US Department of Transportation
Federal Highway Administration

ROAD BUSINESS

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Picture 1. Pedestrian Crossing W11-A2 and Bicycle Crossing W11-1 signs at a busy intersection

On the Road in New Hampshire

Signs at Pedestrian Crosswalks: New MUTCD Defines Sign Types and Placement

The *Manual of Uniform Traffic Control Devices* (MUTCD) governs the design and use of traffic control devices for all public streets and highways. The *MUTCD Millennium Edition* took effect in New Hampshire this spring. This article describes its rules and recommendations for pedestrian crossing signs. It also describes use of the New Hampshire Supplemental Crosswalk Identification Device within the MUTCD rules.

Pedestrian Crossing Sign (W11-2)

The MUTCD Pedestrian Crossing Sign is designated W11-2. It, like other Crossing Signs, warn of conflicts that are relatively confined, or occur randomly over a segment of roadway.

The *MUTCD Millennium Edition* has added a new design for advance crossing and crossing signs. In the past, crossing signs were distinguished from advance crossing signs by the use of crosswalk lines on the sign. The sign in Picture 1, designated a W11-A2, is an example. However, people rarely noticed the difference. The illustrated W11-2 sign is the correct sign for new installations. The effective date for changing existing W11-2A signs to W11-2 signs is January 17, 2001.

In Picture 1 the W11-2A Pedestrian Crossing Sign has a fluorescent yellow green background. The Bicycle Crossing Sign (W11-1) behind it has a yellow background. The MUTCD recommends that one background color be used for all crossing signs within a zone or area.

Which color is best in the Picture 1 situation? The UNH campus is on the right and downtown Durham is on the left. There is heavy pedestrian and bicycle traffic at the crosswalk across a medium volume one way street. Here, and in school zones in general, fluorescent yellow green backgrounds are recommended. And should be used for both signs.

W11-2

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ALSO IN THIS ISSUE

Road Business is a quarterly publication of the:

Technology Transfer Center
University of New Hampshire
33 College Road
Durham NH 03824
603-862-2826
800-423-0060 (NH)
Fax: 603-862-2364

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

UNH T² Center Staff

David H. Fluharty
LTAP Director
Charles H. Goodspeed
TRCG Director
Kathy DesRoches
Assistant Director and
Road Business Editor
Marisa DiBiaso, Project Assistant
Beth Terney
Project Assistant

Pedestrian Crossing Sign Placement

In Picture 1 the Pedestrian Crossing Sign is correctly placed with regard to the crosswalk. Correct placement also involves lateral offset and mounting height.

Lateral offset is the distance from the edge of the pavement (if there is no shoulder) to the near edge of the sign. The MUTCD Standard is a minimum of 6 feet. An Option, however, states that "signs may be placed on existing supports used for other purposes, such as…utility poles."

What does one do then, if the utility pole is too close to the road, such as in Picture 1? The MUTCD emphasizes the use of engineering judgment, which should consider the intent of lateral offset. Minimum lateral offset is intended to keep trucks and cars that use the shoulders from striking the signs or supports. In Picture 1 the curb restricts motorists from hitting the sign. Of course, the utility pole is the greater danger.

Mounting height provides clearance for cars and pedestrian as well as visibility. The MUTCD Standard is, " Where parking or pedestrian movements occur, the clearance to the bottom of the sign shall be at least 7 feet." In Picture 1, the height to the Pedestrian Crossing Sign is 6 feet 5 inches. It should be raised when the sign is replaced.

The Bicycle Crossing Signs in Picture 1 are obviously too low. They also have improper lateral offset. Even if these signs were in good condition (which they aren't), they should be replaced with a single sign mounted 7 feet high on a new post at proper offset. To be consistent with the W11-2A, the new sign should have a fluorescent yellow green background.

Supplemental Crosswalk Identification Device

In New Hampshire Supplemental Crosswalk Identification Device (SCID) inform drivers of pedestrian crosswalks. Being a supplemental sign, local governments must still install traffic signs and pavement markings as described in the MUTCD Part 3.

