Construction work in Progress:  
Newmarket New Hampshire’s Salt Storage Shed

On the Road in New Hampshire

Research Underway to build a better Salt Storage Shed

A research project is underway to construct a salt storage shed in Newmarket, NH. This storage shed differs from others in size, shape, and the materials used to complete it.

The shed is being constructed under the direction of Professor Charles Goodspeed, Civil Engineering University of New Hampshire (UNH) and in cooperation with David Walker, the Public Works Director in Newmarket. The project is being completed by UNH Civil Engineering Students. The purpose of the study is to test various new materials and techniques and is funded by the Federal Highway Administration, New Hampshire Department of Transportation, and Shimizu Corporation of Tokyo, Japan. Materials for the roof have been donated by US Decking.

The shed is built on an unusually small plot of land. It is nestled between the road and a ledge, which was partially removed to build it. The shed measures only 60 feet across but the design allows for 500 cubic yards of materials to be stored inside. The shed is built on an octagonal foundation. The outside walls will be backfilled.

The floor and walls are constructed of concrete reinforced with Fiber Reinforced Plastic (FRP) grids. The roof is constructed of steel corrugated sheets pre-stressed into a hyperbolic paraboloid (hypar) shape. Essentially, a hypar roof is saddleshaped.

FRP was used for reinforcement instead of steel reinforcement because the chloride ions from salt are water soluble and penetrate concrete which eventually rusts steel reinforcement. Rusted steel expands and forces concrete to crack and spall. Composed of carbon and glass fibers, FRP is a non-corrosive material. It was used in a 2-dimensional grid and comes in 4’ x 12’ sheets. The average grid spacing is 4 inches.

The walls are six feet high and 12 inches thick. They are reinforced to flex both inward and outward. Two supports are attached to each wall section to resist lateral loads. The supports are 12” x 16” and the same height as the walls. Four 4’x4’ columns were cast each with six 3/4” x 18” long anchor bolts to

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connect the roof system to the walls. Concrete strengths of 4000 psi were used to construct the walls and 5000 psi in the slab.

The hypar roof materials are economical although the roof is labor intensive to fabricate. Another significant advantage to the hypar roof is that it allows for a high peak (32') providing room for a front end loader and dump truck to maneuver inside. The entrance to the shed is 13'6" high and 20' wide.

To construct the hypar roof four panels were fabricated from corrugated steel sheets. Each panel consists of two sheets laid with the corrugations perpendicular to each other. The panels were prestressed by laying the sheets between two telephone poles, with opposite corners pointing out towards the poles. The other corners were secured to the ground using anchor bolts. A cable was run from the top of one pole, beneath the two sheets, through a pulley and to the top of other pole. The cable was then continued to another ground anchor 62 feet away from the pole. A come-along was placed between the ground anchor and the cable. Tension was applied to the cable using the come-along until the sheets are deformed into the desired shape.

To retain the hypar shape approximately 5000 screws were inserted into each panel. The panels were joined along the ridge using steel plates, and the panels were attached to the supports using the six 3/4" x 18" anchor bolts.

The design of the shed allows a municipality to build a structure that will withstand the damaging effects of salt on concrete and be economical to construct.
Planting Salt Resistant Vegetation

A new resident of New Hampshire will soon recognize what road salt does to vehicles, but it is harder to see what it does to certain plants. Planting salt resistant vegetation along the roadside is essential since vigor is necessary to survive in our sometimes intolerable weather conditions. Hardy vegetation will save you from having to replant the area if it dies because it is incompatible with its surroundings. Vegetative cover is necessary to control erosion and protect water quality (by filtering runoff). It is an important safety element since sediment from runoff can cause blockage of culverts resulting in flooding and creating driving hazards.

How Road Salt Affects Vegetation

Since salt in soil absorbs water it can injury plants if it accumulates to excessive amounts. Even if moisture is plentiful, high amounts of salt can result in a drought-like condition because sodium results in compacted soil. Compacted soil doesn’t allow the water and oxygen to get to roots of the plant.

Salt affects plants as it is absorbed through roots and leaves or needles. As salt dissolves in water, sodium and chloride ions separate, and chloride ions are absorbed by the plant roots. The ions are carried by the plant into growing sections and can accumulate to toxic levels. Toxic buildup results in marginal scorch (death of leaf margins). Plowing and vehicle traffic can spray salt on the roadside. Where salt may enter plant cells directly through the leaves or needles affected plants lose their cold hardiness. Salt also reduces plant vigor, therefore they become more susceptible to attack by insects and diseases.

