MASS

INTERCHANGE

Volume 16, Number 2 Spring 2002

SHAPE UP FOR SPRING

Baystate Roads Program held five workshops on gravel road repair and maintenance in March for communities wishing to improve their unsurfaced roads. Since more than 50% of roads in the U.S. are unpaved and more than 80% carry less than 400 cars per day, new technology is vital for most towns.

Existing soils, drainage issues and historical roadway locations combine to create difficulties. Making matters more interesting are lower budgets, increasing traffic demands on these fragile roads and residents who do not want their road maintained because potholes and mud calm traffic.

Instruction was provided by Paul Brown who explained that proper cross sections, adequate drainage ditches, and a tight riding surface are prerequisites for a good gravel road. Desirable gravel has good gradation and plasticity that will compact well. It will develop a tightly bound surface that needs less maintenance. Problems with excess washboarding, rutting, or potholing in wet weather will be greatly reduced. The class examined 1,500 feet of a local example, learned how to select aggregate, perform a sieve analysis, and create a proper gradation. Attendees brainstormed possible repair methods and considered costs and budget issues for each solution.

It pays to use the best quality material available for gravel roads as attendees at the workshop in Lee discovered.

Baystate has a limited supply of an excellent document entitled "Gravel Roads - Maintenance and Design Manual" published by the South Dakota LTAP Center and FHWA as well as a CDROM version of this report. FAX a request to 413-545-6471 and indicate which format of UNS-19 you would like.

Announcing A New Master Roads Scholar

Meryl Ann Mandell--Master Roads Scholar

As supervisor of DPW operations for the Town of South Hadley, Meryl has been with the department for the past four years.During that time she has introduced a quality control/quality assurance program for contracted paving operations, transitioned snow and ice practice from de-icing to anti-icing, reviewed and improved departmental safety practices, networked all of the inter-office computers at DPW, and assisted in expanding the recycling program for town residents.

She credits many of these changes and improvements to information that she gleaned from over 22 Baystate Roads classes she's attended since 1995. Meryl says she feels very fortunate to work with the terrific, talented, hard working staff at South Hadley DPW, and appreciates the support given to DPW by the Board of Selectmen and Town Administrator. South Hadley is located north of Springfield, with a population of about 17,000, and 84 miles of town roads. The DPW has 32 employees to cover highways, parks, solid waste, and waste water treatment operations.

Before Meryl came to South Hadley, she spent over five years working for Vanasse Hangen Brustlin, Inc. as a project manager with their pavement services group. She became intimately familiar with infrastructure management, and has been able to apply the principles and philosophy of pavement management to South Hadley's roads. Her experience before VHB includes three years as a technical sales represesntative with All States Asphalt, and another three as the first program manager with the Baystate Roads Program. In that capacity she developed the first *Mass Interchange* newsletter, coordinated and attended many Baystate Roads workshops, and initiated general program operations. This experience proved invaluable in all of her other positions. A related benefit were the friends she made and the relationship she forged with other public works officials throughout the state.

Meryl arrives for the Gravel Roads Workshop

Chris Ahmadjian presents the official plaque to Meryl.

Our Fourth Master Roads Scholar

Dennis Kelly-- Master Roads Scholar

Baystate Roads is proud to congratulate Dennis Kelly from the beautiful Town of Lee. For the past five years he has served as the highway/cemetery supervisor in this Berkshire County town and attended over 22 training workshops. During his 28 years with the Lee Highway Department, he also spent 18 as foreman before being appointed supervisor.

With an elevation of 1,200 feet above sea level, snow and ice seminars are of extreme interest to Dennis. He initiated a calcium chloride program three years ago after learning how beneficial it would be to manage those hilly, winter roads in Western Massachusetts. Dennis oversees six full-time employees and two seasonal workers who maintain 57 miles of roads and 14 miles of sidewalks. A large 15 acre cemetery and numerous playgrounds in this community of 5,800 keep the road crew busy. Both Dennis and the DPW superintendent, Ken LaBier, encourage employees to attend classes because new technology and training make everyone's job easier and more productive. Chris Ahmadjian conducted mini-seminars at the Lee DPW on work zone safety and snow plow techniques which provided valuable training for this Berkshire squad.

Chris Ahmadjian congratulates Dennis on his achievement.

In addition to the annual winter operation workshops, coaching and leadership classes have assisted Dennis in supervisory skills required to manage employees. Another workshop entitled "Dealing with the Public While Still Getting Your Job Done" helped him explore ways to find helpful, responsive solutions when those local citizens phone in their special requests.

