, Milan, Warren, Woodstock each had one respondent.

The Survey was sent out to Transportation Advisory Committee (TAC) representatives, local officials, social service organizations, transportation providers, hospitals, libraries, school districts, recreational clubs, senior centers, NHDOT maintenance districts, chambers of commerce, and local support groups. Council staff sent out the survey link multiple times via email, newsletter, and targeted contact to stakeholder groups whose input would be valuable to attain.

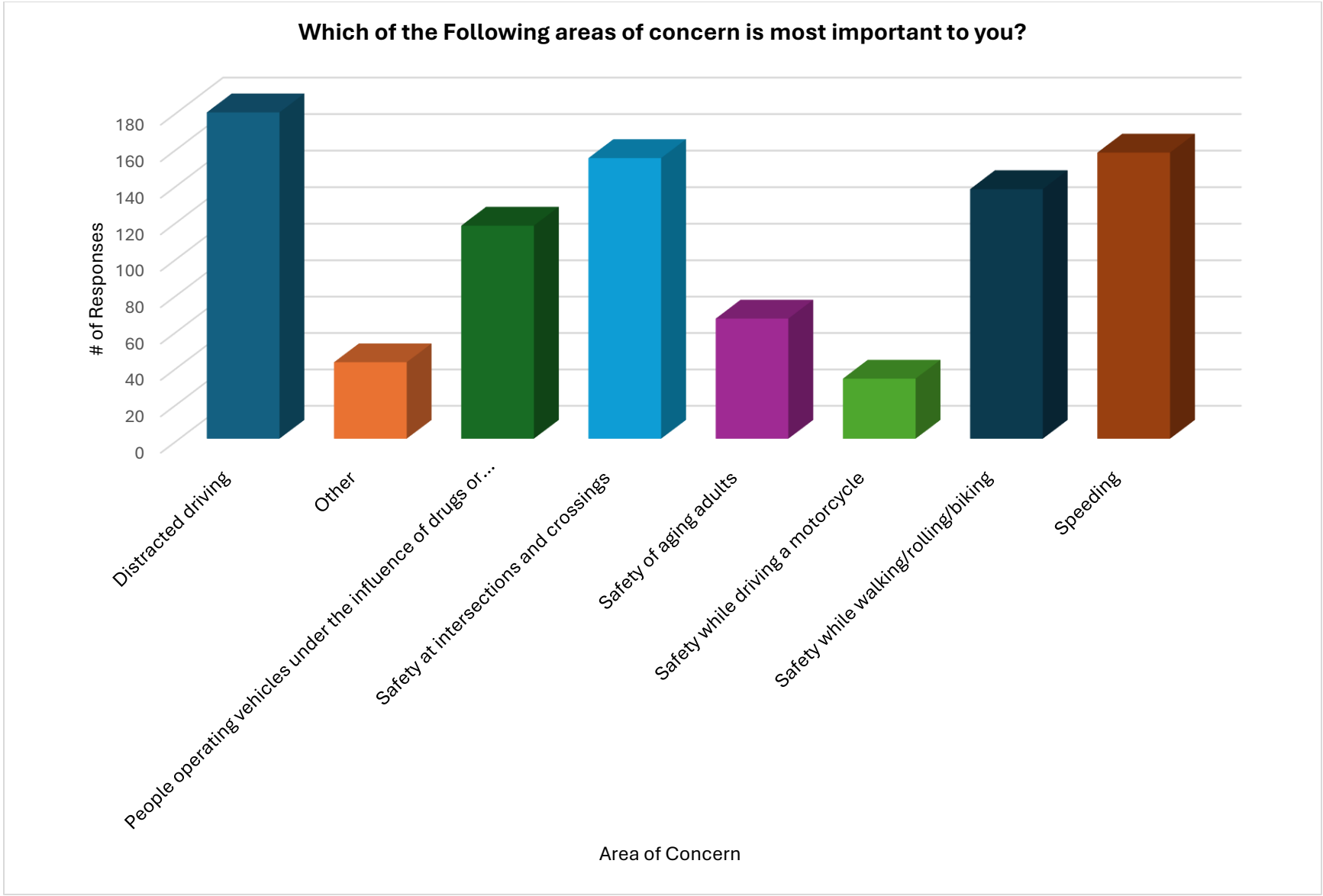


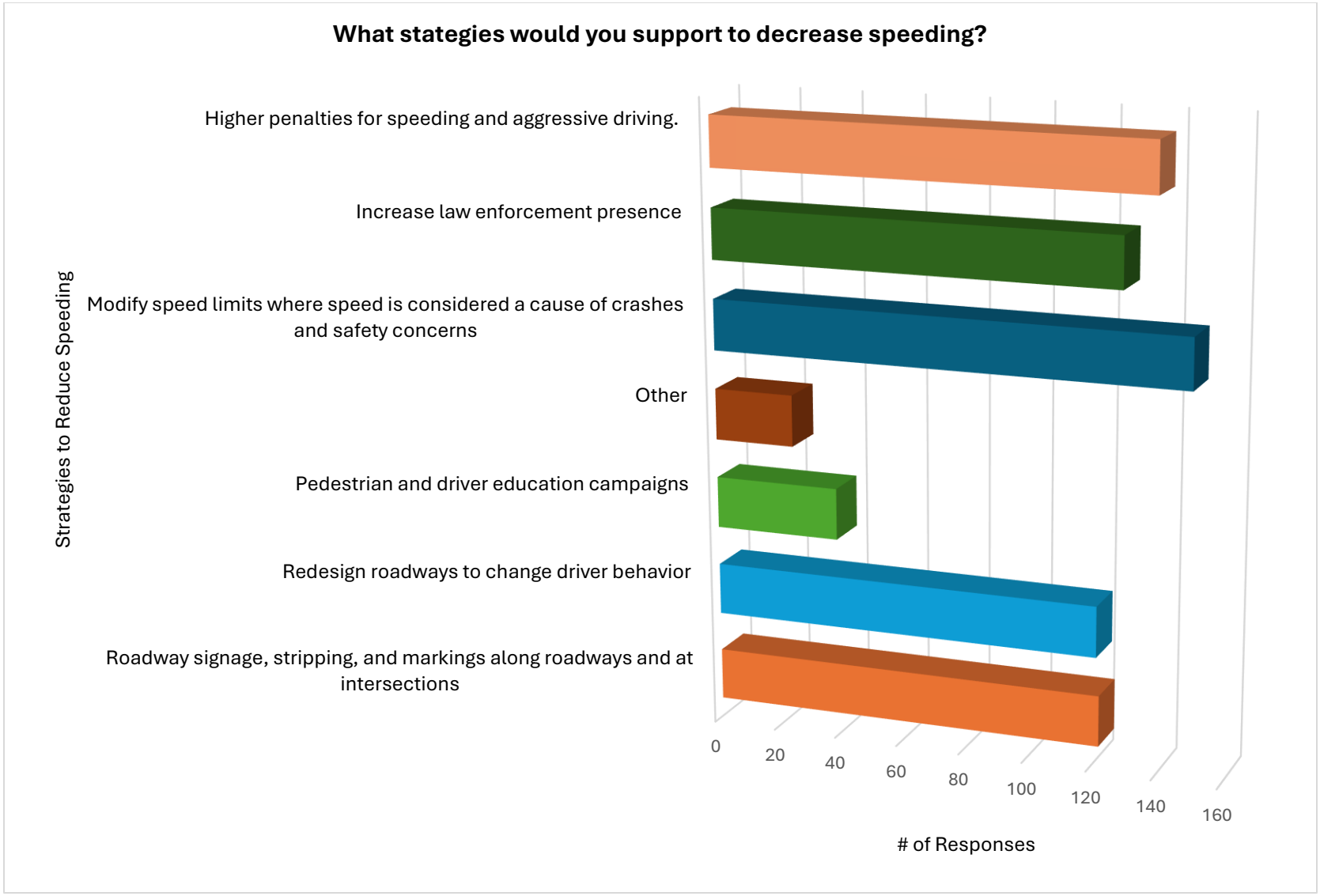
Survey respondents were from a wide variety of age groups. This variety made the survey data more robust and accurate for the region. An important component of outreach was contacting multiple school districts, which allowed us to get 7.22% of respondents to be those 18 years or younger.

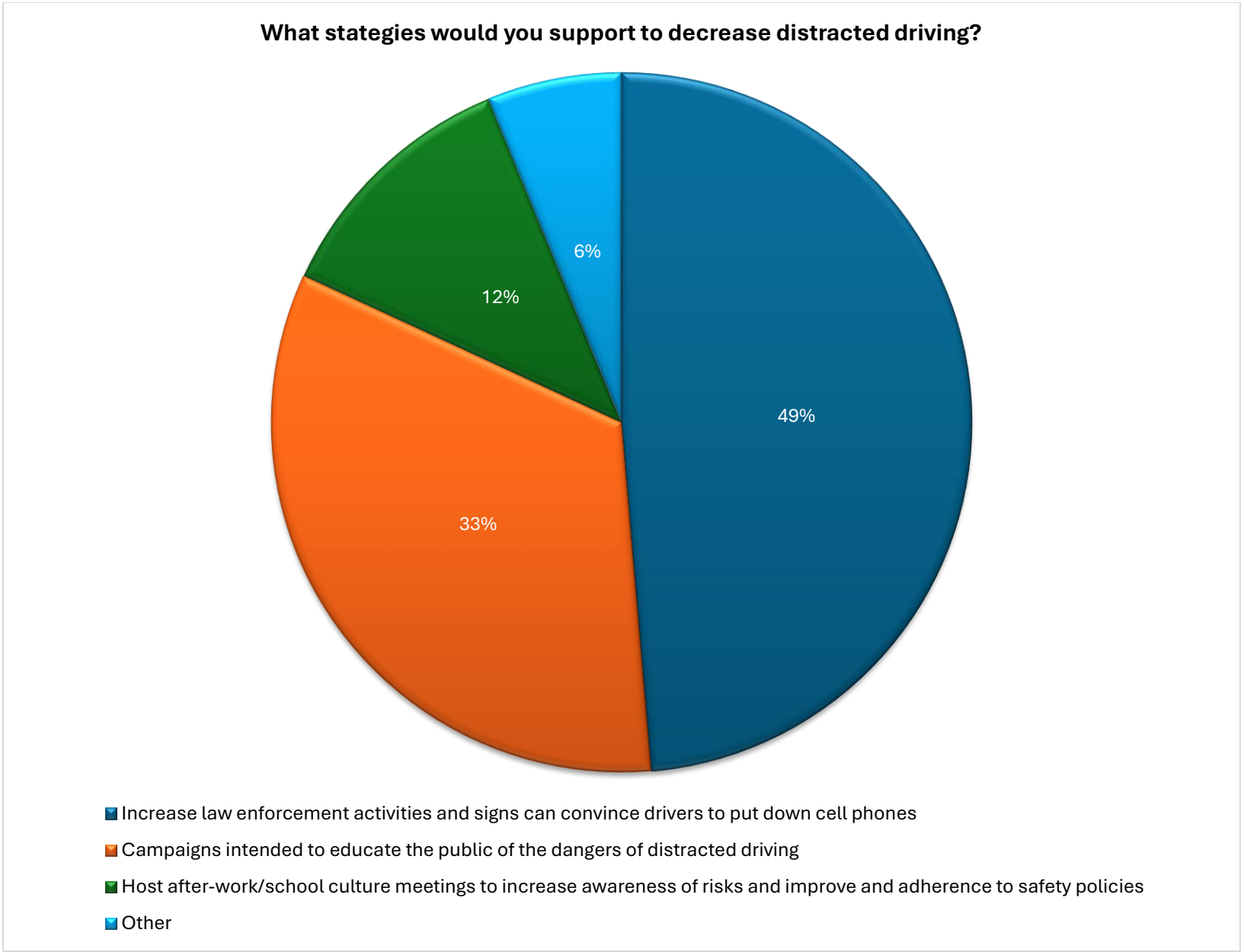
The following pages contain a few of the results from the survey including

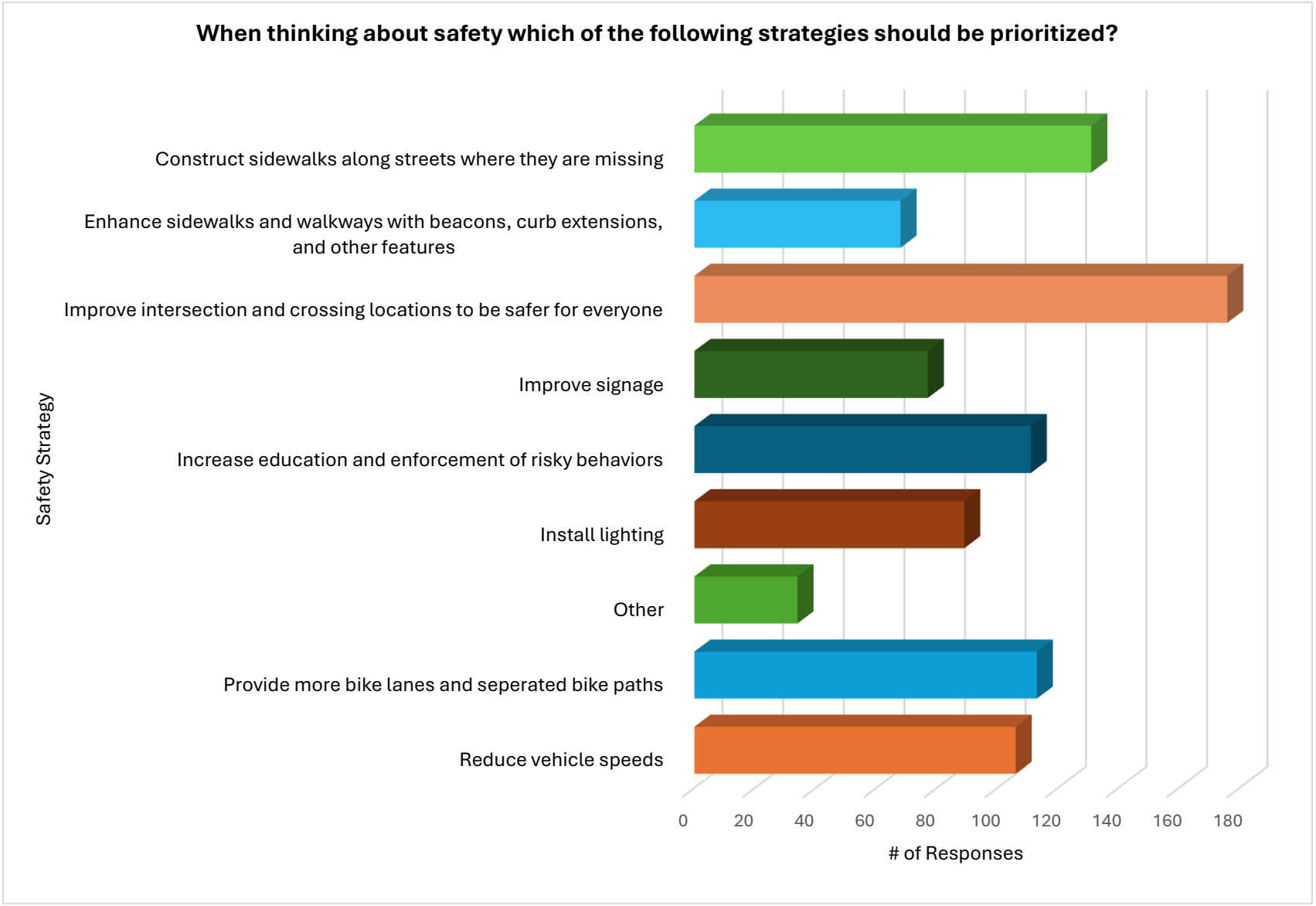
- Which areas of concern are most important to you?
- What strategies would you support to decrease distracted driving?
- What strategies would you support to decrease speeding?
- What strategies should be prioritized to increase safety?
- What infrastructure solutions would you support?

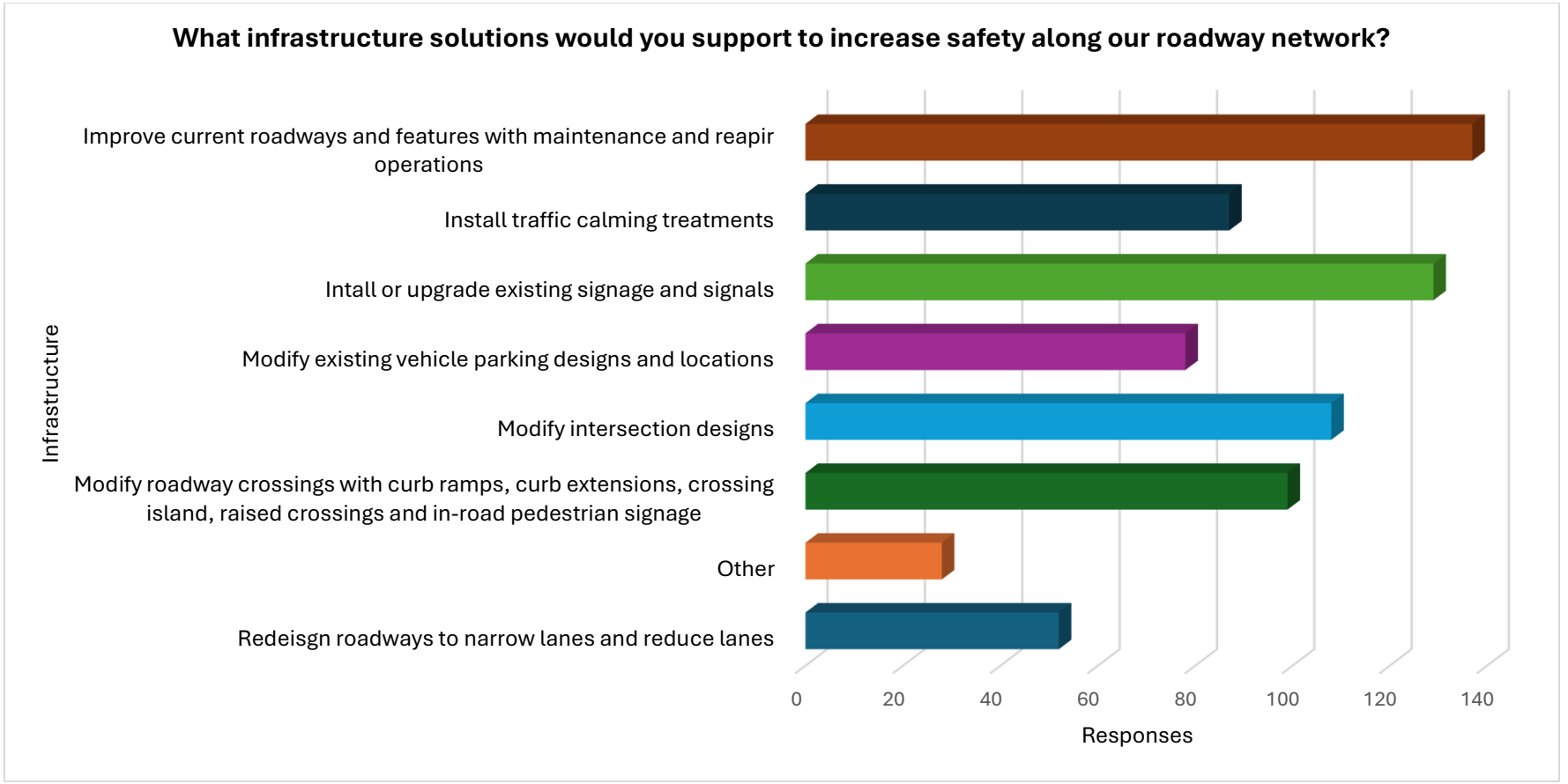
These results provide data on the perceptions and opinions of regional residents on how to best address different safety concerns along our regional roadways. The rest of the survey results can be found in the Appendices.


Which of the Following areas of concern is most important to you?
# of Responses
0
20
40
60
80
100
120
140
160
180
Distracted driving
Other
People operating vehicles under the influence of drugs or…
Safety at intersections and crossings
Safety of aging adults
Safety while driving a motorcycle
Safety while walking/rolling/biking
Speeding
Area of Concern


What stategies would you support to decrease speeding?
Strategies to Reduce Speeding
Higher penalties for speeding and aggressive driving.
Increase law enforcement presence
Modify speed limits where speed is considered a cause of crashes and safety concerns
Other
Pedestrian and driver education campaigns
Redesign roadways to change driver behavior
Roadway signage, stripping, and markings along roadways and at intersections
0
20
40
60
80
100
120
140
160
# of Responses


What stategies would you support to decrease distracted driving?
6%
12%
49%
33%
Increase law enforcement activities and signs can convince drivers to put down cell phones
Campaigns intended to educate the public of the dangers of distracted driving
Host after-work/school culture meetings to increase awareness of risks and improve and adherence to safety policies
Other


When thinking about safety which of the following strategies should be prioritized?
Safety Strategy
Construct sidewalks along streets where they are missing
Enhance sidewalks and walkways with beacons, curb extensions, and other features
Improve intersection and crossing locations to be safer for everyone
Improve signage
Increase education and enforcement of risky behaviors
Install lighting
Other
Provide more bike lanes and seperated bike paths
Reduce vehicle speeds
0
20
40
60
80
100
120
140
160
180
# of Responses


What infrastructure solutions would you support to increase safety along our roadway network?
Infrastructure
Improve current roadways and features with maintenance and reapir operations
Install traffic calming treatments
Intall or upgrade existing signage and signals
Modify existing vehicle parking designs and locations
Modify intersection designs
Modify roadway crossings with curb ramps, curb extensions, crossing island, raised crossings and in-road pedestrian signage
Other
Redeisgn roadways to narrow lanes and reduce lanes
0
20
40
60
80
100
120
140
Responses

Existing Conditions: Crash Data and HIN

About the NADO Research Foundation

Founded in 1988, the NADO Research Foundation is the nonprofit research affiliate of the National Association of Development Organizations (NADO). The NADO Research Foundation identifies, studies, and promotes regional solutions and approaches to improving local prosperity and services through the nationwide network of regional development organizations (RDOs). The Research Foundation shares best practices, offers professional development training, analyzes the impact of federal policies and programs on RDOs, and examines the latest developments and trends in small metropolitan and rural America. Most importantly, the Research Foundation is helping bridge the communications gap among practitioners, researchers, and policymakers. Learn more at www.NADO.org and www.ruraltransportation.org.

Disclaimer

Any opinions, findings and conclusions, or recommendations expressed in this publication are those of the authors and do not necessarily reflect the views of the North Country Council (NCC), the National Association of Development Organizations, or the United States Department of Agriculture (USDA). USDA is an Equal Opportunity Provider.

The authors and sponsoring agencies do not endorse products of manufacturers. Trademarks or manufacturers' names appear herein only because they are considered essential to the subject of this document.

Acknowledgments

We would like to thank NCC staff Nicholas Altonaga for their contributions to this report, and to New Hampshire DOT for the provision of the crash incident data utilized in this report.

Introduction

The purpose of this analysis is to provide a historic five (5 year and baseline roadway safety analysis for the North Country Council planning region. This region is served by North Country Council regional Planning Commission (NCC), based in Littleton, NH. The study area includes northern Grafton and Carroll Counties, and the entirety of Coos County. This effort is being supported by the National Association of Development Organizations (NADO) as part of an ongoing technical assistance project funded by the United States Department of Agriculture (USDA) Rural Development. This safety analysis is intended to be one component of a larger safety action plan document that could be utilized to apply for funding to improve transportation conditions in rural northern New Hampshire. These improvements will be especially beneficial for vulnerable road users and those utilizing active modes of transportation including walking and biking.

Figure 1: Study Area, NCC Region, New Hampshire

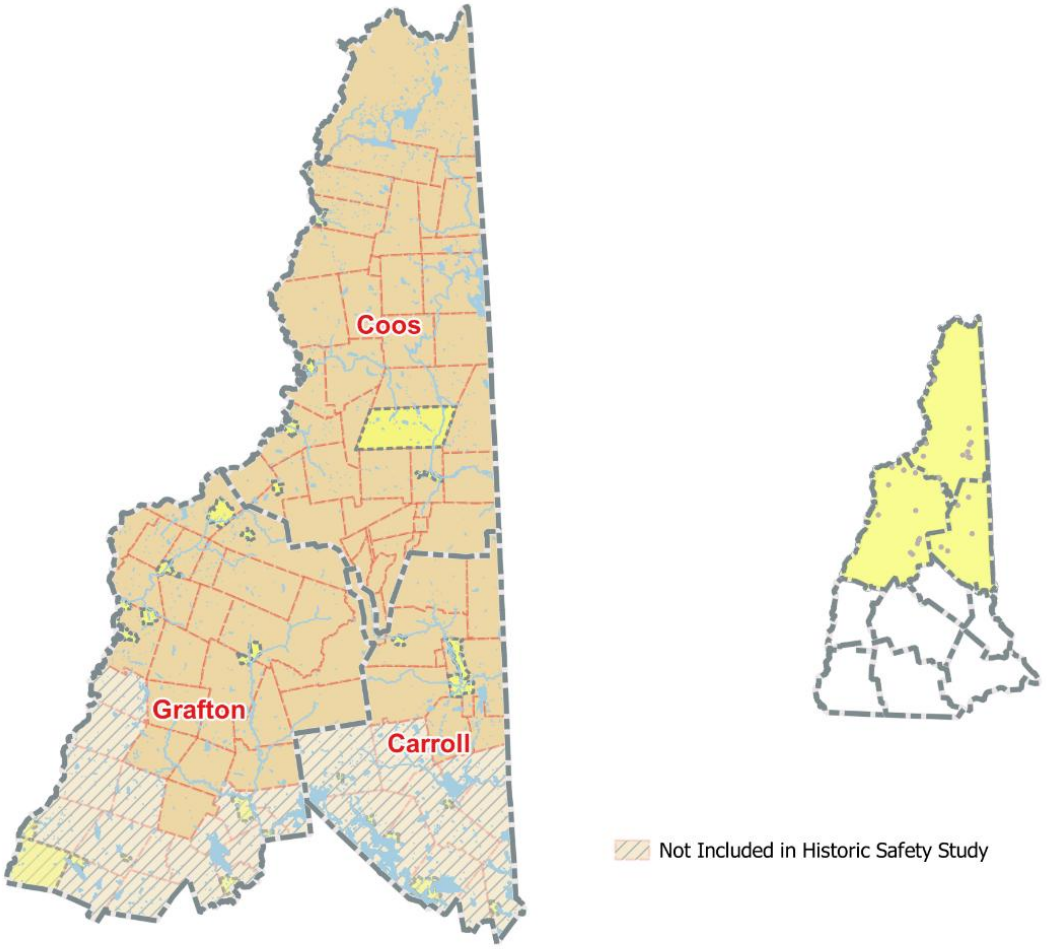


Figure 1: Study Area

This analysis supports the wider safety goals set by statewide plans including the Strategic Highway Safety Plan (2022-2026), NH Pedestrian and Bicycle Plan (2023), and the Vulnerable Road User Safety Assessment (2023). This data plays into the statewide goal of reducing traffic fatalities and serious injuries by using crash data to guide investments in proven safety countermeasures. This crash data analysis provides an evaluation of current regional conditions and reinforces the need for network improvements at key locations.

This analysis is central to the Safety Action Plan and directly supports the goal of using data-driven methods to select and implement appropriate countermeasures that will reduce crashes on all New Hampshire roads. This analysis also provides an evaluation of current conditions in order to propose network improvements and identify potential projects for NCC and its communities.

Safety Action Plan Creation Process

The United States Department of Transportation (USDOT) has outlined eight key components of a safety action plan document.

1. Leadership and Goal Setting
2. Planning Structure
3. Safety Analysis
4. Engagement and Collaboration
5. Equity
6. Policy and Process Changes
7. Strategy and Project Selections
8. Progress and Transparency

This document created by the research team contains items and discussion related to number three – Safety Analysis. The guiding language[1] offers these descriptions of what the material content should contain.

Safety analysis is an analysis of existing conditions and historical trends that provides a baseline level of crashes involving fatalities and serious injuries across a jurisdiction, locality, Tribe, or region.
It includes an analysis of locations where there are crashes and the severity of the crashes, as well as contributing factors and crash types by relevant road users (e.g., motorists, pedestrians, transit users). Analysis of systemic and specific safety needs is also performed, as needed (e.g., high-risk road features, specific safety needs of relevant road users, public health approaches, analysis of the built environment, demographics, and structural issues).

To the extent practical, the analysis should include all roadways within the jurisdiction, without regard for ownership. Based on the analysis performed, a geospatial identification of higher-risk locations is developed (a high-injury network or equivalent).

All remaining sections of the safety action plan as described will be completed by NCC staff, with assistance from the research team as requested.