Symptoms of salt injury are similar to those caused by drought or root injury: stunted yellow foliage, premature autumn leaf coloration, scorch, and twig die back. The conifer foliage often turns yellow or brown in the early spring. If spray causes salt damage, discolored needles are soon masked by new year’s growth. If the salt damage is caused by excesses in the soil, new needles may die as chloride ions accumulate in them. Either type of damage could be lethal to a plant if it occurs for several consecutive years.

Common Sense Solutions

One obvious solution to curb salt damage is to sow salt tolerant plants. To protect intolerant plants use salt spray barriers. Snowfencing or plastic shields also prevents spray to trees. Intolerant species shouldn’t be planted within 30 feet of roads or on slopes below roadbeds.

After March 1, salt applications are most detrimental because plants are breaking from their dormancy and are beginning to actively absorb nutrients and water from the soil. Toxic ions are more likely absorbed during this period. Crews should avoid piling salt and snow around plants or in places where melting water will drain into them.

Proper planting procedure is important. Newly planted trees are under stress and less able to cope with external factors (such as salt). The depression created by settling of new transplants is an excellent place for salty water from melting snow to accumulate. Depressions should be filled or leveled as soon as new transplants become established.

As mentioned earlier, soils containing large amounts of sodium frequently develop poor drainage. Treating roadside soil with gypsum appears to be a successful method of correcting the soils poor drainage. Also, one can create adequate drainage systems for highways, curbs and gutters divert street runoff into storm sewers and clean ditches and culverts carry water away from roadsides. Adequate drainage this will substantially reduce salt’s effects on vegetation.

What to Plant

The University of New Hampshire’s Cooperation Extension program suggests planting salt tolerant trees such as horsechestnut, black locust, honey locust, red oak, white oak. Moderately salt tolerant trees are ash, poplar, birches, cherry, and red cedar.

Permanent seeding of grasses and legumes should occur before August 15. If this does not fit into your schedule, annual ryegrass is a quick temporary cover. Also, annual ryegrass is a good choice in ditches that are cleared out yearly.

Permanent seeding should occur during April and May or the first two weeks in August. The Maine Department of Transportation (MEDOT) suggests planting crown vetch and roseacciait is non-invasive in forest canopied areas, wetlands, and ditches. The MEDOT warns that these species will invade croplands, pastures, lawns, and shrub beds.

Warm-season grasses are more useful for erosion control than are cool-season grasses. Reliable warm-season grasses are switchgrass, little blue stem, big blue stem, indian grass, and prairie grass. Warm-season...
New Hampshire Road Scholars

We are pleased to recognize individuals who, during the Spring of 1996, achieved the following levels in the UNH T^3 Center Road Scholar Program.

**Master Road Scholar.** Participated in UNH T^3 Center training activities which totaled 100 contact hours and covered the Road Scholar II range of topics.

- **Ernest Allain**
- **E. Douglas Barnard**
- **Kenneth Fletcher**
- **Kenneth Roberts**
- **John Starkey**

**Affiliation**
- Berlin
- Concord
- NH DOT
- Alton
- Merrimack

**Senior Road Scholar.** Participated in UNH T^3 Center training activities which totaled 70 contact hours and covered the Road Scholar II range of topics.

- **Allan Brown**
- **Charles Butterick**
- **James Dicey**
- **Gordon Huckins**
- **Michael Smith**
- **John Sowerby**

**Affiliation**
- Warner
- Greenville
- Troy
- New Hampton
- Milton
- Exeter

**Road Scholar II.** Participated in UNH T^3 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 or safety, and supervision or personal development.

