

Road Business

A quarterly newsletter from New Hampshire's Local Technical Assistance Program

Newsletter Summer 2020 - Volume 35, No. 2

“Growing” Respect as First Responders

By Jamie Magaldi, PE, MCA

I bet you can relate to this one. It's 5:30 p.m. on a weeknight, traffic is heavy. The storm came earlier than predicted. Your tree crew is primed, saws are sharp, fluid reservoirs are full and LED emergency beacon lights are flashing. There's a 30-inch DBH oak across a main artery in town, yet your crews can't get there to clear it because nobody, and I mean nobody, in the hectic commute will give your crew an inch. Your bucket truck can't safely pass without people yielding to the right, and your chip-truck crew modestly waits, hopeful for a driver in the line of traffic who understands the urgency of our line of work to allow them to make the turn, proceed through the traffic light or pass to the correct lane.

Commuters grow angry at the situation, only to grow more impatient and greedy to protect their line in the queue. The frustration spirals, unfortunately, and the irony is never quite grasped. The fact of the matter is, if commuters just let the cleanup crew through, the traffic would clear more quickly. Mothers would get home to help with homework. Fathers would make the recital. And the well-respected police and fire crews wouldn't be waiting for us to arrive to help clear the situation so they can finish their active roles as first responders, clearing accident scenes and tending to victims.

Those of us in the industry share this common experience and for years have conceded to the perception that public respect for first responders is limited to local police and fire departments. After all, these men and women have historically earned their respect as they put their lives on the line responding to difficult and dangerous situations, responding at all hours of the night and sometimes putting the wants and needs of their loved ones second to the overall needs of the general public during a time of crisis. These hardworking public-safety officials do deserve our respect. But the time is far overdue, my colleagues, to advocate for our own obvious roles as emergency-management personnel.

Continued on page 3



University of
New Hampshire



U.S. Department of Transportation
Federal Highway
Administration

New Hampshire
DOT
Department of Transportation

Road Business is a quarterly publication. The editorial content, opinions, findings, and recommendations expressed in this newsletter do not necessarily reflect the views of our sponsors. To contact or subscribe, email us at t2.center@unh.edu, call 603-862-0030, or visit our website, www.t2.unh.edu.

Staff

Marilee LaFond, T2 Manager

Chris Dowd, SADES Manager

Butch Leel, Senior Training Instructor

Bettina Sietz, LTAP Program Coordinator

Erin Bell, Ph.D., Principal Investigator

Robert Henry, Ph.D., Principal Investigator

Advisory Board

[NHDOT Representatives](#)

Glenn Davison - Civil Engineer, Division of Project Development

Ann Scholz - Research Engineer, Bureau of Materials & Research

[FHWA Representative](#)

Michelle Marshall - Safety and Area Engineer, NH Division FHWA

[Municipal Representatives NH Public Works Association:](#)

Martha Drukker - Associate Engineer, City of Concord

Scott Kinmond - Town Administrator, Town of New Durham

[NH Road Agents Association:](#) **Rick Riendeau**, Director of Public Works, Town of Milford

[NH Public Works Mutual Aid:](#)

Caleb Dobbins - Representative for NHPWMA, Administrator, NHDOT, Division of Highway Maintenance

[Member at Large/RPC Rep:](#)

Dave Danielson - President, Foresee Advocacy; NH State Representative (2010 - present)

About UNH T2 and NHLTAP

The UNH Technology Transfer Center fosters a safe, efficient, and environmentally sound surface transportation system by improving skills and increasing knowledge of the transportation workforce and decision makers. As the site of the state's Local Technical Assistance Program, it works to enable local counties, cities and towns to improve their roads and bridges by supplying them with a variety of training programs, an information clearinghouse, new and existing technology updates, personalized technical assistance, training videos and materials, and newsletters. LTAP Centers nationally are able to provide local road departments with workforce development services; resources to enhance safety and security; solutions to environmental, congestion, capacity and other issues.

Hello from UNH T2!

Summer 2020 is almost over and our fall is bringing cooler days, apples and new realities: Online and remote learning remain "a thing" - what we thought was short lived and temporary is getting well established and a new, virtual normal is sneaking in. To pick up on the First Responder article: It rings true that not all superheroes are wearing capes - but they are amongst us, every day. Look at the public works community that keeps learning and embracing online training platforms like Zoom or Teams, all while doing their daily tasks under more difficult circumstances in the times of Covid-19. We are so impressed by your interest in professional development and training opportunities, by your willingness to explore new platforms and forgiving us the occasional technical hiccups.

Thank you for all that you are doing, every day, for keeping NH's road system safe and sound, for showing up at our events and for propelling the standard of transportation forward.

As for us, we will keep searching for new topics that might fit your need, so please let us know what you'd like to see on the training calendar, virtually or as a smaller hands-on training.

Our annual NLTAPA conference that was scheduled to take place in Seattle in July 2020 was changed to a virtual format as well. We learned a lot, and can't wait to implement and share the knowledge we gained. We are looking forward to new and exciting learning opportunities with you in the fall. Keep up the great work of learning, training and moving towards your next Road Scholar level.

Stay safe and remember that (invisible) cape of yours!



By Bettina Sietz

A January 2019 USA Today publication lists commercial-logging work as the No. 2 most dangerous job. Many of us who are in a tree-related field would probably agree with this, but the irony is that few would believe the same publication lists police work and firefighting as No. 18 and No. 24, respectively. Why are we selling ourselves short? Why can't we garner a similar respect as ambulances who motivate trained drivers to instinctively yield to the side of the road when they are approaching with emergency lights illuminated? Or the same respect that police officers receive from a group of preschool-aged children who imitate their parents fist pumps, claps and cheers when a cruiser drives by on patrol?

Tree workers and, for that matter, all public and private agencies that provide emergency roadside response deserve the same respect for all the same reasons. Our workers have specialized skills that often are taken for granted – until they are needed in time of crisis. It's similar to the workhorse sump pump in your basement that sits thanklessly until unrelenting spring groundwater makes us utter a loud sigh of relief to own one, and makes us think we'd gladly pay triple its price for it since the local hardware stores have sold out.

