

## RESTORING THE HEART – MAJOR CORRIDOR UNDERGOES REHABILITATION IN DOWNTOWN MANCHESTER, NH BY: TIM BRUN

If one were to do a Yelp search for the best restaurants in downtown Manchester, N.H., a number of the top-rated spots would be found on Elm Street, a key thoroughfare that stretches from the south end to the north through the heart of the Queen City.

This particular corridor is in a crucial location, as it passes by Manchester City Hall. It also houses the Southern New Hampshire University (SNHU) arena, home of the Manchester Monarchs, the city's minor-league hockey team. The 12,000-seat arena also hosts a number of concerts and conventions. A minor-league baseball team, the New Hampshire Fisher Cats, plays just a few blocks away from Elm Street, so the corridor is often bustling with activity.



*Photo: The Elm Street rehabilitation project was conceived and funded as a complete streets project, in order to accommodate a variety of transportation modes.*

As such, when the time came for the four- to five-lane road to undergo rehabilitation, officials with the city of Manchester allocated funding not only for repaving, but for a complete street design approach to accommodate a variety of transportation modes that included bicycle, pedestrian, vehicular and transit.

### Showing its age

Elm Street measures about 60-70 ft wide in pavement width, and until last year, it had not undergone much in terms of reconstruction for a couple decades. "The road probably hadn't been repaved or had a lot of maintenance done to it probably since the mid-90s," David Winslow, project engineer for the Manchester Dept. of Public Works, told Roads & Bridges. "So you're talking 20 years—and it was showing its age." He added that the road was significantly cracked and had a slew of visible utility patches on the pavement.

As rehabilitation became a clear necessity, the opportunity to incorporate the complete streets design was touted by transportation officials. "There's a lot of advocacy for putting transportation facilities for bicycles and such in town for the downtown area," Winslow said. "So we looked at where we could put the bicycle lanes in—and it seemed to make sense without impacting traffic operations all that much." Adding the bike-friendly aspects along the corridor also meant that Elm Street would get

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## *Restoring the Heart, continued cover*

a road diet, reducing the four-lane section to three lanes in order to add room for bicycle lanes along the road. The city of Manchester also decided on incorporating high-visibility crosswalks in certain problem areas for pedestrian crossings on the corridor.

### **In the matrix**

While the city successfully kept the public informed about their presence on Elm Street, coordinating the project schedule itself became quite the hassle as 10 different contractors had to complete repair and utility work along the corridor. All utility work had to be completed before paving could begin, and the city had to juggle an already compressed schedule with making sure the work would be completed apart from the times of major events happening downtown.

Utility work proved to be a major headache for the city to get out of the way before paving. “One of the utility companies putting the fiber optic in, as they started they didn’t realize how tough Elm Street was,” Winslow said. A number of utilities along the corridor slowed down the process of installation.



*Photo: Tree wells using 100% recycled tire rubber were installed along the corridor.*

When construction began in May, contractor Continental Paving at first was limited in the work they could do. “Around June we were able to get started with some sections, and some sections weren’t available to us until some time in September,” Ryan Charbonneau, project manager for Continental Paving, told Roads & Bridges. Elm Street was broken up into eight different work areas, and each section varied in size and had its own unique conditions affecting work production. According to Charbonneau, the most asphalt laid down per day was 2,200 tons of 12.5-mm wearing course. This occurred on the straightest southerly

section of Elm with no irregularities to pave around. The average paved was 1,200 to 1,400 tons per day for the top course.

On Continental’s side of the project, the contractor tried to maintain a similar conceptual schedule to each section where they milled. “The general process was mill, shim, pave, and then there was a fair amount of other work—raising structures, new traffic-control signal loops, things of that nature,” Charbonneau said. On an average week, Continental would try to mill about 2 in. off the road, and then try to shim it in by Friday of that given week. Each section carved out of the project usually was completed within the span of two to three weeks, depending on weather and some of the other work going on along Elm Street.

For the work on Elm Street, in compliance with New Hampshire Department of Transportation (NHDOT) specifications, Continental used 22% RAP in their mix, which consisted of a 9.5-mm mix for shim, 12.5-mm mix used on the top course and PG 64-28 binder. The shim course varied in lift thickness, averaging 1 in., while the top course was 1.5 in. thick. The paving train featured a Roadtec RP190 paver at the front, with some sections using two pavers—one to handle the mainline, and the other to pave in and around angled parking stalls, sidewalk bump-outs and other irregularities. Compaction was achieved with a Hamm 120 for breakdown rolling and Hamm 90 rollers for intermediate and finish rolling. The transporting distances for trucks bringing the mix to the project site ranged from 8-11 miles, depending on the location on Elm Street.