High Injury Network - Data Creation Methodology

This section contains the methodology utilized to create the High Injury Network (HIN) data that reflects specific road segments and intersection locations that could be considered for future investment and improvement in order to advance any safety goals that may be set forth by North Country Council and local member governments. The overall purpose of developing the HIN locations (road segments and intersections) is to determine eligible locations where future investments through discretionary funding programs like Safe Streets and Roads for All (SS4A) and others could be programmed, as well as establishing or enhancing overall transportation safety planning efforts across the region.

High Injury Network – Road Segments

This safety action plan was created using data obtained upon request from New Hampshire DOT. The data received represents crash incidents reported between 2019 and 2023, and their recorded

[1] U.S. Department of Transportation – Comprehensive Safety Action Plans. https://www.transportation.gov/grants/ss4a/comprehensive-safety-action-plans#nofo-table-1.

attributes. This data was imported into a GIS environment utilizing the latitude and longitude attribute values populated within the data set. Once imported this data was analyzed in reference to New Hampshire road data2 retrieved from the NH GRANIT GIS Clearinghouse (supported by the University of New Hampshire – Earth Systems Research Center, Institute for the Study of Earth, Oceans, and Space) in February 2025.

With the spatial data loaded for analysis, NADO Research Foundation staff completed the creation of a High Injury Network data layer based on information found in the spatial data. The process utilized was based on review of other similar analyses done by planning organizations across the country for the purposes of creating safety action plans. Some of the plans reviewed included the following: (Please note that many of these are urban plan documents, and they were selected because they offered detailed information on the methodology used to generate various data that was used in the overall high injury network and safe streets analysis.)

- AMATS - Akron Ohio - https://amatsplanning.org/safe-streets-4-all/
- City of Toledo Ohio - https://cdn.toledo.oh.gov/uploads/documents/Public-Service/Transportation/2023-Toledo-Vision-Zero-Plan-Draft.pdf
- CORPO - Columbus Ohio - https://www.morpc.org/programs-services/corpo-safety-action-plan/
- City of Richmond - Richmond RTPO – Richmond, Virginia - https://planrva.org/wp-content/uploads/RRTPO_VZ2022_DRAFT_2022February.pdf
- Mid Region COG – Albuquerque, New Mexico - https://www.mrcog-nm.gov/570/High-Fatal-and-Injury-Network
- Indianapolis MPO – Indianapolis, Indiana - https://www.indympo.org/resources/safety
- City of Fort Collins - https://www.fcgov.com/traffic/visionzero
- Pinellas County Florida - https://forwardpinellas.org/safestreets/wp-content/uploads/2021/03/6-Safe-Streets-Pinellas-Action-Plan-High-Injury-Network.pdf

The first step of the HIN creation process was to identify the fatal and suspected serious injury crashes in the data for North Country Council counties between 2019 and 2023. In total there were 54 and 262 incidents respectively. The second step was to separate crash events that were related to intersections. This was completed by filtering on attribute values for the field 'FIRSTHARMF' and selecting all incidents with a value of 'Intersection Related' in this category were removed from the analysis for road segments to be used later in intersection specific considerations. The third step was to relate the remaining crash incidents to road segments in the GIS road data. A process called 'join attributes by nearest' utilizing the 'nearest neighbor' processing calculation available in most GIS software packages, was used to complete this step. The fourth step was to create a scoring criterion for the road segments. With the crashes joined to segments, the number of related events per segment was added to the attributes as a 'Total' value. A 'HIN_Pts' (HIN Points) value was added that added a weighted scoring for fatal events. The calculation for 'HIN_Pts' is:

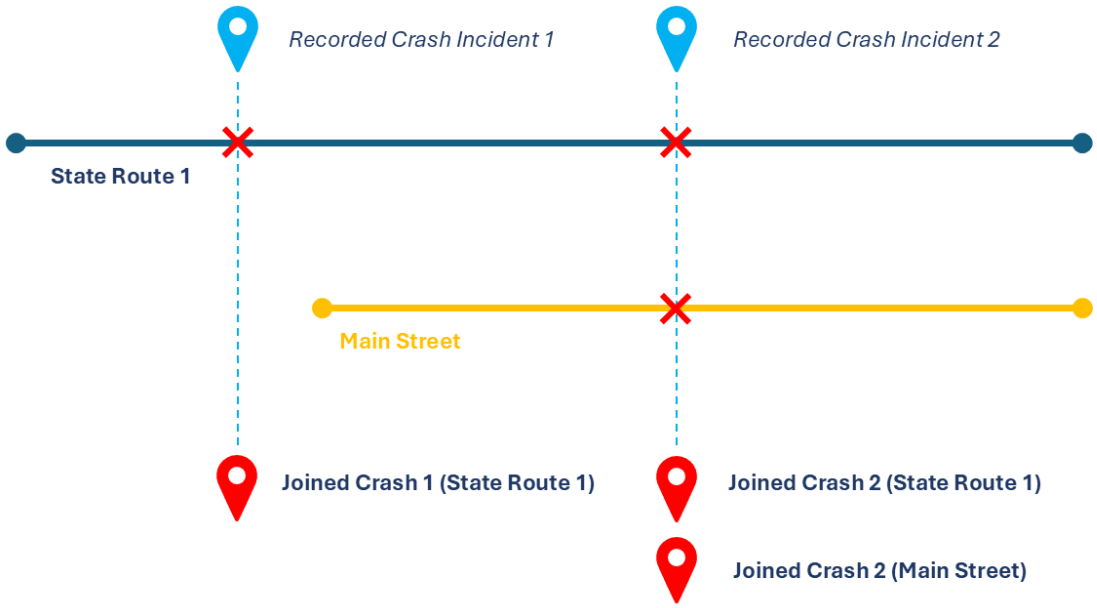
(Fatal Incidents*2) + Serious Injury Incidents = HIN Points

To illustrate, for the study area these calculations yielded values between 0 and 25 points. Based on these values, GIS mapping software was utilized to create classifications of these values based on Jenks

[2] NH DOT Road Data - https://new-hampshire-geodata-portal-1-nhgranit.hub.arcgis.com/datasets/NHGRANIT::nh-dot-roads/about.

natural breaks optimization method. This created five classifications, of which three were illustrated on the resulting maps. Guidance suggested in the case study 'California's High Injury Network and Planning For Zero' completed in 2022 suggests that high injury networks should generally represent 5 to 20 percent of total mileage in a road network. [3] In the cases presented here and as illustrated in map images later, the lowest two categories of HIN scoring have been omitted from the map to ensure that the amount of mileage up for consideration here remains within the recommendations provided by the aforementioned case study. In this scenario, 190 miles of roadway in the region were identified as part of the High Injury Network. This comprises 4.94% of the total 3,844 miles of roadway in the region.

A note on joined crash incidents: many road segments in GIS datasets contain coincident features (i.e. features that are on top of each other). When using the process outlined above to locate crash incidents and relate them to road segments for the purposes of creating the high injury network, crash incidents will be duplicated due to these coincident features. While this is technically correct and accurate, without this description the changing number of total incidents used in the various calculations may be confusing to some.



[3] California's High Injury Network and Planning For Zero – FHWA Office of Safety, Roadway Safety Data Program https://highways.dot.gov/sites/fhwa.dot.gov/files/2022-10/California%20HIN_Case%20Study_Final%20Draft.pdf.

Existing Conditions

Figure 2: Safety Analysis Study Area

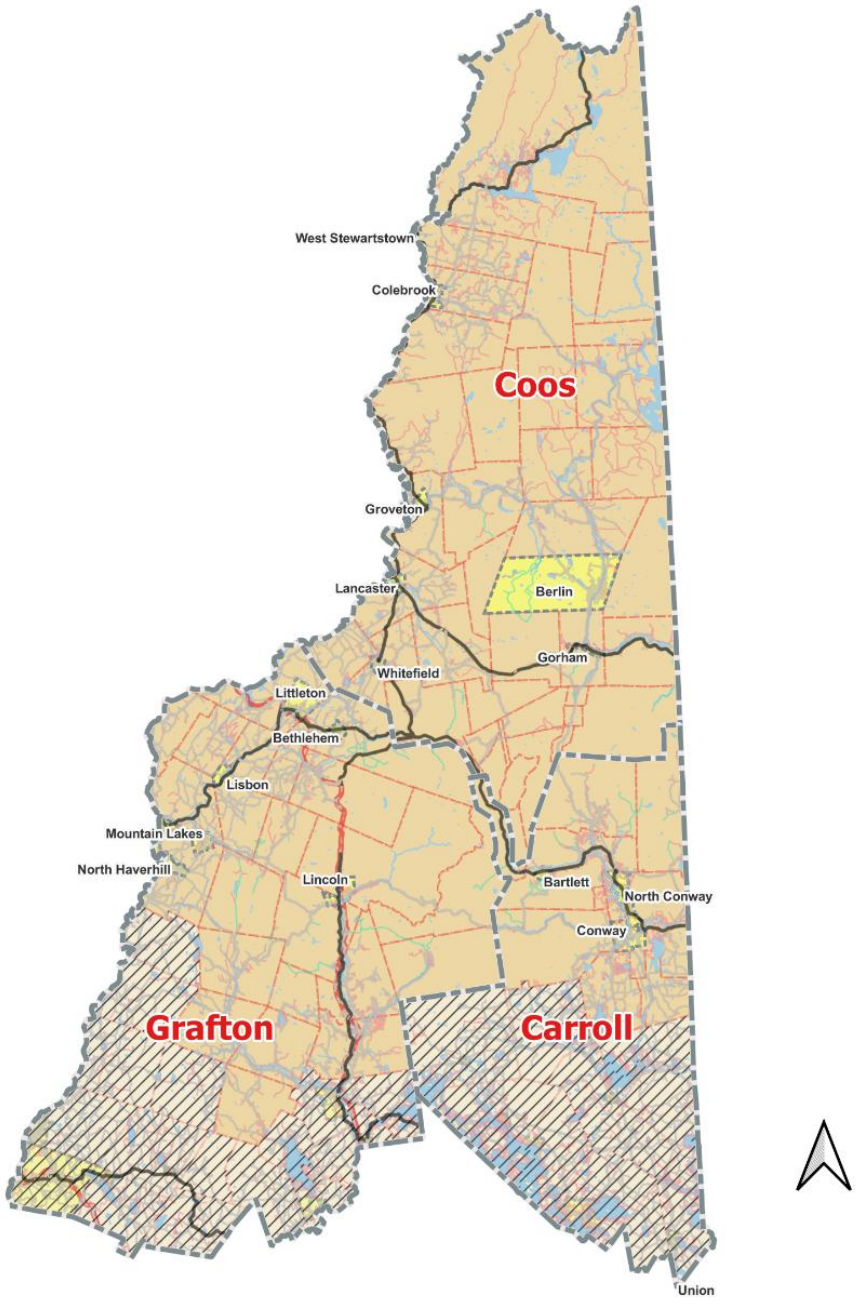


Figure 2: Existing Conditions

The study area includes northern Grafton and Carroll Counties and the entirety of Coos County. These counties are members of the North Country Council (NCC) in Littleton New Hampshire, which provides regional community and economic development services to local communities. The study region is home to 3,844 miles of roadways. These roadways include interstates, U.S. routes, state routes, county roads, municipal roads, as well as other features including private and service roads.

Table 1: Roadway Mileage by Classification in NCC Region

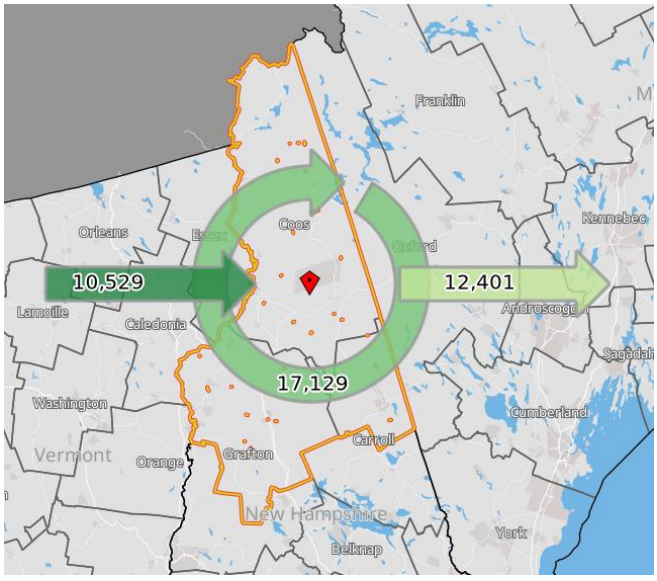
Roadway Classification	Study Area Mileage
Interstate	100
U.S.	391
State*	710
Local	1,517
Private	1,093
Other	33
Total	3,844

**Includes 'State' and 'Non-Numbered State.'*
Note: Mileages rounded to the nearest mile.

Highway infrastructure is critical to the economic success of the North Country Council region and the study area. According to American Community Survey data for 2023, 72% of workers 16 years of age and older in the study area drove alone for work. This is two percent lower than the corresponding state average, and 2% greater than the corresponding national average. The mean travel time to work for these individuals was 23.7 minutes, which is roughly three minutes lower than the state average and national average.[4]

According to 2022 data produced by the U.S. Census Bureau as part of the LEHD On the Map product, 12,401 residents leave the study area each day for work (42% of those living in the study area), while 10,529 enter the region for work (38.1% of those employed in the study region). Over 17,000 individuals live and work within the study region (58% of those living in the study region).

Figure 3: Inflow/Outflow Data for NCC Region



[4] U.S. Census Bureau – American Community Survey – 2023 1 Year Estimates; Multiple Counties, New Hampshire, Table B08006 – Sex of Workers by Means of Transportation to Work.

Annual average daily traffic (AADT) data provided by NHDOT for 2022 (included as an attribute value in the road data obtained from NH GRANIT) illustrates the volume of vehicle traffic for counties in the study area related to the environment of vehicle travel conditions that have been described above.

Figure 4: AADT Data for NCC Region, 2022

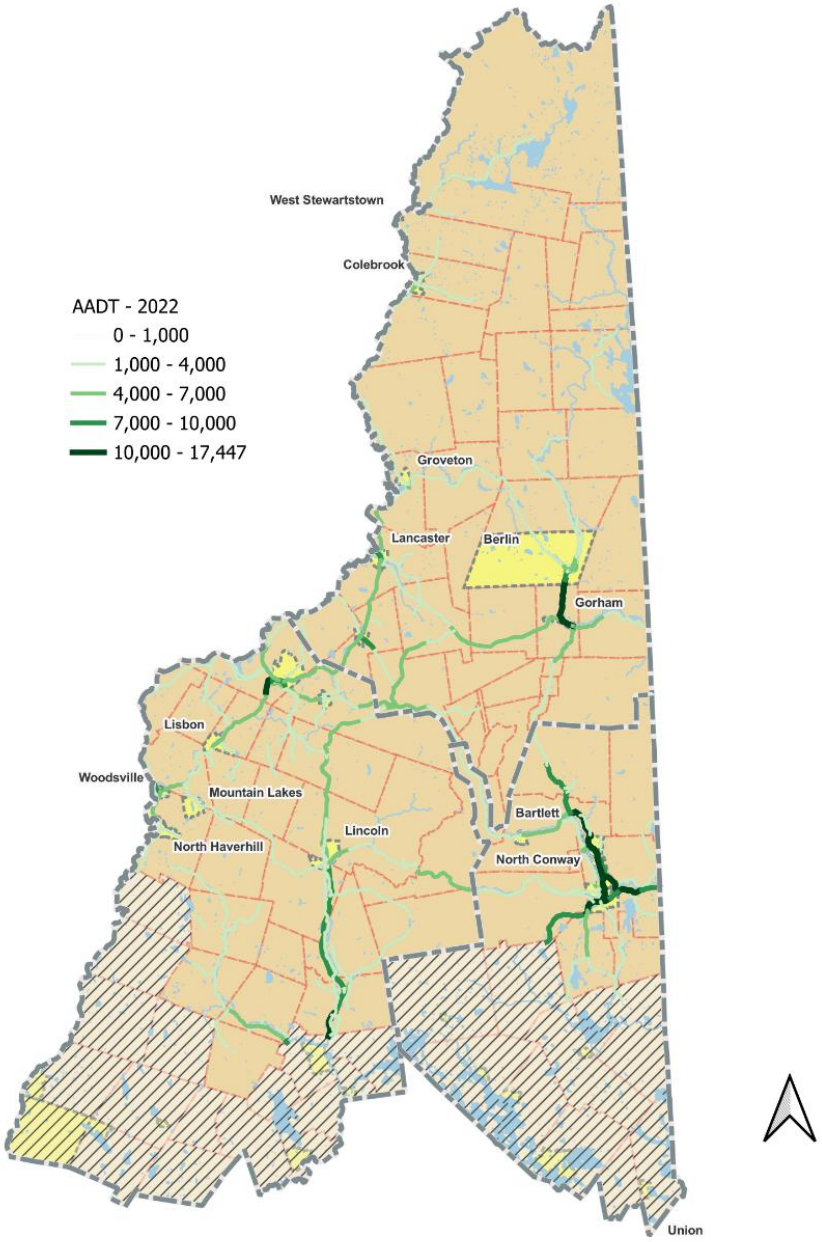


Figure 4: Average Annual Daily Traffic - 2022

In the study area the highest AADT values for 2022 were recorded on NH 16/ US 302 in North Conway, Carroll County (17,447) between Artist Falls Road and Eastman Road; NH 16/ US 302 in North Conway between River Road and Artist Falls Road (15,384). Nearly all segments of these highways in both directions were high AADT value locations. AADT values in the study area ranged from a low of 0 vehicles per day, to a high of 17,447.

With this context in mind, the historical vehicle crash information for the study area between 2019 and 2023 provides information that can help implement a safe systems approach to safety that will be described in subsequent sections of this document. As illustrated below, crash incidents were dispersed across the counties, with higher rates of crashes shown in general proximity to segments with elevated level of functional classification and near population centers.

Figure 5: All Crash Incidents, 2019 - 2023

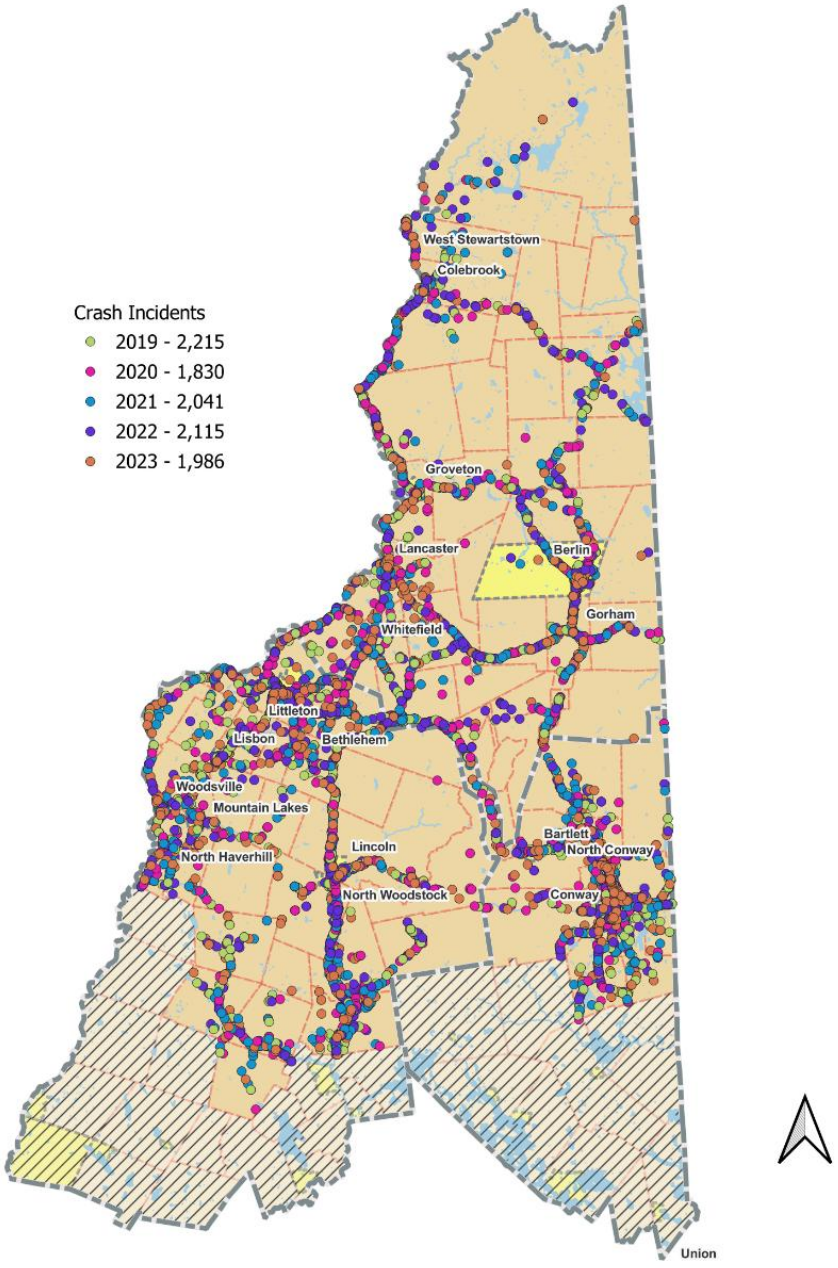


Figure 5: All Crash Incidents 2019 - 2023

Overall, total crashes in the study area are down approximately ten percent between 2019 and 2023 (-229). Incidents have been rising since reaching a five-year low in 2020.(+156 from 2020). There was an average of 2,037 crash incidents per year during this period. Additional information about the severities, contributing factors, and other classifying data will be provided in subsequent sections depending on the available attributes.

Of the 10,187 crash incidents reported between 2019 and 2023, 8,055 (79%) were listed as 'no apparent injury'. For the purposes of this report these will be treated as property damage only (PDO) incidents where no injuries or fatalities were reported unless we know otherwise.

Safety Analysis

The driving purpose of many current transportation related discretionary grant programs, like Safe Streets and Roads for All, is to substantially reduce the number of fatal or serious injury crashes on public roadways. In order to target investments that can deliver these increases in safety and corresponding decreases in fatal and serious injury crashes, communities must analyze available data to understand what factors may be contributing to these accidents. This safety analysis is an important first step in building understanding of the conditions present on the transportation network in rural northern New Hampshire.

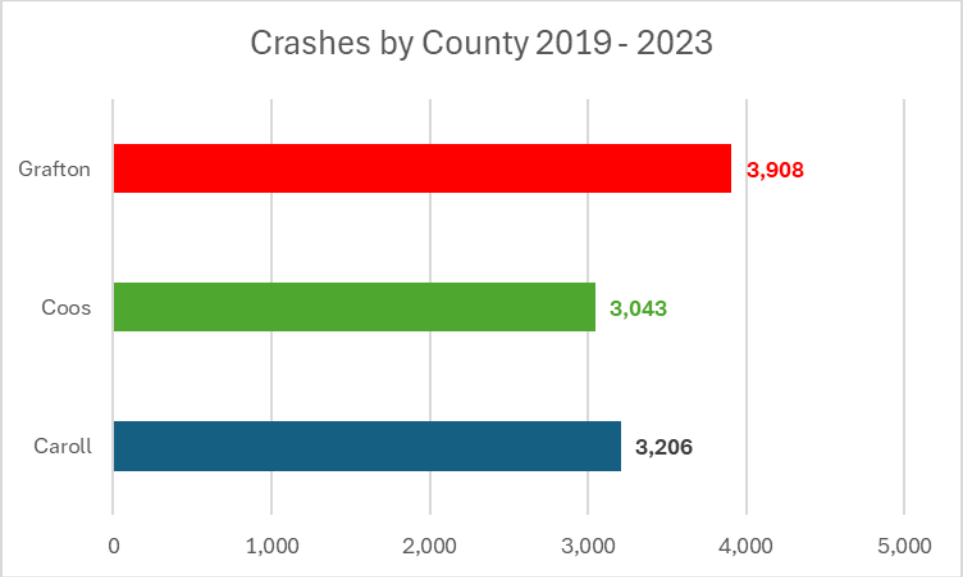
Crash data for the study region utilized in this document was provided to the research team by the New Hampshire Department of Transportation for the years 2019 through 2023. A total of 10,187 crashes were reported over this time period.

Table 2: Frequency of Crashes by Year in Study Region

Year	Total Crashes
2019	2,215
2020	1,830
2021	2,041
2022	2,115
2023	1,986
Average	2,037
Total	10,187

For the five-year period observed, northern Grafton County reported the most crash incidents in the study area with 3,908 while Coos County had the fewest with 3,043. The average number of crash incidents per county per year across the study area was 3,386.

Figure 6: Crashes by County, 2019 - 2023



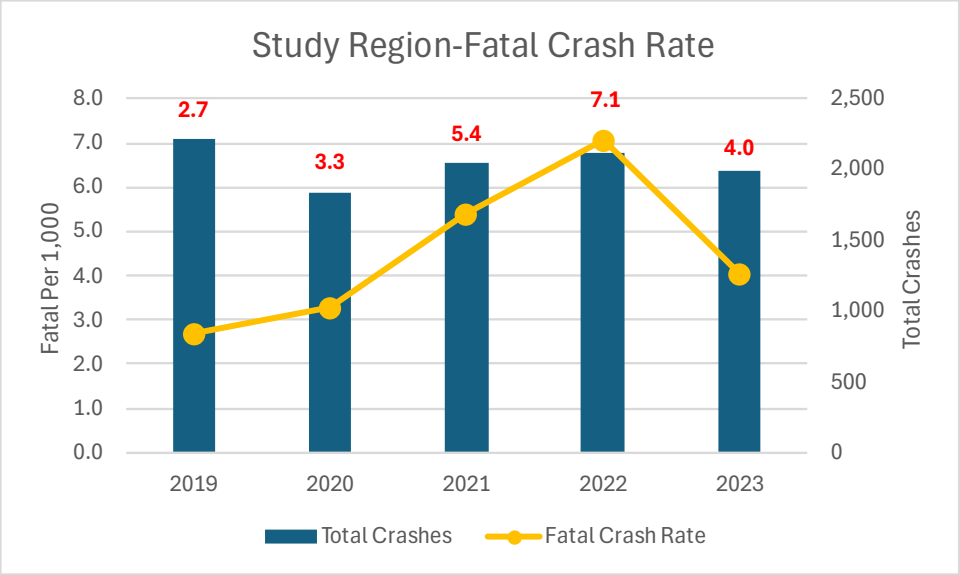
Of the crashes reported during the five-year period, .45% (46) resulted in at least one fatality and 16% (1,615) resulted in at least one injury. Of particular interest, 3% (254) resulted in a suspected serious injury. In total over the five-year period, there were 46 reported fatal crash events. The crash data provided does not provide the total number of fatalities resulting from these events.

Table 3: Number & Percentage of Crashes by Severity in the Study Region

Level of Severity	**Region**	
	Number	Percentage
Fatal Injury	46	0.5%
Suspected Serious Injury	254	3%
Suspected Minor Injury	949	9%
Possible Injury	412	4%
No Apparent Injury/ Property Damage Only	8,055	79%
Unknown	441	4%
Total	10,157	100%

Over the analysis period, there was an average of 4.3 fatal incidents per 1,000 crashes within the NCC region. The highest average fatal crash rate was observed in 2022 with 6.5 per 1,000 incidents. Over the five-year period the fatal crash rate increased by 27% from 5.2 to 6.5 per 1,000 crash incidents.

Figure 7: Study Region Fatal Crash Rate, 2019 - 2023



Across the study area over the 5-year analysis period, Grafton County reported the most fatal incidents with 19. Grafton also reported the most total injury incidents with 638, of which 98 were considered serious. The entirety of the study area is illustrated in the table below.

Table 4: Fatal and Injury Crashes by County in the Study Region, 2019- 2023

County	Fatal Incidents	Serious Injury	All Other Injury
Coos	13	88	424
Carroll	14	68	397
Grafton	19	98	540

The geographic distribution of all fatal and suspected serious injury crash incidents reported in the study area between 2019 and 2023 is illustrated in the map image below.