We're climbing precarious trees, rigging challenging limb geometry and elevating our buckets to heights that would make Icarus shudder. We're clearing roadblocks, removing trees from cars prior to fire crews extricating victims, helping to restore electricity and making crucial decisions on risk management and environmentally sensitive invasive-species control. We're also providing ancillary support by plowing snow, salting streets and clearing flooded roads, making certain those vital vehicular arteries are open for the other two, more widely respected blue and red emergency-response personnel to be able to do their jobs in a crisis. Our emergency lights are illuminated, but all too often our needs for buffer space around the emergency vehicle go unmet.

We don't work in shifts. We work until the safety-sensitive situation is rectified and peace is reasonably restored. Our cell phones are ringing all hours of the night, our vacations are sometimes interrupted and our work-life balances are sometimes altered by the call of the job, to the dismay of our frustrated but ultimately understanding spouses. We've bled a little and sweat a lot, earning our right to go home safely at the end of a crisis response. We've earned the respect.

The American Public Works Association (APWA) Board of Directors released an official Public Works First Responder symbol in November 2017 as a proactive means to raise awareness of the critical role we perform as emergency responders. The symbol represents the industry's importance and stance to be taken seriously as a crucial member of public-safety personnel. The push is on to energize our perception as emergency responders and help boost our well-earned integrity alongside our blue and red hardworking colleagues.

Until we start believing in our own critical roles as emergency-management personnel, we will never be able to break the longstanding perception of triviality and remind the public that public-works responders are indeed the true "Silent Arm of Public Safety." Help the public-works community spread the word on the importance of treating tree and roadway-response crews with the same respect as the other two arms of emergency management, police and fire. Raising awareness of our vital roles as emergency personnel will not only help improve response time and job efficiency, but the safety of our teams will be maximized as the general public starts to become more aware of our presence on the roadways and at job sites.

Post the Public Works First Responder banner proudly and urge your town/city/county officials to share it with public websites, tweets and community boards.

Encourage your leaders to allow your public-works crews to participate in local parades and community-support rallies. Perhaps in time, we can even help driver-education organizations teach students the importance of yielding to all emergency responders, not just police and fire. Sowing the seeds of respect now may also help with future recruitment into this challenging and rewarding field, attracting young, motivated prospects to a lesser-known heroic path.

I offer to you, as genuine first responders, a thank you for all you continue to do, selflessly and unsung, for supporting other local emergency agencies as the often-forgotten Silent Arm of Public Safety, and for doing your job day in and day out to help our communities thrive during crisis. Let's continue to grow these seeds of respect into the mature and unquestioned authority we all know we should be perceived as.

Jamie Magaldi, professional engineer (PE) and Massachusetts Certified Arborist (MCA), is the operations manager and tree warden for the Department of Public Works in Wilmington, Massachusetts.



This article originally ran in the March 2020 issue of Tree Care Industry Magazine. Re-printed with friendly permission by the author and Tree Care Industry Magazine

TECHNICAL ASSISTANCE

A big and somewhat abstract word...Did you know that UNH T2 is providing personalized, technical assistance to NH's municipal highway departments via phone, email or even site visits?

CONDUCTING CONSULTATION

- Phone Calls
- Emails
- Site Visits

RECENT ASSISTANCE

- E-Learning
- Hiring Process
- Pavement Management
- BMPs

PROVIDING TRAINING

- Safety
- Technical
- Environmental

email: t2.center@unh.edu
phone: 603-862-0030
<https://t2.unh.edu/TechAssist>

Want to know more about Technical Assistance? Check our Tech Assist Corner on page 13

Bridge Deck Preservation Treatment Options

Like pavements, many of us have a bad habit of building great bridges and then failing to protect them from deterioration. The result can be a progressive decay of bridge elements to the point that costly rehabilitation or replacement of the bridge are required earlier than our planned life cycle. Just like pavements, we can extend the useful life of our bridges and enjoy better performance by utilizing low cost preservation techniques and technologies.

The Transportation System Preservation Technical Services Program (TSP·2) is a great resource for training and technical information related to the preservation of pavements and bridges. Their [bridge preservation website](#) is rich with videos and other training resources. For example, their [bridge preservation video library](#) allows you to search by topics, such as asset management, corrosion mitigation, deck preservation, joints/bearings, products/materials, paint/coatings, scour mitigation, sub/superstructure, timber structures, and more. They even have a category specific to local agencies.

A great example of those resources is a [recorded presentation entitled Bridge Deck Preservation Treatment Options](#). It provides an overview of preservation options and then spends some time talking about best practices and forensics of problems that reinforce the need for those best practices. This resource is a great starting place for those new to some of these important bridge preservation techniques.

After you watch that presentation, you will likely be hooked and hungry for more. To learn more about deck preservation, use the video library to navigate to the [deck preservation list](#) and you will see dozens of recorded presentations (and oftentimes, the presentation slides in PDF form) on topics like ultra-high performance overlays, evaluation methods, polyester polymer overlays, thin polymers, waterproofing, membranes, polymer resins, contractors' perspective, and hydrodemolition to name a few.

Of course, the other categories may be your immediate interests and you will find dozens more informative presentations there as well.

But TSP·2's resources don't end there. For example, they offer Bridge Preservation Training for Local Agencies, an onsite training at no cost to the hosting agency. Participants will gain a general understanding of why preservation is important, what activities are available and an idea of cost and degree of difficulty with performing the work. As part of the presentation, several case-studies will be highlighted to show how local agencies have obtained funding for preservation. A variety of examples have been developed to help participants understand the importance of incorporating these bridge preservation activities into their work plan. Topics as diverse as deck sealing, patching, bridge washing, joint repair, and spot painting are covered.

Contact Travis Kinney at

Travis.J.Kinney@ODOT.STATE.OR.US or at (503) 986-4010 for more information on the training workshop.



There is still more. There are bridge preservation pocket guides on topics like bridge cleaning and thin-polymer overlays. These guides and phone apps are intended for use in the field to ensure projects are done correctly the first time.

There is even a bridge preservation blog that you can explore. You will also see information about their regional partnerships; in our case it would be the Northeast Bridge Preservation Partnership (NEBPP). Any interested agency, organization, company, or group may join and participate in the activities of this Partnership by contributing funds to the American Association of State Highway and Transportation Officials (AASHTO), or by paying fees to attend the annual workshop and conference.

