

# New Hampshire Strategic Highway Safety Plan

Driving Toward Zero

2017-2021

DRIVING  
TOWARD  
**ZERO**



*One Death Is Too Many*



*This plan has been drafted and is presented by the New Hampshire Driving Toward Zero Coalition. The coalition is comprised of stakeholders from multiple state agencies and organizations.*

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## New Hampshire Driving Toward Zero Coalition Members

3m Company

AAA

AT&T

ATSSA New England Chapter

Bike Walk Alliance of New Hampshire

Brain Injury Association of New Hampshire

Children's Hospital at Dartmouth

City of Manchester

Community Alliance for Teen Safety (Derry)

Dartmouth-Hitchcock Trauma Program

Federal Highway Administration

Federal Motor Carrier Safety Administration

Jacobs Engineering

Manchester Community College

Nashua Regional Planning Commission

National Highway Traffic Safety Administration

New Hampshire Auto Dealers Association

New Hampshire Department of Health and Human Services

New Hampshire Department of Justice-Office of the Attorney General

New Hampshire Department of Safety

New Hampshire Department of Transportation

New Hampshire Drivers Education Teachers Association

New Hampshire State Liquor Commission

Traffic Records Coordinating Committee

Upper Valley/Lake Sunapee Regional Planning Commission

Vanasse Hangen Brustlin, Inc.

Victims Inc.

Dear New Hampshire Citizens:

The following pages comprise the State of New Hampshire's 2017 Strategic Highway Safety Plan (SHSP). It is the result of a collaborative effort of safety stakeholders. This plan is data-driven and identifies statewide goals and strategies targeting highway safety improvements proven to reduce traffic crashes. The SHSP serves as a roadmap for federal, state, and local agencies; planning commissions; the private sector; and concerned citizens working together to reduce crashes, injuries, and deaths on New Hampshire's roads.

Since the creation of New Hampshire's first Strategic Highway Safety Plan in 2007, five-year traffic fatalities have been trending downward. The updated plan builds on this success, targeting the State's current safety concerns, and continues the vision of "Zero Deaths" on New Hampshire's roadways. It is important for New Hampshire Driving Toward Zero Coalition members to remain vigilant in implementing countermeasures to reduce fatalities, given annual fatalities may rise slightly based on driving behaviors.

Although a committee of professionals representing agencies and organizations that are directly involved in safety created this plan, it is you, the citizens of New Hampshire, who hold the power to effect true change. History shows that driver behavior is a major contributor in the reduction of crashes. To realize the vision of "Zero Deaths," each of us must remember that operating a vehicle is a privilege and can be dangerous. We must accept personal responsibility for traveling safely on New Hampshire roads.

Every driver, passenger, bicyclist, and pedestrian is important and deserves our full attention and consideration. We must not accept roadway deaths as a matter of course. All drivers in New Hampshire, choosing to be fully aware when they get behind the wheel, will create a profound impact.

We invite you to review the 2017 New Hampshire Strategic Highway Safety Plan and to join us in **Driving Toward Zero**.

“People get in their cars, turn the key, and expect to arrive at their destinations alive.”

**Earl Sweeney**  
Former Assistant Commissioner,  
Department of Safety



## THE NUMBERS [2010-2014]

**39,172** People Injured.

The total number of people injured in traffic crashes in New Hampshire from 2010 through 2014 equates to an alarming average of **7,834** people per year.

**2,745** People Seriously Injured.

Serious injuries\* changes lives—and oftentimes shorten them. There are unimaginable emotional costs and huge financial implications to the injured, their families, and their communities.

**556** Lives Lost. Gone Forever.

Who were these people? What might they have contributed to our lives, to our state and to our country?

The bottom line is that traffic crashes are preventable—not inevitable.

New Hampshire's goal is to reduce the number of roadway deaths 50 percent by 2030 (from a baseline year of 2010), and to continue this program until there are ZERO roadway deaths.

*\*A serious injury is defined as an incapacitating injury. Roadway crash injuries are assessed on-scene by first responders.*

*A suspected serious injury is any injury other than fatal which results in one or more of the following:*

- Severe laceration resulting in exposure of underlying tissues/muscle/organs or resulting in significant loss of blood
- Broken or distorted extremity (arm or leg)
- Crush injuries
- Suspected skull, chest, or abdominal injury other than bruises or minor lacerations
- Significant burns (second and third degree burns over 10% or more of the body)
- Unconsciousness when taken from the crash scene
- Paralysis







## DRIVING TOWARD ZERO... A SAFETY CULTURE

Eliminating deaths on New Hampshire roadways is an important vision and the driving force behind this plan and the coalition that united in its development. It is also an important vision for the public, all of whom travel New Hampshire's roadways—by car, motorcycle, truck, bicycle, or on foot—day and night under all types of weather conditions.

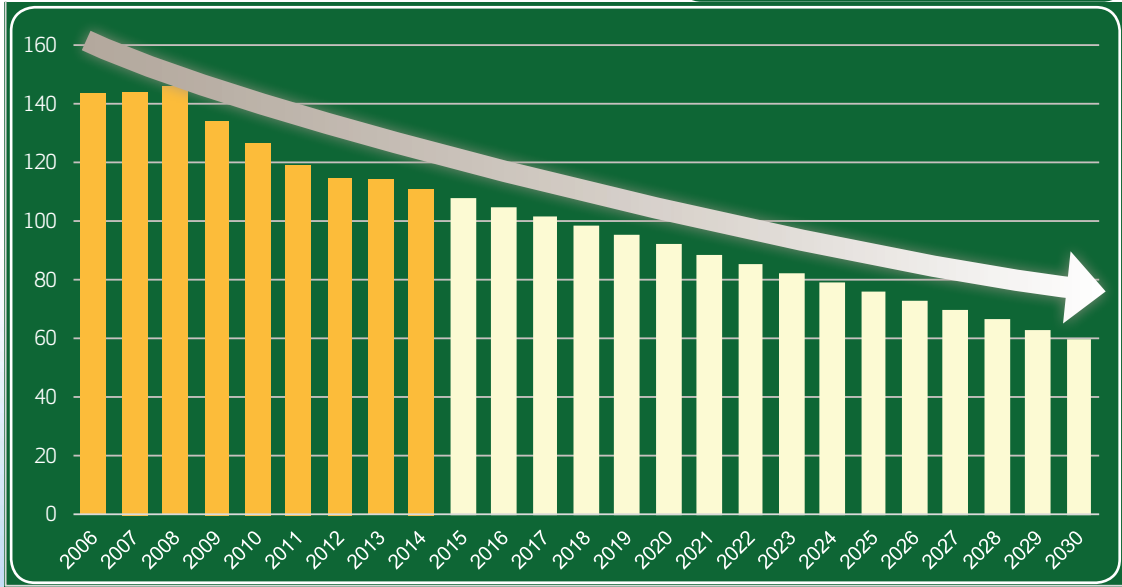
Our mission is to create a safety culture where even one death is too many, through a collaborative effort of both public and private entities, as well as the implementation of education, enforcement, engineering, and emergency management solutions.

Our vision is to reduce the number of fatal and serious injury crashes on New Hampshire roadways to ZERO. The principles on which the Strategic Highway Safety Plan was developed comprise a comprehensive, systematic approach in the reduction of crashes on all public roads. The plan is integrated, proactive, and data-driven, both in the selection of candidate locations and countermeasures, as well as in the evaluation of results.

The need for New Hampshire to take action to reduce motor vehicle crashes is clear. According to the Department of Safety's Crashes Database, in 2014, 28,395 motor vehicle crashes occurred on New Hampshire's roadways, resulting in 95 deaths and 614 serious injuries. The human and economic consequences of these crashes are unacceptable, unaffordable, and preventable. Over the past five years, traffic crashes have cost New Hampshire residents an estimated \$8.4 billion, but the true "cost" of the loss of just one human life is immeasurable.

The purpose of the SHSP is to reduce crashes and the resulting fatalities and injuries by sharing information, combining resources, and targeting our efforts on the critical emphasis areas that analysis shows have the greatest potential for improvement. It is also imperative that the plan be inclusive and accessible to the public at large.

NH TRAFFIC FATALITIES:  
Trends, Forecasts, and Goals



The graph above represents the history of traffic deaths in New Hampshire from 2006 to 2014 and the predicted number of deaths until 2030, providing benchmarks toward attaining our goal. Numbers are given as five-year moving averages (based on the previous five years).

The data collection that led to the identification of key areas of emphasis and establishing the goals, strategies, and measurable objectives set forth in this plan is the result of the active involvement of a broad-based group of safety stakeholders who accepted the challenge of participating in the SHSP development process. This group will remain involved in the process through the plan’s various stages of implementation. However, the general public—drivers, riders, and pedestrians of all ages—truly holds the power to generate change by choosing to adopt the safety measures outlined here and by choosing **not** to accept roadway crash-related fatalities and injuries as an unavoidable “cost of doing business.”

## OUR GOAL

The vision of the Strategic Highway Safety Plan is to have ZERO Traffic Deaths on New Hampshire roadways. Though our overall goal is to realize zero fatalities, we have set a plan goal of reducing the number of fatalities and serious injuries by 50 percent from 2010 by the year 2030.

Through the initiatives outlined in this plan, the development and implementation of technological advances, and the creation of a culture where traffic fatalities and injuries are no longer acceptable, we believe a 50 percent reduction in fatalities and serious injuries is attainable by the year 2030.

Investment in technology drives improved safety. Improvements in the safety of vehicles, detection and warning systems, traffic control devices, intelligent transportation systems, and state-of-the-art analytical tools for use in the decision-making process contribute to overall roadway safety. We predict that over the life of this plan, research in all areas of highway safety will also contribute to the success of our vision.

A “safety culture” is defined as the enduring value and priority placed on safety by everyone, at every level. This plan seeks to promote a safety culture through examples of personal responsibility, safety awareness, education and outreach, evaluation, adjustment, and of course, constant improvement.

**ZERO deaths is the ONLY goal we all can live with.**





“People do not, on a regular basis, think of driving a vehicle as a risky event, and this does not just apply to young drivers. Adults share this attitude.”

**Rhonda Siegel**  
Administrator of Maternal and Child Health Section,  
Bureau of Population Health and Community Services,  
Division of Public Health Services,  
New Hampshire Department of Health and Human Services



## GENERAL STRATEGIES

The New Hampshire Strategic Highway Safety Plan is organized, in large part, into critical emphasis areas. Each area identifies strategies to help reduce fatalities and serious injuries associated with their specific location or behavior. The following general strategies apply to all critical emphasis areas and support the SHSP.

- **Develop emphasis area action plans.**

Action plans put goals into reality and provide a roadmap to give stakeholders and partners direction. Each committee develops an action plan implementing its strategies. In some cases, an action plan may be a pre-existing safety plan or a committee may collaborate with an existing group.

- **Link with other transportation plans.**

Safety is a critical component of many transportation plans. The processes and analysis used in developing the SHSP can be informative for other plans and serve to address challenges before they become a concern.