Figure 8: Fatal and Injury Incidents, 2019 - 2023

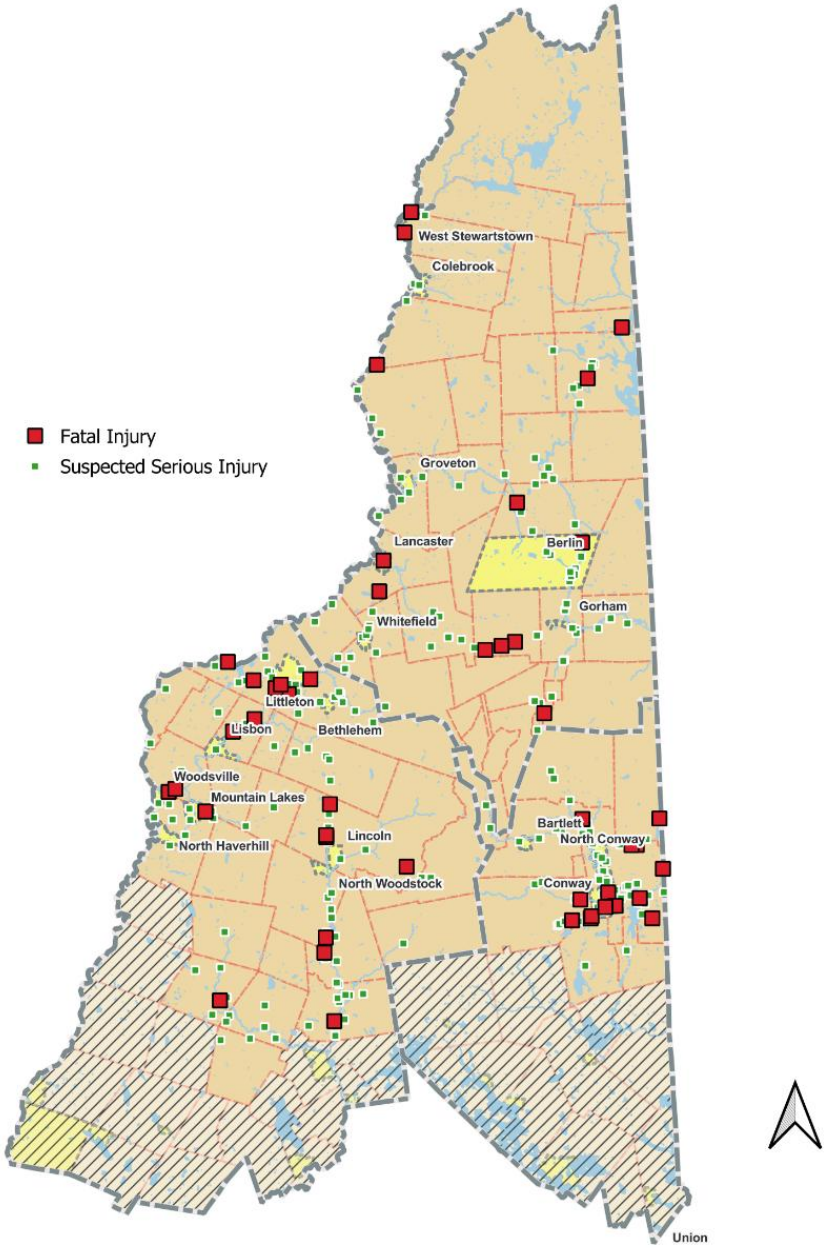
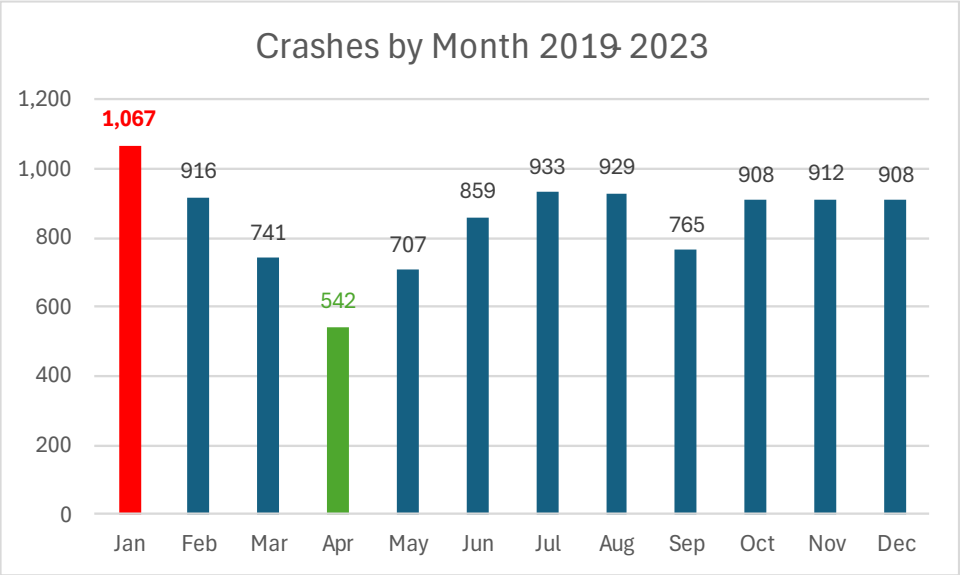


Figure 8: Fatal and Injury Incidents 2019 - 2023

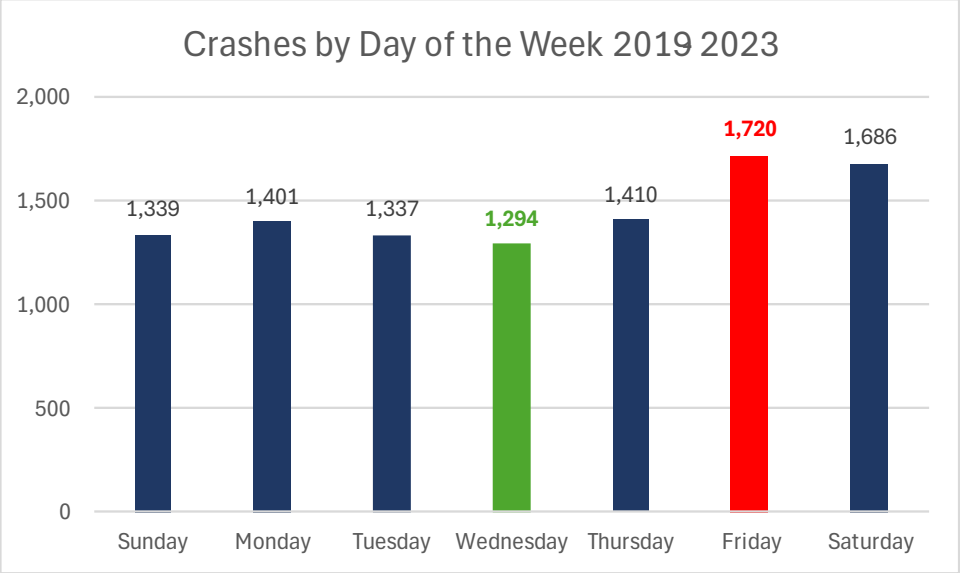
When investigating the influence of the month of the year on the frequency of crashes, for the study area, the average monthly frequency of crashes is 849, with April having the fewest at 542 and January having the most at 1,067 (Figure 9).

Figure 9: Frequency of Crashes in Study Region by Month, 2019- 2023



When considering the day of the week, Friday has the greatest frequency of crashes and Wednesday the fewest over the five-year period for the study area.

Figure 10: Frequency of Crashes in Study Region by Day of Week, 2019 – 2023



The two crash types that were reported as accounting for more than ninety percent of all crashes in the study area are collisions with another motor vehicle and fixed object crashes. Specific attention should be paid to fixed object and single vehicle crashes identified, as these are the types of crashes most readily addressed by the systemic safety approach to roadway improvements. This approach maximizes the use of widespread and low-cost countermeasures that can be implemented for significant benefit to the travelling public.

Table 5: Number and Percentage of Crash Type in Study Region, 2019 - 2023

Crash Type	Region	
	Number	Percentage
Other Motor Vehicle	824	8.09%
Fixed Object	507	4.98%
Animal(Other)	203	1.99%
Parked Motor Vehicle	112	1.1%
Other	67	.66%
Overturn/Rollover	58	.57%
Other Object	23	.23%
Value not provided	23	.23%
Pedestrian	15	.15%
Thrown or Falling Object	14	.14%
All Other	28	.27%
Total	1,874	18.4%

It is noted here that 82% (8,313) of all crashes provided in the available data **did not** have a crash type associated and were not considered in this analysis. The percentages shown in table 5 reflect the percentage of the reported incidents against the entire universe of crash incidents over the five-year period, noted as 10,187 incidents.

Considering the types of crashes indicated above, 9 of 54 fatal incidents, and 54 of 262 injury incidents were represented in the crash types indicated above. The full breakdown of fatal and suspected serious injury incidents by crash type is outlined below.

Focusing more closely on the fixed object incidents that comprise 4.98% of the crashes reported in the region, the following were the reported associated values. Examining the 'fixed object' information provided, the results of the distribution of the top ten values recorded for 1,871 events is provided below. The top four fixed objects that motorists in the study area struck causing reportable incidents were, trees, embankments, guard rails, and telephone/electric poles. It is noted here that 71% (1,325) of the reported incidents lacked data or were listed as 'other.' The full distribution of fixed objects where data was present is provided below.

Table 6: Fixed Object Values in Study Region, 2019 - 2023

Fixed Object Detail	Region	
	Number	Percent
Tree	119	6.4%
Embankment/Ditch/Curb	102	5.5%
Guard Rail	93	5%
Telephone/Electric Pole	61	3.3%
Sign Post	35	1.9%
Building/Wall	26	1.4%
Barrier/Fence	22	1.2%
Traffic Signal	20	1.1%
Culvert/Headwall	13	.7%
Rock/Sideslope	13	.7%
Total	504	27%

Vulnerable Road Users

Vulnerable road users are commonly defined as anyone utilizing a road feature while not travelling in a motor vehicle (car, truck, bus, etc.), most commonly pedestrians, bicyclists, and motorcyclists. This also includes anyone utilizing mobility device, road workers, and even travelers utilizing horses or off-road vehicles. Between 2019 and 2023 in the NCC study region, 15 crashes (0.15%) involved a pedestrian; three crashes (0.03%) involved a bicyclist, and four incidents (0.04%) involved a snowmobile/OHRV. It is noted here that 7 of the 22 incidents were recorded within municipal boundaries of communities in the region.

The geographic distribution of vulnerable road user crash incidents across the NCC region is illustrated below.

Figure 11: Vulnerable Road User Incidents, 2019 - 2023

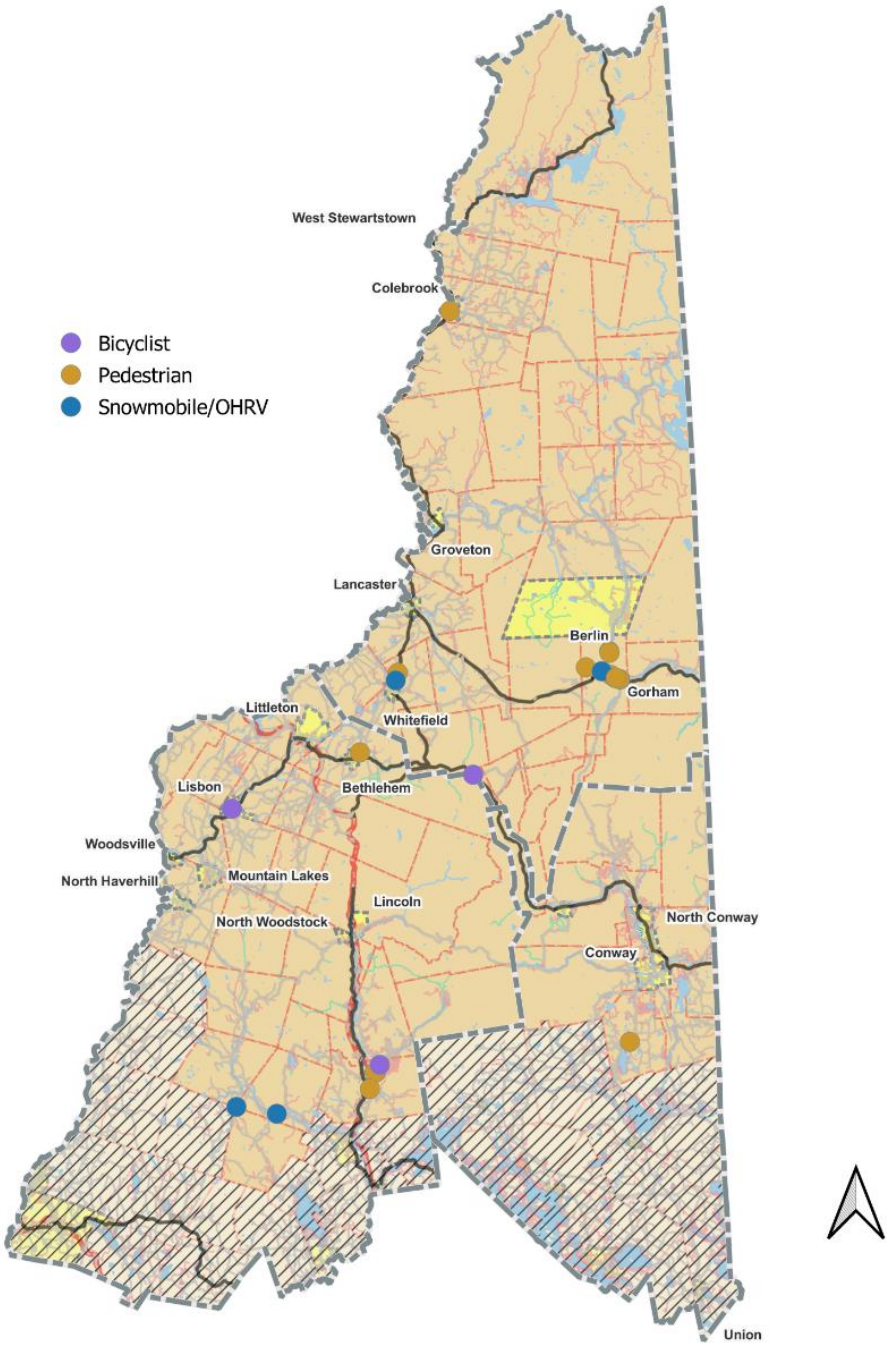


Figure 11: Vulnerable Road User Incidents 2019 - 2023

High Injury Network

As a result of the existing conditions analysis, specifically focusing on fatal and suspected serious injury accidents across the North Country Council region – a High Injury Network (HIN) comprised of road

segments has been created. The methodology for identifying the segments and intersections illustrated in the following map images has been outlined in section 2.1 above. The purpose in identifying these areas is to begin the conversation regarding future project considerations and countermeasures that could be considered to address the occurrence of fatal and serious injury incidents within the study area.

Figure 12: High Injury Network Locations, Study Region

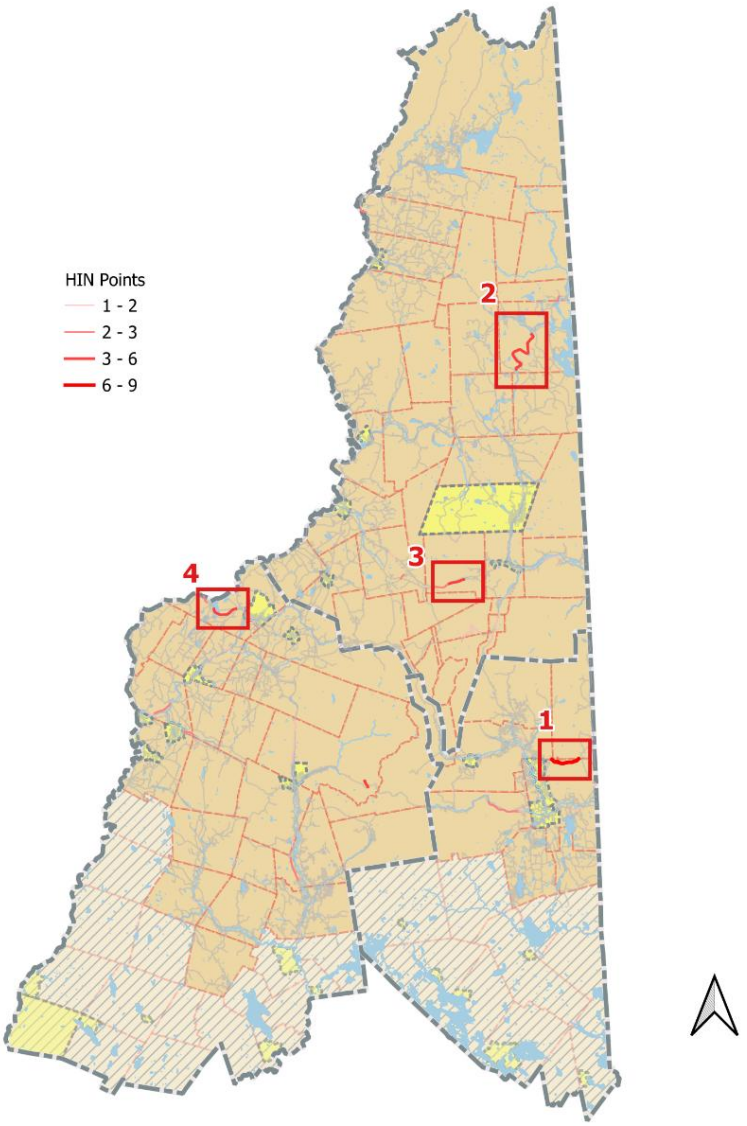


Figure 14: High Injury Network

It is important to note, highway segments that had a 'HIN Score' of less than 1 were omitted from the map. As illustrated, of the 3,844 miles of roadway in the study region, 190 miles have a HIN Score of 1 or greater. This comprises 4.94% percent of the highway mileage in the region, according to section length data retrieved from the NHDOT road data. This is provided in reference to guidance suggested by the U.S. Department of Transportation that states all HIN segments should comprise between 5 and 20% of total road mileage analyzed.

The top four HIN scoring locations indicated in Figure 14 were Hurricane Mountain Road in Carroll County just east of North Conway (7), Berlin Road in Coos County in the Town of Errol (5), US Route 2 west of Gorham between Durand West and Ravine Pool Rd. (5), and Interstate 93 North, west of Littleton (4).

Analysis Summary

The NADO Crash Data Analysis 2025 provides a comprehensive overview of roadway safety trends in northern Grafton, Carroll, and Coos Counties in New Hampshire, drawing from crash data reported between 2019 and 2023. During this five-year period, the region experienced 10,187 crashes, with 0.5% resulting in fatalities and 16% causing injuries. While overall crash numbers declined by 10% over the period, serious safety concerns persist—particularly in fixed object and single-vehicle crashes, which are especially amenable to systemic safety improvements. A High Injury Network (HIN) was developed to identify the 190 most critical miles of roadway (4.94% of the network) based on fatal and serious injury crash density, informing future project targeting.

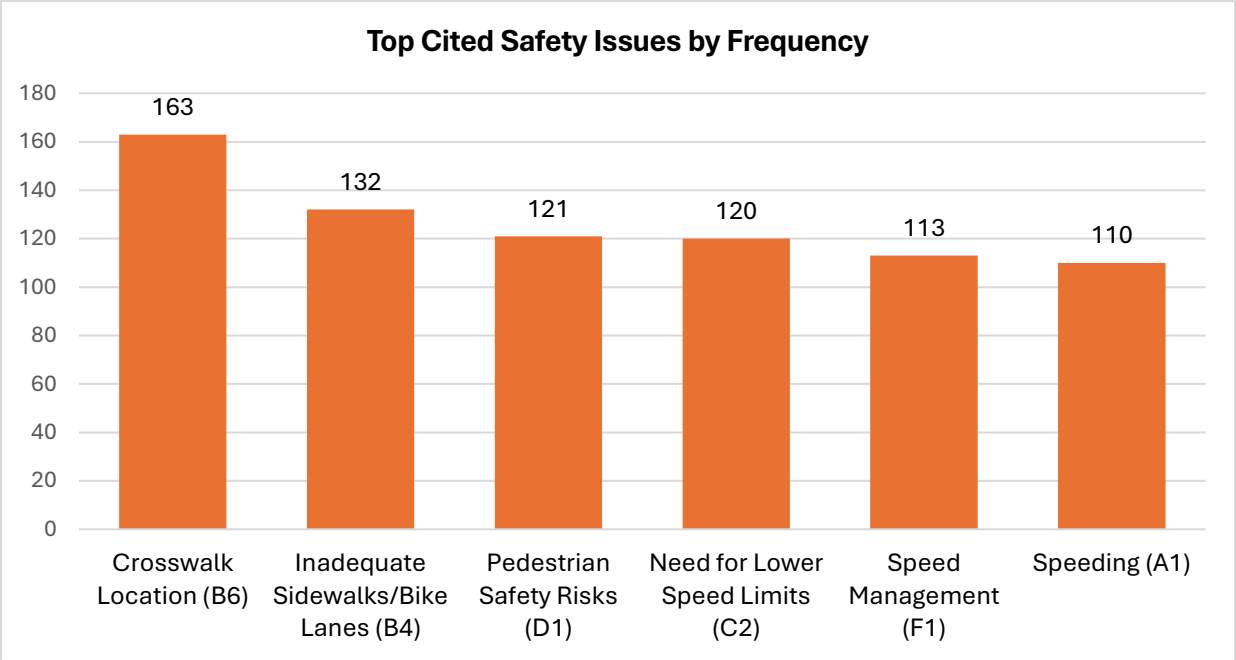
However, there is a critical gap in the analysis: 82% of crash records lacked data on crash type, significantly limiting insights into contributing factors. This lack of data weakens efforts to develop targeted countermeasures based on crash behavior patterns. This missing information particularly hampers detailed understanding of scenarios like run-off-road crashes, multi-vehicle collisions, or vulnerable road user incidents, that limits the region's ability to deploy proven countermeasures effectively.

To strengthen future analyses and safety planning, improving crash reporting completeness—especially in terms of crash type—is essential. Better data granularity would enhance the effectiveness of HIN methodologies, prioritize safety interventions more precisely, and support the region’s goal of reducing the number of traffic fatalities and serious injuries along the region’s roadways.

Safety Survey Analysis

Data Overview

Over 420 qualitative responses were collected, providing detailed local knowledge about safety hazards. Responses were thematically coded using content analysis methods, yielding both location-based and issue-based insights. The results reflect both broad systemic safety issues and local hazard reporting, offering invaluable community guidance for prioritizing interventions and countermeasures. Over 2,000 individual codes were identified during the response analysis.



Key Findings

- Speeding is the most pervasive concern. It affects rural highways, town centers, school zones, and trailhead areas with frequent mentions on Routes NH-16, US- 2, NH-10, and NH-135. The codes related to speeds were A1, C2, and F1 which were in the top six responses for codes related to concerns or solutions and coded 343 times.
- Dangerous intersections were widely reported, particularly in Jackson Village, Gorham, Woodsville/Haverhill, and Randolph. There were a total of 138 responses that directly cited a dangerous intersection.
- Pedestrian and cyclist safety concerns emerge across the region, especially on routes with narrow shoulders or fast-moving traffic. Of the combined codes related to pedestrian and cyclist safety (B4, D1, D2, G4) there were 350 instances this was cited in responses.
- Law enforcement gaps were mentioned frequently alongside specific moving violation types and location-specific in school zones. Many respondents perceived visible but inactive enforcement, and was identified in the analysis in 579 references made in survey responses (A1, A3, B4, C1, C3, D1, D2, F1, G4).

High-Risk Locations Identified

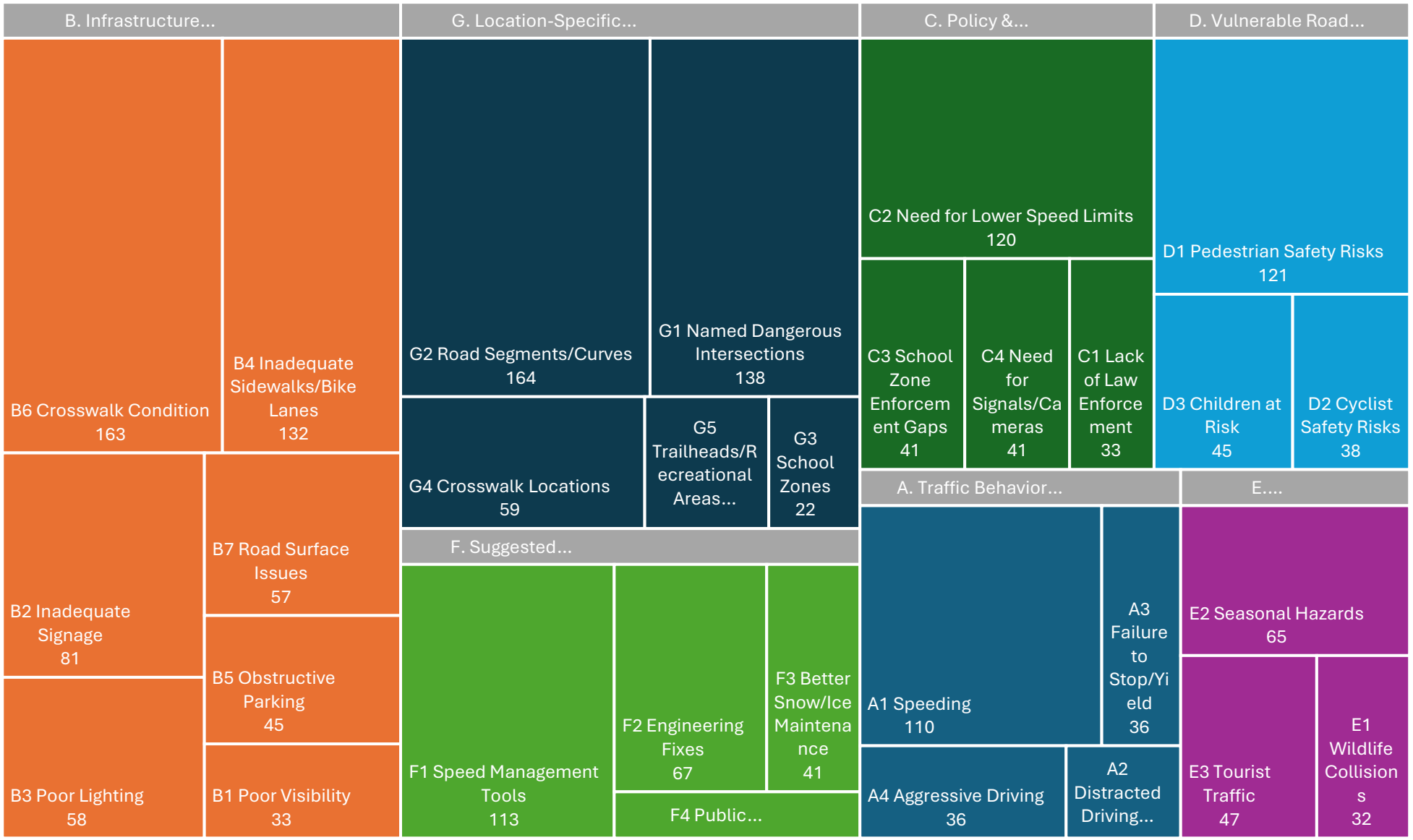
- Route 16, Jackson to Gorham—multiple mentions of curves, speeding, unsafe driveways, and increased safety concerns during tourist seasons.
- Route 2, Jefferson to Gorham (through Randolph)—high speeds, poor visibility, trailhead crossings, dangerous turning traffic, and seasonal concerns related to road condition, darkness, and wildlife crossings.
- Intersection of Route 135 & Route 302, Woodsville—dangerous intersection, poor visibility, lack of traffic signals, and aggressive or difficult merging.
- Route 16A & 16B, Jackson Grammar School Zone—pedestrian safety, confusing intersection geometry, and speeding.
- Route 2: Appalachian Trailhead Parking, Randolph & Gorham—dangerous crossings, cars parked on shoulders, speeding, and increased traffic during tourist and recreational seasons

Recommendations Based on Survey

- ❖ Lower posted speed limits in high pedestrian-use areas (e.g., Jackson Village; Route 16/Main Street, Gorham)
- ❖ Improve signage and lighting at key intersections and crossings (e.g., North-South Road, North Conway; Bartlett Village)
- ❖ Install traffic-calming features (e.g., flashing lights, radar signs, narrower lanes).
- ❖ Enhance pedestrian infrastructure, including crosswalks, sidewalks, and trail access.
- ❖ Increase law enforcement presence in known speeding zones and high-violation areas.
- ❖ Prioritize engineering studies at the most frequently cited intersections.

Transportation Safety Theme & Code Frequency

Transportation Safety Theme & Code Frequency



Insights from the Survey Responses

1. Speeding is the Dominant and Pervasive Concern

Speeding emerged as the most dominant issue in the public survey responses, cited in responses and coded over 340 times. Concerns about speeding were not isolated to any single area, but rather spanned rural roadways, town centers, and school zones throughout the North Country region.

Respondents specifically highlighted excessive speeds on key corridors, including Route NH-16, Route US-2, Route NH-10 and Route NH-135, with a particular concern about:

- Commercial/Freight Truck Traffic
- Out-of-town or seasonal tourist drivers
- Speeding near residential driveways, trailheads, and schools

Additionally, many respondents proposed solutions such as reducing posted speed limits, installing radar feedback signs, and increasing law enforcement presence in high-concern areas.