So, if you have bridges, large or small, take a little time out to explore the TSP-2 website to sample the resources and connect with colleagues across the region for a more robust program to protect the great bridges you build.



Re-printed with friendly permission by Matt Carter from Delaware LTAP

THANK YOU!

A large yellow graphic with a blue border. At the top, two blue spotlights point towards the center. The text "WE SEE YOU !" is written in large, bold, blue letters. Below it, in smaller black text, is "That employee who went above and beyond? A public works colleague who was with your department for countless years serving the public?". Then, in blue text, "WE WANT TO HEAR THAT STORY, SEE THE PICTURES, SHARE YOUR GRATITUDE." followed by "THANK YOU" written in a large, black, cursive font. At the bottom, a hand is shown writing "THANK YOU" with a black marker. On the left side, text reads: "Share your shoutout of gratitude for years of service, the extra mile or that big work anniversary in the next edition of Road Business." On the right side, text reads: "Email us a story and a picture at t2.center@unh.edu or call us at 603-862-0030 and tell us about the person who you'd like to thank!"



Figure: Wildlife tracks through a culvert under NH Route 110 in Milan, New Hampshire (Source: Pete Steckler, TNC)

Why Did the Critter Cross Under the Road?

By Pete Steckler, TNC and Sandi Houghton, NH Fish and Game

To get to the other side safely, of course.

But there are lots of other reasons why wildlife uses culverts and bridges to cross beneath roadways. One reason is that there was a structure to pass through in the first place, a convenient alternative to safely cross under the road rather than running the gauntlet across cleared side-slopes, maybe over or under a guardrail, across multiple lanes of traffic with speeding vehicles, and back into the safety of the natural landscape on the other side. If you are a black bear it's because you can actually squeeze yourself through the pipe—that is, if it's large enough that you can fit through comfortably. And if you are an animal that prefers to keep its feet out of the water, such as bobcat, groundhog, skunk, or porcupine, it's because there is a dry ledge or shelf to suit your movement preferences.

There are many reasons why wildlife chooses to cross under a roadway, and good reasons why road managers and the traveling public should encourage such behavior. Safety is the ultimate driver for the management of our roadways, and moving wildlife under roads is to the benefit of motorists and animals alike. We've all had to make those split second decisions to slam on the breaks, swerve, or drive on through when an animal suddenly appears in your lane; at best, these events are frightening for all involved, but the consequences can be far more severe (I confess to some sleepless nights after a too-close for comfort encounter with a couple of moose).

There are other benefits associated with managing roads to accommodate wildlife passage. Larger structures pass more water and mitigate flood hazards. This reduces maintenance and emergency repair costs, in addition to supporting a safe and reliable transportation network. Such structures also facilitate improved passage for fish and other aquatic animals and maintain habitat quality by reducing erosion in and adjacent to streams. Benefits for wildlife include the ability to safely move about the landscape to meet their various needs for access to food, water, breeding and overwintering habitat.



Some highly agile wildlife, like bobcat and American marten, occupy large areas that may require multiple road crossings on a regular basis. On the other end of the agility spectrum are slow moving and long-lived species such as turtles, whose populations can be vulnerable when just a small number of breeding adults are lost. Both groups are especially susceptible to mortality from vehicle collisions.

If You Build It, They Will Come



In New Hampshire we are learning how wildlife responds when offered suitable crossing opportunities. The Nature Conservancy worked with the Town of Newmarket just last year to replace a perched 36-inch culvert with a 16-foot wide box culvert. We used a wildlife camera to monitor wildlife passage before construction and only observed beaver passing under the road (side note: beavers were also causing regular maintenance headaches for the town). Initial post-construction monitoring shows that beaver, bobcat, otter, mink, raccoon, groundhog, fox and deer are all using the structure for under-road passage, in addition to birds and smaller critters. The upsized structure has eliminated road flooding, washouts, and the nuisance beaver activity at this crossing already.

Up in northern New Hampshire we are working with the New Hampshire Department of Transportation (NHDOT) on a culvert replacement that incorporates wildlife passage under Route 3. This project offers multiple benefits: it addresses a structure in need of replacement because of its poor condition, it will correct a four-foot outlet perch that is a barrier for native brook trout and other fish, and it will enhance under-road passage for a broader suite of wildlife that it is currently unsuitable for. The existing structure is a four by four-foot box culvert that will be replaced with a seven-foot-wide by five-foot high box this summer. A wildlife shelf will be installed inside the culvert, with inlet and outlet features that facilitate unimpeded wildlife access. We look forward to monitoring how wildlife adapt and utilize this safer passage underneath Route 3.

Where to Consider Doing More for Wildlife Crossings

There are tens of thousands of culverts across New Hampshire, and not all culvert locations are equal when it comes to their value as wildlife crossings. So how do you determine where to invest more for wildlife? There are several factors to consider that we will explore.

First, where do you find roadkill repeatedly at the same location? Or are there any locations that you frequently see wildlife crossing or attempting to cross the road? These observations indicate that the road bisects suitable habitat and that there might be opportunities to enhance wildlife passage.

Second, is there a wildlife connectivity plan that overlaps your community? The Nature Conservancy and New Hampshire Fish and Game Department have worked together on multiple wildlife corridor plans in New Hampshire. The most recent, [Connect The Coast](#), identifies regionally significant wildlife corridors across southeastern New Hampshire, extending from I-93 to the coast and from the Massachusetts border up to the Lakes Region. We worked on a similar plan for [Northern New Hampshire](#), extending from Route 2 to the Canadian border, as part of the Staying Connected Initiative. Take a look at these plans to see where wildlife corridors intersect the road network—your next wildlife passage project might be highlighted for you! And in the near future, New Hampshire Fish and Game Department will undertake a wildlife corridor planning effort for all of New Hampshire.



Lubberland Bobcat; Bobcat passing under Bay Road in Newmarket (Source: Charlotte Harding, TNC)

Other factors to consider for locating wildlife passage projects include road type and traffic volume, and adjacent habitat areas in need of connecting. A seldom traveled dirt road probably isn't your best investment for moving wildlife from one side of the road to the other. Wildlife should be able to move across these types of roads mostly unimpeded (but make sure to watch out for those slower moving animals that you might encounter on these roads, such as turtles and snakes). Higher traffic volume roads with faster speeds are much more significant barriers for wildlife to cross. Put yourself in their shoes—would you want to run across I-93 south of Concord? Stream crossing structures under these major roads offer important opportunities for safe wildlife passage.