### **A showcase street**

The total asphalt tonnage used in paving Elm Street came in at 12,500 tons. The compaction level achieved on the project was in the 93-94% range, exceeding the 92% requirement of the contract.

*Cont. pg. 3*

## *Restoring the Heart*, continued pg. 2

Work on the final section of Elm Street was completed a week in advance of the Nov. 7 deadline. While the total cost savings from using recycled material on the project is hard to pinpoint, if the same project used a mix with all virgin material, according to Charbonneau, the added cost would be \$5 per ton. Thus, using 22% RAP provided a savings of around \$62,000.

Another element of the project that used recycled material involved the installation of 50 permeable tree wells along Elm Street using 100% recycled tire rubber. Such achievements on the project are part of what earned the Elm Street Rehabilitation project a [Roads & Bridges/ARRA Recycling Award for 2018](#).

The final product, in the eyes of Manchester officials, provides a boost for the businesses along Elm Street and enhances the downtown experience for residents and visitors. “We have a lot of people from out of town coming to the arena and other events, and when they drive downtown they see a brand new street which looks nice,” Winslow said. “It’s the showcase piece for downtown or even just the city in general.”



This article reprinted with permission from Roads & Bridges Magazine and originally appeared in the February 2018 issue. Tim Bruns is the Associate Editor of Roads & Bridges Magazine.  
<https://www.roadsbridges.com/restoring-heart>

*Photo: A road diet made for the right multimodal mix on Elm Street.*

## *Upcoming Events*

8/26-29 PWX, Kansas City, MO

9/11 5th Annual NH Salt Symposium, Concord, NH

9/11-13 National Work Zone Management Conference, Herndon, VA

9/18 NH Public Works Association Technical Meeting Manchester NH

9/27- 9/28 NH Construction Career Days New Boston, NH

9/30-10/3 ARTBA National Convention “Building Smart & Resilient Transportation Infrastructure” NYC

10/4 NH Public Works Mutual Aid Ultimate Toolbox Workshop Pembroke

10/7-11 NTTD Conference, Chattanooga, TN

11/14 -11/15 NHMA Conference, Manchester, NH



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## From the T2 Team

### *Hello all!*

Summer is finally here- the warmer weather, outdoor activities, BBQs, and so many other things I love about life in New Hampshire! UNH T2 has been busy these past several weeks with *60+ workshops since April, and participants from 140 towns and organizations!* We've also attended several conferences, and enjoyed networking with our colleagues, seeing many of you, and hearing about the exciting things happening in the public works profession and your own teams! This issue, we're pleased to recognize one of those innovative teams- the Dover Community Services team, winner of our 2018 UNH Technology Transfer Center Build a Better Mouse Trap competition. Watch for more information about their submission in an upcoming issue.

Speaking of upcoming issues- we have a lot of content we'd like to share with you, but limited space! We're planning a summer "Double Header" for *Road Business*, so watch for another issue in several weeks. We're also planning some exciting changes to launch in the fall, including a redesigned newsletter, an updated website, a Toolbox Talks program, and a user experience survey. We're thrilled to be sharing these new resources and initiatives with you in the coming months, and hope you'll share with us in return! We'd like to add some new features to our newsletter, including the following, and appreciate reader contributions:

- Innovation- a focus on changes to process, technique, tooling, or anything else that makes your team more efficient, allows you to save time or money, or increases safety
- Old roadway structures and architecture photos
- Success stories and professional accomplishments- we love to hear how you're developing your professional knowledge and expertise, including if T2 is a part of that success
- Retirements and Appointments to celebrate your team members who are retiring, or new team members joining you

We're excited about the next few months at T2, and hope you'll connect with us to stay informed of what's happening. We also hope you'll share your feedback, challenges, and ideas with us! Please contact me at [marilee.lafond@unh.edu](mailto:marilee.lafond@unh.edu).

Thank you for all you do to provide safe, efficient roadway transportation in New Hampshire. Wishing you a pleasant and safe remainder of the summer season!