Exemplar Quote: "*Every time I exit or enter into my driveway off RT 16, its like playing Russian roulette with the speeding cars & trucks coming around blind curves at breakneck speed in the snow.*"

Insight: Speeding is not perceived as a behavioral problem alone, but rather as a systemic issue resulting from a combination of roadway design, insufficient enforcement, and changing traffic patterns driven by tourism growth and regional development. The data suggests that effective interventions will require a multi-faceted approach, including both engineering and policy strategies.

2. Dangerous Intersections and Road Segments Pose Consistent Risks

Over 130 responses referenced specific intersections and curvy or hilly road segments that residents believe are hazardous. Locations mentioned repeatedly include:

- Route 16 & 2 in Gorham
- Route 302 & 135 in Woodsville
- Carter Notch Road & Main Street in Jackson
- Randolph Hill Road & Route 2

Common concerns include limited sightlines, confusing traffic flows, and high-speed turns on roads not designed for current traffic volumes.

Exemplar Quote: "*At the intersection of route 16 and route 2, people are allowed to park along the roadway from the [G]orham Common to the corner of the intersection and from the Inn up to the intersection…having cars park here, especially in the summer really hinders a drivers ability to see cars coming when stopped at the intersection to turn, especially seeing [oncoming] motorcycles. This gets very very dangerous and cars should not be able to park that close to the intersection on the same side.*"

Insight: These location-specific concerns highlight the need for targeted intersection redesigns, advance warning signage, and roadway realignment where geometry contributes to unsafe conditions.

3. Pedestrian Infrastructure is Inadequate or Unsafe in Key Traffic Areas

Pedestrian safety was raised in over 350 instances across responses, especially in locations where foot traffic is common, like village or town centers, school zones, and trailhead crossings.

Key Concerns included:

- Lack of sidewalks or shoulders (e.g., Jackson, Bartlett, Gorham, Woodsville)
- Faded or missing crosswalks
- Drivers not yielding to pedestrians
- Poor nighttime visibility

Exemplar Quote: "Walking, biking, driving in Bartlett village. There are no crosswalks or sidewalks in the village, incredibly challenging to walk to the library, school, friends, farmstand, post office, town meetings, rec fields during winter, busy seasons, and at night."

Insight: The existing pedestrian infrastructure does not meet the safety needs of North Country region residents, especially children, seniors, and trail users. This issue intersects with road design, lighting, and enforcement, indicating a need for complete streets strategies, enhanced crossings, and ADA-compliant pedestrian facilities.

4. Enforcement Gaps Undermine Roadway Safety

A strong theme throughout the responses was the perceived absence of law enforcement, with over 550 instances responses referenced a law-enforcement related complaint.

Key enforcement gaps include:

- Speeding violations
- Failure to stop at signs or lights
- Unsafe behavior in schools zones
- Lack of ticketing or follow-through by police

Exemplar Quote: "NH16 from Albany up to Jackson has heavy traffic and many places with very high speeds and lack of speed control/enforcement. Problem is heightened during the Summer and Winter recreation months."

Insight: The effectiveness of local traffic enforcement is a major concern. Many respondents expressed frustration with warning-based approaches and requested increased patrols, automated enforcement tools, and clearer signage to support compliance.

5. Environmental and Seasonal Conditions Contribute to Safety Risks

Environmental factors, particularly winter weather, were frequently mentioned as increasing pre-existing road hazards. These concerns were mentioned in over 60 responses and focused on:

- Ice buildup and poor drainage on hills and curves
- Snowbanks obstructing visibility at intersections
- Delayed or inadequate snow removal
- Wildlife crossings on dark, forested roads

Exemplar Quote: "In winter, snow accumulates on guard rail by golf course and it's like having a wall going south…and there actually is a wall on the bridge just north."

Insight: Seasonal hazards are not isolated concerns—they intensify dangers in areas already struggling with speed, visibility, or poor design. Improving winter maintenance, road drainage, and shoulder clearance could substantially improve safety.

6. School Zones are Viewed as Vulnerable and Under-Protected

Across towns, respondents described school zones as inadequately marked or enforced. Specific mentions include:

- Jackson Grammar School
- Bartlett Elementary School
- Gorham School
- North Haverhill school bus stops

Issues identified by respondents:

- No flashing signs or visual alerts
- No crossing guards
- Drivers failing to yield to buses or pedestrians

Exemplar Quote: "*In front of the schools during drop off and pick up. Speeding, poor signage, not enough police presence in the am, no crossing guards. No clear indication it's a school zone. More evident crosswalk signs that are illuminated.*"

Insight: School zones are high-stakes areas where even minor delays in signage, enforcement, or visibility can lead to serious harm. Targeted improvements should include enhanced signage, crosswalk upgrades, and designated crossing assistance during peak hours.

7. Respondents Suggest Practical and Actionable Solutions

Many respondents provided constructive, site-specific recommendations to improve safety. These suggestions, supported by local knowledge, often included:

- Radar speed signs and flashing beacons
- Roundabouts or redesigned intersections
- Sidewalk and shoulder expansions
- Plowing and sanding improvements
- Expanded public or active transportation options

Exemplar Quote: "*We need speed feedback signs and better marked crosswalks—these are low-cost fixes that could save lives.*"

Insight: The people of the North Country are actively engaged in identifying problems, while also offering realistic, context-based solutions. Incorporating this input into project prioritization will help ensure that future safety improvements align with both the data and the community experience.

Elevating Community Voices into Safety Action

The North Country Transportation Safety survey's long responses make it clear that traffic safety is a concern throughout the region and that it is not a single issue problem. Respondents described problems that are both common and long-standing. These are not isolated issues. They show up across the region and along key corridors like Route 2, 16, and 135. The same concerns were consistently mentioned:

- Lack of enforcement
- Outdated road design
- Poor visibility, and
- Infrastructure that does not support safe travel for pedestrians and cyclists

Many respondents also shared suggestions for solutions, but few reflected confidence that these changes would happen without a clear plan and follow-through. The responses reflect the understanding of local risks, but also a level of frustration. Many of these problems have been raised before, yet they remain unaddressed. The Safety Action Plan is an opportunity to do more than document concerns. The SAP is a step toward identifying specific, achievable improvements, especially in places where risk is highest and public feedback is most urgent. This input can help guide investments, policies, and enforcement strategies that respond directly to what people are experiencing on the ground.

From Plan to Action

Transportation safety is everyone's responsibility. It will take cooperation and collaboration between many different groups to make the goal of this plan a reality. The Council has developed an in-depth goal & objective implementation matrix, a priority project list, and a toolkit of proven safety countermeasures to address the safety concerns noted in the crash data analysis, survey responses, and project identification process. These three (3) important deliverables are focused on solving the overarching goal of the North Country Safety Action Plan:

Reduce the number of fatal and serious injury roadway crashes by 50% by 2035, working toward 0 by 2050.

The Council has established the following five (5) goals to meet this challenge:

1. **Policy & Planning:** Adopt standards and design guidelines for projects that address safety for vulnerable road users
2. **Corridor & Roadway Infrastructure**: Improve infrastructure along corridors and roadways to reduce the frequency and severity of crashes
3. **Intersection & Crossing Infrastructure**: Improve infrastructure at intersections and crossing locations to reduce the frequency and severity of crashes
4. **Education & Outreach**: Establish an education and outreach campaign to address dangerous behaviors that lead to severe crashes on the regional roadway network
5. **Enforcement**: Increase the effectiveness of enforcement activities along HIN corridors and other routes and locations

Each of these goals contains a number of strategies, with associated actions to meet the complete the strategy. Details for each objective include the proposed lead agency to tackle the work, the safe system element it addresses, as well as the level of priority, and the timeframe of implementation. Below is an example of a strategy and related action to meet the Policy & Planning Goal:

Number	Action	Proposed Lead Agency (and partners)	Safe System Element	Priority	Implementation Time Frame
1.1 Incorporate innovative safety guidance and best practices into the project planning process					
1.1.1	Use the Safe Systems Approach to inform transportation projects and decision making	Cities, Towns, RPCs	Safer Roads	High	Ongoing

We believe that these goals, strategies, and actions can help meet the challenge of reducing fatalities and serious injuries along our roadway. These will provide guidance to the Council's work, as well as the work of local officials, regional agencies, and stakeholder groups to help address safety concerns along our roads. The entire Goal and Strategy matrix is in the first Appendix.

The priority project list is located in the section below. The list consists of numerous current projects, as well as those identified by Council staff as part of regular transportation work, and through safety survey

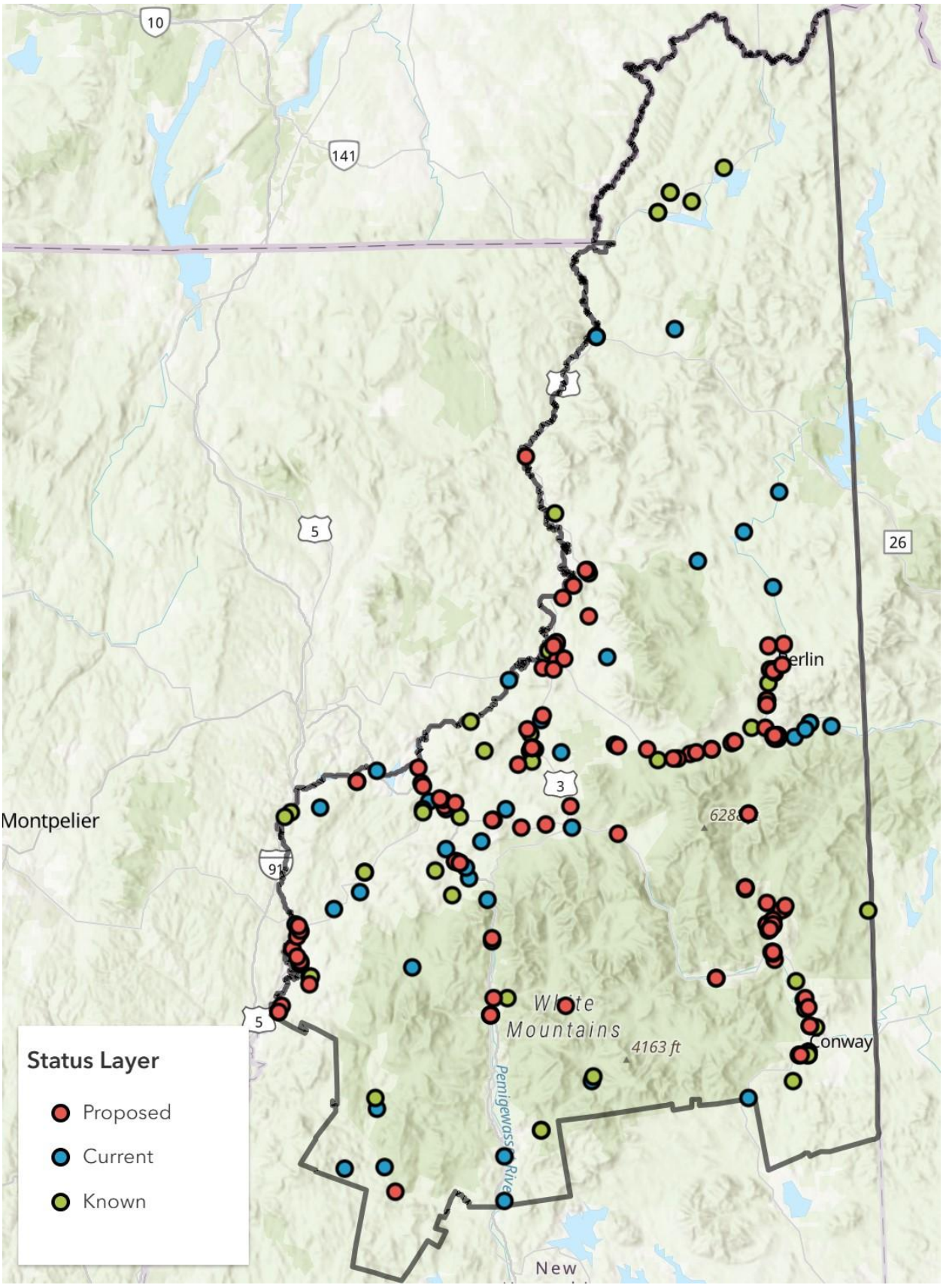
responses. The projects of the Ten-Year Plan and the Regional Transportation Improvement Program have also been included.

Current, Known, and Proposed Projects

The following project list is made up of projects from the RTIP, TYP, and those identified in survey response. The projects are categorized in three types:

Current – Currently programmed and vetted projects. These projects include the project ID, and project timeline and cost.
Known – Projects that have been identified through the TYP, TAP, CMAQ, or other funding or solicitation period , but were not funded or officially programmed. These projects may include project descriptions and cost estimates.
Proposed – Projects that were identified through the safety survey. These projects generally contain a project description, but are not vetted or detailed, besides those that were included in the survey responses.

The map below shows the current, known, and proposed projects in the region. These span almost every community in the region, and are focused on all types of problems such as congestion mitigation, speed, heavy vehicle volume, crash reduction, and mitigating crashes. These projects are important for addressing the roadway safety issues, and to reduce the number of fatalities and serious injuries along our roadway network. The project list will be updated regularly to ensure that project priorities and status are up-to-date.


10
141
5
26
3
91
5
Montpelier
Berlin
White Mountains
4163 ft
Conway
Pemigewasset River
New
Status Layer
Proposed
Current
Known

Project ID	Community	Route/Road/Location	Description	Timeline	Cost	Current or Proposed
14958	Conway	NH 16	Bridge Rehabilitation over Saco River - Br.#170/071		$3,666,878	Current
15815	Dummer	Old NH 110	Bridge Rehabilitation - Old Route 110 over Upper Ammonoosuc River - Br.#042/043		$956,841	Current
16238	Haverhill	Mill Street	Bridge Replacement over abandoned railroad and active multi-use trail		$1,209,015	Current
16304	Dummer-Cambridge-Errol	NH 16	Widening and Rehabilitation where needed from Errol extending south 10 miles		$3,065,040	Current
22192	Lancaster	MOUNT ORNE RD	MOUNT ORNE RD OVER CT RIVER; COVERED BRIDGE #039/105	2025	$371,961	Current
24497	Franconia	NH 18	NH 18, Superstructure replacement for bridge carrying NH 18 over Lafayette Brook, Br.# 089/099		$3,322,086	Current
27162	Rumney	BUFFALO ROAD	Bridge replacement	2025	$1,213,834	Current
27711	Littleton, NH - Waterford, VT	NH 18	Deck Replacement and Superstructure painting of bridge carrying NH 18 over Connecticut River, Br.#109/134	2025	$5,611,226	Current
29597	Albany	NH 16	Widen and resurfacing for install of centerline rumble strips from Tamworth TL to Conway TL (~4.5m)	2025-2029	$13,726,031	Current
40018	Conway	NH 16	Reconstruct NH 16 from Olympic Lane East 0.60 miles to Village Lane - Multi-Funded		$2,104,080	Current
40363	Shelburne	US 2	BRIDGE REHABILITATION OF RED LIST BRIDGE CARRYING US ROUTE 2 OVER PEA BROOK (BR NO 049/089)	Construction 2026	$2,829,281	Current
40514	Franconia	I-93	Rehabilitation on I-93 from MM 111.6 to MM 116.1, including ramps at exits 35, 36, & 37	Construction 2025	$22,078,708	Current
40551	Shelburne	North Road	BRIDGE REHABILITATION OF THE BRIDGE CARRYING NORTH ROAD OVER ANDROSCOGGIN RIVER (BR NO 075/113)	Construction 2027	$5,252,632	Current
40576	Milan	BERLIN REGIONAL AIRPORT	Preservation, modernization, and/or expansion of airport facilities, planning studies	2025-2034	$10,594,015	Current
40578	WHITEFIELD	Mt. Washington Regional Airport	Preservation, Modernization, and/or Expansion of airport facilities; Planning Studies.	2025-2034	$7,531,632	Current

40613	Thornton	NH 49	Deck Replacement and Scour Protection for bridge carrying NH 49 over Mad River - Br. #239/152. State-owned Red List bridge.	2025	$6,501,990	Current
40638	Conway	NH 16, NH 113, NH 153	Roundabout Improvements to NH 16 including intersections of NH 16/NH 153 and NH 16/NH 113.	2025	$4,093,629	Current
40640	Colebrook	US 3/Main Street	Reconstruction of about 2700' of US 3/Main Street from South Main Street traffic island to Beaver Brook	2025	$4,185,324	Current
40648	Wentworth	FRESCOLN RD OVER ROCKY BRANCH	BRIDGE REPLACEMENT-FRESCOLN RD OVER ROCKY BRANCH - BR.#108/070	2025	$936,544	Current
40651	Colebrook	Harvey Swell Rd over East Branch	Bridge rehabilitation - Harvey Swell Road over East Branch - Br. #190/109. State-owned Red List Bridge.	2025	$472,600	Current
40655	Colebrook	Pleasant Street over Mohawk River	Bridge Rehabilitation - Pleasant Street over Mohawk River - Br. #050/099.	2025	$605,807	Current
40808	Jackson	Valley Cross Road OVER WILDCAT BROOK	Bridge rehabilitation- VALLEY CROSS RD OVER WILDCAT BROOK-BR. #153/066	2025	$1,376,806	Current
41402	Conway	Washington Street	bridge rehabilitation	Construction 2025-2026	$2,279,405	Current
41409	North Haverhilll	Dean Memorial Airport	Preservation, Modernization, and/or Expansion of airport facilities; Planning Studies.	2025-2034	$8,258,655	Current
41472	Campton	NH 49	address bridge carrying NH 49 over Pemigewesset River	Construction 2028-2029	$7,402,433	Current
41472	Campton	NH 49	Address red list bridge	Construction 2028-2029	$7,072,433	Known
41575	Bethlehem	NH 142	address red list bridge (099/152) carrying NH 142 over Ammonoosuc River	Construction 2027-2028	$4,379,360	Current
41582	WHITEFIELD	LANCASTER RD	ROADWAY RECON & SAFTEY IMPROVEMENTS TO US 3 FROM JEFFERSON RD (NH 116) NORTH 3000'	2025-2028	$4,715,160	Current
42436	Franconia-Sugar Hill-Bethlehem	I-93	I-93 44 FROM MM 116.1 TO MM 120.5 INCLUDING RAMPS AT EXISTS 38 &39	2029-2030	$25,957,284	Current
42437	Bethlehem-Littleton	I-93	rehabilitation on I-93 from MM 120.5 to MM 125.0, including ramps at exits 40, 41, & 42	2028-2031	$25,728,051	Current
42510	Northumberland	CHURCH, MAIN STATE ST	RENOVATION/REPLACEMENT OF APPROXIMATELY 6300 LINEAR FEET OF VILLAGE SIDEWALK TO ADA STANDARDS	2028-2029	$1,198,299	Current

42598	Gorham	NH 16	DRAINAGE AND RETAINING WALL IMPROVEMENTS ALONGSIDE NH 16 ONE QUARTER MILE SOUTH OF LIBBY STREET	2029	$3,478,646	Current
42599	Shelburne	US 2	Culvert upgrades	2025-2029	$2,434,646	Current
42966	SHELBURNE	NORTH RD	NORTH ROAD BRIDGE PRESERVATION FOR SHELBURNE BR. NO 075/110	2027	$918,120	Current
43438	WOODSTOCK	NH 112, KANCAMAGUS	ADDRESS BRIDGE (170/159) CARRYING NH 112 OVER PEMIGEWASSET RIVER IN THE TOWN OF WOODSTOCK	2027-2030	$997,614	Current
43445	Bath	NH 135	NH 135 Bridge Preservation Efforts over Ammonooscuc River (Br# 071/063)	2025	$1,608,625	Current
43520	Gorham	NH 16	Bicycle/Pedestrian Improvements ALONG NH 16 FROM THE INTERSECTION OF US 2 (GLEN RD) AND US 2 (LANCASTER RD)	Construction 2032	$2,074,385	Current
43521	Whitefield	NH 116	Pedestrian Improvements ALONG NH 116 IN WHITEFIELD	2027-2032	$1,595,798	Current
43523	Berlin	NH 16	Roadway improvements from Cleveland Bridge/Hutchins St to Exchange St	2032	$6,157,213	Current
43734	Waterville Valley	Valley, Tecumseh, Snows Brook	RECONSTRUCT 3,406 LF OF ROADWAY TO INCLUDE A DEDICATED BIKE/PED LANE ON VALLEY RD, TECUMSEH RD	2023-2031	$1,256,169	Current
43802	Littleton	I-93	Painting two bridges carrying I-93 BRIDGES IN LITTLETON	2026	$3,091,217	Current
43809	Littleton	I-93	Preservation of 4 Bridges in Littleton carrying I-93 over Ammonoosuc River and NHRR (ABD)	2025	$6,917,493	Current
43842	Gorham	US 2	320LF Sidewalk, pedestrian crossing and Bicycle facilities	Construction 2026	$1,334,714	Current
43844	Littleton	US 302	Pedestrian Improvements ALONG RT 302 FROM NEAR OLD COUNTY RD TO NEAR LOWES	2025-2030	$4,871,277	Current
43955	Campton	NH 175	Replacement of 3.5' x 6' Stone Box Culvert (NH 175) located 0.4 MI north of Pulifier Rd	2026	$1,592,282	Current
44142	Berlin	Mason St	Mason Street improvement as identified in CDS 2022 Legislation	2025	$749,999	Current

44158	Whitefield	US 3-UNION ST	ROADWAY & UTILITIES RECON/REHAB ON US3 (UNION ST) IIN DOWNTOWN WHITEFIELD, AS IDENTIFIED IN CDS 2023	2025	$1,225,000	Current
44160	Bethlehem-Franconia	NH 18	On-Rd (NH18) and Off Rd Trail connecting centers of Bethlehem and Franconia (CDS 2023)	2025	$524,063	Current
44174	Berlin	NH 16 - MAIN AND PLEASANT ST	REHAB OF ROADS, SIDEWALKS & PARKING AREA, INSTALLATION OF DOWNTOWN SNOW MELT SYSTEM. RAISE GRANT	2029	$18,038,332	Current
44215	Shelburne	US 2	Raise profile of US2 ~2,100' S of North Rd to ~2,350 N of Grumpy Old Man Rd (Reflection Pond) (To eliminate or mitigate flooding conditions that are present on Rt.2 adjacent to Reflection Pond)	2029-2034	$3,812,285	Current
44216	Gorham	NH 16	Construct ~12.5m sidewalk and bike shoulder from 2400'N of US2 to ~1400 S of Pisani St	2029-2034	$6,673,874	Current
44319	Jackson	DUNDEE RD	Replace Dundee Road Bridge over Mill Brook (BR #198/046)	2031-2032	$1,304,509	Current
44325	Warren	FISH HATCHERY RD	Replace Fish Hatchery Rd bridge over Patch Brook (BR#120/058)	2029	$1,371,532	Current
44327	Landaff	SYM NOYES RD	Replace Sym Noyes Road Bridge over Mill Brook (BR#074/159)	2030	$1,604,214	Current
44334	Sugar Hill	Streeter Pond Rd	REPLACE STREETER POND ROAD BRIDGE OVER INDIAN CREEK (BR#208/125)	2031	$1,487,283	Current
44341	Jefferson	LARCOMB RD	Replace Larcomb Road Bridge over Isreal River overflow (BR#104/078)	2033	$2,689,390	Current
44342	Lancaster	MCGARY HILL RD	Replace McGary Hill Rd Bridge over Bone Brook (BR#218/076)	2033	$1,657,623	Current
44345	Monroe	SMUTTY HOLLOW RD	Replace Smutty Hollow Rd Bridge OVER SMUTTY HOLLOW BROOK (BR#170/083)	2034	$2,126,223	Current
44369	Gorham	GLEN & MT WASHINGTON STAGE GO	Convert 10 vehicles from gasoline to clean fuel propane	2026	$96,783	Current
44416	Carroll	US 302	Address Bridge (162/127) carrying US 302 over Ammonoosuc River	2031	$7,302,991	Current
44418	Easton	TUNNEL BROOK RD	Address Red List Bridge (084/056) carrying Tunnel Brook Rd over Wild Ammonoosuc River	2029-2030	$1,433,891	Current

44623	Franconia		Install 2 two-port electric vehicle charging stations in center of town on Main St	2028-2033	$66,446	Current
13602C	Jefferson - Randolph	US 2	ROADWAY Reconstruction AND safety improvements FROM NH 115 TO JEFFERSON/RANDOLPH TOWN LINE (2.2M)	2025-2027	$17,453,234	Current
16304C	Cambridge	NH 16	Widening and Rehabilitation of NH 16	Construction 2030-2031	$10,547,699	Current
16304C	Dummer-Cambridge-Errol	NH 16	Widening and rehabilitation of NH 16	2031	$10,547,699	Current
	Albany	NH 112	Paved shoulders for safer driving and room for cyclists			Known
	Albany/Madison	NH-113/NH-16	Installation of Roundabout at NH16 and NH113 intersection to improve the safety of motorists and pedestrians.		$5,095,700	Known
	Albany-Jackson	Route 16 (Albany to Jackson)	speeding, tourist traffic, enforcement gaps, need for reduced speed limit			Proposed
	Bartlett	Route 302 & River Rd & Albany Ave	dangerous intersection, need crosswalk, tourist traffic, speeding			Proposed
	Bartlett	Route 302	need bike lanes, speeding, need for reduced speeds			Proposed
	Bartlett	Route 302 & Upper West Side Rd	need bike lanes,			Proposed
	Bartlett-Glen	Route 302	need bike lanes, speeding, need for reduced speeds			Proposed
	Berlin	Cleaveland Bridge to Green Square Intersection. Includes Glev Ave and Pleasent St.	Addressing both insufficent roadways and pedestrian traffic conditions. Improve roadway coordior, conditions, infrastuctuture, and overall sustainability. Improve ADA acessability.			Known
	Berlin	one-way streets/ intersections				Proposed
	Berlin	Mason St/ Unity St/ Hutchins St/ E Mason St/ Goebel St (Big Apple Store)				Proposed
	Berlin	Route 116 (northern, section close to the river)				Proposed
	Berlin	Cates Hill				Proposed
	Berlin	Hillside Ave & Willow St (Bob's Variety Store)				Proposed
	Berlin	Granite St & Maston St				Proposed

Berlin	Hutchins St to Route 16	speeding, enforcement gaps, need for reduced speed limits	Proposed
Berlin - Gorham	Route 16 (Berlin to Gorham)	road redesign, OHRV lane	Proposed
Berlin	NH 110 & NH 16	dedicated bicycle lanes within downtown Berlin and between Berlin and Gorham	Known
Berlin/Northumberland	NH 110	new and improved public transit services	Known
Bethlehem	Town Hall (2155 Main St) to Elementary School (2297 Main St)	Installation of 1,500 linear feet and 5 feet wide sidewalk with granite curbing. The project will include drainage modifications with the new curb line, as well as improvements to the driveway aprons and local road approaches that meets PROWAG standards.	Known
Bethlehem	Route 302 (hill by Wayside Inn)		Proposed
Bethlehem	Route 302 (Main Street/Library to Littleton)	tourist traffic, obstructive parking, unsafe crosswalks, speeding, need for reduced speeds, freight corridor	Proposed
Bethlehem - Berlin	Routes 3 - Route 115 - Route 2 - Route 16		Proposed
Bethlehem - Carrol/Twin Mountain	Route 302	need bike lanes, speeding, need for reduced speeds	Proposed
Campton/Thornton/Waterville Valley	NH 49	multi-use/shared pathway from Waterville Valley to I-93 for recreation, travel, and emergency uses	Known
Campton-Littleton	I-93		Proposed
Carrol/Twin Mountain	Route 3 & Route 115		Proposed
Carrol/Twin Mountain	Route 302 (RR crossing by Fabyan's)	bike hazard, rr crossing, speeding, need for reduced speeds, need bike lanes	Proposed
Carroll	US 3 & US 2	paved shoulders and bike lanes for safer cycling within and between communities and to and from Presidential Rail Trail	Known

Colebrook - Pittsburg	Route 3		Proposed
Conway	Chatham town line to Center Conway (7.1mi)	Reconstruction of approximately 7.1 miles of E. Conway Road starting at Chatham Town Line.	Known
Conway	Intersection of NH 16 and Intervale Cross Rd.	Installation of traffic calming measures/ safety improvements to busy state-local intersection in North Conway	Known
Conway	Route 113/Main St & W. Main St		Proposed
Conway	US 16	sidewalk & bike lanes or separated multi-use pathway between North Conway and Conway village	Known
Conway	US 302	bike lanes for safer cycling and separated multi-use pathways for pedestrians and cyclists	Known
Conway	US 302 & NH 16	new public transit services within Conway for reducing congestion within downtown and increased mobility for non-drivers	Known
Conway/Eaton	NH 153	paved shoulder or separated multi-use pathway for safer pedestrian and cyclist movement	Known
Dalton	State Road 135 at Bridge Hill Road.	Installation of crosswalk at intersection of Bridge Hill Rd and NH135. Promote safety for students loading and unloading from the school bus as well for pedestrians at the Dalton Country Store. Approximately 40ft crosswalk with shoulders.	Known
Dalton	NH-135 from Bridge Hill Road to NH-142.	Install a pedestrian/bike lane from Dalton Country Store to intersection of NH-142. Promotes a dedicated recreational safe space along a major roadway for people to utilize non-motorized modes of transportation. Approximately 3 miles of lane improvements. Prepare shoulder for a 36" path with a ledge-packed or paved surface. Plan for ped/bike lane on one side of roadway.	Known
Dalton	Hall Rd	narrow road, poor condition road	Proposed
Franconia	Main St	Install 2 two-port electric vehicle charging stations in center of town on Main St	Known
Franconia	Route 116 & Route 18		Proposed

