

# ROAD BUSINESS

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

## On the Road in NH:



### Weare DPW Replaces Bridge on Abijah Bridge Road

Submitted by Carl Knapp, Director of Public Works, Town of Weare

After four years of design and permitting, the Town of Weare Public Works Department was able to start construction of the bridge over Lake Horace on Abijah Bridge Road.

Work began in Spring of 2008 with the creation of an extensive traffic detour route. Second, 900 feet of road was reconstructed, which included moving a majority of the road away from the existing site. Third, all necessary trees were removed and silt fence and several hundred feet of silt boom were installed in the lake.

Next, a majority of the new road was built. Then, the old bridge — a wood deck over steel girder, which was fourteen feet wide by approximately thirty-eight feet in length — was removed. Old abutments were also removed and large boulder rip-rap was placed in the channel to protect new footings and abutments. Shortly, after these installations, the rain began to fall!

The crew had four three-inch pumps running continuously for several weeks to keep footing areas dewatered while the pouring was completed. Once the footings were installed, the crew was able to stop pumping the water. Then the abutments and back-walls were poured. Simultaneously, the crew placed rip-rap on the slopes, installed drainage and made the preparations for the pavement.

The new bridge, a complete wooden struc-

ture that is 24 feet wide and 57 feet long, arrived. The crew set the stringers, which were 42 inch tall laminated wood beams, with a large excavator. Then, the six-inch wooden deck was installed.

Wood guard rail was installed on the new bridge along with approach rail. Next, base coat pavement was laid down, after which Corten Natural rusting steel rail was installed on the rest of the roadway. Siltation devices were then removed, and the roadway and new bridge were opened to traffic.

*(“Weare” is continued on p.4)*



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UNH Technology Transfer Center Mission: To provide technical and management information about roads and bridges to municipal officials and road-related organizations.

## Master Roads Scholars

*Master Roads Scholar is the fourth and final achievement level in the UNH T<sup>2</sup> Center Roads Scholar Training Program. It requires completing 100 contact hours plus the requirements for Roads Scholar Two: 5 hours in basic road construction, 5 hours in supervision or personal development, 5 hours in environmental, 5 hours in tort liability or safety, and 20 hours in other technical areas.*

UNH T<sup>2</sup> Roads Scholar Program: [www.t2.unh.edu/training/rdsclr.html](http://www.t2.unh.edu/training/rdsclr.html) - UNH T<sup>2</sup> Training Calendar: [www.t2.unh.edu/training](http://www.t2.unh.edu/training)

### Master Roads Scholar—Peter Furmanick



Peter Furmanick has worked for the Town of Plymouth Public Works Department for nine non-consecutive years. Most recently, he has been the Highway Manager since May of 2009. Prior to this, he worked for Holderness for eleven years. He particularly enjoys his job because he has the

ability to complete a job from planning to implementation.

Peter will continue to take classes with UNH T<sup>2</sup> because he says “the classes are informative.” His favorite part of the Roads Scholar Program is relating to the others in the Program. He advises new employees to join the Program because it is very informative for all aspects of public works.

### Master Roads Scholar—Kevin McDonald



Kevin McDonald has been the Public Works Superintendent for the Greenfield Department of Public Works for the past eight months. Prior to this, Kevin operated a small site construction company for over ten years. In addition, he has been involved in public service since 1987 as a police officer and an Advanced EMT.

Kevin has just implemented a new DPW work-force training program in Greenfield. Their DPW is accepting interns from local high schools in hopes to interest students in the public works field. The high school students also receive academic credit for the internship.

Kevin’s favorite part of his job is changing past standards and bringing his department to a new level of professionalism using modern concepts and improved practices.

Kevin will continue to take classes with UNH T<sup>2</sup> in order to stay current and learn all aspects of his job and to pass on knowledge onto others in the public works field. His favorite part of the Roads Scholar Program has been networking with other public works professionals. Kevin advises new public works employees to “continue education and training, always keep an open mind and listen to others’ thoughts and opinions regarding their experiences.”

Kevin is married and enjoys hunting and fishing.

### Master Roads Scholar—Doug Starr



Doug Starr has been the Town Engineer for the Jaffrey Department of Public Works for the past seven years. He has been working within public works since the age of sixteen, when he worked in his hometown outside of New York City. He worked

part-time through high school and college as a laborer and engineering intern. After he received degrees in environmental and civil engineering, he worked as an engineer for several years before moving to New Hampshire in 1985.

Doug has also worked for Merrimack, Milford, and at the New Hampshire Department of Environmental Services.

Doug will continue to take classes with the UNH T<sup>2</sup> program, and also through DES, Primex, and the Local Government Center. He says, “I en-

## Master Roads Scholars (Cont.)

joy the classes and talking with other public works employees and I always learn something new and very helpful at the classes.” His favorite part of the Roads Scholar Program is sharing experiences and discussing common problems with others across the state. He says he enjoys working in municipal engineering because there are a variety of projects in the field and that “Jaffrey is a great community to work in. The residents are great and the Board of Selectmen and other town officials are very supportive of public works.”

