

ROAD BUSINESS

On the Road in New Hampshire *Roads Safety Audits*



New Hampshire held the first Roads Safety Audits in August. These were the first audits performed on NH roads outside of training. Two audits were done in Boscawen and another two in Moultonborough. These sites were volunteered by the municipality.

A roads safety audit differs from the NHDOT safety surveillance team as it includes a group of people with a wide range of backgrounds and experience.

In Boscawen, the intersection of Rt. 3 and Rt. 4 was reviewed. The Boscawen audit team consisted of 3 Boscawen selectmen and the town administrator; Dean Hollins, Boscawen road agent; Mike Doody, NYDOT; Marty Calawa, FHWA; Bill Lambert and Stuart Thompson, NHDOT; Dave Danielson, SEA; and the UNH T² Center. The team designed a low-cost solution for the intersection.

At the second location, the town recommended moving the road, the team agreed. The team sug-

gested low-cost safety improvements to implement before the long-term capital improvement project to move the intersection could be achieved.

In Moultonborough, the intersection of Fox Hollow Road and Rt. 25 was audited. It had a high crash history and 3 fatalities. The audit team was Scott Kinmond, Moultonborough; Dave Haskell, Tamworth; and others from the first day. Low-cost safety improvements were suggested for immediate implementation as well as a longer, more expensive permanent solution.

The second location in Moultonborough was recently improved by the state. The team recommended reviewing site, again, after new crash data is collected.

The auditors used a software program developed by the Utah LTAP Center to assist with the data collection and report writing.

FHWA and NHDOT fully supports this process. Contact the UNH T² Center to schedule a roads safety audit.



Technology Transfer Center
New Hampshire LTAP at UNH

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Master Road Scholars

Master Roads Scholar-Mark Avery



Mark Avery is a patrol foreman with NHDOT, district 2. Mark started with the NHDOT as a highway maintainer II.

Mark wants to continue taking classes because he thinks that the UNH T² Roads Scholar Program is good and he learns a lot.

He is married to Tracey and they have a daughter, Emily. In his spare time, Mark enjoys hunting, fishing, and racing.

Master Roads Scholar-David Crosby

David Crosby is the public works director for the town of Alstead. He has worked there for 24 years. David was first hired “on call” to plow snow. He previously worked in construction.

David wants to continue taking classes to gain knowledge and network with others.

David enjoys riding his bike and fishing.



Master Roads Scholar-Dave Danielson



Dave Danielson is a business development manager for NH and southern Maine at SEA Consultants, where he has been for 3 years.

He first worked with public works departments as a client and is now a member of the NHPWA Standards and Training Council. Dave has an MBA, with a focus on marketing and finance. He taught at Southern New Hampshire University and teaches management for the UNH T² Center.

Dave wants to continue classes, to learn more about public works.

Dave is married with one son.

Master Roads Scholar-Dennis Ford

Dennis Ford is a maintenance supervisor with NHDOT, district 2. He has been with the DOT for 26 years. He was hired as a laborer and promoted to truck driver. Later, he became a grader operator, then foreman, and is now a supervisor.

Dennis will continue taking classes and is motivated by the knowledge he gains which will enable him to do a good job.

Dennis has been married to Lucy for 25 years, and he enjoys riding his snowmobile.



Master Roads Scholar-Jim Holmes

Jim Holmes has spent the past 5 years as a truck driver for the city of Portsmouth. He is a former dairy farmer from Stratham. He joined Portsmouth in 2001 and was promoted to truck driver.

Even though Jim is a master roads scholar, he will continue to take classes. His motivation is to achieve general knowledge. He says that supervisors are pleased by progress.

Jim has been married to Laura for eight years. They have five children and one grandchild. Jim enjoys fishing and swimming.



Master Roads Scholar-Dean Hooper



Dean Hooper is a highway foreman. He has worked for the city of Claremont for 11 years. He began his involvement with public works in the water department.

Dean plans to continue with classes as he wants to keep his knowledge fresh and new.

Dean has been married for 21 years and has two daughters. He enjoys camping, four wheeling, riding his motorcycle, and snowmobiling.

Dean wants to thank the city of Claremont for giving him the opportunity to take classes.

Master Roads Scholar-Kim Kercewich

Kim Kercewich is an equipment operator for the town of Alstead. He has been with the highway department for ten years.

Kim wants to continue taking classes, to learn more.

Kim is the chief of the Alstead Fire Department and a first responder with the ambulance service.