The SCID is shown in Picture 2. It can be used at pedestrian crossings in New Hampshire to supplement MUTCD devices. Picture 2 shows an appropriate use, in that it supplements pavement markings. It

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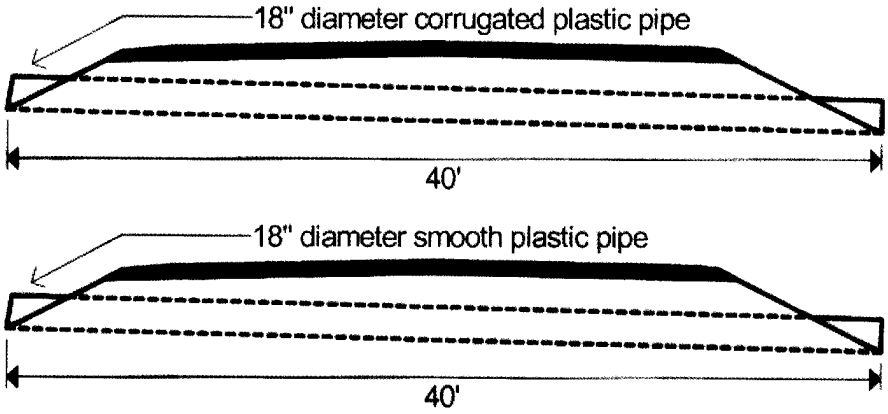
Picture 2. A SCID at a crosswalk, the intended use of the supplemental device

Test Your Culvert Design Knowledge

One culvert is corrugated plastic and the other smooth plastic pipe. They are otherwise the same in the following details:

- The flow is with inlet control, in that no part of either pipe flows full.
- Diameter: 18 inches
- Length: 40 feet
- Projecting Inlet
- Maximum Allowable Head-water Depth: 2.5 feet
- Slope: 2.5% (1 foot fall over the 40 foot length)



Q Which culvert has a great capacity to carry water?

A. Both pipes carry the same amount of water! At the maximum allowable headwater, both pipes carry about 10 cubic feet per second (4,000 gallons per minute).

Q. Why?

A. "Flow with inlet control" means that the discharge capacity is controlled at the culvert entrance. Although each entrance is submerged, the culvert edges restrict or contract flow into each barrel. From the entrance to the exit, no part of the pipe flows full. Capacity for flow with inlet control depends on headwater depth, the barrel cross-section area, and the shape and type of inlet edge. These are same for each culvert, so their capacities are equal.

Q. Are there other differences in performance?

A. Yes, the outlet velocities will differ. The corrugated pipe outlet velocity is 6 feet per second (ft/sec); the smooth pipe outlet velocity is over 9 ft/sec. Grass will adequately protect the corrugated pipe outlet. Some riprap is needed to prevent erosion at the smooth pipe outlet.

Q. Which is the better installation?

A. The agency must determine whether flow is with inlet or outlet control. Flow with outlet control occurs when the headwater depth is greater than the "Maximum Allowable Headwater." The barrel then flows full for part or all of its length. The higher the headwater, the greater the potential for road damage. The best pipe, then, is the one with the highest capacity. Capacity with outlet control involves additional factors, including roughness. Other factors being equal with outlet control, smooth plastic pipe would carry more water than corrugated. Smooth pipe would therefore be better, with riprap to prevent erosion at the outlet

If the agency can be sure that the inlet control will always occur, the best installation depends on relative cost. The smooth pipe may need rip-rap, but may be less likely to plug with debris. The corrugated pipe, in this instance, needs only grass for erosion control. It might, however, be harder to install due to its increased flexibility.

Sources

Orr, David, "Test your Culver Design Knowledge." *Nuggets & Nibbles*, Spring 2002, Vol. XX, No. 2, p. 8. Cornell Local Roads. Ithaca NY.
Drainage, Drainage, Drainage Workshop Notebook.. January 1996. UNH T² Center.
Manual on Drainage Design for Highways. NHDOT.

Technology Transfer Center Celebrates its 15th Anniversary

August of 2001 marks the fifteenth anniversary of the Technology Transfer Center.

We'd like to share a few highlights from over the years.

1986

- The University of New Hampshire Technology Transfer Center opens.
- First issue of Road Business is published.
- Staff: John A. Anderson, Project Director; Yvonne E. Allen, Administrative Assistant; Charles H. Goodspeed, University Liaison.
- Road Surface Management System (RSMS) development begins.