Right now, the town of Jaffrey is working on a number of interesting projects that include water and wastewater treatment plant upgrades, water main extensions, energy improvements, and also traditional public works projects such as roads, drainage, bridges, and dams. Doug’s advice for new Public Works employees is to “enjoy your job and take advantage of any training that is offered to you, ask questions, and do your best.”

Doug currently resides in Merrimack with his wife, Kathy, of twenty-eight years, and his son Eric, who is a senior at Merrimack High School. Their other son, Jeff, attends Assumption College. Doug loves all sports, and coaches baseball and basketball. He also serves on the Merrimack

Conservation Commission.

### Master Roads Scholar—Ed Thayer



Edward Thayer is the Director of Public Works for the Town of Washington. He has been working with the department for nineteen years. He was originally hired for vehicle maintenance.

He will continue to take classes with UNH T<sup>2</sup> in order to “stay current on new technology.” Edward particularly enjoys interacting with different municipalities through the Roads Scholar Program, and likes to see how other departments function differently.

His favorite part of his job is the interaction with the public in Washington, and he enjoys “dealing with all of the changes of the job.” His advice for new public works employees is to learn as much as you can.

Edward has been married to his wife Jane for twenty-one years. His son, Kris, is serving in the Marine Corps and his daughter, Erin, is attending Clark College for a biology degree.

## ACEC Engineering Excellence Awards 2009

The Engineering Excellence Awards are presented annually by ACEC New Hampshire to recognize engineering achievements, which demonstrate the highest degree of merit and ingenuity, by New Hampshire consulting engineering firms.

The winners for the 2009 Engineering Excellence Awards are:

### Overall winner for 2009: CLD Consulting Engineers, Inc.

#### Category Winners:

- **Transportation:** Project - Granite Street Interchange and Widening Project, Manchester, CLD Consulting Engineers, Inc.
- **Water/Waste Water:** Project - Membrane Microfiltration Facility, Hanover, Wright-Pierce.
- **Water Resources:** Project - Lake Winnisquam Access Project, Laconia, Fay, Spofford & Thorndike.
- **Structural Systems:** Project - Rehabilitation of the Haverhill-Bath Covered Bridge, Haverhill/Bath, Hoyle, Tanner & Associates, Inc.

For more information: Contact: ACEC-NH Executive Director, Alex Koutroubas, (603) 225-7397



*("Weare" continued from p. 1)*

As part of this project, a low-level water control structure was installed to keep the upper wetlands full during the annual drawdown of the lake.

Other than high water, the entire project went very well. It was completed primarily by town forces and at a much lower cost than bid price, including manpower, equipment and fuel.

The total cost of this project was approximately \$508 thousand, and Weare expects an 80% reimbursement from the State. Approximately \$200

thousand tax-payer's dollars were saved!

Weare DPW worked very closely with the following groups: Piscataqua Water Association, NH Department of Environmental Services, NH Fish and Game, Ducks Unlimited, NH Bureau of Dams, and the local conservation commission.

*Thanks to the following: SEA Consultants, permitting, design and engineering; Boisvert Brothers Tree Service, tree removal; Bayview Construction, concrete work; Harry Weatherbee, SWPP plan and testing; Pike Industries, paving; CWS Guardrail. Also a huge thank you to the Weare Public Works Department crew for a very large undertaking!*

## NHDOT Recommends JOMA 6000 Plow Blade

Submitted by Ashley Benson, UNH T<sup>2</sup> Project Assistant & UNH Masters in Literature Student

During the winter of 2008-2009, New Hampshire Department of Transportation (NHDOT) conducted a test of the JOMA 6000 Plow Edge, manufactured by Black Cat Blades.

The JOMA 6000 differs from standard carbide plow edges because it is a composite type blade, using sections of rubber and steel. The sections in the JOMA blade pivot, allowing them to shape to the roadway being plowed.

The test was a comparison between the JOMA 6000 blades and the current NHDOT standard carbide blades, to determine which blade cleaned the roadway of snow more effectively and to determine the amount of wear on the blade edge. Both the standard carbides and the JOMA blades were each tested on two sections of roadway that represent the best and worst road conditions on NH state roads.

NHDOT reports that the JOMA 6000 performed very well on both roadway sections. The JOMA blades removed more of the snow and slush layer that is often left behind by the standard carbides in use by the NHDOT. In addition, NHDOT reports that the JOMA blades have a much longer life expectancy than the standard carbide blades.

Specifically, the JOMAs outlasted the carbides in life expectancy by two and three times more, depending on the road conditions.

The flexible design of the JOMA 6000 plow edge also allowed NHDOT to use the same snow plow on roadways with varying conditions. Results from the test do indicate that the JOMA 6000 plow edge does allow for excessive blow-over, due to the angle at which the edge is connected to the snow plow. While this was reduced during the trial by adjusting the angle, and eliminated by the addition of a steel flap, the standard carbide blades do not have this issue.

