M A S S

INTERCHANGE

Volume 15, Number 1 Winter 2001

Coolidge Memorial Bridge: Rebuilding for the Future

Built in the 1930's, the Calvin Coolidge Bridge has been in need of repair, improvement, and expansion for many years. The historical photograph taken in the 1930's reveals only farmland on the east side of the Connecticut River. However, increased population and traffic on both sides of the river have created intolerable congestion which has led to MassHighway's proposed reconstruction and expansion of the bridge. To alleviate problems during this period, a traffic management plan for the Pioneer Valley will be developed to operate as a Regional Traveler Information Center. The Center will enable the public, media, local government agencies and public safety personnel to share information in order to better inform the traveling public about current conditions.

Current bridge prior to reconstruction.

Coolidge Memorial Bridge under construction in 1938.

LTAP Local Technical Assistance Program

(413) 545-2604 http://www.ecs.umass.edu/baystate_roads

New Rules for Pavement Markings

On January 3, 2000 FWHA published the final rule revising the MUTCD regulations for center and edge line markings (Revision 7). The most salient portions are reprinted below. Note that "shall" is mandatory, "should" is advised or recommended, and "may" is permissive. Also note the definitions:

Traveled Way: That portion of a highway ordinarily used for vehicular travel, exclusive of parking lanes, sidewalks, berms, or shoulders. In the event a highway includes two or more separate traveled ways, the term "traveled way" refers to each one separately, but not collectively.

Collector Highway: A general term denoting a highway which in rural areas connects small towns and local highways to arterial highways, and in urban areas provides land access and traffic circulation within residential, commercial, and business areas and connects local highways to the arterial highways.

Arterial Highway: A general term denoting a highway primarily used by through traffic, usually on a continuous route or a highway designed as a part of an arterial highway system.

The New Rules

Center line markings shall be placed on paved 2-way traveled ways on streets and highways having one or more of the following characteris tics:

1. Urban and rural arterial and collector with traveled ways 20 feet (6 meters) or more in width with an ADT of 6000 or greater
2. Urban and rural traveled ways with 3 lanes or greater.

Center line markings shall be placed on paved 2-way traveled ways on streets and highways having one or more of the following characteristics:

1. Urban arterials and collectors with traveled ways 20 feet (6 meters) or more in width with an ADT of 4000 or greater.
2. Rural arterials and collectors with traveled ways 18 feet (5.4 meters) or more in width with an ADT of 3000 or greater.

Center line markings may be placed on other 2-way traveled ways on any street and highway.

On traveled ways less than 16 feet (4.8 meters) wide, an engineering study should be used in determining whether to place center line markings on traveled ways due to traffic encroachment into the lane of opposing traffic where edge line markings are used.

Edge line markings shall be white, except they shall be yellow for the left edge in the direction of travel of the traveled ways of a divided or one-way street or highway.

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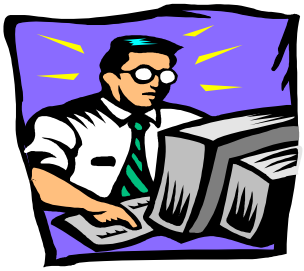
Practices to Increase Productivity

Whether we contract work or do it with our own transportation agency crews, talk of improving productivity is easy, but what if its implementation must be a formal and managed process. Everyone must make a concerted effort to meet predetermined goals. The following 4 principles are the cornerstones of increased productivity.

#1. A formalized training program must be developed. One example is safety. Safety programs are a part of virtually all transportation agencies' strategic goals. But we also must provide training that gives employees the tools for implementing and managing change. Historically, we have promoted training in the technical skills. In today's work environment of change, training programs also need to include development of leadership and management skills.

#2. Project management procedures must be applied in a consistent manner and constantly updated as innovations in project management are identified. The areas of pre-job planning and project organization are the areas with the most immediate results. How we manage projects must be identified, analyzed and documented. The process then can be reviewed, evaluated and improved through comparison with similar efforts by other transportation agencies.

#3. We must have a measurement tool for monitoring progress. It is said you get what you measure. When attempting to change behavior, reinforce that change and subsequently validate its progress. Posting results in a visual format has a powerful impact. Measurement tools often are described as a means of keeping score. Keeping score makes the process more interesting, fun and competitive. Without an adequate measurement tool, it is impossible to tell if you are winning or losing. All construction and technical procedures continually must be examined and compared against some yardstick to determine their positive contributions and continued usefulness.



#4. Organizational behavior must be directed toward identifying improvements and implementing new approaches. To foster such an environment, management needs to create a culture of openess that encourages a free-flow of ideas from all levels within the agency. Challenging but achievable goals need to be set. Once they are met, new goals should replace them. Too often goals are defined as *more*. They need to be set with the idea of *benefit* to the transportation worker and agency.

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Recycled Materials Resource Center

The Recycled Materials Resource Center is a new national center created to promote the use of recycled materials (pavements, secondary waste, by-product materials) in the highway environment and will focus particularly on the long-term physical and environmental performances of recycled materials. The center's Web site address is <www.rmrc.unh.edu> where you can choose MHD's 2000 update on recycling from the current news menu.

