

# ROAD BUSINESS

## On the Road in New Hampshire Mutual Aid Conference



On April 25<sup>th</sup>, New Hampshire Public Works Mutual Aid held their first statewide conference. It was held at Division of Environmental Services. Seventy-four people attended.

The conference began with a welcome by Governor John Lynch. On the agenda were:

- Alan Côté, Derry, a mutual aid refresher.
- Kathy DesRoches, UNH T<sup>2</sup> Center, the mutual aid web site and resources.
- Carl Quiram, Goffstown, billing with FEMA in mind.
- Kurt Blomquist, Keene, and Jim Terrell, Walpole, how their towns enacted mutual aid.
- Bill Lambert, NHDOT, the traffic management center and its role in emergencies.

- Dick Verville, OEM, mitigation funding.

There were break-out sessions in the afternoon for highway, wastewater, parks and recreation, and building inspectors. The day ended with NIMS 700 certification.

Almost half of the participants completed the conference survey. They thought it was very good. The mutual aid board will hold another conference in 2010.

The fee for mutual aid is \$25 annually per municipality. There are currently 93 municipality members, which includes 780 trucks, 62 graders, and 1,200 people. Contract, inventory forms, and member information are online: [www.t2.unh.edu/ma](http://www.t2.unh.edu/ma)



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

*Summer 2008*

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## Master Road Scholars

### Master Roads Scholar--Henri Frechette

Henri Frechette is an heavy equipment operator for the city of Claremont. He has worked in Claremont for 25 years. Henri worked for Coca Cola where he performed equipment maintenance and later became a bottling manager.

Henri's favorite part of his job is his coworkers. He says they are a great group of people.

Henri plans to continue to attend classes as he values education. He enjoys learning more effective ways to perform his job. Henri suggests new highway employees attend UNH T<sup>2</sup> Center classes. Learning is a benefit to the person and the job.

Henri enjoys kayaking, hunting, and fishing. He enjoys attending the opera house with his girlfriend.



### Master Roads Scholar--Michael LaClair



Michael LaClair is a road technician in the town of Madison. He has held this position for four years.

Michael enjoys taking classes with the UNH T<sup>2</sup> Center because the training introduces him to new technologies in his field. He enjoys the center's hands on training.

Currently, Michael is involved in helping the town recuperate from the April flood of 2007. He enjoys his job because he likes to work outside. Michael advises new public works employees to keep an open mind to new ideas.

### Master Roads Scholar—Robert Lovering

Robert Lovering is an equipment operator III in the town of Merrimack. He has worked in Merrimack for 19 years. He was originally hired as a laborer/truck driver.

One of his favorite projects occurred in 1990; the department built the only covered bridge in town.

Bob has been married for 21 years. They have two daughters. One daughter is a senior in high school, studying pastry making. The other daughter is nursing student in college. Bob and his wife volunteer for the Actor-Singers of Nashua. Robert works backstage with props, set-up, and scenery changes. Robert has volunteered there for 24 years. Robert also likes to hunt and fish.



## Master Roads Scholar--Jim Mountford

Jim Mountford is the construction foreman in NHDOT District 4. He started at the NHDOT 17 years ago as a grader operator. Depending upon the day, Jim supervises from one to 20 people. His crew rebuilds roads; installs and maintains drainage systems; and builds new facilities. In the winter, his work is mostly night patrol. Jim also substitutes for patrolmen when they're out sick.

Jim co-instructs the grader operator training for the UNH T<sup>2</sup> Center. He will continue to take classes to further his knowledge and share his own knowledge with others.

Jim has a wife, two children, and six grand-children. He likes to ski and hunt.



## Master Roads Scholar--William Ruoff



William Ruoff is the public works director for the town of Milford. He joined Milford in 2000. Previously, was a vice president of operations at Energy North Natural Gas. He was the New Hampshire Division Manager for R.H. White Construction Company.

Bill earned his B.S. in civil engineering at Worcester Polytechnic Institute. Bill likes to ski and enjoys NASCAR. His favorite driver is Dale Earnhardt, Jr.

## Master Roads Scholar--Paul Vlasich

Paul Vlasich recently became the town engineer in Exeter. Previously, Paul worked in the city of Dover for 20 years as the assistant city engineer

Paul will continue to take classes with the UNH T<sup>2</sup> Center as he likes to learn.

Paul's favorite part of his job is to ensure projects are completed correctly. He likes to balance environmental concerns with the town's development and maintenance. Paul's favorite roads scholar course was pavement management.



## Master Roads Scholar--William Willey

William Willey is the public works superintendent in the town of Lincoln. He began working in the department nineteen years ago as the water superintendent.

Even as a master roads scholar, William says he will continue to take classes because he "gets a lot out of them and because they are very educational." He has a particular interest in road reconstruction and the resurfacing classes offered by UNH T<sup>2</sup> Center. He enjoys working in public works as every day is different. William may take care of the cemetery, water, sewer, and public works departments on any given day. William advises new public works employees to take advantage of UNH T<sup>2</sup> Classes.