Franconia	Route 18/Main St		Proposed
Franconia	intersection of NH 116 & NH 18	safety improvements to reduce stop sign running by northbound vehicles on NH 116	Known
Franconia/Easton	NH 116	sidewalks and paved shoulders for safer pedestrians and cyclists	Known
Glen	Route 16 & 302		Proposed
Glen	Route 302 (Grant's Supermarket)	Unsafe driveway, dangerous intersection, need signage	Proposed
Glen	Route 16 & Green Hill Rd		Proposed
Glen-Jackson-Gorham	Route 16/Pinkham Notch Road	speeding, unsafe driveways, blind curves, tourist traffic, need for reduced speed limit, freight corridor	Proposed
Gorham	Route 16 & US 2		Proposed
Gorham	Route 16 (Main Street)	obscured signs, obstructive parking, speeding, unsafe crosswalks, unmarked crosswalks, need signals, freight corridor, enforcement gap, need for reduced speed limit	Proposed
Gorham	Route 16 & Walmart		Proposed
Gorham	Route 16 & Mount Washington Auto Rd		Proposed
Gorham	Route 16 & Railroad St		Proposed
Gorham	Route 16 & Washington St		Proposed
Gorham	Route 2 (Appalachia Trail Parking)	trailheads, unsafe crosswalk, tourist traffic, obstructive parking, speeding, need signage, roadway redesign	Proposed
Gorham	Church St		Proposed
Gorham	Promenade St		Proposed
Gorham	School St (Gorham Elementary)	need crosswalk, enforcement gap	Proposed
Gorham-Lancaster	Route 2	speeding, trailheads, seasonal hazards, no shoulders	Proposed
Groveton/Northumberland	Church St & State St		Proposed
Groveton/Northumberland	Guildhall Rd & Route 3		Proposed

Groveton/Northumberland	Route 3 (entrance into Groveton)	confusing signage	Proposed
Haverhill		Preservation, modernization, and/or expansion of airport facilities, planning studies	Known
Haverhill	Route 10/Dartmouth College HWY & Dollar General		Proposed
Haverhill	Route 10/Dartmouth College HWY & Aldrich's		Proposed
Haverhill	Route 10/Dartmouth College HWY & Hatchland		Proposed
Haverhill	Route 10 & Route 116/Benton Rd (Post Office)		Proposed
Haverhill	Route 10 & Grafton County Nursing Home		Proposed
Haverhill	Brushwood Rd		Proposed
Haverhill	Route 10 (Clifford Dr to Mace Hill Rd)		Proposed
Haverhill	Route 10		Proposed
Haverhill	NH 10	intersection improvements with Swiftwater Rd, Forest St, Melody Ln, and Ralston Rd	Known
Haverhill	intersection of NH 10 & NH 25	safety concerns about turning movements, look to improve sightlines and speeding	Known
Haverhill-Bethlehem	US 302	new and improved public transit services to increase mobility for non-drivers	Known
Jackson	NH16 in Jackson from mile marker 93-96 (approx 21,120 ft).	Project scope would include a study of this section of NH16, input from community members, and a re-design of the road to widen and improve sight lines.	Known
Jackson	16B/Black Mountain Rd & 16A/Main St (Jackson Grammar School)	road redesign, speeding, unsafe crosswalks, need signage, school zone, enforcement gaps, parking issues, unsafe sidewalks, tourist traffic	Proposed
Jackson	Route 16 & Route 16A/Main Street (Ski The Whites & The Shannon Door Pub)	road design, speeding, unsafe sidewalks, unsafe crosswalks, seasonal hazards, icing on sidewalks	Proposed
Jackson	Route 16 & Dana Place Rd	speeding, unsafe driveway, turning traffic	Proposed

Jackson	Route 16 & 16B/Carter Notch Rd (Wentworth Inn)	missing crosswalk, speeding, need for reduced speed limit, need bike lane	Proposed
Jackson	Route 16 (Jct Route 16A & Wildcat Service Station to Eagle Mt Rd)		Proposed
Jackson	Route 16A/Main St & Thorn Hill Rd		Proposed
Jackson	16B/Black Mountain Rd/5 Mile Circuit (between Jackson Historical Society & Christmas Farm Inn & Spa)		Proposed
Jackson	Route 16 (mile markers 92-96; deadmans curve)	deadmans curve, dangerous curve, speeding, unsafe driveways, tourist traffic, need for reduced speed limit, freigh corridor	Proposed
Jackson	Route 16 & Winneweta Falls		Proposed
Jackson	Route 16 (Blake House Rd to Wildcat Townhouse Dr)		Proposed
Jackson	Route 16 (mile markers 90.4 - 90.6)	seasonal hazard, ice flow	Proposed
Jackson	Route 16B (Jackson Falls)	Seasonal hazards, unsafe sidewalks	Proposed
Jackson	Route 16A (Covered Bridge)	Freight corridor, need signage, blind curve, confusing traffic pattern	Proposed
Jackson	Route 16B/Black Mountain Rd & Wilson Rd	speeding, turning vehicles, need for reduced speed limit	Proposed
Jackson	Route 16 & Ellis River Rd	speeding, unsafe driveway, turning traffic	Proposed
Jackson	Route 16 & Ridge Rd	speeding, need for reduced speed limit, enforcement gaps	Proposed
Jefferson/Carroll	NH 115A, US 3, & US 2	paved shoulders and bike lanes for safer cycling within and between communities and to and from Presidential Rail Trail	Known
Lancaster	Central Business District	Study safe options for pedestrian and bicycle traffic through the Central Business District. Main concern is the block between Middle St and Bunker Hill St	Known
Lancaster	1350 linear feet from rotary along US2 to Ice Pond Road School Entrance	Support pedestrian traffic from the downtown area to the school with improved sidewalk and curbing.Current sidewalk is deteriorating with no delineation or barrier to deter vehicular impact from the roadway. Green boulevard could be converted into bike lane/shoulder	Known

Lancaster	US-3 north intersection with Page Hill Rd and Summer St.	The purpose of this project is to support both non- and motorized activity by addressing safety issues. Discontinue entrance to Summer St, install curbing and landscape, design widened entrance to Page Hill Road with turn lanes.	Known
Lancaster	Route 2 & 3 (Soldier's Park)		Proposed
Lancaster	Rout 3/Summer St/ Page Hill Rd		Proposed
Lancaster	Weeks Hospital		Proposed
Lancaster	Main St (Downtown Lancaster)		Proposed
Lancaster	Route 3 (Martin Meadow Pond Rd to William St)		Proposed
Lancaster-Gorham	US 2	new and improved public transit services	Known
Lancaster-Littleton	US 3 & US 302	improved public transit services	Known
Lancaster-Pittsburg	US 3	new public transit services above Lancaster and between US 3 and NH 16 for increased mobility for non-drivers	Known
Lincoln	2.5mi length from I-93 to Kancamagus Hwy	Corridor Study of the traffic and congestion issues on the approximately 2.5 mile stretch from I-93 to NH rte 112 & Knacamagus Hwy	Known
Lincoln - Conway	Route 112		Proposed
Lincoln/Littleton	I-93	new public transit between Littleton and Lincoln to decrease congestion in Franconia Notch and increase mobility of non-drivers	Known
Lincoln/Woodstock	NH 112 & US 3	safer conditions and wider pathways for pedestrians and cyclists	Known
Lincoln-Franconia	Franconia Notch		Proposed
Lisbon		Redesign intersection of US-302 and School Street, Improve crossings and connectivity along US-302 in Lisbon's downtown to increase sense of space and serve the community	Known
Lisbon	intersection of	safety improvements to vehicular movement on and off of US 302, as well as improved pedestrian facilities	Known

Littleton	Meadow Street US Rt.302	Addition of 4,800' of sidewalks from Lowes to Convenient MD.	Known
Littleton	Cottage St/Route 302 & Bethlehem Rd/Route 302 (Beattie House/Food Coop)		Proposed
Littleton	Cottage St & Main St & Union St	dangerous intersection	Proposed
Littleton	Route 135 & Skinny Ridge Rd		Proposed
Littleton	Route 135/North Littleton Rd & Wheeler Hill Cemetary		Proposed
Littleton	Route 135/North Littleton Rd between house numbers 360 and 525		Proposed
Littleton	Route 135/ North Littleton Rd between house numbers 2655 & Mt Misery Rd		Proposed
Littleton	Route 135/Old St. Johnsbury Rd & Skinny Ridge Rd		Proposed
Littleton	Main Street	tourist traffic, obstructive parking, unsafe crosswalks, speeding, need for reduced speeds, freight corridor	Proposed
Littleton - Bethlehem	Brook Rd		Proposed
Littleton	US 302	reconstruct from Maple St to Dells Rd with pedestrian and bicycling improvements, including realignment of Saranac St	Known
Littleton	NH 116 & US 302	safety improvements for cyclists through downtown	Known
Monroe	NH135 South of Grange Hall Road	1/2 Mile of guardrails need replacement	Known
Monroe	NH135 South of Intersection with Barnet Road	Roadway repair/rehabilitation due to concerns about erosion of roadway into Connecticut River	Known
North Conway	Seavey St & North-South Rd		Proposed
North Conway	Route 302/Route 16/White Mountain HWY (Downtown North Conway)		Proposed

North Conway	North South Rd		Proposed
North Woodstock	Junction of US3 and NH112 and West to Clark Farm Road. Approx 0.7 miles.	Install pedestrian crosswalks and improvements at the intersection of NH112 and US3. Ensure crosswalk signage is clearly visible and compliant with safety standards. Implement handicap accessibility features. Design and construct a new ADA sidewalk along NH112 from intersection of Clark Farm Road.	Known
Northumberland	intersection of US 3 & Church St	safety concerns about turning movements and intersection configuration	Known
Northumberland/Groveton	Lost Nation Road (entire length for bike lanes)		Proposed
Pittsburg	Murphy Dam Road from US3 across bridge.	Complete rebuild of culvert, abutments, bridge, and roadway. Approximately 500 feet.	Known
Pittsburg	Round Pond Road/ US3	Improve drainage and pave 300 feet of Round Pond Road	Known
Pittsburg	Fifteen roadway aprons along US-3 and Back Lake Rd.	Improvement of roadway aprons along US3 and Back Lake Road. For safer transition from the dirt roadways onto the paved roadways. Paving of aprons at each location.	Known
Pittsburg	Main St (US3) in the village area from Cheese Factory Road to Back Lake Road. Approx 7,920ft.	Rebuild pedestrian sidewalks (asphalt sidewalk and curb) to prevent vehicles from driving up on the sidewalks.	Known
Pittsburg	Back Lake Road from the top of the Transfer station US3 intersection.	Reclaim and repave approximately 15,840 feet of roadway and install 8 culverts for drainage.	Known
Pittsburg	Black Lake Road from US3 intersection to entrance of transfer station.	Reclaim and repave approximately 7,920 feet of roadway and install five culverts for drainage.	Known
Pittsburg	Hill Road (North), crossing Perry Stream	Refurbish covered bridge #35 for ped traffic and to install a new steel bridge for vehicle traffic east of the covered bridge. The new bridge would be approximately 120 feet in length; oversize one lane.	Known

Randolph	Intersections of US2 and Randolph Hill Road and Raycrest Drive	Address safety issues on US2 at two intersections, US2/Randolph Hill Road and US2/Raycrest Drive, by providing: left-turn lanes for US2 eastbound traffic at Randolph Hill Road; and a left-turn lane for US2 westbound traffic at Raycrest Drive. Approx 2,500 feet of US2. Additional distance may be necessary to create safe turning lanes.		Known
Randolph	Route 2 & Randolph Hill Road			Proposed
Randolph	Route 2 & Raycrest Drive			Proposed
Randolph	Route 2 & Durand (East & West)			Proposed
Randolph	Route 2 (The Inn at Bowman)			Proposed
Randolph	Route 2 (Center rumble strips)			Proposed
Randolph	Route 2 (Gorham Hill)			Proposed
Randolph	Appalachia Trailhead	safety concerns about trailhead parking overflow		Known
Rumney	Route 25 (northern)			Proposed
Stratford	US-3 and Town Common Road	North Stratford Village pedestrian improvements to sidewalks and crossings. Installation of sidewalks, signage, and crosswalk locations to improve connectivity to houses and local amenities and institutions.	$970,700	Proposed
Sugar Hill	NH 117	Install ADA compliant sidewalks and improve drainage through the town center (NH117 from Lover's Lane (near Church) to NH117 and S. Rd. Improvement of current Town Hall crosswalk and installation of crosswalk at Meetinghouse.		Known
Warren	NH 25C	improved and extended sidewalks along residential portion of the road		Known
Whitefied		Increase bicycle and pedestrian access to downtown via Rt116/Rt142 from Morrison Summit and Weeks Medical Center by a walking path.		Known
Whitefield	5.2 Miles (Whitefield), 1.5 Miles (Bethlehem), 4.8 Miles (Dalton)	Convert rail corridor into a multi-use 4-season rail trail for residents and visitors to use for recreation and transportation. 11.5 Miles of Railroad		Known

Whitefield		Preservation, modernization, and/or expansion of airport facilities, planning studies	Known
Whitefield		King Square Pedestrian safety improvements	Known
Whitefield		Road reconstruction and safety improvements	Known
Whitefield	Route 116 & US 3 (Union Street)		Proposed
Whitefield	Route 116 & Route 142		Proposed
Whitefield	Route 3/Lancaster Rd & Route 116/Jefferson Rd		Proposed
Whitefield	Route 3/Lancaster Rd (south of WMRHS)		Proposed
Whitefield		decommission and conversion of railway into rail trail to connect Ammonoosuc and Presidential Rail Trails	Known
Whitefield	King's Square (US 3 & NH 142)	reconstruct sidewalks and safety improvements to slow vehicle speeds and improve walkability of the area	Known
Wolfeboro	Route 28/Center St & Route 109/S Main St		Proposed
Woodstock	Route 112 & US 3		Proposed
Woodsville/Haverhill	Route 10 & Route 135 (South Court St)	Mulituse trail crossing, blind curve, speeding, need signage, need crosswalk	Proposed
Woodsville/Haverhill	Route 10 & Forest St		Proposed
Woodsville/Haverhill	Route 135/Forest St & Route 302/Central St (Cumberland Farms & Shaws)	dangerous intersection, need signal, need signage, intersection redesign	Proposed

Emphasis Areas

The following section presents a toolkit of proven safety countermeasures and traffic calming tactics that communities can implement to improve conditions along their roadways. The countermeasures are organized around specific "Emphasis Areas", which are the specific issues that they are meant to address. Each countermeasure includes key information including its emphasis area, potential application, and effectiveness.

Speeding and Aggressive Driving – Speeding is driving above the reasonable speeds for the roadway conditions

Vehicle Occupant Protection – The proper use of seat belts, child safety restraints, and other safety features that can help to avoid or reduce severity of injuries than may result from a crash

Roadway Departure – Crashes involving drivers drifting amongst lanes into opposing traffic or off the road

Impaired Driving – Driving under the influence or alcohol and/or drugs

Vulnerable Roadway Users (Motorized) - Crashes involving motorcyclists or other roadway users (scooters, OHRVs)

Vulnerable Roadway Users (Non-Motorized) - Crashes involving pedestrians (including wheelchair users), bicyclists, and e-bikes

Proven Safety Countermeasures Toolkit

INTRODUCTION

Along the Roadway	Paved Shoulders Sidewalks & Walkways Wider Edge Lines
Crossing Locations	Advanced Yield/Stop Lines Roadway Crosswalk Visibility Enhancements High Visibility Crosswalks Lighting Curb Extensions Curb Ramps
Intersection Design	Curb Radius Reduction Roundabouts/ Traffic Circles
Roadway Design	Mid-Block Narrowing Parking Restrictions at Crossings Road Diets Raised Medians Bicycle Lanes Longitudinal rumble strips and stripes on two-lane roads Safety Edge Median Barriers Lan/Visual Narrowing Transverse Rumble Strips
Signs and Signals	Retroreflective Backplates General Traffic Pedestrian Signs RRFB Push Button & Signal Timing Speed Feedback Signs
Traffic Calming	Gateways Speed Humps/Speed Tables
Other	Local Road Safety Plans Road Safety Audit Appropriate Speed Limits for all road users Police Enforcement

COUNTERMEASURE: PAVED SHOULDERS

EMPHASIS AREA(S): bicycle, pedestrian, shared roadway

DESCRIPTION/APPLICATION: Paved shoulders create a separate space for bicyclists and provide motor vehicle safety benefits and space for inoperable vehicles to pull over safely. Paved shoulders are best when at least 6 feet wide. Many two-lane rural highways do have shoulders and space is limited, but shoulders at curves can be considered.

EFFECTIVENESS: Adding a paved shoulder can reduce crashes involving pedestrians walking along roadways by 71%.[1]

SOURCES: [1] Gan et al. "Update of Florida Crash Reduction Factors and Countermeasures to Improve the Development of District Safety Improvement Projects." (2005)

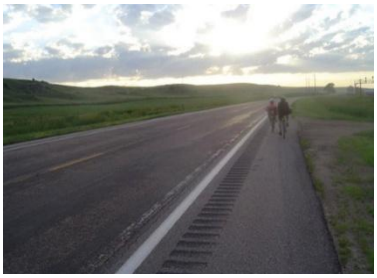


Figure 1 Example of paved shoulders with rumble strip separating motorists from bicyclists. Source: BIKESAFE

COUNTERMEASURE: SIDEWALKS AND WALKWAYS

EMPHASIS AREA(S): bicycle, pedestrian, shared roadway

DESCRIPTION/APPLICATION: Sidewalks and walkways are "pedestrian lanes" that provide people with space to travel within the public right-of-way that is separate from the roadway vehicles. Sidewalks and walkways should be a minimum of 5 feet in width and within a 4-to-6-foot buffer zone from the street to safely separate pedestrians from traffic. Bicycle lanes and parked cars may be used to provide an acceptable buffer zone. It is recommended that sidewalks are located on both sides of the roadway.

EFFECTIVENESS: Adding sidewalks and walkways can reduce crashes involving pedestrians by 65-89%.

SOURCES: Gan et al. "Update of Florida Crash Reduction Factors and Countermeasures to Improve the Development of District Safety Improvement Projects". Florida DOT, (2005).

Figure 2 Example of a walkway in a residential neighborhood. Source: FHWA

Countermeasure: Wider Edge Lines

Emphasis Area(s): roadway departure, signs and signals

Description/Application: Wider edge lines enhance the visibility of travel land boundaries and can provide safety benefits to all in both urban and rural areas. Edge lines are considered "wider"' when the marking width is increased from the minimum normal line width of 4 inches to the maximum normal line width of 6 inches.[1]

Effectiveness: Wider edge lines are most effective in reducing crashes on rural two-lane highways by up to 37%, especially for single-vehicle crashes.[2] Agencies may also consider implementing a systemic approach to wider edge line installation based on roadway departure risk factors like presence of curves, history of nighttime crashes, narrow shoulder widths, and others.

Sources: [1]FHWA. "Manual on Uniform Traffic Control Devices (MUTCD)." (2023)
[2]Potts et al. "Benefit/Cost Evaluation of MoDOT's Total Striping and Delineation Program: Phase II." (2011)

Figure 13 Application of 6-inch-wide edge line. Source: Texas Transportation Institute

Countermeasure: Advanced Yield/Stop Lines

Emphasis Area(s): bicycle, pedestrian, crossing locations, intersections

Description/Application: Advanced yield/stop lines are pavement markings placed 20 to 50 feet in advance of a marked crosswalk to indicate where vehicles are required to stop or yield in compliance with the accompanying "STOP here for Pedestrians" or "YIELD Here to Pedestrians" signs. These advanced markings improve the visibility of pedestrians to motorists to prevent multiple-threat crashes. These pavement markings are also referred to as "shark teeth" and are only used at uncontrolled crossings.

Effectiveness: By placing the stop bar further back from the crosswalk, vehicles stop in a location allowing pedestrians to clearly view oncoming vehicles. The installation of advanced yield or stop markings and signs can reduce pedestrian crashes by 25%.[1]

Sources: [1]NCHRP. "Development of Crash Modification Factors for Uncontrolled Pedestrian Crossing Treatments." (2017)

Figure 14 Advanced yield markings at a midblock crosswalk with a refuge island. Source: pedbikeimages.org - Toole Design Group

COUNTERMEASURE: CROSSWALK VISIBILITY ENHANCEMENTS

EMPHASIS AREA(S): crossing locations, bicycle, pedestrian, traffic calming

DESCRIPTION/APPLICATION: Crosswalk visibility enhancements can be achieved by using a variety of methods like pavement markings, lighting, and signs. High-visibility crosswalks use patterns that are visible to both the driver and the pedestrian from farther away compared to traditional line crosswalks. Improved lighting at crossing locations makes it easier for a driver to visually identify the pedestrian when the lights are placed in forward locations to better light them in the crosswalk. Enhanced signing and pavement markings can include in-street pedestrian crossing signs with "YIELD to Pedestrians" or pavement markings indicating crossing locations ahead.

Figure 5 Example of crosswalk visibility enhancements. Source: FHWA

EFFECTIVENESS: High-visibility crosswalks can reduce pedestrian injury crashes up to 40%.[1] Intersection lighting can reduce pedestrian crashes up to 42%.[2] Advance yield or stop markings and signs can reduce pedestrian crashes up to 25%.[3]

SOURCES: [1] Chen, L., C. Chen, and R. Ewing. "The Relative Effectiveness of Pedestrian Safety Countermeasures at Urban Intersections - Lessons from a New York City Experience." (2012)

[2] Elvik, R. and T. Vaa. "Handbook of Road Safety Measures." (2004)

[3]Zeeger et al. "Development of Crash Modification Factors for Uncontrolled Pedestrian Crossing Treatments." (2017)

COUNTERMEASURE: HIGH VISIBILITY CROSSWALKS

EMPHASIS AREA(S): crossing locations, bicycle, pedestrian, traffic calming

DESCRIPTION/APPLICATION: Crosswalk visibility enhancements can be achieved by using a variety of methods like pavement markings, lighting, and signs. High-visibility crosswalks use patterns that are visible to both the driver and the pedestrian from farther away compared to traditional line crosswalks. Improved lighting at crossing locations makes it easier for a driver to visually identify the pedestrian when the lights are placed in forward locations to better light them in the crosswalk. Enhanced signing and pavement markings can include in-street pedestrian crossing signs with "YIELD to Pedestrians" or pavement markings indicating crossing locations ahead.

Figure 6 Example of high visibility crosswalk. Source: FHWA

EFFECTIVENESS: High-visibility crosswalks can reduce pedestrian injury crashes up to 40%.[1] Intersection lighting can reduce pedestrian crashes up to 42%.[2] Advance yield or stop markings and signs can reduce pedestrian crashes up to 25%.[3]

SOURCES: [1] Chen, L., C. Chen, and R. Ewing. "The Relative Effectiveness of Pedestrian Safety Countermeasures at Urban Intersections - Lessons from a New York City Experience." (2012)

[2] Elvik, R. and T. Vaa. "Handbook of Road Safety Measures." (2004)

[3]Zeeger et al. "Development of Crash Modification Factors for Uncontrolled Pedestrian Crossing Treatments." (2017)

Countermeasure: Lighting and Illumination

Emphasis Area(s): crossing locations, bicycle, pedestrian, intersections, shared roadway

Description/Application: Lighting and illumination are used to provide a visual environment for road users to safely use the road during darker hours, reduce the impacts of disability glare from approaching headlights, and reveal objects on the roadway beyond vehicle headlights. Luminaires should be placed in forward locations to create a silhouette effect of the pedestrian(s) which allows drivers to visually identify them.

Effectiveness: Lighting can reduce 40% of reported nighttime pedestrian crashes and injuries at intersections, 33-38% for rural intersection crashes and 28% for nighttime crashes on rural highways.

Sources: [1]Elvik, R. and Vaa, T., "Handbook of Road Safety Measures." (2004)

Figure 7 Example of lighting along the roadway. Source: WSDOT

Countermeasure: Curb Extensions & Parking Restrictions at Crossing Locations/Intersections

Emphasis Area(s): bicycle, pedestrian, crossing locations, intersections

Description/Application: The use of wide roadways can create a difficult crossing situation for pedestrians, as they need more time to cross the roadway, but the roadway width encourages drivers to speed or take turns quickly. Curb extensions are used to extend the sidewalk or curbline out into the parking lane to reduce crossing distance, create a physical barrier between vehicles and pedestrians, improve visibility for motorists, and prevent vehicles from parking at corners.

Effectiveness: Although curb extensions have not been widely studied, they may be effective in improving motorist yielding as part of a large package of countermeasures. Alone, curb extensions can reduce crashes by 20%.

Sources: Charles V. Zegeer, Dan Nabors, Peter Lagerwey "Curb Extensions" (2013)

Figure 8 Example of a curb extension with restricted parking. Source: PEDSAFE

Countermeasure: Curb Ramps

Emphasis Area(s): bicycle, pedestrian, crossing locations

Description/Application: Curb ramps are used to provide access to the sidewalk and roadway for those using wheelchairs, walkers, bicycles, crutches, strollers, or those who have mobility restrictions making stepping up and down curbs difficult. Curb ramps should have a slope between 8% and 10% to differentiate from the sidewalk.

Effectiveness: Curb ramps make it easier for people to navigate sidewalks and cross streets, promoting participation and independence in the community as well as reducing the fall risk of pedestrians who are visually impaired through appropriate slopes and landings,

Sources: Goughnour, E., D. Carter, C. Lyon, B. Persaud, B. Lan, P. Chun, I. Hamilton, and K. Signor. "Safety Evaluation of Protected Left-Turn Phasing and Leading Pedestrian Intervals on Pedestrian Safety." (2018)

Figure 9 Example of curb ramp accessibility for restricted pedestrians. Source: FHWA

Countermeasure: Curb Radius Reduction

Emphasis Area(s): intersection design,

Description/Application: Curb radius reduction can be achieved through reconstruction of the curb edge to provide a smaller corner radius to reduce turning speed of right-turning vehicles (or left onto a one-way street), shorten distance for pedestrians to cross, and improve pedestrian and motorist visibility. This could be creating a larger radius by using bicycle lanes, parking lane lines, or an edge line to direct vehicles away from the edge of the pavement/curb line. These designs must accommodate emergency vehicles and drainage at the corner.

Effectiveness: Larger curb radii typically result in high-speed turning movements by motorists, which may increase the risk of pedestrians being struck by right-turning vehicles. Smaller radii can improve pedestrian safety by requiring motorists to reduce vehicle speed by making sharper turns and shortening pedestrian crossing distances which thereby improves signal timing.

Sources: [1]PEDSAFE. "Curb Radius Reduction". (2013).)

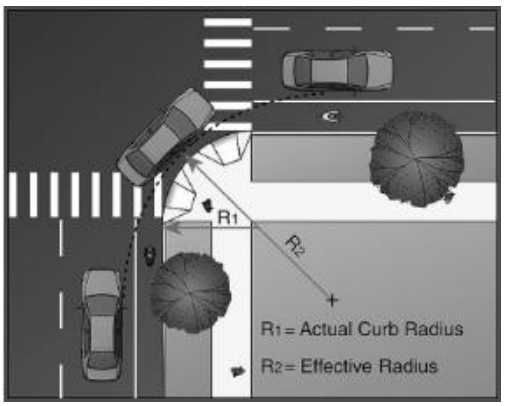


Figure 10 Illustration of actual and effective curb radii. Source: Institute of Transportation Engineers

COUNTERMEASURE: ROUNDABOUTS

EMPHASIS AREA(S): speed management, intersections, transition zones

DESCRIPTION/APPLICATION: A roundabout is a circular intersection that safely and efficiently moves road traffic in one direction (counterclockwise) around a center island to minimize conflict points. Roundabouts can be used to replace traffic signals, two-way or all-way stop controls as they are an effective option for managing speed from high to low-speed and traffic and environments. They reduce conflict at intersections by creating a suitable area for walking and bicycling.

Figure 11 Example of a single-lane roundabout. Source: FHWA

EFFECTIVENESS: Roundabouts can replace signals, two-way stop controls, and all-way stop controls. Switching from signalized intersections to a roundabout reduces fatal and injury crashes by 78% and switching two-way stop-controlled intersections to roundabouts reduces fatal and injury crashes by 82%.

