

## Appendix 4: Policies, Programs, and General Practices Summary

### Policy Recommendations

The New Hampshire Department of Transportation (NHDOT) has a number of systems in place to support walking and bicycling in the New Hampshire. A handful of improvements to those systems will encourage more residents and visitors to walk or bicycle for commuting, recreation and/or daily errands. Recommendations are presented throughout this document with key highlights that include:

- Develop checklists related to pedestrian and bicycle facilities for project development
- Educate NHDOT staff about the checklists and Departmental Goals for Walking and Bicycling
- Ensure RPCs include nonmotorized needs in their project evaluation criteria
- Track annual expenditures for walking and bicycling accommodations, including when expenditures are components of larger projects
- Ensure adequate funding for pedestrian and bicycle facilities within all roadway funding sources, not just discrete grant programs such as TAP, CMAQ, and HSIP
- Ensure all NHDOT bureaus are aware of, and supportive of the statewide pedestrian and bicycle-related goals, as described in other sections of the Plan
- Develop specific measurable criteria or thresholds for walking and bicycling accommodations
- Expand data collection efforts to reflect the needs of pedestrian and bicycle planning

A number of specific policies related to the design and management of the roadway system have the potential to significantly impact pedestrian and bicyclist safety and comfort. Historically, these policies were often originally developed around the demands of motor vehicles, and adjustments to the policies may be appropriate to ensure they account for the needs of nonmotorized users as well. The following policy areas are reviewed in this section:

- Setting of speed limits
- Changes to speed limits
- Reallocation of roadway space
- Pedestrian crossing locations
- Sidewalk construction and maintenance
- Data to plan for the needs of nonmotorized users

### Setting speed limits

A significant factor in the severity of collisions involving vulnerable users is the speed motor vehicles are traveling during the crash. Low speeds, speed enforcement, and roadway context are important factors in ensuring a safe environment for bicyclists and pedestrians.

New Hampshire law requires all motorists to control their speed to a degree that they can avoid colliding with any person, motor vehicle, or piece of roadway infrastructure (RSA 265:60). This statute also has predetermined speed limits including:

“RSA 265:60 Basic Rule and Maximum Limits. —

- In a posted school zone, at a speed of 10 miles per hour below the usual posted limit from 45 minutes prior to each school opening until each school opening and from each school closing until 45 minutes after each school closing.
- 30 miles per hour in any business or urban residence district as defined in RSA 259:118;
- 35 miles per hour in any rural residence district as defined in RSA 259:93, and on any class V highway outside the compact part of any city or town as defined in RSA 229:5, IV;
- 55 miles per hour in other locations, except as provided in (e);
- 65 miles per hour on the interstate [and other highways like the turnpikes] .... where said highways are 4-lane divided highways or other divided highways of 4 or more lanes,” and “the portion of Interstate 93, from mile marker 45 to the Vermont border which shall be 70 miles per hour.” (per RSA 265:50 amendment)

While these speeds generally match what motorists are comfortable with in those environments, they are faster than speeds that pedestrians or bicyclists would generally feel comfortable traveling proximate to. Pedestrian fatality rates when hit by a vehicle traveling 30 miles per hour are four to five times higher than when they are hit by vehicles traveling 20 miles per hour.<sup>i</sup> Efforts to reduce standard speed limits are important to support safe travel by pedestrians and bicyclists. Stakeholders have reported difficulty in getting speed limits lowered from the values prescribed by the statutes described above, given the statutory guidance and the guidelines of the engineering community. **Posting a lower speed limit on its own is unlikely to meaningfully reduce travel speeds, but NHDOT can work with interested municipalities to develop roadway designs that support slower speeds when projects are evaluated in areas with high pedestrian and bicycle use.** These efforts could incorporate narrower travel lanes and visual constraints such as street trees.

### Changes to speed limits

NHDOT adheres to the current MUTCD policy in terms of setting speed limits as well as using USLIMITS2 for identifying ideal speeds. The MUTCD policy sets speeds within 5 miles per hour of 85th percentile operating speeds as the primary guideline for setting speed limits. The MUTCD policy, however, describes other factors which may be considered when setting or evaluating speed limits, including:

- “A. Road characteristics, shoulder condition, grade, alignment, and sight distance;
- B. The pace<sup>ii</sup>;
- C. Roadside development and environment;
- D. Parking practices and pedestrian activity; and
- E. Reported crash experience for at least a 12-month period.”<sup>iii</sup>

**The state Traffic Engineer sets all speed limits on state-maintained roads, and the 85<sup>th</sup> percentile speed guideline is relied upon as an important component in speed-limit setting. Educating engineers throughout the state, including at the municipal level, about the potential for these other factors to influence the ultimate speed limit would be an important step the Department can take to ensure speed limits recognize the needs of all road users, including pedestrians and bicyclists.** The MUTCD method of speed-limit setting is under review nationally to require explicit recognition of pedestrian and bicycle activity when establishing appropriate maximum speeds. While this change will likely not be implemented until a new MUTCD is published a few years from now, this change will better allow NHDOT to set more appropriate speed limits that recognize the safety needs of nonmotorized users.