When not working, William enjoys spending time with his three grandchildren and his wife of 36 years. He is an avid hunter and likes to golf.



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## Tips to Help Maintain and Keep the Roads in Good Condition

### 1. Keep the water away from the road

Good drainage is vital. Keep water off and away from roads. A saturated road base is a weak road base. Surface water combined with traffic creates potholes and cracking. If improperly channeled, water will cause erosion and break down the edge of pavement. Whether a muddy road or a frost heave, water is trouble.

Proper surface drainage prevents water from infiltrating through the road surface. Shoulders protect the pavement edge and allows water to flow into the ditches. Good drainage moves water to the ditches and away from the road.

Ditches carry water away from the road. Keep ditches clean and protected from erosion. Water left in the ditches leaches into the base material. Use culverts, or water turn outs, at frequent intervals to move the water in the ditches away from the road.

Culverts channel water from one side of the road to the other. They reduce erosion by controlling flow, and water velocity.

### 2. Build on a firm foundation

Roads wear out from the top but fail from below. Without adequate support, roads deteriorate rapidly. Good roads require a foundation of stable materials.

### 3. Use the best materials available

The supply of natural, good quality material is being depleted. Blended or crushed gravel is a less expensive alternative. Use good quality materials. Using inferior materials requires excessive maintenance over the life of the road.

### 4. Compact well

Compact the base, subbase, and surface materials. An improperly compacted road will fail. Water will enter the road and through air voids left in the

materials.

Compaction expels the air between the materials, making them more dense. Crushed or angular particles become more stable with compaction than rounded particles of a similar size. Moisture is needed for good compaction.

### 5. Design for winter maintenance

Roads designed for winter maintenance will be adequate the rest of the year. Consider the following: if the road is wide enough to allow a plow and bus to meet, it should be wide enough in every condition.

Grades should be at least one percent for drainage and no more than 10%. Steep roads are difficult to travel, especially in the winter.

### 6. Build for traffic loads and volume

Design roads to accommodate the largest vehicle that will use the road. Roads built only to serve residential traffic will breakdown if it starts carrying heavy loads. Design roads, like bridges, with the expected type of volume in mind.

### 7. Pave only roads that are ready

Do not pave an improperly prepared road. Build roads using well-compacted layers of free-draining aggregate.

### 8. Build from the bottom up

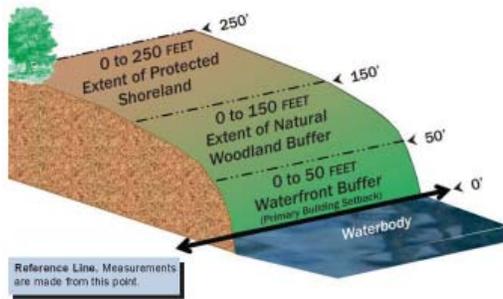
Before correcting a problem, look at the cause. A top dressing of gravel, a seal, or a pavement overlay will not improve poor base and drainage. It may be necessary to remove old materials and rebuild the road.

### 9. Protect the investment

Roads and bridges require regular maintenance.

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## Comprehensive Shoreland Protection Act



The **Comprehensive Shoreland Protection Act** (CSPA) was enacted in 1991 to protect the water quality of larger water bodies by setting minimum requirements for the development and use of all land within 250 feet of the **Reference Line**. Within this area, or Protected Shoreland, there are setbacks and restricted use areas. Effective **April 1, 2008, a state shoreland permit is required** prior to any construction, excavation or filling activities within the protected shoreland.

**Note:** on-going projects meeting certain conditions **may** be exempted from the permit requirement.

The CSPA allows development within the protected shoreland while assuring that vegetated areas remain to help keep water clean.

### Waterfront Buffer – 0'-50'

- All new primary structures must be set back 50' from the reference line. Towns may have a greater set back – but not a lesser one.
- A 50' waterfront buffer must be maintained. Within the waterfront buffer, tree coverage is managed with a 50'x 50' grid and points system. Cutting is allowed as long as the sum of points for remaining trees and saplings equals 50 points or more per 50'x 50' grid.
- Natural ground cover, including leaf litter, must not be removed. No cutting or removal of vegetation below 3' in height (excluding lawns) is allowed except for a footpath to the water (up to 6' wide) that does not concentrate stormwater or cause erosion.
- Stumps, roots and rocks must remain intact in

and on the ground.

- Pesticides and herbicides are prohibited.
- No fertilizer except limestone can be applied within 25' of the reference line.

### Natural Woodland Buffer – 0'-150'

- A percentage of the area of the lot not covered by impervious surfaces shall remain in an undisturbed state.
- Strict restrictions apply to the types of fertilizer that can be used.

### The Protected Shoreland – 0'-250'

- Impervious surfaces are limited to 20 percent or up to 30 percent with runoff protections.
- New lots must have subdivision approval by DES.
- Strict restrictions apply to the types of fertilizer that can be used.
- All new septic systems are subject to setback requirements of 75', 100' or 125', depending on soils.
- Minimum frontage requirements apply for new lots.