- Other transportation plans include:

- Commercial Vehicle Plan
- Highway Safety Improvement Program
- Strategic Action Plan
- Long Range Transportation Plans
- State Injury Prevention Plan
- Statewide and Metropolitan Transportation Improvement Programs

- **Develop a communication plan and continue to identify ways to create outreach opportunities to raise awareness and to educate the citizens of New Hampshire about roadway safety.**

Raising public awareness through marketing initiatives is a critical element necessary for the success of the plan, and New Hampshire will work with NHTSA efforts to maximize messaging.

- **Create targeted messaging and high visibility enforcement.**

Targeted messaging, in combination with high visibility enforcement activities, is a proven strategy to lower the number of driving fatalities. Message timing is critical in reaching at-risk drivers. Therefore, the use of the highway electronic message boards, paid media, and earned media has been and will continue to be integral parts of all strategies to prevent roadway crashes.





## CRITICAL EMPHASIS AREAS

The following pages outline the critical emphasis areas and strategies that determine how each committee allocates limited resources, targeting strategies proven to produce the greatest benefit. Selected critical emphasis areas exhibit a higher number of fatal and serious crashes; these critical emphasis areas focus on specific behaviors or locations.

The strategies outlined in each critical emphasis area address each challenge through the integrated application of the 4Es of roadway safety:

- Education;
- Enforcement;
- Engineering; and
- Emergency Management Services.

Collectively, these strategies comprise the action plan that will assist New Hampshire in reducing the number of roadway crashes and resulting serious injuries and fatalities.

Emphasis areas addressed by the 2017 New Hampshire SHSP include:



- Impaired Driving
- Distracted Driving
- Speeding
- Vehicle Occupant Protection
- Teen Traffic Safety
- Older Drivers
- Crash Locations
- Vulnerable Roadway Users
- Comprehensive Safety Data
- Education and Public Outreach

# IMPAIRED DRIVING

## OUR CHALLENGE

Impaired driving includes driving under the influence of alcohol and/or drugs. Historically, advocacy efforts, data collection, and law enforcement have focused on drunk driving, but a greater emphasis on drugged driving is now taking place, at least in part due to the current drug epidemic in New Hampshire and the United States. Drug use is on the rise nationally; 2015 was the first year that drug use was more prevalent than alcohol use in fatal crashes.

Between 2010 and 2014, New Hampshire and the United States have seen relatively steady rates of alcohol-related driving fatalities, hovering around 30 percent of all driving fatalities. In 2012, 25% of all motor vehicle fatalities in New Hampshire were drug-related.

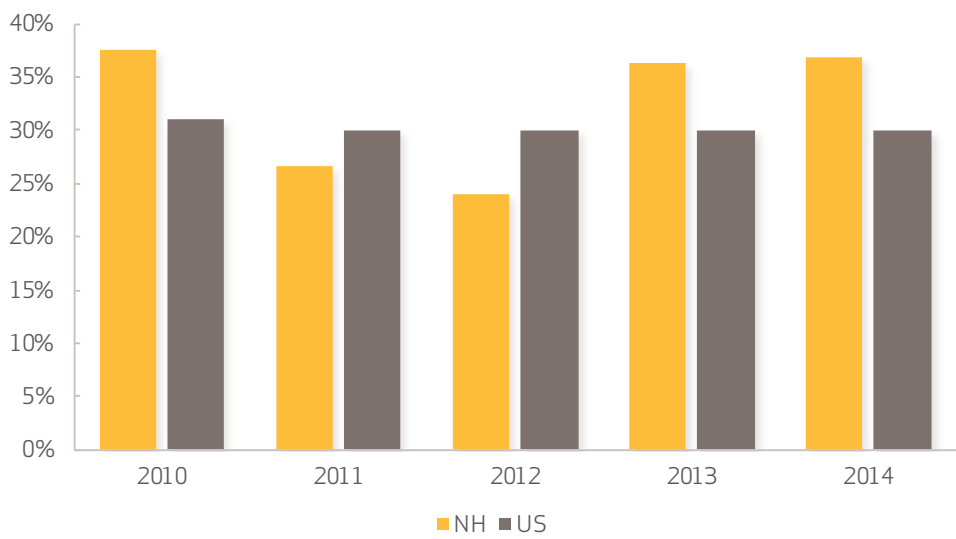
The 2013-2014 National Roadside Survey of Alcohol and Drug Use by Drivers found that alcohol use while driving is more likely to occur on weekend nights, suggesting recreational use. Drug prevalence, on the other hand, was found to stay relatively constant whether during the day or night time, and whether on weekdays or weekends.



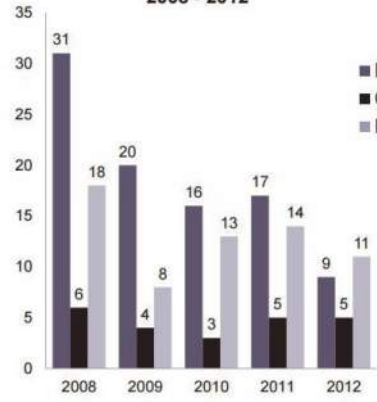
# OUR GOAL

Our goal is to eliminate impaired driving, and the resulting serious injuries and fatalities, from New Hampshire roadways.

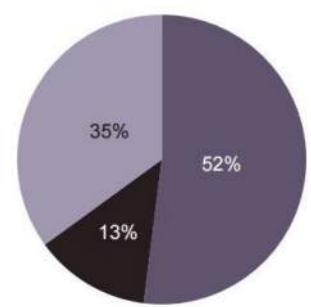
% of Fatalities Involving Alcohol, NH vs. US



NH CRASHES INVOLVING DRUG USE 2008 - 2012



FATAL NH CAR CRASHES INVOLVING DRUG USE AVERAGES OVER A FIVE YEAR PERIOD (2008-2012)



Drug use charts from: <https://www.dhhs.nh.gov/dcbcs/bdas/documents/issue-brief-impaired-driving.pdf>



## OUR FOCUS STRATEGIES



### **Continue to develop New Hampshire's Prescription Drug Monitoring Program to reduce prescription drug impaired driving.**

A prescription drug monitoring program (PDMP) is designed to assist health care professionals in accurately assessing the needs of their patients when prescribing controlled drugs. A well-designed PDMP may reduce several types of crime, including doctor-shopping, fraud, and driving under the influence of drugs. PDMP may also lower the number of unintentional drug overdose deaths.



## OUR CONTINUING STRATEGIES

- Improve collection and use of impaired driving data for stronger enforcement.
  - Ensure greater focus on using the data that we have.
  - Expand use of data-driven enforcement activities.
  - Expand Laconia Bike Week efforts in future years and initiate other events.
  - Target locations of last drink for those arrested for driving under the influence (DUI).
- Continue targeted patrols and implement all-hours patrols utilizing drug recognition experts (DREs).
  - Increase the number of DUI checkpoints.
  - Increase the number of DRE patrols and increase funding for DRE patrols using programs like “Granite Hammer,” a targeted Drug Enforcement effort.
  - Increase the level of experience of officers in DUI checkpoints.
  - Increase the number of DRE trainings.
- Incorporate additional field sobriety testing, breathalyzer training, and DRE training into both the part-time and full-time police academies.
- Encourage collaboration between local and state police to proactively address the dangers of impaired driving.
- Improve the prescription drug-monitoring program (PDMP) in New Hampshire.
  - Enhance the law to make it mandatory and real-time.
  - Increase the number of drug diversion investigators.
- Increase the range of drugs for which the State Police Toxicology Laboratory tests.
- Promote programs that educate the public about the risks and consequences of impaired driving.
  - Promote motorist reporting of impaired drivers.
  - Promote the Safe Driving Pledge.
- Create a definition of “drug analog” and analog law in New Hampshire.
  - Clarify the difference between synthetic drugs and legitimate products.
  - Create an “intended for human use” clause.
- Encourage collaboration with medical, pharmaceutical, and liquor commissions to promote awareness and education about the dangers of impaired driving.
- Hold an impaired driving summit with stakeholders and coalition members.
- Add centerline and shoulder rumble strips on New Hampshire roadways, where warranted.

# DISTRACTED DRIVING

## OUR CHALLENGE

Distracted driving is any non-driving activity that a person engages in while driving that has the potential to distract him or her from the primary task of driving. The four main types of distraction are visual, manual, cognitive, and drowsiness. Texting while driving encompasses three of these distraction areas. New Hampshire law bans the use of handheld electronic devices while driving or temporarily halted in traffic; Bluetooth or other hands-free electronic devices are allowed.

In New Hampshire, fatalities due to distracted driving were on an upward trend and reached a peak of 10 percent in 2014, though preliminary reports show the rate decreased in 2015 and 2016.

In addition to prevention of distracted driving, accurate reporting is a challenge associated with this emphasis area. Currently, the crash reporting form used in New Hampshire does not clearly differentiate between types of distracted driving, and evidence shows that driver cell phone use in crashes is often underreported across the country.

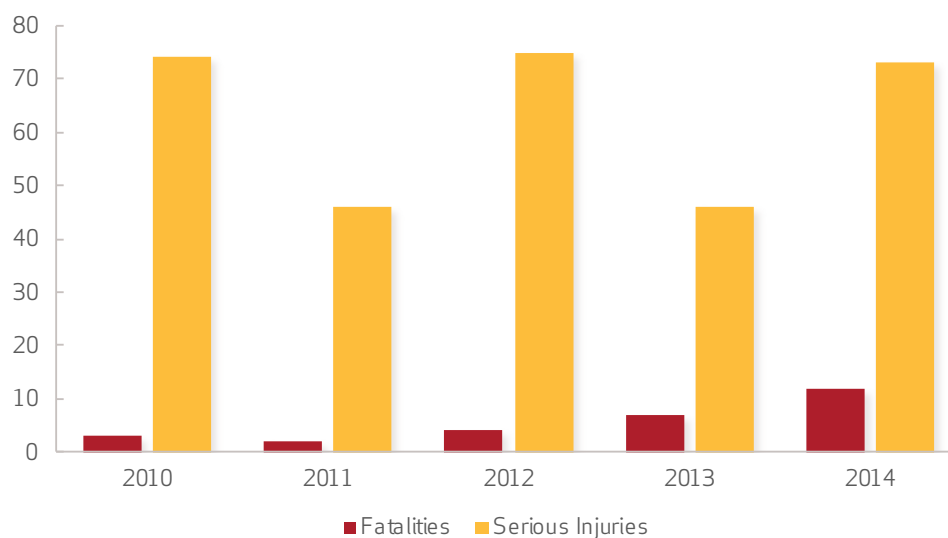




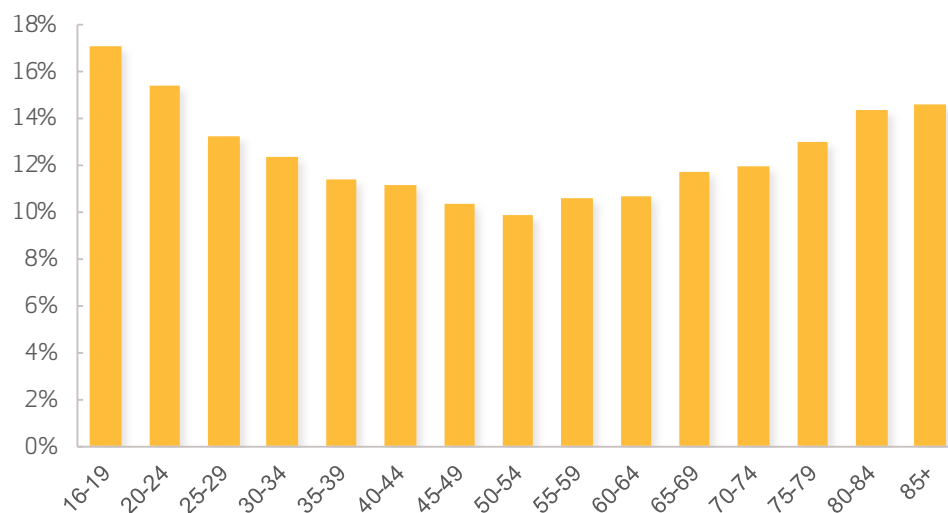
## OUR GOAL

Our goal is to raise public awareness about the dangers of driving while distracted and to eliminate the fatalities and serious injuries resulting from distracted driving crashes.

