
*A newsletter for municipal employees, public and private road-related organizations, and citizens.*

# How Can NH LTAP Help You?

Technology Transfer Center
New Hampshire LTAP at UNH

*Kathryn A. Myers, NH LTAP Program Manager*

The road system in NH represents an extremely important and expensive asset. Roads are one of the first things people see when they enter a community. People will form opinions about a town government based on the road condition. A deteriorated road system can create the perception that a town is not a pleasant place to live or do business. In contrast, a well-managed road system can create a favorable impression.

NH municipalities are not alone in their quest to achieve a safe, efficient, cost-effective and environmentally sound transportation system. The NH Local Technical Assistance Program (LTAP) was established in 1986 as a non-profit organization to help provide local government agencies in NH with training and technical assistance for their transportation infrastructure and workforce. The NH LTAP Center is funded by both FHWA and NHDOT and operates at the University of New Hampshire.

There is a LTAP Center in every state. The National LTAP mission is "to foster a safe, efficient, cost-effective, and environmentally sound surface transportation system by improving the skills and increasing the knowledge of the transportation workforce and decision makers." To accomplish this mission, NH LTAP offers an organized Roads Scholar (training) Program that is designed to teach all levels of transportation managers, technicians, and maintenance personnel to safely and cost-effectively manage their municipal assets. The Roads Scholar Program gives supervisors a way to assess their personnel for consideration in job promotion and annual performance evaluation. Students are given a certificate of completion for each training they attend and each level in the Program they achieve and managers are alerted as their employees progress in the program.

To date, we have offered 124 different topics, such as flagging operations, grader operations and safety, pavement preservation, OSHA 10 Hour Construction, employee safety, construction inspection and winter maintenance. There are currently 3,842 students in our Roads Scholar Program.

Our trainers are highly experienced and come from a variety of technical and practical backgrounds. We have local road managers, consultants from private firms, NHDOT, NHDES, and FHWA staff, other state department officials, and others from a variety of disciplines, instruct our trainings.

NH LTAP also offers a quarterly newsletter, retroreflectometers for rent to measure sign retroreflectivity, free videos and publications, and technical assistance.

We invite you to use NH LTAP as an important resource for the technical and training needs in your municipality.

*www.t2.unh.edu ~ 603-862-2826 ~ t2.center@unh.edu*

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***UNH Technology Transfer Center Mission:*** *To provide training and services concerning the technology and management of roads and bridges to municipal highway department officials.*

# UNH T² Master Roads Scholars

*Master Roads Scholar is the fourth and final achievement level in the UNH T² Center Roads Scholar Training Program. It requires completing 100 training hours plus the requirements for Roads Scholar Two: 25 hours in technical road construction, 5 hours in supervision or personal development, 5 hours in environmental, 5 hours in tort liability or safety, and 10 elective (other) hours.*

UNH T² Roads Scholar Program: **www.t2.unh.edu/training/rdsclr.html** ~ UNH T² Training Calendar: **www.t2.unh.edu/training**

## Master Roads Scholar—Bob Brown

Bob Brown has worked as a labor operator for the Town of Barrington Highway Department for the past three and a half years. Previously, Bob worked as a tool and die maker for 30 years. He now enjoys the variety of jobs he does working for the highway department.

Bob advises new public works employees and roads scholars to attend Roads Scholar classes because, as he says, "there is always something new to learn and meeting people from different municipalities is a valuable aspect of any public works job". Bob's favorite part of the Roads Scholar Program is getting to meet the instructors and new people. He says that you always walk away from each class with something new. Bob intends to continue his training and is already registered for upcoming workshops.

Bob has been married for 36 years. He loves to hunt and fish, but his favorite thing to do is play with his grandson.

## Master Roads Scholar—Peter Cook

Peter Cook is the Road Agent for the Town of Barrington and has been for 10 years. He has worked for the department for a total of 31 years. Peter is always willing to attend training and learn how other towns operate. Peter's favorite parts of the Roads Scholar Program are learning new things, and sharing and listening to other highway department employees' stories, strategies, and problem-solving techniques.

What Peter likes most about his job is the ability to work outside. He enjoys the different seasons and the unique challenges they present. Peters assures us that "no matter the size of the project, department staff are always interested every day." Peter advises new public works employees to "listen to any advice or knowledge you are given because things will change, and no matter how much you think you already know, there is always more to learn."

## Master Roads Scholar—Dennis Eastman

Dennis Eastman is the Highway Maintainer II for the NHDOT District 4, and has been working at this post for two years. Previously, he worked with the town of New Ipswich as a summer temporary-worker during his teenage years.

Currently, Dennis' district is working on several new road projects and guardrail replacements. Dennis enjoys that in his job he "does something different every day." Dennis advises new public works employees and new Roads Scholars to "attend all the classes you can since it will better you in your career".

Dennis will continue to take classes with UNH T² because he likes to learn different things. He most enjoys the hands-on exercises of the workshops.

Dennis has been married to his wife Colleen for 22 years. They have a German Shepherd/Australian Shepherd mix dog named Bear. In his free time, Dennis enjoys woodworking, hunting, fishing, archery, and playing softball, horseshoes, and darts.

## Master Roads Scholar—Karen Welch

Karen Welch is an Equipment Operator for the Town of New London. She is the sole grader operator for the department and has been grading for 13 years. Previously, she was the Recycling attendant for the town. She has worked for the town of New London for a total of 24 years.

Karen says training is beneficial to attend. She enjoys the UNH T² workshops and the workshops put on by the NH Road Agents Assoc. (NHRAA). NHRAA recently did a hands-on workshop on catch-basin system installation.

Karen has been with her partner, Jim Marshe for 18 years. She has a 12 year old daughter named Kaylee. Karen is a Girl Scout leader and softball coach. Karen's father, Fred Welch, is the Town Manager of Hampton.

# New Technology for Local Roads

Road managers should keep abreast of new technology available that can help them maintain their roads and bridges. The Federal Highway Administration (FHWA) lab develops innovations that are designed to meet critical highway needs. FHWA calls these "Market-Ready Technologies".

FHWA does the research and development, but it is the challenge of local public works directors and city engineers to play the greatest role in the deployment of the technology. Vendors and consultants do play a role in deployment as well, but it is largely left to local government officials to endorse and use the technology.