Financially, the reports of the NHDOT trial indicate that JOMA 6000 blades are more cost-effective than the standard carbide blades. Although the initial cost is higher, replacement costs are significantly lower due to the longer life expectancy. NHDOT reports that in terms of finances and performance, 8 sets of the standard NHDOT carbide blades are required to match one set of the JOMA blades. **Due to the successes in the trial comparing JOMA 6000 blades and carbide blades, NHDOT recommends their use statewide for this coming winter season.**

## A College Powered by Garbage

by Michael Lemonick, a writer for Climate Central ([climatecentral.org](http://climatecentral.org))

A growing mound of garbage outside Rochester actually provides up to 85% of power and heat for UNH's nearly 15,000-student campus in Durham!

Communities are now seeking clean, green alternatives such as wind, water, and solar power instead of oil, coal, or natural gas--fossil fuels. UNH began investigating landfill gas a few years ago, after it installed a plant that burned natural gas for energy and provided hot water for heating. The natural gas burned relatively cleanly, but it still emitted carbon dioxide.

Meanwhile, Waste Management (WM), a company operating a nearby landfill, was dealing with a gas surplus containing 50% methane, which is created when bacteria break down organic waste. Methane is a pollutant and can not be released into the air, but it can be used as fuel. Most landfills are forced to simply burn off their excess gas.

Between WM's excess methane and UNH's need for sustainable living, a match was made! Four years and \$49 million later, the 12.6-mile EcoLine pipeline is in full operation. Methane is extracted from the landfill using a system of wells and piping, then purified before being sent to UNH's plant.

The Environmental Protection Agency classifies the methane as a renewable fuel since anything it releases is first sucked out of the atmosphere by the coffee plants, banana trees, and other organic matter now rotting in the landfill. This means methane's carbon output is relatively insignificant.

New Hampshire standards require electric utilities to generate at least part of their energy from renewable sources, so UNH sells credits to utilities that don't meet the requirement. This money helps pay for the pipeline.

Landfill gas "is pretty widely used in the U.S. and Europe," says Joan Ogden, an environmental-



science professor at the University of California, Davis. Who says you can't turn trash into treasure?

Retrieved on April 19, 2010 from <http://www.parade.com/news/2010/04/18-a-college-powered-by-garbage.html>

### NH Bans Texting While Driving



Gov. John Lynch signed a law making New Hampshire the 16<sup>th</sup> state to ban text messaging while driving.

The law also bans typing on laptop computers or other electronic devices while driving. An exception is made for entering a name and number in a cell phone to make a call.

Violators face a \$100 fine.

The texting ban took effect on January 1, 2010.

Lynch said that texting while driving poses a serious danger. He said the law sends a strong message that drivers should be attentive at all times.

## New Hampshire Roads Scholars

*We are pleased to announce the individuals who have achieved the following levels in the UNH T<sup>2</sup> Center Roads Scholar Training Program since the summer of 2009.*

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

Gene Cuomo	Fitzwilliam
Peter Furmanick	Plymouth
Harold Johnston	Lebanon
Scott Johnston	Enfield
Matthew Kimball	Deerfield
Carl Knapp	Weare
Dustin Muzzey	Gilford
Steve Rougeau	Milford
Douglas Starr	Jaffrey
Edward Thayer	Washington

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

Alan Dews	Dover
Samuel Fortune	Bradford
Nathaniel Jones	Concord
Tom Jordan	Northfield
Jim Major	Concord
Kevin McDonald	Greenfield
Laura Scott	Windham
Dwayne Searles	NHDOT
Tim Shackford	Conway

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

Kevin Demers	Concord
Bruce Felch	Seabrook
Scott Gage	NHDOT

Ray Long	Amherst
Frank Podlenski	Hinsdale
James Simons	Milford
Michael Stack	Merrimack
Don Vachon	New Durham

**Roads Scholar I:** Requires 30 training contact hours.

James Bean	Tuftsboro
Peter Beede, Sr.	Moultonborough
Todd Bellefeuille	NHDOT
Matt Bumford	Henniker
Jon Bushway	NHDOT
Dennis Clark	NHDOT
Perry Cloutier	Mont Vernon
Mark Colonna	Dover
Eugene Cote, Jr.	Eastman Community
Richard Coutu	Milford
Kevin Dillon	Greenfield
Steven Dunn	NHDOT
Kevin Flanagan	NHDOT
John Frink	Newington
Scott Goodspeed	Lempster
Matt Hall	Milford
David Heald	Conway
Mike Oleson	Chester
James Pacheco	Salem
Russell Pilotte	NHDOT
Jeffrey Remillard	Bradford
Gabriel Robertson	Greenfield
Robert Scott	Canaan
Bob Southworth	Northfield
Jeff Tarr	Greenfield
Lenny Thomas	Newington
Bob Warpula	Peterborough
Corey Welcome	Bow
Mike White	Dover



# UNH T<sup>2</sup> Center Technical Note

## Runoff Pollution: Prevention & Management

Submitted by Ashley Benson, UNH T<sup>2</sup> Project Assistant & UNH Masters in Literature Student

### Runoff as Pollution

Water pollution deriving from stormwater runoff is increasingly becoming a problem in municipalities across the country. The New Jersey Department of Environmental Protection found that nearly 60% of drinking water pollution problems is caused by stormwater runoff.