Fatalities and Serious Injuries due to Distracted Driving



Distracted Driving Crashes by Age Group as % of Total Crashes by Age Group



## OUR FOCUS STRATEGIES



### **Promote strong laws, enforcement, and education based on data analysis and available studies.**

The rate at which technology is advancing makes this a difficult challenge; however, New Hampshire took a big step toward this goal when it passed a law prohibiting the driver of a motor vehicle from using any handheld electronic device while driving or while halted in traffic. This new law, alongside proper enforcement and public outreach, should help reduce driver distraction. The Legislature should regularly monitor existing laws to ensure they continue to encompass new devices and technology to improve safety and enforcement on NH's roadways.

### **Support development and implementation of new technologies that alert drivers to hazards on the road.**

Technology drives safety improvements. Supporting systems that alert drivers to unsafe acts and conditions help them be better drivers, thereby reducing the number of distracted driving-related fatal and serious crashes. Examples of such technologies include lane departure warnings, automatic braking, and driver fatigue detection.



## OUR CONTINUING STRATEGIES

- Develop and implement a Distracted Driving Action Plan to focus drivers.
  - Consider recent studies that compare impaired and distracted driving.
  - Encourage positive driving behaviors.
  - Target more types of distraction, including:
    - Passengers; instill responsibility to be (and educate how to be) a good passenger
    - Technology in car, i.e. GPS and radio, and MP3 players
    - Eating
    - Awareness of connected vehicles and future autonomous vehicles
  - Increase the number of high schools exposed to distraction presentations.
  - Be sure to include adults in messaging.
- Encourage corporate programs addressing distracted driving.
  - Team up with national campaigns (i.e. AT&T “It Can Wait” campaign) and local campaigns.
- Support targeting periods of enforcement with local/state collaboration (e.g., morning and evening commute times).
  - Encourage officers to fill out crash reports with as much detail as possible for the cause of distraction.
- Encourage other state departments and local companies to develop and implement an electronic device ban or hands-free policy.
- Add centerline and shoulder rumble strips on New Hampshire roadways, where warranted.

Between July 1, 2015 to April 7, 2017 troopers stopped 10,683 drivers for use of hand-held devices.



# SPEEDING

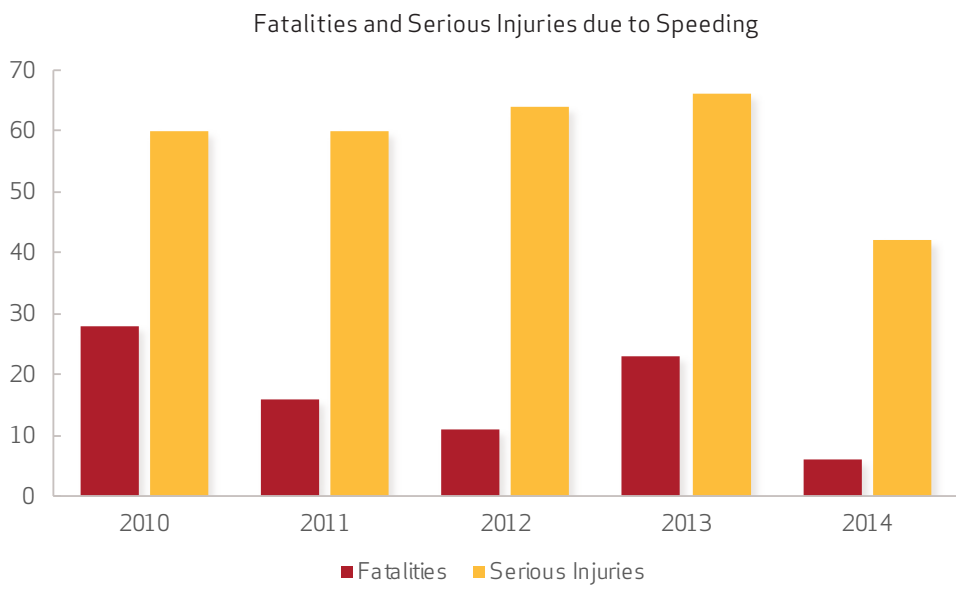
## OUR CHALLENGE

Speeding contributed to 84 fatalities and 292 serious injuries in New Hampshire from 2010 through 2014. Of those fatalities, 63 percent were due to crashes occurring on a curve in the roadway, and 73 percent were due to crashes with a fixed object.



# OUR GOAL

Our goal is to eliminate speeding on New Hampshire roadways and the fatalities and serious injuries that occur as a result of crashes caused by speeding.



## OUR FOCUS STRATEGIES



### **Educate the public as to the dangers and consequences of speeding.**

It takes nearly three times the distance to stop a vehicle traveling 60 mph versus 30 mph. The probability of fatality when a vehicle traveling 20 mph strikes a pedestrian is 5 percent; at 40 mph it is 85 percent. Understanding the dynamics related to the control of a speeding vehicle can help drivers make educated choices.

### **Provide for law enforcement operations in the design, construction, and maintenance of roadways.**

For the safety of the public and to aid law enforcement, highway design should accommodate pullouts and turnarounds so officers may safely monitor roadways and pursue and apprehend offenders.





## OUR **CONTINUING** STRATEGIES

- Encourage reasonable and credible speed limits
  - Support the NHTSA Local Speed Workshops for communities.
  - Educate the public why speed limits are set
  - Encourage implementation of traffic calming measures at community gateways and highway segments through Complete Streets concepts
  - Install dynamic feedback speed limit signs where warranted, with approval through the Bureau of Traffic
- Educate the public on the risks and consequences of speeding.
- Identify and deploy targeted enforcement in known speeding corridors.
  - Continue using data to deploy resources
  - Continue use of variable message boards
  - Continue use of Winter Weather Messaging and reduced speed limits based on conditions.
- Add curve warning signs on New Hampshire roadways per the Manual on Uniform Traffic Control Devices (MUTCD).

# VEHICLE OCCUPANT PROTECTION

## OUR CHALLENGE

Buckling one's seat belt is the single, most effective action to protect a person from serious injury or death in a roadway crash. Research has found that seat belts reduce the risk of fatal injury to front seat occupants by 45 percent and the risk of moderate-to-critical injury by 50 percent in passenger cars. For light truck occupants, safety belts reduce the risk of fatal injury by 60 percent and moderate-to-critical injury by 65 percent.

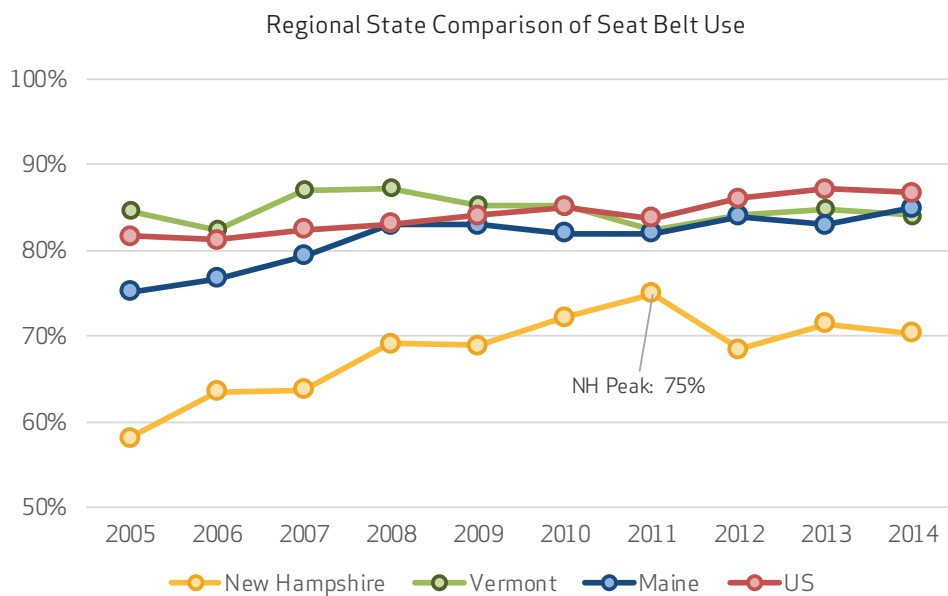
Seat belt use by New Hampshire residents reached a peak of 75 percent in 2011 but has hovered around 70 percent since then. In 2013, New Hampshire reported 62 percent of persons fatally injured in passenger vehicle crashes were not using seat belts.

New Hampshire is the only state that does not have a seat belt law for adults. This fact affects more than the individual user. Research shows that passenger restraint use for children is higher when the driver is also belted. In addition, the current law also hinders law enforcement in identifying violators of the existing primary seat belt laws for those under age 18.



## OUR GOAL

Our goal is to increase the use and effectiveness of vehicle occupant protection to 100 percent.



## OUR FOCUS STRATEGIES



### **Support the adoption and the enforcement of a primary seat belt law.**

With a primary seat belt law, New Hampshire could save an estimated 25 lives per year, 82 serious injuries, and \$158 million in related costs. In 2013, 91 people died in motor vehicle crashes while riding in cars and light trucks. Of these people, 62 percent were not wearing seat belts.

### **Amend the existing primary seat belt law to include proper restraints for children ages eight years and younger.**

Safety belt and child restraint laws in New Hampshire require all occupants under age 18 to use a seat or safety belt. In March 2011, the National Highway Traffic and Safety Administration recommended that all children through age 12 should ride in the back seat of a vehicle.