### Impervious Surface

Modified surfaces that cannot absorb water, such as roofs, decks, patios, paved and gravel driveways (excluding bedrock).

### Non-Conforming Structures

Those structures that do not conform to the provisions of the CSPA. (May be repaired, renovated, or replaced in kind, as long as the repairs or replacements result in no expansion of the footprint.)

### Undisturbed State

Native vegetation left to grow without interference.

### Grid and Points System

The waterfront buffer is divided into 50'x50' segments. The trees in each segment are given points according to their diameter at 4½' off the ground.

**Fifty points must be maintained in each segment.** You may cut trees or saplings as long as the sum of the points of the remaining trees and sap-

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## Dust Suppressants

One car traveling a mile on an unpaved road every day will create one ton of dust in a year. Multiplied by the number of vehicles and one can see the impact of dust.

Dust indicates a weakened road surface. Dust or “fines” act as a road glue and hold the road surface together. An unstable surface is a driving hazard and limits visibility.

Dust suppressants reduce airborne dust. Dust may create a health hazard for those with breathing problems. It is hazardous for sensitive crops, roadside vegetation, and animals. Dust control results in less dust in homes, businesses, and vehicles. One agency benefit is fewer citizen complaints.

A suppressant holds or binds the surface particles together and increases the road density. Dust affects the bottom line. When fines are lost, maintenance costs increase.

### Dust Control Products

Chlorides and asphalts are two dust control products.

Chlorides are most widely used and cost-effective. Liquid calcium chloride and liquid magnesium chloride are water based, odorless, colorless, non-toxic, nonflammable, and “environmentally friendly” when applied properly.

Calcium chloride and magnesium chloride are hygroscopic and deliquescent. When chlorides are applied, they draw and hold the air’s moisture. A chloride-treated road can be graded without losing its dust control capabilities.

Cut back liquid asphalts and emulsified asphalts are readily available but are not as widely used. These products form a “crust” on the road surface. They do not bind well to the dry surface below. Asphalt-treated roads are difficult to maintain as they cannot be bladed without removing the dust control properties.

Potholes can be an issue on asphalt-treated surface.

### Preparation and Application Tips

The road surface should contain a good gradation of aggregate materials with a maximum size of ¾ inch. When there is an insufficient gradation, add material to improve gradation.

Before blading, pre wet the gravel to the optimum moisture content (seven percent). Water breaks up the surface crust, potholes, and washboard. Create a modified “A” crown (four percent).

Apply chlorides with a calibrated, ground-speed control unit designed for roads.

Do not allow traffic on the surface until it has started to cure--usually a few hours. If impossible, reduce traffic speed.

Roll the surface with a rubber tired roller. Roll to compact the road. Watch the rolling operation to ensure that the materials do not stick to the tires. If this happens, stop rolling, and allow more time to cure.

Source:

*Dust Suppressants Help to Keep Dust on the Road and Out of the Atmosphere*, Tribal Transportation News, OSU, June 2004, P. 2-3

## What is a Road Managers Meeting?

Butch Leel facilitates these meetings for road managers and supervisors. There is always a short presentation. This year we’re featuring sessions on succession planning, time management, and road files

Meetings are scheduled for 2 ½ hours. They provide people with an opportunity to meet and network with others in the field.

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

## Correct Sign Installation Improves Safety



Signs are a low cost safety improvement to reduce run off the road crashes. Install signs in safe location so they do not become a roadside hazard.

The Manual on Uniform Traffic Control Devices (MUTCD) describes where to place signs (see pages 3-4 of this note). A new version of the MUTCD is expected at the end of 2008. It is in comment period until July 31, 2008 (<http://mutcd.fhwa.dot.gov>).

According to a General Motors study, 85% of run off the road incidents recover safely within 30 feet of the roadway, in the clear zone.



Although not always possible, a 30-foot clear zone is a worthy goal. The fewer hazards in clear zone, the safer motorists will be.

The following list illustrates methods to create a clear zone and improve roadside safety:

1. Remove the obstacle.
2. Redesign the obstacle for safe traversal.
3. Relocate the obstacle.
4. Make the obstacle breakaway.
5. Shield the obstacle.
6. Delineate the obstacle.

### Sign Hazards

According to the MUTCD, "Sign posts and their foundations and sign mounting, shall be so constructed as to hold signs in proper and permanent position, to resist swaying in the wind or displacement by vandalism. In areas where ground mounted sign supports cannot be sufficiently offset from the pavement edge, sign supports should be of suitable breakaway or yielding design."

### Sign Placement

When possible, place signs where they are not likely to be

struck by out-of-control vehicles. Consider the following when installing signs:

- Place signs outside the clear zone.
- Avoid placing signs on curbs.
- Avoid installing signs on the outside of horizontal curves.
- Avoid placing signs next to lane drops or places where the pavement narrows.
- Provide an unobstructed view of signs along the roadway.
- If possible, place signs behind guardrails or other barriers.
- Avoid placing signs in the bottom of the ditches.
- Space signs so they don't obstruct the view of each other. (Recommended spacing is 150 to 200 feet apart. Do not cluster signs together.)