Workzone Mutual Aid--Thank you!



It's nice to know that there are people to help. The UNH T² Center is lucky to have many friends. In August, we asked Bow PWD and Stay Safe Traffic Signs for assistance. They helped the UNH T² Center create photos needed for a workzone class.

The center had asked other LTAPER's for good workzone photos. Usually people take photos of poorly installed sites but rarely do they take photos of properly installed ones. The center, along with Bow PWD and Stay Safe Traffic Signs created a series of photos for the UNH T² Center to use in training.

Thank you Nate Hadaway and Joe Toupin, of Bow, and Catherine Schoenenberger, at Stay Safe Traffic Signs!

Preparing for Winter Operations



Another summer has ended and it's time to consider winter operations. This article provides tips for fighting winter weather.

Prepare Equipment

Keep trucks and equipment in good condition. Perform a pre-trip inspection and routine maintenance. Report needed repairs immediately.

Calibrate spreaders for the specific material. Spreader models vary. Refer to manufacturers' recommendations. The Massachusetts LTAP Center produced a DVD demonstrating calibration. The UNH T² Center sent one to each municipality this past summer (with special FHWA funding) and has copies for loan.

Snow and Ice Control Strategies

There are three strategies for snow and ice control: anti-icing, plowing, and deicing. Municipalities may not use all. Many use a combination.

Records from past storms and weather predictions, enable supervisors to make informed decisions when planning for a winter storm. Accurate forecasts are critical to know when a storm will arrive, how air and pavement temperatures will change, and wind direction and velocity.

Managers may use records and predictions to determine which strategies and materials to use, along with, application rates, and frequency of treatment. Use current and predicted pavement temperature to select the appropriate snow and ice control strat-

egy. Chemical effectiveness is directly related to pavement, not air, temperature. Salt, for example, becomes less effective as the pavement temperature approaches 18°F.

Anti-Icing

Anti-icing is a proactive approach to snow and ice control. Treatments consist of applying liquid chemicals or pre-wetted salt to pavement before, or at the beginning of, a storm. Treatments create a barrier to prevent snow and ice from bonding to pavement. This allows accumulated snow to be pushed off the road, leaving the pavement relatively dry.

Anti-icing has several benefits:

1. it reduces the total chemical use,
2. it reduces materials and equipment costs and time,
3. pavement conditions are better when ice formation is prevented, and
4. it makes post-storm cleanup easier and faster.

Reapply chemicals after plowing and before pavement temperature drops. Reapply before the snow and ice bond to the pavement.

Anti-icing may be less effective during heavy, freezing rain, in blowing snow conditions, or in intense snowfall when the storm gets ahead of anti-icing

Anti-Icing Tips

- Apply using stream nozzles so materials are distributed directly on the wheel paths.
- Anti-icing is often effective for heavy frosts. Apply chemicals early in frost conditions or light freezing drizzle.
- When conditions could produce frost or black ice, apply on selected sections of the roadway (e.g., bridge decks). Consider spot applications on hills, curves, and intersections.
- When possible, apply material during low-traffic periods.
- Do not apply chemicals under excessively windy

situations.

- Reapplication may not be necessary. Residual chemicals may remain for several days.

Plowing

Remove snow as quickly as possible, to reduce compaction. Use underbody blades to remove compacted snow or slush. Adjust the blade angle to maximize cutting efficiency or snow-throwing capabilities.

Do not push or blow snow off a bridge into the water or onto traffic below.

Deicing

In deicing, chemicals are applied to snow and ice. Normally this occurs at the end of a storm, after the snow/ice has bonded to the pavement. Deicing chemicals lower the freezing point of water (causing melting). Reapply when the chemicals become diluted.

Commonly used chemicals are sodium chloride (NaCl), calcium chloride (CaCl₂), magnesium chloride (MgCl₂), and calcium magnesium acetate (CMA). Salt and calcium chloride are most widely used. Salt brine freezes at 18°F and a calcium chloride solution (29.8 percent concentration) freezes at -20°F.

Salt provides immediate skid protection. To work effectively as a deicer, salt must be a brine state. If salt is applied dry, the moisture to create a brine, must come from pavement surface or from the air. When the pavement temperature is below freezing, salt loses its effectiveness because pavement moisture is frozen.

When deicing on two-lane roads with low to medium traffic volumes, apply a windrow of salt along the center line. Traffic will move salt off the center line. The resulting salt brine will melt across the pavement cross slope and across the width of the road. This method provides vehicles with clear pavement under at least two wheels. On curves, spread salt on the high side of the curve.