In 2014, New Hampshire added its own law stipulating that children under 7 years old or 57 inches tall (whichever is reached first) must ride in a car seat or booster. Young children up to two years of age should be in a rear-facing safety seat, or until their height or weight reaches limits set by the seat's manufacturer. Children ages two through six should be in a forward-facing car seat with a harness, until they have outgrown the weight and height limits set by the seat manufacturer, at which time they should switch to a booster seat. Between ages 7 and 12, children should remain in booster seats until they are big enough to have a seat belt fit properly.



## OUR **CONTINUING** STRATEGIES

- Work closely with New Hampshire's Teen Driving Program to increase teen seat belt usage rates through education campaigns.
- Partner with corporate stakeholders and other available education resources to promote increased occupant protection.
- Provide child restraint educational programs and information to parents, guardians, caregivers and medical personnel, e.g. the New Hampshire Pediatric Society.
- Educate and assist law enforcement personnel in their efforts to enforce New Hampshire's child restraint law.
- Educate and inform the public about occupant protection initiatives and increase seat belt usage through education campaigns.
- Seek opportunities to pursue a primary seat belt law for New Hampshire.
- Support efforts to update the child passenger occupant protection law to the best practices.



# TEEN TRAFFIC SAFETY

## OUR CHALLENGE

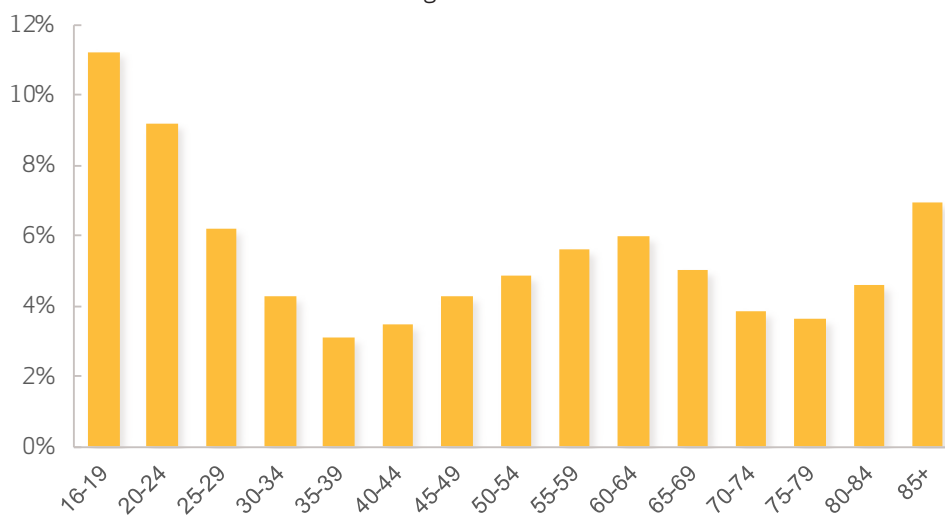
Drivers younger than 20 have the highest crash rate of all age groups, and drivers in the 20-24 age group have the second highest crash rate. Distracted driving is the most common cause of crashes among teen drivers; of crashes involving a driver under 20 between 2010 and 2014, 24 percent were due to distracted driving. This is approximately equal to the sum of all other known common causes of crashes with drivers under 20.



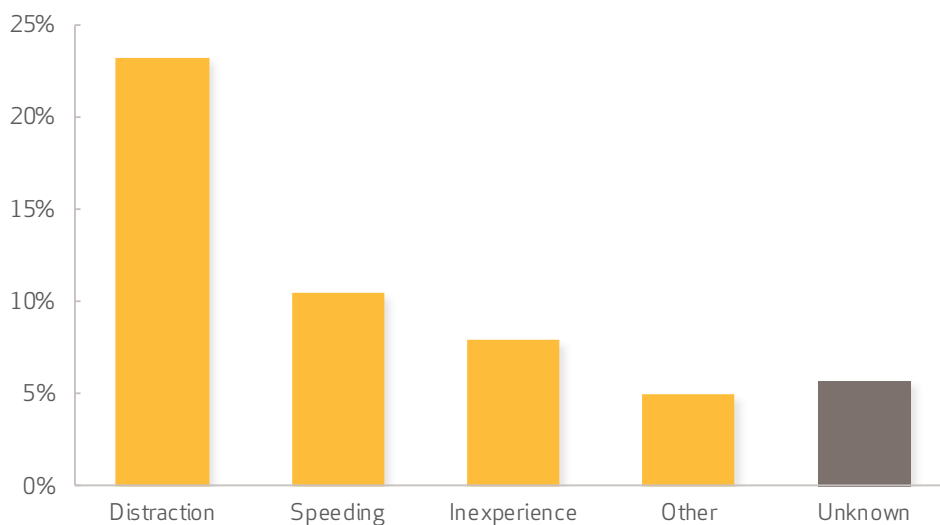
## OUR GOAL

Our goal is to reduce teen driving crashes and resulting fatalities and serious injuries to zero.

% of Licensed Drivers Involved in Crashes by Age Group, Average of 2010-2014



Most Common Contributing Factors of Crashes Involving Drivers Under 20, Average of 2010-2014



## OUR FOCUS STRATEGIES



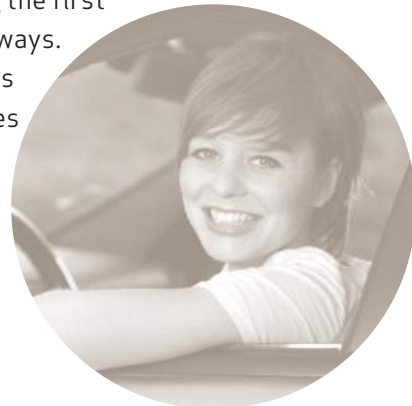
### **Strengthen graduated licensing laws.**

Graduated driver licensing systems have proven to be effective in reducing the number of crashes and fatalities. A graduated driver's license involves three stages for licensing adolescent drivers: permitting (about six months and 30 to 50 hours of supervised driving), intermediate licensing (until age 18, nighttime and passenger restrictions), and full licensing (no restrictions or provisions). In New Hampshire, there is no permitting phase, but New Hampshire does have a youth operator license for drivers between the ages of 16 and 20. This license restricts nighttime driving (between 1:00 a.m. and 4:00 a.m.) for those under age 18 and limits the number of passengers a teen driver may have in his or her vehicle for the first six months of licensure.

### **Increase community and parental involvement encouraging safe teen driving practices.**

Parents are a strong influence and example for adolescents. Research has shown that adolescents drive in ways similar to those of their parents. Parents also remain the primary people responsible for preparing their adolescents for independent driving. The research is also clear that risky driving, traffic violations, and crashes are lower among adolescents whose parents apply restrictions and set expectations, such as consistent seat belt use.

Quality drivers education in high schools is among the first line of defense for safety on New Hampshire highways. It is the goal of drivers education to teach the rules of the road, proper driving skills, and safe practices to help students form good habits for a lifetime of safe driving.





## OUR CONTINUING STRATEGIES

- Target educational outreach to novice drivers, ages 16 and 17.
  - Continue educational outreach to high schools.
  - Focus at a community level to change the culture in targeted communities.
  - Promote and encourage funding opportunities through state, local, and private entities for drivers education classes to allow greater access for all students.
- Increase parental involvement in graduated driver licensing and training.
  - Maintain a web-based parent toolbox for educational information and other links to resources.
  - Increase the outreach to middle schools to implement an age-appropriate safety curriculum, which would include vehicular passenger, pedestrian, and bicycle safety.
- Increase awareness of the risks and consequences of unsafe driving behaviors.
  - Increase the availability of monitoring technologies and driving simulators
- Strengthen Graduated Drivers' License Laws (GDL).
  - Develop mechanisms for distributing information about GDL.
  - Support the addition of a permit system to the process of becoming a licensed New Hampshire driver.
- Reiterate occupant protection group's strategy, i.e. primary seat belt law.
  - Develop mechanisms for distributing information about a future seat belt law
  - Support increased funding/grants focused on enforcing seat belt usage

According to the NH Highway Safety Agency's 2010 Observational Seat Belt Survey, only 50 percent of all teen drivers wear seat belts.

# OLDER DRIVERS

## OUR CHALLENGE

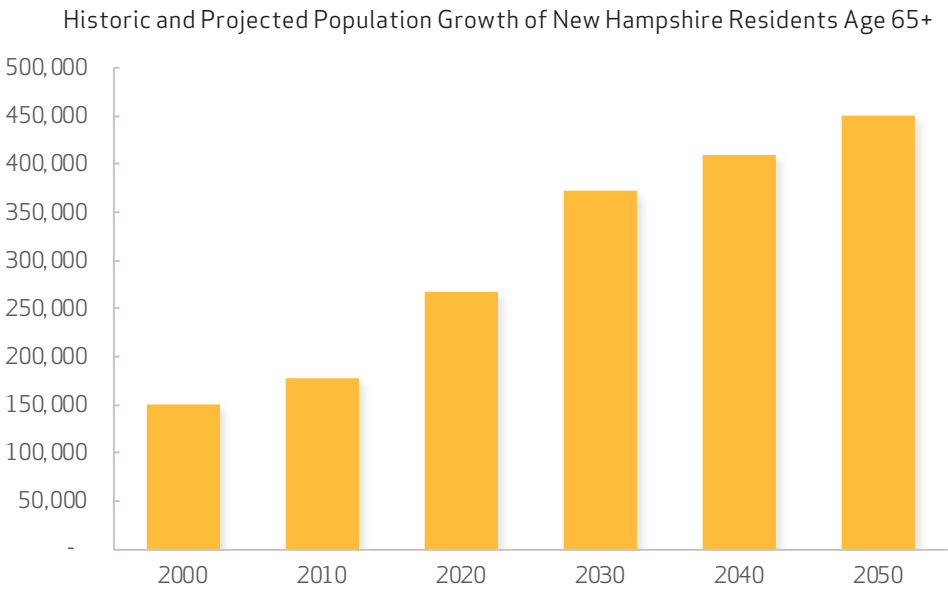
As of the 2010 census, the age group of people 65 and older was increasing faster than the total population of the United States and represented 13 percent of the total population. Increasing age is associated with a decline in many functional abilities identified as important for driving, including vision, reaction time, and the ability to divide attention between tasks. In addition, older drivers have an increased likelihood of chronic medical conditions and use of prescribed medications for treatment of these conditions, which can adversely affect driving fitness.

Nationally, people age 70 and older tend to drive fewer miles and have a higher seat belt usage rate than younger drivers. However, because older drivers are more susceptible to injuries, fatal crash rates per mile traveled increase for drivers age 70 and older. After age 80, the increase is even greater.

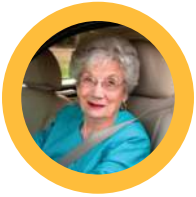


# OUR GOAL

Decisions concerning drivers' abilities should be made case by case, not strictly based on age. Our goal is to reduce the number of crashes involving older drivers and the resulting serious injuries and fatalities to zero.