Pollutants, such as chemicals, bacteria, dirt, refuse, and metals are carried with rain or melting snow into municipal stormwater systems, which then carry and deposit the pollutants into waterways. Water in drains is not filtered through a sewage treatment plant before it is released into waterways. The stormwater runoff that empties into storm drains alongside roadways and parking lots flows directly to nearby rivers, lakes, and bays.

The effects of runoff pollution are various and detrimental. First, excess sediment can cloud water, which disrupts aquatic habitats. Second, runoff from lawn fertilizer spreads excess nutrients into the water, causing algae blooms once the overly nutrient-rich runoff reaches bodies of water. When the algae decomposes, it removes oxygen from the water, threatening fish and other aquatic life. Third, bacteria from stormwater runoff can cause health hazards when present in drinking water and swimming areas. Fourth, debris is not only unsightly, but it can suffocate aquatic life, such as ducks, fish, and turtles. Fifth, hazardous waste from household

materials, such as insecticides, pesticides, paints, solvents, and auto fluids, can flow into bodies of water and poison aquatic life. Eating poisoned fish or shellfish can cause illness in people and land animals.

Stormwater pollution is termed “non-point source” pollution because it cannot be traced back to a single source of pollution (such as a chemical spill, for example). Instead it is a combination of many sources of pollution and affects large areas of land and wildlife.

For all of these reasons, stormwater runoff is a large problem in our communities and this article will attempt to outline several best management practices (BMPs) to help prevent and reduce water pollution created through stormwater runoff.



Photo by Jane Thomas, LAN UMCES, <http://ian.umces.edu/imagegallery/displayimage-1438.html>

## BMPs to Reduce Water Pollution from Runoff

BMPs for reducing stormwater runoff pollution can be divided into two categories: structural BMPs and non-structural BMPs. According to the Iowa State LTAP, “Structural BMPs include engineered and constructed systems that control the quantity and/or quality of stormwater runoff. Non-structural controls include public education, recycling, and maintenance practices” (“Reducing Water Pollution”).

This article will discuss several structural BMPs, including infiltration systems, detention basins, stormwater ponds, bioswales, rain gardens, and permeable pavements. There is no one “quick fix” that all municipalities can use. Instead, each municipality should research the various types of structural BMPs for managing runoff to discern which BMPs will work best within their environment.

### Structural BMPs

#### Detention Basins

These basins detain stormwater runoff temporarily, and release it into the ground later. The stormwater’s rate of flow is greatly reduced using detention basins, but since all of the runoff is eventually released, it does not reduce the runoff volume. The general purpose for a detention basin is to prevent floods and erosion by detaining the runoff. Rapid erosion can increase levels of stormwater runoff pollution.

#### Infiltration Systems

Like detention basins, infiltration systems detain stormwater and release it into the ground gradually. However, infiltration systems have a filtering system that uses sand, soil, carbon, or other organic material to remove contaminants from runoff before the stormwater is released into the ground.

#### Stormwater Ponds

Stormwater ponds retain runoff for between 24 to 48 hours. The pond water dissipates by evaporating or filtering into the ground or the pond water is withdrawn and recycled for other uses, specifically non-potable. Therefore, stormwater ponds prevent large amounts of contaminants from flowing into waterways, reducing non-point source pollution.

#### Bioswales

Often used in parking lots and other paved areas, bioswales are vegetative systems, the aim of which is to improve the quality of stormwater, and to remove contaminants from the stormwater that flows through them. The open-channel concept of the bioswale allows stormwater to flow along the channel, traveling through the vegetation. The water is slowed, which allows sedimentation, filtering, and/or infiltration into the soil underneath. Once water leaves the bioswale, there are fewer pollutants in the runoff.



<http://www.rivanna-stormwater.org/images/bioswale.jpg>

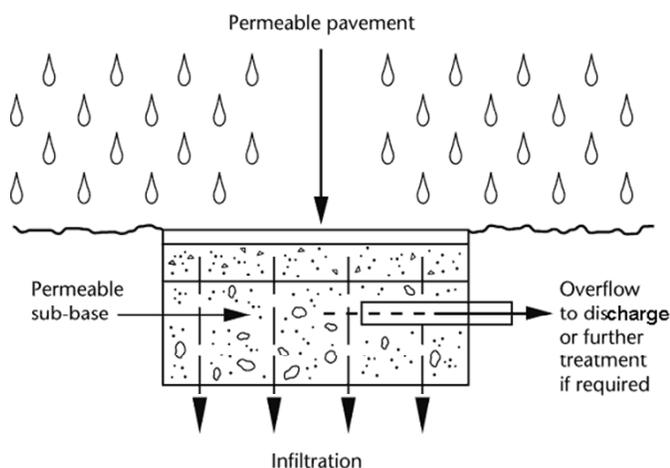
#### Rain Gardens

Rain gardens are another landscaping solution to stormwater runoff and pollution. These gardens offer on-site treatment options for runoff pollution, and direct the stormwater flow into shallow depressions in the landscape. The water is

then filtered through mulch and a specially prepared soil mix. The filtration process removes pollutants, sediments, and excess nutrients from the water, creating cleaner runoff to flow to waterways.