### Sign Posts

A sign post must be durable and structurally adequate. Posts should fail in a safe and predictable manner if struck by a vehicle.

Sign post construction and foundations are critical. Use safe sign supports.

Posts must be able to hold

a sign in the proper position and withstand normal wind yet safely yielding when struck by a vehicle.

Use two or more sign posts when signs are large (over 50 square feet).

## Sign Installation Tips

- Bury posts in firm ground 3.5 to 4.0 feet deep.
- Loose or sandy soil may require deeper post placement.
- Use breakaway sign supports to enhance roadside safety.
- Bolt sign panels to the post with oversized washers.
- Use sign connections that prevent vandalism.

## Sign Height

The MUTCD states, “signs erected at the side of the road in rural districts shall be mounted at a height of at least five feet, measured from the bottom of the sign to the near edge of the pavement.”

Where there is parking and/or pedestrian movement or where obstructions are present, the clearance to the bottom of the sign must be at least seven feet. The height at the bottom of a sign, mounted below another sign, may be one foot less than the appropriate height specified above.

## Lateral Clearance

Signs should be at least six feet from the shoulder. When there is no shoulder, 12 feet away from the edge of the roadway. In urban areas, a minimum of two feet is recommended, a clearance of one foot from the curb face is permissible where the sidewalk width is limited or where existing poles are close to the curb.

## Sign Panels

Bolt sign panels to the post using oversized washers. Oversized washers:

- Prevent the panel and post from separating on impact.
- Prevent the sign from breaking loose from the post when hit by a vehicle.
- Prevent the bolt from pulling through the sign

panel from wind vibrations.

Set the bottom of the sign panel a minimum of seven feet above the pavement or ground. Do not confuse this with the mounting height of five foot above the roadway surface. The new MUTCD will require a seven-foot mounting height. A seven foot mounting height reduces the possibility that the sign and the post might hit the car’s windshield.

## U-Channel Steel Posts

The U-channel rolled steel post is the most commonly used small sign support. It is considered breakaway as it will bend or break away at the post/base connection at the ground line when it is hit.

### Maximum Post Sizes for U-Channel Steel Posts

Maximum Size Panel	Post Size
18" x 24"	2 lb./ft.
30" x 30"	3 lb./ft.
36" x 36"	2 @ 2 lb./ft.

Purchase posts to breakaway on impact and at ground level.

The U-channel steel post manufacturer must certify that posts and hardware have the same chemistry, mechanical properties, and geometry used in the FHWA tests and will meet the FHWA change in velocity requirements.

All U-channel steel posts must be galvanized according to ASTM A-123. The connecting bolts can be cadmium plated according to ASTM A-165 or zinc plated according to ASTM B-633.

Drive the post base into the ground. Do not encase in concrete. The posts base is 3.5 feet in length. When installation is completed, no more than four inches of the base should be above the ground.

Refer to the manufacturer’s wind-load charts for determining post size for other sign panel sizes.

## Splicing U-Channel Steel Posts

To splice U-Channel steel posts, follow these steps:

- Drive a 3.5 foot base post to within approximate-

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## Section 2A.16 Standardization of Location--2003 MUTCD

### Support:

Standardization of position cannot always be attained in practice. Examples of heights and lateral locations of signs for typical installations are illustrated in Figure 2A-1 (of MUTCD), and examples of locations for some typical signs at intersections are illustrated in Figure 2A-2 (of MUTCD).

### Standard:

Signs requiring different decisions by the road user shall be spaced sufficiently far apart for the required decisions to be made reasonably safely. One of the factors considered when determining the appropriate spacing shall be the posted or 85th-percentile speed.

### Guidance:

Signs should be located on the right side of the roadway where they are easily recognized and understood by road users. Signs in other locations should be considered only as supplementary to signs in the normal locations, except as otherwise indicated.

Signs should be individually installed on separate posts or mountings except where:

- A. One sign supplements another, or
- B. Route or directional signs are grouped to clarify information to motorists, or
- C. Regulatory signs that do not conflict with each other are grouped, such as turn prohibition signs posted with one-way signs, street name signs posted with a stop or yield sign, or a parking regulation sign posted with a speed limit sign.

Signs should be located so that they:

- A. Are outside the clear zone unless placed on a breakaway or yielding support (see section 2A.1, of MUTCD)
- B. Optimize nighttime visibility;
- C. Minimize the effects of mud splatter and debris;
- D. Do not obscure each other; and
- E. Are not hidden from view.