1987

- Start offering free publications upon request.
- Introduction of the video loan program, with 27 tapes.
- First meeting of Road Agents Association. Allen Lary elected President.

1988

- Roads Scholar Program is introduced in New Hampshire.
- First Mountain of Demonstrations held at Waterville Estates, in Campton
- RSMS issued for paved roads.

1989

- RSMS revised to include unpaved roads.

1990

- Edwin R. Schmeckpeper joins staff as a Research Engineer and instructor.
- Jennifer Rand replaces Yvonne Allen as administrative assistant.

1991

- Dowel and Glulam timber bridge and concrete span bridge erected in parking lot at Mountain of Demonstrations.

1992

- Edwin Schmeckpeper earns Ph.D. and leaves to assume an Assistant Professorship at Iowa.
- Paul Brown becomes Research Engineer.
- A.R. Van de Meulebroecke added to staff as T^2 engineer.
- Patty Ferrelli becomes a consultant for Public Works Management Systems.
- First Municipal Equipment Management System (MEMS) workshop offered.
- Quick Guides are published and distributed.
- Cold Emulation research conducted on Madbury roads.

1993

- John Anderson earns Ph.D. and becomes Director of Pennsylvania T^2 Center.
- Dave Fluharty replaces John Anderson as Director.
- Hilar Varik from Estonia begins a one year internship at UNH T^2 Center.
- Mountain of Demonstrations held in Nashua.

1994

- CEU's available in Road Scholar Workshops.
- Road Scholar Program revised to provide four levels of recognition.
- Jennifer Rand leaves the T^2 Center to attend graduate school at Tufts University.
- Kathy DesRoches replaces Jennifer Rand.
- RSMS surveys by Civil Engineering students offered.
- Master Road Scholar level achieved for the first time.
- Mountain of Demonstrations returns to Waterville Estates.

1995

- Distributed over 1000 publications and loaned over 100 videotapes.
- A.R. Van de Meulebroecke retires.
- Master Road Scholars become Advisory Board for training.
- 24 foot timber bridge beams are set and a 50 long 8' high foot timber retaining wall built at Mountain of Demonstrations

1996

- First annual Road Scholar Directory published
- Road Agents Association becomes responsible for all of the Mountain of Demonstrations. UNH T^2 Center conducts a tour of previous demos conducted at Mountain of Demonstrations.
- Center applies for and receives grant to partially fund Work Zone Traffic Control kits for municipalities.
- The first High Performance Concrete bridge in the Northeast is constructed along Route 102 in Bristol, NH.
- The listserve Road.net, later changed to PW.NET, is created to enable people concerned with NH roads to network with each other.

1997

- Number of Road Scholars (165) more than doubled since 1994 (74).

- First T^2 Challenge at the Mountain of Demonstrations.
- Held first Sign Inventory Management System (SIMS) workshop, and distributed nationwide.
- Over 200 people attend the High Performance Concrete Bridge Showcase in Waterville Valley; the showcase was held in cooperation with NHDOT, FHWA, and UNH.

1998

- The Mutual Aid Program for Public Works is started. The UNH T2 Center becomes an administrator of the program.
- Windows version of RSMS and SIMS completed and distributed.

1999

- Over 200 people achieved Road Scholar status.
- Established a Public Works Events Calender on the UNH T^2 Center web page.
- UNH T^2 Center opens a new webpage devoted to job opportunities.

2000

- UNH T^2 Center holds workshops on GASB 34 and Road Weight Limits.
- Interactive Public Works Calendar is established on the website.

2001

- Crew Training program begins at Portsmouth and Littleton.
- *Road Business* is offered on website in .pdf.

Pros and Cons of Sand on Ice and Snowpack

This picture was taken in March after a season of spreading sand on a hill. Sand remains on the road and roadsides. A catch basin at the bottom of the hill empties into a wetland.

Many highway departments apply sand on snow and ice covered roads to increase friction and improve road safety. Yet, significant friction increases occur in only a few situations. This article will describe those situations and the affects of sand on the environment.