Considering what culverts or bridges are connecting is also important when planning wildlife crossings. This requires zooming out from your project site to look at landscape factors beyond the right-of-way. Is there undeveloped land on both sides of the road in need of connecting? Is there conservation land? Is one side of the stream better for wildlife movement than the other because of adjacent land uses? The University of New Hampshire hosts the [GRANITView](#) online mapping tool that can help answer some of these questions. It provides easy access to many statewide GIS datasets, such as roads, streams, NH's Wildlife Action Plan habitats and habitat priorities, conservation land, and many more informative layers. Checkout [Getting Started with GRANITView](#) if you have never accessed this resource.

Other Resources:

As you well know, transportation projects are costly endeavors. Projects that incorporate multi-benefit solutions, including flood risk mitigation, wildlife crossings, and fish passage, are much more likely to secure non-traditional transportation funding than replacing a crossing in poor condition alone.

The culvert replacement project at Lubberland Creek in Newmarket received \$200,000 from the NH Department of Environmental Services' Aquatic Resource Mitigation (ARM) program because of its multiple benefits. The DOT project in Stratford received nearly \$140,000 from the National Fish and Wildlife Foundation's New England Forest and Rivers grant program because of its benefits for fish and wildlife passage. In both cases, and across many other similar projects across the state, it was important to build strong partnerships with federal, state, local, and private organizations to harness technical and financial resources to advance these important projects.

The Nature Conservancy and New Hampshire Fish and Game Department welcome you to reach out to discuss your wildlife crossing project ideas. We can help evaluate your projects and identify partners that are working in your area. It will take an “all hands on deck” approach to secure the connections that both people and wildlife need across New Hampshire.

If a wildlife crossing project isn't on your immediate horizon there are other important ways you can engage and help. Please consider submitting your live wildlife sightings, roadkill and wildlife track observations to NH Wildlife Sightings (<http://nhwildlifesightings.unh.edu/>). The records submitted to NH Wildlife Sightings can help identify roadkill and crossing hotspots to prioritize future road crossing efforts. Thanks for your help!

Pete Steckler is the GIS & Conservation Project Manager at The Nature Conservancy in New Hampshire. He can be reached by email at psteckler@tnc.org or by phone at (603) 224-5853 extension 222.

Sandi Houghton is the Wildlife Diversity Biologist in the Nongame and Endangered Wildlife Program at the NH Fish and Game Department. She can be reached by email at Sandra.Houghton@wildlife.nh.gov.

THANK YOU!

We would like to thank Pete Steckler and Sandi Houghton for their collaboration on this important topic and for providing this valuable contribution to our newsletter.



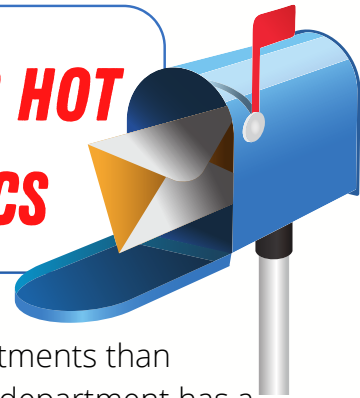
Pictures from a recent Grader Hands-On training in Loudon, NH.
By: Butch Leel

**HANDS-ON
TRAINING**

Mailboxes

By Natch Greyes, Municipal Services Counsel, NHMA

**NHMA'S HOT
TOPICS**



There are few pieces of property that cause more headaches for public works departments than mailboxes. Postal patrons often mistakenly believe that their municipal public works department has a role in determining proper placement or maintenance, and public works department heads are forever fielding complaints about mailboxes being winged by snowplows and other maintenance work.

Article 1, Section 7 of the U.S. Constitution gives Congress the authority to “establish post offices and post roads.” The Clause has been construed to give Congress the enumerated power to designate mail routes and construct or designate post offices, with the implied authority to carry, deliver, and regulate the mail of the United States as a whole. The consequence, of course, of this authority is that the United States Postal Service (USPS) has full authority over design and placement of mailboxes, including those mailboxes along public rights-of-way.

While the design and placement of mailboxes are controlled by USPS regulations, and USPS occasionally engages in enforcement activities along carrier routes, reminding patrons that mailboxes must be placed 6 to 8 inches away from the curb and the incoming mail slot or door must be 41 to 45 inches from the ground, there are plenty of mailboxes which are closer or further away from the curb than USPS regulations allow. Unfortunately, it is these improperly placed mailboxes which cause the most trouble.

Rutting

Mailboxes which are further from the curb than allowed by USPS regulations may cause the mail carrier to leave the road surface to deliver the mail. In time, this passage over the adjacent land can lead to the rutting of the property adjacent to the road surface, resulting in the mail carrier refusing to deliver mail unless the rutting is solved. The private owner often comes to the public works department to ask that they fix the issue, reasoning that the rutting is just off the road surface.

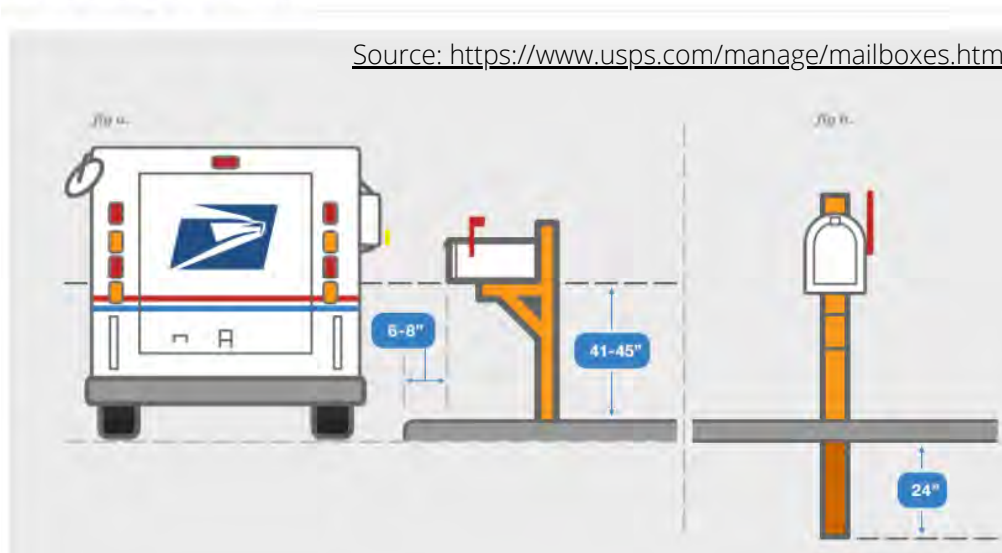
This is where public works directors need to know case law, specifically *Clapp v. Jaffrey*, 97 N.H. 456 (1952). In *Clapp*, the Town of Jaffrey was plowing private driveways. Mr. Clapp had an issue with this occurring, so he sued. As a consequence, the N.H. Supreme Court answered the question of whether it is lawful for the town to rent equipment to or perform services for private individuals on their property. Ultimately, the Court concluded that a municipality may not perform services for private individuals, unless that service is “subordinate and incidental” to town needs and that the prices charged are sufficient to cover the cost so that no burden falls on taxpayers, such actions are lawful.