### Support:

The clear zone is the total roadside border area, starting at the edge of the traveled way, available for use by errant vehicles. The width of the clear zone is dependent upon traffic volumes, speeds, and roadside geometry. Additional information can be found in the "AASHTO Roadside Design Guide"

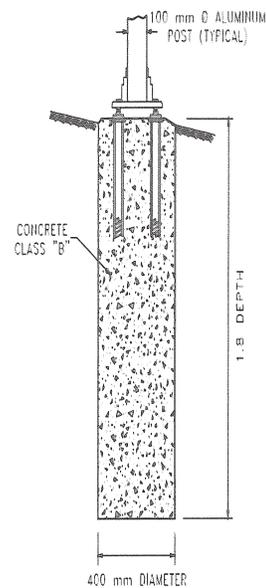
### Guidance:

With the increase in traffic volumes and the desire to provide road users regulatory, warning, and guidance information, an order of priority for sign installation should be established.

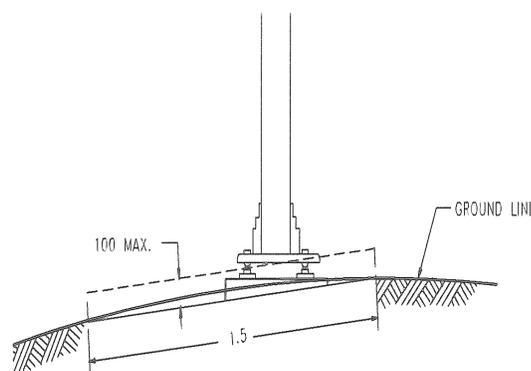
### Support:

An order of priority is especially critical where space is limited

### BREAKAWAY



### FOOTING DETAIL



### MAXIMUM BREAKAWAY STUB HEIGHT

BREAKAWAY SUPPORTS PLACED ON ROADSIDE SLOPES SHALL NOT ALLOW IMPACTING VEHICLES TO SNAG ON EITHER THE FOUNDATION OR ANY SUBSTANTIAL REMAINS OF THE SUPPORT. SURROUNDING TERRAIN SHALL BE GRADED TO PERMIT VEHICLES TO PASS OVER ANY NON-BREAKAWAY PORTION OF THE SIGN INSTALLATION WHICH REMAINS IN THE GROUND OR RIGIDLY ATTACHED TO THE FOUNDATION.

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ly 12 inches above ground level.

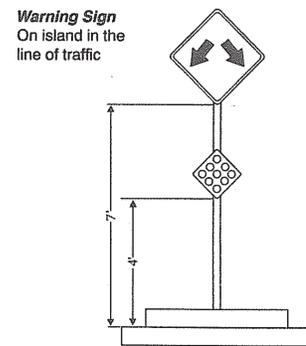
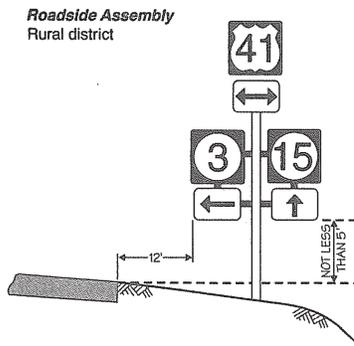
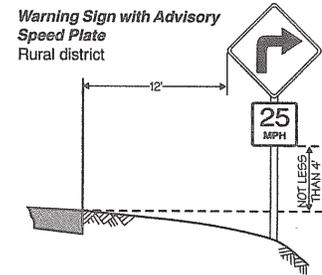
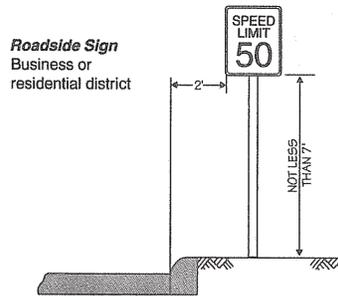
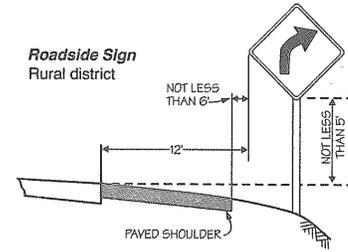
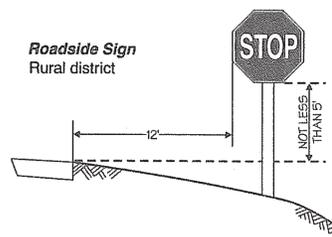
- Place one bolt and cut washer in the fifth hole from the end and tighten the threaded space securely onto the bolt.
- Drive the base post to four inches above ground level.
- Place the remaining bolt and cut washer in the first hole from the end and tighten the threaded spacer securely onto the bolt.
- Dig out approximately two inches from around the back of the base post to allow room for a sign post to be attached.
- Nest the sign post over the protruding base post bolts through the first and fifth holes of the top post.
- Place a lock washer and lock nut on each bolt.
- Tighten the nuts and tamp the earth around the base post firmly.

Source:

“Correct sign installation can increase motorist safety on local roadways”, *Oklahoma LTAP News*, Jan 2005, p. 3-6

*Geometric Design of Highways and Streets, AASHTO, 2004, p. 294-5*

*Traffic Control Devices Handbook, ITE, Washington DC, 2001 p. 60, 65*



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for sign installation and there is a demand for several different types of signs. Overloading road users with too much information is not desirable.