- **Donald Atwood**
- **Phillip Howard**
- **David Hunt**
- **Walter Kiblin**
- **George Mayhew**
- **Richard Petell**
- **Richard St. Hilaire**
- **Joseph Tomolonis**
- **Keith Weed**

**Affiliation**
- Bridgewater
- Lempster
- Washington
- Lyndeborough
- Kingston
- Gilford
- Kingston
- Merrimack
- Claremont

**Road Scholar I.** Participated in UNH T^3 Center training activities which totaled 30 contact hours.

- **Mark Bucklin**
- **James Coffey**
- **Dennis Desrochers**
- **Jay Fitzgerald**
- **Michael Gospaderick**
- **Ronald Hansen**
- **David Herlihy**
- **Douglas Isabelle**
- **Scott Keddy**
- **David Maudsley**
- **Jeremy Philbrick**
- **L. Patrick Roberts**
- **Anthony Rocca**
- **Donald Sharp**
- **Dennis Stevens**
- **David Walker**

**Affiliation**
- Bristol
- Hillsborough
- Hooksett
- Lebanon
- Hudson
- Eastman Community
- Anmerst
- Brentwood
- Raymond
- Eidelweiss
- Mont Vernon
- Bartlett
- Lyndeborough
- Sutton
- Sutton
- Newmarket

Continued from page 3

Grasses develop large root masses so it often appears that they are failing when instead all the growth is occurring below the ground. The depth and strength of their root system are important. They germinate at a minimum solid temperature of 60 degrees so plant early in the season. Also, they grow the most during the heat of the summer (after May 15 in NH). Most warm-season grass will remain viable in the soil for several years and will not germinate until prolonged moisture is available. Because water flows through sand and gravel, the seedbed is usually too dry to allow the plants to germinate. The most dependable method for seeding is to track using a bulldozer. The grouser tracks reduce erosion during the seedling establishment period.

*"Roadside Vegetation and Salt," Deicing Salt and Our Environment, Salt Institute, 700 North Fairfax St, Fairfax Plaza, Suite 600, Alexandria VA 22314-2040 (703) 549-4648*
Robert Bennett. Bob has been a Master Road Scholar since the fall of 1995. Bob is currently the Road Agent in Plainfield and before that was Road Agent in Sutton. Both positions have been appointed ones. Bob has been in construction most of his life and has spent many years working in the lumber business. He says he “has done everything you can do with wood, including sell it.”

Bob likes to “keep informed of new methods and improve on old ones.” He believes there is “always room for improvement,” and “new technology allows you to get the job done faster and better.” His supervisors are supportive of his training efforts and think he should “toot his own horn more.” He says he “is proud of what he does.”

Bob sends his five employees to training. Recently they all attended Work Zone Traffic Control. He also sends them to programs by the New Hampshire Municipal Association, and they borrow many videos from the T² Center.

Bob and his wife, Joanne, have 2 children. Their celebration of their 30th wedding anniversary last year included renewing their wedding vows. He loves to fly and has been working on his pilot’s license. Joanne has been up with him a couple times and likes it, although he has given her a couple of good scares. His father flew, and Bob grew up flying with his father who liked to do aerobatics. Bob’s other hobbies are fly fishing, canoeing, and hiking.

Congratulations Master Road Scholar Robert Bennett!

John Starkey, the Assistant Director of Public Works in Merrimack, has recently joined the growing ranks of Master Road Scholar. John has been at Merrimack since 1983. Prior to Merrimack, he worked as a construction inspector with Camp, Dresser & McKee. He has also worked with various other contractors working his way up through the ranks from laborer to superintendent. John went to college on the GI bill, after serving 4 years in the Navy Seabees. He earned his Associates degree in Civil Engineering from UNH and a BA in Public Administration from Franklin Pierce College.

John attends classes because he likes to stay current. He believes there is a “wealth of information available and you must pursue it.” He says, he “never stops learning.” He has worked with a number of public works directors in Merrimack, and they have all been supportive in his pursuit of education. He sends his employees to training and recently was excited to have one attain the level of Road Scholar II.

John is married to Rebecca who also works for the town of Merrimack. He has three children, all in school: one child is at UNH, another in High School, and one in Junior High School. John raises Labrador Retrievers and is one of four licensed hunting and fishing guides in the state of New Hampshire. He is also an instructor for hunting safety with the NH Fish and Game and teaches a course in hunting ethics.

Congratulations Master Road Scholar John Starkey!
1996 Mountain of Demonstrations

Over 500 road managers and crews from all New England states attended the 9th Annual Mountain of Demonstrations held by the NH Road Agents Association on June 21, 1996. Rain, which fell during the first several hours and for the first time in the history of the show, failed to dampen the participants' enthusiasm.

Waterville Estates Association again hosted the event. Over seventy vendors displayed and demonstrated materials, equipment, techniques, and services covering all aspects of road maintenance and repair.

Jean Barden, Dianne Murray, and Sylvia Moynahan at the registration desk.