## Reallocation of roadway space

One of the most feasible and most cost-effective ways to improve infrastructure for walking and bicycling is through reallocation of roadway space via pavement restriping during resurfacing projects. Narrower lanes correlate with slower speeds, which are safer for pedestrians and bicyclists. NHDOT's Bicycle and Pedestrian program publicizes upcoming resurfacing projects to provide opportunities for stakeholders to influence the planned striping early enough in the process. By default, NHDOT will stripe 11- to 12-foot travel lanes. Where local stakeholders and policies have supported alternatives, NHDOT will consider travel lanes as narrow as 10' on a case-by-case basis. Decisions regarding travel-lane width consider operating speeds, traffic volumes, crash types, truck traffic, and surrounding context.

Two improvements would consistently support reallocating space to encourage walking and bicycling:

NHDOT could set the default travel lane width at 11' wide except on specific roadways with particular traffic characteristics, such as those with high truck volumes.

While currently the NHDOT Pedestrian and Bicycle Program reaches out to municipalities and posts upcoming resurfacing projects on its website, a more proactive approach such as social media posts, would help encourage a larger number of residents to participate in the process.

## Pedestrian crossing locations

New Hampshire DOT is currently developing revised guidelines for a midblock pedestrian crossing program. In the interim period, the Department relies on MUTCD for determining uncontrolled or midblock pedestrian crossings of state highways. These guidelines rely on research to determine suitable locations for pedestrian crossings. The key criteria include "the number of lanes, the presence of a median, the distance from adjacent signalized intersections, the pedestrian volumes and delays, the average daily traffic (ADT), the posted speed limit or 85th-percentile speed, the geometry of the location, the possible consolidation of multiple crossing points, the availability of street lighting, and other appropriate factors."<sup>iv</sup> Along with these criteria are specific guidelines for when crosswalk markings on their own are NOT sufficient and additional supportive measures, such as flashing beacons—e.g. RRFB or Pedestrian Hybrid Beacons—or refuge islands, would be necessary. These locations have speed limits above 40 miles per hour, four travel lanes to cross, and/or traffic volumes of at least 12,000 vehicles per day (without a median) or 15,000 vehicles per day (with a median). FHWA completed a report in 2005, *Safety Effects of Marked Versus Unmarked Crosswalks at Uncontrolled Locations*, which included specific recommendations for when a crosswalk could be installed, and/or when additional supportive features should be considered. This report has informed supplemental policies adopted by a number of states. The key criteria are shown in Table 11 of the FHWA Report by Zegeer.<sup>v</sup>

The Design Guidelines section of the NHDOT Statewide Pedestrian and Bicycle Transportation Plan includes examples of additional pedestrian crossing improvements and other facilities that are known to be effective safety treatments, per FHWA's Proven Safety Countermeasures document.<sup>vi</sup>

Implementation of proven safety countermeasures will not only help to reduce the pedestrian (and bicycle) crash rate, but by their very existence, will encourage more walking and bicycling in New Hampshire. Examples include:

- Pedestrian Crossing/Refuge Island – 56% reduction in pedestrian crashes<sup>vii</sup> (note that an island will need to be well demarcated with signage and/or delineator posts to ensure compatibility with snow plowing and other roadway-maintenance efforts)
- Sidewalk along roadway – 65%-89% reduction in pedestrian crashes

- Paved shoulders – 71% reduction in pedestrian crashes
- Pedestrian Hybrid Beacons (PHB, or aka “HAWK signals”) – 69% reduction in pedestrian crashes (along with a 29% reduction in total crashes)
- Pedestrian improvements at signalized intersections
- Pedestrian Signal with Leading Pedestrian Interval – 60% reduction in pedestrian crashes
- Pedestrian Countdown Signals – crash modification factors (CMFs) include an 8% reduction in total crashes, a 12% reduction in rear end crashes and a 9% reduction in crashes involving pedestrians (per a study of 333 intersections in the cities of Charlotte NC and Philadelphia PA<sup>viii</sup>)
- Rectangular Rapid Flashing Beacons (RRFB) – RRFBs are not formally featured as a key pedestrian safety countermeasure in FHWA’s Proven Safety Countermeasures document. However, a 2010 study and report by FHWA<sup>ix</sup> showed that the RRFB locations produced an increase in yielding behavior at multilane uncontrolled crosswalk locations, and that they were more effective than traditional overhead or side-mounted yellow flashing beacons. In some cases, replacement of overhead yellow flashing beacons with RRFBs increased motorist yield percentage from 16% to 78% (88% where additional RRFBs were installed within a roadway median as well).