Dennis has also contributed valuable suggestions over the years as a member of the Baystate Roads Advisory Board. He assisted with the successful Gravel Road Repair & Maintenance Workshop held in Lee on March 28 and is always ready to lend a hand at Snow Plow Roadeos where his crew competes.

Wearing his new jacket and displaying the special plaque, Dennis is ready for anything.

Steps to Safe Operation of Loader/Backhoe

The loader/backhoe is one of the most widely used pieces of construction equipment. But, as with any equipment, proper operation and maintenance are vital to job-site safety. Here are some basic tips for safe operation.

* Read the operator's manual thoroughly and refer to it often. Store it where it can be found for easy reference.

* Dress for safety. Wear a hard hat, safety glasses, safety shoes and snugly fitting, comfortable clothing.

Inspect the machine each day. Perform these steps:

* Look over the operator's area. Make sure it isn't cluttered with junk, isn't muddy or greasy.

* Check the engine oil level and the hydraulic fluid level. Drain any water or sediment that has collected in the fuel system.

* Take a walk around the loader/backhoe. Look for missing, broken or loose parts. Make sure the tires aren't damaged or under inflated.

* Climb into the operator's area carefully and fasten your seat belt. The seat belt together with the rollover protection system could save your life in the event of an accident.

* Some loaders/backhoes have left and right brake pedals. Anytime you travel more than 5 mph make sure pedals are locked together. Using only one pedal at road speeds will cause the machine to veer sharply.

* Always carry the loader bucket low for visiblilty and stability. Raise the bucket as you approach the truck you're loading.

When you are going to use the backhoe, follow these steps:

* Swing the seat around so that you're facing the direction of the backhoe. Never operate the machine from behind your back!

* Lower the stabilizer pads and level the machine. If the ground is soft or muddy, place planks under the stabilizer pads.

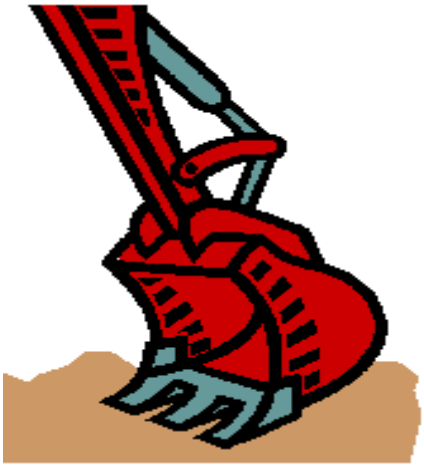
* Before you begin digging, make sure all workers are clear of the area.

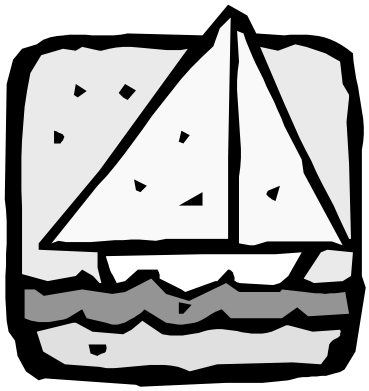
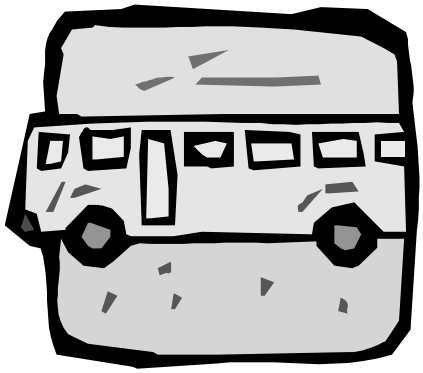
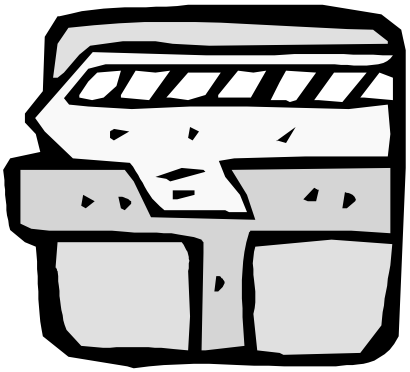
* Check with the electric, gas and phone companies first. Know the location of utility lines before you dig.

* To ready a unit for transport, bring the boom in and engage the locking plate. Install the swing lock pin, retract the stabilizers, and you're ready to go.

A safety conscious operator is an efficient operator. By carefully studying the owner's manual and following these safety steps, you'll get the maximum benefit from your loader/backhoe.

This article has been reprinted with permission from Nevada Milepost, Fall 1999.



