

# ROAD BUSINESS

## On the Road in New Hampshire

### Temporary Dams



The town of Hollis used a portadam during a bridge replacement to provide temporary and semi-permanent barriers for water retention. Jeffrey Babel, public works director, Hollis, recommends the temporary daming system. Temporary dams are made of synthetic fabric and are low impact, which allowed the Hollis to use an expedited DES wetlands permit.

Jeff's crew prepared the site in one day. A three-man crew from Portadam worked with three employees from Hollis. A steel frame was built on site to Jeff's specifications. It was covered with a fabric tarp and sand bags were set in place to hold the dam. The water was then pumped out of the river.

The river water pulled the tarp down to create a water-tight barrier. The installation took two days.

The dam was very effective. Jeff and his crew worked 18 feet below water level to secure bridge footings.

It took only one day to remove the dam. Two alternatives to using a portadam are sheet piling or water bags.

Jeff was skeptical about the temporary dam. He wondered if it would hold during a heavy storm. He believed that animals or people could tear holes in the fabric. A small hole developed in the portadam, a water pump remedied the problem.

*by Kathryn Myers*



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

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## Master Road Scholars

### Master Roads Scholar--Robert Bain



Robert Bain is the road agent for the town of Campton. He became road agent in March 2006. He began with public works as a truck driver in Portsmouth.

Robert will continue taking classes with the UNH T<sup>2</sup> Center because he enjoys gaining new knowledge.

Robert enjoys spending time with his wife, Angela, and their children, Codi and Cami. Robert is an avid hunter.

### Master Roads Scholar--Harold Blanchette

Harold Blanchette is the superintendent of public works in Hopkinton. He began working for Hopkinton after high school, 21 years ago.

One reason that Harold will continue to take classes is that he enjoys the networking opportunity. Networking gives him new ideas, making him a more efficient worker.

Harold and his wife, Kris, have two sons Zach, 15, and Taylor, 11. With their support he is makes it through the long winter hours. Harold owns oxen that he takes to fairs to exhibits around New England.

### Master Roads Scholar--Joe Boucher



Joe Boucher is the working foreman for the streets and drains department in the city of Dover. He began working in Dover 10 years ago, in the sewer department, as a maintenance mechanic.

Joe plans to continue taking classes to further his knowledge.

Joe is an avid hunter. He enjoys camping on the lake with his family, tubing, and waterskiing.

### Master Roads Scholar—Frank Colyn

Frank Colyn is an Assistant Highway Patrol Foreman for NHDOT, District 4. He has been employed with the NHDOT for 20 years, 14 as the Assistant Foreman. He was hired as a Highway Maintainer I. Previously, Frank worked a metal-working teacher at New Ipswich Public School with grades 7-12. He enjoyed teaching seventh and eighth graders because of the students' enthusiasm and eagerness to learn.

Frank enjoys working outdoors, hunting, fishing, and hiking.



## Master Roads Scholar-Jason Damren

Jason Damren is the assistant highway foreman at the Bureau of Turnpikes. He began his involvement with public works in Salem seven years ago.

Jason enjoys taking classes with the Technology Transfer Center because he has enormous pride and respect for the public and the road.



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## Master Roads Scholar-Gary Kitson



Gary Kitson is a system highway patrol foreman with NHDOT, District 6. He has worked for the state for 25 years, 16 in bridge maintenance. Gary has always had an interest in construction. He enjoys working outdoors and prefers to do work that is different from a typical “job.”

Gary will continue to take classes, he says that you can always get more out of classes. Even if you’re repeating a class, you learn something new. Gary would like to remind us we’re never too old to learn.

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## Master Roads Scholar-Charles Perkins

Charles Perkins works for the Town of Raymond as an equipment operator, driver, and laborer. He has been with the Raymond Highway department for 3 years. He started his career with public works at NHDOT.

Charles wants to continue his education. He finds them fun and there is always something new to learn.

He has been married to “a wonderful woman,” Rachel, for nine years. Charles enjoys hunting and fishing.

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## Master Roads Scholar-Carol Raymond

Carol Raymond works is the assistant road agent in Chichester. She has been employed with the town for three years.

Carol intends to continue taking UNH T<sup>2</sup> Center classes to learn new and different things.

Carol enjoys spending time with her family. She has one son and two daughters. She also enjoys traveling and riding her Harley.

# Dover NH Salt Brine Research Project

*By Kathryn Myers, Educational Program Assistant*



Doug Steele, is the community services director in Dover. Dover has adopted the use of salt brine in the city. Previously, they have tried rock salt, solar salt, calcium chloride, hot sand, and ice-be-gone. Doug finds that brine's unique characteristics prevent the snow and ice from bonding to the pavement. Doug believes that, like all products, brine has certain conditions where it works best.

## Why use Salt Brine?

Dover became interested in salt brine as both the NHDOT and Maine DOT have reported positive results. The city decided to test the brine with the assistance of the NHDOT research grant.