In the case of rutting, it is clear that if the rutting is occurring on private property and the only members of the public which travel over that property are the mail carrier and the owner, and USPS regulations prohibit the placement of the mailbox as it currently exists, the municipality has no obligation to assist the property owner in either filling in the ruts or properly siting the mailbox, and a public works department which did so would be acting unlawfully under the rule created in *Clapp*.

Damaged Mailboxes

Unfortunately, while it is most often the mailboxes which are improperly placed too close to the road surface that are damaged, even properly situated mailboxes can be damaged by snowplowing or other activities. The fact that mailboxes are subject to USPS regulations on design and placement has created the myth that they are a magical category of property, not subject to usual liability law. Yet, no rational person, for example, would assume that a driver of a vehicle who causes that vehicle to strike a person, car, house, fence, or causes other personal or property damage could escape liability for the caused harm. A driver taking ordinary care would not cause such damage. Yet, for some reason there exists a myth that a person or entity operating a snowplow may damage the mailboxes without consequence. There are two incorrect arguments which I have heard in support of this argument. First, municipalities may not spend public money for private purposes – an idea which comes from Clapp – and because mailboxes are privately owned, the municipality may not replace one even if it damages it. That, of course, is absurd. If an operator of a municipal vehicle hits another vehicle or house or fence, etc., the liability carrier for the municipality will act as any private insurance company, and pay the amount owed to repair the damage. The fact that mailboxes might be of so little value that they can be handled outside of insurance does not negate the liability, it just changes who deals with it.

Where to Place the Mailbox



The second argument pertains to RSA 231:92, which states, in relevant part, that municipalities are not liable for “property damage arising out of its construction, maintenance, or repair of public highways and sidewalks constructed thereupon unless such injury or damage was caused by an insufficiency.” This broad protection is an exception to the ordinary rules of liability. See *Schoff v. City of Somersworth*, 137 N.H. 583 (1993) (discussing the exception). However, a municipality may be subject to liability when “workers negligently follow or fail to follow an established plan or standards, and injuries result.” *Gardner v. City of Concord*, 137 N.H. 253, 258 (1993). It is hard to argue that a mailbox which the local postmaster can attest was properly placed would be struck by a vehicle as a consequence of anything other than either an intentional act – which is never protected from liability – or negligence on the part of a driver. While improperly placed mailboxes may, of course, not be subject to such protections, there is still a high probability that an improperly placed mailbox which has been in the same location for a number of years would not ordinarily be struck except through some intentional or negligent act of a driver, but that depends more on the facts of the positioning than a properly placed mailbox.

(NHMA's Hot Topics: Mailboxes, continued from page 12)

Considering the low cost of a mailbox, it is often more cost-efficient for a municipality to self-insure and replace damaged mailboxes than fight postal patrons over proper placement of mailboxes, unless the mailbox was obviously improperly placed.

With the recent upswing in mail, particularly packages, it is unlikely that postal patron complaints about mailboxes will go away anytime soon, but it is important for public works departments to recognize what they are and are not responsible for regarding mailboxes.



We want to thank Natch Greyes for his continuing support and important contributions of "Hot Topics" to our newsletter!

UNH T2's Tech Assist Corner

UNH T2 provides Technical Assistance on a variety of topics, including equipment training, pavement management questions, drainage considerations, policies and best practices, understanding maintenance regulations, and more.

Assistance with the hiring process in a DPW Department

We recently provided technical assistance to a town that was hiring a new highway department employee. UNH T2 provided several examples the agency used to prepare their own job description, job posting, and also plan their interview process.

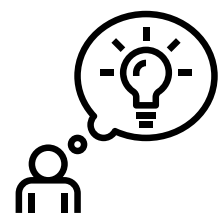
This included suggestions to have a diverse interview panel comprised of supervisors, department of public works leaders from neighboring communities, select board members, or others that could give the candidate a broad view of the position and its stakeholders.

UNH T2 shared a selection of roadway pictures that could be utilized to evaluate candidates' ability to 'read the road' for maintenance needs (overgrowth brush covering signs, potholes, areas of possible drainage concern, etc). We also provided the below template documents to help the hiring committee.

- Click [here](#) for a collection of sample interview questions.
- Click [here](#) for a sample scoring matrix when dealing with multiple candidates.

Do you have a technical need we can help you with? Reach out to T2.Center@unh.edu!





Innovation Station

Featuring a winning Build-A-Better-Mousetrap entry from 2019 on the insert after this page. Now is the time to think about the creative innovations that you implemented in 2020. Did you tweak a process, change a piece of equipment to make it more user-friendly, to improve your and your teams' safety? Did Covid-19 make you creative in how you kept yourself and others safe in your daily work? - Tell us about it! And have your idea and entry ready for the Build-A-Better-Mousetrap competition of 2021!

New Hampshire, The Beautiful!