### **Permeable Pavements**

Permeable pavements allow the stormwater runoff to infiltrate the pavement directly through to the soil underneath. This process filters out many contaminants, and reduces the amount that would normally be flushed to waterways by traditional pavement. Non-permeable pavements do not allow runoff to filter through them, which means that the runoff—including all contaminants and debris—flows directly to waterways, with no filtration.



<http://www.netregs.gov.uk/static/images/NetRegs/pavementAKP.GIF>

Permeable pavements include porous asphalt and pervious concrete. See the diagram above for how permeable pavements allow for filtration of stormwater runoff to reduce non-point source pollution.

## **Non-Structural BMPs**

### **Public Education**

Making citizens aware of the impact that their daily activities have on runoff pollution can be

very effective in reducing stormwater runoff. Citizens often have control over automotive product disposal, pesticide/herbicide use, fertilizer use, hazardous material disposal, lawn debris management, and pet waste disposal. Education on how to recycle these materials, rather than dumping them down storm drains or on lawns, will help citizens understand the effects of their actions. Many municipalities have marked storm drains with plaques that indicate that the drain leads to open waterways. This alerts the average citizen that what they are dumping down their drain could end up in their glass of water or in their cooking pan.

### **Maintenance Practices**

Maintenance practices that public works departments can institute to reduce runoff pollution include proper cleaning and maintenance of catch basins, keeping streets and parking lots clear of debris, maintaining roads and ditches, limiting salting and sanding on roads, removing sediment from structural BMPs, and maintaining vegetation. Maintenance practices should not only reduce runoff pollution, but also ensure that the structural BMPs are properly functioning.

## **Managing Runoff at Construction Sites**

Stormwater runoff can become particularly hazardous at construction sites. This is because construction sites generally have higher rates of erosion, and eroding soil leads to pollutants in nearby waterways. However, there are a few ways that public works departments can control runoff from construction sites before construction begins, during construction projects, and after completing construction work.

### **Pre-Construction and During Construction**

Managing runoff during construction and before construction generally means implementing temporary erosion control measures, to keep runoff

and contaminants from leaving the construction site. These methods of runoff pollution prevention include silt fences, storm drain protection (inlet and outlet), erosion control blankets, sediment traps, and diversion dikes. Any of these methods, or any combination of these methods, can be used, depending on the needs of the construction site.

Road Managers will want to minimize sediment loss before and during construction. Silt fencing, installed around the construction site's perimeter, is the most common method for minimizing sediment loss in construction sites. Used alone, however, silt fences are not nearly as effective at reducing erosion as they could be.

In addition to silt fences, departments can also use temporary mats, netting, or erosion control blankets to protect sloped seeded areas, before the vegetation begins to grow in. Geotextiles and mulches are also useful in protecting sloped areas before vegetation begins to grow. Filters for storm drains are a good alternative during the pre-construction phase of managing runoff pollution. Road Managers can also simply attempt to limit the amount of soil that is disturbed at any given time during the construction process.

Erosion control methods should be installed before construction begins, to minimize erosion. Such preventative measures, while they do take time to install initially, are incredibly cost- and time-effective in the long run.

### **Post-Construction**

The key to post-construction management of stormwater runoff is permanence. These BMPs are permanent structures that are installed to maintain or improve the quality of the runoff and to reduce the quantity of the runoff. Many of the structural BMPs outlined above are useful for post-structural management of stormwater runoff, including rain gardens, permeable pavements, bioswales, basins and ponds for stormwater retention, and other infiltration systems. These permanent, structural

BMPs must be periodically maintained to ensure that they are functioning properly. BMPs designed for post-construction installation and usage remove or reduce pollutants and provide stormwater infiltration. As with the other structural BMPs discussed in this article, municipalities should vary their choices for post-construction BMPs based on the work site.

## **Making Changes to Improve Water Quality**

Runoff from stormwater can be detrimental to habitats, wildlife, and humans, and is a serious source of non-point pollution that needs to be addressed. By following the best management practices outlined in this article—both structural and non-structural—municipal highway departments can reduce pollution that occurs because of stormwater runoff.

Road Managers should provide citizens with information about how stormwater runoff occurs, how it can negatively affect nearby waterbodies, and what can be done to prevent further pollution. Also, Road Managers should ensure they are following BMPs at construction sites. Structural BMPs (such as bioswales and silt fencing) that prevent or reduce erosion will help reduce pollution resulting from stormwater runoff, ensuring better water quality for all.

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**Technology Transfer Center**  
New Hampshire LTAP at UNH

## Safety While Working with Silica

Submitted by Ashley Benson, UNH T<sup>2</sup> Project Assistant & UNH Masters in Literature Student

Over 1.7 million workers in the United States are exposed to respirable crystalline silica, mostly from construction sites working with concrete, according to the Center for Disease Control. Concrete is composed of these crystalline silica particles, which, when breathed in, can cause a non-treatable and often fatal lung disease called silicosis. Symptoms of silicosis include shortness of breath, chest pain, fatigue, weight loss, and respiratory failure.

Although silicosis is irreversible, it can be easily prevented through instituting the following simple safety regulations when employees are handling concrete.