## Site Preparation

Store brine inside, covered, and in a warm environment. Dover DPW used a bay in their building to make and store the brine. A large garage door was installed to allow the loader to enter the building and transport salt to the brine mixing system. A three inch water line and electrical updates were installed for the new equipment.

The new door cost \$8,780 (including installation), the water line \$13,420; and the electrical work

\$970. Total site preparation: \$24,970.

Dover used existing equipment to measure pavement temperature before applying the salt brine. Do not use brine if the road temperature is below 15 degrees.

## Creating the Salt Brine

Dover purchased a mixing unit, two 6,000 gallon storage tanks, pump and hoses, and a portable tank with brine distribution unit. The tank combined salt, at one ton per 1,000 gallons, of water to produce the brine.

## Training

The vendor provided brine mixing training. Salt is placed in the mixer and water added. The circulation pump mixes the materials. The mixture is tested with a hydrometer for salinity levels. Once the brine is at 23% salinity, it is pumped to storage tanks or an anti-icing unit. Doug reports that now there are now units available that automatically mix brine.

## Applying the Brine

Two similar plows routes were selected with residential areas and heavily traveled streets. One

route used salt pre-wetted with a chemical de-icer. The other used salt brine. They performed this comparison five times in 2005.

### Application Rates and Cost

Cost of salt brine is \$4.71 per 1,000 gallons water; \$45.96 for 2,000 pounds of salt; and \$10.50 of employee's time (to make the brine). Therefore, cost of the brine was \$61.17 or 0.061 per gallon.

Dover DPW began applying salt brine with an application rate of 40-50 gallons per lane mile. They increased the application rate to 80 gallons per lane mile. Therefore, 80 gallons with \$.061 per gallon totals \$4.88 per lane mile.

In comparison they believe that salt alone costs \$5.70 per lane mile.

### Savings

Brine can be applied during regular work hours, reducing overtime. It can be applied up to three days before the storm. Brine allows the city up one to two hours of light snow before calling in staff. Brine dries on the road compared to rock salt that traffic blows off.

Dover has found many benefits to salt brine. Salt brine is less costly. It is environmentally friendly and less wasteful. Brine is helpful in typical problematic areas, such as bridges and shaded areas. Brine eases worry about the impact of the storm and is effective when used correctly.

### Future Use

The city will continue to use brine. This year, they plan to use existing saddle tanks on trucks to pre-wet salt with brine at the spreader.



*The hydrometer measures the level of the salt brine.*

## Avoid Hypothermia

Prolonged exposure to cold temperatures can result in hypothermia. People exposed to the cold need to notice its effects.

Cold is the most common cause of hypothermia. Chilled air cools the body. Hypothermia can occur on a mild winter's day or in damp weather. People can become hypothermic at temperatures above freezing if exposed to a combination of wind and wet clothing.

In windy conditions, the head, chest and groin are especially vulnerable. Fatigue increases one's risk of hypothermia.

Proper clothing and adequate insulation trap warm air around the body and prevents hypothermia.

Wear a hat as up to 50 percent of body heat is lost through the head. Protect feet and hands. Wear waterproof boots and mittens or gloves.

Layer clothing. The first layer of clothing should allow the skin to breathe and sweat to escape. Wear underwear, socks and glove liners of polypropylene or knitted silk to allow sweat to wick off the skin.

The second layer should absorb perspiration and not allow heat to escape. Wool is ideal as it stays warm even when wet and comes in many thicknesses. Layer two light sweaters on top of each other.

To prevent exhaustion, drink plenty of non-alcoholic fluids. Heated drinks work well, but limit coffee and tea. Pace yourself. Take regular breaks to get out from the cold. Don't become weak with fatigue. People who are fit are less prone to hypothermia.

Source  
Precautions to avoid hypothermia, Nevada Milepost, Winter 2006, p. 3

## Roundabouts

Roundabouts have their naysayers, particularly citizens who don't want to slow down however, that's what they are designed to do.

The town of Goffstown recently installed one. It's working well but the public still has not accepted it. The NHDOT installed a roundabout in Keene and is pleased with the results.

### What's a Roundabout?

A modern roundabout has two main traffic-controls, each with its own benefit: yield at entry (gives traffic in the circle the right-of-way), causes traffic to slow down, and flare, provides increased capacity. They measure 70-160 ft.

### What's Not a roundabout?

People often confuse traffic circles with roundabouts. Unlike roundabouts, traffic circles require a full stop before entry and have a much larger diameter of 300-400 ft. to enable higher speeds.