Guidance:

Because regulatory and warning information is more critical to the road user than guidance information, regulatory and warning signing whose location is critical should be displayed rather than guide signing in cases where conflicts occur. Information of a less critical nature should be moved to less critical locations or omitted.

Option:

Under some circumstances, such as on curves to the right, signs may be placed on median islands or on the left side of the road. A supplementary sign located on the left of the roadway may be used on a multi-lane road where traffic in the right lane might obstruct the view to the right.

Guidance:

In urban areas where crosswalks exist, signs should not be placed within 1.2 m (4 ft) in advance of the crosswalk.

## 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 Spring of 2008.*

**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.

William Byrne	Keene
Michael Clarke	New Durham
Henri Frechette	Claremont
Michael LaClair	Madison
Robert Lovering	Merrimack
Jim Mountford	NHDOT
William Ruoff	Milford
Paul Vlasich	Exeter
William Willey	Lincoln

**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.

John Ahlman	Franklin
Bruce Brown	Northfield
Gerard DeCosta	Litchfield
Robert Donnelly	Enfield
Ernie Doucette	Merrimack
Jesse Eames	NHDOT
Larry Gay	Merrimack
Scott Kinmond	Moultonborough
Dennis Marquis	NH Dept of Agriculture
Brian Martin	Kingston
Rick Plankey	Keene
Victor Ranfos III	Pembroke
Kenneth Salisbury	Amherst
Bob Seawards	Dover
Randall Smith	Sullivan

**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.

Kenneth Barton	Eastman Community
William Bucklin	Grafton
Bob Burley	Merrimack
Christopher Carazzo	Barnstead
Sam Clough	Haverhill

Scott Daley	Merrimack
Dale Drew	Conway
Don Foss	Pelham
Jody McDonald	Conway
John Paul-Hilliard	NHDOT
James Shackford Jr.	Conway
Tim Shackford	Conway
Michael Summersett	Northfield
Craig Sykes	Raymond
Roger Trempe	Dublin

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

Richard Andersen	Conway
Gavin Bell	Laconia
Keith Brignano	Laconia
Jay Caffrey	Salem
Arnold Cate	Bridgewater
Steve Chabot	Keach-Nordstrom
Robert Cunningham	Laconia
Scott Decoteau	Claremont
Kevin Demers	Concord
Hank Denison	Laconia
Robert Glover	NHDOT
Don Hebert	Goffstown
Arthur Lee	Claremont
Paul Mac Kinnon	Laconia
Greg Meagher	Concord
Dan Miller	Claremont
Patrick O'Reilly	Laconia
Timothy Paquette	Ashland
Joe Rice	Greenfield
Gary Russell	Greenfield
Steve Smith	Laconia
Tom Smith	Lyman
Scott Sykes	Concord



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## Section 106 Review on Historical Resources

*Thanks to Kevin Nyhan of NHDOT for reviewing this article.*

Section 106 of the National Historic Preservation Act (NHPA) provides for preservation of historical resources and sites. Historic sites include archaeological sites and standing architectural property that is at least 50 years old, such as burial grounds, buildings, culverts, and bridges. A Section 106 review is needed when using Federal funds or if a Federal review or permit, such as a wetlands permit is required.

### Is a Section 106 Process Needed?

Determine if any historical resources exist near the project area.

1. Are any properties in the area listed or eligible for listing in the National Register of Historic Places? See [www.nr.nps.gov](http://www.nr.nps.gov).
2. Complete a field review and discuss it with the NH Division of Historical Resources.
3. If the division requires complete historic surveys. Summarize the site's history; current and historical appearance; and level of historical significance; and integrity on the district survey. Specify details of each building on the individual survey. If more than one building exists, complete a project survey. The survey allows the division to determine if any resources are eligible for listing in the National Register. The division recommends hiring a consulting architectural historian for site review when any structure in the area is older than 50 years old and, therefore, potentially eligible for listing in the National Register.

### Review Process

The review process determines if the project effects historic properties. The three categories of project effect are "No Historic Properties Affected," "No Adverse Effect," and "Adverse Effect." The Advisory Council on Historic Preservation (advisory council) can comment during the review process.

When historical resources are determined to be at risk and the project has been determined to have no adverse effect or adverse effect, invite public comment on the project, either through local media or by holding a public meeting.

If the division, in consultation with the lead Federal agency (ACOE), determines that there will be an adverse effect, including physical damage and change to the property's use or setting; mitigation may be required. Formalize the agreed-to mitigation by writing a Memorandum of Agreement (MOA) with the project sponsor, ACOE, and the division. The MOA will summarize the steps the project sponsor will take to minimize and mitigate the adverse effects to the historical resources. A MOA template is online: [www.fhwa.dot.gov/indiv/moatempt.htm](http://www.fhwa.dot.gov/indiv/moatempt.htm). When damage cannot be avoided, but the project is in the public's interest, construction may begin after coordination is complete.