Best wishes,  
Marilee LaFond  
UNH T2 Manager

## *Rising Tides, Increasing Floods* By: Robbin Ray

*UNH research finds flooding on eastern coastal roads has increased 90 percent over the past 20 years.*



*A driver ventures down a flooded road made impassable by coastal flooding in Rye, N.H. Photo credit: Kim Reed.*

New research from UNH confirms something anyone in Hampton, N.H., or Scituate, Mass., or along the Jersey Shore has experienced first-hand: High tide floods, or so-called “nuisance flooding,” are occurring far more frequently than ever before. In fact, this flooding along shore roadways during seasonal high tides or minor wind events has increased a whopping 90 percent over the past 20 years along the East Coast, resulting in impassable roads, delays and disrupted transportation of goods and services.

And it’s likely to get much worse.

“This could be just the beginning of impact on these areas,” says Jennifer Jacobs, professor of civil and environmental engineering and lead author of the [study](#), published in the journal *Transportation Research Record*. “With the continued rise in sea levels, nuisance flood frequency is projected to grow and the effect on the physical roads and the people that live along the coastline is concerning.”

These findings will help researchers and transportation planners better understand the type and extent of roadway infrastructures that are vulnerable to high tide flooding and the transportation impacts now and in the future due to sea level rise.

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Jacobs and her co-authors found that tidal nuisance flooding threatens more than 7,500 miles of roadways along the entire East Coast, with more than 400 miles of that being interstate roads. They estimate that this causes more than 100 million hours of delays each year for drivers on those roads, and that number could rise to more than 3.4 billion hours by 2100. By the middle of the century (2056 –2065), the researchers predict nuisance flooding could occur almost daily at specific sites along the shores of Connecticut, New Jersey, Maryland, the District of Columbia, North Carolina and Florida under an intermediate sea-level-rise scenario.

With the continued rise in sea levels, nuisance flood frequency is projected to grow and the effect on the physical roads and the people that live along the coastline is concerning.”



*Roads closed due to high tide floods in Portsmouth, N.H.  
Photo by Lisa Graichen.*

“As tidal coastal flooding increases in the coming years, there will also be issues with the transportation infrastructure,” says Jacobs, who leads [The Infrastructure and Climate Network](#) and is co-director of the [UNH Center for Infrastructure Resilience to Climate](#). “We’ve already seen billions of dollars in damage to coastal roadways from recent hurricanes. In the future, with rising sea levels, we expect to see more frequent issues, more damage and impact to roadways even farther inland.”

Jacobs and her co-authors (from the U.S. Department of Transportation and the National Oceanic and Atmospheric Administration, or NOAA) note that these effects are not limited to storms. They say that critical transportation infrastructure is at risk from sea level rise alone, which numerous transportation agencies project to be between one to eight feet, along the U.S. Atlantic and Gulf Coasts. Vulnerable roads were identified using data from the Federal Highway

Administration’s Highway Performance Monitoring System and NOAA’s Center for Operational Oceanographic Products and Services. They looked at flood frequency maps, tidal gauge historic observations, and future projections of annual minor tidal flood frequencies and durations.

This research was funded by U.S. National Science Foundation research grant (CBET-1231326).



### Roads Scholar Update

Congratulations to the newest Advanced Master Roads Scholars! **Craig Sykes, of the town of Raymond and Gordon Ellis, of the Town of Epsom**, have given of their time and wisdom to the betterment of the public works community. They’ve each worked hard over the years to give back to their public works communities and others.

Their efforts have assisted others in furthering their professional knowledge and skills. Without a doubt, their passion for this industry has made public works a better place to work.

Thank you, Craig and Gordon, for your dedication and passion for public works!



# Food for your brain...

Butch says...

"Knowledge is of no use unless you use it."

## And others say...

"If knowledge is not put into practice, it does not benefit one." — *Muhammad Tahir-ul-Qadri*

"Wisdom is not a product of schooling but of the lifelong attempt to acquire it." — *Albert Einstein*

"Knowledge is power? No. Knowledge on its own is nothing, but the application of useful knowledge, now that is powerful." — *Rob Liano*

You have an infinite supply of fresh drinking water at today's site...























... and you also have a 5-liter bucket and a 3-liter bucket. How do you measure four liters?



John noticed that the amount he was paying for his T2 workshop was a rearrangement of the digits of the amount of money he had in his pocket, and that the money he had left over was yet another rearrangement of the same three digits! How much money did John start with?