A simple way to quickly gain access to all of the current information available is to *Google* the phrase "Federal Highway Administration Market Ready Technologies". Your search results should include several inter-related websites including: www.fhwa.dot.gov/research/deployment/ptisafety.cfm.

Here are three technologies most municipal departments could embrace right away:

1. **DYNASMART-P** integrates traffic analysis with ITS systems and air quality analysis. This can easily help you integrate greenhouse gas emissions with most environmental reviews.
2. **ACS-Lite** improves traffic signal timing by making it self-adjusting. Say goodbye to periodic counts and manual adjustments.
3. **Transportation, Economic, and Land Use System** (TELUS) integrates land use planning, economics, and transportation so as to produce annual transportation programs (MTIP and RTIP) by cities/counties and their metropolitan planning organizations.

Bookmark some of the sites which interest you and visit the sites frequently as information can change. Use these websites as a way to stay current with new technology while staying at your desk.

*Reference: APWA Reporter, June 2010. William E. Reichmuth is a member of the APWA Engineering and Technology Technical Committee. He is a former member of the SAFETEA-LU Task Force, Transportation Committee and Water Resources Management Committee.*

## Is Your Agency Eligible To Receive HMGP Grants?

All local governments are required to have a FEMA-approved Local Mitigation Plan in order to apply for and/or receive grants under FEMA's Hazard Mitigation Assistance Program, including the Hazard Mitigation Grant Program (*Code of Federal Regulations, Title 44: Emergency Management and Assistance, Part 201.6*). In addition, an approved plan is required to apply for and receive funds under the Pre-Disaster Mitigation, Flood Mitigation Assistance, Repetitive Flood Claims Program, and the Severe Repetitive Loss program.

To assist local governments in the development of a Local Mitigation Plan that is in compliance with requirements of 44 CFR Part 201.6, FEMA published the Local Multi-Hazard Mitigation Planning Guidance (www.fema.gov/library/viewRecord.do?id=3336). The Local Mitigation Plan must be reviewed and updated, and resubmitted to FEMA for approval within five years.

*Reference: AWPA Reporter (January 2010). Teresa Scott, P.E., Director of Public Works, City of Gainesville, Florida, and member, APWA Emergency Management Committee and APWA IFEMA Partnership Task Force; and Curtis L. Edwards, P.E., Vice President, Psomas, San Diego, California, and member, APWA Emergency Management Committee.*

# Using Social Media for Public Relations

***Beth Hamilton, UNH T² Program Assistant***

Welcome to the age of multimedia communication. People are now getting their news and information instantly from their mobile devices via social media websites and applications. Implementing a new, technology-friendly communication policy, which includes social media, can be a great way for you to market your services and communicate with the public.

An essential part of providing any service is communicating with your customers. Since the public are municipal highway departments' "customers", the public is who will benefit from the municipal use of social media. Municipal highway departments can use social media to help achieve a variety of goals, such as maintaining a positive reputation by alerting residents to the great work you do and earning public trust by clearly informing citizens of upcoming projects, regular maintenance, and emergency policies or procedures.

Sites such as Facebook, Twitter and Google Groups are free for public use. They provide an easy and very effective way to communicate with many people with little effort. The public expects and needs you to keep them informed and using social media can help you achieve that goal.

There are several communities in New Hampshire that now use social media as a way of communicating. For example, Kurt Grassett, Director of Public Works for the Town of Hancock, started using Google Groups over a year ago. He said he "was looking for a better way to communicate and discovered that Google Groups had the most positive feedback from current users". He stated that "It has become one of the most effective communication tools that I have used. My customers are now getting important information in a more timely manner. This has helped them manage their plans around road construction, water breaks, and winter weather."

Another community that is utilizing social media is Rochester, NH. They have eight municipal departments on Facebook and it's simple to navigate from one department's page to another. It makes their communication direct, open, and easy.

The use of a new social media can be daunting to some, but the outcome is worth the time it takes to learn the application. Use social media to reach the greatest amount of people as fast and as easily as possible. Transparency and honesty go a long way in creating and upholding good public relations, and social media is the newest way to accomplish these goals.


Use the American Public Works Association website, at www.apwa.net, to research the positive effects of Facebook. Additionally, APWA offers a handout on using social media at www.apwa.net/documents/meetings/handouts/congress/5687.pdf

Here are a few tips to follow when using social media for public relations:

1. Take the time to research all your options before deciding on which social media application to utilize in your department. There are many options and all have unique benefits and limitations.
2. Take the time to familiarize yourself with the application (once you decide which one to use) before publicly announcing it.
3. Keep communications related to business only. Do not post anything personal. Any communication is an extension of your business.
4. Remember to keep updates short and useful. Continuous updates are only effective if they are beneficial to those reading them.
5. Build your list of followers every day. The more "friends" or "followers" your site has, the more people your message reaches.
6. Publicize it! Add a link on your department website that links it to your new page on Facebook or Twitter.

*References:*


- *"Social Media for Public Works: How to Implement an Effective Social Media Strategy to Increase Communications and Productivity". 17 August 2010. Retreived on March 20, 2011 from www.apwa.net/documents/meetings/handouts/congress/5687.pdf*
- *Broviak, Pam. "Enhancing Public Works Services Using Social Media". Retrieved on March 20, 2011 from www.slideshare.net/publicworksgroup/enhancing-public-works-services-using-social-media*

# Ignoring ADA Can Be Costly to Your Agency

*By Lindsay Nathaniel, Colorado LTAP Training Coordinator*

Spring is here, and along with it, construction season. This means it is time to re-visit some requirements under the American with Disabilities Act (ADA), as well as, some new recommendations. The ADA was signed into law on July 26, 1990, and was implemented to stop discrimination on the basis of disability in four areas: employment, public services and public transportation, public accommodations and commercial facilities, and telecommunications.

## Pre/Post-ADA

Roads that were built before January 26, 1992 are considered 'pre-ADA' and roads that were built after this date are considered 'post-ADA'. When pre-ADA streets are *altered*, the street must be updated to meet the ADA requirements. An *alteration* in this case is any change affecting the usability of a street. For example, resurfacing a roadway that is beyond the ordinary maintenance is considered an alteration, but fixing a pot hole would not be considered an alteration.

## Detectable Warnings

Curbs are a signal to people with visual impairments that the sidewalk is ending and the street is beginning. Curb ramps are necessary for people who have mobility impairments, but the removal of curbs can create some difficulties for people with visual impairments since curb ramps can be much harder to detect. In order to help people with visual impairments, it is necessary to have detectable warnings on the curb ramps.