Environmental Concerns

Agencies tend to spread sand many times throughout the winter months. Sand is expensive. It also can create large debris deposits on roadways. Environmental concerns dictate that sand be swept up each spring. Sweeping sand also picks up other debris and various compounds. Agencies must dispose of the material as a solid waste.

Sweeping picks up only a small percent of the total sand applied during a typical winter. The rest remains in the environment, much of it in catch basins or on or around roadways. Sand retained in catch basins should be periodically removed. This material, too, must be disposed of as solid waste. (A pending New Hampshire Department of Environmental Services fact sheet will address disposal of street sweepings and catch basin materials.)

Much of the sand not retained in catch basins stays in drainage pipes, decreasing their capacity. The rest is carried to outfalls, becoming sediment in ditches and water bodies.

Some of the sand on roadsides ends up in the ground, diminishing soil quality. Much of it becomes sediment, in many instances carried into streams, rivers, ponds, or lakes.

Study Results

Studies show that the effects of sanding are temporary, whether spread dry or prewetted. Abrasives do little to improve driving conditions on roads with high traffic volume. When dry sand is spread, 30% of it immediately scatters. Over time, cars usually displace most of the remaining sand. As few as 8 to 12 vehicles can sweep it from snow covered highway surfaces. Even with light traffic, friction gained from dry sand is quickly diminished.

University of Iowa (UI) researchers have drawn conclusions about methods to prewet abrasives with a chemical deicing brine. One method is to prewet abrasives in the stockpile to prevent their freezing. Such prewetting has little effect on the ability of the abrasives to remain on the pavement surface when delivered.

Some agencies prewet abrasives while loading trucks. Researchers found no evidence that such prewetting increases abrasives staying on the road surface.

The final prewetting method is to add about 10 gallons of sodium chloride or calcium chloride brine per ton of abrasives at the truck spinner or tailgate. Studies indicate that prewetting salt and other solid chemicals helps to keep them on the road surface when first delivered. It is less clear that prewetting helps it to stay there. The researchers drew the same conclusions for sand.

In summary, none of the prewetting methods appears to help sand stay on roads.

Recommended Practices

The UI study examined abrasive use on Iowa county roads. The researcher concluded that sand has varying levels of effectiveness on different classes of roads. He recommended the following changes in practice, which are summarized in Table I.

- **High Speed Urban Roads.** For urban streets with posted speed limits above 30 mph, there is no significant value in placing abrasives. Research recommends plowing and applying chemicals to achieve bare pavement.

- **Low Speed Urban Roads.** For urban streets with posted speed limits less than 30 mph, there is less abrasive dispersion. Abrasives should be limited to parts of the road where motorists must brake, accelerate, or maneuver. Even then, abrasives should be applied only when it will likely take a long time to provide bare pavement.
- **Urban Intersections.** Urban intersections are relatively low-speed traffic locations. Abrasives could be placed if needed. However, they should be used only when an intersection might be snow or ice-covered beyond a normal period.
- **Rural Roads.** Both paved and gravel roads can expect to see high-speed traffic. Abrasives will not stay on the road for any reasonable amount of time. Abrasives should be applied on hills and curves only on low-speed low-volume roads. Paved rural roads should be plowed and chemical applied to achieve bare pavement. The recommended gravel rural roads approach should be simply to groom the snow pack.
- **Rural Intersections.** Again, gravel versus paved roads must be considered. An intersection should be considered "paved" only if all intersecting roads are paved. Road segments where motorists must stop or yield are low-speed traffic locations. Abrasives could be placed if needed. The preferred approach for paved roads is to plow and apply chemicals to achieve bare pavement. On gravel parts of intersections, abrasives may be applied over that part of the road where speeds less than 30 mph are expected.

Table 1
Recommended Abrasives Applications

Road Type	Use of Dry Abrasives
High Speed Urban Roads	Inappropriate
Low Speed Urban Roads	Only in certain locations, and when snow pack will persist
Urban Intersections	Only when snow pack will persist
Rural Roads, Paved	Inappropriate
Rural Roads, Gravel	Only on low speed sections (perhaps hills and curves)
Rural Intersections	Only on low speed approach length of gravel roads

Sand remaining on gravel roads after spring thaw is a poor wearing course material. Some New Hampshire road mangers report significant friction increases from spreading crushed aggregate on gravel hills and curves. Several have successfully used 5/8-inch minus aggregate. In addition to safer roads in the winter, these are better wearing course materials after the spring thaw. Following the UI recommendations above, managers should consider such material at gravel road intersections.