Solid calcium chloride is more effective at lower temperatures and works quicker than salt. Store cal-

cium chloride in moisture-proof bags. Otherwise, it may lose its ability to draw moisture and may form large chunks.

Pre-wetting

Pre-wetting salt is common. Pre-wetted salt melts faster. Wet salt is less apt to bounce or be blown off, the road by traffic. This saves 20 to 30% material costs.

Some agencies pre-wet salt by spraying it as it is loaded into the truck. For more uniform application, use a truck-mounted equipment to spray salt as it leaves the spreader.

Salt brine is gaining popularity. Some agencies produce their own brine. Brines with concentration rate greater than 23% risk failure.

Liquid calcium chloride draws moisture from the air and releases heat as it dissolves. Calcium chloride melts snow/ice at lower temperatures (than salt). Apply at six to ten gallons per cubic yard of salt. Liquid calcium magnesium acetate and magnesium chloride are also used.

After the storm

Maintain accurate records to track and manage current operations, as well as, provide information for future operations.

Snow Storage

After removing snow and completely clearing traffic lanes and parking spaces, load the snow into trucks and haul it to remote storage areas. Locate storage where it can handle the snow-melt runoff without overburdening existing drainage features and without violating Environmental Protection Agency requirements.

Source:

Smith, Duane, Local Roads Maintenance Worker's Manual, Center for Transportation Research and Education, CTRE Project -5-173 p. 111-139

Back to the Phone for Better Communication



Email has changed from the information age to the too-much-information age. The days of instant replies to an email are gone. The recipient has 50 or 60 other messages in line, and unless the tag line is fascinating it could be deleted along with many others. Or sent to a folder to be reviewed later.

Of course, if asking two questions in an email, senders likely to get an answer to just one, the least important question.

Telephones seem more convenient than ever. A simple phone call could help to avoid several emails.

It's true that one could be directed to voice mail, but once there, the number of calls will be far fewer than the email queue.

Email is here to stay, but sometimes it is easier and faster to see a person face-to-face or call them.

Why would the Chair on the Selectmen's Board want to attend Roads Scholar Training?

By Bill McAuley, Frankestown

Why would a select person enroll in the Roads Scholars program? "Why wouldn't they?" Few towns have a select person knowledgeable in the highway department to understand the requests from the Road Agent or DPW Director. Select Board and budget committees struggle with the budget process while dissimilar departments compete for limited tax dollars. Equitable allocation of tax dollars requires a basic knowledge of all departmental functions.

My first budget process was humbling. It was night after night of hearing from proponents for Fire, Police, DPW, et al., all of whom expected me to know and understand their needs. As the highway was the largest budget line, this seemed like a good department to seek to understand.

The road agent was already a Master Roads Scholar when I began to attend classes with the UNH T² Center.

When I first began taking roads scholar classes, I had no idea what to expect and I am continually impressed. I leave every workshop with a better understanding of maintenance, construction, and safety. I do not think that I could operate the department but I understand what my road agent says, and the need behind his requests. The sessions are informative to conduct day-to-day operations and provide detailed knowledge in permitting processes, applicable RSA's, department management, and personnel to name a few. Being in class with those on the front line has increased my respect for highway crews.

I just reached the Senior Roads Scholar plateau. It is personally satisfying. I know that I can improve this year's budget and planning process. This is a program beneficial to highway department personnel and town administrators. I believe that every town should have a select person or administrator who has completed, if not the entire Roads Scholar program, at least sessions pertaining to administration.

UNH T² Center Technical Note

Pavement Management Systems

In most municipalities, highway is the largest budget item. In some towns, the roads may have deteriorated to funding needs exceed available funds.

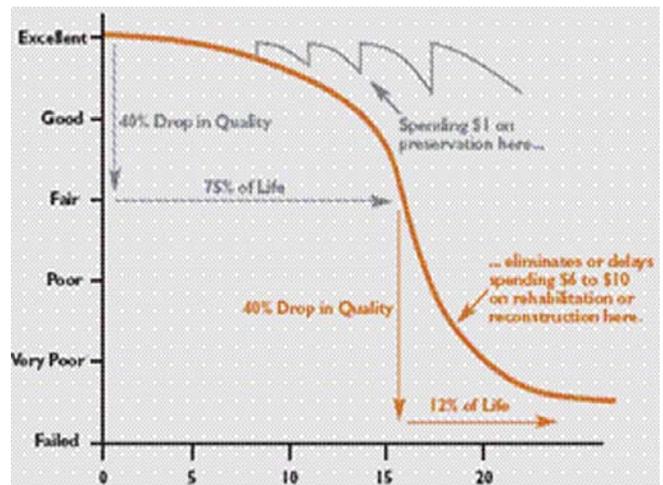
Typically, municipalities develop their street maintenance budget using one or more of the following techniques:

- **Last Year's Budget.** Based on last year's funding, possibly with an increase or decrease.
- **Standard Program.** A program based upon a periodic maintenance schedule, such as chip seal every five years and an overlay every 15 years, whether, or not, the street need it.
- **"Fighting Fires"**. Fix problems as citizens complain.
- **Worst First.** Fix the streets in the worst condition first. This approach has a certain logic (although incorrect).
- **Political Pressure.** Political considerations establish priorities and budgets.
- **Gut Feel.** Rely on the experience, knowledge and "gut feel" of managers and experienced employees.

A maintenance program focusing on rehabilitation and/or reconstructing roads is expensive and quickly uses the maintenance budget. It leaves little or no money for preventive maintenance. A few streets are restored while many deteriorate. Delayed maintenance is costly.

The most cost-effective solution is to choose which streets to repair based on the condition of the overall street system.

A pavement management system (PMS) allows managers to effectively manage the maintenance of



municipal streets. It is an organized approach to assure that all factors are taken into account.

What is a PMS?

PMS is a systematic, consistent approach to:

1. evaluate present condition of each pavement surface,
2. determine the proper type of maintenance to return the pavement to an acceptable level of service,
3. prioritize necessary repairs,
4. and generate useful reports.

Pavements deteriorate very slowly during the first few years and very rapidly as they age. Even though pavement design and materials vary, the deterioration of pavement is a standard curve. See the "pavement condition vs age curve" above.



Years of collecting pavement condition data have shown that it is more economical to preserve roads than to delay repairs and reconstruct roads. Studies show that as traffic levels increase, the costs of delaying repair work also increases. The traditional practice of repairing the worst roads first is costly. A PMS helps road managers determine the most cost effective method to do preventative maintenance.

The complexity of a PMS system can vary. It may be used to determine the best investment strategy every year for an extended number of years. A PMS will analyze scenarios and determine network condition if there are changes in funding levels or Maintenance, Reconstruction and Repair (MR & R) strategies.

Most municipalities require information such as the costs of each repair, the total cost of all repairs, etc. This information is generated with a simplified PMS. A PMS stores and analyzes data.

A “low-tech” computer program will work for most municipalities. However, it may not optimize investment over an extended period. It will select the proper MR&R techniques and apply them at the correct time.

A simple method using pencil and paper to record the condition of each road segment may be adapted. Use this system as a last resort.

Meeting with the Board

Generally, the selectboard will decide if PMS is implemented. A council member as an advocate may be crucial to getting pavement management on a meeting agenda. The advocate may be someone who considers public works a priority.

Explain the PMS process, present a general overview of PMS, focus on the potential benefits. Successful implementation occurs when everyone understands the basic concepts and how it benefits the community.

At the board presentation, discuss a suggested plan of action. The plan of action should contain:

1. Time frame for completing the PMS process,
2. Identify key points where board input is needed,
3. Plan for public communication, and
4. Create a steering committee.

Keep other departments and the public informed: use notices in the town’s newsletter, an informal public meeting, or a citizen participation process. Communities have benefited from the support and insight of the public when the public is informed about PMS activities.

PMS Implementation Process

Implementation varies based on agency needs. Keep it simple. As agencies become more comfortable, they can “step up” the complexity. A PMS includes these steps:

1. A systematic method to gather information about each road segment in the network such the length, width, surface, etc...
2. Develop repair strategies.
3. Budget funds focused on preventive maintenance.

What Information is Generated?

PMS should generate a series of reports that include the following:

Road Inventory. A list of each road segment in the network and the physical characteristics of each segment, including: road length, width, surface, traffic volume, etc...

Condition Summary. A summary of the condition of each pavement surface (results from the distress survey)

Repair Strategies. A summary of appropriate MR&R to improve each road segment.

Prioritized Repair Strategies. A summary listing road segments based upon priority. Priority is based on weighted factors such traffic, roughness, surface distress, and municipal needs.

Reports. Reports may include: number of streets that can be repaired based upon a specified budget, how much it would cost to upgrade all streets, etc.