The Draft Guidelines for Accessible Public Rights-of-Way recommend that agencies install 24 inches of truncated domes along the bottom of curb ramps. The smaller strip of truncated domes helps to give the visually impaired better cues as to where the street is and it does not interfere with the operation of wheelchairs.

The two feet of truncated domes should be installed:

- At the edge of depressed corners,
- At the border of raised crosswalks and raised intersections,
- At the border of medians and islands,
- At the edge of transit platforms and where railroad tracks cross the sidewalk.

## Curb Ramps

The ADA has five separate Titles, but Title II is the one that pertains to public agencies. Title II requires that public agencies provide curb ramps in order to make it possible for people with disabilities to cross from one side of the street to the other. How you accommodate this rule can vary depending on the age of the street.

The ADA standards require curb ramps to have a slope of 8.33 percent (1:12) or less, flared sides to have a maximum slope of 1:10, and a minimum width of 36 inches, exclusive of flared sides.

## Sidewalks

Sidewalks should be a minimum of 36 inches wide, and there should be 60 inches of passing area spaced periodically along the sidewalk. Forty-eight (48) inches is the minimum width needed for an ambulatory person to pass a non-ambulatory or semi-ambulatory person. Within this 48-inch width, the ambulatory person will have to twist to pass a wheelchair user, a person with a service animal, or a semi-ambulatory person.

Cross slopes are another important consideration of sidewalks. Cross slopes that are greater than 1:48 (2%) significantly hinder forward progress on an uphill slope and can decrease control and balance in downhill travel and on turns.

It's beneficial to a department to comply with ADA regulations. Not complying with ADA enforceable laws can be extremely expensive and time consuming for your agency.

*Reference: This article was republished with permission from CO LTAP Newsletter, Spring 2010. NH LTAP has made edits.*

*These truncated domes are not set correctly - they must span the curb cut width.*

# Highway Workers: Save Yourselves

*Five key safety strategies for avoiding injury or death in highway workzones.*


Working in the road can be a frightening experience but as time passes, it is easy to forget those dangers even though they are still present. Every year, more than 100 workers are killed and 20,000 workers are injured in road construction and maintenance zones. Follow these five safety strategies to help ensure you and your co-workers make it home safely at the end of each workday.

1. **Focus on the Traffic.** Remain mindful of your surroundings and keep an eye on where the traffic will be. There may be limited vehicles at times, but this does not mean you are safe. Resist the false sense of security. It only takes a second for a car to hit you.
2. **Be Seen and recognized as a Person.** To accomplish this, wear all your safety gear properly. Button your vest, wash it often to keep it retroreflective and visible, and discard it after the specified number of times. Communicate with motorists by using easily visible advanced warning signs. Follow the MUTCD requirements and motorists will expect you to be in the road.
3. **Set up Proper Advanced Warning**. Motorists will not expect you to be in the road. You must tell them, repeatedly, that you will be there. If motorists don't know there is a workzone ahead, they won't be prepared to react or won't have time to. Workzone setup procedures are for the safety of both the motorists and road workers. It is essential you follow the MUTCD guidelines each time you set up, even if your workzone is only going to last a few minutes
4. **Avoid Internal Dangers.** Equipment within the workzone can be as dangerous as traffic. When setting up the workzone, designate separate areas for equipment and foot traffic to significantly reduce the risk of accidents. In addition, equipment operators and ground-workers need to maintain a constant awareness of one another. If you can't see the other person, stop what you are doing immediately.
5. **Train, Train, Train.** Highway safety rules and regulations are revised frequently and it's important to stay current on those changes. In addition, retraining refreshes the mind and leads to a heightened sense of awareness.

*Reference: Reprinted with permission from Indiana LTAP Technology Transfer Newsletter, Vol. 28 - No. 3, Summer 2010, Author: Megan Tsai, www.redwagonwriting.com (original source http://www.cdc.gov/niosh/updates/healthcoal.html). Article has been edited by NH LTAP.*

## More than half of U.S. highway fatalities are related to deficient roadway conditions.

A report conducted by the Pacific Institute for Research & Evaluation (PIRE) on behalf of the Transportation Construction Coalition, found several alarming conclusions about deficient roadway conditions:

1. They are a contributing factor in 52.7 percent of the nearly 42,000 American deaths resulting from motor vehicle crashes each year and 38 percent of the non-fatal injuries. This is the single most lethal contributing factor-greater than speeding, alcohol or non-use of seat belts.
2. They cost the U.S. economy more than $217 billion each year.
3. They impose societal cost of 20 billion in medical costs, $46 billion in productivity costs, $52 billion in property damage and other resource costs, and $99 billion in monetized quality of life costs.
4. They are costing American businesses an estimated $22 billion of the annual economic cost of motor vehicle crashes involving their employees.

Road officials can use this data to support increased highway department funding for road and safety improvements. The report identified several ways to improve deficient road conditions, such as replacing poles with breakaway poles, using brighter and more durable pavement markings, adding rumble strips to shoulders, installing guardrails, and installing retroreflective signs. More significant road improvements include adding or widening shoulders, replacing or widening narrow bridges, reducing pavement edge drop-offs, and clearing more space adjacent to roadways.

*Reference: The Immense Cost of Deficient Roadway Conditions, Better Roads, August 2008. The full report (On a Crash Course): www.transportationconstructioncoalition.org.*

# UNH T² Center Technical Note

## Roadside Vegetation Management

*By Ashley Benson, UNH T² Project Assistant & UNH Masters in Literature Student*

Highway departments have been taking care of our roadsides for many generations. Vegetation in the medians and on the roadsides of public highways require maintenance, and traditionally that has meant mowing and the use of herbicides. However, due to economic and environmental concerns, many municipalities have begun searching for alternatives to traditional forms of roadside management. New technologies and alternative methods are available for highway departments to experiment with what works best for their community.

In some communities, roadside vegetation is now being regarded as a vital part of their public asset management program—a part with practical, economic, and safety-related roles. Vegetation management now includes selective herbicide use, controlled release of weed-eating insects, soil improvement, and the cultivation of native plants, which can offer communities economic, safety, time, and environmental benefits.