## OUR FOCUS STRATEGIES



### **Formalize and convene a State Older Driver Task Force.**

This task force will work to bring together “older driver” professionals. It will include reactivating the New Hampshire Medical Advisory Board to review screening tools and promote physician-driven recommendations.





## OUR CONTINUING STRATEGIES

- Reactivate the New Hampshire Medical Advisory Board, establish funding, and promote legal immunity for healthcare providers.
  - Develop frame work for this board so their scope is clear
    - Review national best practice guidelines for medical advisory boards (assuring that policy addresses all ages)
- Develop an on-line system for reporting medically-at-risk drivers for healthcare providers.
- Educate healthcare providers on the new immunity laws.
  - Increase focus on the cognitive issues.
- Develop and disseminate education materials, programs, and tools that explain how the aging process may affect safe driving.
- Promote awareness of the impact of prescription and non-prescription medications and supplements on the safety of aging road users.
- Promote implementation of multi-modal guidance for older road users.
- Provide training for highway design and maintenance staff on Older Driver issues and establish standardized engineering practices.
  - Identify members for the State Older Driver Task Force and convene a meeting.
- Select screening tools used in licensing and develop training and guidelines for Division of Motor Vehicle staff and law enforcement to observe potential medical impairments that can affect driving ability.
- Promote self-assessment and resources on partner websites.
- Expand public and demand response transportation alternatives, which would reduce the number of seniors as drivers on roadways.

## CRASH LOCATIONS

### OUR CHALLENGE

There are three critical crash location types on New Hampshire roadways: intersections, drivers inadvertently departing from travel lanes, and work zones. In New Hampshire, 11 percent of fatalities and 23 percent of serious injuries occur at intersections.

Lane departure crashes include drivers running off the road and those drifting out of their lanes. These crashes are prevalent on a variety of roads, including curved, two-lane roads in rural areas, and they often have contributing factors, including speed, distracted driving, and impaired driving.

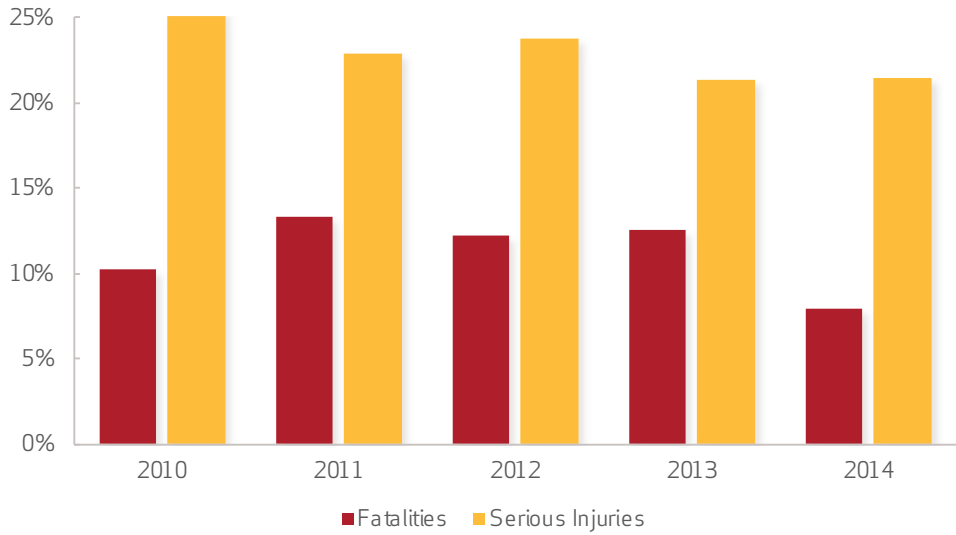
**High risk rural roads** are of particular concern in New Hampshire. On such roads, NHDOT has constructed projects such as improving the curve warning signs and intersection signs to meet federal requirements. A full definition of high risk rural roads can be found on page 66 in the appendix.



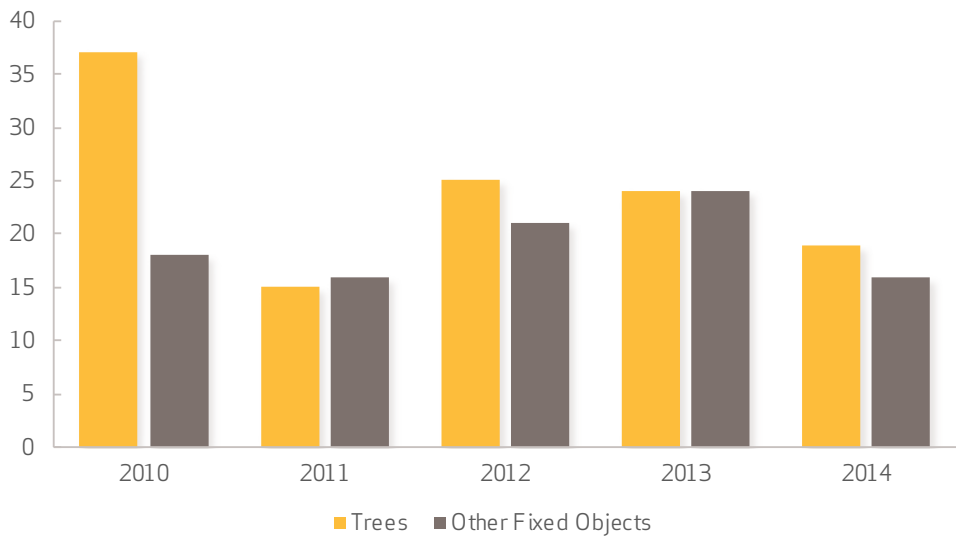
# OUR GOAL

Our goal is to reduce roadway crashes resulting in fatalities and serious injuries by 50 percent by 2030. While the strategies selected here will reduce specific crash types by more than 30 percent, innovations, new technologies, and the creation of a safety culture are projected to also assist in achieving our goal.

% of Fatalities and Serious Injuries Involving Intersections



Fatalities due to Crashes with Fixed Objects



## OUR FOCUS STRATEGIES



### **Improve driver awareness of intersections, intersection visibility, and sight distance.**

Driver awareness at intersections refers to the advance notice of upcoming intersections and existing signing and signals. Recognizing the approach to an intersection prepares the driver for changing traffic patterns and conflicting movements. Clearing vegetation and removing roadside objects and other obstructions at intersection approaches improves intersection sight distance by improving sight triangles. Providing adequate intersection sight distance is a critical safety consideration for all users.

### **Install and maintain centerline and shoulder rumble strips where possible.**

Rumble strips are grooves in the roadway surface that provide an auditory and tactile alert to drivers when they inadvertently leave their lanes. Rumble strips are appropriate in rural areas where the roadway pavement is in satisfactory condition to support their installation, and where lane and shoulder widths are sufficient. Rumble strips' auditory response makes them unacceptable in some locations.

### **Evaluate, standardize, and install delineation, signing, and pavement markings on curves.**

New Hampshire has a higher than expected percentage of fatal crashes on horizontal curves. The state has implemented a system-wide signing improvement program, with improvements based on standards and guidance contained in The Manual of Uniform Traffic Control Devices (MUTCD).





## OUR CONTINUING STRATEGIES

### SHARED STRATEGIES:

- Implement and instruct users on the application of the American Association of State Highway and Transportation Officials' (AASHTO's) Highway Safety Manual, AASHTO Bike and Pedestrian standards, and the National Association of City Transportation Officials (NACTO) Urban Street Design Guide
- Develop and implement guidance for a Comprehensive Corridor and targeted Special Events Safety program.
- Promote the Road Safety Audit program and the use of New Hampshire Highway Safety Improvement Program (HSIP) manual, guidance, and benefit/cost analysis.

### FOR REDUCING INTERSECTION CRASHES:

- Transverse rumble strips
- Flashing beacons
- Traffic signals
- Pedestrian warning systems
- Roundabouts
- High friction pavements
- Offset turn lanes
- Flashing yellow arrows or left turn signals
- Continue implementation of Statewide Intersection Safety Improvement Plan.
- Consider access management near intersections.
- Address wrong-way drivers
- Update railroad crossings to current standards

### FOR REDUCING LANE DEPARTURE CRASHES:

- Shoulder and centerline rumble strips and stripes
- Pavement markings
- Curve warning signs and devices
- Median protection
- Guardrails and terminal units
- High friction pavements
- Remove, relocate or shield road users from hazardous fixed objects.
- Pavement preservation and safety review process
- Pavement edge drop off prevention and recovery guidance.
- Lighting where appropriate

### FOR REDUCING WORK ZONE CRASHES:

- Temporary transverse rumble strips
- Proper sign package per MUTCD
- Variable speed limit trailer unit
- Proper lane tapers for lane closures or lane shifts
- Promote safety training efforts / programs for Work Zone personnel and Traffic Incident Management (TIM) responders.
- Truck trailer mounted attenuators