Road Inventory

The inventory (survey) collects descriptive information for the roads in the network. The information might include:

- Section Description,
- Functional Classification,
- Type of Pavement,
- Length and Width,
- Construction History, and
- Traffic.

Inventory collection is the most time-consuming step. Gather inventory in three phases to make it more manageable.

1. Determine the types of data needed.
2. Determine which data already exists.
3. Determine the remaining data that must be gathered.

Surface Condition Survey

Road surface condition is a visual inspection of road each segment. Certain surface distresses are related to pavement deterioration. PMS links distress type to repair strategies. Train people who perform the condition survey. Correct data is crucial. Inaccurate data leads to inappropriate repair strategies, resulting in the inefficient use of funding.

This a list of recommended distresses to include in the condition survey:

- Alligator cracking,
- Longitudinal/transverse cracking,
- Edge cracking,
- Potholes/patching,
- Roughness,
- Rutting, and
- Raveling/Oxidation.

Record the severity and extent of the distress.

- Severity refers to the degree of deterioration (low, medium, or high).
- Extent refers to the frequency of occurrence or amount of road surface (percentage) subjected to a distress.

The severity and extent determine the repair strategy. For example, a pavement with alligator

cracking and a high severity but only a low extent requires only a patch. If the alligator cracking has a high severity and has a high extent, then reconstruct the road.

Repair Strategies

Municipalities must decide which repair alternatives to consider. Some municipalities may only use patching, overlays, and reconstruction. Others may consider options such as micro-surfacing and cold in-place recycling. After the initial set of repair alternatives is selected, additional alternatives may be added.

Group alternatives into repair strategy categories. There is a link between the type, severity and extent of a distress, and the recommended repair strategy.

It is generally accepted that there are five repair strategies to consider for road surfaces:

1. Routine Maintenance: patching, crack sealing, and other relatively low cost actions. Routine maintenance should be funded each year.
2. Preventive Maintenance: seals and other surface treatments designed to stop deterioration.
3. Deferred Action road sections in this category receive minimum funds for the current budget year. They are beyond preventive maintenance but do not need rehabilitation, yet. When an agency defers action, it must be prepared to fund rehabilitation or reconstruction later.
4. Rehabilitation usually includes thick overlays or recycling. Funding for completion of these major projects may depend upon long range planning and may be done in stages.
5. Reconstruction involves complete removal and replacement of failed pavement. It may also involve widening, improved alignment, grade changes, guard rail, and major drainage work. Several years of lead time may be necessary due to the cost of full reconstruction and the time required to develop a plan of action, secure permits, and establish special funding.



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Determine Network Needs

The initial report lists streets in alphabetical order. It does not consider priorities. Most municipalities do not have funding to repair all streets in one year. Perform analysis to prioritize network needs, then reports will list streets in repair order.

The prioritized repair list may require adjustment, as is difficult to schedule a large project within a given year. It may be necessary to hold money in reserve from one year to accomplish a large project in the next year. In some cases, money may be saved by scheduling improvements on adjacent streets in a single year even when the PMS places the improvements in different years.

PMS prioritization uses either the worst-first method or the best-first method. The worst-first method selects streets for repair in the worst condition first. The best-first method selects streets in good condition first (preserving good roads rather than delaying repairs and reconstructing roads).

Develop a Budget

Municipalities must determine the level of funding to allocate to end further road deterioration. Roads currently in good condition will deteriorate, requiring future repairs. Therefore, is it important to develop a short-term and long-term plan.

After selecting which streets to repair, examine them to determine the exact scope of work. A detailed survey will yield a more accurate cost estimate. This is necessary as the initial condition survey does not measure exact quantities. A detailed survey of every street is extremely time consuming and unnecessary at the network planning stage

Develop a Multi-year Plan

Most municipalities will only be able to fund a certain percentage of repairs. PMS provides an opportunity to develop a multi-year plan. For most agencies, an expensive state-of-the-art multi-year forecasting computer system is not practical. A prioritized repair list, common sense, and negotiation provide a reasonable three to five year picture of the agency's needs.

Summary

For most governments, the budget is the central planning document and often the only significant planning activity. The structural approach of a PMS, removes questions about the quality or objectives of the budget. PMS allows boards to clarify their objectives and target investment.

Sources:

Pavement Management Primer, <http://www.fhwa.dot.gov/infrastructure/as-stmgmt/pavement.htm> September 7, 2007

<http://www.kercherei.com/index.html>, August 1, 2007

Remaining Service Life

One way to access network condition is road service life.