### Considerations

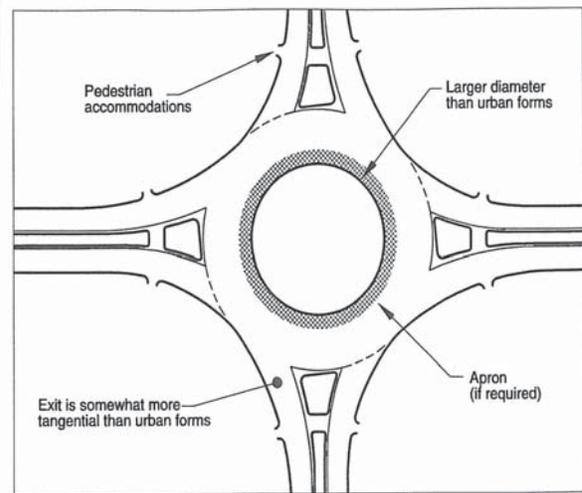
When considering installing a roundabout, consider these factors.

**Safety.** There are 32 conflict points in a single-lane intersection. When a roundabout is used, the number drops to eight with a 75% drop in accident risk. The roadway curvature of the roundabout reduces speed, which provides drivers with more time to make decisions and lessens impact severity.

Pedestrians are better protected. The space between splitter islands and entrances allows them to pause while crossing the street.

**Low cost.** Roundabouts don't require any poles, timers, etc... normally required in an signalized intersection. Drivers have no question about who has the right-of-way in power outages at these intersections.

The average cost of a traffic light at an intersection is \$120,000 to \$250,000 and expensive electrical maintenance costs follow. Construction costs with roundabouts varies but the average cost of a single-



lane roundabout is around \$250,000, not counting the land acquisition. The maintenance costs are considerably less than with traffic lights.

### Other benefits

Installing a roundabouts are environmentally friendly. Less pollution occurs due as there is a lack of traffic stopping and accelerating at lights. It also provides for greater capacity; since traffic is moving continually and the circle can hold more traffic at once. U-turns are much easier in curves and the islands allow for aesthetic creativity with landscaping.

Source:  
KUTC Newsletter, Summer 2006, p 3-4

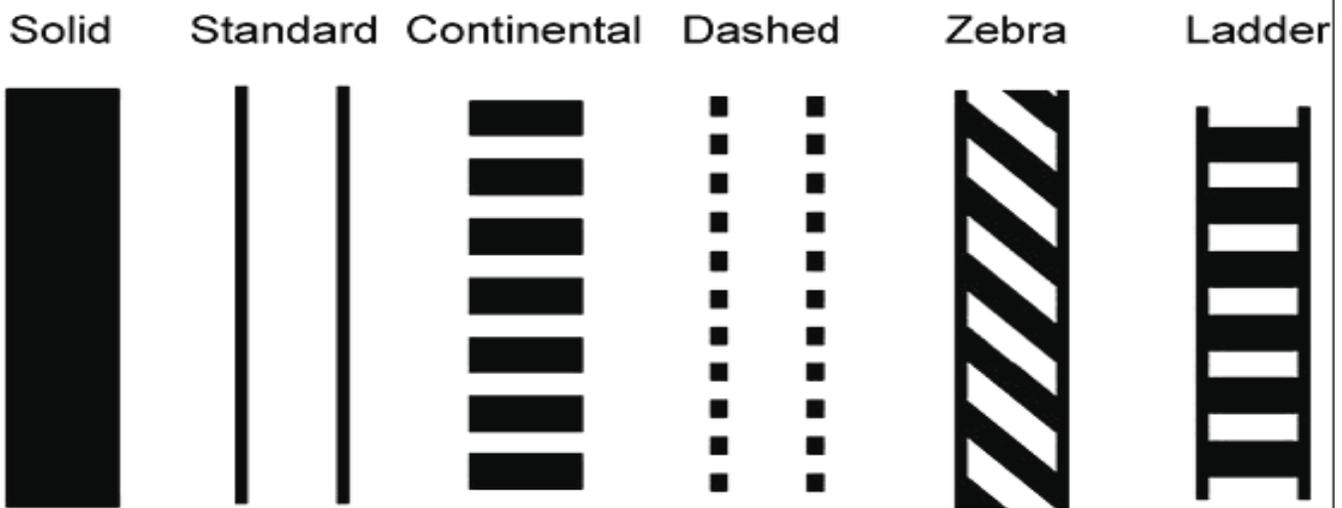


**Technology Transfer Center**  
New Hampshire LTAP at UNH

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

## Crosswalk Marking

*By Chris Bourque*



Crosswalks are areas in the roadway where pedestrians are granted the right of way. They indicate the safest paths for pedestrians to cross.

Crosswalks may be marked or unmarked. They exist at all controlled intersections, whether marked or unmarked, and may only be established by markings at non-intersection locations.

Not all locations are safe for pedestrians to cross due to traffic volumes, speed limits, sight distances, etc., therefore, perform an engineering study before installing

a marked crosswalk.

According to the Manual on Uniform Traffic Control Devices (MUTCD), colored paint between the white lines of a crosswalk marking is permitted, as long as the paint does not:

- Degrade the contrast of the white lines
- Use colors that may be misconceived by drivers as a traffic control device
- Contain retroreflective materials

(As interpreted by the FHWA Interpretation Letter 3-178(I) - [http://mutcd.fhwa.dot.gov/resources/interpretations/3\\_178.htm](http://mutcd.fhwa.dot.gov/resources/interpretations/3_178.htm))

Crosswalk markings may follow many patterns, including: solid, standard, continental, dashed, zebra, and ladder patterns. There is no conclusive evidence that links the type of crosswalk pattern to improved pedestrian safety.