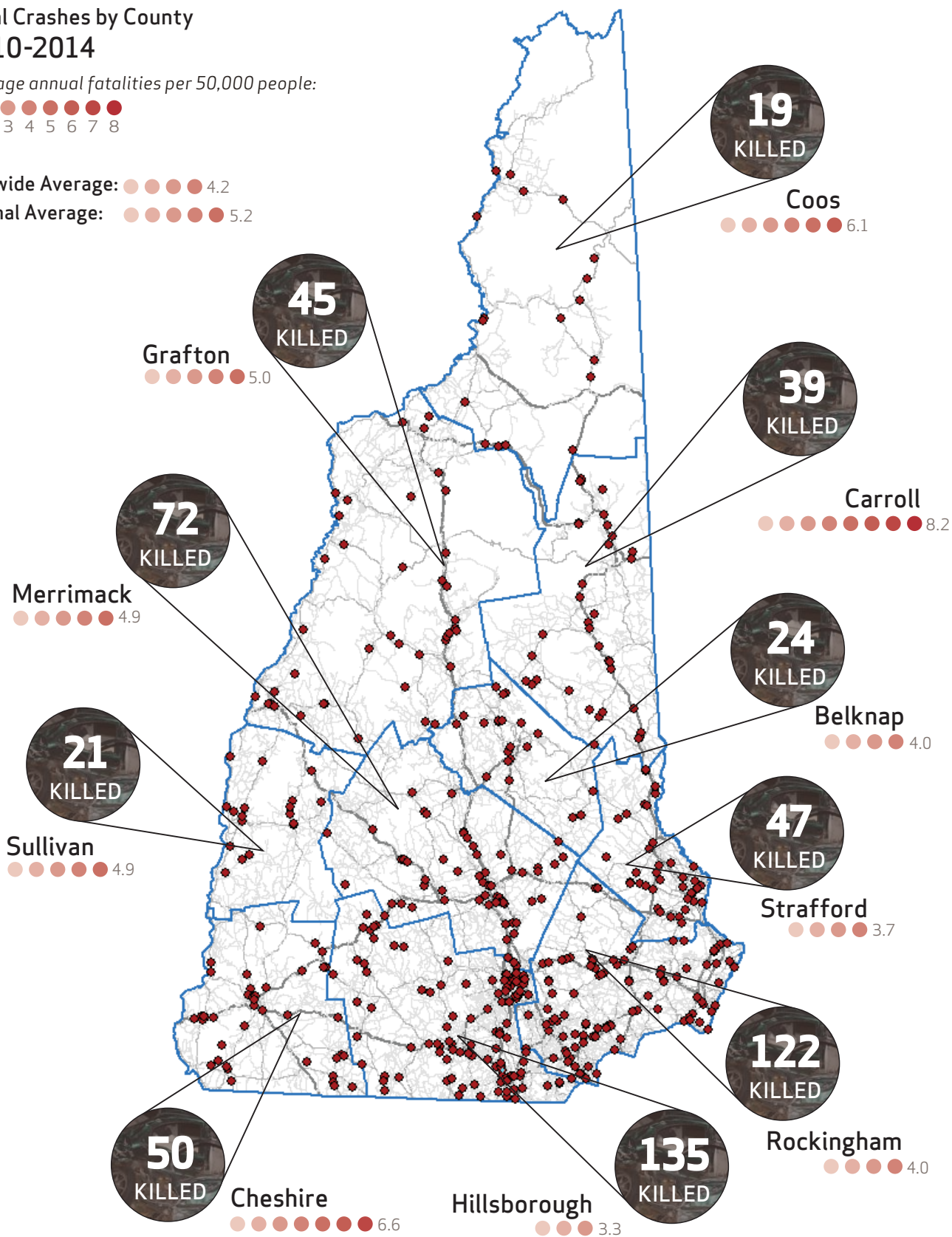
## Fatal Crashes by County 2010-2014

Average annual fatalities per 50,000 people:




Statewide Average: 4.2

National Average: 5.2







“Local fire and police agencies were instrumental in the installation of rumble strips along State Routes 202 and 9, resulting in a noticeable decline in roadway crashes along these routes. This is a perfect example of the success that collaborative efforts yield.”

**Jeff Brillhart**  
Former Assistant Commissioner, NHDOT

“I have been on the Hopkinton Fire Department for 32 years, the last 12 as chief. The department has seen a dramatic decrease in motor vehicle crashes over the last few years, and I believe this is due largely to the addition of rumble strips and dedicated left and right turning lanes on State Routes 202 and 9, and Interstate 89. Keep up the great work making our highways safe and protecting our first responders.”

**Rick Schaefer**  
Hopkinton Fire Department (1980-2012)  
Fire Chief (2000-2012)



## VULNERABLE ROADWAY USERS

### OUR CHALLENGE

Vulnerable road users include both motorized users, such as motorcyclists, and nonmotorized users, such as pedestrians and bicyclists.

New Hampshire has the second highest number of motorcycles per capita in the United States. Between 2010 and 2014, there were 116 motorcycle fatalities, and 66 percent of these motorcyclists were not wearing helmets.

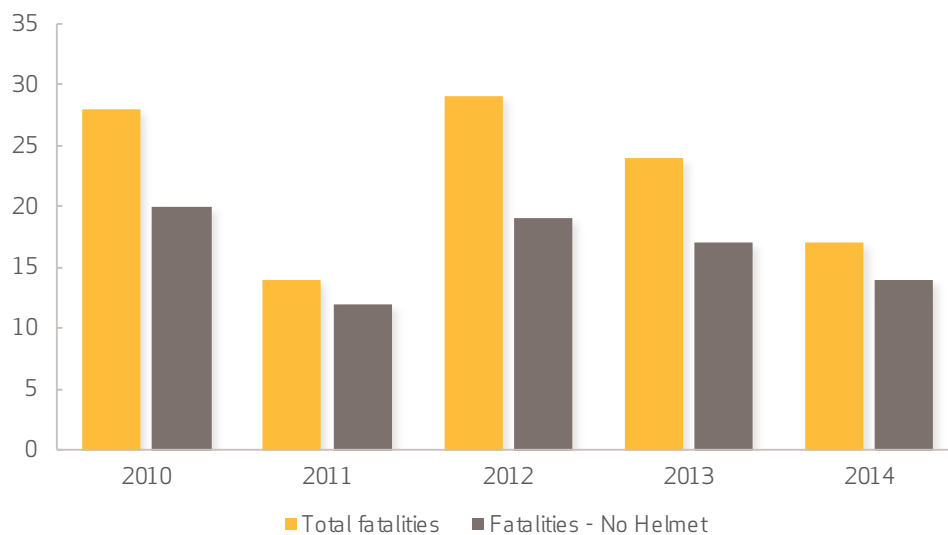
Between 2010 and 2014, 11 bicyclists and 46 pedestrians were killed on New Hampshire roadways.



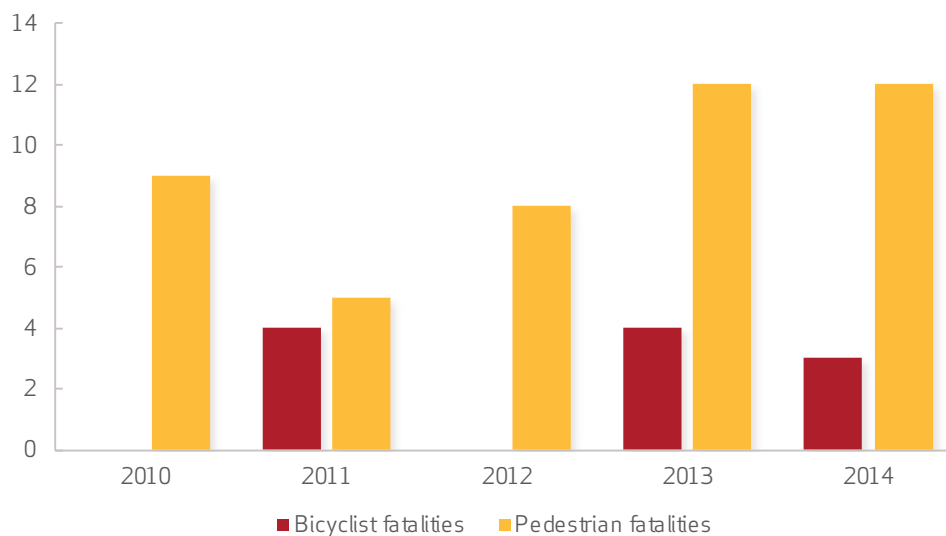
## OUR GOAL

Our goal is to reduce crashes involving motorcyclists, pedestrians, and bicyclists and to improve crash data collection, while improving education, training, and public awareness of vulnerable road users, leading to the elimination of fatalities and serious injuries for this group.

Motorcycle Fatalities and Helmet Use



Pedestrian and Bicyclist Fatalities





## OUR FOCUS STRATEGIES



### **Raise awareness for, and increase enrollment in, motorcycle training courses.**

Continue marketing and holding the motorcycle rider training courses. Currently, the Motorcycle Rider Training Program trains approximately 3,000 students of all skill levels each year and offers training at nine different training sites throughout the State. Currently, the Division of Motor Vehicles runs courses that apply to motorcyclists of all experience levels: Basic Rider, Intermediate Rider, and Experienced Rider.

### **Target enforcement at events where alcohol and motorcycles mix.**

In 2016, 22% of all motorcycle fatalities involved impairment. In all of these cases, the driver was speeding. These fatalities could have been prevented if different driver choices were made.



## OUR CONTINUING STRATEGIES

- Consider vulnerable road users in the design, construction, and maintenance of roadway infrastructure
  - Recommend the use of the Complete Streets concepts in Designs
- Encourage passing a Vulnerable Roadway User Law.
- Education and Awareness of motorcycles, bicycles and pedestrians
  - Create a pamphlet of what has changed in laws over the last 20 +/- years to be given to drivers when they renew license
  - Develop Public service announcements
  - Target marketing and education to Motorcyclists' ages from 45 to 65 years old, including rules of the road, impairment issues and distraction
  - Education should focus on raising awareness of existing laws
    - 3 foot rule
    - Helmets for those under 16 on bicycles
    - Links to other websites (DMV and Bike Walk Alliance)
  - Increase press, social media and public interactions with "The Rev"
- Identify and implement best practices for improving pedestrian and bicycle safety.
- Support vehicular cycling classes for 14 to 15 year olds.
- Encourage transit agencies to place bus stops in locations that can be safely accessed, and seek funding as needed to improve the safety of roadway crossings with lighting, flashing beacons, and HAWK beacons.
- Increase funding for pedestrian safety infrastructure and non-infrastructure projects.
- Improve collection, use, and analysis of data needed for pedestrian safety planning and programming.
- Increase pedestrian safety-focused coordination among state, regional, and local agencies, including transportation planning and land use efforts.
- Improve roadway and bikeway planning, design, operations, and connectivity to enhance bicycling safety and mobility to all destinations.
- Encourage more bicycle travel by improving public attitudes about bicycling as a safe mode of transportation.
- Provide education to support a Universal motorcycle helmet law
  - Increase motorcycle helmet use thru education
  - Explore the effectiveness of a Helmet law Nationally
- Encourage use of FHWA guidance: *Leading Practices for Motorcyclist Safety* (2011)
- Increase press, social media, and public interactions with "the Rev", NH DOS's motorcycle driving simulator

# COMPREHENSIVE DATA IMPROVEMENT

## OUR CHALLENGE

Improve the data and information systems that support the Strategic Highway Safety Plan. Today's safety information systems are managed through various methods, ranging from labor-intensive legacy systems to advanced automated electronic systems for data collection, processing, and reporting. Our challenges include evaluating and determining the most efficient and effective method for each information system to collect, process, and distribute data. In addition, we must assess and allocate the required resources that will sustain and manage these information systems.



## OUR **GOAL**

Make the data accurate, reliable, accessible, and linkable. Improve data collection and information systems by leveraging new technologies to provide increased functionality to expedite capture, exchange, storage, and reporting.



## OUR FOCUS STRATEGIES



### **Continue to implement and use the Crash Records Management System (CRMS).**

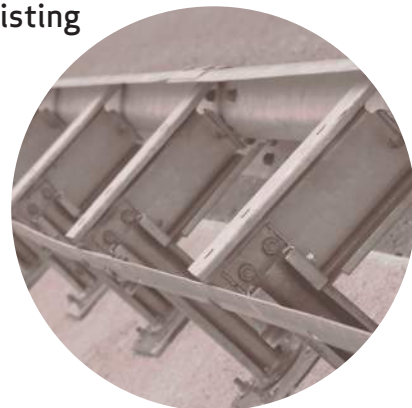
The CRMS project is a collaboration of efforts among federal, state, local, and private agencies to expedite crash data capture, exchange, storage, and reporting. The objective is to ensure efficient, timely, consistent, and streamlined capturing of crash data to allow sharing of the information among all concerned parties for effective analysis and reporting. This project was implemented in 2013 for State Police; local police departments are in the process of migrating to the CRMS.