If one mile of road is reconstructed at a cost of \$200,000 then an additional 20 years of life is added to the one mile of road to the entire network.

If the same \$200,000 is spent improving 20 miles of roads, with an average improvement to service life of six years, then 120 years of service life is added to the entire network (20 miles x 6 years). At the same time, all other roads depreciate by one year for each year they are not improved.

In the first example, a town with 100 miles of road, will gain 20 mile years but lose 99 thereby losing 79 mile years (one mile was improved).

In the second example, they gain 120 mile years and lose 80 mile years, thereby gaining 40 mile years.

This is why the UNH T² Center advocates the best first approach.

Media Savvy

It is important that employees of public agencies understand public relations. A positive public reputation helps one to get their job done more easily.

To develop good public relations, work courteously and professionally with the public and media. Develop and disseminate story ideas to improve the agency's image. Write effective news releases. Work with the elected officials.

Prepare for Interview

- What is the reporter's name and organization?
- What is the deadline?
- What is the reason for the interview?
- What is the focus of the story?
- Who else has been interviewed?
- What research has the reporter done?

Will the interview be live or taped? If live, prac-

tice possible questions and answers to gain comfort. If time is needed to gather information before the interview. Work out a time to call the reporter, and do so. The reporter is most likely working on a deadline.

Keep remarks short and to point. Reporters love snappy quotes. People who speak with colorful frankness, become sought-after sources. Instead of saying "no comment" explain why it's not appropriate to comment.

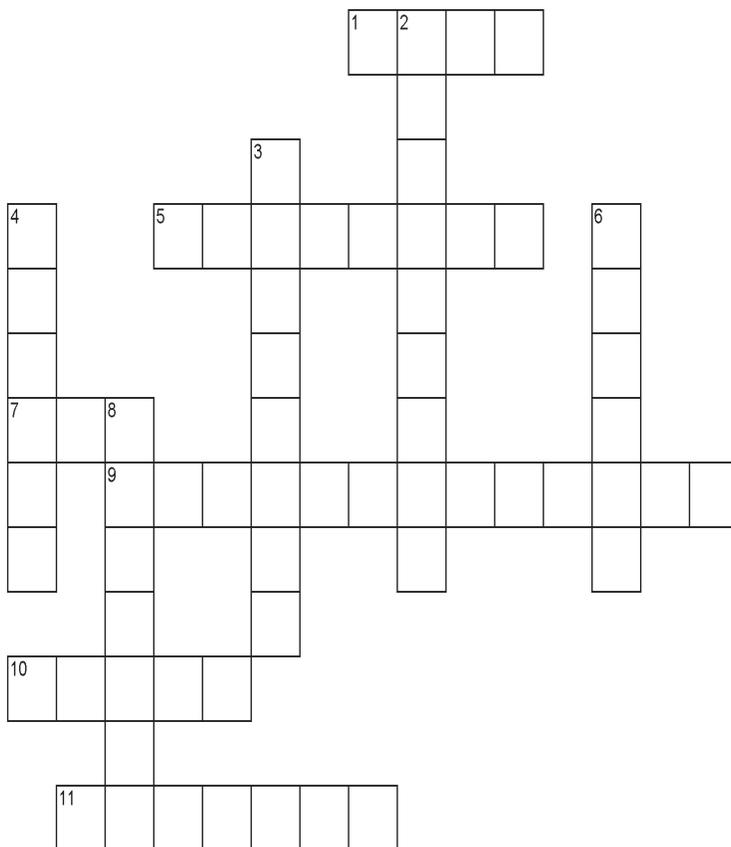
Many reporters gather information over the phone. If the conversation is taped, the reporter must inform the receiver.

Offer to fax or email supporting documents. This helps the reporter to get their facts right.

Source:

Making yourself media savvy, Nevada Milestone, Winter 2006, p. 13

Test your Knowledge--Items in this newsletter



Across:

1. Becomes less effective a 18 F.
5. Deicing chemicals lower the ____ point of water.
7. ____ is a consistent approach to evaluate pavement.
9. The Roads Scholar Program will require a(n) ____ class beginning in 2008.
10. Salt ____ with a concentration rate of 23% risks failure.
11. Winter operation occurring after a storm.

Down:

2. Prevents pavement and ice from bonding.
3. ____ is the degree of road surface deterioration.
4. Reporters love ____ quotes.
6. Use Road Safety ____ to improve high crash locations.
8. Road ____ life is a way to access network condition.