### After the Review Process

Municipalities must complete the review process before beginning construction. If construction has mistakenly begun before the process is complete, the advisory council and the division may advise municipalities as to how to become compliant. Contractors and/or municipalities may be found liable if historical resources are put at risk of damage or are damaged during construction. To save time, resources, money, and prevent a lawsuit, follow proper procedure before constructing in a historically sensitive area. The advisory council is available to provide guidance even if they decide not to directly participate in the review process.

Resources:

*ACHP*: [www.achp.gov/106summary.html](http://www.achp.gov/106summary.html) (April 26, 2002)

*Complete set of rules for federal agencies*: [www.achp.gov/regs-rev04.pdf](http://www.achp.gov/regs-rev04.pdf)

*NHDHR Section 106 Compliance*: <http://www.nh.gov/nhdhr/review/> (2007)

*Sample Wetlands Permit*: [www.nh.gov/dot/bureaus/enviornment/documents/microsoftword-2006wetlandsperrmitsmanual.pdf](http://www.nh.gov/dot/bureaus/enviornment/documents/microsoftword-2006wetlandsperrmitsmanual.pdf) (2006)



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*continued from page 4*

Maintenance preserves the investment and prevents costly rehabilitation.

- **Roadway surfaces:** blade and shape; patch; resurface; dust control; and snow and ice removal.
- **Drainage:** clean and repair culverts, and ditches.
- **Roadside:** cut bushes; trees and grass; repair and prevent roadside erosion.
- **Bridges:** clear channels; repair rails, decks and structure; clean and paint.
- **Traffic services:** sign maintenance, and cut vegetation.
- **Special projects:** restore or improve, emergency work such repairing washouts, and retaining walls.

## 10. Keep good records

Good records makes roadwork easier. Good records make budgeting easier. Record work as it done.

Source:

*10 Basic Tips to Help Maintain and Keep Your Roads in Good Shape*, The Link, KTC, Tech Transfer Center, Vol. 24, No. 1, Spring 2008, p. 5-7, 10

*continued from page 5*

lings for that segment is at least 50 points.

If your property has one or more grid segments that did not have 50 points of April 1, 2008, you are not required to plant trees to achieve 50 points. However, you may not cut any existing trees or saplings in those segments.

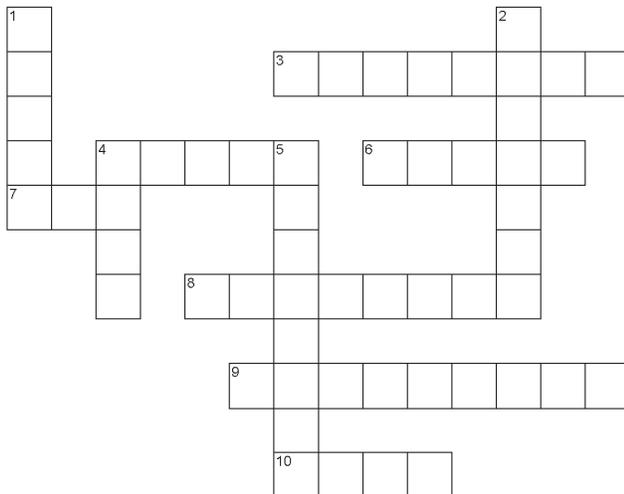
This is a summary of the CSPA's major provisions. Before planning or undertaking any construction, excavation or filling within the protected shoreland, contact the DES Wetlands Bureau at: **(603) 271-2147 [www.des.nh.gov/cspa](http://www.des.nh.gov/cspa)**.

Source:

[http://www.des.nh.gov/news/envnews\\_archives/news032008.pdf](http://www.des.nh.gov/news/envnews_archives/news032008.pdf) accessed 6/5/08 pages 4-5

## Crossword

*Test your knowledge, items from this newsletter.*



[www.CrosswordWeaver.com](http://www.CrosswordWeaver.com)

### Across:

3. A dust control product.
4. Governor \_\_\_\_\_ welcomed the Mutual Aid Conference.
6. This document is expected in 2008.
7. When signs are over 50 sq. ft. use \_\_\_ post(s).
8. An issue on asphalt roads
9. This sign support enhances roadside safety.
10. Enacted to protect water quality

### Down:

1. Signs should be placed on the \_\_\_\_\_ side of the road.
2. Carries water away from the road.
4. Before correcting a problem \_\_\_\_\_ at the cause.
5. A Section 106 review is for \_\_\_\_\_ resources.

## 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.

\_\_\_ *Accessible Sidewalks and Street Crossings.*

Designing appropriate, legal, and safe structures for pedestrians with disabilities. USDOT & FHWA.

\_\_\_ *Accident Mitigation Guide for Congested Rural Two-Lane Highways-NCHRP Report 440.* This guide will assist planners, designers, and traffic engineers in identifying and designing projects to improve safety on congested rural two-lane highways. TRB.

\_\_\_ *Dust Palliative Selection and Application Guide.* This publication will help practitioners understand and correctly choose and apply the dust palliative that is appropriate for their particular site, traffic conditions, and climate. US Dept. of Agriculture and Forest Service.