Paul Brown, of General Chemical, and Lee Murray, the President of the Road Agents Association and Road Agent from New Boston.

A Hydraulic Compactor tamps over a newly installed culvert.
A Grappone Industrial Hydraulic Hammer on an excavator removes ledge from a drainage ditch.

At the Mountain of Demonstrations, everyone learns something, here a child is shown a new way to remove a manhole cover.

Workzone signs are used to guide the participants to a lecture on Work Zone Traffic Control sponsored by Property Liability Trust.
Trenching and Excavation Safety

by Ken Bradley*

Various measures can ensure safety on a trenching, excavation, or any other job site. Some measures are common sense, some are required by law, and others are practices that come from years of experience. This article contains a summary of some of those practices.

It is important to thoroughly think through a job before beginning. Preparation will enable the road manager to consider any problems that might occur and obtain any equipment that might be necessary.

Federal and New Hampshire laws require anyone digging or trenching to contact Dig Safe before breaking ground. A good practice is to photograph all the markings before starting work. This will help supervisors to keep an accurate record since the first thing that happens in digging operations is destruction of markings by the removal of asphalt. Also, one should keep a daily log of what occurs on the job site so there is a record in case of liability or contractual issues. Supervisors should keep phone numbers and directions to the nearest hospital and emergency medical assistance readily available, and make certain everyone knows where to find them.

Crew members should complete daily inspections of all equipment. On multi-employer worksites, managers should require each employer to present the Materials Safety Data Sheet (MSDS). Crews should have and use all materials for safety, including the MUTCD required signs, cones, vests and hard hats. Work zones must be clearly defined. Personal protective equipment may include safety glasses, steel-toed boots, hearing protection, and gloves. For future detection lay magnetic tape or copper wire over plastic pipe before it is backfilled. Extension cords should have a Ground Fault Circuit Interrupter (GFI), even if the tools have double insulated cords. If there is a laser employed on site, the operator must have a certification card and a placard warning of the potential damage to eyesight.

When purchasing equipment it is important to thoroughly research specification and buy quality equipment. It is expensive to repurchase equipment that might not fit safety specifications. Bepers, walkie talkies, hazard atmosphere monitors, and cell phones should be explosive proof and intrinsically safe; specify this when purchasing. Hydraulic shoring fluid should always be winter grade. Winter grade will work in the summer but summer grade won’t work in the winter.

*Ken Bradley is the President of Waste, Inc in Concord NH

Trenching & Excavation Definitions:

Guidelines for Competent Person

COMPETENT PERSON WILL:
1. Conduct daily inspections before work begins and as needed throughout the work shifts when conditions change.
2. Conduct daily inspections of protective systems, unsanitary conditions, and testing for hazardous atmospheric conditions when there is reasonable cause to believe they exist.
3. Determine the degree to which actual slopes are reduced due to surcharge loading, operating equipment or traffic.
4. Monitor the equipment and operations of water removal.

COMPETENT PERSON MAY:
5. Design structural ramps used by employees only. Structural ramps used by equipment will be designed by a registered professional engineer. Design must follow certain guidelines.

Confined Space/Review attendant and entrant duties.

A Confined Space is a Space that:
1. Is large enough and so configured that an employee can bodily enter and perform assigned work; AND
2. Has limited or restricted means for entry or exit (for example, tanks, vessels, silos, storage bins, hoppers, vaults and pits are spaces that may have limited means of entry); AND
3. Is not designed for continuous employee occupancy.

When is a Permit Required in a Confined Space?
1. Contains or has the potential to contain a hazardous atmosphere;
2. Contains a material that has the potential for engulfing an entrant;
3. Has an internal configuration such that an entrant could be trapped or asphyxiated by inwardly converging walls or by a floor which slopes downward to a smaller cross-section; or
4. Contains any other recognized serious safety or health hazard.

Duties of an attendant and entrant.

Four Parameters
Use a hazardous atmosphere meter
Use a ventilator/blower
Use Rescue/Retrieval Tripod
Use a respirator or self contained breathing apparatus (SCBA).