Sand-salt mixtures help keep the sand from freezing. A 10:1 mixture, 10 parts sand to one part salt, is usually more than sufficient to prevent freezing.

Mixtures with sufficient salt will melt ice and snowpack. Sand melts no snow or ice. The amount of melting depends on the amount of salt applied per unit area. For example, studies have shown that agencies should apply at least 300 pounds per road mile to melt ice or hard snow pack at temperatures just below freezing. For a 1:1 or 50%-50% mix, the agency must spread 300 pounds of salt per mile of sand to apply the necessary salt. Sand to salt mixes of 2:1 require 600 pounds per mile of sand to spread enough salt. Higher ratios require even more sand.

As established above, sand is useful only in certain situations, and often adversely affects the environment. It is expensive to spread, pick up, and dispose of. With only a few exceptions, the best winter operations practice to provide safe roads is to plow and apply chemicals to achieve bare pavement. For gravel road hills, curves, and intersections, spreading crushed aggregate appears to be a good alternative to sand.

Beth Terney, UNH T² Center Project Assistant, contributed to this article.

Sources:

"Dry Sand on Winter Roads Provides Little Benefit." *Technology News*, Jan-Feb 2001, 4-5.

"Saving Money and the Environment." Federal Highway Administration. June 2001. http://www.fhwa.dot.gov////////winter/roadsvr/CS092.htm,.

Nixon, Wilfrid A. "The Use of Abrasives in Winter Maintenance: Final Report of Project TR 424." March 2001. http://www.sicop.net/Abrasives%20report.pdf, June 2001.

Snow Disposal

Recommendations for Environmentally Safe Disposal

Snow removed from roadways can harm receiving waters. Melted snow often contains salt, sand, debris, and chemicals. Snow disposal has, therefore, become a concern to environmental agencies and to the public.

Snowmelt need not cause harm if properly disposed of. Local agencies are aware that they can no longer dump snow directly into surface water, or on ice over surface water. Most also know they cannot dump snow close to surface waters. This article will describe alternatives to these practices that provide environmentally safe snow disposal.

Environmental Concerns

Heavy metals, inorganic salts, aromatic hydrocarbons, and suspended solids accumulate on road surfaces. Vehicles deposit oil, grease, rust, hydrocarbons, rubber particles, and other solid materials. Salting and sanding practices, for example, may leave concentrations of chloride, sodium, and calcium on the roadway surface. These are contaminants, and potential pollution.

> Strictly speaking, anything other than two atoms of hydrogen and one atom of oxygen is a water contaminant. Contaminants become pollutants when they interfere with the normal life cycle functions of organisms living in or dependent on the water source. (FHWA Environmental Technology Brief)

Rain or snow storm events often wash contaminants off highways. Pollution occurs when excessive contaminants remain when the runoff reaches a receiving water.

Proper snow disposal practices dilute contaminants. This reduces the possibility of their being excessive when they reach streams and lakes. Proper disposal also reduces erosion during flow to water bodies. The following are recommended snow disposal practices.

Snow Disposal Recommendations

Snow disposal locations should allow melt water to flow at a low velocity to a water body. High velocity flows carry particles long distances. They also pick up additional materials by eroding surfaces in their path. Agencies should pave or riprap channels that even periodically have high velocity flows.

New Hampshire Department of Environmental Services rules prohibit dumping of snow directly into waterways. It has published recommendations in its "Snow Disposal Guidelines" Fact Sheet.

- Disposed snow should be stored near flowing surface waters, but at least 25 feet from the high water mark of the surface water;
- A silt fence or equivalent barrier should be securely placed between the snow storage area and the high water mark;
- The snow storage area should be at least 75 feet from any private water supply wells, at least 200 feet from any community water supply wells, and at least 400 feet from any municipal wells. (Note: Snow storage areas are prohibited in wellhead protection areas);
- All debris in the snow storage area should be cleared from the site prior to snow storage; and
- All debris in the snow storage area should be cleared from the site and properly disposed of no later than May 15 of each year

If a municipality provides locations for private contractors to deposit snow, they should require disposal according to these recommendations.