## Computer Keyboard Shortcuts

	+		Cut the selected item
	+		Copy the selected item
	+		Print the open document
	+		Save current document
	+		Find keyword
	+		Paste the selected item
	+		Undo an action
	+		Underline a selected section
	+		Italicize a selected section
	+		Bold a selected section

# Celebrating Public Works Across New Hampshire

The Barrington Highway Department held a food drive for End 68 hours of Hunger in Barrington. We held two drives and the outcome of the Food drive was \$701.82 in Monetary Donations and \$790.00 worth of food donations!! They were able to fill up a pickup truck! – Erin Paradis, DPW Barrington



End 68 hours donations!

## Concord Public Works Week

Twitter Party, Concord Public Works Celebration, and a Public Works Luncheon

## Manchester Public Works Week

Public Works employees enjoyed a luncheon celebrating their hard work and commitment to their community.

## Somerset Public Works Week

Fill a Truck, collected around 30 boxes/ bags of non-perishable food items for the Somerset Community Food Pantry, held an employee appreciation BBQ, and the Mayor signed Proclamation recognizing the week

*Michael J. Bobinsky, Director of Public Works and Utilities*



## Congratulations

to the Barrington Public Works Department for being recognized with the 2017 CAPSC Champion Award given by CAP Strafford County. Check out the great video showcasing their efforts!

<https://www.youtube.com/watch?v=dM4gp1HRCnI>

## CONGRATULATIONS DOVER COMMUNITY SERVICES DEPARTMENT- WINNER OF T2'S NH 2018 BUILD A BETTER MOUSE TRAP COMPETITION!

All of us at T2 are pleased to congratulate the City of Dover's Community Services Department, winners of the 2018 University of New Hampshire Technology Transfer Center's (T2) Build a Better Mouse Trap Competition. We also thank them for sharing their innovation with the New Hampshire public works community through their submission! The city entered its new media box that was developed to solve issues with storm water treatment. Working with several partners, including the UNH Stormwater Center, the city designed a catch basin structure that would allow it to meet permitting requirements to construct a rain garden on streets requiring storm water treatment, but with limited space.

An old catch basin style structure was re-engineered into a new two-part system called a media box. One side or cell is a catch basin to collect sand and heavy debris. The other side or cell holds media intended to treat storm water prior to entering the drainage system. The benefit of the new media box is that it can be installed in the street fairly simply and similar to a catch basin, and both cells are able to be cleaned out easily.

Dover's innovation will be submitted by the UNH T2 Center to the Federal Highway Administration's national Build a Better Mouse Trap competition. The national winner will be announced in late July. The UNH T2 Center looks forward to this potential opportunity to share Dover's innovation with public works professionals around the country. Watch for more information about Dover's media box project and be thinking about your own innovations for submission to our 2019 competition!



# The Living Bridge: Portsmouth Memorial Bridge

By: Dr. Erin Bell, Ph.D.

Imagine a bridge crossing over a tidal estuary, a local landmark that deeply resonates with an entire community; a bridge that is a living laboratory for researchers, engineers, future engineers and the general public. This bridge is instrumented with sensors that capture structural performance, traffic patterns, environmental conditions, the behavior of innovative bridge design elements and enable and promote community engagement. The information collected with these sensors is shared with researchers, bridge designers and the bridge owner, but also, where appropriate, with K-12 classrooms and the public.

Aesthetic lighting and social media is used to communicate relevant information from the bridge and environmental sensors, such as weather, tides and traffic to the local community. The bridge sensor network, information communication system and aesthetic lighting are powered by a locally available renewable energy resource, tidal energy. This bridge has the capability to advance all aspects of community engagement with infrastructure, clean energy innovation in tidal energy conversion, energy storage, structural and environmental impact and social perception of our engineered environment. The proposed sensing network, including structural response sensors, underwater instrumentation and cameras, and weather stations, will allow for a complete system-based evaluation, including the impact of the tidal turbine. This “smart bridge” provides a platform for continued innovation of sensor, communication and energy technologies. This is the vision behind the Living Bridge project.