New Hampshire Roads Scholars

We are pleased to recognize those who have achieved the following levels in the UNH T² Center Roads Scholar Program during the Fall of 2006 and Spring of 2007.



Master Roads Scholar. Participated in UNH T² Center training activities which totaled 100 contact hours and covered the range of topics required for Roads Scholar II.

<u>Name</u>	<u>Affiliation</u>
Mark Avery	NHDOT
David Crosby	Alstead
David Danielson	SEA
Dennis Ford	NHDOT
Jim Holmes	Portsmouth
Dean Hooper	Claremont
Kim Kercewich	Alstead
Gary Kitson	NHDOT
James Maclean	Walpole
Charles Perkins	Raymond

Senior Roads Scholar. Participated in UNH T² Center training activities which totaled 70 contact hours and covered the range of topics required for Roads Scholar II.

<u>Name</u>	<u>Affiliation</u>
Joe Boucher	Dover
Henry Brooks	Keene
David Brown	NHDOT
Clark Craig	Greenfield
Jason Damren	NHDOT
Jason DeWidlt	Rochester
David DesFosses	Portsmouth
Joseph Fagnant	Plymouth
Michael Kercewich	Alstead
Michael Limoges	Hollis
William McAuley	Francestown
Paul Moynihan	Laconia
Dustin Muzzey	Gilford

<u>Name</u>	<u>Affiliation</u>
Eddie Nason	Brookfield
Birney Robbins	Keene
William Ruoff	Milford
Ed Tourville	Enfield
Gerard Turco	NHDOT
Dave Wholley	Salem
William Wood	NHDOT

Roads Scholar II. Participated in UNH T² 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.

<u>Name</u>	<u>Affiliation</u>
Thomas Bayrd	Hollis
Bruce Brown	Northfield
Ray Castor	NHDOT
William Chick	Madison
Dan Garlington	Plaistow
Kelly Gibbons	Lebanon Airport
Ken Hamilton	Claremont
Patrick Holland	Epsom
Michael Laclair	Madison
Tracey Leonard	Gilford
David Morrison	Mason
Gerald Morse	NHDOT
Carol Raymond	Chichester
Robert Ripley	Portsmouth
Andy Smith	Conway
Dean Stearns	Merrimack
Gary Turner	NHDOT

Roads Scholar I. Participated in UNH T² Center training activities which totaled 30 contact hours.

<u>Name</u>	<u>Affiliation</u>
Jason Bard	NHDOT
Mark Beaudry	Goshen
Charles Beckley	Northfield
Christopher Carazzo	Rochester
Matthew Clark	Surry

<u>Name</u>	<u>Affiliation</u>
David Condon	Claremont
Jim Cyr	Franconia
Robert Donnelly	Enfield
Pat Doughty	Lyman
Don Doyon	UNH
Bruce Felch	Seabrook
Kyle Fox	Merrimack
Dave Goodwin	Campton
Robert Gray III	Conway
Bucky Grugnale	Mont Vernon
Andrew Guptil	Andover
Christopher Hammond	Enfield
Leon Holmes	Freemont
Chris Hope	NHDOT
Jeff Huntington	NHDOT
Wayne Husband	Nashua
Scott Johnston	Enfield
Tim Lamper	Hudson
Michael Lavoie	NHDOT
Kevin Martin	Kingston
Tim Pinkham	NHDOT
Mike Rau	Walpole
Dave Rix	NHDOT
Mike Roderick	Northfield
Larry Shanks	Madison
James Simons	Milford
Tom Sommers	Hudson
Jake Stevens	Merrimack
Chris Sullivan	NHDOT
Michael Summersett	Northfield
Kyle Surette	NHDOT
Philip Sylvia	Laconia
Mike Symonds	Walpole
Peter Titus	Newbury
Richard Trempe	NHDOT
Romeo Turcotte	North Hampton
Raul Vazquez	Manchester
Gilbert Vien	Chichester
Glenn Wakeman	Peterborough
Charles Waterbury	Gilford



Butch Leel Joins the UNH T² Center

Butch Leel joined the UNH T² Center this summer after retiring from the NHDOT. Butch was a district 4 maintenance supervisor and worked at the NHDOT for over 30 years.

Butch is not entirely new to the center. He teaches Workzone Traffic Control and Drainage, Drainage, Drainage with Tim Sweeney. He is a Master Roads Scholar.