SOURCES: AASHTO. "The Highway Safety Manual, American Association of State Highway Transportation Professionals." (2010).

COUNTERMEASURE: MID-BLOCK NARROWING

EMPHASIS AREA(S): roadway design, speed management, transition zones

DESCRIPTION/APPLICATION: Mid-block narrowing, or a "choker", constricts the roadway, slowing motor traffic and/or alerting drivers of the presence of a mid-block narrowing and crossing pedestrians. This provides a space for greening, bike parking, stormwater resources, and community facilities.

Figure 12 Example of mid-block narrowing in Manhattan. Source: NYCDOT

EFFECTIVENESS: Implementing mid-block narrowing calms traffic through narrowing the roadway, shortens crossing distance for pedestrians, reduces sidewalk clutter by creating space, and makes crosswalks more visible to motorists, encouraging them to slow and stop in advance of the crosswalk and reduces (illegal) parking within the crosswalk.

SOURCES: NYCDOT "Mid-Block Narrowing." (2024)

COUNTERMEASURE: ROAD DIET/RECONFIGURATION

EMPHASIS AREA(S): speed management, bicycle, pedestrian, shared roadway

DESCRIPTION/APPLICATION: A Road Diet usually involves converting a pre-existing four-lane undivided roadway into a three-lane roadway with two through lanes and a center two-way left-turn lane. A Road Diet can be a low-cost safety solution, when planning in combination with a simple pavement overlay. It is recommended that they are implemented on roadways with current and future daily traffic averages of 25,000 or less.

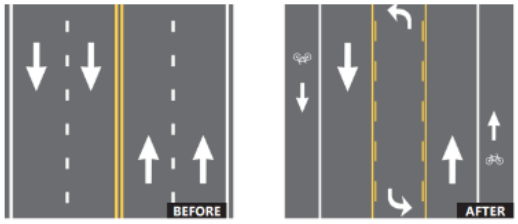


Figure 13 Example of before and after implementing a Road Diet. Source: FHWA

EFFECTIVENESS: Road Diets provide fewer lanes for crossing pedestrians, opportunities for pedestrian refuge islands, bicycle lanes and transit stops, and encourage calmer traffic and reduced speeds.

SOURCES: FHWA "Evaluation of Lane Reduction "Road Diet" Measures on Crashes" (2010).

COUNTERMEASURE: RAISED MEDIANS

EMPHASIS AREA(S): roadway design

DESCRIPTION/APPLICATION: Raised medians are achieved by separating opposing streams of traffic and restricting motorist turning movements. This provides pedestrian visibility to drivers, slows motor speeds, and provides ample space for lighting and landscaping. Medians facilitate pedestrian crossing by providing a space completely separated from the vehicle travel path and enables pedestrians to focus on only one direction of traffic when crossing at a time. Medians should be at least 4 to 8 feet wide to accommodate the anticipated number of pedestrians to stand and wait comfortably and safely.


Figure 14 Example of a right-turn slip lane with a raised landscaped median. Source: Living Streets, PEDSAFE

EFFECTIVENESS: At unmarked crosswalk locations, medians have reduced 39% of pedestrian crashes and provides pedestrian refuge areas reflecting in a 46% reduction in pedestrian and motorist crashes.

SOURCES: Charles V. Zegeer, Dan Nabors, Peter Lagerwey. "Raised Medians" (2013)

Countermeasure: Bicycle Lanes

Figure 15 Separated bike lane on an urban two-lane roadway. Source: City of Cambridge.

Emphasis Area(s): bicycle, pedestrian, shared roadway

Description/Application: Most fatal and serious injury bicyclist crashes happen at non-intersection locations. To address this safety concern, bicycle lanes can be considered by local and state agencies. The provision of bicycle lanes can help reduce interactions, conflicts, and crashes between bicyclists and motorists. Creating a separating space for users can enhance the safety of all road users.

Effectiveness: Nearly one-third of crashes happen when motorists are overtaking bicyclists and because of the speed and size differential can lead to sever injuries[1]. Converting traditional or flush buffered bicycle lanes to a separated bicycle lane with flexible delineator posts can reduce crashes up to 53%[2]. The addition of a bicycle lane can reduce crashes up to 49% on 4-lane undivided collector and local roads[3]. The addition of a bicycle lane can reduce crashes up to 30% on 2-lane undivided collectors and local roads[4].

Sources: [1]Thomas et al. "Bicyclist Crash Types on National, State, and Local Levels: A New Look." (2019)

[2]FHWA. "Developing CMFs for Separated Bicycle Lanes." (2023)

[3]Sand et al. "Pursuing Equity in Pedestrian and Bicycle Planning." (2016)

[4]FHWA. "Development of Crash Modification Factors for Bicycle Lane Additions While Reducing Lane and Shoulder Widths." (2021)

Countermeasure: Rumble Strips and Stripes

Figure 16 Shoulder rumble strip and center line rumble strip. Source: FHWA

Emphasis Area(s): roadway departure, roadway design

Description/Application: Rumble strip sand stripes are the application of depressions or raised areas across the surface of an approach lane to produce an audible and tactile warning of an intersection. Longitudinal rumble strips are applied to the pavement along the shoulder, edge line, or at or near the center line of an undivided roadway. Rumble strips are applied at the center or edge line and can increase the visibility and durability of the pavement markings during wet, nighttime conditions and can improve the durability of the markings on roads with snowplowing operations. Rumble strips address human behavior problems rather than roadway design problems.

Effectiveness: Roadway departure crashes account for more than half of the fatal roadway crashes annually in the United States, rumble strips address these crashes by alerting distracted, drowsy, or otherwise inattentive drivers who drift from their lane. Center line rumble strips can reduce head-on fatal and injury crashes on two-lane rural roads by 44-46%[1]. Shoulder rumble strips can reduce single vehicle, run-off-road fatal and injury crashes on two-lane rural roads by 13-51 %[2]. These are most effective when applied as a systemic countermeasure.

Sources: [1]NCHRP. "Synthesis 339: Centerline Rumble Strips-A Synthesis of Highway Practices." (2005)

[2]NCHRP. "Report 641: Guidance for the Design and Application of Shoulder and Centerline Rumble Strips." (2009)

COUNTERMEASURE: SAFETY EDGE™

EMPHASIS AREA(S): roadway design

DESCRIPTION/APPLICATION: SafetyEdge technology shapes the pavement edge to approximately 30 degrees from the pavement cross slope during paving processes. This eliminates the risk of vertical drop-off at the pavement edge and has a minimal effect on project costs and may improve pavement durability. In the case of drivers straying due to inattention, the shape of the edge allows more controlled recovery when returning to the pavement, and reduces the tendency of the pavement to fray, providing an overall consistent pavement width.

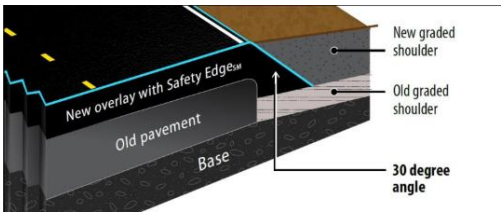


Figure 17 Example of cross-section of an overlay with SafetyEdge. Source: FHWA

EFFECTIVENESS: By utilizing SafetyEdge, fatal injury and crashes were reduced by 11%, run-off road crashes reduced by 21%, and reduce head-on crashes by 19%. The benefit-cost ratio range is 700:1 to 1,500:1.4

SOURCES: Hallmark et al. "Safety Impacts of Pavement Edge Drop-offs" (2006)

Donnell et al. "Development of Crash Modification Factors for the Application of the SafetyEdge℠ on Two-Lane Rural Roads". (2017)

COUNTERMEASURE: MEDIAN BARRIERS

EMPHASIS AREA(S): roadway design

DESCRIPTION/APPLICATION: Median barriers are longitudinal barriers that separate opposing traffic on a divided highway and are designed to redirect vehicles when colliding with either side of the barrier. Median barriers help to reduce cross-median crashes by using cable barriers, metal-beam guardrails, concrete barriers. Agencies may consider implementing a systemic approach to median barrier placement based on traffic volumes, classification of vehicles, crash history, alignment, and median terrain configurations.

EFFECTIVENESS: By installing median-barriers on rural four-lane freeways reduced cross-median crashes by 97%.

SOURCES: NCHRP Report 794: "Median Cross-Section Design for Rural Divided Highways",

Figure 18 Median cable prevents a potential head-on crash. Source: WADOT

COUNTERMEASURE: LANE/VISUAL NARROWING

EMPHASIS AREA(S): speed management, transition zones

DESCRIPTION/APPLICATION: On roadways where there are safety and speeding problems, and vehicle lane widths are greater than the recommended minimums, narrowing lane/visual narrowing, can help improve safety and comfort for pedestrians, bicyclists, and motor vehicles. Lane/visual narrowing involves the reduction of the striped lane width, or curb-to-curb width of a street. Lanes can be narrowed using removable vertical traffic control devices, medians, curbing, road diet, or pavement markings. This suggests to motorists that the street ahead is a narrow, low-speed road.

EFFECTIVENESS: overall speeds reduce to 32 mph or less by utilizing lane and visual narrowing and can be used for snow and ice control in winter months. This provides a safer refuge area for pedestrian crossing safety.

SOURCES: Charles V. Zegeer, Dan Nabors, Peter Lagerwey. "Lane Narrowing" (2013)

Figure 19 Example of lane narrowing, creating space to install bike lanes and a buffer for pedestrians. Source: PEDSAFE

COUNTERMEASURE: TRANSVERSE RUMBLE STRIPS

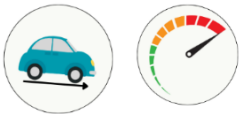
EMPHASIS AREA(S): speed management, transition zones

DESCRIPTION/APPLICATION: Transverse rumble strips (TRS) are perpendicular raised or grooved patterned areas across the surface of an approach lane that alerts motorists to an upcoming intersection or reduced speed zone, through audible and tactical warnings. Although the purpose of TRS is to warn drivers of an upcoming stop or change in speed, this countermeasure is not generally expected to reduce crashes, though, they are often applied at high-crash locations. They may require maintenance, especially in areas of high volume of truck traffic.

EFFECTIVENESS: Installation of transverse rumble strips decreases the number of drivers who brake late, as they are more likely to begin braking at an appropriate location before the stop sign. Transverse rumble strips also reduce average speeds to below 45mph.

SOURCES: CMF CleaningHouse "Install Transverse Strips on the Intersection Approach". (2025)

Figure 20 Example of transverse rumble strips applied along a multilane. Source: VHB



COUNTERMEASURE: RETROREFLECTIVE BACKPLATES

EMPHASIS AREA(S): signs and signals

DESCRIPTION/APPLICATION: Retroreflective backplates are installed to improve the visibility of the illuminated face of the signal by introducing a controlled-contrast background. The improved visibility is achieved by lost-cost framing the signal head with a 1-to-3-inch yellow retroreflective border. The signals that have backplates equipped with these borders are more visible in both daytime and nighttime conditions. This technique is recognized as an enhancement of traffic signal visibility, and orientation for older and color deficient drivers. In the case of a power outage when the signal would otherwise be dark, retroreflective backplates provide a visible cue for motorists to stop at the intersection ahead.

Figure 21 Example of a retroreflective border that is highly visible during the night. Source: FHWA

EFFECTIVENESS: Backplates with retroreflective borders can account for 15% reduction in total crashes.

SOURCES: Sayed, T., Leur, P., and Pump, J., "Safety Impact of Increased Traffic Signal Backboards Conspicuity." (2005).

COUNTERMEASURE: GENERAL TRAFFIC PEDESTRIAN SIGNS

EMPHASIS AREA(S): signs and signals

DESCRIPTION/APPLICATION: General traffic pedestrian signs may include 'Yield Here to Pedestrians' (R1-5 or R1-5a) or 'Stop Here for Pedestrians' (R1-5b and R1-5c) signs. These are intended for use on the uncontrolled multilane approaches to indicate where motorists are to yield or stop, even when the lines are not used. These signs should only be used where the law requires that a driver must stop for pedestrians in a crosswalk. The 'In-Street Pedestrian Crossing' (R1-6 or R1-6a) sign or the 'Overhead Pedestrian Crossing' (R1-9 or R1-9a) sign may be used to remind road users of laws regarding the right-of-way at an unsignalized pedestrian crosswalk. General traffic pedestrian signs should have a fluorescent yellow-green background.

Figure 22 Example of a general traffic pedestrian crossing sign. Source: roadtrafficsigns.com

EFFECTIVENESS: General traffic pedestrian signs are effective in improving motorist behavior and contributing to enhanced pedestrian safety. These signs reduce conflict by 20-65%.

SOURCES: Charles V. Zegeer, Dan Nabors, Peter Lagerwey. "Pedestrian Safety Guide and Countermeasure Selection System" (2013)

COUNTERMEASURE: RECTANGULAR RAPID-FLASHING BEACON (RRFB)

EMPHASIS AREA(S): crossing locations, bicycle, pedestrian, traffic calming**.**
DESCRIPTION/APPLICATION: RRFBs consist of two rectangular-shaped yellow indications, each with a light-emitting diode (LED)-array-based light source. They flash with an alternating high frequency when activated to enhance visibility of pedestrians at the crossing to drivers. RRFBs are the most effective when used sparingly and locations with significant pedestrian safety issues.

EFFECTIVENESS: RRFBs can reduce pedestrian crashes by up to 47%.[1] They can also increase motorist yielding rates up to 98% (varies by speed limit, number of lanes, crossing distance, and time of day).[2]

SOURCES: [1] Zeeger et al. "Development of Crash Modification Factors for Uncontrolled Pedestrian Crossing Treatments." (2017)
[2] Fitzpatrick et al. "Will You Stop for Me? Roadway Design and Traffic Control Device Influences on Drivers Yielding to Pedestrians in a Crosswalk with a Rectangular Rapid-Flashing Beacon." (2016)

Figure 23 Rectangular Rapid Flashing Beacon in use at a crosswalk. Source: www.pedbikeimages.org / Lara Justine

COUNTERMEASURE: PUSH BUTTON & SIGNAL TIMING

EMPHASIS AREA(S): signs and signals

DESCRIPTION/APPLICATION: Push buttons are detectors intended to provide pedestrians with the ability to activate a pedestrian signal and reassure pedestrians that they will receive a crossing indication. Push buttons should be located within easy reach of pedestrians intending to cross, generally no more than 6 feet from the edge of the roadway. The face of the button should be parallel to the crosswalk and supplemental signage should identify the crossing direction and indications. Push buttons increase visibility of crossing pedestrians, reduce conflict, and enhance pedestrian safety.

EFFECTIVENESS: On average, 64% of pedestrians utilize push buttons as they provide safe pedestrian crossings.

SOURCES: "Manual on Uniform Traffic Control Devices" (MUTCD), FHWA (2023)

Figure 24 Example of a pedestrian push button, allowing pedestrians to activate the crossing signal. Source: PEDSAFE & FHWA

COUNTERMEASURE: SPEED FEEDBACK SIGN

EMPHASIS AREA(S): speed management, transition zones, traffic calming

DESCRIPTION/APPLICATION: Speed feedback signs are portable, interactive signs that display a vehicle's current speed to remind the driver to slow down and obey the posted speed limit. Radar speed feedback signs (RSFS) provide a real-time dynamic display of a driver's speed to encourage compliance with posted speed limits. Drivers receive immediate confirmation of their actual speed in comparison to the speed limit. Some speed feedback signs can be integrated to have a message like "Thank you for Driving Safely" or "Slow Down" depending on the recorded speed of the driver.

EFFECTIVENESS: Speed Feedback signs are cost effective when compared with construction of physical measures. There can be a moderate speed reduction (2 to 8 mph), with a more significant reduction of excessive speeds (10+ mph over posted speed limit).[1]

Figure 25 Speed feedback sign with posted speed limit and display of driver's speed. Source: IOWA DOT

SOURCES:[1] FHWA. "A Desktop Reference of Potential Effectiveness in Reducing Speed." (2014)

COUNTERMEASURE: GATEWAYS

EMPHASIS AREA(S): speed management, transition zones, traffic calming

DESCRIPTION/APPLICATION: A gateway is a physical or geometric landmark that indicates a change in the roadway environment from a higher speed arterial or collector road to a lower speed residential or commercial district.[1] These can be landmarks used to create an expectation for motorists to drive more slowly and watch for pedestrians when entering a commercial, business, or residential district from a higher speed roadway.[2] They can also create a unique image or character for an area.

EFFECTIVENESS: Traffic-slowing effects will depend upon the device chosen and the overall traffic-calming plan for the area. Modest speed reductions of 1-6 mph are achievable, with more significant reductions of excessive speeds. Gateways can contribute to the aesthetics and community pride in the town center. Cost and maintenance can be offset by partnerships with local, charitable organizations or businesses.

Figure 26 Example of a temporary gateway sign in Sugar Hill, NH. Source: North Country Council

SOURCES: [1]PEDSAFE. "Gateways." Accessed February 2025.
[2]VTrans. "Traffic Safety Toolbox: Speeding Countermeasures Toolbox for Vermont." (2023)

COUNTERMEASURE: SPEED HUMPS/TABLES

EMPHASIS AREA(S): speed management, bicycle, pedestrian, crossing locations

DESCRIPTION/APPLICATION: Speed humps are a form of vertical traffic control measures. They are typically approximately three to four inches in height at their center, and extend the full width of the street, with height tapering near the drain gutter to allow bicycle travel. A speed table is like a speed hump but includes a flatter portion where a pedestrian is provided with a crosswalk. Speed humps should not be confused with a speed bump, which are usually found in parking lots.

EFFECTIVENESS: Speed tables enhance the pedestrian environment at pedestrian crossings and tend to have the most predictable speed reduction impacts on local streets. Prefabricated cushions can be removed and reused, and reports have shown 28% reductions in the 85th percentile speed and reductions to 27mph or less.

Figure 27 Example of a speed table. Source: USDOT

SOURCES: 1, 2, 3, 4 FHWA, "A Desktop Reference of Potential Effectiveness in Reducing Speed,"(2014)

COUNTERMEASURE: LOCAL ROAD SAFETY PLANS

EMPHASIS AREA(S): bicycle, pedestrian, crossing locations, intersections, shared roadway

DESCRIPTION/APPLICATION: A local road safety plan (LRSP) provides framework for identifying, analyzing, and prioritizing roadway safety improvements on local roads. This process and content are tailored to the local needs and results in a prioritized list of issues, risks, and improvements that can be used to reduce crashes and fatalities on local roads. Lastly, LRSPs serve as an effective strategy to improve local road safety in support of the goals of a State's overall Strategic Highway Safety Plan (SHSP).

EFFECTIVENESS: States including Minnesota and Washington have had 17-35% reduction in county-owned road fatal and severe injury crashes after implementation of a local road safety plan.

Figure 28 Example of LRSP process. Source: FHWA

SOURCES. Anderson et al. Noteworthy Practices: "Addressing Safety on Locally-Owned and Maintained Roads A Domestic Scan", FHWA (2010)

COUNTERMEASURE: ROAD SAFETY AUDIT

EMPHASIS AREA(S): bicycle, pedestrian, crossing locations, intersections, shared roadway

DESCRIPTION/APPLICATION: Road Safety Audits (RSA) are performed by a multidisciplinary team independent of the project to evaluate the safety performance of a road or road project. RSAs consider all road users, accounting for human and road user capabilities, are documented in a formal report and require response from the road owner. RSAs can be performed in any phase of project development, planning through construction, though it's recommended to conduct at the earliest stage possible. Typically, they are more focused on motorized vehicles, pedestrians, bicyclists, motorcyclists, or a combination of all.

Figure 29 The eight steps for conducting an RSA. Source: FHWA

EFFECTIVENESS: Road safety audits have been proven to have a 10-60% reduction rate in total crashes due to safer designs. RSAs can reduce the cost of a project if used early, to have early identification and mitigation of safety issues before the project(s) is built and increase opportunities for multimodal safety strategies

SOURCES: 1. Road Safety Audits: "An Evaluation of RSA Programs and Projects" FHWA; and "FHWA Road Safety Audit Guidelines", (2025)

COUNTERMEASURE: SETTING APPROPRIATE SPEED LIMITS FOR ALL USERS

EMPHASIS AREA(S): speed management, signs and signals, bicycle, pedestrian, transition zones, traffic calming

DESCRIPTION/APPLICATION: Setting appropriate speed limits set by states and local jurisdictions can reduce the significant risks drivers impose on others, especially vulnerable road users, and on themselves. Jurisdictional agencies can establish non-statutory speed limits or designate reduced speed zones, that must be based on an engineering study, conducted in accordance with the *Manual on Uniform Traffic Control Devices* (MUTD) involving multiple factors and engineering judgement.[1] When setting a speed limit, agencies should consider a range of factors such as pedestrian and bicyclist activity, crash history, land use context, intersection spacing, driveway density, roadway geometry, roadside conditions, roadway functional classification, traffic volume, and observed speeds. The use of 20 mph speed zones or speed limits in community core areas where vulnerable users share the road environment with motorists may result in further safety benefits.[2]

Figure 30 Reduced speed school zone in Bethlehem, NH. Source: Google Maps

EFFECTIVENESS: To achieve desired speeds, agencies often implement other speed management strategies concurrently with setting speed limits. One study found that on rural roads, when considering other relevant factors in the engineering study along with the speed distribution, setting a speed limit of no more than 5 mph below the 85th percentile speed may result in fewer total and fatal plus injury crashes, and lead to drivers complying closely with the posted speed limit.[3]

SOURCES: [1]FWHA. "Appropriate Speed Limits for All Road Users." (2021)

[2]FHWA. "Methods and Practices for Setting Speed Limits: An Informational Report." (2012)

Gayah et al. "Safety and Operational Impacts of Setting Speed Limits below Engineering Recommendations." (2018)

COUNTERMEASURE: POLICE ENFORCEMENT

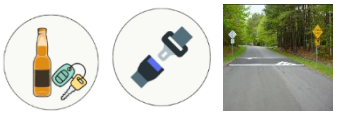
EMPHASIS AREA(S): speed management

DESCRIPTION/APPLICATION: Police enforcement is a primary component in maintaining a safe environment for all modes of travel. Enforcement campaigns can often be effective in deterring careless and reckless driving and encouraging motorists to share the roadway with both pedestrians and bicyclists when combined with pre-installed traffic control devices and public education programs. Police Forces implant a sense of right and wrong in the eyes of the public and can be helpful in implementing safety and protection to motorists and pedestrians.

EFFECTIVENESS: Although other engineering countermeasures are implemented, the failure of pedestrians and motorists to adhere to traffic laws may create an unsafe environment and police serve as increased driver awareness of sharing the road and reduce pedestrian-related crashes.

SOURCES: [1]PEDSAFE. "Police Enforcement". (2013).

Figure 31 Police enforcement helping to increase driver awareness and the need to share the roadway. Source: Flickr



Appendix: Goal and Objective Matrix

Policy & Planning: Adopt standards and design guidelines for projects that address safety for vulnerable road users

Number	Action	Proposed Lead Agency (and partners)	Safe System Element	Priority	Implementation Time Frame
1.1 Incorporate innovative safety guidance and best practices into the project planning proces					
1.1.1	Use the Safe Systems Approach to inform transportation projects and decision making	Cities, Towns, RPCs	Safer Roads	High	Ongoing
1.1.2	Encourage the adoption of Complete Streets policies at the local level	Cities, Towns, RPCs	Safer Roads	Medium	Long Term
1.1.3	Design local and regional transportation projects using proven safety countermeasures	Cities, Towns, RPCs	Safer Roads	High	Ongoing
1.1.4	Integrate vulnerable road user considerations into project review and scoring activities	Counties, Cities, Towns, RPCs	Safer People	High	Short Term
1.1.5	Balance all modes and types of travel when reviewing regional projects	Counties, Cities, Towns, RPCs	Safer People	Medium	Ongoing
1.1.6	Educate local and regional officials about the use of proven safety countermeasures in capital projects	Counties, Cities, Towns, RPCs	Safer Speeds	Low	Long Term
1.1.7	Incorporate the needs of all users when discussing speed limits and speed data	Counties, Cities, Towns, RPCs, NHDOT	Safer People	Low	Ongoing
1.2 Adopt roadway design standards that prioritize safety					
1.2.1	Ensure that local roadway signage and markings comply with the latest Manual on Uniform Traffic Control Devices for Streets and Highways (MUTCD).	NHDOT, Cities, Towns	Safer Roads	Medium	Long Term

1.2.2	Promote Proven Safety Countermeasures in transportation project designs	Counties, Cities, Towns, RPCs, NHDOT	Safer Roads	High	Ongoing
1.2.3	Include resiliency considerations in adopted standards for new transportation projects.	Counties, Cities, Towns	Safer Roads	Medium	Long Term
1.2.4	Adopt accessibility standards to ensure all proposed transportation projects consider users of all abilities	Counties, Cities, Towns, NHDOT	Safer People	Medium	Long Term
1.2.5	Adopt updated floodplain standards to boost the resilience and longevity of the transportation network	Cities, Towns	Safer Roads	Low	Long Term
1.3 Coordinate with local, regional, and state agencies to improve the effectiveness of outreach and planning efforts					
1.3.1	Train local and regional staff on data collection and analysis techniques to improve the quality of information available	Counties, Cities, Towns, RPCs	Safer Speeds	Low	Long Term
1.3.2	Increase safety-focused coordination with state agencies, local officials, and stakeholder groups on data collection, data sharing, and enforcement.	Cities, Towns, RPCs	Safer People	Medium	Long Term
1.3.3	Improve the collection, use, and analysis of data needed for non-motorized safety and programming.	RPCs, NHDOT	Safer Speeds	Medium	Medium Term
1.3.4	Work with interagency partners to better document and track non-motorized road user crash injuries and fatality data.	RPCs, NHDOT	Safer People	Low	Long Term
1.3.5	Support efforts to inventory bicycle and pedestrian data including traffic volume, roadway types, and non-motorized infrastructure assets	RPCs, NHDOT	Safer Roads	Medium	Medium Term

Corridor & Roadway Infrastructure: Improve infrastructure along corridors and roadways to reduce the frequency and severity of crashes

Number	Action	Proposed Lead Agency (and partners)	Safe System Element	Priority	Implementation Time Frame
2.1 Improve data collection activities along HIN routes and important corridors					
2.1.1	Monitor vehicle speed and commute data along HIN roadway segments and other important corridors to assess safety concerns	Cities, Towns, RPCs, NHDOT	Safer Speeds	High	Ongoing
2.1.2	Develop a consistent program to monitor non-motorized traffic at priority locations	Cities, Towns,	Safer Roads	Medium	Long Term
2.1.3	Use a systemic approach to identify transportation concerns and to apply treatments	Counties, Cities, Towns	Safer Roads	Medium	Short Term
2.1.4	Perform roadway safety audits on priority corridors to identify roadway features and behaviors that contribute to severe crashes and identify appropriate countermeasures.	Cities, Towns, RPCs, NHDOT, State and Local Police	Safer People	High	Long Term
2.1.5	Conduct walk and bike audits with community members to raise awareness of roadway safety concerns and to create local support for solutions	Cities, towns, RPCs, NHDOT	Safer Roads	Low	Short Term
2.1.6	Set appropriate speed limits based on the use of appropriate engineering practices	Cities, Towns, RPCs, NHDOT, State and Local Police	Safer Speeds	Medium	Long Term
2.2 Utilize Proven Safety Countermeasures along roadways that improve driver awareness and reduce speeds					
2.2.1	Install Radar Speed Feedback Signs to notify drivers of their speeds.	Cities and Towns, regional agencies	Safer Speeds	Medium	Medium Term

2.2.2	Implement raised medians and median barriers to reduce lane departure and crossover crashes	Cities and Towns, regional agencies	Safer Roads	Low	Long Term
2.2.3	Install high visibility signage to notify drivers of roadway hazards or a change of roadway context	Cities and Local Agencies, State and Local Police	Safer Speeds	High	Short Term
2.2.4	Consider the use of transverse rumble strips to encourage lower speeds in transition/gateway zones.	Counties, Cities, Towns, state and local police, regional agencies	Safer Speeds	Low	Medium Term
2.2.5	Use Variable Speed Limits (VSLs) to reduce speed and speed variances, improve driver expectation, and mitigate hazardous weather conditions on the roadway.	Cities and towns	Safer Speeds	Medium	Long Term
2.3 Utilize Proven Safety Countermeasures that increase safety for all roadway users					
2.3.1	Reconfigure roadways (road diet) to narrow travel lanes to reduce crashes, improve pedestrian safety, and maintain more consistent speeds.	NHDOT, Cities, Towns	Safer Streets	Medium	Long Term
2.3.2	Install paved shoulders along rural roadways to reduce “walk on roadway” crashes and increase safe connections for pedestrians and bicyclists.	NHDOT, Cities, Towns	Safer People	High	Long Term
2.3.3	Install sidewalks along roadways along suburban and urban and developed areas to reduce “walk on roadway” crashes and to increase safe connections for pedestrians and bicyclists.	Cities, Towns	Safer Streets	High	Medium Term