*Pedestrian crossing island on North Main Street/Route 3 in Concord*

Additional information about improved pedestrian safety at crossing locations can be found at the FHWA’s site, Safe Transportation for Every Pedestrian (STEP) at: [https://www.fhwa.dot.gov/innovation/everydaycounts/edc\\_4/step.cfm](https://www.fhwa.dot.gov/innovation/everydaycounts/edc_4/step.cfm). The site further articulates “cost-effective countermeasures with known safety benefits (that) can help reduce pedestrian fatalities”, and promotes the use of road diets, PHBs, refuge islands, raised crosswalks and general crosswalk visibility enhancements such as lighting and signs.

Finally, the Department implements and maintains striped crosswalks at state-maintained signalized intersections or at pedestrian crossings in designated school zones. Regarding potential locations for uncontrolled and midblock crossings on state highways (both numbered and unnumbered), NHDOT includes local input when making decisions about suitable locations for new crosswalks or places where crosswalks should be removed. The main concern is ensuring a crosswalk will have adequate use to justify its presence and to ensure drivers recognize the potential for actual pedestrian presence. FHWA guidance suggests a minimum of 20 pedestrians during the peak hour as a suggested threshold (15 elderly pedestrians or children).

### **Sidewalk Construction and Maintenance**

NHDOT will include sidewalk construction as part of road improvement projects, but requires the municipality to accept responsibility for maintenance. Justifying owning and maintaining sidewalk plows and other similar resources requires an extensive network of sidewalks. New Hampshire includes many small towns which are unlikely to have more than a few sections of sidewalk. The burden of maintaining these facilities is particularly challenging for those communities.

If and when a partnership with a local municipality is established, determining whether a new sidewalk should be established on one side of a state highway or both sides is an important consideration. Although the AASHTO 2004 Guide for the Planning, Design and Operation of Pedestrian Facilities manual encourages installation of sidewalks on both sides of a roadway based on the frontage conditions<sup>x</sup>, a number of additional, context-sensitive elements should be carefully considered, which may result in the necessity of developing sidewalks on one side of a roadway.

- Funding: with the limited funding available in New Hampshire, how best to appropriately make provisions for people who walk?
- Land use: does the roadway corridor include homes or commercial uses, and are they on one or both sides of the roadway? Does one side of the corridor remain in an undeveloped state?
- Residential Density: will the sidewalk(s) serve rural area or urban/suburban streets?
- Destinations: are there nearby destinations—especially schools—that might encourage pedestrians to cross the roadway twice for access if a sidewalk were only provided on one side? If this is the case, are there opportunities for uncontrolled/midblock crossings in the area?
- Topography: do cross slopes and/or drainage swales create challenges for sidewalk construction on one side versus the other?
- Roadway classification: is the roadway designated as a local street, collector or arterial?
- Character: what is the level of impact on community character if sidewalks were built on both sides (especially, if there will be impact to mature street trees)?
- Shoulder(s): does the presence of a wide shoulder provide an appropriate facility for people who walk and can it function in lieu of a sidewalk on one or both sides?
- Deliverability: the following conditions will have an impact on the ability to provide a sidewalk on one or both sides of a highway:
  - Need for acquisition of right-of-way or permanent easements
  - MSA permitting and treating stormwater runoff
  - Environmental challenges and the need for regulatory permitting on one or both sides
  - Local community support, especially residents and property owners along the corridor
  - Presence of physical obstacles
  - Current or future development permits that can be leveraged for sidewalk construction



*Discrete portions of NH Route 202 in Chichester feature a sidewalk on both sides of the highway, occasionally separated from the roadway by a drainage swale*

## Data to Plan for the Needs of Nonmotorized Users

One challenge in meeting the needs of pedestrians and bicyclists is the lack of data. Developing and maintaining a data-collection program will help to support planning and funding efforts for roadway safety initiatives and pedestrian and bicycle facilities. It will also provide the needed data for the state to analyze level of traffic stress (LTS) for pedestrians and bicyclists over a long-term period (supplementing the LTS analysis completed recently for this planning effort and by a team comprised on the state's MPOs and Plymouth State University). The data-collection program could include:

- Regular speed studies to determine the prevailing traffic speed on state highways and numbered roadways throughout the state
  - Currently only posted speeds are available, which do not accurately reflect the safety or comfort of pedestrians or bicyclists
  - Operating speed partly determines the recommended separation and protection for nonmotorized users
- Accurate and thorough shoulder-width data
  - Currently, reliable shoulder width data is limited to Tier 1 and 2 roads
  - Shoulder width data is important to understand the availability of space for separating motorized and nonmotorized users
- Traffic volumes
  - While traffic counts are regularly conducted by NHDOT, they are only available on a small subset of roads (as required by the Highway Performance Monitoring System)
  - The volume of motor vehicles is a factor in determining the comfort of nonmotorized users and the separation necessary
- Intersection lane configurations
  - This can help state and RPC planners understand how to accommodate pedestrians and bicyclists at complex intersections and inform the types of facilities needed to improve accessibility and safety

## Public Program Recommendations

### Recommended Safety and Four “E’s” Programs

Although promotion of four “E’s” programs frequently rests with local municipalities, New Hampshire DOT can also help to deliver pedestrian and bicycle education and encouragement programs. The Department’s efforts could potentially include:

- Funding for active transportation education and encouragement programming such as PSAs (in coordination with the NH Department of Safety) and/or state highway variable message sign that relate to pedestrians and bicyclists
- In conjunction with the Complete Streets Advisory Committee, coordination with other State agencies to accomplish goals related to transportation and public health
- Mode shift promotion that results in increased safety and normalizes walking and bicycling
- Coordinate best practices throughout DOT bureaus, across DOT Maintenance Districts and across Regional Planning Commission districts
- Collect and analyze transportation safety, usage, and infrastructure data



*Variable message sign example with bicycle safety related message*

The suggestions below were selected to improve safety for people who walk and bicycle in New Hampshire and to encourage more state residents to choose active transportation for commuting, errands and recreational trips. The recommendations discuss the potential to create new safety education, encouragement, evaluation, and enforcement programs as well as enhancement to existing programming. These ideas were developed based on a review of existing NHDOT safety education materials and best practices research.

### Targeted Safety Behaviors List Development

Identifying a priority list of targeted safety behaviors helps focus proposed program recommendations on the most important issues. One of the objectives of safety education programming is to reduce the likelihood that pedestrians and bicyclists are involved in crashes, particularly those that cause serious or fatal injuries.

The list below proposes recommended targeted safety behaviors to address through the 4 E’s programs, especially education and encouragement:

- **Reduce distracted driving:** Crash reporting protocols make it difficult to discern how often distraction is a crash contributing factor. Nonetheless, citizens and decision makers share concerns about the need to reduce distracted driving, particularly involving mobile devices and other electronics.

- **Encourage youth/young adult and senior transportation safety:** National crash data shows that drivers under 35 and over 56 are more frequently involved in crashes.
- **Educate drivers about active transportation safety:** Motor vehicle speed typically plays a role as a contributing factor in crashes and influencing crash severity.
- **Encourage context-sensitive safety education programming for urban and rural contexts:** There is a need for program customization based on whether a target audience is located in an urban or a rural area.
- **Encourage increased rates of bicycling:** National data shows that increased rates of bicycling in many cities have resulted in decreased crash rates involving people bicycling (typically called the “Safety in Numbers” principle).

### **Ongoing Statewide Media Campaign**

An ongoing statewide media campaign uses a variety of formats to convey safety messaging to people driving, walking, and bicycling. NHDOT and the CSAC’s work in this area has been a great start and taking it to the next level would be beneficial for safety. A media campaign could unite the various pieces of content that NHDOT has developed over time, including fact sheets and press releases. Possible media to share safety messages include social media ads and posts, outdoor advertising, websites, online ads, and posters distributed to partners and local communities. Potential target audiences and specific behaviors include:

- **Motorists:** Campaigns to changing unsafe behavior and recognizing the rights of other roadway users. Other specific behaviors include distracted driving and impaired driving.
- **Pedestrians:** Campaigns to remind motorists to look for pedestrians, especially children and the elderly. Campaigns should remind pedestrians to follow the rules of the road.
- **Bicyclists:** Campaigns to promote and normalize bicycling, to teach bicyclists about the rules of the road, and to remind them to always respect these rules.

Example media campaigns from outside of New Hampshire for consideration by NHDOT include:

- North Carolina’s “Watch for Me” campaign: NCDOT’s campaign—funded through the Governor’s Highway Safety Program—involved educational safety messaging for people driving, bicycling, and walking as well as related enforcement efforts by local police.
- Massachusetts’ “Scan the Street for Wheels and Feet” campaign: MassDOT’s effective 2017-2018 campaign was funded using federal Highway Safety Improvement (HSIP) funds, which can no longer be used for promotional programs, however.
- “THINK!” road safety campaign from the UK Department for Transport: This ad campaign includes customized material for urban and rural areas. The umbrella campaign houses ads that are targeted to specific safety problem behaviors and to specific audiences.