This fall, Butch will be at many classes. He is developing the new Basic Winter Operations.

Please say hello to Butch when you meet him. And, join him at the Road Manager's Meetings this fall! It's a chance to let us know what's on your mind.

UNH T² Center Modifies the Roads Scholar Program

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



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Publications



UNH Technology Transfer Center

These publications are available from the UNH T² Center. See 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.

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. The guide assumes that widening the road to four lanes is not a practical solution because of financial, environmental, or societal constraints. Geometric, traffic control, and other types of countermeasures are discussed. *TRB*

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 Unpaved Rural Roads. Safety of unpaved rural roads by describing the application of traffic control devices, geometric guidelines and management techniques. *Wyoming LTAP*.

Forest Products Road Manual: A Handbook for Municipal Officials and The Forest Products Industry. Guide for both municipal officials and the forest products industry to improve understanding of the laws which govern public roadways. *NH Timberland Owners Association & UNH Cooperative Extension*.

Low Cost Treatments for Horizontal Curves.

This report examines practical information on low-cost treatments that may be applied at horizontal curves to address identified or potential safety problems. The report describes the treatment, shows examples, suggests when a treatment might be applicable, provides design features, and provides information on the potential safety effectiveness and costs when the information is available.

NHDOT Classification of Highways & Aid Available to Municipalities. Highway classification system and highway aid funds, including state aid, bridge aid, applications for estimates, highway block grants, and federal bridge aid replacement. *NHDOT*.

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

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

Material Request Form

Name: _____

Affiliation: _____

Town/City: _____

Phone: _____ Fax: _____

Title: _____

Mailing address: _____

State: _____ Zip: _____

Email: _____

Milestones

David Foster, has left Somersworth and has joined Underwood Engineers.

Robert Hueber is the new road agent in Warren.

Rene LaPorte has joined Lempster as the road agent.

Joe Maguire has left Merrimack.

Wayne Mardin is the road agent in Landaff.

Jim Moore, former UNH T² Center Advisory Board Committee Member, retired from the NHDOT.

Fred Salisbury retired from Amherst.

Bruce Tatro, Keene, retired in August.

The town of *Bow* passed level 4 accreditation from the NHPWSTC and the town of *Goffstown* passed level 3.

Websites:

Signal Timing on a Shoestring.

Retiming traffic signals is one of the most cost-effective tasks that an agency can do to improve traffic flow and safety. .

http://ops.fhwa.dot.gov/publications/signal_timing/signaltimingshstrg.pdf

Field Guide for Inspecting Signalized Intersections to Reduce Red-Light Running.

<http://safety.fhwa.dot.gov/intersections/fieldinspectionform.pdf>

Good Practices: Incorporating Safety into Resurfacing and Restoration Projects.

http://safety.fhwa.dot.gov/roadway_dept/pubs/sa07001.pdf

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. 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 T² Center workshops? Sign up for pw.net

RunOff.Talk

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



Technology Transfer Center

New Hampshire LTAP at UNH

Road Business

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Technology Transfer Center
New Hampshire LTAP at UNH

Fall Workshop Calendar

Basics

October 16	Basics of a Good Road	Manchester--Best Western	\$75
October 23	Basics of a Good Road	Rochester	\$75

Erosion Control

October 4	Erosion Control 2	Concord	\$75
November 15	Erosion Control 2	Somersworth	\$75

Supervisory or Personal Development

October 2	Problem Solving	Manchester--Best Western (executive court)	\$75
October 30	Managing Highway Department	Rochester	\$60

Technical Aspect of Road Maintenance or Repair

September 25	Bridge Maintenance	Lincoln	\$60
September 26	Lines, Levels, & Layouts	Amherst	\$60
October 2	Basic Winter Operations	Concord	\$60
October 10	Gravel Roads	Lincoln	\$75
October 11	All About Roadway Materials	Lincoln	\$75
October 12	All About Roadway Materials	Somersworth	\$75
October 15	Winter Ops-Decision Makers	Lincoln	\$60
October 16	Winter Ops-Decision Makers	Manchester--Derryfield Country Club	\$60
October 18	Culvert Maintenance	Somersworth	\$60
October 25	Culvert Maintenance	Lincoln	\$60
October 30	Roadside Design	Manchester--Derryfield Country Club	\$60
November 14	Hard Road to Travel	Somersworth	\$60

Tort Liability

October 3	MUTCD	Concord	\$60
November 1	Tort Liability	Manchester--Derryfield Country Club	\$60