## Recommendations for installing Marked Crosswalks and Other Needed Pedestrian Improvements at Uncontrolled Intersections

| Roadway Type<br>(Number of travel lanes<br>and median type) | Vehicle Average Daily Traffic<br>(ADT)<br>≤ 9,000 |        |        | Vehicle ADT<br>> 9,000 to 12,000 |        |        |
|---|---|--------|--------|----------------------------------|--------|--------|
|   | ≤ 30<br>mph                                       | 35 mph | 40 mph | ≤ 30<br>mph                      | 35 mph | 40 mph |
|   | 2 Lanes   | C      | C      | P                                | C      | C      |
| 3 Lanes   | C   | C      | P      | C                                | P      | P      |
| Multilane (4 or more<br>lanes) with raised<br>median        | C   | C      | P      | C                                | P      | N      |
| Multilane (4 or more<br>lanes) without raised<br>median     | C   | P      | N      | P                                | P      | N      |
| Roadway Type<br>(Number of travel lanes<br>and median type) | Vehicle ADT<br>>12,000 to 15,000                  |        |        | Vehicle ADT<br>> 15,000          |        |        |
|   | Speed Limit                                       |        |        |                                  |        |        |
|   | ≤ 30<br>mph                                       | 35 mph | 40 mph | ≤ 30<br>mph                      | 35 mph | 40 mph |
| 2 Lanes   | C   | C      | N      | C                                | P      | N      |
| 3 Lanes   | P   | P      | N      | P                                | N      | N      |
| Multilane (4 or more<br>lanes) with raised<br>median        | P   | P      | N      | N                                | N      | N      |

C=Candidate sites for marked crosswalks. Marked crosswalks must be installed carefully and selectively after an engineering study is performed.

P=Possible increase in pedestrian crash risk may occur if crosswalks are added without other pedestrian facility enhancements. Closely monitor these locations and enhance with other pedestrian crossing improvements, if necessary, before adding a marked crosswalk.

N=Marked crosswalks alone are insufficient, since pedestrian crash risk may be increased due to providing marked crosswalks alone. Consider using other treatments, such as traffic calming, traffic signals with pedestrian signals where warranted, or other substantial crossing improvements to improve crossing safety for pedestrians.

## Design requirements for crosswalk pavement markings.

| Treatment   | Minimum Design Requirements  | Maximum Design Requirements  |
|---|--|--|
| Solid white transverse crosswalk lines                  | <ul style="list-style-type: none"> <li>• 6-in line width</li> <li>• 6-ft gap between lines (crosswalk width)</li> </ul>                | <ul style="list-style-type: none"> <li>• 24-in line width</li> <li>• No maximum crosswalk width defined</li> </ul>   |
| Diagonal or longitudinal lines without transverse lines | <ul style="list-style-type: none"> <li>• 6-ft crosswalk width</li> <li>• 12-in line width</li> <li>• 12-in spacing of lines</li> </ul> | <ul style="list-style-type: none"> <li>• No maximum crosswalk width</li> <li>• 24-in line width</li> <li>• 5-ft spacing of lines (not to exceed 2.5 times the line width)</li> </ul> |

### Marked vs. Unmarked

Crosswalk markings are intended to increase pedestrian safety, however, this is not always the case. According to a study by Charles Zegeer et. al., of the University of North Carolina, “under no condition was the presence of a marked crosswalk alone at an uncontrolled location associated with a significantly lower pedestrian crash rate compared to an unmarked crosswalk.” The study concluded that there was an increase in pedestrian related accidents under the following conditions:

- Multi-lane roads without raised medians and average daily traffic volume about 12,000;

“Under no condition was the presence of a marked crosswalk alone at an uncontrolled location associated with a significantly lower pedestrian crash rate compared to an unmarked crosswalk”

- Multi-lane roads with raised medians and average daily traffic volume above 15,000.

(See “Are Marked Crosswalks Safer” article from Winter 2006 UNH T<sup>2</sup> Newsletter)

The study analyzed five

years of data on pedestrian crashes at 2,000 crosswalks, half of the sites were marked and half unmarked in comparable locations. All of the sites were “uncontrolled,” (there was no signal or stop sign regulating traffic). Marked crosswalks often gives pedestrians a false sense of security.