### Preparation & Maintenance of Roadside Vegetation

One effective and innovative approach to roadside vegetation management programs emphasizes the use of native plants. There are several benefits to using native plants in your roadside vegetation management plan. First, native vegetation is easier for workers to cultivate than other forms of vegetation; allowing native plants to flourish in their natural environment is arguably simpler than mowing the grass. Second, native plants are very low-maintenance and non-invasive. Third, native plants have adapted to grow best in their local environments, which also means they are resistent to winter and pests. Fourth, native plants can be colorful, vibrant and more wild-looking than dry and short-cut grass. Fifth, using native plants and vegetation can help departments reduce their carbon footprint.

*This roadside near the Alton/New Durham area could use some roadside vegetation management to enhance the New England fall natural colors. Photo Credit: Trekearth.com*

Some departments have already begun using native plants and flowers in their roadside management plans. For example, InDOT has recently begun using native wildflowers, and commuters routinely

compliment municipal workers on their beautiful roadsides. Also, the State of Iowa has refocused their program to include reseeding ditches with native grasses, forbs, and legumes.

Once planted, native plants may not sprout on their own due to years of mowing and the application of pesticide. Therefore, there is some preparation work that must be done before introducing native plants to our roadsides. The roadside area must first be cleared of all vegetation, including grasses, weeds and other plants. Be sure to pay particular attention to the seedbed. If the seedbed is not cleared, weeds and non-native vegetation are likely to grow back, choking out the native vegetation planted purposefully.

Be sure to confirm that the flowers and plants you intend to plant are actually native to New Hampshire and your local area; otherwise, they will not prosper. See *Table 1* for an easy-to-use chart to find what native New Hampshire vegetation will grow in what type of environment. Make sure to tailor your roadside vegetation management program to the specific type of environment the vegetation will be growing in.

After preparation and planting, focus on management and maintenance. Native roadside vegetation will require some upkeep, particularly in the first few years after cultivation. It is recommended that departments mow yearly for the first two years and only as necessary after that to keep non-native, invasive, and "woody species" out.

The better prepared the plot is before seeds are planted, the less maintenance is needed. It is also recommended to combine mowing and weed-pulling with herbicide application in order to maintain your roadside vegetation. Doing only one of these maintenance tasks will be less effective than combining the two. Only mowing can leave behind roots that

*Table 1: Native New Hampshire Vegetation listed by the environment they most thrive in.*

| Environment | Dry Areas | Moist Areas | Wet Areas | Streambanks/ Pond Shores | Shallow Ponds |
|---|---|---|---|---|---|
| Native New Hampshire Species | Pitch pine, native lupine, bayberry, butterfly-weed, Stiff Aster, Red Pine, Scrub Oak, Lowbush Blueberry, Bracken Fern, Sweetfern, Little Bluestem, Switch Grass, Big Bluestem, Wild Rye. | White Pine, Beech, Red Oak, Hemlock, White Ash, Sugar Maple, Yellow Birch, Flowering Dogwood, Sassafras, Basswood, Solomon's seal, Black Cherry, Elderberry, Wood Fern, Wild Yellow Lilly, Virgin's-bower, Highbush Blueberry, Bee-Balm, Columbine, Jewelweed. | Jack-in-the-pulpit, Cardinal Flower, Prairie Cordgrass, Ostrich Fern, Rushes, Sedges, Red Osier Dogwood, Silky Dogwood, Turtlehead, Balsam Fir, Red Spruce, Red Maple, Hemlock, Northern Arrowwood, Winterberry, Atlantic White Cedar, New England Aster, Blue Flag Iris, Sweet Flag. | Willow, Silver Maple, Speckled Alder, Smooth Alder, Sycamore, Monkey Flower, Switch Grass, Pussy Willow. | Bur-reed, Buttonbush, Pondweed, Sedges and Rushes, Duck Potato, Fragrant Water Lily, Yellow Water Lily, Pickerelweed, Wild Rice, Duck Weed. |

will sprout again, and just applying herbicides will not kill the more mature, heartier plants. Also be open to exploring alternative roadside vegetation control options, such as the controlled release of weed-eating bugs.

## Safety Benefits of Roadside Vegetation Management

There is another strong incentive to maintaining our roadsides: safety. A driver's visibility can be severely impaired if roadside vegetation is not maintained. The driver may have an obscured view of the road ahead, traffic control devices, approaching vehicles, wildlife and livestock, and pedestrians and bicycles. This increases the chance of an accident or even death.

For more information about the safety implications of proper roadside vegetation management programs, see the FHWA's "Vegetation Control for Safety: A Guide for Local Highway and Street Maintenance Personnel." The purpose of the guide is to help "local road agency maintenance workers identify locations where vegetation control is needed to improve traffic and pedestrian safety, to provide guidance for maintenance crews, and to make them aware of safe ways to mow, cut brush, and otherwise control roadside vegetation" (Barbaccia 14). *Contact the NH LTAP Center for a free copy.*

## Environmental/Practical Benefits of Roadside Vegetation Management

It is important to use a variety of diverse plants in your roadside vegetation program for many environmental and ecological reasons. First, a variety of native species allows for the development of natural habitats for animals, insects, and birds. Second, species that are native and adapted to our climate allow our roadsides to help control erosion and keep roadsides clear of weeds. Third, some can reduce runoff and non-point source pollution by allowing greater stormwater filtration.

A roadside vegetation management program that utilizes several different maintenance methods will have several benefits. First, using less herbicide is better for the environment. Second, since the application of herbicide is seldom used, it is assumed the workers are taking more care to spray only the areas they know are problems, thus saving the other plants that are healthy and beneficial. Third, since less product is required, departments can purchase the most effective herbicides and use the latest spraying technology.

*Butterfly weed is a native New Hampshire plant that grows in dry areas, and may be suitable for roadside use. Photo Credit: Prairie vegetation Wiki*

A comprehensive roadside vegetation management program will yield many benefits to your community, such as stabilizing roadside slopes, reducing erosion, creating habitats for native plants and animals, decreasing stormwater runoff pollution (including that which is derived from herbicide use), and increasing aesthetics.

## Economics & Partnerships

We all understand the nation's current economy and the need to "do more with less". We are seeing the effects of this in reduced budgets for most, if not all, municipal departments. Creating and implementing an integrated roadside vegetation management program can actually save your department a lot of money in the long run.