General requirements when excavating trenches

Deeper than 4’ test for hazardous atmosphere. Use a ladder and have it within 25’ of all employees.
Deeper than 5’ or possibility of cave in, slope the gravel or use a trenchbox. Use a ladder and have it within 25’ of all employees.
Keep your spoils pile a minimum of 2’ back from the opening of the trench. Watch for surcharge loads. Make sure that tabulated data for the trenchbox is always on site. Have your trenchbox extended up 18” above the excavation. You may bench your trenchbox up to 2’ in a dry soil.
PUBLICATIONS
from the
University of New Hampshire Technology Transfer Center

Copies of the following books or pamphlets are available through the UNH T^2 Center. You can request them by mail or telephone. If by mail, follow the instructions below. To request by telephone, call (603) 862-2826, or in New Hampshire, (800) 423-0060.

**Best Management Practices for Erosion.** Published by the FHWA. Provides guidance in preventing erosion and controlling sediment of highway construction projects.

**New! National Association of County Engineers Action Guide Vol. III-7. Subsurface Soil Exploration.** Discusses the effects of subsurface soils on all types of structures. Includes soil properties and advice on what to do with the results of soil analysis.

**New! National Association of County Engineers Action Guide Vol. II-2. Road Programming.** A description of the process of road programming as the act of discovering the county’s needs, and then planning construction to meet those needs.

**National Association of County Engineers Action Guide Vol. III-3. Bridge Rehabilitation on Local Roads.** Provides personnel with an understanding of current techniques for rehabilitating and upgrading bridges with functional deficiencies and structural deterioration to adequately serve current and future traffic needs.


**New! National Association of County Engineers Training Guide. Bridge Maintenance on Local Roads.** Gives techniques for the maintenance and repair of specific bridge elements.

**NHDOT Classification of Highways.** A synopsis of Highway Aid available to Municipalities

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**To Request Material by Mail**

Check the items you would like to have. Fill in your name, address, and other information. Cut out this page, fold so the UNH T^2 Center address is on the outside, staple closed, and mail.

Name ____________________________________________

Position ____________________________________________

Organization: ____________________________________________

Private: ___________ Federal: ___________

State: ___________ Local: ___________

NH ___________ Zip ___________

Academic: ___________ Other: ___________

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VIDEOS

from the
University of New Hampshire Technology Transfer Center

The following videos are available from the UNH T2 Center Video Library. You may take the videos out for a two week period, there is no charge. To request by mail, check the videos you would like to have, fill out the mail request form on page 9, staple closed, and mail. To request by telephone, call (603) 862-2826 or (800)423-0060 (in NH).

__DC-209, Operating Tips. Discusses inspection of tractors, off-highway trucks, and loaders.__

__DC-217, Drainage Pipe Installation. Shows the correct procedure for drainage pipe installation. Emphasizes proper compaction.__

__DC-234, Stowell Road Bridge Reconstruction, Merrimack NH. Cost benefits and other advantages of timber bridges.__

__M-224, Base and Subbase repair. Shows good procedures used in repairing base and subbase failures due to excessive moisture. Covers extensive repairs and rebuilding for a long life.__

__M-231, Mechanical Cleaning of Unlined Ditches. Defines the four principles features of a ditch and their functions. Demonstrates two methods of mechanical cleaning using a motorgrader and a backhoe. Stresses the importance of reestablishing good drainage. Excellent training film for crews.__

__M-235, Re-shaping Earth and Gravel Shoulders. Shows proper procedures for reshaping earth and gravel shoulders to correct shoulder drop-offs, rutting, build-up of material, and excessive weed control to maintain safe shoulder with proper cross slope. Nine steps are outlined, and tools and equipment are described.__

__M-236, Common Maintenance Problems and Causes. Broad overview of the causes of problems on the street and roadway system. Discusses source of failures in many products. Also, deals with gravel roads, shoulders, and drainage problems. Good basic training for new maintenance personnel.__

__M-266, Maintaining a Safe Roadside. Presents unsafe road sites in order to underscore the importance of maintaining safe roadides.__

__M-269, New Life for Old Roads. Describes the Full Depth Reclamation process, noting precautions to take in order to ensure success.__

__New! M-287 Bridge Maintenance for Local Road Crews. Demonstrates simple maintenance measures and discusses reasons to perform maintenance.__

__New! M-288 Problems with Gravel Roads. Discusses problems with gravel roads, blading, compaction.__


__New! M-290 Sign Maintenance and Installation. From public complaint to installation of signs. Discusses traffic control devices and field operations.__

__ST-235, Chainsaw Safety. Demonstrates the do's and don'ts of chainsaw operation.__
Reader's Page

New Hampshire Department of Transportation
Process for Bridge Aid Municipal Managed Projects

The 1994 Spring issue of “Road Business” featured information about the New Hampshire Department of Transportation’s (NHDOT) Municipal Bridge Aid Program. Since that issue there have been changes to the program. What follows is a condensed version of the information provided to the T² Center by the NHDOT. For a copy of the uncondensed information, call the T² Center for a copy of the Bridge Aid Program, attachments, and application, or you may contact the NHDOT directly (271-2107) at the Bureau of Municipal Highways.