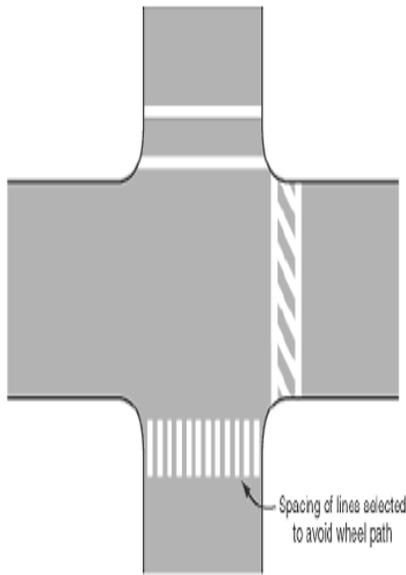
There is evidence that enhancements such as roadway narrowing, raised medians, traffic signals, increasing overhead lighting, traffic calming, and curb extensions increase pedestrian safety. Consider these during an engineering study in place of or in addition to installation of marked crosswalks.

### Specifications

MUTCD places minimum and maximum standards on marking widths and spacing to enhance visibility of crosswalks. These standards coincide with those required by the NHDOT.

The MUTCD suggests the following guidelines for crosswalk marking:

- Crosswalks should be marked at all intersections where there is substantial conflict between vehicular and pedestrian movements.
- Marked crosswalks should be provided at other appropriate points of pedestrian concentration, such as at loading islands, mid block pedestrian crossings, or where pedestrians could not otherwise recognize the proper place to cross.



*The drawing on the left is from the FHWA website. It illustrates examples of crosswalk marking patterns and an example of spacing. Spacing should avoid wheelpaths.*

Because non-intersection pedestrian crossings are generally unexpected by the road user, warning signs should be installed and adequate visibility should be provided by parking prohibitions. (Note: install street lights to help drivers identify pedestrians crossing or where pedestrians are crossing the roadway. Consider painting “Look Both Ways”)

For added visibility, the area of the crosswalk may be marked with white diagonal lines at a 45-degree angle to the line of the crosswalk or with white longitudinal lines parallel to traffic flow. The NHDOT suggests that when diagonal lines are used, the stripes should slope towards the edge of pavement from left to right.

When diagonal or longitudinal lines are used to mark a crosswalk, the transverse crosswalk lines may be omitted. This type of marking may be used at locations where substantial numbers of pedestrians cross without any other traffic control device, at locations where physical conditions are such that added visibility of the crosswalk is desired, or at places where a pedestrian crosswalk might not be expected.

Wherever possible, install marking designs to avoid wheel paths.

**References:**

**MUTCD**

<http://www.tfhrc.gov/safety/pedbike/pubs/05085/chapt10.htm> September 12, 2007

[http://mutcd.fhwa.dot.gov/resources/interpretations/3\\_178.htm](http://mutcd.fhwa.dot.gov/resources/interpretations/3_178.htm) September 12, 2007

<http://www.nh.gov/dot/standardplans/pdf/pm-9-000.pdf> September 12, 2007  
 “Are Marked Crosswalks Safer” *Road Business*, Winter 2006



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

## Federally Mandated Worker Visibility Regulation Summary

The Federal Highway Administration has enacted a worker visibility regulation (Part 634; Title 23; Code of Federal Regulations) to decrease the likelihood of worker fatalities or injuries from motor vehicles while working within a right-of-way on Federal-aid-highways. This rule, issued on November 18, 2006, will become mandatory November 24, 2008. The compliance period is to provide agencies, incident responders, and contractor's sufficient time to purchase garments that comply with the new standards.

The new regulation requires the wearing of high-visibility ANSI Class 2 or Class 3 safety garments by workers performing tasks within the right-of-way on Federal-aid-highways. A worker is defined as those people on foot whose duties place them within the right-of-way of a Federal-aid highway, such as highway construction and maintenance forces, survey crews, utility crews, responders to incidents, and law enforcement personnel when

directing traffic, investigating crashes, and handling lane closures, obstructed roadways, and disasters. Adopt-A-Highway workers, mowing crews, gardeners, etc. all will have to wear the high-visibility clothing to be in compliance with the new rule. The only exception will be law enforcement personnel during manhunts, traffic stops and searches.

A Federal grant is available to help agencies purchase the required safety clothing; it is the State and Community Highway Safety Grant Program, Section 402, Chapter 4 of Title 23.

For details see: <http://www.nhtsa.dot.gov/portal/site/nhtsa/menuitem.c5f2b2d02df83a9d304a4-c4446108a0c/>

For Part 634; Title 23; Code of Federal Regulations see: [http://www.access.gpo.gov/su\\_docs/fedreg/a061124c.html](http://www.access.gpo.gov/su_docs/fedreg/a061124c.html)

For examples of safety apparel: <http://secure.cartsvr.net/catalogs/index.asp?catid=21054&fileID=14114>

## Tips for Safe Backing



- Park & back defensively.
- When in doubt-don't back up.
- Park the vehicle so backing up is unnecessary.
- While backing, remember, there is always a blind spot.
- Every backing situation is different
- Plan backing to the minimum distance possible.
- When possible, back toward the driver's side.
- Before backing, get out of the vehicle and look. Back immediately after checking.
- Check for all types of obstacles - including overhead.
- When there is no back-up alarm, sound the horn before backing, and periodically while backing.
- Continually check mirrors on both sides.
- Use a spotter.
- Eliminate background noise and distractions (open windows, irrelevant conversations, turn down: radios, CB's, stereos, etc...).
- Back slowly in the lowest gear possible.
- When parallel parking, leave enough room so as not to have to back up when exiting.