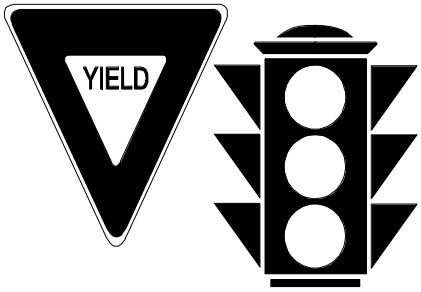




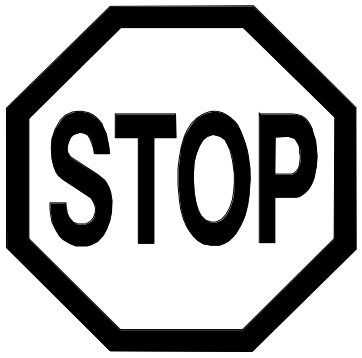
Baystate Roads Website Up and Running

http://www.ecs.umass.edu/baystate_roads

With the help of Michael Kit, a computer systems engineering student at UMass/Amherst, we have resurrected our website. Please visit for the latest information on current activities sponsored by your Local Technical Assistance Program (LTAP). You will find old favorites and new tools for improving your transportation operations:

- **Workshops**
- **Newsletters - last several years**
- **Publication and Video Libraries - searchable soon**
- **Roads Scholar Requirements**
- **Staff**
- **Contacts**
- **Links - valuable resources including state/federal sites, national associations, and other LTAPs**
- **Hotmail Link - baystate roads@hotmail.com**





National Public Works Week May 19-25, 2002

Start making plans now for the annual National Public Works Week, May 19-25. The 2002 theme is "Committed to Our Communities."

Public works employees are "Everyday Heroes" who face the challenges of improving the quality of life in their communities and this year's theme celebrates the proud efforts of public works professionals.

During the week of May 19-25, we urge you to publicize the importance of public works to your community. We encourage you to reach out to policy makers, government officials, business leaders, and citizens by communicating the positive impact of your public works projects on your community.

This year APWA is setting the goal of educating 50,000 people about the value of public works in their community. You can be a part of this goal by telling us about your plans for National Public Works Week events, and reporting to us about the success your events. Simply go to the National Public Works Week web site, **http://www.apwa.net/npww** and click on "Tell us about your outreach." Check back to the web site frequently for updates on the progress toward our goal of 50,000.

Cold Mix Asphalt: A Brief Overview

By Rick O. Drumm, P.E.
Federal Highway Administration,
Indiana Division

Cold Mix Asphalt (CMA) has become somewhat more popular over the years as a paving material, extending its use beyond the traditional patching material. The use of CMA by local agencies to pave low-volume roads may well be appropriate given the facility and fiscal constraints. However, due to its inability to endure higher traffic loads, the use of CMA should be restricted from its use on medium- and high-volume road surfaces.

The important point to recognize is that if a county or town wishes to use CMA for paving purposes, it should be a component of their overall pavement management strategy. This pavement management system should include knowledge of conditions of the roads at present, a goal of minimum satisfaction of highway conditions, the cost of various treatments and a sense of the durability of the pavement treatment. That being said, understanding how CMA paving is similar and how it differs from the traditional Hot Mix Asphalt (HMA) paving is key to a successful CMA pavement.

Resources:

Guidance on CMA paving can be found in two main publications. One is the Asphalt's Institute's (AI) *Asphalt Cold Mix Manual, MS-14, Third Edition.* Information on ordering this manual can be found on the AI's web site, **www.asphaltinstitute.org**. Although the manual is split between information on CMA using a central mix plant and mix-in-place paving, using a plant mix is typically superior in order to attain a more consistent mix and final pavement surface.

The other publication for valuable information on CMA is *A Basic Asphalt Emulsion Manual, MS-19, Third Edition*, published jointly by AI and the Asphalt Emulsion Manufacturers Association (AEMA). Information on obtaining this manual can also be found on AI's web site or that of AEMA, **www.aema.org**. Obviously, this manual provides information regarding emulsions only, and does not cover cutbacks. *MS-19* deals with all aspects of emulsion use: chemistry, storing, handling, testing, selecting the right type and grade, surface treatments and aggregate mixes (including CMA).

The Basics:

The main advantages of CMA are versatility, economy, and being low-polluting. It is versatile since a wide variety of emulsified and cutback asphalts are available for varying aggregate weather conditions. CMA is also much less expensive than typical HMA pavements. And, since less heat is used in production, the CMA process is less polluting, particularly when emulsified asphalts are used.