InDOT provides a nice example of how this could work for your department. InDOT began

rethinking its roadside vegetation program around six years ago. InDOT has since planted over 300 acres of flowers and wild grasses, and over 1,500 trees—all native species. Because of these efforts, and the changes that have been made in instituting an integrated roadside vegetation management program, InDOT is saving money and creating more beautiful and environmentally conscious roadsides. Because InDOT is using native vegetation and spraying herbicides pro-actively and effectively, mowing is required far less often, which saves InDOT time and money. In one district in Indiana, the budget for mowing decreased from $900,000 to $450,000 annually. Additionally, InDOT has created "seed sites" where they grow their own wildflower and grass seeds. Growing instead of purchasing has saved over $40,000 in seed costs.

## Public-Private Partnerships

It is important to note that InDOT also forged a public-private partnership for their new roadside vegetation management plan. A partnership was formed between "Save the Dunes" and InDOT, which allowed both organizations to accomplish more than either one organization could do alone. Initially, InDOT provided the trees and plants, and Save the Dunes provided the manpower to weed, till, and plant.

Another example of a private-public partnership that can yield economic benefits to a public department is that between the MSDOT and Mississippi State University (MSU). MSU tests herbicides for MSDOT before they are used on their roadsides. While MSDOT benefits because they do not have to spend time and money on efficacy testing, MSU benefits from the research opportunities afforded by such testing. The University and the Department of Transportation work together to decide what vegetation to plant along Mississippi's roadways, and what herbicides will work best with that vegetation.

New approaches to roadside vegetation management can offer municipal highway departments alternatives to reduce cost and create a beautiful, landscaped roadside that is safe, practical, and environmentally beneficial. It is beneficial for highway departments to research adopting new maintenance plans for roadside vegetation. Be sure to stay abreast of new technologies and methods available.

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- *National Cooperative Highway Research Program. Integrated Roadside Vegetation Management: A Synthesis of Highway Practice. Washington D.C.: Transportation Research Board, 2005.*
- *WSDOT Vegetation Management. WSDOT, 2011. Web. 23 March 2011.*


*Wild grasses such as this type of wild rye are excellent for roadside vegetation because they are native and do not obstruct drivers' views. Photo Credit: Ultimate Pheasant Hunting*

# New Hampshire Roads Scholars

*The following individuals have achieved a level in the Roads Scholar Training Program since the summer of 2009.*

**Master Roads Scholar:** *100 training hours and coverage of Roads Scholar II topics.*

| | |
|---|---|
| James Bean | Tuftonboro |
| Donald Blanchard | Private |
| Bob Brown | Barrington |
| Peter Cook | Barrington |
| Matthew Costa | Amherst |
| Dennis Eastman | NHDOT |
| Harold Johnston | Lebanon |
| Emile Lacerte Jr. | Bedford |
| Paul MacKinnon | Laconia |
| Daniel Morrow | Exeter |
| Barry Mueller | NHDOT |
| Marc St. Pierre | Rochester |
| Phillip Sylvia | Laconia |
| Karen Welch | New London |

**Senior Roads Scholar**: *75 training contact hours and coverage of Roads Scholar II* topics.

| | |
|---|---|
| Ralph Barrett | Pelham |
| Gavin Bell | Laconia |
| Scott Brown | Amherst |
| Bradly Butcher | Springfield |
| Christopher Carazzo | Barnstead |
| George Chartier | Littleton |
| James Culpon | Laconia |
| Scott Daley | Merrimack |
| Kevin Demers | Concord |
| Alan Dews | Dover |
| Bill Dow | Moultonborough |
| Bruce Felch | Seabrook |
| Samuel Fortune | Bradford |
| Donald Foss | Pelham |
| Kyle Fox | Merrimack |
| Robert Golemo | Merrimack |
| Paul Goundrey | DHMC |
| Joseph Grady | Private |
| Bucky Grugnale | Mont Vernon |
| Glen Hansen | Groton |
| Leonard Heath | Merrimack |
| Warren Hilton | Dover |
| Leon Holmes Jr. | Fremont |
| Wayne Husband | Nashua |
| Nathaniel Jones | Concord |
| Tom Jordan | Northfield |
| David Keets | Laconia |
| Bruce Kimball | Lebanon |
| Asa Knowles IV | Seabrook |
| Shawn Littlefield | DHMC |
| Ray Long | Amherst |
| Jim Major | Concord |
| Bruce McDonald | Franklin |
| Jody McDonald | Conway |
| Brad Meade Sr. | New Castle |
| David Morrison | Mason |
| Patrick O'Reilly | Laconia |
| Frank Podlenski | Hinsdale |
| Gary Russell | Bennington |
| Jon Russell | NHDOT |
| Laura Scott | Windham |
| Dwayne Searles | NHDOT |
| Tim Shackford | Conway |
| Scott Sykes | Concord |
| Roger Trempe | Dublin |
| Gilbert Vien | Chichester |
| Harold Wood | Private |

**Roads Scholar II**: *50 training contact hours and coverage of specific subjects: technical, tort liability or safety, supervision or personal development, and environmental.*

| | |
|---|---|
| Kevin Bartlett | Concord |
| Neal Beauregard | Greenfield |
| Dave Bogannan | Laconia |
| Randy Borelli | Derry |
| Matt Bumford | Henniker |
| Robert Buxton | Derry |
| Bruce Caillouette | Danville |
| Almus Chancey | Bedford |
| Travis Chick | Bartlett |
| Kevin Coakley | Dover |
| John Frink | Newington |
| Stephen Gray | Private |
| Jason Marro | NHDOT |
| Nancy Mayville | NHDOT |
| Dan Morrill | Laconia |
| Bryan Pease | NHDOT |
| Sharon Penney | Plymouth |
| Jeffrey Remillard | Bradford |
| Scott Richey | Rochester |
| Paul Robichaud | NHDOT |
| Jim Ruggles | Laconia |
| James Simons | Milford |
| Mitchell Smith | Keene |
| Thomas Smith | Lyman |
| Ames Sorell | Laconia |
| Steve St. Pierre | Laconia |
| Michael Stack | Merrimack |
| Leonard Thomas | Newington |
| Don Vachon | New Durham |
| Dave Walker | Private |
| Jeff Wright | Hancock |
| Anthony Yakovakis | Amherst |