Source:  
Amsler, Dewey, AFM Engineering

## New Hampshire Roads Scholars

*We are pleased to recognize those who have achieved the following levels in the UNH T<sup>2</sup> Center Roads Scholar Program during the Fall of 2007.*

**Master Roads Scholar.** Participated in UNH T<sup>2</sup> Center training activities which totaled 100 contact hours and covered the range of topics required for Roads Scholar II.

|                   |             |
|-------------------|-------------|
| Robert Bain       | Campton     |
| Harold Blanchette | Hopkinton   |
| Joe Boucher       | Dover       |
| Arnold Cate       | Bridgewater |
| Michael Clarke    | New Durham  |
| Frank Colyn       | NHDOT       |
| Jason Damren      | NHDOT       |
| Scott Frost       | Madison     |
| Gary Kitson       | NHDOT       |
| James Maclean     | Walpole     |
| Charles Perkins   | Raymond     |
| Carol Raymond     | Chichester  |
| Mack Tebbetts     | Barnstead   |
| Troy Wilmott      | Walpole     |

**Senior Roads Scholar.** Participated in UNH T<sup>2</sup> Center training activities which totaled 70 contact hours and covered the range of topics required for Roads Scholar II.

|                 |            |
|-----------------|------------|
| Peter Furmanick | Holderness |
| Kelly Gibbons   | Lebanon    |
| David Herlihy   | Amherst    |
| Scott Johnston  | Enfield    |
| Jason Kimball   | Merrimack  |
| Michael LaClair | Madison    |
| John Mathieu    | Bedford    |
| Terry Miller    | Claremont  |
| Barry Mueller   | NHDOT      |
| Charles Pease   | Northwood  |
| James Rostron   | NHDOT      |
| Steve Rougeau   | Milford    |
| Allen Swiadas   | Bedford    |
| Thomas Willis   | Rochester  |

**Roads Scholar II.** Participated in UNH T<sup>2</sup> Center training activities which totaled 50 contact hours and covered a set of minimum subject areas including road design and construction basics, other technical, tort liability and safety, and supervision or personal development.

|                 |           |
|-----------------|-----------|
| George Chartier | Littleton |
| Matthew Clarke  | NHDOT     |
| Matthew Costa   | Amherst   |

|                   |                 |
|-------------------|-----------------|
| Scott Davison     | Henniker        |
| Hazen Fisk        | New Ipswich     |
| Carl Gagnon       | Nashua          |
| Kelly Gibbons     | Lebanon Airport |
| Dave Howard       | Lempster        |
| Paul Jalbert      | Grafton         |
| Scott Kinmond     | Moultonborough  |
| John Meisel       | Manchester      |
| Greg Messenger    | Strafford       |
| Richard Patten    | NHDOT           |
| Victor Ranfos III | Pembroke        |
| John Riendeau     | New Boston      |
| John Russell      | NHDOT           |
| Kenneth Salisbury | Amherst         |
| Bob Seawards      | Dover           |
| Raul Vazques      | Manchester      |
| Gilbert Vien      | Chichester      |

**Roads Scholar I.** Participated in UNH T<sup>2</sup> Center training activities which totaled 30 contact hours.

|                   |                   |
|-------------------|-------------------|
| Neal Beauregard   | New Ipswich       |
| Dan Bushman       | Franklin          |
| Edward Cantara    | Pittsfield        |
| Peter Companion   | Claremont         |
| Peter Cook        | Barrington        |
| Don Cote          | Eastman Community |
| James Culpon      | Laconia           |
| Andrew Dame       | NHDOT             |
| Gerard Decosta    | Litchfield        |
| Mark Doherty      | Franklin          |
| Dale Drew         | Conway            |
| Ira Ela           | Conway            |
| Brian Eldredge    | Pittsfield        |
| Alan Fenstermaker | Raymond           |
| Lee Ford          | Wilmington        |
| Sid Gobin         | Eastman Community |
| Chris Hall        | NHDOT             |
| Lauren Howard II  | NHDOT             |
| Steve Huckins     | NHDOT             |
| John Jackman      | Somersworth       |
| Brad Kelly        | Warner            |
| Rene LaPorte      | Lempster          |
| Lucas Lamos       | Laconia           |

Lous Lapointe  
 Jody McDonald  
 Reno Nadeau  
 Forrest Paranto  
 John Paul-Hilliard  
 Carl Peare  
 Ernest Perry  
 James Plourde  
 Eric Poitras  
 Larry Shanks  
 Dana Smith  
 Cliff Steinhauer  
 Paul Wilson  
 Dave Winslow  
 Harold Wood  
 Kirk Young