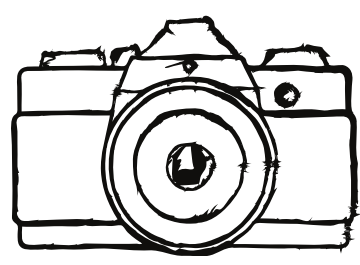
Our state is so beautiful! Mountains, pristine ponds, lakes and rivers, and the coast line! New Hampshire has it all! Prosperous cities, quaint New England villages, humble people. We recently asked for you to be our eyes on the road, and to send in some pictures from your (work) day. We are so happy and thankful to have received some outstanding pictures that are featured below. We are still looking for more submissions from the road (safety first, please), and encourage you to show us your (hobby) photographer talent! - Thank you!



Grader, Haverhill, NH
Submitted by Brigitte Codling, Town Manager Haverhill, NH



DPW Buiding in Gilford, NH
Submitted by Meghan Theriault, DPW Director, Gilford, NH



Got pictures? Send them to
Bettina.Sietzeunh.edu
Thanks!

INSPECTION AND DATA COLLECTION

This category recognizes modernization and use of new technology to retool the way agencies approach inspections, capture information, and increase efficiency and productivity.



WINNER: Olmsted County
Public Works, Minnesota

360-Degree Camera Sled Transforms Culvert Inspections

Imagine you're a public works inspector whose job is to check on the condition of culverts. The only way to see inside those culverts is to crawl in with a flashlight. If you're lucky, the diameter is large enough to get through on your knees. Otherwise, you're forced to slide in on your belly and roll onto your back. The bottom is wet and often covered in layers of mud.

Senior transportation specialist Jeff Busch doesn't have to imagine any of that because it's his reality—at least it was before his resourcefulness led him to a brilliant new solution. Until recently, every time Busch and his fellow Olmsted County, Minnesota, inspectors checked one of 1,600 culverts after a flooding event or before a repair project, they were confronted with uncomfortable, unsanitary, and potentially unsafe conditions.

"If something goes wrong, you're stuck in that confined space," says Busch. "It's an emergency situation."



© 2019 Olmsted County Public Works, Minnesota.

The possibility of coming face to face with a rodent or snake provided even more motivation to find an alternative inspection method.

For about two years, the five Olmsted inspectors and their supervisor, Scott Holmes, talked about how they could create a remote inspection system. Busch knew he wanted to design a system without complex wiring, servos (a power-driven mechanism that supplements the primary control), or the need to maintain a Wi-Fi signal. While the team members originally considered using a remote-control car to move a camera through the culvert, Busch ultimately led them to the original concept of a camera on a sled.

As a lifelong tinkerer with a childhood habit of taking toys apart to "make them better," innovative thinking comes naturally to Busch. Presented with this challenge, his gears couldn't help but turn: If they integrated a 360-degree action camera in their design, they could easily view a culvert from every angle. Plus, he realized most of the models available were waterproof—perfect for their purposes. Applying additional criteria of short focal length, small size, large memory, and viewing and editing software to his search, he found the ideal 360-degree action camera and a tablet that enables the remote use of a live feed.

Busch, however, prefers to review footage back in the office later, finding that immediate answers are not essential, and recordings can be saved as part of the inspection.

To make a model of the sled platform he envisioned for the action camera, he headed for his son's creative construction set for kids—and it was that prototype composed of little plastic rods and connectors that Busch pitched to Olmsted's county engineer, Kaye Bieniek, getting her support.

Next, he needed to find a way to move the camera through the culvert. The perfect ingredient came in the form of 4 mm fiberglass fish tape, typically used by electricians to route new wiring, which could be pushed through the pipe and locked into the sled when it got to the other side. A toilet tank float was ideal at the end of the fish tape to help it skip through the pipe without getting stuck.

Busch has been stopped only twice after sending his sled through roughly 120 culverts. And despite pulling his sled over rocks, rusted metal, and even a deer skull, there hasn't been a single flip-over or wreck. Pretty impressive for something composed of a PVC pipe sled, pool noodle side arms for buoyancy, rechargeable bike lights to illuminate the action camera, a flashing pet collar for visual location, a toilet tank float, and a kite reel that operates as a "positioning yo-yo" or recovery line.

"I've never built anything like this," Busch says. "I just kind of looked for objects that would fit my needs and saw what would work best."

Before his innovation, the smallest culvert inspectors could enter was 24 inches—and they couldn't get quality visual documentation for their evaluations. Now, inspectors can obtain clear images in culverts as small as 15 inches. The new system has already provided maintenance crews with better data; in one instance, preventing a road from being torn up when Busch's video revealed that only a patch was required.

"You can look at video multiple times and get a different view every time," Busch reports. He was initially concerned about the lens being too close to the pipe for clear images, but that hasn't been an issue. He does slow videos down to half speed for better resolution, however.



© 2019 Olmsted County Public Works, Minnesota.

Holmes is impressed with how the 360-degree action camera on skids has transformed their work, not to mention Busch's ingenuity. "It's nice having an innovator like Jeff," he says. "You can go back and look at all these still pictures around the whole culvert—around the top, around the sides, around the bottom. You can spend a half-hour looking at it in the office, and he only ran it through there for a minute."

Busch says he was going for "cheap but effective," which he accomplished with his final tally of \$1,240, compared to commercial pipe inspection crawler robots that can cost as much as \$10,000. The bulk of that cost went toward the 360-degree action camera (\$600) and tablet (\$360).

Busch has already modified his original design and is now using a third, more compact version featuring even greater stability and flotation capabilities. He also plans to use the 360-degree action camera to get a better view of trouble spots in other areas of his work, including construction and bridge inspections. Culverts are only the beginning.

"I'm definitely inspired to do more," he says.

For more information, contact:

Olmsted County Public Works, Minnesota
 Jeff Busch/Scott Holmes,
 Senior Transportation Specialist/ Transportation Supervisor
 507-328-7070
busch.jeff@co.olmsted.mn.us



Riddle me this...

We are excited to try a new approach, and came up with a **virtual Road Trip riddle**. [Click here to play.](#)

Answer the questions, keep scrolling to the very end of the online questionnaire, and submit your answers for your chance of being drawn for a free UNH T2 workshop seat (total value of up to \$100).



...and you might win a free UNH T2 workshop seat!