Through the Bridge Aid Program, a municipality may receive 80% reimbursement with state funds of the cost of design and construction of a bridge rehabilitation or replacement project.

Municipality Options

Under the Municipal Managed process a Municipality has two options available to conduct both the design and the construction phases of work.

1. Design may be performed by municipal staff, provided the designer is a Licensed Professional Engineer (PE) registered in the applicable branch classification required (i.e. Structural Engineer for bridge design).

2. The Municipality may hire a consultant based on a qualification selection procedure per RSA 21-I:22.

Construction may be performed by Municipal forces, using an existing town contract for materials acquisition, or the Municipality may contract out all or portions of the work by the competitive bid process.

Application Procedure

To apply for Bridge Aid (under RSA 234), a municipality must comply with the following:

1. Apply for a preliminary estimate of the total cost of rehabilitating or replacing a bridge on Form MHBA-1 titled “Application for Preliminary Estimate - Bridge Aid.”

2. Upon receipt of the completed application, the NHDOT will examine the bridge and site and forward a preliminary cost estimate to the municipality. The estimate will also indicate the approximate scope and limit of work, and minimum design standards for alignment (horizontal and vertical) and width (roadway and bridge). This will establish the baseline criteria for the project.

NOTE: The NHDOT will accept variances provided that the municipality acknowledges, in writing, that they recognize their proposal does not meet the minimum design standards, and the municipality accepts all responsibilities associated with constructing a facility that is in variance with NHDOT’s standard design practice.

3. The municipality must indicate whether they intend to do work themselves or use a consultant. If using a consultant, the municipality must follow the Consultant Selection Process for Bridge Aid Compliance.

4. The design must be in accordance with Design Procedures for Bridge Aid—Municipal Managed Project.

5. NHDOT must approve final plans and specifications before the municipality may proceed.

6. The municipality may proceed by force account method or advertise work for bid. They must send a copy of the advertisement and tabulation of bids to Bureau of Municipal Highways for approval of award to the low bidder.

7. The municipality must provide on-site construction inspection by a licensed professional engineer.

Reimbursement

Reimbursement will not occur until after approval of finalized plans and specifications and, if designed by a consultant, the submittal of a paid invoice or, if designed by municipality engineers, submission of staff related charges. Eighty percent of design costs will be reimbursed.

Construction costs are reimbursed in the following manner: at the time of approval one-half of the state 80% share will be reimbursed. At completion reimbursement is based on paid municipality invoices. Qualifying costs for reimbursement for construction engineering: include shop drawings, fabrication, falsework review, lab and field testing, and construction inspection. Reimbursement occurs at the rate of 80% of all qualifying costs found in compliance with the process, provided the costs do not exceed the acceptable range of costs for this type of project, and magnitude or type of services provided are otherwise justifiable in the opinion of the NHDOT.

Help Wanted: The UNH T² Center is seeking a work study student during the 1996-97 academic year. Please call Kathy to apply.
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Calendar

UNH T² Center Workshops
Fall 1996
For additional information or registrations, call the UNH T² Center

Dates and Location Set

Deicing, Anti-Icing, and RWIS
September 17 -- Lancaster
September 18 -- Portsmouth
September 19 -- Hillsborough

Road Surface Management System
October 24 - 25 -- Lebanon
November 7-8 -- Dover

Routine and Preventive Maintenance Treatments
November 17 -- Hillsborough
November 18 -- Portsmouth
November 19 -- Lancaster

Training Activities by the NHMA Property Liability Trust
(800-646-2758)
Snow Plow Rallies -- September 5, 12, 19, 26

Dates and Locations Being Arranged

Basics of a Good Road
2 Locations

Cost Estimating and Budget Preparation
2 Locations

Introduction to Computers
3 Locations

Municipal Equipment Management System
3 Locations

Supervision & Personal Development
2 Locations

ADA & Town Gov.--September 6, 13, 20

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