First, ensure employees are working in well-ventilated areas and minimizing dust exposure by applying water sprays, wetting silica dust while in the air, or using saw blades or drills that add water directly to the concrete being cut.

Second, managers need to ensure employees are wearing the appropriate Personal Protective Equipment (PPE). Respirators should always be worn when working in areas with silica exposure. See industry standards for what type of respirator to use, as the makes and models will vary between

jobs. Also, disposable or washable work clothes and gloves should be worn when working in areas where crystalline silica particles are in the air.

Third, employees should vacuum the dust from work clothes, shower as soon as possible after exposure to silica particles, and change into clean clothes.

Fourth, managers should ban eating, drinking, and smoking in areas where silica dust is in the air. In addition, employees should wash their hands before doing any of these activities after exposure to silica dust.

Fifth, and most importantly, managers should be knowledgeable about what tasks in public works expose workers to crystalline silica dust, and ensure that necessary safety precautions are taken before the task begins. Silicosis is a serious illness that is irreversible, but it is 100% preventable when the proper safety measures are taken.

### References:

- *Occupational Safety and Health Administration: Crystalline Silica Safety Standards. The US Department of Labor, 3 July 2008. Web. 24 May 2010.*
- *NIOSH Workplace Safety and Health Topics: Silica. Centers for Disease Control and Prevention. 14 May 2010. Web. 24 May 2010.*

## WebEOC® Software Training Available

**\*You must attend a training class to be able to log into WebEOC.**

WebEOC® is the computerized logging system used in the state Emergency Operations Center and many local EOCs. Training is available the second Thursday of every month at the state EOC.

To register for WebEOC® training, contact Lorri Sargent at 603-223-3630 or [lorri.sargent@hsem.nh.gov](mailto:lorri.sargent@hsem.nh.gov) with the following information: name, telephone number, email, emergency management role.

“WebEOC® is a crisis information management system and provides secure real-time information sharing to help managers make sound decisions quickly. Today, WebEOC is used by agencies within DOD, DOE, DHS, EPA, NASA, state, county, and city EOCs, domestic and international airlines, healthcare associations, corporations, public utilities, and universities. It has also been adopted by government agencies internationally.”

More info.: [http://www.esi911.com/esi/index.php?option=com\\_content&task=view&id=14&Itemid=30](http://www.esi911.com/esi/index.php?option=com_content&task=view&id=14&Itemid=30)

## Sustainable Transportation

Submitted by Ashley Benson, UNH T<sup>2</sup> Project Assistant & UNH Masters in Literature Student

Sustainable transportation is currently a “hot topic.” Traditional transportation methods contribute significantly to greenhouse gases. Sustainable transportation is achieved by using fuel-efficient, space-saving, and healthy-lifestyle alternatives to older forms of transportation systems. Sustainable transport includes walking, bicycling, taking buses, using rideshares, driving hybrid or biofuel-driven vehicles, and other alternatives to single-user vehicles.

Communities everywhere are implementing strategies to reduce pollution from transportation. For example, the city of San Francisco CA. now addresses land use issues and transportation planning together. Also, they now place more emphasis on ensuring goods and services are accessible in urban centers and place less emphasis on suburban sprawl.

Also, Vancouver, Canada’s public works and planning departments prioritize issues of mobility in the following order: 1) Pedestrians 2) Cyclists 3) Public Transit 4) Commercial Vehicles and 5) Private cars. This means access and mobility for individuals using sustainable transportation is prioritized over older forms of transportation. Vancouver is one of the world’s leading sustainable cities, according to the ITE Journal.

Also, progress toward sustainable transportation is being made in many municipalities in New Hampshire. Towns of Antrim, Bennington, Dublin, Franconia, Greenfield, Greenville, Hancock, Jaffrey, New Ipswich, Peterborough, Rindge, Sharon, and Temple are working together to offer transportation alternatives, like rideshare.

In addition, the Contoocook Valley Transportation Company offers three opportunities for sustainable transportation: a

ride-share community, a shuttle, and several volunteer driver networks, which all

contribute to having less cars on the roads.



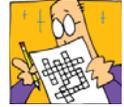
In addition, the University of New Hampshire (UNH) provides commuting students, faculty, and staff with many alternatives to single-user cars. UNH has recently created bike lanes for commuters and has improved access and safety for buses and cars. UNH has also expanded their inter-city bus system, is in the process of converting all Campus Transit buses to biofuel, and provides its students and staff with the UNH-funded Durham Amtrak station, enabling individuals from all over New England to travel to UNH in a sustainable fashion.

The key issues in sustainable transportation are about accessing goods and services; prioritizing pedestrians, bicyclists, and buses rather than cars; and reclaiming cities and towns as spaces for people, not cars. The goal is to offer residents viable alternatives to single-user vehicles, creating communities that are safe, efficient, and environmentally conscious. Many of these types of changes require a change in attitude and possibly a change of culture. Change, in any form, takes time but you have to start somewhere!