For more information about Memorial Bridge’s Living Bridge Project, visit: <https://livingbridge.unh.edu>

*Photo: Sunset at the bridge from Prescott Park; credit to the Living Bridge Project*



BRAIN TEASER ANSWER

Q2:

John started with \$9.54. The money can be written with just three digits—so it must be between \$1.01 and \$9.99. Trial and error shows that there is only one set of numbers that fit this question:  $\$9.54 = \$4.59 + \$4.95$ .

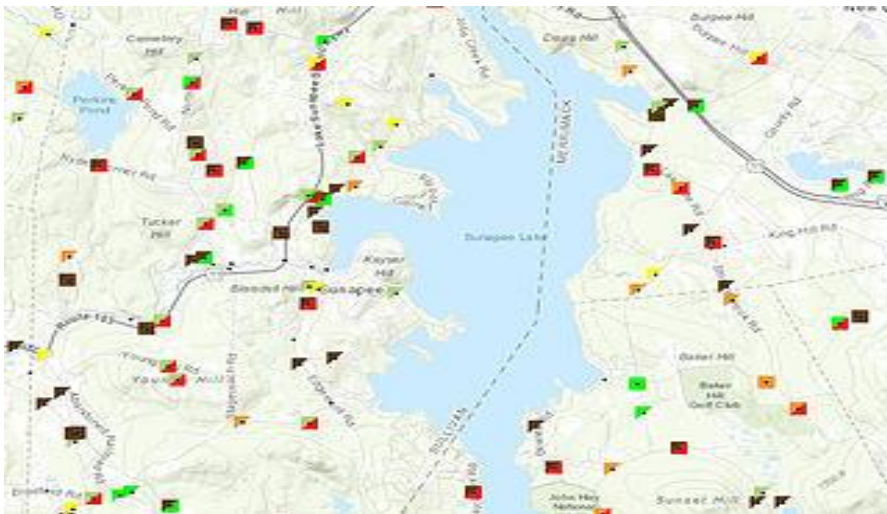
BRAIN TEASER ANSWER

Q1:

1. Fill the 3-liter bottle and pour it into the empty 5-liter bottle.
2. Fill the 3-liter bottle again and pour enough to fill 5-liter bottle. This leaves exactly 1 liter in the 3-liter bottle.
3. Empty the 5-liter bottle; pour the remaining 1 liter from the 3-liter bottle into the 5-liter bottle.
4. Fill the 3-liter bottle and pour it into the 5-liter bottle. The 5-liter bottle now has exactly 4 liters.

**There is an alternate answer – did you get it? Let us know!**

The Statewide Asset Data Exchange System (SADES) has grown significantly since its inception in 2014. SADES utilizes cloud-based mobile field collection software to increase data collection efficiencies at the state, and regional level with plans to eventually reach the municipal level. The most wide-reaching module in SADES is the New Hampshire Stream Crossing Initiative, which is an interagency workgroup which has been tasked with managing the state's stream crossing assessment effort. Using SADES, over 15 agencies can access and collect stream crossing data all on the same shared database. This shared database has many benefits including, reduced duplication of efforts, streamlined data collection, and a standardized data collection.



Since 2014, through the NH Stream Crossing Initiative project partners have collected over 10,000 stream crossing data points across all corners of the state using the SADES model. With this abundance of data, there was a call to make some of this data publicly available for all agencies to access. From that call to action, there were two similar but different, online, public-facing web maps made available. The first is located on the SADES website ([www.nhsades.com](http://www.nhsades.com)), titled "SADES Stream Crossing Viewer".

This web map contains information related to the stream crossing condition, Aquatic Organism Passage (AOP) score, and Geomorphic Compatibility score. The purpose of this particular web map is for simple, high-level viewing of the data collected and verified through the NH Stream Crossing Initiative.

This map is free to access, available to any member of the public, and updated automatically when new data points are added. For any questions regarding this web map or the SADES program, please contact Chris Dowd at the UNH Technology Transfer Center (T2) at [chris@nhsades.com](mailto:chris@nhsades.com).

**SADES map** the second public map is hosted by New Hampshire Geological Survey (NHGS) at the New Hampshire Department of Environmental Services (NHDES), titled "New Hampshire Aquatic Restoration Mapper". This map is a "decision support tool to prioritize culvert replacement and stream restoration projects" (NHDES). This map is significantly more detailed than that hosted on the SADES website in that it also has data layers pertaining to flood hazards, watershed boundaries, fishery models, and more. The web-map can be found on the Wetland Mitigation Program page on the NHDES website, or it can be accessed via this link: [NH Aquatic Restoration Mapper](#). For any questions regarding this web map, please contact Cheryl Bondi at NHDES at [Cheryl.Bondi@des.nh.gov](mailto:Cheryl.Bondi@des.nh.gov).