**Roads Scholar I**: *25 training contact hours.*

| | |
|---|---|
| Travis Ambrose | Meredith |
| Fred Bassett | Franklin |
| Peter Beede Sr. | Moultonborough |
| Todd Bellefeuille | NHDOT |
| Shane Bilodeau | NHDOT |
| Peter Blythe | Lempster |
| Jeff Boivin | Enfield |
| James Bourdon | Laconia |
| John Boynton | NHDOT |
| Scott Brown | Hooksett |
| Jon Bushway | NHDOT |
| William Buxton | Derry |
| Mike Canfield | Private |
| Erik Carratu | Salem |
| Steven Chagnon | NHDOT |
| Dennis Clark | NHDOT |
| Perry Cloutier | Mont Vernon |
| Brian Cole | NHDOT |
| Mark Colonna | Dover |

## New Hampshire Roads Scholar 1 (Con't from pg. 7)

| | | | | | |
|---|---|---|---|---|---|
| Eugene Cote Jr. | Eastman Community | David Heald | Conway | James Pacheco | Salem |
| Richard Coutu | Milford | Greg Hogan | Carroll | Steve Perry | Hanover |
| Phil Couturier | Nashua | Gerald Holmberg | Private | Russell Pilotte | NHDOT |
| Duane Demeritt | Brentwood | Brian Houghton | Bradford | Joshua Plourde | Rochester |
| Bob Dickerson | Franklin | Tyler Howe | NHDOT | James Plunkett | Chichester |
| Kevin Dillon | Greenfield | George Jantti | Dublin | Kyle Richter | Meredith |
| Matt Dings | Claremont | Jesse Johnson | Goshen | Rick Riendeau | Milford |
| Ronald Dunn Jr. | Lyndeborough | David Kemp | Jaffrey | John Sartorelli | NHDOT |
| Steven Dunn | NHDOT | Dale LaClair | DHMC | Robert Scott | Canaan |
| Justin Fitzgerald | Bradford | David Lacasse | Acworth | William Shoemaker | Enfield |
| Kevin Flanagan | NHDOT | Brian Lahaye | Lebanon | Eric Slosek | Hollis |
| Lance Foss | Conway | Scott Lebeau | Exeter | Robert Southworth | Northfield |
| Bruce Fox | Temple | Gus Lerandeau | Private | Scott Stuart | Lyman |
| Arthur Genualdo | Sandown | Mike McManus | Henniker | Jeff Tarr | Hancock |
| Scott Goodspeed | Lempster | Victor McLean | Newington | Phil Thibodeau | Nashua |
| Russell Gover | Lebanon Airport | Jack Meaney | Bradford | John Trowbridge | Amherst |
| Fred Greenwood | Mason | Kevin Minckler | Claremont | Bob Warpula | Peterborough |
| Matt Hall | Milford | Brian Moser | Washington | Corey Welcome | Bow |
| Josh Hamel | Exeter | Jim Mulvey | Nashua | Mike White | Dover |
| Fred Hawkins | Meredith | Mike Oleson | Chester | | |
| Dennis Hazeltine | Bow | Catherine Orlowicz | New Durham | | |

# Welcome New T2 Staff

### Ryan Byrne

Ryan Byrne is a freshman at the Whittemore School of Business and Economics at the University of New Hampshire with a concentration in Finance. Ryan is responsible for administrative work, completing Master Road Scholar interviews, updating flyers, creating folders and manuals, and workshop evaluations. He enjoys music, sports, and meeting new people.

Technology Transfer Center
New Hampshire LTAP at UNH

### Beth Hamilton

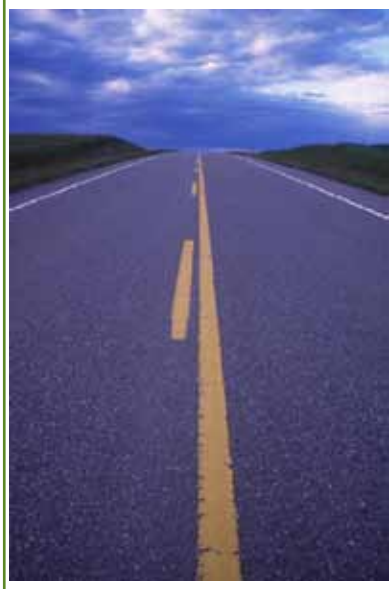
Beth is our new Program Assistant. She will be managing the databases, mailing lists, customer information, workshop registrations, and mutual aid information. Beth will also manage our libraries, update flyers, and coordinate mailings. She will write articles for Road Business and update our website, twitter, and Facebook pages. Beth graduated from Jacksonville State University in Jacksonville, AL with a BA in History and a concentration in Sociology. Beth coaches a high school colorguard.

### Kaitlin Scheerhoorn

Kaitlin Scheerhoorn is a junior in the College of Liberal Arts at UNH with a concentration in Political Science. Kaitlin is responsible for administrative work, completing articles for Road Business, updating flyers, creating folders and manuals, website maintenance, completing Master Roads Scholar interviews, and workshop evaluations. Kaitlin is also a Community Assistant for the Undergraduate Apartment Complexes. She plans on attending law school after graduating from UNH and loves to read, write and debate about almost anything.

# Street Dirt: An Alternative to Analyzing Stormwater

***Submitted by Ashley Benson, UNH T² Project Assistant & Masters in Literature Student***



It can be challenging to measure the effectiveness of best management practices (BMPs) intended to reduce environmental pollutants from entering our rivers and streams. Many departments rely on stormwater analysis to measure the BMP effectiveness of reducing pollutants, which can be costly and produce inaccurate results. Another alternative is to analyze street dirt. Street dirt may be more useful than stormwater to learn BMP effectiveness of reducing pollutants.

Stormwater is typically analyzed to study homeowner pesticide and fertilizer use, cleaning of public and private inlet sumps, street sweeping, and pickup of dog feces, among others. There are many disadvantages of using stormwater to study environmental pollutants, such as high cost, the need for extensive technical expertise and specialized equipment, dependency on weather conditions, and the production of unclear results. Most importantly, it is difficult to connect a specific BMP to the collected data so one cannot decipher which BMP is most or least effective.