2.3.4	Consider the use of shoulder and centerline rumble strips along routes with high risk factors for run-off-road crashes and head-on-crashes	NHDOT	Safer Roads	Medium	Medium Term
2.3.5	Install high visibility signage to alert drivers to watch for pedestrians, bicyclists, and other hazards	NHDOT, Cities, Towns	Safer People	High	Short Term
2.3.6	Install updated lighting along roadways to reduce the severity and frequency of nighttime crashes and improve pedestrian safety	NHDOT, Cities, Towns	Safer Roads	Medium	Short Term
2.4 Utilize Proven Safety Countermeasures that address Roadway Departure crashes					
2.4.1	Consider the use of the Safety Edge design in rural roadway projects to reduce road edge drop-off crash severity	NHDOT, Cities, Towns	Safer Roads	Low	Long Term
2.4.2	Stripe roadways with wider edge lines to improve roadway boundary visibility	NHDOT, Cities, Towns	Safer Speeds	Medium	Short Term
2.4.3	Consider the use of shoulder and centerline rumble strips along routes with high risk factors for run-off-road crashes and head-on-crashes	Cities, Towns, RPCs, NHDOT, State and Local Police	Safer People	Low	Medium Term
2.4.4	Enhance horizontal road curves with chevron signs, high visibility pavement markings, retroreflective strips on signposts, and traffic delineators to reduce the frequency and severity of horizontal curve crashes	Cities, Towns, NHDOT	Safer People	High	Long Term
2.4.5	Use Roadway design and operation improvements at curves including vegetation management, removal of roadside objects, and flattening of side slopes to improve road visibility and reduce crash frequency	Cities, Towns, NHDOT	Safer Roads	Medium	Long Term

Intersection & Crossing Infrastructure: Improve infrastructure at intersections and crossing locations to reduce the frequency and severity of crashes

Number	Action	Proposed Lead Agency (and partners)	Safe System Element	Priority	Implementation Time Frame
3.1 Improve data collection and analysis practices that relate to intersection safety.					
3.1.1	Perform roadway safety audits on priority intersections to identify roadway features that contribute to severe crashes and identify appropriate countermeasures.	RPCs, Cities, Towns, NHDOT	Safer Roads	Medium	Long Term
3.1.2	Conduct walk and bike audits with community members to raise awareness of intersection safety concerns and to create local support for solutions	RPCs, Cities, Towns	Safer Roads	Low	Long Term
3.1.3	Develop an inventory of intersection data including traffic volumes, roadway features, and traffic asset data for use in roadway safety evaluations	RPCs, NHDOT	Safer Speeds	Medium	Long Term
3.1.4	Coordinate regularly with municipal residents and staff to identify safety improvements and align them with upcoming funding opportunities.	Counties, Cities, Towns, RPCs, NHDOT	Safer People	Medium	Ongoing
3.2 Implement crosswalk and sidewalk improvements at intersections					
3.2.1	Prioritize pedestrian and trail crossing improvement and installation projects.	Cities, Towns, RPCs	Safer Roads	Low	Long Term
3.2.2	Improve road geometry (narrow lanes, reduce curb radii, provide refuge islands, bike lanes) and signs, signals, and pavement markings at pedestrian and trail crossing locations.	NHDOT, Cities, towns	Safer Roads	Medium	Long Term
3.2.3	Install curb ramps at crossing locations to ensure access for pedestrians of all abilities	Cities, Towns	Safer Roads	High	Medium Term

3.2.4	Upgrade existing curb ramps to ensure access for pedestrians of all abilities	Cities, Towns	Safer People	High	Medium Term
3.2.5	Install transverse rumble strips in advance of intersections. Ensure proper outreach has been conducted and coordinate with NHDOT where required.	NHDOT, Cities, Towns	Safer Speeds	Low	Long Term
3.2.6	Convert intersections at town gateways to roundabouts to slow speeds.	Cities and towns	Safer Speeds	Medium	Long Term
3.2.7	Upgrade lighting and signage countermeasures at intersections and crossing locations	Cities and towns	Safer Roads	High	Short Term
3.3 Upgrade lighting and signage countermeasures at intersections and crossing locations					
3.3.1	Install updated lighting systems to increase pedestrian visibility and reduce the severity and frequency of nighttime crashes.	Cities, Towns	Safer People	High	Medium Term
3.3.2	Consider the installation of Rapid Flashing Hybrid Beacons (RRFBs) at busy pedestrian crossings	Cities and towns	Safer People	High	Short Term
3.3.3	Upgrade appropriate existing signs and pavement markings (e.g., retroreflective signs, reflective strips on signposts, add flashing lights to existing signs).	NHDOT, Cities, towns	Safer Roads	High	Medium Term
3.3.4	Implement Leading Pedestrian Intervals (LPI) at crossings to increase the visibility of crossing pedestrians, reduce conflicts between pedestrians and vehicles, and enhancing safety for pedestrians who may be slower to start into the intersection.	NHDOT, Cities, towns	Safer Roads	Low	Long Term
3.3.5	Install retroreflective back plates on signage to increase signal visibility and reduce crashes at crossings.	Cities and towns	Safer Roads	Medium	Short Term
3.4 Implement the systemic application of low-cost countermeasures at intersections					

3.4.1	Add left-turn, right-turn, or center turn lanes at intersections where speeds are too high to turn safely to or from a roadway.	NHDOT, Cities, Towns	Safer Speeds	Low	Long Term
3.4.2	Consider the use of roundabouts and median U-turn lanes to reduce left turn conflicts	NHDOT, Cities, towns	Safer Roads	Medium	Long Term
3.4.3	Install consistent high visibility signage at intersections and crossings	NHDOT	Safer Roads	Medium	Short Term
3.4.4	Prohibit Right-Turn-On-Red and install accompanying signage at locations with high volume pedestrian conflicts.	NHDOT	Safer Roads	Low	Long Term
3.4.5	Implement parking restrictions at crossing locations to reduce crashes and increase pedestrian visibility.	Counties, Cities, towns, NHDOT	Safer People	High	Medium Term
3.4.6	Install advanced stop and yield lines at intersections to improve the visibility of pedestrians to motorists and prevent multiple-threat crashes	Cities, Towns, NHDOT	Safer People	Medium	Long Term

Education & Outreach: Establish an education and outreach campaign to address dangerous behaviors that lead to severe crashes on the regional roadway network

Number	Action	Proposed Lead Agency (and partners)	Safe System Element	Priority	Implementation Time Frame
4.1 Implement a Distracted Driving Action Plan to advocate for Attentive Driving.					
4.1.1	Encourage awareness programs addressing distracted driving.	Counties, Cities, Towns	Safer People	Medium	Long Term
4.1.2	Reach out to schools to encourage youth to advocate for attentive driving.	Cities and Towns, NHDMV	Safer People	High	Medium Term
4.1.3	Involve the Injury Prevention Center to find ways to involve schools.	Counties, Cities, Towns	Safer People	Low	Long Term

4.1.4	Support PSAs that focus on impairment and distraction.	Cities, Towns, RPCs, NHDOT, State and Local Police	Safer People	Medium	Medium
4.1.5	Create a coalition against distracted driving to support related legislation and further outreach efforts made up of cross-sector and community groups.	Cities, Towns, RPCs, NHDOT, State and Local Police	Safer People	Medium	Long term
4.2 Develop Speed-related safety marketing materials.					
4.2.1	Develop handouts highlighting the differences in survival rates for vulnerable users when hit by cars traveling at various speeds at 20 mph vs. 30 mph vs. 40 mph.	Cities and Towns, regional agencies	Safer Speeds	Low	Medium Term
4.2.2	Educate the public of the dangers and consequences of speeding.	Cities and Towns, regional agencies	Safer Speeds	Medium	Medium
4.2.3	Participate in campaigns like NHTSA's "Obey the Sign or Pay the Fine" and "Stop Speeding Before it Stops You".	Cities and Local Agencies, State and Local Police	Safer Speeds	Low	Long Term
4.2.4	Illustrate the difference in travel speeds with respect to braking distance and crash survivability.	Counties, Cities, Towns, state and local police, regional agencies	Safer Speeds	High	Short Term
4.2.5	Engage Law Enforcement officials in coordinating initiatives that address speeding.	Cities and towns	Safer Speeds	Low	Long Term
4.3 Create an online toolkit for teen and younger driver safety educational resources.					
4.3.1	Collect data and statistics on driving safety and driving risks	Cities, Towns, RPCs, NHDOT	Safer Speeds	Low	Ongoing
4.3.2	Work with New Hampshire's Teen Driving Program to increase teen seat belt usage	Cities, Towns, RPCs, NHDOT	Safer People	Low	Long Term
4.3.3	Provide information on funding opportunities for drivers education courses through state, local, and private entities.	RPCs, NHDOT, NHDOS	Safer Roads	High	Ongoing

4.3.4	Target educational outreach to novice teen drivers by continued educational outreach to high schools and peer to peer	Counties, Cities, Towns, School Districts	Safer People	Medium	Long Term
4.3.5	Partner with schools and annually send educational program information	Cities, Towns, RPCs, state and local police	Safer People	Low	Long Term
4.3.6	Prepare peer to peer educational materials for schools and community groups	NHDOS, NHDMV	Safer People	Low	Long Term
4.4 Educate drivers on how to navigate new forms of traffic control treatments and train designers and planners on best practices.					
4.4.1	Develop a variety of marketing materials associated with new and innovative types of traffic control measures (videos, flyers, online material, PSAs)	RPCs, NHDOT, NHDOS, NHDMV	Safer People	Medium	Medium
4.4.2	Work with partner agencies to publish educational information on various outlets (social media, community websites, industry groups, etc.)	NHDOT, RPCs, State and Local Police	Safer People	Low	Long Term
4.4.3	Hold trainings and meetings with local and regional officials about new roadway and intersection safety measures	RPC, NHDOT	Safer People	Medium	Medium Term
Number	Action	Proposed Lead Agency (and partners)	Safe System Element	Priority	Implementation Time Frame
4.1 Implement a Distracted Driving Action Plan to advocate for Attentive Driving.					
4.1.1	Encourage awareness programs addressing distracted driving.	Counties, Cities, Towns	Safer People	Medium	Long Term
4.1.2	Reach out to schools to encourage youth to advocate for attentive driving.	Cities and Towns, NHDMV	Safer People	High	Medium Term
4.1.3	Involve the Injury Prevention Center to find ways to involve schools.	Counties, Cities, Towns	Safer People	Low	Long Term

4.1.4	Support PSAs that focus on impairment and distraction.	Cities, Towns, RPCs, NHDOT, State and Local Police	Safer People	Medium	Medium
4.1.5	Create a coalition against distracted driving to support related legislation and further outreach efforts made up of cross-sector and community groups.	Cities, Towns, RPCs, NHDOT, State and Local Police	Safer People	Medium	Long term
4.2 Develop Speed-related safety marketing materials.					
4.2.1	Develop handouts highlighting the differences in survival rates for vulnerable users when hit by cars traveling at various speeds at 20 mph vs. 30 mph vs. 40 mph.	Cities and Towns, regional agencies	Safer Speeds	Low	Medium Term
4.2.2	Educate the public of the dangers and consequences of speeding.	Cities and Towns, regional agencies	Safer Speeds	Medium	Medium
4.2.3	Participate in campaigns like NHTSA's "Obey the Sign or Pay the Fine" and "Stop Speeding Before it Stops You".	Cities and Local Agencies, State and Local Police	Safer Speeds	Low	Long Term
4.2.4	Illustrate the difference in travel speeds with respect to braking distance and crash survivability.	Counties, Cities, Towns, state and local police, regional agencies	Safer Speeds	High	Short Term
4.2.5	Engage Law Enforcement officials in coordinating initiatives that address speeding.	Cities and towns	Safer Speeds	Low	Long Term
4.3 Create an online toolkit for teen and younger driver safety educational resources.					
4.3.1	Collect data and statistics on driving safety and driving risks	Cities, Towns, RPCs, NHDOT	Safer Speeds	Low	Ongoing
4.3.2	Work with New Hampshire's Teen Driving Program to increase teen seat belt usage	Cities, Towns, RPCs, NHDOT	Safer People	Low	Long Term
4.3.3	Provide information on funding opportunities for drivers education courses through state, local, and private entities.	RPCs, NHDOT, NHDOS	Safer Roads	High	Ongoing

4.3.4	Target educational outreach to novice teen drivers by continued educational outreach to high schools and peer to peer	Counties, Cities, Towns, School Districts	Safer People	Medium	Long Term
4.3.5	Partner with schools and annually send educational program information	Cities, Towns, RPCs, state and local police	Safer People	Low	Long Term
4.3.6	Prepare peer to peer educational materials for schools and community groups	NHDOS, NHDMV	Safer People	Low	Long Term
4.4 Educate drivers on how to navigate new forms of traffic control treatments and train designers and planners on best practices.					
4.4.1	Develop a variety of marketing materials associated with new and innovative types of traffic control measures (videos, flyers, online material, PSAs)	RPCs, NHDOT, NHDOS, NHDMV	Safer People	Medium	Medium
4.4.2	Work with partner agencies to publish educational information on various outlets (social media, community websites, industry groups, etc.)	NHDOT, RPCs, State and Local Police	Safer People	Low	Long Term
4.4.3	Hold trainings and meetings with local and regional officials about new roadway and intersection safety measures	RPC, NHDOT	Safer People	Medium	Medium Term

Enforcement: Increase the effectiveness of enforcement activities along HIN corridors and other routes and locations

Number	Action	Proposed Lead Agency (and partners)	Safe System Element	Priority	Implementation Time Frame
5.1 Enhance enforcement activity to address intersection safety.					
5.1.1	Conduct highly publicized and visible enforcement of priority intersections.	State and Local Police	Safer People	High	Ongoing

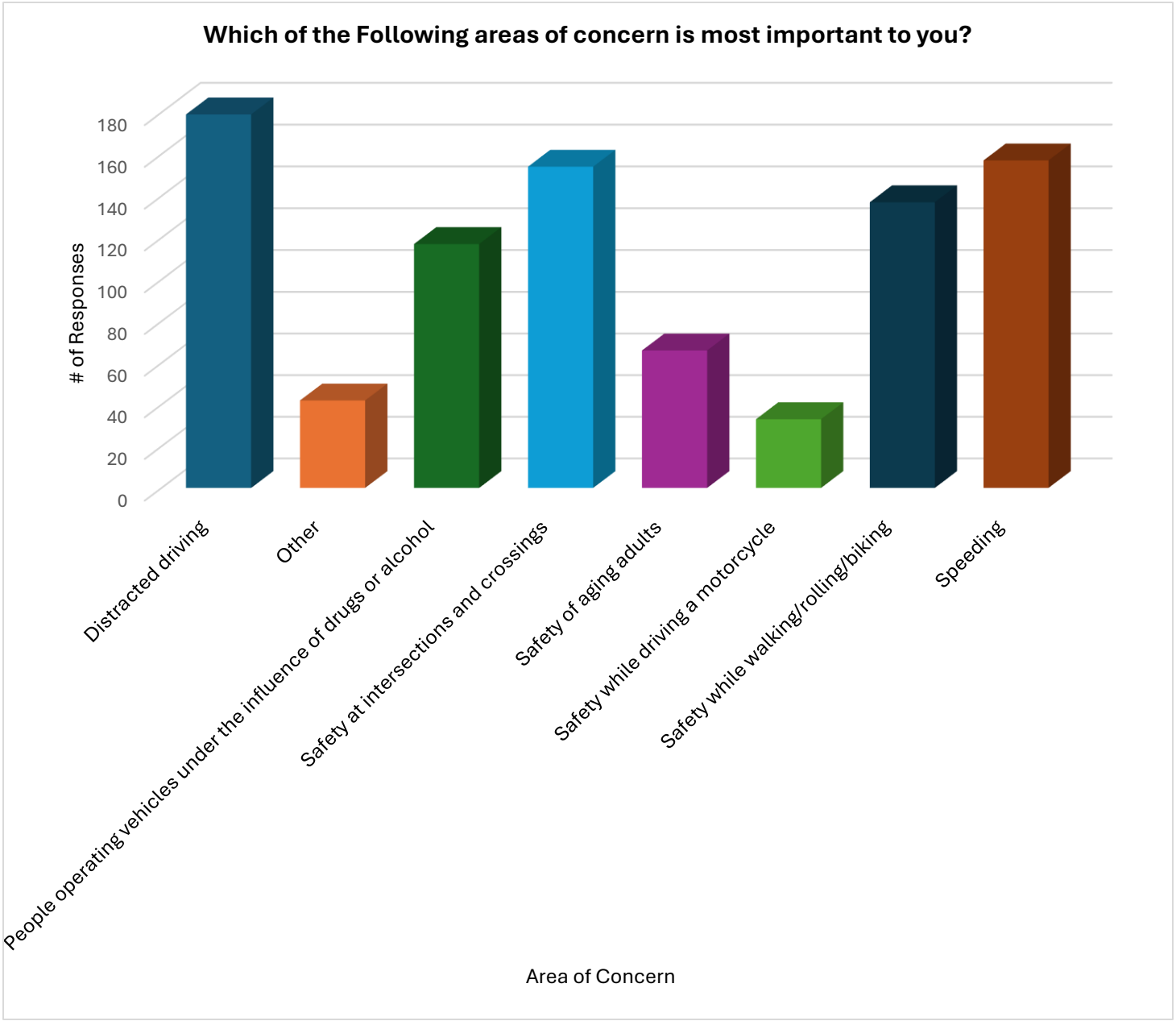
5.1.2	Coordinate with Enforcement Officers to prioritize enforcement of locations with a history of speed-related crashes.	RPCs, NHDOT, State and Local Police	Safer Speeds	Medium	Short Term
5.1.3	Conduct speed monitoring at priority intersections to target law enforcement officer attention and activities	RPCs, NHDOT	Safer Speeds	Medium	Long Term
5.2 Enhance enforcement activity to address distracted driving.					
5.2.1	Target periods of enforcement with local/State collaboration	State and Local Police	Safer Speeds	High	Ongoing
5.2.2	Work with legislature and courts to maintain or strengthen distracted driving legislation through education and advocacy.	RPCs, NHDOT, Legislature	Safer Vehicles	Medium	Long Term
5.2.3	Identify opportunities involving vehicle-to-infrastructure technology which help to provide drivers information on current status of surrounding infrastructure.	RPCs, NHDOT, NHDOS	Safer Vehicles	Medium	Long Term
5.3 Enhance enforcement activity to address impaired driving.					
5.3.1	Conduct publicized sobriety checkpoints. Note that the police must follow a protocol that includes judicial authorization for the checkpoint and an advance public notice	State and Local Police	Safer Roads	Medium	Ongoing
5.3.3	Incorporate additional field sobriety testing, breathalyzer training, and drug recognition expert (DRE) training into both the part-time and full-time police academies.	NHDOS, State and Local Police	Safer Roads	Medium	Ongoing
5.3.4	Engage community-based organizations to reach at-risk populations starting with one community and expand to additional communities.	NHDOS, State and Local Police	Safer People	Low	Long Term

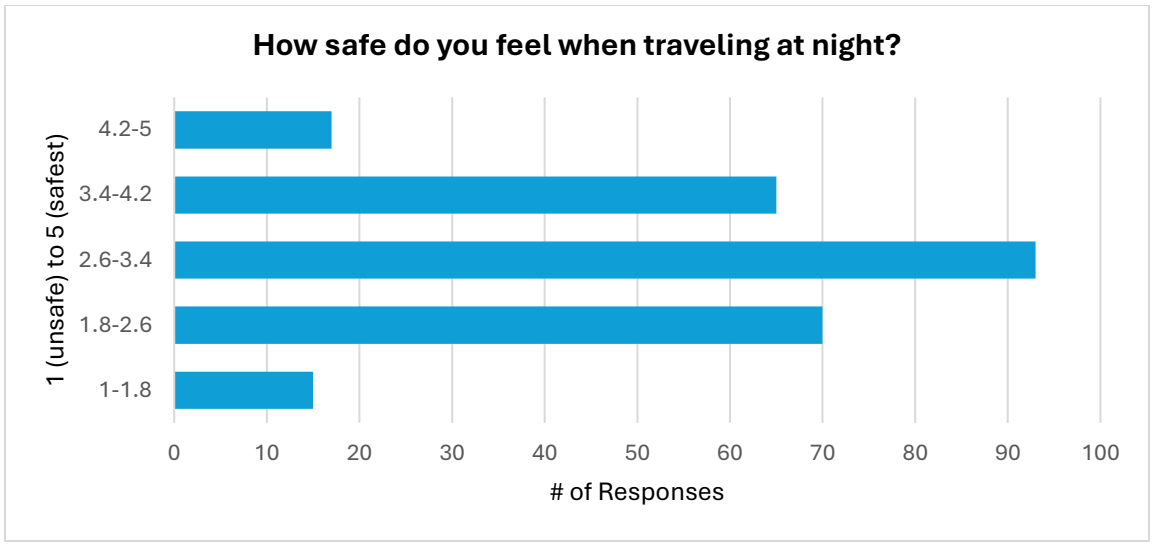
Appendix: Survey Questions

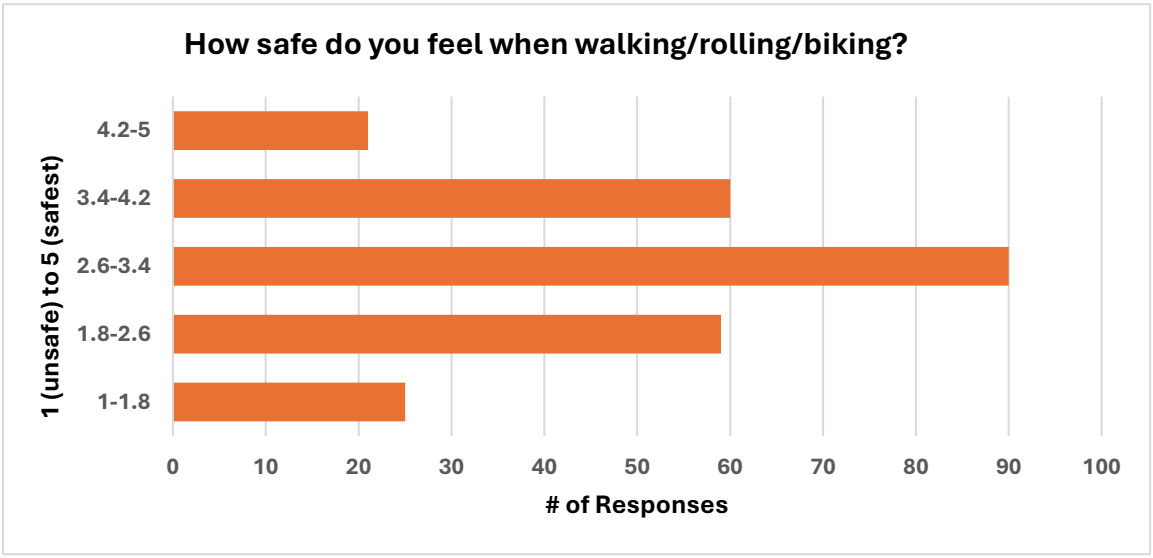
1. What town do you live in?
2. What is your age?
    a. Under 18
    b. 18-24
    c. 25-34
    d. 35-44
    e. 45-64
    f. 65-84
    g. 85 and older
3. Do any of the following circumstances prevent you from driving?
    a. Underage
    b. Disability
    c. Cost
    d. Criminal History
    e. Other
4. Other - Do any of the following circumstances prevent you from driving?
5. Which of the following areas of concern is most important to you?
    a. Distracted driving
    b. Speeding
    c. Safety at intersections and crossings
    d. Safety while walking/rolling/biking
    e. People operating vehicles under the influence of drugs or alcohol
    f. Safety of aging adults
    g. Other
    h. Safety while driving a motorcycle
6. Other - Which of the following areas of concern is most important to you?
7. When you or others are traveling, how safe do you feel when walking/rolling/biking?
8. When you or others are traveling, how safe do you feel when crossing a busy street when walking, biking, or rolling?
9. When you or others are traveling, how safe do you feel when driving or traveling in a vehicle?
10. When you or others are traveling, how safe do you feel when getting to and waiting for transit? (Bus route, carpool, and rideshare)
11. When you or others are traveling, how safe do you feel when riding in a transit vehicle?
12. When you or others are traveling, how safe do you feel when traveling through intersections?
13. When you or others are traveling, how safe do you feel when traveling at night?
14. When you or others are traveling, how safe do you feel when traveling during bad weather? (Snowy/icy conditions, high winds, heavy rain, etc.)
15. When thinking about safety which of the following strategies should be prioritized?
    a. Reduce vehicle speeds
    b. Provide more bike lanes and separated bike paths
    c. Other
    d. Install lighting
    e. Increase education and enforcement of risky behaviors
    f. Improve signage

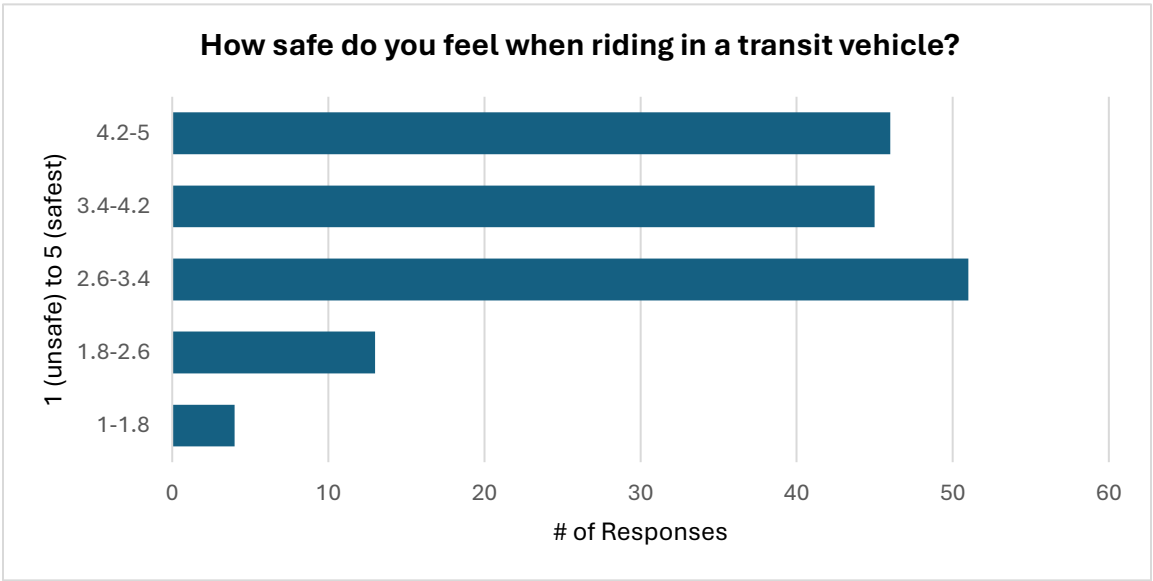
    g. Improve intersection and crossing locations to be safer for everyone
    h. Enhance sidewalks and walkways with beacons, curb extensions, and other features
    i. Construct sidewalks along streets where they are missing
16. Other - When thinking about safety which of the following strategies should be prioritized?
17. What strategies would you support to decrease distracted driving?
    a. Increase law enforcement activities and signs can convince drivers to put down cell phones
    b. Campaigns intended to educate the public of the dangers of distracted driving
    c. Host after-work/school culture meetings to increase awareness of risks and improve and adherence to safety policies
18. Other - What strategies would you support to decrease distracted driving?
19. What strategies would you support to decrease speeding?
    a. Roadway signage, stripping, and markings along roadways and at intersections
    b. Redesign roadways to change driver behavior
    c. Pedestrian and driver education campaigns
    d. Other
    e. Modify speed limits where speed is considered a cause of crashes and safety concerns
    f. Increase law enforcement presence
    g. Higher penalties for speeding and aggressive driving.
20. Other - What strategies would you support to decrease speeding?
21. What infrastructure solutions would you support to increase safety along our roadway network?
    a. Redesign roadways to narrow lanes and reduce lanes
    b. Other
    c. Modify roadway crossings with curb ramps, curb extensions, crossing island, raised crossings and in-road pedestrian signage
    d. Modify intersection designs
    e. Modify existing vehicle parking designs and locations
    f. Install or upgrade existing signage and signals
    g. Install traffic calming treatments
    h. Improve current roadways and features with maintenance and reapir operations
22. Other - What infrastructure solutions would you support to increase safety along our roadway network?
23. Are there specific places that you find particularly dangerous when traveling?
24. Is there anything else you would like to add?