Beth Terney, UNH T² Center Project Assistant, contributed to this article.

Sources

"Is Highway Runoff: A Serious Problem?" FHWA Environmental Technology Brief. McLean VA: Turner-Fairbanks Highway Research Center. http://www.tfhrc.gov/hnr20/runoff/runoff.htm

"Snow Disposal Guidelines." Environmental Fact Sheet WMB-3, NH Department of Environmental Services. 1992. http://www.des.state.nh.us/factsheets/wmb/wmb-3.htm

Publications

University of New Hampshire Technology Transfer Center

Copies of the following books and pamphlets, and our complete list of publications, are available through the UNH T² Center. When requesting an item with a charge, please include the check with your form. If ordering by mail, follow the instructions below. To request by telephone, call 603-862-2826, or in NH, 800-423-0060. You can also request by fax to 603-862-2364, or by e-mail to t2.center@unh.edu

The following materials are available free of charge.

____*UNH T² Center Publications and Video Catalog.*

____*Calcium Chloride Package.* A package of articles and pamphlets explaining the benefits of deicing with calcium chloride.

____*Concete in Practice Fact Sheets.* Includes 29 fact sheets covering various practices.

____*Measuring and Calculating Slopes.* Informational sheet on how to measure a roadway slope. Recommended guidelines for roadway slopes are also included.

____*Nonpoint Source Pollution.* This NHDES guide describes the causes of nonpoint source pollution and suggestions for prevention.

____*The Salt Storage Handbook.* A practical guide for handling deicing salt. Published by the Salt Institute.

____*The Snowfighter's Handbook.* A practical guide for snow and ice control before, during, and after a storm. Published by the Salt Institute.

____*Snow Disposal Guidelines.* NHDES Environmental Fact Sheet; flyer gives recommended guidelines for snow disposal.

____*Series of Quick Guides for New Hampshire Towns***.** A set of pamphlets dealing with the topics below. Developed by the UNH T² Center and distributed as a set. 1) Culvert Installation and Maintenance, 2) Ditch/Channel Construction and Maintenance, 3) Vegetative Erosion & Sediment Control, 4) Non-Vegetative Erosion & Sediment Control, 5) Cut and Fill Slopes, 6) Beaver Pipe: Construction and Maintenance, 7) Stormwater Inlets and Catch Basins, 8) Mowing and Brush Control, 9) Snow and Ice Control, and 10) Obtaining Permits

The following materials involve a minor charge. Please send a check with the form when requesting one of these materials.

____*Basics of a Good Road.* The manual discusses how to design and build roads that will last. Specific topics covered include drainage, treatments, and soils. A UNH T^2 Center workshop notebook. **$15**

____*Drainage, Drainage, Drainage.* The manual describes various drainage concepts and features. Problems with drainage, and proper maintenance to ensure good drainage, are also discussed. A UNH T² Center workshop notebook. **$15**

To Request Material by Mail

Check the items you would like to receive. Fill out this form and include a check in the envelope, if necessary. Cut out this page and mail to the UNH T2 Center.

Name: _____

Position: _____

Organization: _____

Address: _____

Town: _____ State: _____ Zip: _____

Videos

University of New Hampshire Technology Transfer Center
Road Business, Fall 2001, Vol. 16, No.3

The following videos are available from the UNH T² Center Video Library. You can have five videos for a two-week period with no charge. To request by mail, check the videos you would like to borrow (up to 5), fill out the mail request form, staple closed, affix stamp, and mail. To request by telephone, call (603) 862-2826 or (800)423-0060 (in NH). Visit our complete publication and video catalog on our website at http://www.t2.unh.edu. Or email t2.center@unh.edu

____**M-281, Anti-Icing & Deicing,** 30 min. This informative video discusses the benefits and differences between anti-icing and deicing methods. Basic chemistry of deicing chemicals is explained. Making of brine, pre-wetting and snow fences are also covered.

____**M-283, Using Winter Weather Resources,** 35 min. This video is explains how to use weather information to make decisions during winter operations. The video covers weather resources such as RWIS, DTN and local forecast information. Although Midwest weather and terrain is represented, there is detail describing basic weather terminology.