### **Safety Training Resources for State of NH Staff**

As mentioned earlier, NHDOT staff play a crucial role in delivering effective roadway safety programming to residents. Providing staff with robust, ongoing training will help accomplish this goal. Staff training can take a variety of shapes including, but not limited to, the options shown below.



### *Driver Education for State Employees*

Although general driver education for any state employee who drives for their position is already required in New Hampshire, additional education with a focus on safe and legal interactions with people walking and bicycling on roadways could also be considered. Informally introduced by NHDOT recently, this program could be institutionalized by the Department in the near future. The Colorado Department of Transportation, for example, requires this type of training for their employees.

### *Law Enforcement Officer Training*

Law enforcement officers participate in ongoing professional education to keep up on changing laws. Many states have created such professional development opportunities related to bicycling and walking safety, crash data, and laws. Modules should refresh officers' understanding of common crash contributing factors, the role of law enforcement officials in keeping roadway users safe, and state laws related to active transportation and driving. The Vermont Agency of Transportation offers training for new recruits to the Vermont State Police Academy. Minnesota, Louisiana, North Carolina, and New York also offer law enforcement officer training.

### *Implementation Details for Training Opportunities*

<b>Promotional Methods</b>	Email updates to NHDOT staff regarding upcoming trainings Press release to District staff Direct communication with partners such as the State Police
<b>Action Items</b>	Evaluate training needs Evaluate the effectiveness of trainings held
<b>Partner Agencies</b>	NH Department of Health and Human Services NH State Police

## **Safe Routes for Seniors Program**

A Safe Routes for Seniors education and encouragement grant program could be administered by NHDOT in a similar fashion to Safe Routes to School grants. The Department would provide support to selected communities by working with local agencies and organizations. Together, the selected communities and the Department would provide technical assistance for improving pedestrian safety for seniors, especially those in high crash areas. The program's resulting recommendations would include infrastructure development Next Steps and supportive education programming to encourage seniors' improved mobility. Given NHDOT's statewide focus, specific details would remain the responsibility of local jurisdictions, while DOT would provide consistency and program oversight.

### *Implementation Details for a Safe Routes for Seniors Program*

<b>Promotional Methods</b>	Create a statewide call for participation for interested communities Organize resulting materials on the NHDOT website (i.e., community maps, planning documents, safety brochures)
<b>Action Items</b>	Create a program scope similar to the State's existing Safe Routes to School framework, including recommendations presented in this memorandum.
<b>Partner Agencies</b>	NH Department of Health and Human Services, Division of Public Health Services

## Promote Participation in the National Bike Challenge

The National Bike Challenge is a nationwide competition for individuals and organizations with the intent of encouraging more people to try commuting by bicycle.<sup>xi</sup> The annual challenge occurs during May, which is considered National Bike Month. NHDOT can use the National Bike Challenge as a statewide bike commuting challenge in recognition of Bike Month, with a focus on the urban areas of the state where traffic congestion is most significant. NHDOT can work with the Office of the Governor to further promote the program and could sponsor prizes and/or recognition of the highest-ranking teams in the state (for public agencies, private-sector companies and local businesses).

### *Implementation Details for Participation in the National Bike Challenge*

<b>Promotional Methods</b>	Use social media posts and a press release to publicize the program.  Work with large employers, RPC's and New Hampshire cities to promote employee participation.
<b>Action Items</b>	Plan publicity materials to promote the National Bike Challenge starting in early 2021.
<b>Partner Agencies</b>	Office of the Governor  Large employers

## Create a Statewide Ped/Bike Counts Program

A statewide pedestrian and bicycle count program would enable NHDOT to monitor changes in active transportation usage over time. State DOTs across the country develop data collection frameworks to help RPC's and municipalities collect, analyze, and manage data. The active transportation count program would complement the Department's long-standing and ongoing motor vehicle counts. Agencies would be responsible for choosing to collect data manually (with volunteers) or using automated equipment. Among other uses, the resulting data would provide additional context for interpreting pedestrian and bicycle crash data. Having access to robust data is important for several reasons. Data makes it possible to assess changes over time, draw conclusions about the impact of new facilities, and improve the design of future facilities. Additionally, data helps to quantify the benefits of walking and bicycling, which ultimately makes active transportation projects more competitive for funding.