# EDC-4 and STIC IN ACTION

**Ultra-High Performance Concrete Connections** –This recently-completed project consists of the rehabilitation of the Red List bridge carrying NH 107A over Pan Am Railway (Amtrak Downeaster) in East Kingston and a residential drive, and associated roadway approach work. Prefabricated Bridge Units and UHPC used for their connections provided a quick superstructure replacement to minimize the impacts associated with working over the busy Amtrak Downeaster and freight line.

*Prewetting the edges of the Prefabricated Bridge Units prior to placement of the UHPC. Cap forms were necessary to contain the UHPC material, which has the consistency of self-leveling pancake batter.*



## Want more information?

FHWA's webinar recordings on UHPC, which includes additional deployment stories  
[https://www.fhwa.dot.gov/innovation/everydaycounts/edc\\_4/uhpc\\_webinar\\_recording.cfm](https://www.fhwa.dot.gov/innovation/everydaycounts/edc_4/uhpc_webinar_recording.cfm)

Read "Building Connections That Last" an FHWA *Public Roads* magazine article on UHPC.  
<https://www.fhwa.dot.gov/publications/publicroads/s8winter/01.cfm>

<https://www.fhwa.dot.gov/research/resources/uhpc/bridges.cfm> for an interactive map of North American deployments of UHPC in highway bridge construction.

*For more information on these and other EDC-4 innovations NHDOT is participating in, visit the State Transportation Innovation Council (STIC) site <https://www.nh.gov/dot/programs/stic/index.htm>*

## About Our Authors

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SADES (Statewide Asset Data Exchange System) establishes a primary transportation inventory of assets including a maintainable condition assessment process for many state and local agencies. Its unique approach to statewide asset management efficiently utilizes modern technology and joins efforts for the common good of accurate and sustainable data collection.

Robbin Ray |  
Communications  
and Public Affairs,  
University of New  
Hampshire





## NHPWA Rally and Competition Updates

**3rd Annual NH Public Works Plow Rally; Ken Ward Memorial Snow Plow Competition; Dana Wright Memorial Backhoe Competition; NH Road Agents Association, Mountain of Demonstrations, Mt. Sunapee Newbury, NH-** The New Hampshire Public Works Association was proud to sponsor the 3rd annual NH Public Works Association Plow Rally. This year's event was again held in conjunction with the NH Road Agents Associations, "Mountain of Demonstrations," at Mt. Sunapee, in Newbury, NH on May 24th, 2018. This venue was made possible in a continued collaborative working relationship between the NH Road Agents Association Executive Board and the NH Public Works Association Board of Directors. The NHPWA President & Plow Rally Chair Scott Kinmond, stated, that he hopes to bring a greater participation to the event with the venue change, as the Mountain of Demo's has between 400-500 attendees for Public Works agencies around the State, and is a perfect event to hold the Plow Rally & Backhoe Competition. The Public Works Association held two events again this year - the Ken Ward Memorial Snow Plow Operator Competition and the Dana Wright Memorial Backhoe Competition. The event again had participation with teams from across the State. The Plow Rally had eight (8) teams consisting of municipalities and one (1) NHDOT Team (NHDOT Champs.) These two-person teams competed in three (3) phases of testing: First: a written examination on winter maintenance operations and safety. Second: a pre-trip inspection of a plow truck and Third: plow truck operations practical. During the plow truck operation practical the teams each had to navigate a course of hazards, and vehicle maneuvers to test the team's skill in working together and their individual operator skill. The teams had to navigate simulated narrow streets with parked cars and mailboxes. The operators then had to use good driving skills with stop and turning maneuvers, then alleyway backing and then forward serpentine to a front alleyway stop. The operators then switch drivers to do a backing serpentine, then a left hand sweeping turn, with wing obstacles. The teams are scored by how they negotiate the course, along with being timed in case of a tie.

After the results were tallied, the winning Municipal team was from the Town of Merrimack, consisting of John Trythall and Dean Stearns. First runner up was the City of Lebanon, consisting of Jesse Dumayne and David Moore. The Municipal winners then squared off with the NHDOT team, consisting of Austin Lyman and Cody Hurley, of the NHDOT District 2. These two teams competing in the plow truck operator's practical course, which resulted in the state championship being won by the NHDOT Team of Austin Lyman and Cody Hurley.