____**ST-256, Torts are Everybody's Business,** 5 min. Tort suits are lawsuits brought against a Department of Transportation because of road problems. This video answers many questions about what torts are and how they can be prevented. PA DOT

____**PA-232, Inspecting Unsurfaced Roads,** 8 min. This video describes one of the first steps in the Unsurfaced Road Management System--inspection. It briefly explains what defects to look for in an unsurfaced road and how to measure them. USA CRREL

____**DC-251, The Importance of Road Drainage,** 19 min. The basis for this film is that if you don't drain water from roads, nature will drain it for you. Describes surface and subsurface drainage, drainage systems, and procedures for their inspection and repair. FHWA

____**M-284, Preventive Maintenance: Project Selection,** 30 min. The principle of this video is to apply the *right* treatment to the *right* road at the *right* time. It explains the advantages of preventive maintenance and the importance of preserving the life of the road, rather than restoring it.

____**M-247, Planning and Organizing Winter Operations,** 12 min. Preparations for winter operations including ordering parts and materials, stock piles, checking drainage areas, rental agreements, snow plowing map, crew, and staff meetings. PA DOT

____**ST-219, New Directions in Sign Management,** 17min. Presents the problems that create the need for a sign management system. Highlights the main points of a management program. ATSSA

____**Video Catalog**.

Place Stamp Here

Technology Transfer Center
33 College Road
University of New Hampshire
Durham, NH 03824-3591

Milestones:

Mike Lynch was promoted to the position of the Director of Public Works in Durham.

Scott Pike has rejoined the highway department in Rochester.

Doug Sargent is the Director of Public Works in Ossipee.

Websites:

There are many helpful websites for public works employees. If you have others that your colleagues could benefit from, send the urls to t2.center@unh.edu. We'll publish the site and your name in Road Business. (No commercial sites please).

UNH T2 Center: http://www.t2.unh.edu

NHCRP 350
http://safety.fhwa.dot.gov/programs/roadside_hardware.htm

NH Department of Environmental Services
http://www.des.state.nh.us/

NEW! New Hampshire Department of Transportation
http://webster.state.nh.us/dot/index.htm

New Hampshire Department of Labor
http://webster.state.nh.us/dol/

NPDES Phase II
http://www.epa.gov/owm/sw/phase2/index.htm

Snow and Ice Control
http://www.sicop.net/

Weather
http://www.intellicast.com
http://www.weather.com
http://www.weatherunderground.com/

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Picture 3. The appropriate sign is a W11-2; not a Supplemental Crosswalk Identification Device

should, however, be placed before the crosswalk relative to the direction of the one way traffic.

The SCID in Picture 3 is used as a substitute rather than a supplement for a MUTCD sign. The "Standard" or mandated rule for a W11-2 Pedestrian Crossing Sign is to use it adjacent to the crossing location. An "Option" or permissive rule allows Pedestrian Crossing Sign placement in advance to alert road users of unexpected entry into the roadway. The W11-2 is the appropriate sign for this application. A supplemental plaque with the legend AHEAD installed below the W11-2 sign would warn motorists of the crosswalk.

PW.NET

Want to know what is happening in other towns? Need a place to ask questions of other public works officials? Want to be the first to receive notifications of UNH T2 Center workshops? Then, subscribe to PW.NET. It's free. Send an email message to: kathy.desroches@unh.edu

In the body of the message type:
Add pw.net your name

For instance:

Add pw.net John Doe

Road Business

Technology Transfer Center
University of New Hampshire
33 College Road
Durham NH 03824-3591
603-862-2826 or
800-423-0060 (NH)
Fax: 603-862-2364
t2.center@unh.edu
http://www.t2.unh.edu

Calendar

October				
29	30	31	1 NHMA Annual Conference.	2
November				
5—Gravel Road Maintenance, New London	6—Gravel Road Maintenance, Alton	7	8—Basic Math Skills, New London	9—Basic Math Skills, Lancaster
12—Veterans Day Observed, University Closed	13	14	15	16—Leadership Lessons, Lincoln
19	20	21	22—Thanksgiving, University Closed	23—University Closed

Planned workshops for the winter: MUTCD & DIMS