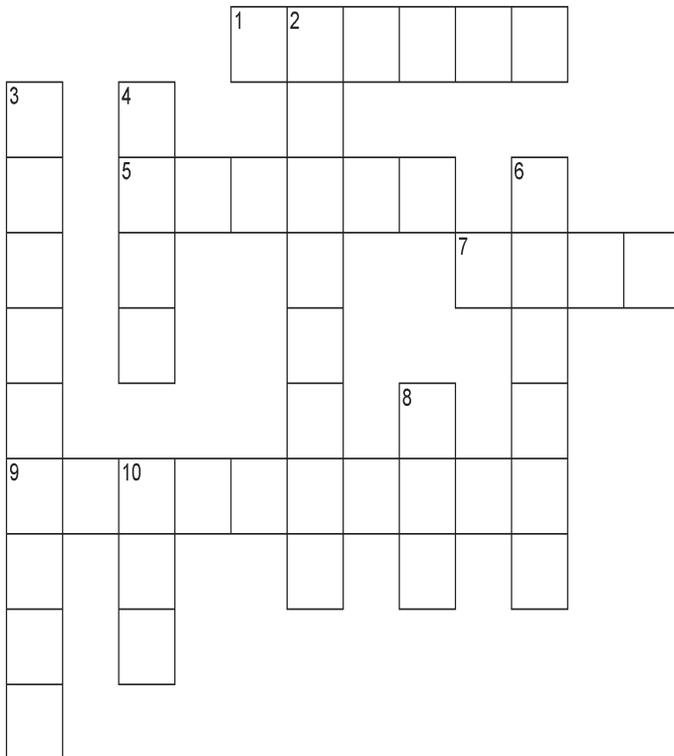
Merrimack  
 Conway  
 Pembroke  
 Claremont  
 NHDOT  
 Conway  
 Alstead  
 Greenfield  
 Dover  
 Madison  
 Concord  
 Franklin  
 NHDOT  
 Manchester  
 Raymond  
 Gilford

## UNH T<sup>2</sup> Center Modifies the Roads Scholar Program

As we welcome in 2008, there will be a change to the Roads Scholar Program. Currently, level two requires 50 contact hours and covers a set of minimum subject areas including road design and construction basics, other technical, tort liability and safety, and supervision or personal development. In 2008, the program will require an environmental course in addition to the other workshops needed to achieve level two.

### Crossword

*Test your knowledge, items from this newsletter.*



www.CrosswordWeaver.com

#### ACROSS

- 1 Hypothermia can occur on a damp \_\_\_\_\_ day.
- 5 Safe \_\_\_\_\_ is good for business.
- 7 \_\_\_\_\_ around the vehicle before backing.
- 9 The Town of Goffstown recently installed a \_\_\_\_\_.

#### DOWN

- 2 Salt brine is used to \_\_\_\_\_ roads
- 3 The Town of Hollis used a \_\_\_\_\_ dam.
- 4 Crosswalk markings may follow \_\_\_\_\_ patterns.
- 6 Workers should wear ANSI class 2 or 3 \_\_\_\_\_ garments.
- 8 Temporary dams are \_\_\_\_\_ impact
- 10 When backing up \_\_\_\_\_ a spotter.

## Publications



### *UNH Technology Transfer Center*

These publications are available from the UNH T<sup>2</sup> Center. See [www.t2.unh.edu/video\\_pub/publist.html](http://www.t2.unh.edu/video_pub/publist.html) for a complete list and to access some publications online. To request publications, complete form and mail or fax to 603-862-0620.

**Anti-Icing of Local Roads Manual.** A successful and effective anti-icing program on local New Hampshire roads. It is intended for use by public works managers and road agents as well as their crews. UNH T<sup>2</sup> Center workshop notebook.

**Deicing, Anti-Icing and Chemical**

**Alternatives.** Technologies to consider for certain snow or ice control situations. UNH T<sup>2</sup> Center

**Highway Salt and Our Environment.** Use of salt in deicing operations, including why we use highway salt; road, bridge, and vehicle corrosion; roadside vegetation; wildlife and fish; human health; and ways to safeguard the environment. Salt Institute.

**Mutual Aid: A Key to Emergency**

**Management.** Objectives and benefits of joining the NH Mutual Aid Program. UNH T<sup>2</sup> Center, *Road Business*, Winter 2001.

**Pros and Cons of Sand and Ice on Snow pack.**

Describes specific situations where friction will increase due to sand being applied to snow and ice. UNH T<sup>2</sup> Center, *Road Business*, Fall 2001.

**Road Salt and Water Quality.** Road salt management, alternatives to road salt, and the DOT Reduced Salt Pilot Program. NH DES.