### References

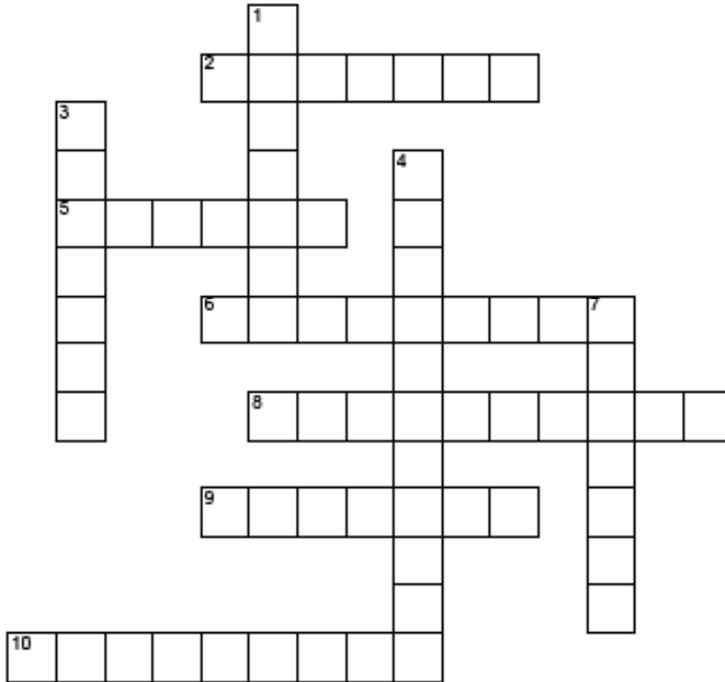
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- University Office of Sustainability. *University of New Hampshire*. 2010. Web. 4 May 2010.

# Crossword Puzzle



Be the first to complete this crossword and fax it (603-862-0620) to win a FREE T<sup>2</sup> workshop!

Name: \_\_\_\_\_ Email: \_\_\_\_\_



## ACROSS

- 2 As of January 1, 2010 New Hampshire law banned \_\_\_\_\_ while driving.
- 5 The Town of Weare replaced the bridge over \_\_\_\_\_ Bridge Road.
- 6 \_\_\_\_\_ pavements allow stormwater to filter through to the soil underneath.
- 8 The \_\_\_\_\_ Valley Transportation Company provides sustainable alternative to its community.
- 9 The NHDOT recommends the usage of the JOMA 6000 blades over the standard \_\_\_\_\_ blades for winter plowing.
- 10 This disease is 100% preventable using safety standards.

## DOWN

- 1 The University of New Hampshire is provided with 85% of its power and heat through the use of this gas, released from a nearby landfill.
- 3 333 people have earned their 4-year \_\_\_\_\_ certification since May of 2007 with the T2 Center.
- 4 Sustainable transportation prioritizes \_\_\_\_\_ over single-user vehicles.
- 7 Road Managers can decrease runoff pollution by reducing \_\_\_\_\_ during construction.

### Gravel Road Maintenance with a Snowplow Truck

*Submitted by Russ Lanoie -- Rural Home Tech*

The FrontRunner grader/rake attachment fits in place of the snowplow blade on a plow-truck and utilizes the existing hoist and angle functions for control. NH towns find the FrontRunner ideal for plowing early and late winter snowfalls when snowplows tend to dig up the soft surface. Smaller towns have found it ideal for narrower roads, particularly if there is little surface gravel.

Use the FrontRunner when roads are moist to minimize dust and reduce tire wear. Also, the mud that collects on the vehicle washes off easily before it dries hard.

U.S. and Canadian Forest Service testing supports that FrontRunner is 70% less costly to operate than a grader, it can be quickly deployed to problem areas, the forward facing operation improves operator safety, there are no apparent adverse effects to the vehicle, and it is an effective piece of equipment to supplement road maintenance operations. Dave Herlihy, of Amherst DPW, says "It's a great tool in our toolbox."

A new Gravel Roads Maintenance and Operator Training Video is now available for loan from UNH T2. The video shows how FrontRunner fits into a gravel road maintenance program.

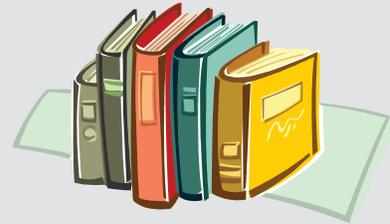
A complete explanation of the FrontRunner is available at: [www.RuralHomeTech.com](http://www.RuralHomeTech.com)

## FREE UNH T<sup>2</sup> Publications & Videos

- **329 Publications:** [www.t2.unh.edu/video\\_pub/publist.html](http://www.t2.unh.edu/video_pub/publist.html)
- **62 Videos:** [www.t2.unh.edu/video\\_pub/vidlist.html](http://www.t2.unh.edu/video_pub/vidlist.html)

All items are FREE and available from UNH T<sup>2</sup> (unless otherwise indicated). Videos are FREE to rent for three weeks and \$5 each to purchase.

To request material, email: [t2.center@unh.edu](mailto:t2.center@unh.edu) or call 603-862-2826.



## Need Student Help?

Post a Job or Internship with the  
UNH Advising and Career Center!