Upcoming UNH T2 Workshops

One Environmental RS Hour

GUEST SPEAKER: HEIDI HOLMAN, NH FISH & GAME

UNH T2 PRESENTS

WEEDS, SEEDS & THINGS WITH WINGS

Learn about invasives and pollinator habitats for your next roadside maintenance project

REGISTER AT [HTTPS://T2.UNH.EDU/TRAINING-CALENDAR](https://t2.unh.edu/training-calendar)

9/23 AT 7:30 AM

Culvert Maintainer Recertification Training

October 6, 7:30-9:30 AM

Via Zoom

\$25 municipal
\$50 private

Register at <https://t2.unh.edu/training-calendar>

CERTIFIED

New Hampshire Roads Scholar

...and more on our calendar!

The Safe System Approach

Sharing an exciting development from FHWA's Office of Safety on page 18 & 19.



Watch for more information on the Safe System Approach, and join us for our own upcoming six-part series on Safer Roads for New Hampshire when we'll explore this, and several other safety initiatives and countermeasures to support safe roadways!

Start for this FREE, 6-part series is October 13th!



Join UNH T2 and special guest speakers for this engaging new virtual series where we'll review the planning and countermeasures for safer roadways for New Hampshire! While some of the content may be specific to New Hampshire regulations and BMPs, most of it will be helpful for any local road agency, in any rural town in New Hampshire and beyond. We'll focus these discussions on the situations and challenges that you address on your rural streets and roadways, and share practical (and oftentimes low-cost) ways to make transportation safer for all of your roadway users, including:

Reducing Rural Roadway Departures

The Safe System Approach to move towards Zero Deaths

Safe Transportation for Every Pedestrian

Understanding NH's HSIP

The Tools and Resources to Develop Your Own Local Road Safety Plan

Systemic Analysis and more!

We encourage local road agencies of all sizes, including those who maintain the many miles of New Hampshire's rural roadways, to join us for this informative new series!

10/13: Week 1: We'll start our series within the framework of the Safe System Approach. The goal is always to avoid a crash in the first place, but if a crash occurs, our road system should protect against serious injuries and fatalities. In this session, we'll also introduce the Strategic Highway Safety Plan, as well as how public works road agency team members can "read the road" in their daily efforts to identify potential safety issues. **Guest speaker Mark Doctor**, Safety and Design Engineer with FHWA, will join us to discuss Safe System Approach.

10/20: Week 2: We'll talk about Crash Reduction Factors and Crash Modification Factors, reaction time, and consistency, and how each of those helps us in managing safer roadways. We'll review how Curves, Friction including High Friction Surface Treatment, Signs and Markings (including Chevrons) can help us to KEEP vehicles on the road, along with the importance of Retroreflectivity. Delineators, and roadway Markings. We'll also explore ways to create safer roads, keep vehicles on the road, and reduce crashes through safety at intersections, traffic signals, and driveways. **Guest speaker Richard Albin**, Safety Engineer with FHWA, will join us to discuss these important safety countermeasures.

10/27: Week 3: We'll explore the countermeasures that can help us get a vehicle BACK on the road safely, if it does leave the travel lane. This includes Rumble strips, safer Slopes and Ditches to prevent rollovers, Safety Edge, as well as maintaining clear zones and reducing roadside hazards.

11/3: Week 4: After reviewing how to KEEP vehicles on the road or get them safely BACK on the road if not, we'll spend week four reviewing how to reduce crash severity if neither of those options works and a vehicle leaves the roadway and can't safely get back on. This includes proven safety countermeasures to minimize the severity of the crash, such as breakaway sign supports. **Guest speaker David Kopacz**, Safety Engineer with FHWA, will join us as we discuss when certain Barriers or Guardrails may be a good option, and how to select and utilize them safely.

11/10: Week 5: Let's take a walk through the many pedestrian safety countermeasures to help make transportation safer for ALL users. We'll review crosswalk enhancements, hybrid beacons, Rectangular Rapid Flashing Beacons (RRFB), Leading Pedestrian Intervals (LPIs), and other important pedestrian measures and technologies.

11/17: Week 6: In our final week of the Safer Roads for New Hampshire series, we'll bring it all back together to discuss ways to identify the right data to support crash analysis and safe road planning, as well as to identify crash contributing factors. In this session, we'll also review the Road Safety Audit submission and completion process, and take a detailed look at the fantastic resources, templates, and information available to help YOUR local road agency complete its own Local Road Safety Plan. Discussions will include choosing countermeasures, as well as funding. **Guest speaker Jerry Roche**, Transportation Safety Engineer at Federal Highway Administration, Office of Safety, will join us to discuss Local Road Safety Planning tools. **Guest speaker, Colin Lentz**, Senior Transportation Planner with the Strafford Regional Planning Commission, will discuss the NH Road Safety Audit (RSA) process.

[Click here to register once for all sessions!](#) Time: 7:30am - 9:00am
Attend all sessions for 3 hours Safety, and 6 hours Technical.



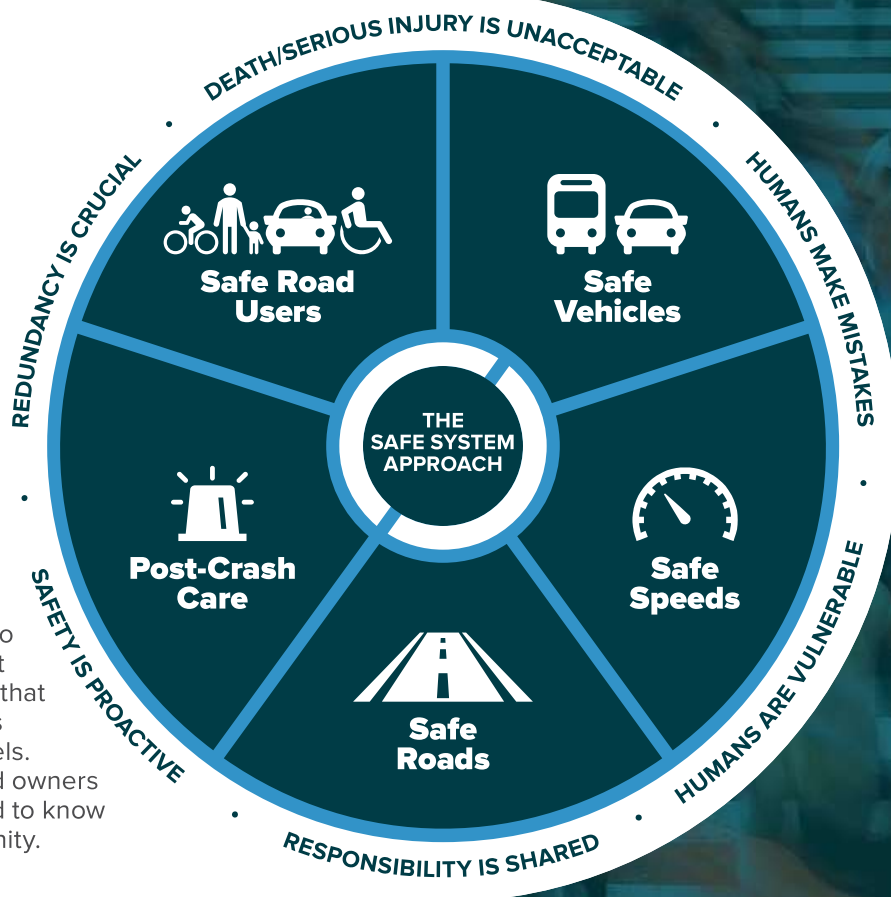
***"ALWAYS REMEMBER THE 7 P'S: PROPER
PLANNING AND PREPARATION PREVENTS
PRETTY POOR PERFORMANCE."***