**Snow and Ice Fact Sheet.** Snow Fence, Controlling Material Applications, Radar and How it Works, Bridge Frost, Salt, Surface and Substance Temperatures, Air Temperatures, Dew Point Temperature & Relative Humidity, Eutectic Temperature, Rock Salt, Road Frost, Roadway Temperatures, Chemical Concentration, Temperatures & Concentration, Deicing Chemicals, Endothermic and Exothermic Chemicals, Ice Penetrations, Ice Melting Capacity. The Salt Institute and IA DOT.

**Stormwater Management and Drainage:**

**NACE Action Guide.** Strong argument for stormwater management and planning. It explains the basics of drainage, ways to practice drainage of stormwater, and winter deicing and the environment. NACE, 2000.

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## Material Request Form

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

Affiliation: \_\_\_\_\_

Town/City: \_\_\_\_\_

Phone: \_\_\_\_\_ Fax: \_\_\_\_\_

Title: \_\_\_\_\_

Mailing address: \_\_\_\_\_

State: \_\_\_\_\_ Zip: \_\_\_\_\_

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

## Milestones

*Kelly Ann Butler* is the new public works director in Unity.



*Christopher Hall* and *Matthew Clarke*, NHDOT District 4, won the NH Plow Rally.

## Websites

NHDOT RWIS data [http://vortex.plymouth.edu/nh\\_rwis.html](http://vortex.plymouth.edu/nh_rwis.html)

Safe Access is Good for Business. Federal Highway Administration's primer on access management and its effect on business activity and the local economy. It focuses on economic concerns in response to proposed access changes or policies, including potential impacts on business activity and parking for customer. [http://www.trb.org/news/blurb\\_detail.asp?id=8364](http://www.trb.org/news/blurb_detail.asp?id=8364)

Pavement Management; Monitoring, Evaluation, And Data Storage; And Accelerated Testing 2007 Includes 17 papers based on predictions of pavement smoothness, condition measurement, the resurface cycle, and pavement restoration. It also examines maintenance contracts, life-cycle costs, frost effects, and service life. [http://www.trb.org/news/blurb\\_detail.asp?id=8269](http://www.trb.org/news/blurb_detail.asp?id=8269)

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## Listservs

A listserv is a free way to use email to exchange information. To subscribe send an email to [ListProc@lists.unh.edu](mailto:ListProc@lists.unh.edu). Leave the subject line blank, in the body of your message type:

Subscribe listname your name

For instance:

Subscribe pw.net John Doe

### PW.NET

Want to know what is happening in other towns? Or, learn the very latest in regulations? Need a place to ask questions of other public works officials? Want to be the first to receive notifications of UNH T<sup>2</sup> Center workshops? Sign up for pw.net

### RunOff.Talk

Want to discuss NPDES II issues and concerns? This list enables a dialog to clarify federal permits, and determine the best technical management for compliance. Use it to announce meetings and conferences. ❖



**Technology Transfer Center**

New Hampshire LTAP at UNH

## Road Business

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t2.center@unh.edu  
<http://www.t2.unh.edu>



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

### Preliminary Spring 2008 Workshop Calendar

#### Basics

|          |                              |                |      |
|----------|------------------------------|----------------|------|
| March 25 | Drainage, Drainage, Drainage | Plymouth       | \$75 |
| March 27 | Drainage, Drainage, Drainage | Swanzy         | \$75 |
| June 4   | Basics of a Good Road        | Moultonborough | \$60 |

#### Erosion Control

|          |                   |                  |      |
|----------|-------------------|------------------|------|
| April 23 | Erosion Control 1 | Concord, Audubon | \$75 |
| May 15   | Erosion Control 1 | Lincoln          | \$75 |
| May 28   | Erosion Control 2 | Lincoln          | \$75 |

#### Supervisory or Personal Development

|         |                              |         |      |
|---------|------------------------------|---------|------|
| April 1 | Public Relations for PW      | Lincoln | \$60 |
| April 3 | Public Relations for PW      | Swanzy  | \$60 |
| May 27  | Managing Highway Departments | Lebanon | \$60 |

#### Technical Aspect of Road Maintenance or Repair

|          |                            |                      |      |
|----------|----------------------------|----------------------|------|
| March 18 | Plan Reading               | Lincoln              | \$60 |
| March 20 | Plan Reading               | Concord, Holiday Inn | \$60 |
| April 16 | Maintenance of Local Roads | Swanzy               | \$60 |
| April 22 | Municipal Permits          | Concord, Holiday Inn | \$60 |
| April 24 | Municipal Permits          | Lincoln              | \$60 |
| May 1    | Pavement Markings          | Plymouth             | \$60 |
| May 6    | Crack sealing              | Raymond              | \$60 |
| May 7    | Pavement Markings          | Claremont            | \$60 |

#### Tort Liability

|          |                          |             |      |
|----------|--------------------------|-------------|------|
| April 15 | Workzone Traffic Control | Lebanon     | \$60 |
| April 17 | Workzone Traffic Control | Swanzy      | \$60 |
| April 30 | Flagger Certification    | Swanzy      | \$35 |
| May 8    | Flagger Certification    | Somersworth | \$35 |