### **Improve state and local roadway inventory data through the adoption of Federal Highway's Model Inventory Roadway Elements (MIRE).**

Safety data sets are a key element to sound decisions on the design and operation of roadways. The MIRE is a recommended list of roadway inventory and traffic elements critical to safety management. It provides a structure for data elements by using common, consistent definitions and attributes, which are essential for making sense of aggregated data.

### **Conduct an evaluation of the state of current data systems and needs. In coordination with other emphasis area subcommittees, identify gaps between existing performance and desired performance.**

Data systems transform data into decision-making knowledge. Accurate, complete, and reliable data are essential to making sound decisions.





## OUR CONTINUING STRATEGIES

- Catalog all existing safety data systems and datasets.
  - Identify and list champions / contacts for each data system.
  - Identify gaps in existing data systems and needs for additional datasets.
- Identify performance measures, set targets, and track performance.
  - Conduct a Crash Data Improvement Program (CDIP) review and implement resulting recommendations.
- Re-establish the CODES (Crash Outcome Data Evaluation Systems) to identify prevention factors by linking crash, vehicle, and behavior characteristics to their specific medical and financial outcomes.
  - Use CODES to update crash cost data for HSIP and other analysis.
  - Use CODES to establish MAIS injury severity for crash records.
- Support the development and implementation of classroom or virtual training for police officers to improve crash data collection
  - Understanding of why accurate reporting is important to reducing crashes
  - Proper reporting of injury severity and crash location
  - Using CRMS
- Make crash data more accessible
  - Investigate needs and uses for crash data by SHSP stakeholders, RPCs, MPOs, municipalities, and law enforcement.
  - Identify means to make crash data more accessible using interactive web mapping viewers
- Develop Strategic Plan for Data Improvements and Analysis Tools
  - Identify and prioritize data and analysis needs
  - Identify analysis tools for the data systems
  - Plan, prioritize, and identify resources to implement Strategic Plan

# EDUCATION AND PUBLIC OUTREACH

## OUR CHALLENGE

Modify driver behavior by changing the driving culture.

Reduce the top four causes of fatalities and serious injuries on NH roadways: impairment, distraction, speeding, and occupant protection. These decisions are among the reasons human error is a factor in 94% of crashes.



## OUR GOAL

Educate the public on the dangers and consequences of impaired driving, distracted driving, and speeding and on the importance of being properly restrained at all times when in a vehicle.



## OUR FOCUS STRATEGIES



### **Support law enforcement efforts through using media stories to promote safe driving behaviors.**

Like technology, how we receive news stories is ever changing. The use of social media as well as traditional news outlets are good sources to educate the public on trends and facts to influence driving behaviors.

### **Coalition members share knowledge and data to promote safe driving behaviors.**

Monthly or quarterly meetings between agencies are good opportunities to exchange knowledge, data, and solutions. Targeting issues through the Traffic Records Coordinating Committee benefits more than one agency. Sharing data has also led to collaboration on radio advertisements that target seasonal driving behaviors.

### **Promote Safe Driving behaviors at public events.**

Fairs and conferences are targeted for the NH Driving Toward Zero Booth. At the booth, staff can hand out material to influence driver behavior. Printed brochures for parents of teen drivers, the safe driving pledge, and flyers for the hands-free law all have been created for distribution.

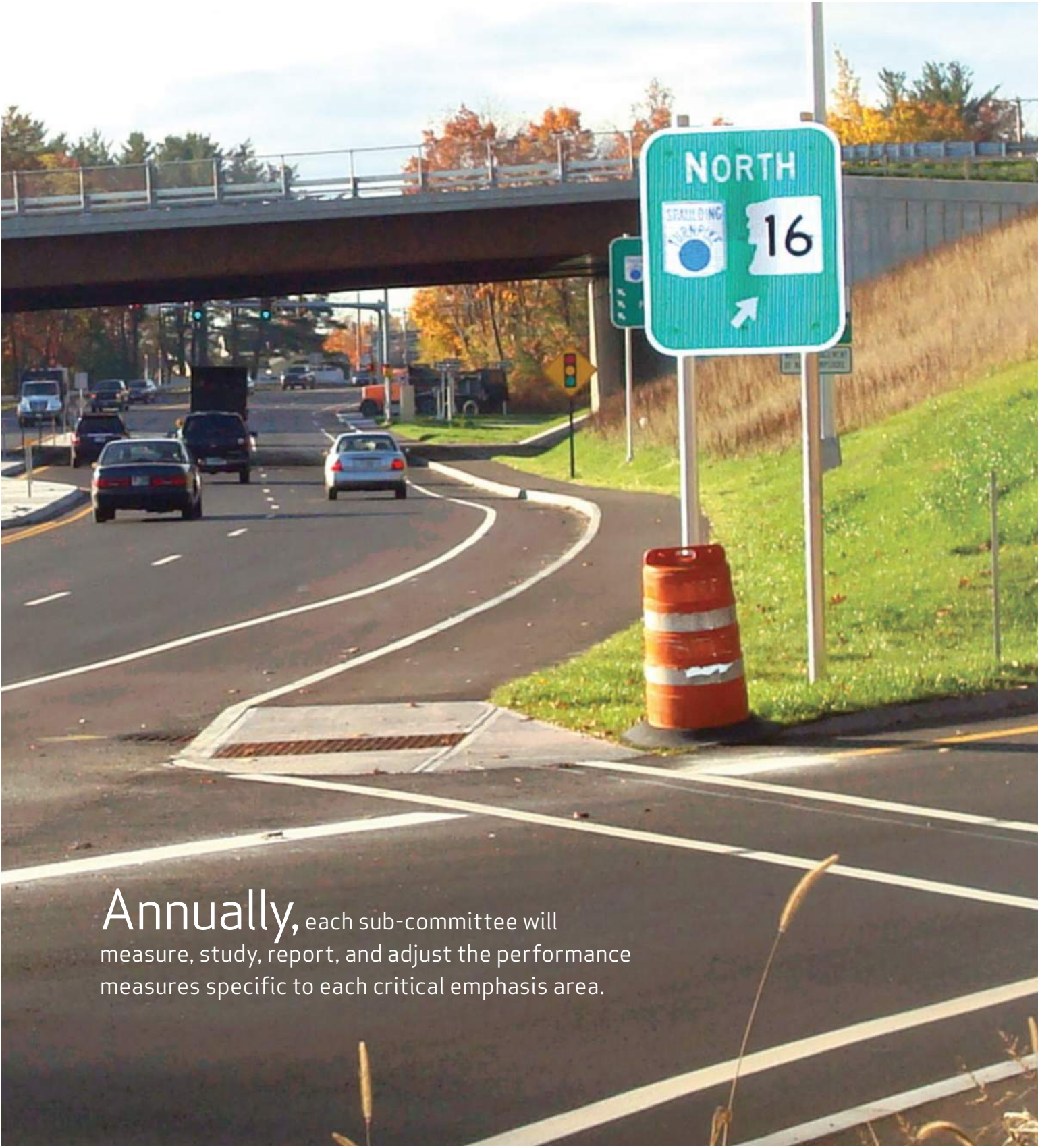
### **Engage teen drivers to challenge their parents to engage in safe driving behaviors.**

Often at the NH Driving Toward Zero Booth, teens state that they are a safe driver but their parents are not. Coalition members are challenging teen drivers to engage their parents with discussions on safe driving behaviors to help change the safety culture in New Hampshire. In addition, the NH Driving Toward Zero Booth attends high school career days to reinforce the safe driving habits and distribute brochures.

## OUR CONTINUING STRATEGIES

- Modify driver behavior through cultural change.
  - Educate drivers on the reality that driving is the most dangerous activity that the average person does.
    - Identify causes of crashes associated with behavior behind the wheel.
    - Change perception of activity behind the wheel through real-world, peer-to-peer storytelling and sharing to invoke emotional responses.
  - Educate people on the importance of being properly restrained should a crash occur because of someone driving impaired, distracted or speeding.
    - Reward, praise, and positively reinforce those who practice safe driving.
- Use the various public outreach venues to raise awareness of Highway Safety Initiatives and NHTSA Safety Weeks.
  - Use newspaper stories, free and paid advertisement.
  - Use locally created and other public service announcements (PSA's) for television, radio and social media.
  - Speak on talk radio shows such as New Hampshire Public Radio (NHPR) Exchange.
- Expand public outreach.
  - Within high schools through the teen driver program
  - Place posters and flyers in lobby of local police departments, state office buildings, and other municipal buildings.
  - Place information on related web sites, including those of the Division of Motor Vehicles (DMV), defensive driving and driver education programs, local and state police, NH Bureau of Tourism, NH Brain Injury Association, and Children's Hospital at Dartmouth.
- Raise public awareness through marketing initiatives.
  - Brand development
  - Print, broadcast, experiential, environmental, online, and digital advertising campaigns
  - Marketing collateral and public relations initiatives
  - Website development and social media tools
  - Outreach at safety and community meetings, as well as at safety summits
  - NHTSA designated safety weeks





Annually, each sub-committee will measure, study, report, and adjust the performance measures specific to each critical emphasis area.

## PERFORMANCE MEASURES

The following performance measures are tools to monitor the progress and success of the Strategic Highway Safety Plan. By utilizing the leading indicators as key performance measures, the New Hampshire Driving Toward Zero Coalition is targeting outcomes that have proven most successful in reducing the number of roadway crashes that result in serious injuries and fatalities.

### Leading Indicators

- Increase in the percentage of occupant seat belt use
- Increase in the percentage of motorcycle helmet use
- Model performance measures for state traffic records systems
- Increase in the number of electronically submitted crash reports
- Increase in the number of curves receiving safety enhancements
- Increase the number of miles of median protection
- Increase the number of state and local police utilizing E-Ticketing system
- Enhance existing safety laws (Graduated Drivers License, impaired driving, child restraints, hands free law)
- Increase the number of Road Safety Audits with implemented counter measures
- Increase the number of DUI checkpoints and DRE patrols, including enforcement of the hands free law

The lagging indicators presented below are a broader measure for the overall performance of the SHSP. Hence, the successful implementation of the leading indicators (cause) should positively impact the success of the lagging indicators (effect).

### Lagging Indicators

- Number of traffic fatalities (five-year average)
- Number of serious injuries
- Number of fatalities per 100 million vehicle mile traveled
- Number of serious injuries per 100 million vehicle mile traveled
- Number of non-motorized fatalities
- Number of non-motorized serious injuries
- Number of unrestrained vehicle occupant fatalities
- Number of fatalities in crashes involving an impaired driver
- Number of fatalities in crashes involving distracted drivers
- Number of speeding-related fatalities
- Number of un-helmeted motorcyclist fatalities
- Number of drivers 20 years old or younger involved in fatal crashes
- Number of drivers 65 years old or older involved in fatal crashes
- Location of the last drink for those arrested for DUI





# PERFORMANCE MEASURES

## IMPLEMENTATION

A significant challenge for the implementation and success of this plan is to ensure both public and private stakeholders remain engaged in the process and continue to champion the programs, projects, and initiatives outlined in the Strategic Highway Safety Plan. The State of New Hampshire is committed to implementing the SHSP by mobilizing agency resources to support the initiatives outlined in this plan through all available channels of community outreach.