### *Implementation Details for Participation in the Statewide Counts Program*

<b>Promotional Methods</b>	Direct communication with Regional Planning Commissions (RPCs) and MPO's throughout the state
<b>Action Items</b>	Assess existing count programs throughout the state.  Work with RPCs and MPOs to develop a vision for the unified count program's next steps.
<b>Partner Agencies</b>	Regional Planning Commissions

## Enhance Tourism Resources

### *Bike Guide and Online Resources*

Enhancing VisitNH.com and other online/print resources with more-robust information about bicycle tourism could increase the number of bicycle tourists throughout the state. Example materials might include recommended routes, locally-owned businesses to visit or use for lodging, equipment and clothing tips, and more. New Hampshire could also produce an annual or semiannual bike guide. Safety information should be prominently included throughout online and print materials and should be customized to rural and urban areas. These ideas should be considered by Department of Natural and Cultural Resources (DNCR) staff who have been engaged to promote outdoor recreation and tourism. DNCR could also help to promote walking and bicycling for transportation, in addition to recreation.

### *Statewide Bicycle Route Maps*

Incorporating the network recommendations from this plan, statewide bicycle route maps should be updated to promote awareness of existing bicycle-friendly routes and destinations across New Hampshire. Maps should also include safety tips to help riders learn about lane positioning, hand signals, pavement marking/traffic device meanings, and other rules of the road. The statewide bike route maps would be different and distinct from the planned state bike network in development for the New Hampshire Pedestrian + Bicycle Transportation Plan, since the latter network represents planned future routes suitable for bicycling. Colorado Department of Transportation (CDOT) and Minnesota Department of Transportation (MnDOT), and other agencies produce similar materials to help residents and visitors select routes that best suit their interests and fitness ability. NHDOT may choose to continue to distribute the maps electronically or as printed maps and could be available at rest stops, state visitor centers, local libraries, city/town halls and other locations.

### *Implementation Details for Participation in the Enhancing Tourism Resources*

<b>Promotional Methods</b>	VisitNH.gov is a comprehensive resource for tourism in New Hampshire. NHDOT can work to provide safety information (i.e., text, graphics, and links to other resources)
<b>Action Items</b>	Work with the Department of Health & Human Services to update online and print materials.  Review existing and proposed material to ensure content includes safety information about riding in rural areas.
<b>Partner Agencies</b>	NH Department of Health and Human Services NH Department of Natural and Cultural Resources Visit NH

## Enhancements to the Driving Towards Zero Campaign

This Plan recommends including safety resources related to active transportation within the existing statewide Driving Towards Zero campaign. Providing adequate funding resources—through either NHDOT general funds, gas tax revenues, or from federal grants—to implement education campaigns and other features could increase the reach of the overall initiative. The Driving Toward Zero initiative’s current framework offers opportunities to add active transportation safety information to current programs. It is recommended that materials include safety tips to remind motorists to look for people bicycling and walking and remind all roadway users about all modes’ rules and responsibilities. If not already a member, NHDOT can consider joining the Road to Zero Coalition, organized through the National Safety Council (NSC). The initiative was launched in 2016 by NSC, Federal Motor Carrier Safety Administration, and National Highway Traffic Safety Administration. The organization’s goal is to eliminate roadway deaths by 2050.<sup>xii</sup> Coalition members, including many state DOTs, receive access to toolkits, webinars, posters, and other resources to promote throughout their agency or organization. Members can compare safety and health data with other members and can apply for grants administered by NSC.

## Automated Speed Enforcement

Currently in New Hampshire, Automated Speed Enforcement is “Prohibited unless there is specific statutory authorization”.<sup>xiii</sup> This provides a hurdle to improving safety along corridors where speeding discourages walking and bicycling. **The state should consider adopting legislation to allow and regulate automated enforcement laws to make it easier for municipalities to plan, design, fund, and build automated speed enforcement systems.**

Speed enforcement is an important part of promoting a culture of safe driving. Various speed enforcement techniques include Automated Speed Enforcement (ASE), which involves the use of cameras and radar technology to identify motor vehicles traveling above the posted speed limit, and cite them digitally through the mail<sup>xiv</sup>. While there is limited data on which U.S. states continue to utilize ASE, partially due to a lack of federal oversight, the speed-camera systems are used extensively in other countries, including the U.K., Norway, and Australia.

The Governors Highway Safety Association published the following information related to the use of **speed cameras** in the United States:

- 13 states that have laws passed to **prohibit** speed cameras
- 28 states have no laws addressing speed cameras
- 2 states permit the use of speed cameras (+ Washington DC)
- 7 states limit their use by location or other criteria (+ US Virgin Islands)

The Governors Highway Safety Association also published the following information related to the use of **red-light cameras** in the United States:

- 20 states that have laws passed to **permit** speed cameras (+ US Virgin Islands)
- 11 states fully permitting use (+ Washington DC)
- 9 states allowing limited use (+ US Virgin Islands)
- 8 states **prohibit** their use
- 21 states have no law concerning red light camera enforcement
- 22 states have red light cameras currently operating in at least one location (+ Washington DC)