\_\_\_ *Best Management Practices for Routine Roadway Maintenance Activities in NH.* Information for personnel to select appropriate BMP's to specific sites and conditions, which employ the most responsive control measures for protecting the environment. NHDOT & NHDES.

\_\_\_ *Common Roadside Invasives.* This field guide has illustrations and names of various herbaceous weeds to help identify what weeds are growing near roadsides to remove and prevent future growth. FHWA.

\_\_\_ *Erosion Control Handbook for Local Roads.*

Guidelines and methods for effective erosion control practices on low volume roads. Minnesota Local Road Research Board.

\_\_\_ *Field Guide for Inspecting Signalized Intersections to Reduce Red-Light Running.* The field guide suggests a procedure for conducting an investigation of a specific intersection that has been identified as a red-light running problem site.

\_\_\_ *Microsurfacing Application.* This is part of a series of pavement preservation checklists to guide State and local highway maintenance and inspection staff in the use of innovative pavement preventive maintenance processes.

\_\_\_ *Nonpoint Source Pollution.* This guide describes the causes of nonpoint source pollution, and suggests ways that NPS pollution can be prevented. EPA, Revised from the May 1994 edition.

\_\_\_ *Recommended Technical Standards for New Roads.* A set of recommendations for governing new roads in New Hampshire cities and towns. Municipal officials should regard these as minimum technical standards, and should exceed them whenever considerations of safety or cost effectiveness warrant.

\_\_\_ *RSA (Road Safety Audit) Making Your Roads Safer.* A guide outlining what an RSA is, how to conduct one, and what the benefits are. FHWA.

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## Material Request Form

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

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

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

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

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

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

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

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

## Milestones

The Mutual Aid Program won an award from EPA.

The towns of *Emerald Lake Village District*, *Epping*, and *Haverhill* have joined Mutual Aid.

*Doug Almon*, NHDOT, has been promoted to the safety and training coordinator in district 6.

*Chris Carazgo* is the new road agent in Barnstead.

*David Blanchard* has left Bennington. *Gary Russell* is the new road agent.

*Ed Chase* has left Merrimack.

*James Donninson* is the city engineer in Keene.

*Fred Duefield* has resigned from the town of Grafton. *Robert Bassett* is the new road agent.

*Alan Huntoon* is new road agent in Danbury.

*Steve Parkinson*, public works director, Portsmouth, was named a 2008 Top Ten Public Works Leader of the Year by the APWA.

*Mike Pivero* is the new road agent in Newton.

*Keith Robinson* is new road agent in Pittsburg.

*Gary Russell* is the new road agent in Bennington.

*Paul Vlasich* has joined the City of Exeter.

*Shawn White* is the new road agent in Whitefield.

## Websites

Maintaining Traffic Sign Retroreflectivity  
[www.fhwa.dot.gov/retro](http://www.fhwa.dot.gov/retro)

Sign sheeting type web site <http://www.trafficsign.us/signsheet.html>

*Road Business* is a quarterly publication of the University of New Hampshire Technology Transfer Center

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The Technology Transfer Center at the University of New Hampshire (UNH) is supported by the Federal Highway Administration (FHWA), the New Hampshire Department of Transportation (NHDOT), and UNH. Any opinions, findings, conclusions, or recommendations presented in this newsletter are those of the authors and do not necessarily reflect the views of FHWA, NHDOT, or UNH. Any product mentioned in the *Road Business* is for information only and should not be considered a product endorsement.

## 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. ❖



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New Hampshire LTAP at UNH

## Road Business

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### Summer/Fall 2008 Workshop Calendar

#### Basics

TBA	Basics of a Good Road		\$75
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#### Environmental

September 23	Erosion Control 1	Manchester	\$75
September 30	Erosion Control 2	Lebanon	\$75

#### Supervisory or Personal Development

October 28	Public Speaking	Manchester	\$75
November 6	Managing Highways	Swanzey	\$75

#### Technical Aspect of Road Maintenance or Repair

August 12	Math for DPW	Concord	\$60
August 14	Intersection Safety	Plymouth	\$75
August 15	Road Safety Fundamentals	Concord	\$75
September 10	Lines, Levels, and Layouts	Rochester	\$75
September 16	Lines, Levels, and Layouts	Lincoln	\$75
October 1	Project Planning	Plymouth	\$60
October 2	Guardrails	Concord	\$60
October 14	Culvert Inspection & Maintenance	Lebanon	\$75
October 15	Winter Maintenance	Swanzey	\$75
October 16	Winter Maintenance	Plymouth	\$75
October 21	Culvert Inspections & Maintenance	Concord	\$75
October 22	Bridge Maintenance	Somersworth	\$75
October 23	Full Depth Reclaim at ion	Concord	\$75
October 29	Gravel Roads	Lebanon	\$75
October 30	All About Asphalt	Somersworth	\$75
November 18	Hard Road to Travel	Concord	\$60

#### Tort Liability

November 4	Municipal Permits	Rochester	\$60
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