NHPWA President and Plow Rally Coordinator Scott Kinmond presented the gifts certificates to the Municipal champion, First Runner up teams and the State Champions. The two teams will now travel to the New England Public Works Association Plow Rodeo to compete in the New England's Plow Rodeo finals representing the State of New Hampshire.

The Dana Wright Backhoe competition event brought seven (7) talented operators to test their operator abilities. These 10 operator skill tests points are scored coupled with the time to complete. The 1st place winner went to Jesse Allatt of Town of Weare and runner up to Eric Allen of the Town of New London (Last year's winner.)

We would like to thank all the 2018 Plow Rally and Backhoe Competition participants and hope to have more teams and competitors next year.

~Contributed by Scott D. Kinmond, CPM, NHPWA President- 2018-2019

## Upcoming T2 Workshops

### August Workshops

Date	Course	Location
8/16/18	Culvert Maintainer Cert	Lincoln, NH
8/21/18	Budgeting for Public Works	Concord, NH
8/20 -8/24/18	Grader Operations & Maintenance	Franklin, NH <b>FULL</b>
8/28/18	Green SnowPro- Power of Brine	Dover, NH
8/29/18	Cultural Differences	Concord, NH
8/30/18	A Hard Road to Travel	Concord, NH
8/30/18	Winter Maintenance Fundamentals	Newbury, NH

### September Workshops

Date	Course	Location
9/6/18	Green SnowPro Refresher	Enfield, NH
9/12/18	Rd Maintenance for Administrators	Concord, NH
9/13/18	Culvert Maintainer Recert	Derry, NH <b>FULL</b>
9/17/18	Excavator Operations	Wakefield, NH
9/18/18	Excavator Operations	Wakefield, NH
9/19/18	Excavator Operations	Wakefield, NH
9/20/18	Excavator Operations	Wakefield, NH
9/21/18	Excavator Operations	Wakefield, NH
9/25/18	Culvert Maintainer Recert	Carroll, NH

Register at <https://t2.unh.edu/workshop-registration-form>

*(Calendar continued on page 14)*

## Upcoming T2 Workshops (Continued- October/November)

### October Workshops

Date	Course	Location
10/1/18	Backhoe Operations & Safety Day 1	Colebrook, NH
10/3/18	Green SnowPro Training	Peterborough, NH
10/4/18	Backhoe Operations & Safety Day 2	Colebrook, NH
10/5/18	Backhoe Operations & Safety Day 2	Colebrook, NH
10/9/18	Rd Maintenance for DPW	Stratham, NH
10/10/18	Chainsaw Safety and Maintenance	Lebanon, NH
10/11/18	Excavator & Loader Operations	Weare, NH <b>FULL</b>
10/12/18	Excavator & Loader Operations	Weare, NH <b>FULL</b>
10/16/18	Green SnowPro Training	Lincoln, NH <b>FULL</b>
10/23/18	Green SnowPro Refresher	Ossipee, NH
10/24/18	Is a Good Road a Safe Road?	Lyme, NH
10/25/18	Green SnowPro Training	Greenland, NH
10/25/18	Winter Maintenance Fundamentals	Milford, NH <b>FULL</b>
10/30/18	Green SnowPro Training	Laconia, NH
10/31/18	Road Safety 365	Danbury, NH

### November Workshop

Date	Course	Location
11/13/18	Road Managers Meeting	Enfield, NH

Register at <https://t2.unh.edu/workshop-registration-form>



## UNH Technology Transfer Center

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.

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[www.t2.unh.edu](http://www.t2.unh.edu)

603-862-2826 or 800-423-0060 (NH only)

[t2.center@unh.edu](mailto:t2.center@unh.edu)

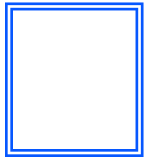
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Customer Name  
Street Address  
City, ST ZIP Code



## The 2018 UNH T2 User Survey is coming this Fall!

*Help T2 consider future programming and initiatives to be sure we're bringing YOU the resources, training, and information you want. Watch for more information!*

**Survey will be available online and in print**

*Thank you in advance for taking the time to share your feedback with us.*