Speed cameras can reduce crashes dramatically. Studies from Charlotte, NC<sup>xv</sup> and in Scottsdale, AZ<sup>xvi</sup> indicate that both mobile-camera and fixed-camera systems reduce both speeding and crashes. The 9-month pilot in Scottsdale resulted in the following findings:

- Total target crashes were reduced by an estimated 44 – 54%
- Crashes resulting in an injury were reduced by an estimated 28 – 48%
- Crashes resulting in property damage only were reduced by an estimated 46 - 56%

## Summary Tables of Additional Four “E’s” Programs

The tables below include a summary of many of the recommended programs to improve pedestrian and bicycle safety and encourage more walking and bicycling in New Hampshire.

### Evaluation Programs

Policy or Program	Need for Revision	Recommendation	Agency Lead
<b>Pedestrian and Bicycle Counts</b>	Bicycle and pedestrian counts in the state are irregular and too few in number. Additional counts can be used to help substantiate investments in new/improved infrastructure to improve pedestrian and bicycle safety, and to encourage more walking and bicycling for everyday transportation and recreation.	Continue and expand upon existing counts program. Include both peak hour and 24-hour counts, using automated counters, if available. Incorporate additional count locations in urban, suburban, and rural locations.	NHDOT, Regional Planning Commissions
<b>Pedestrian and Bicycle Crashes</b>	Data related to crashes involving bicyclist do not include the likely cause of the crash. Additional information can be used to inform potential revisions to roadway or intersection design.	Develop a new input on crash reports that provides the opportunity for local or State police to record the cause (e.g., hit from behind, right/left hook, dooring, etc.). Educate state and local police on the new methodology to fill out crash report accurately, and to contribute New Hampshire’s data to the MMUCC program <sup>xvii</sup> .	NHDOS, State Police, local Police departments

<b>Pedestrian and Bicycle-related Performance Measures</b>	Currently, the state does not have a comprehensive set of Performance Measures (PMs) tailored specifically to walking and bicycling. Adhering to recommended PMs will allow agency officials to track improvements in ped/bike safety, usage, and development of the network.	State agencies should track key metrics articulated in the PMs section of this plan	(See Performance Measures section of this Plan for list of Agency Leads)
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**Education & Encouragement Programs**

<b>Policy or Program</b>	<b>Need for Revision</b>	<b>Recommendation</b>	<b>Agency Lead</b>
<b>Public Safety Campaign</b>	Current public safety campaigns focus on distracted driving, impaired driving, and speeding, which is a good start, but could be expanded to focus more on pedestrian and bicycle safety.	Expand to include vulnerable road user safety campaign	NH Department of Safety (DOS)
<b>Bicycle Network Branding</b>	Lack of consistent signage and branding along many of the State’s bikeways and shared-use paths prohibits passers-by (on bike or driving) from comprehending the full extent of the state’s bicycle network.	Create a cohesive signage and branding strategy for the State’s key bicycle routes (collaborate with East Coast Greenway to install proper signage along ECG coastal route)	NH DOT

<p><b>Messaging from the Governor’s Office</b></p>	<p>The current Governor is a strong supporter of bicycle programs and infrastructure and could help provide added visibility to bicycling. Coming from the highest office in the state, this could encourage more residents to ride and for motorists to be more respectful of bicyclists.</p>	<p>Develop an annual announcement from the Office of the Governor during May (bike month) documenting progress in making NH a more bike-friendly state</p>	<p>Office of the Governor</p>
<p><b>Pop-Up Project Materials Lending Libraries</b></p>	<p>Local agencies don’t necessarily have the proper materials on hand to set up temporary “pop-up” projects; such projects effectively communicate the benefits of proposed street design changes and how pedestrian and bicycle safety can benefit from the changes.</p>	<p>Create “lending libraries” of pop-up materials (flex posts, traffic cones, signs, etc.) to be used by public agencies to demonstrate bike lanes, pedestrian refuge islands, etc. Materials could be stored at each of NHDOT’s maintenance facilities to make them readily available to municipal departments and Regional Planning Commissions around the state.</p>	<p>NHDOT</p>

**Enforcement Programs**

<p><b>Policy or Program</b></p>	<p><b>Need for Revision</b></p>	<p><b>Recommendation</b></p>	<p><b>Agency Lead</b></p>
<p><b>Vulnerable Road User Law</b></p>	<p>Currently in New Hampshire, there is no vulnerable road user law. Without it, pedestrians and bicyclists are not afforded additional protections from aggressive motorists.</p>	<p>Consider adopting a Vulnerable Road User (VRU) Law that increases penalties for motorists who harass, injure, or kill pedestrians, bicyclists, or other vulnerable road users.</p>	<p>NHDOS to work with Legislature</p>