THE SAFE SYSTEM

APPROACH

Zero is our goal. A Safe System is how we will get there.

Imagine a world where nobody has to die from vehicle crashes. The Safe System approach aims to eliminate fatal & serious injuries for all road users. It does so through a holistic view of the road system that first anticipates human mistakes and second keeps impact energy on the human body at tolerable levels. Safety is an ethical imperative of the designers and owners of the transportation system. Here's what you need to know to bring the Safe System approach to your community.



SAFE SYSTEM PRINCIPLES



Death/Serious Injury is Unacceptable

While no crashes are desirable, the Safe System approach prioritizes crashes that result in death and serious injuries, since no one should experience either when using the transportation system.



Humans Make Mistakes

People will inevitably make mistakes that can lead to crashes, but the transportation system can be designed and operated to accommodate human mistakes and injury tolerances and avoid death and serious injuries.



Humans Are Vulnerable

People have limits for tolerating crash forces before death and serious injury occurs; therefore, it is critical to design and operate a transportation system that is human-centric and accommodates human vulnerabilities.



Responsibility is Shared

All stakeholders (transportation system users and managers, vehicle manufacturers, etc.) must ensure that crashes don't lead to fatal or serious injuries.



Safety is Proactive

Proactive tools should be used to identify and mitigate latent risks in the transportation system, rather than waiting for crashes to occur and reacting afterwards.



Redundancy is Crucial

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



U.S. Department of Transportation
Federal Highway Administration

FHWA-SA-20-015



Safe Roads for a Safer Future
Investment in roadway safety saves lives

SAFE SYSTEM ELEMENTS

Making a commitment to zero deaths means addressing every aspect of crash risks through the five elements of a Safe System, shown below. These layers of protection and shared responsibility promote a holistic approach to safety across the entire transportation system. The key focus of the Safe System approach is to reduce death and serious injuries through design that accommodates human mistakes and injury tolerances.



Safe Road Users

The Safe System approach addresses the safety of all road users, including those who walk, bike, drive, ride transit, and travel by other modes.



Safe Vehicles

Vehicles are designed and regulated to minimize the occurrence and severity of collisions using safety measures that incorporate the latest technology.



Safe Speeds

Humans are unlikely to survive high-speed crashes. Reducing speeds can accommodate human injury tolerances in three ways: reducing impact forces, providing additional time for drivers to stop, and improving visibility.



Safe Roads

Designing to accommodate human mistakes and injury tolerances can greatly reduce the severity of crashes that do occur. Examples include physically separating people traveling at different speeds, providing dedicated times for different users to move through a space, and alerting users to hazards and other road users.



Post-Crash Care

When a person is injured in a collision, they rely on emergency first responders to quickly locate them, stabilize their injury, and transport them to medical facilities. Post-crash care also includes forensic analysis at the crash site, traffic incident management, and other activities.

THE SAFE SYSTEM APPROACH VS. TRADITIONAL ROAD SAFETY PRACTICES

Traditional

- Prevent crashes → Prevent deaths and serious injuries
- Improve human behavior → Design for human mistakes/limitations
- Control speeding → Reduce system kinetic energy
- Individuals are responsible → Share responsibility
- React based on crash history → Proactively identify and address risks

Safe System

Whereas traditional road safety strives to modify human behavior and prevent all crashes, the Safe System approach also refocuses transportation system design and operation on anticipating human mistakes and lessening impact forces to reduce crash severity and save lives.

WHERE ARE
YOU ON THE
SAFE SYSTEM
JOURNEY?

Implementing the Safe System approach is our shared responsibility, and we all have a role. It requires shifting how we think about transportation safety and how we prioritize our transportation investments. Consider applying a Safe System lens to upcoming projects and plans in your community: put safety at the forefront and design to accommodate human mistakes and injury tolerances. Visit safety.fhwa.dot.gov/zerodeaths to learn more.





DON'T SLEEP ON THE CHANCE FOR (FREE!) ROADS SCHOLAR HOURS!

Through 2020, earn Roads Scholar hours from any live webinar on our training calendar or on-demand training from our eLearning Catalog! *

**IMPORTANT!! FOR PROPER CREDIT
SUBMIT HOURS WITHIN ONE MONTH OF COMPLETION**

*Receive up to 40 hours credit for on-demand eLearning training



TUESDAY'S

TOP TEN AT 10

with T2

- Spring Riddle answers
1. People
 2. Heatstroke
 3. Elearning
 4. Catalog
 5. Additional
 6. Lighting
 7. Pavement
 8. Preservation
 9. Coronavirus
 10. Butch
 11. Emerald
 12. Ash
 13. Borer

2020 Spring Riddle Winners

Bruce Thomas, Hooksett & Dave Beaudin, Lincoln

Congratulations on 1 free UNH T2 workshop seat!



**Tailgate Talks**

JOIN UNH T2 @UNHT2CENTERLTAP

 **LIVE** 

9/14
Woodchipper Safety



Connection is now more important than ever! - Subscribe to All Things UNH T2 here.