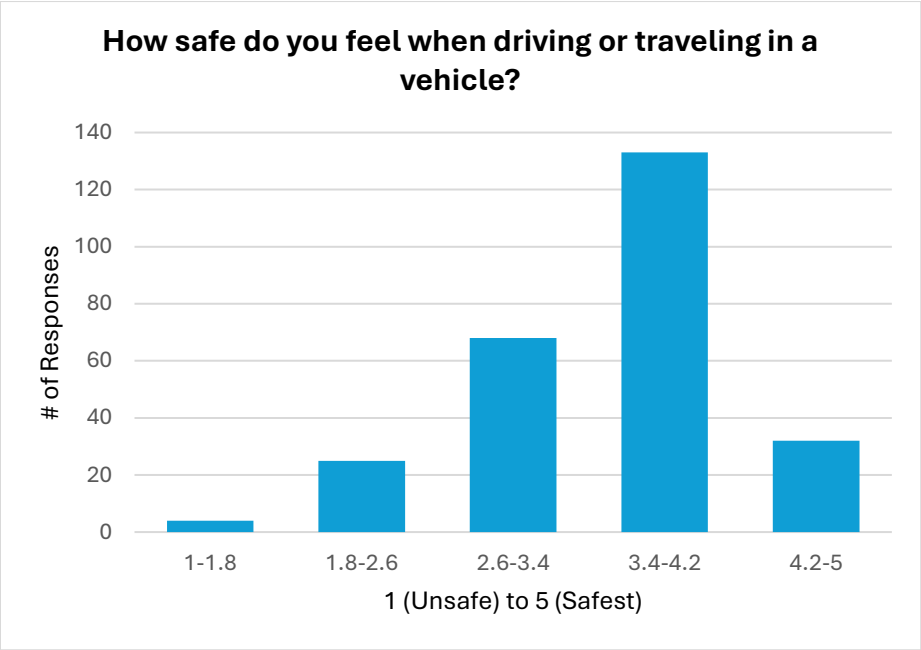
Appendix: Survey Data



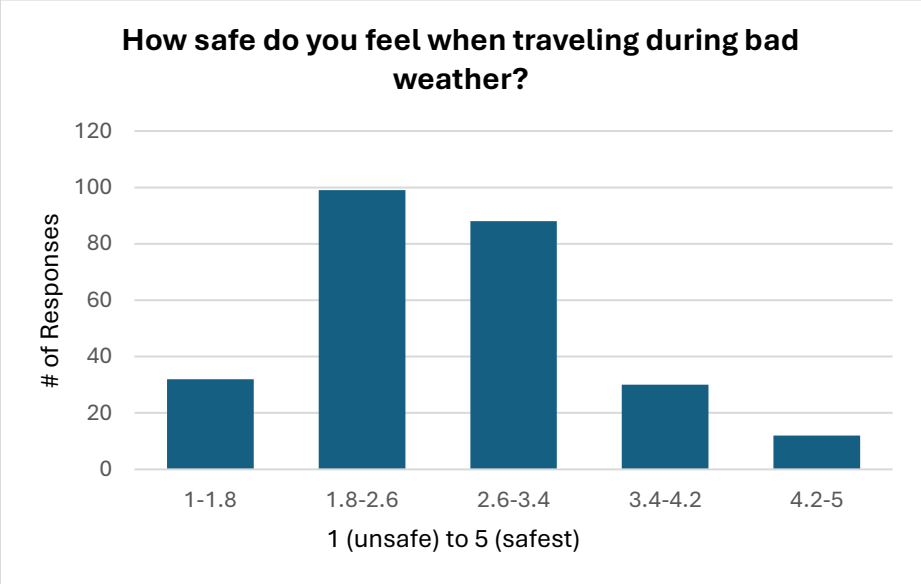

How safe do you feel when traveling at night?
1 (unsafe) to 5 (safest)
4.2-5
3.4-4.2
2.6-3.4
1.8-2.6
1-1.8
0
10
20
30
40
50
60
70
80
90
100
# of Responses


How safe do you feel when walking/rolling/biking?
1 (unsafe) to 5 (safest)
4.2-5
3.4-4.2
2.6-3.4
1.8-2.6
1-1.8
0
10
20
30
40
50
60
70
80
90
100
# of Responses

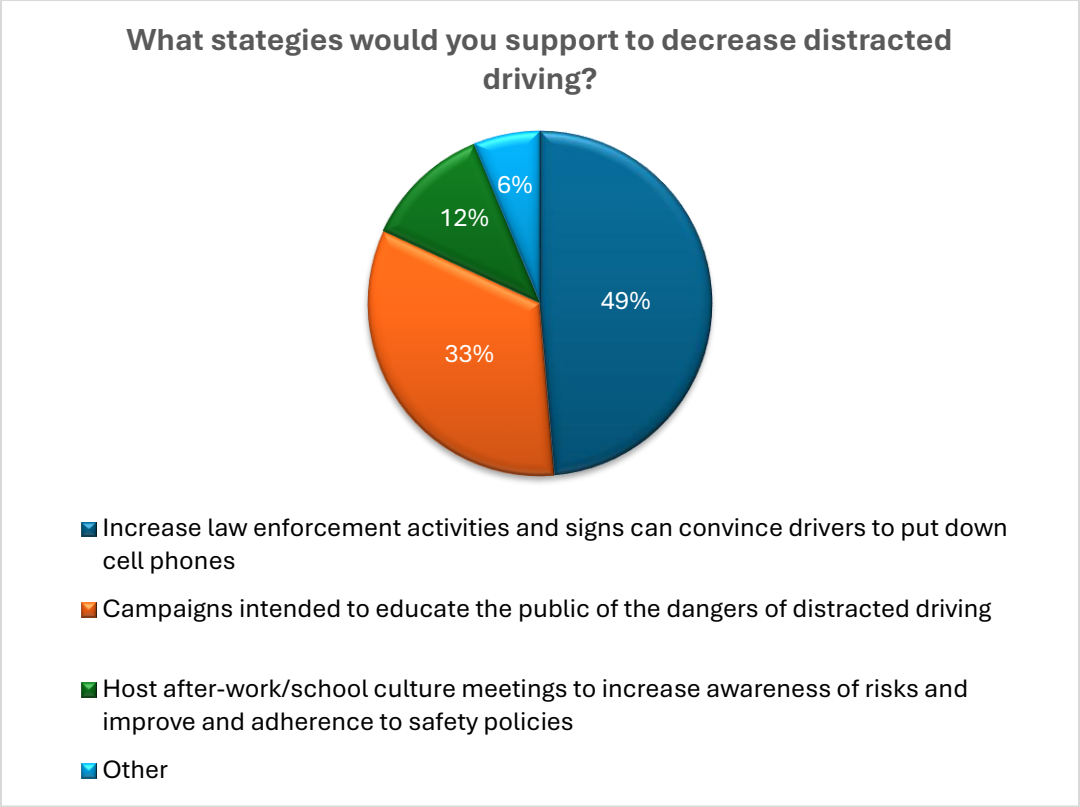

How safe do you feel when riding in a transit vehicle?
1 (unsafe) to 5 (safest)
4.2-5
3.4-4.2
2.6-3.4
1.8-2.6
1-1.8
0
10
20
30
40
50
60
# of Responses

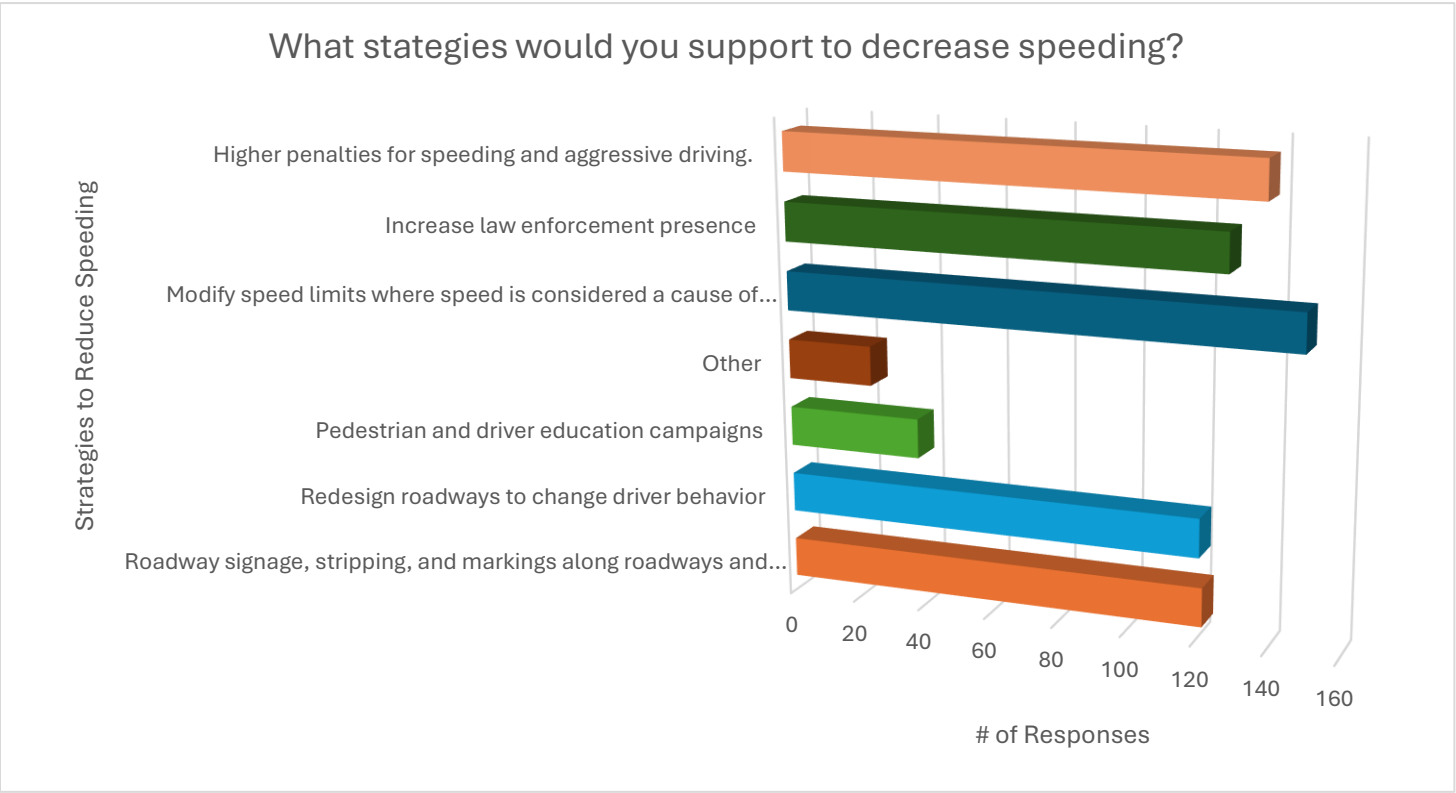

How safe do you feel when driving or traveling in a vehicle?
# of Responses
140
120
100
80
60
40
20
0
1-1.8
1.8-2.6
2.6-3.4
3.4-4.2
4.2-5
1 (Unsafe) to 5 (Safest)


How safe do you feel when getting to and waiting for transit?
# of Responses
70
60
50
40
30
20
10
0
1-1.8
1.8-2.6
2.6-3.4
3.4-4.2
4.2-5
1 (unsafe) to 5 (safest)

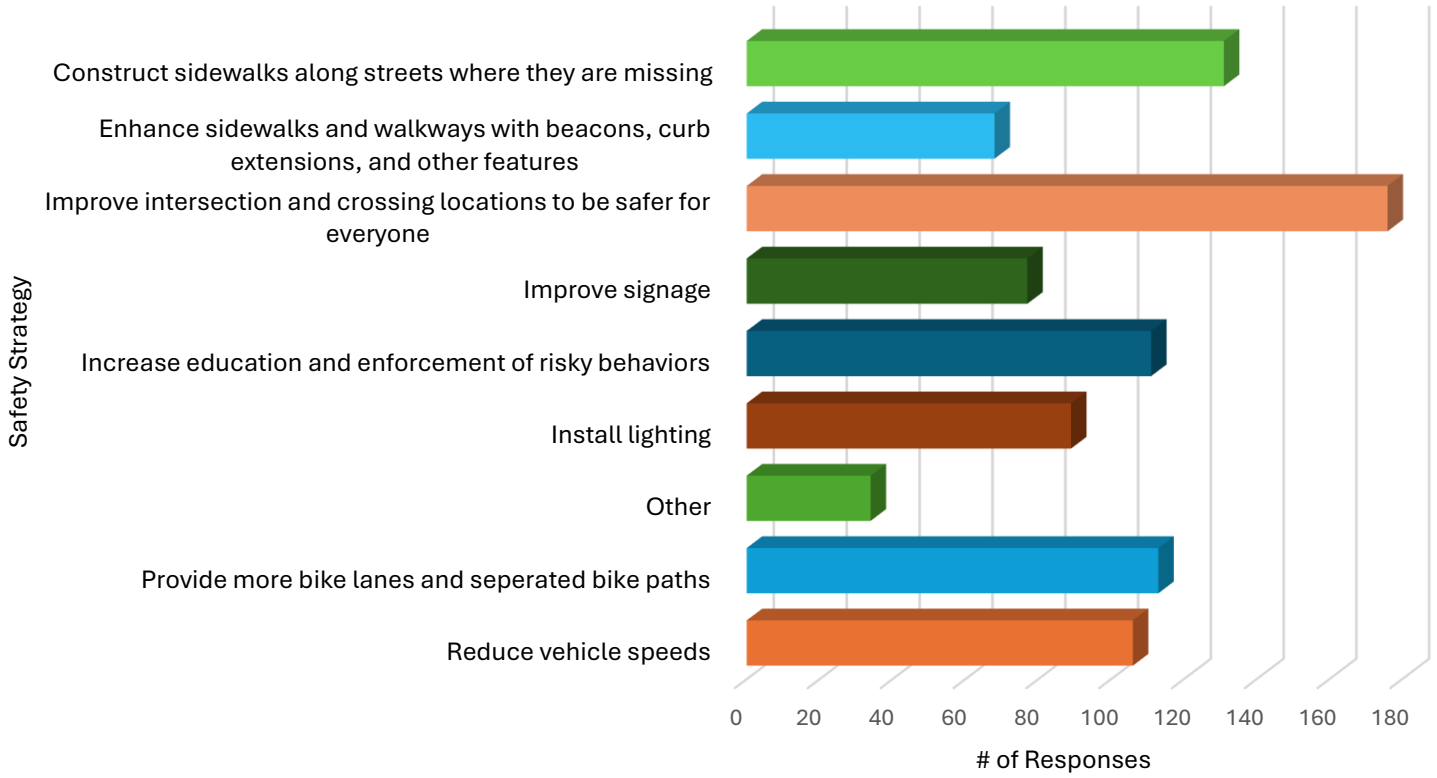

How safe do you feel when traveling during bad weather?
# of Responses
120
100
80
60
40
20
0
1-1.8
1.8-2.6
2.6-3.4
3.4-4.2
4.2-5
1 (unsafe) to 5 (safest)


How safe do you feel when traveling through intersections?
# of Responses
120
100
80
60
40
20
0
1-1.8
1.8-2.6
2.6-3.4
3.4-4.2
4.2-5
1 (unsafe) to 5 (safest)

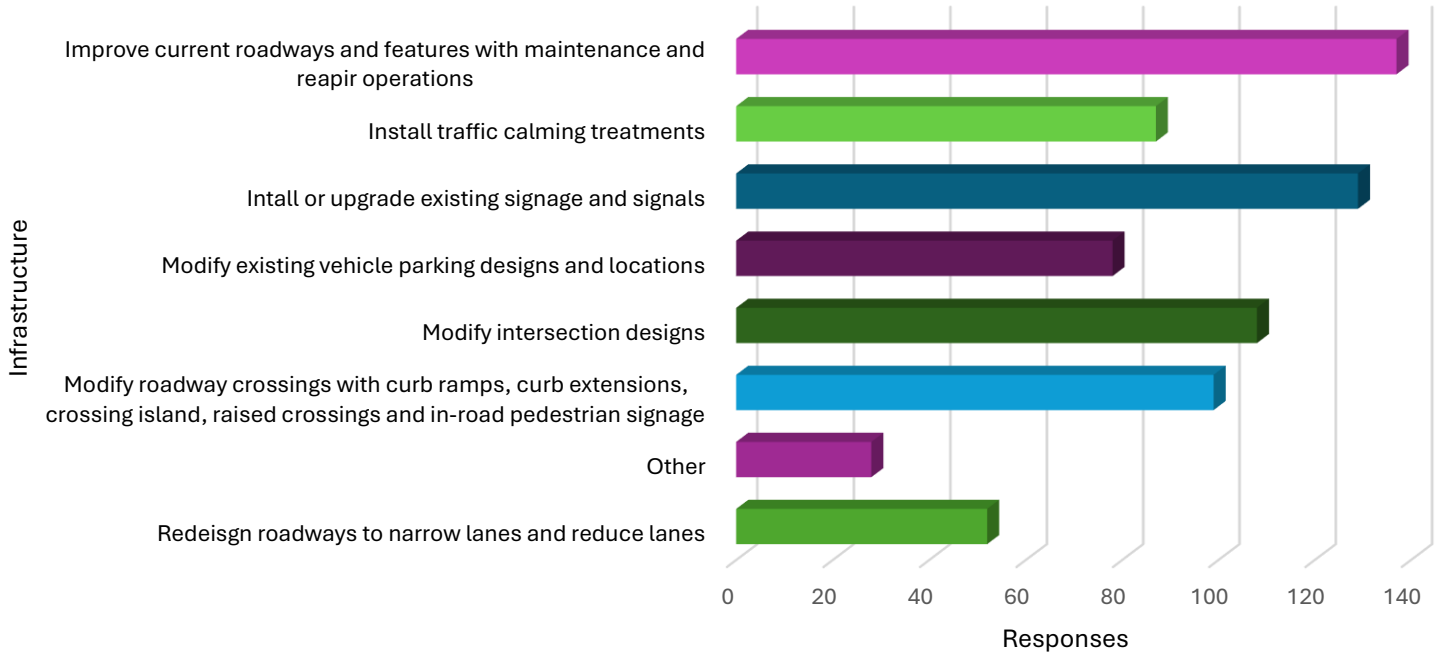

What stategies would you support to decrease distracted driving?
6%
12%
49%
33%
Increase law enforcement activities and signs can convince drivers to put down cell phones
Campaigns intended to educate the public of the dangers of distracted driving
Host after-work/school culture meetings to increase awareness of risks and improve and adherence to safety policies
Other


What stategies would you support to decrease speeding?
Strategies to Reduce Speeding
Higher penalties for speeding and aggressive driving.
Increase law enforcement presence
Modify speed limits where speed is considered a cause of...
Other
Pedestrian and driver education campaigns
Redesign roadways to change driver behavior
Roadway signage, stripping, and markings along roadways and...
0
20
40
60
80
100
120
140
160
# of Responses

When thinking about safety which of the following strategies should be prioritized?



What infrastructure solutions would you support to increase safety along our roadway network?



Appendix: Survey Response Coding

Theme	Code	Count	Description
A. Traffic Behavior Issues	A1. Speeding	110	General or location-specific speeding concerns
	A2. Distracted Driving	20	Mentions of phone use, impaired drivers, inattentiveness
	A3. Failure to Stop/Yield	36	Drivers ignoring stop signs, red lights, or yielding rules
	A4. Aggressive Driving	36	Tailgating, unsafe overtaking, road rage
B. Infrastructure Deficiencies	B1. Poor Visibility	33	Blind curves, sightline issues
	B2. Inadequate Signage	81	Missing, unclear, or hidden traffic signs
	B3. Poor Lighting	58	Lack of lighting, especially at night
	B4. Inadequate Sidewalks/Bike Lanes	132	Unsafe or absent walking/biking infrastructure
	B5. Obstructive Parking	45	Parked car blocking sightlines or crossings
	B6. Crosswalk Condition	163	Faded markings, unsafe placement
	B7. Road Surface Issues	57	Potholes, poor pavement, icy conditions
C. Policy & Enforcement	C1. Lack of Law Enforcement	33	Limited police presence or enforcement of laws
	C2. Need for Lower Speed Limits	120	Specific calls to reduce speed limits
	C3. School Zone Enforcement Gaps	41	Lack of guards, signs, or police in school zones
	C4. Need for Signals/Cameras	41	Suggested installation of traffic lights, flashing signs
D. Vulnerable Road Users	D1. Pedestrian Safety Risks	121	Any concern about pedestrians not being protected or noticed
	D2. Cyclist Safety Risks	38	Danger for cyclists, including lane conditions or driver behavior
	D3. Children at Risk	45	Specific concern about child safety (crossing streets, walking to school)
E. Environmental Hazards	E1. Wildlife Collisions	32	Moose, bear, or other wildlife incidents
	E2. Seasonal Hazards	65	Snow, ice, whiteouts, slippery conditions
	E3. Tourist Traffic	47	Seasonal congestion, parking challenges
F. Suggested Solutions	F1. Speed Management	113	Suggested radar signs, flashing signs, speed cameras

	F2. Engineering Fixes	67	Redesign, roundabouts, lane narrowing, crosswalk upgrades
	F3. Better Snow/Ice Maintenance	41	Need for improved winter maintenance
	F4. Public Transit/ Alt. Transport	22	Suggestions for shuttles, rail, buses, multimodal infrastructure
G. Location-Specific Concerns	G1. Named Dangerous Intersections	138	Specific intersections cited as dangerous (e.g., Rt 16 & 2 in Gorham)
	G2. Road Segments/Curves	164	Curves, stretches of road, hills noted as unsafe
	G3. School Zones	22	Specific mention of school zone areas being dangerous
	G4. Crosswalk Locations	59	Locations needing or having poor pedestrian crossings
	G5. Trailheads/Recreational Areas	30	Parking lots or crossings near trails that are dangerous

Appendix: Ten-Year Plan Statewide Review Criteria

NH TEN YEAR PLAN: *Regional Project Review Guidance*

PROJECT SCORING PROCEDURES

The weights of each project review criteria should be set before the scoring process begins. RPC staff should discuss the criteria internally and with Transportation Advisory Committee members to provide input on the importance of the criteria and to assist with the weight-setting process.

A score shall be assigned for each criterion. Criteria scores should then be multiplied by criteria weights. The weighted criteria scores should then be summed to develop the final project score.

RPCs should make reasonable attempts to assign a defensible score to each project for each criterion. *Criteria shall not be skipped when scoring a project.* If a defensible score cannot be developed for a particular criterion due to data/information limitations, RPCs should 1) use their best judgement to assign a score; and 2) record any relevant data/information limitations.

If a criterion is irrelevant to the project, a score of 1 out of 10 should be assigned for that criterion.

EVALUATING PROJECT NEED & PROJECT IMPACT

There are two types of project evaluation criteria: 1) criteria that assess the *need* for a project; and 2) criteria that assess the *impact* of a project. For example, looking at the history of crashes at an intersection can help evaluate the *need* for a safety improvement project, while looking at Crash Modification Factors for the proposed improvements can help evaluate the *impact* that the project will have on safety.

The table below presents the project scoring scales for evaluating project *need* and project *impact*. Additionally, each criterion in this packet is labeled to indicate if it is evaluating *need* or *impact*.

PROJECT SCORING SCALES

10 9 8 7 6 5 4 3 2 1 0

SCORE	PROJECT NEED CRITERION		PROJECT IMPACT CRITERION		CRITERION RELEVANCY
10	There is a **very high need** for the project under this criterion.	OR	The proposed project would deliver a **significant improvement** under this criterion.	-	- - -
5	There is a **moderate need** for the project under this criterion.	OR	The proposed project would deliver a **moderate improvement** under this criterion.	-	- - -
1	There is **minimal/no need** for the project under this criterion.	OR	The proposed project would deliver **minimal/no improvement** under this criterion.	OR	The proposed project is **not relevant** to this criterion.
0	- - -	-	The proposed project would result in a **negative impact** under this criterion.	-	- - -

NH TEN YEAR PLAN: *Regional Project Review Guidance*

NEW HAMPSHIRE'S "TEN YEAR PLAN"

The *New Hampshire 10-Year Transportation Improvement Plan* ("*Ten Year Plan*") is a fiscally-constrained program of state– and federal-funded transportation projects. The *Ten Year Plan* is updated biennially, pursuant to the requirements of New Hampshire RSA 240.

The *Ten Year Plan* includes projects related to roadway improvements, bicycle and pedestrian travel, public transportation, aviation, and natural hazard resiliency.

REGIONAL PROJECT REVIEW PROCESS

As part of the biennial update of the *Ten Year Plan*, each of the nine New Hampshire Regional Planning Commissions (RPCs) leads a process to identify and prioritize transportation projects in their respective regions for inclusion in the *Plan*.

Projects eligible for consideration through the regional review process:

⇒ ***Asset management projects*** (e.g., bridge rehabilitation, bridge replacement, pavement/base/subbase repair/replacement);

⇒ ***Bicycle and pedestrian improvements*** (e.g., sidewalks, bike trails, multi-use paths; traffic calming improvements);

⇒ ***Infrastructure-related travel demand management projects*** (e.g., park and ride lots, transit or HOV lanes, priority signalization, bus shelters, intermodal transportation centers);

⇒ ***Planning studies*** assessing the need for future projects;

⇒ ***Roadway improvements*** (e.g., operational improvements, access management, intelligent transportation systems, widening, technology operation improvements).

FEDERAL HIGHWAY SYSTEM PERFORMANCE MEASURES

Under the *Bipartisan Infrastructure Law* (BIL), state DOTs and Metropolitan Planning Organizations (MPOs) are required to use **performance measures** to work toward specific targets in support of **national goals for transportation management** in all federally-funded projects and programs.

The Ten-Year Plan Criteria detailed in this packet reflect these federal performance measures. Relevant federal performance measures are noted with each criterion.

PROJECT REVIEW CRITERIA

The criteria included in this packet are intended to help RPC's prioritize projects in their respective regions. A list of criteria is provided in the table to the right.

Each RPC may assign weights to different criteria to reflect regional priorities. Weights should be assigned to criteria prior to scoring projects.

For each project, a score should be assigned for each criterion in order to develop an overall project score. **Detailed scoring procedures are provided on page 2 of this packet.**

Each RPC should clearly define the specific scoring process that will be used prior to scoring projects.

CRITERION	SUB-CRITERIA
Economic Development	Local & Regional; Freight Movement
Equity, Environmental Justice, & Accessibility	Equity & Environmental Justice; Accessibility
Mobility	Mobility Need & Performance; Mobility Intervention
Natural Hazard Resiliency	Hazard Risk; Hazard Mitigation
Network Significance	Traffic Volume; Facility Importance
Safety	Safety Performance; Safety Measures
State of Repair	State of Repair; Maintenance
Support	n/a

For each criterion, the following reference table is provided in order to standardize & guide project reviews:

REGIONAL EVALUATION CONSIDERATIONS	POTENTIAL RESOURCES & DATA SOURCES
This column includes the factors that should be considered in order to evaluate and rank proposed Ten Year Plan projects. *Depending on data availability, some considerations may not be evaluated for all projects.*	This column includes data and established resources for best practices that can be used to justify project rankings. *Not all sources of data will be available for each project. It is left to the discretion of each RPC as to which sources to consult.*

Note: project review criteria and associated scores are intended to inform the regional project prioritization process. RPCs may consider other factors, such as project costs and timelines, when deciding final regional priorities.

Appendix: Resources

This appendix contains a list of resources from a variety of sources that can help in creating a complete streets policy, drafting design guidelines, or preparing other types of road safety studies.

FHWA Proven Safety Countermeasures
NHTSA Countermeasures that Work
USDOT National Roadway Safety Strategy

NHDOT Highway Safety Improvement Program (HSIP)

Road Diet FAQ Sheet Federal Highways Administration
Road Diet Informational Guide Federal Highways Administration
Traffic Calming ePrimer Federal Highways Administration
Low Speed, Low Volume Roadways Can Be Shared NACTO
Promoting Walking and Bicycling Accommodations in New Hampshire New Hampshire Department of Transportation
Complete Streets New Hampshire Business and Economic Affairs
Busting the Myths about Complete Streets Active Transportation Alliance
Small Town and Rural Multimodal Networks FHWA, ALTA Planning. Rural Design Guide
Roadway Cross-Section Reallocation: A Guide National Academies
Pop-Up Traffic Calming Guide Bike Walk Montana
Slow Your Street Guide One STL
Pop-Up Placemaking Toolkit AARP
Where the Duct Tape Meets the Road Safe Routes Partnership
Bridging Bicycle Promotion and Emergency Response Streets Blog SF
Burlington Public Works Quick-Build Design and Materials Standards Guide (Burlington Vermont Public Works and partners, undated)
Primer Pop-Up Traffic Calming & Placemaking
Big Sky/ Rural Communities Traffic Calming Toolkit
Demonstration Project Implementation Guide (Minnesota DOT, 2019)