<p><b>Stopping for Pedestrians</b></p>	<p>The current NH law (RSA 265:35-1) states “...the driver of a vehicle shall yield the right of way, slowing down or stopping if need be to yield, to a pedestrian crossing the roadway...”<sup>xviii</sup> This ambiguity creates an easy way to dismiss potentially hazardous behavior by a motorist in the event of a collision involving a pedestrian.</p>	<p>Assess the law that requires drivers to “Slow[ing] down or stop[ping] if need be...” and evaluate if requiring motorists to stop would increase pedestrian safety.</p>	<p>NHDOS to work with Legislature</p>
<p><b>Sidewalk Riding</b></p>	<p>The current NH law (RSA 265:26-a) prohibits bicyclists from riding on the sidewalks. While this is logical in many contexts, it precludes the opportunity for children to bicycle along a sidewalk in small town and rural areas where sidewalk hazards are substantially lower.</p>	<p>The law could be amended to prohibit sidewalk riding only in designated commercial districts, or language specifically allowing for state and local police discretion during any enforcement could be amended to the RSA.</p>	<p>NHDOS to work with Legislature</p>

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- <sup>i</sup> US Department of Transportation, Literature Reviewed on Vehicle Travel Speeds and Pedestrian Injuries. March 2000. <https://one.nhtsa.gov/people/injury/research/pub/hs809012.html>
- <sup>ii</sup> “Pace” refers to the average speed measurements over a ten-mile range
- <sup>iii</sup> MUTCD, Page 58 (Section 2B.13 Speed Limit Sign (R2-1))
- <sup>iv</sup> MUTCD, Page 384 (Section 3B.18 Crosswalk Markings)
- <sup>v</sup> FHWA, “Safety Effects of Marked Versus Unmarked Crosswalks at Uncontrolled Locations”, by Zeeger, C. V., R. Stewart, H. Huang, and P. Lagerway, HRT-04-100, September 2005, page 54.
- <sup>vi</sup> <https://safety.fhwa.dot.gov/provencountermeasures/>
- <sup>vii</sup> The likely reduction in the number of crashes involving pedestrians helps make the case for investments in pedestrian safety countermeasures from a pure cost perspective. Although some counter measures can cost tens or hundreds of thousands of dollars, this much be contrasted with the macro- economic impact of pedestrian and bicycle-related crashes. According the U.S. DOT’s Benefit-Cost Analysis Guidance for Discretionary Grant Programs (December 2018), the monetized cost of each fatality is \$9.6m, the cost of a severe injury is \$459,00 and a visible injury, \$63,900.
- <sup>viii</sup> FHWA, “Safety Evaluation of Pedestrian Countdown Signals”, FHWA-HRT-19-045, November 2019.
- <sup>ix</sup> FHWA, “Effects of Yellow Rectangular Rapid-Flashing Beacons on Yielding at Multilane Uncontrolled Crosswalks”, FHWA-HRT-10-043, September 2010.
- <sup>x</sup> AASHTO 2004 Guide for the Planning, Design and Operation of Pedestrian Facilities, page 57: “Sidewalks should be provided on each side of the street along collectors and arterials wherever the frontage is developed.”
- <sup>xi</sup> [Nationalbikechallenge.com](http://Nationalbikechallenge.com)
- <sup>xii</sup> <http://www.nsc.org/learn/NSC-Initiatives/Pages/Road-to-Zero-Grants.aspx>
- <sup>xiii</sup> <https://www.cdc.gov/motorvehiclesafety/calculator/factsheet/speed.html>
- <sup>xiv</sup> See the Centers for Disease Control and Prevention website:  
[www.cdc.gov/motorvehiclesafety/calculator/factsheet/speed.html](http://www.cdc.gov/motorvehiclesafety/calculator/factsheet/speed.html)
- <sup>xv</sup> Cunningham, C., Hummber, J., and Moon, J., “An Evaluation of the Safety Affects of Speed Enforcement Cameras in Charlotte, NC”, NC State University Institute for Transportation Research and Education, October 2005.
- <sup>xvi</sup> Retting, R., Kyrychenko, S., and McCartt, A., “Evaluation of automated speed enforcement on Loop 101 freeway in Scottsdale AZ”, Journal of Accident Analysis and Prevention 40 (2008), 1506-1512
- <sup>xvii</sup> Model Minimum Uniform Crash Criteria (MMUCC) link:  
<https://crashstats.nhtsa.dot.gov/Api/Public/ViewPublication/811631>
- <sup>xviii</sup> <http://www.gencourt.state.nh.us/rsa/html/xxi/265/265-mrg.htm>