The University Advising and Career Center (UACC) offers the following services for employers:

- Advertising for a part-time job opening
- Advertising for a full-time job opening
- Advertising for an internship
- Rooms to conduct on-campus interviews
- Internship Development Guide

Visit UACC: <http://www.unh.edu/uacc/>

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Email [k.myers@unh.edu](mailto:k.myers@unh.edu) and include your name and affiliation. As soon as the newsletter is complete, you will receive an email with a link to the .pdf online.

Thanks in advance for being green!

To view previous newsletter editions:  
[www.t2.unh.edu/newsletter.html](http://www.t2.unh.edu/newsletter.html)

## Milestones

- **Brian Schutt** is the new NHDOT District 1 Engineer.
- **Epsom Highway** joined NH Public Works Mutual Aid.
- **New Hampton Highway** joined NH Public Works Mutual Aid.
- **Manchester Highway** joined NH Public Works Mutual Aid.
- **Orford Highway** joined NH Public Works Mutual Aid.
- **Stratford Highway** joined NH Public Works Mutual Aid.



## NH LTAP Statistics

- **4230** people are currently enrolled in our Roads Scholar Program (training). The majority of them work for municipalities.
- **80** one-day workshops are offered annually in over 100 topics.
- **212 (of 234)** New Hampshire municipalities attend our training.
- **392** people are at level 1 Roads Scholar; 94 people are at level 2 Roads Scholar; 91 people are at level 3 Roads Scholar; 189 people have achieved their Master Roads Scholar.
- **333** people have earned their 4-year flagger certification (ATSSA) since May of 2007.
- **136** people have been trained in grader operations and safety since May of 2008.
- **62** videos are available for free loan or streaming in our library.
- **329** publications are available for free by download or request!
- **1065** people receive the Road Business newsletter.
- **117** municipal highway departments belong to the NH Public Works Mutual Aid Program to assist one another during emergencies.



**Technology Transfer Center**  
New Hampshire LTAP at UNH

## About UNH T<sup>2</sup>

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 T<sup>2</sup>) was established in 1986. We continue the LTAP mission by providing training and services to NH municipalities. Our program is supported by Federal Highway Administration, NH Department of Transportation, University of New Hampshire, and our National LTAP & TTAP Program.

## UNH T<sup>2</sup> Staff

- Charles Goodspeed, Faculty Liaison
- Kathryn Myers, Program Manager
- Linsey Shaw, Program Support Assistant
- Butch Leel, Technical Support Assistant
- Ashley Benson, Project Assistant

## UNH T<sup>2</sup> 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 - Director of PW, New London

### NH Public Works Standards & Training Council

Dave Danielson - Foresee Advocacy LLC

## About Road Business

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# Summer/Fall 2010 Training Calendar

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

7/20 - 7/23	Backhoe Operation & Safety	10 Technical	Plymouth/Rumney	\$120
8/10 - 8/13	Grader Operation & Safety	10 Technical	Hillsborough	\$120
8/20	Road Managers Meeting	N/A	Claremont	FREE
8/24 - 8/227	Backhoe Operation & Safety	10 Technical	Plymouth/Rumney	\$120
8/31	Employee Safety	5 Safety	Keene	\$60
9/1 & 9/2	Road Surface Mgmt. Systems (Software)	10 Technical	Concord	\$100
9/2	Public Relations	5 Supervisory	Keene	\$60
9/3	Road Drainage & Culverts	5 Basic	Moultonborough	\$60
9/7	Budgeting for Municipalities	5 Supervisory	Amherst	\$60
9/8	Know Before You Dig	5 Safety	Concord	\$60
9/9	Winter Maintenance Fundamentals	5 Technical	Derry	\$60
9/10	Municipal Road Safety & Trees	5 Safety	Derry	\$60
9/14	Sign Inventory Mgmt. Systems (Software)	5 Technical	Concord	\$50
9/15 & 9/16	ICS for Public Works	10 Safety	Concord	TBA
9/17	Invasive Plants	5 Environmental	Concord	\$60
9/28	Flagger Certification Training	5 Safety	Lincoln	\$60
9/29	Computers: Reports and Presentations	5 Technical	Concord	\$60
10/1	Lines, Levels & Layouts	5 Technical	Rochester	\$60
10/5	Reconstruction Project Planning	5 Technical	Amherst	\$60
10/6	Flagger Certification Training	5 Safety	Bow	\$60
10/7	Basic Math	5 Basic	Amherst	\$60
10/12	Winter Maintenance Fundamentals	5 Technical	Raymond	\$60
10/13	Bridge Maintenance	5 Technical	Rochester	\$60
10/14	Recycling for Public Works	5 Environmental	Raymond	\$60
10/19	Employee Performance Evaluations	5 Supervisory	Lincoln	\$60
10/20	Flagger Certification Training	5 Safety	Mont Vernon	\$60
10/21	Full-Depth Reclamation	5 Technical	Derry	\$60
10/26	Workzone Traffic Control	5 Safety	Lebanon	\$60
11/4	A Hard Road to Travel	5 Supervisory	Moultonborough	\$60
11/9	Emergency Communications for PW	5 Supervisory	Dover	\$60