There are many advantages to using street dirt to study environmental pollutants. First, street dirt analysis results are much more accurate than stormwater at indicating which BMP caused the pollutant reduction. Second, you don't have to wait for a storm to occur in order to collect the discharge, which often sends workers out in inclement weather or dangerous conditions. Instead, street dirt analysis can be conducted during good weather, ensuring that municipal workers stay safe (and dry!). Third, the equipment needed for the collection and analysis of street dirt is not nearly as complex as what is needed for stormwater analysis. This saves municipalities money on the purchase of equipment, training and labor costs. For example, equipment costs for stormwater outfall are around $10,000 (*Minton and Sutherland*). In contrast, the equipment necessary for monitoring street dirt chemistry is around $1,500. Also, the cost of labor for monitoring one stormwater outfall can cost upwards of $100,000 and can take one year. In contrast, the cost of street dirt analysis, per dirt sample, is only upwards of $1,000. Fourth, the street dirt analysis samples offer a more holistic idea of the chemical and pollutant make-up of a municipality's streets since the dirt is collected at any time and during any weather condition.

Overall, monitoring and analyzing the chemistry of street dirt may provide municipalities with a cheaper and more effective alternative to using stormwater to measure BMP effectiveness.

*Reference: Minton, Gary R. and Roger C. Sutherland. "Street Dirt: A better way of measuring BMP effectiveness." Stormwater. March/April 2010: 12-21. Print.*

## Retroreflectometer Loan Program

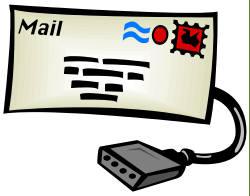
NH LTAP has three retroreflectometers available to rent to NH municipalities.

The fee for the equipment loan is $25, and municipalities may keep the retroreflectometer for up to six weeks (*additional time may be requested*).

*For more information:*

- *www.t2.unh.edu/retroreflectometer*
- *t2.center@unh.edu*
- *603-862-2826*

## Effective Email Communication




Effective email communication is necessary in most organizations today. Email can be your most important tool if used properly. Follow the tips below to better utilize email in the workplace.

1. **Work email is not personal email**. Keep them separate. Use formal language and layout when using your work email. Avoid using slang.
2. **Use a short but meaningful subject line.** Make it short but descriptive so readers know what to anticipate when they open the message and help them locate the message at a later date. Avoid using all capital letters as this is hard to read.
3. **Keep the message simple**. Your email should be short, concise, and to the point. People work fast and don't have time to read long emails. They will skip the message or delete it. Use proper grammar and be mindful of your tone. Avoid sarcasm.
4. **Send to only those who need the message.** Use "Reply All" or "CC" only if others need the information.
5. **Reply right away if you can.** This sends a message to your reader that you are responsive and organized. Avoid the habit of flagging all your emails as important so that you have to go back at a later date to reply.
6. **Have a formal signature.** Readers need to know who you are. Include any important contact information, such as name, title, company name, phone number, email, and company website.

The quicker your are at adapting and utilizing new workplace tools, such as email, the more effective and efficient you will be at your job.

References:

- "Effective Email Communication, People Communicating" (2010). Retrieved on March 24, 2011 from http://www.people-communicating.com/effective-email-communication.html.
- Rudloff, Alex (2007). "Email Etiquette". Retrieved on March 24, 2011 from http://blog.emurse.com/2007/07/12/email-etiquette/.
- Sternthal, Sheppard (2011). "Email Communication in the Workplace". Retrieved on March 24, 2011 from http://ezinearticles.com/?Email-Communication-in-the-Workplace&id=2038957.

## NH LTAP is on Facebook & Twitter!

Want to stay informed of our activities? Want to connect with other professionals who attend our training? Want to look at pictures from our training classes and other events? Then "friend" us on Facebook or "follow" us on Twitter to stay connected! We are posting information daily on our activities, new programs, training, and services.

**www.facebook.com/nhltap**
**www.twitter.com/nhltap**

## About UNH T²

**Congress established the Local Technical Assistance Program (LTAP) in 1982 to provide services to US municipalities. There is an LTAP Center in every US state and Puerto Rico, and there are Regional Centers serving Tribal Governments.**

**NH LTAP (UNH T2) was established in 1986. We continue the LTAP mission by providing training and services to NH municipalities. Our program is supported by the Federal Highway Administration, the NH Department of Transportation, the University of New Hampshire, and our National LTAP & TTAP Program.**

## UNH T² Staff

- **Charles Goodspeed, Faculty Liasion**
- **Kathryn Myers, Program Manager**
- **Butch Leel, Technical Support Assistant**
- **Beth Hamilton, Program Support Assistant**
- **Student Project Assistants: Ashley Benson, Kaitlyn Nagle, Ryan Byrne, and Kaitlin Scheerhoorn.**

## UNH T² Advisory Board

**NHDOT Representatives**
**Glen Davison - Planning & Community**
**Nancy Mayville - Planning & Community**

**FHWA Representative**
**Christopher Tilley - FHWA Area Engineer**

**Municipal Representatives**
**Alex Cote - Road Agent, Deerfield**
**Martha Drukker - Associate Engineer, Concord**
**Richard Lee - DPW Director, New London**

**NH Public Works Standards & Training Council**
**Dave Danielson - Forecee Advocacy LLC**

## About Road Business

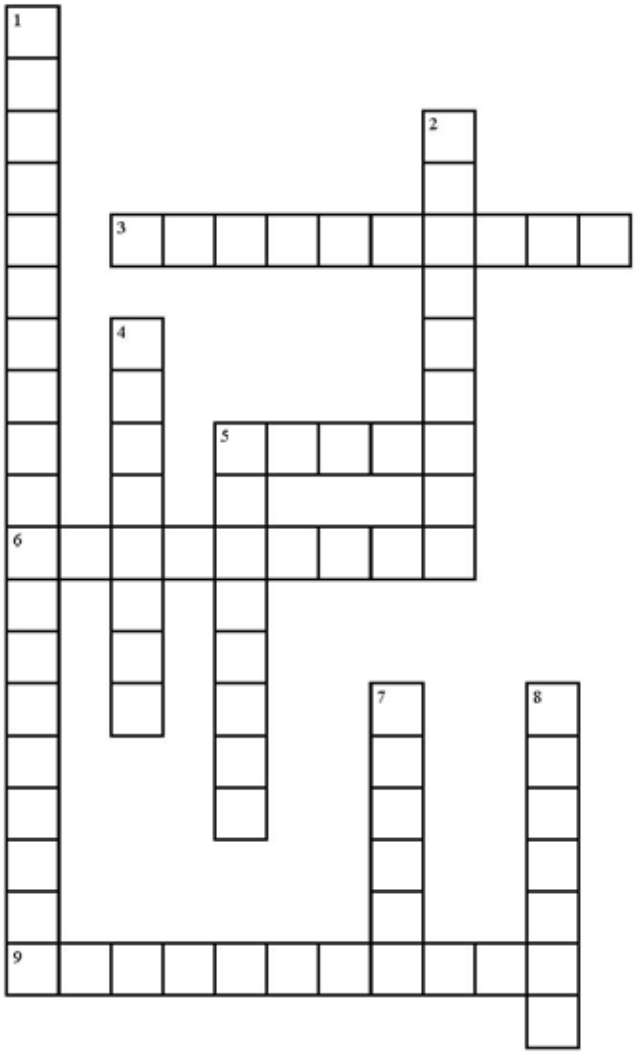
**Road Business is a quarterly publication of the University of New Hampshire Technology Transfer Center. Any opinions, findings, conclusions, or recommendations presented in this newsletter are those of the authors and do not necessarily reflect the views of our sponsors. Any product mentioned is for educational purposes only and is not a product endorsement. To receive this newsletter electronically, send your name and email to t2.center@unh.edu. To view past editions of this newsletter: www.t2.unh.edu/newsletter.html**