There are some notable limitations of using CMA in paving operations. Durablility under medium or heavy traffic is obviously one major drawback. CMA has been used for base or subbase treatments with success as it can provide a working platform for lifts higher in the pavement. But as a surface treatment, locations should be limited to low-volume roads.

Another limitation is the weather. Emulsified asphalt needs time to cure, meaning time to allow the water, which is part of the mixture, to evaporate and enable the asphalt to finish adhering to the aggregate. This evaporation is essential, so the *MS-14 Manual* suggests not paving unless the ambient temperature is at or above 50 F. Massachusetts specifications state that 40 F as the minimum temperature during placement. It is also necessary to make sure that no inclement weather is forecast for the time of placement or for a number of hours after the CMA is placed.

Continued on page 7

Baystate Roads Needs your Email

For speedier info from Baystate Roads, the staff would like to make your job easier, more rewarding, incredibly efficient, and extremely informative. By providing your Email address, you will be able to:

-Receive special notifications

-Request publications and videotapes from the library

-Obtain solutions to specific problems

If you are interested in joining this new List Serve, please EMAIL your address to:

baystate_roads@hotmail.com

Baystate Roads Calendar

Hot-Mix Asphalt

May 29-31 Worcester

Concrete Sidewalks

May 21 Wakefield
June 6 Chicopee
June 13 Grafton
June 19 Barnstable

Developing Successful Projects

April 30 Holyoke
May 7 Peabody
May 9 Pittsfield
May 14 Taunton
May 23 Worcester

Pavement Preservation

May 16 Westborough

New Roads Scholars

Patrick Lapointe
Leominster DPW
Peter Legare
Westfield Engineering
Leonard Colson
Westfield Engineering
Stephen Kadlik
Wayland DPW

continued from page 6

Keeping traffic off the pavement for longer than one would restrict traffic for HMA pavement is required. This is also due to the curing time needed for the CMA. This restriction of traffic is necessary to prevent immediate damage to the pavement.

Overall, though, CMA paving is quite similar to HMA paving. The equipment is the same for the most part, and the processes of production, laydown, and compaction have many similarities. For the plant, spreading, compaction, and surface tolerance, the CMA specifications refer to the HMA specifications as the standard spec. So understanding the details of CMA-- its mix components, how it cures, and when to allow traffic on the mat--are key to producing a quality CMA pavement.

Additional Thoughts

Additional advances are being worked on in the use of CMA including the increasing use of recycled pavements. This can all be done by milling the pavement and transporting it to a plant producing cold mix. Alternately cold in-place recycling can be done if the proper equipment is available with the old pavement milled and mixed with the emulsified asphalt.

As local agencies turn toward a variety of options to balance road condition and funding concerns, Cold Mix Asphalt is being looked at as a part of this equation. Its use should be within the guidelines of one's own pavement management system. When considering the use of CMA, it is important to do your homework in advance. Study the resources available, talk to other customers , and make sure everyone in the process is aware of the differences in how to work with CMA.

Adapted with permission from an article which appeared in Indiana LTAP's newsletter The Pothole Gazette, Vol. 19, No. 4.

Winner of the Movie Contest

Michael J. Racicot, town administrator of Rockport, was the first to identify Paul Newman in Cool Hand Luke, a movie illustrating a chip seal application. Michael will receive an acknowledgement for his cinematic expertise. Thanks to all the Baystate players. See you at the movies!!

in this issue...

The Baystate Roads Program, which publishes *Mass Interchange* each quarter, is a Technology Transfer (T2) Center created under the Federal Highway Administration's (FHWA) Local Technical Assistance Program (LTAP). FHWA is joined by the Massachusetts Highway Department, College of Engineering at the University of Massachusetts/Amherst, and local public works departments in an effort to share and apply the best in transportation technologies.

In addition to publishing *Mass Interchange*, the Baystate Roads Program facilitates information exchange by conducting workshops, providing reports and publications and videotapes on request, and offering one-to-one technical assistance on specific roadway issues. Because the program relies on input from many sources, inquiries, articles, and ideas are encouraged.

LTAP Local Technical Assistance Program

To contact the Baystate Roads Program call (413) 545-2604 or FAX 413-545-6471.

BAYSTATE ROADS PROGRAM
College of Engineering
University of Massachusetts
214 Marston Hall
Amherst, MA 01003

Non-Profit Organization
U.S. Postage Paid
Permit No. 2
Amherst, MA
01002

5-22239

Massachusetts Highway Department
Federal Highway Administration
University of Massachusetts/Amherst