## EVALUATION

The Strategic Highway Safety Plan will be evaluated annually to review all critical emphasis areas, strategies, and performance measures. During this review, each sub-committee will develop actionable steps for the following year and will make this report available to the general public. The purpose of this review will be to analyze the preceding year's data, re-evaluate performance measures, and ensure established benchmarks are met. The SHSP will undergo a complete review and revision every five years.

### Evaluation Focus Areas:

- Assess progress in each Critical Emphasis Area Action Plan.
- Assess progress made by stakeholders and level of collaboration among stakeholders, and ensure minimal overlap of efforts.
- Assess progress of aligning with mission, vision and goals of SHSP.
- Assess appropriate use of available funding.
- Assess integration with other plans.







## CONCLUSION

### Saving lives.

It is a simple concept and what the Strategic Highway Safety Plan is all about. The strong leadership and collaboration that have ensured the successful development of this plan will continue as each stakeholder takes responsibility for extending the reach of the plan and the strategies contained within it, until every person using New Hampshire roadways shares in the vision of Driving Toward Zero.

Remember, it is the only goal we all can live with.





# APPENDIX

## DEFINITIONS

### ○ High Risk Rural Roads

The New Hampshire Driving Toward Zero Coalition defines the term “High Risk Rural Road” to mean any roadway functionally classified as a rural major or minor collector or rural local road (New Hampshire functional class 7, 8 and 9 - also known as Function System Tier 4 & 5) on which:

1. The expected crash frequency for fatalities and injuries exceeds the predicted crash frequency for similar roadways, as calculated using Safety Performance Functions, including logical extensions and gaps of these identified roadway segments,
2. Roadways segments and intersections otherwise identified and approved for Road Safety Audits (RSAs), as per the NHDOT HSIP Manual and associated procedures, and
3. Roadways with similar high risk attributes to those defined in number one and two above when considering systemic safety countermeasure treatments.

## LINKS

### ○ Motorcycle Basic Rider Course (New Hampshire DMV)

<https://www.nh.gov/safety/divisions/dmv/driver-licensing/motorcycle/basic.htm>

### ○ Leading Practices for Motorcyclist Safety

[http://onlinepubs.trb.org/onlinepubs/nchrp/docs/NCHRP20-68A\\_09-04.pdf](http://onlinepubs.trb.org/onlinepubs/nchrp/docs/NCHRP20-68A_09-04.pdf)

# APPENDIX

## ADDITIONAL GUIDANCE

- **Countermeasures That Work: A Highway Safety Countermeasure Guide for State Highway Safety Offices** (Governors Highway Safety Association)
- **Highway Safety Manual** (American Association of State Highway and Transportation Officials)
- **NCHRP Report 500 Series:**
  - Volume 01: A Guide for Addressing Aggressive-Driving Collisions
  - Volume 02: A Guide for Addressing Collisions Involving Unlicensed Drivers and Drivers with Suspended or Revoked Licenses
  - Volume 03: A Guide for Addressing Collisions with Trees in Hazardous Locations
  - Volume 04: A Guide for Addressing Head-On Collisions
  - Volume 05: A Guide for Addressing Un-signalized Intersection Collisions
  - Volume 06: A Guide for Addressing Run-Off-Road Collisions
  - Volume 07: A Guide for Reducing Collisions on Horizontal Curves
  - Volume 08: A Guide for Reducing Collisions Involving Utility Poles
  - Volume 09: A Guide for Reducing Collisions Involving Older Drivers
  - Volume 10: A Guide for Reducing Collisions Involving Pedestrians
  - Volume 11: A Guide for Increasing Seat Belt Use
  - Volume 12: A Guide for Reducing Collisions at Signalized Intersections
  - Volume 13: A Guide for Reducing Collisions Involving Heavy Trucks
  - Volume 14: Reducing Crashes Involving Drowsy and Distracted Drivers
  - Volume 15: A Guide for Enhancing Rural Emergency Medical Services
  - Volume 16: A Guide for Reducing Crashes Involving Alcohol
  - Volume 17: A Guide for Reducing Work Zone Collisions
  - Volume 19: A Guide for Collecting and Analyzing Safety Highway Safety Data
  - Volume 20: A Guide for Reducing Head-On Crashes on Freeways
  - Volume 21: Safety Data and Analysis in Developing Emphasis Area Plans
  - Volume 22: A Guide for Addressing Collisions Involving Motorcycles
  - Volume 23: A Guide for Reducing Speeding-Related Crashes



# APPENDIX

## REFERENCES

The New Hampshire crash statistics in this report are from the NH Department of Transportation's crash records and the NH Department of Safety's Highway Safety Annual Reports.

Other statistics in this report are from the following sources:

○ **Page 9:** *Over the past five years, traffic crashes have cost New Hampshire residents \$8.4 billion.*

**Cost of injury severities:** NH DOT Highway Safety Improvement Program Manual and Guidance

[https://www.nh.gov/dot/org/projectdevelopment/highwaydesign/hwysafetyimprovements/documents/hsip\\_nhguidance\\_122013.pdf](https://www.nh.gov/dot/org/projectdevelopment/highwaydesign/hwysafetyimprovements/documents/hsip_nhguidance_122013.pdf)

○ **Page 16:** *2015 was the first year that drug use was more prevalent than alcohol use in fatal crashes.*

Washington Post

[https://www.washingtonpost.com/local/trafficandcommuting/drugged-driving-eclipses-drunken-driving-in-tests-of-motorists-killed-in-crashes/2017/04/25/38c01b4c-291a-11e7-a616-d7c8a68c1a66\\_story.html?utm\\_term=.453f20d78e5a](https://www.washingtonpost.com/local/trafficandcommuting/drugged-driving-eclipses-drunken-driving-in-tests-of-motorists-killed-in-crashes/2017/04/25/38c01b4c-291a-11e7-a616-d7c8a68c1a66_story.html?utm_term=.453f20d78e5a)

○ **Page 16:** *In 2012, 25% of all motor vehicle fatalities in New Hampshire were drug-related.*

New Hampshire Bureau of Drug and Alcohol Services, New Hampshire for Excellence, and the New Hampshire Charitable Foundation

<https://www.dhhs.nh.gov/dcbcs/bdas/documents/issue-brief-impaired-driving.pdf>

○ **Page 16:** *The 2013-2014 National Roadside Survey of Alcohol and Drug Use by Drivers found that alcohol use while driving is more likely to occur on weekend nights, suggesting recreational use. Drug prevalence, on the other hand, was found to stay relatively constant whether during the day or night time, and whether on weekdays or weekends.*

National Highway Traffic Safety Administration

<http://www.trb.org/Main/Blurbs/172097.aspx>

○ **Page 20:** *Evidence shows that driver cell phone use in crashes is often underreported across the country.*

National Safety Council

<http://www.nsc.org/learn/NSC-Initiatives/Pages/priorities-cell-phone-crash-data.aspx>

○ **Page 28:** *Research has found that seat belts reduce the risk of fatal injury to front seat occupants by 45 percent and the risk of moderate-to-critical injury by 50 percent in passenger cars. For light truck occupants, safety belts reduce the risk of fatal injury by 60 percent and moderate-to-critical injury by 65 percent.*

National Highway Traffic Safety Administration

<https://www.nhtsa.gov/risky-driving/seat-belts>

○ **Page 29:** *Chart: Regional State Comparison of Seat Belt Use*

**Vermont, up to 2010:** National Highway Traffic Safety Administration

<http://ghsp.vermont.gov/sites/ghsp/files/documents/Analysis%20of%20Fatal%20Crash%20Data%20Vermont%202006-2010.pdf>

*References continued on next page >>*

# APPENDIX

## REFERENCES

<< *References continued from previous page*

**Maine, and Vermont, since 2007:** National Highway Traffic Safety Administration

<https://crashstats.nhtsa.dot.gov/Api/Public/ViewPublication/812149>

**Maine, up to 2007:** University of Southern Maine

<https://www1.maine.gov/dhhs/mecdc/phdata/non-dhp-pdf-doc/safety-belt-use-in-maine-2007.pdf>

○ **Page 30:** *With a primary seat belt law, New Hampshire could save an estimated 25 lives per year, 82 serious injuries, and \$158 million in related costs.*

**Cost of injury severities:** See reference for cost of injury severities for Page 9, above.

○ **Page 33:** *Chart: % of Licensed Drivers Involved in Crashes by Age Group*

Federal Highway Administration, Highway Statistics 2000

<https://www.fhwa.dot.gov/ohim/hs00/dl22.htm>

○ **Page 36:** *As of the 2010 census, the age group of people 65 and older was increasing faster than the total population of the United States and represented 13 percent of the total population.*

United States Census Bureau

[https://www.census.gov/newsroom/releases/archives/2010\\_census/cb11-cn192.html](https://www.census.gov/newsroom/releases/archives/2010_census/cb11-cn192.html)

○ **Page 36:** *...because older drivers are more susceptible to injuries, fatal crash rates increase for drivers age 70 and older per mile traveled. After age 80, the increase is even greater.*

Insurance Institute for Highway Safety - Highway Loss Data Institute

<http://www.iihs.org/iihs/sr/statusreport/article/49/1/1>

○ **Page 37:** *Chart: Projected Population Growth of New Hampshire Residents Age 65+*

2000: New Hampshire Center for Public Policy Studies

<http://www.nhhfa.org/assets/pdf/data-planning/needsassessment/2014/HousingElderV031114.pdf>

2010-2040: New Hampshire Office of Energy and Planning

<https://www.nh.gov/oep/data-center/documents/2016-state-county-projections-final-report.pdf>

2050: Assumed same growth rate as between 2030 and 2040

○ **Page 44:** National average fatality rate

Insurance Institute for Highway Safety | Highway Loss Data Institute

<http://www.iihs.org/iihs/topics/t/general-statistics/fatalityfacts/state-by-state-overview/2014>

○ **Page 46:** *New Hampshire has the second highest number of motorcycles per capita than any other state.*

Motorcycle.com

<http://blog.motorcycle.com/2014/02/18/motorcycle-news/50-states-ranked-highest-motorcycle-ownership-per-capita>

○ **Page 54:** *These decisions are among the reasons human error is a factor in 94% of crashes.*

National Highway Traffic Safety Administration

<https://crashstats.nhtsa.dot.gov/Api/Public/ViewPublication/812115>

DRIVING  
TOWARD  
**ZERO**

*One Death Is Too Many*