# Crossword Puzzle

*Be the first to complete this crossword and fax it (603-862-0620) to win a FREE T² workshop!*

Name: _____ Affiliation: _____

Email: _____ Phone: _____



## DOWN

1. NH LTAP now offers three _____ on loan.

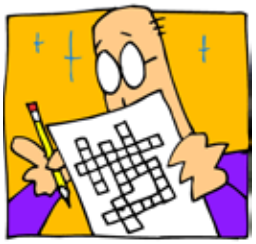
2. According to ADA guidelines, _____ should be a minimum of 36 inches wide.

4. Native plants are low maintenance and are not _____.

5. Roadside vegetation management programs provide environmental, practical, and _____ benefits.

7. Most effective and innovative roadside vegetation management programs emphasize the usage of _____ species.

8. Deficient _____ conditions can be linked to 52.7% of car crash fatalities in America.



## ACROSS

3. Analyzing the chemistry of _____ can provide an alternative to analyzing stormwater runoff.

5. Effective _____ communication is necessary in most organizations today, because of the reliance on technology.

6. An essential part of providing any service is communication with your _____.

9. Municipalities can use _____ to reach the greatest amount of people as fast and as easily as possible.

**UNH Technology Transfer Center**
33 Academic Way
Durham NH 03824

603-862-2826 or
800-423-0060 (NH)
Fax: 603-862-0620
t2.center@unh.edu
www.t2.unh.edu

Technology Transfer Center
New Hampshire LTAP at UNH

# Spring/Summer 2011 Training Calendar

www.t2.unh.edu/training

| Date | Topic | Roads Scholar Hours | Location | Cost (Town/Private) |
|---|---|---|---|---|
| 4/14 | Lines, Levels & Layouts | 5 Technical | Deerfield | $60/$100 |
| 4/19 | MUTCD | 5 Safety | Dover | $60/$100 |
| 4/20 | Public Works Employee Safety | 5 Safety | Deerfield | $60/$100 |
| 4/22 | Intro. to Computers | 5 Technical | Concord | $60/$100 |
| 4/26 | Salt Reduction for Parking Lots & Private Roads | 3.5 Environmental | Derry | $50 |
| 4/26 & 27 | OSHA 10 Hr. Construction | 10 Safety | Lincoln | $50/$100 |
| 4/28 | Bucket Truck Operator Training | 5 Safety | Washington | $100/$150 |
| 5/3 | Workzone Traffic Control | 5 Safety | Dover | $60/$100 |
| 5/5 | Vegetation Control | 5 Environmental | Grantham | $60/$100 |
| 5/6 | Geosynthetics | 5 Technical | Claremont | $60/$100 |
| 5/11 | Sustainability Management | 5 Supervisory | Lebanon | $60/$100 |
| 5/25 | Road Drainage & Culverts | 5 Technical | Derry | $60/$100 |
| 5/31 | Advanced Erosion Control | 5 Environmental | Dover | $75/$125 |
| 6/1 | Basics of a Good Road | 5 Technical | Lincoln | $60/$100 |
| 6/2 | Chainsaw Safety & Maintenance | 5 Safety | Groton | $75/$125 |
| 6/7 | Invasive Plants | 5 Environmental | Derry | $60/$100 |
| 6/8 | Sign Retroreflectivity Summit | 5 Safety | Manchester | $25/$50 |
| 6/9 | Public Relations for Public Works | 5 Supervisory | Dover | $60/$100 |
| 6/15 | Culvert Installation & Maintenance | 5 Technical | Lincoln | $60/$100 |
| 6/16 | Know Before You Dig | 5 Safety | Amherst | $60/$100 |
| 6/17 | Flagger Certification | 5 Safety | Keene | $60/$100 |
| 6/21 | Mutual Aid for Public Works | 5 Safety | Concord | $25-members/$40-non-members |
| 6/22 | Road Safety 365 | 5 Safety | Concord | $60/$100 |
| 6/23 | Municipal Garage Safety | 5 Safety | Moultonborough | $60/$100 |
| 6/24 | Road Management for Town Officials | 5 Technical | Keene | $60/$100 |
| 6/28 & 29 | Incident Command System for PW | 10 Safety | Concord | $20-members/$40-non-members |
| 7/12 & 13 | Intro. to Public Works Series | 5 Safety & 5 Technical | Concord | $90/$150 |
| 8/23 & 24 | Manager & Supervisor Series | 5 Safety & 5 Supervisory | Concord | $90/$150 |

## Dates

- **4/12, NHDOT/ACEC Technical Conf., Concord**
- **4/15, Road Managers Mtg., Keene**
- **4/21, Mutual Aid Tabletop Exercise, Lebanon**
- **5/5, NHPWA Annual Meeting, Manchester**
- **5/25, Mt. of Demonstrations, Gilford**
- **6/16, ER Mgmt. Conf., Manchester**
- **6/21, Mutual Aid Conf, Concord**
- **7/15, Road Managers Mtg., Enfield**

## Milestones

- **Scott Davison is the Interim Road Agent, in Henniker.**
- **Scott Hazelton is the new DPW Director in Farmington.**
- **Greg Hogan is the new Road Agent in Carroll.**
- **Butch Leel is the Interim PW Supervisor in Greenfield.**
- **Jeffrey Lewis is the Interim DPW Director in Weare.**