Recycled Materials Resource Center
123 Nesmith Hall, Durham, NH 03824
Phone: 603-862-4704
Fax: 603-862-3957
E-mail: rmrc@rmrc.unh.edu

Partnerships for Sustainability: A New Approach to Highway Materials

User Guidelines for Waste and Byproduct Materials in Pavement Construction

International Conference - Beneficial Use of Recycled Materials in Transportation Applications

European Scanning Tour - Recycled Materials Use in the Highway Environment: Use, Technologies and Policies

Framework for Evaluating Use of Recycled Materials in the Highway Environment

The National Cooperative Highway Research Program (NCHRP) Waste and Recycled Materials (WRM) database. (NCHRP 4-21) (This is a PC only program)

Massachusetts Highway Department: Recycling & Pollution Prevention Report 2000 Update

Center for Environmental Industry and Technology

EPA New England's Center for Environmental Industry and Technology (the Center) has established a unique web-based inventory of commercially-available, innovative environmental technologies to spur the use of these technologies in the market place.

Who Can Benefit

The Innovative Technology Inventory (ITI) is designed to give you an easy way of finding innovative and environmentally beneficial technologies that may be used by companies as part of a Supplementary Environment Project or by companies participating in EPA's Excellence in Leadership (XL) project. It can also be used by states, towns, organizations, or universities looking to try new technologies.

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How to Access the ITI

The ITI can be accessed on the Center's web page **(http://www.epa.gov/region01/steward/ceit).** It can be searched by featured companies and current technology types which include:

*Air Pollution Control
*Containment
*Detection/Monitoring
*Energy Conservation
*Emission Reduction
*Erosion/Sediment Control
*Pollution Prevention
*Predictive Maintenance
*Recycling
*Remediation
*Steam Cogeneration
*Stormwater Treatment
*Waste Reduction
*Wastewater Treatment

What the ITI Provides

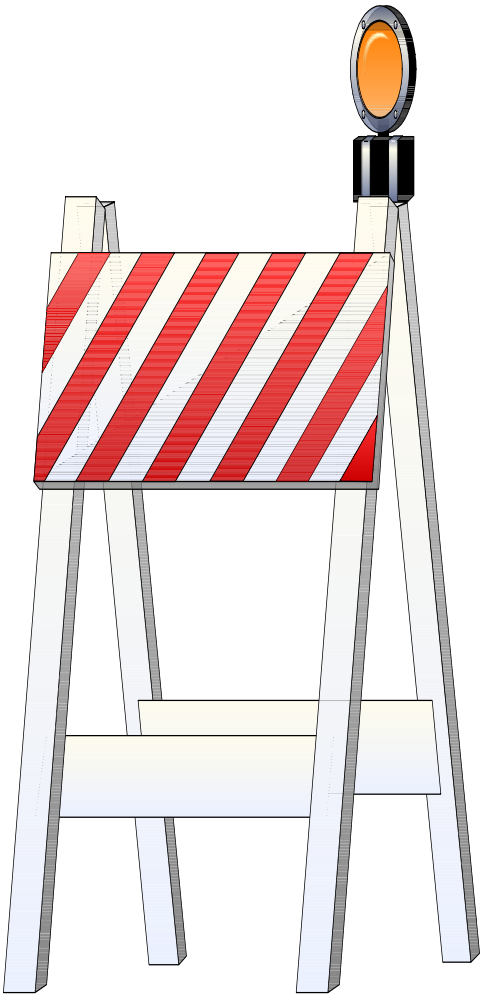
The ITI contains information on the technologies including their descriptions, applications, environmental benefits, performance, limitations, and costs. For those companies with their own web page, the ITI provides a direct link. The ITI now showcases more than sixty technologies from more than forty companies (the ITI is not limited to New England-based companies). Please be aware that *inclusion of companies/technologies in the database does not constitute or imply endorsement by the EPA.*

Technology Trade Shows

Technology Trade Shows showcase new and innovative technologies. Trade shows for 2000 are focused on erosion and sediment control technologies and monitoring technologies.

Ombudsman Hotline

The Center offers assistance, information, and referrals on a wide range of federal and state programs to the industry through its Ombudsman Hotline: 1-800-575-CEIT (in New England only) or 617-918-1783.



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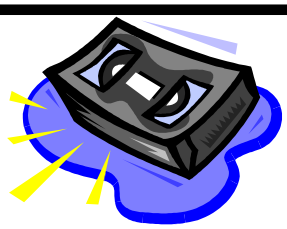
Throughout the implementation process, employees must see that they are meaningful members of the team for change. Employees at all levels must view proposed changes as a means to improvement. But long-term success is dependent on management's commitment to develop and maintain a continuous productivity improvement program.

This article has been reprinted with permission from the Winter 1999 Issue of the Nevada Milepost Newsletter by the Nevada Technology Transfer Center

New Publications

CDROM-23	**Pavement Preservation: State of the Practice** USDOT/FHWA *July, 2000*
CDROM-26	**Guide to Developing Performance- Related Specifications for PCC Pavements** FHWA *November, 2000*
D&C-76	**Use of Design/Build and Warranties in Highway Construction** Minnesota DOT *1999*
D&C-77	**Critter Crossings: Linking Habitats & Reducing Roadkill** USDOT/FHWA *February, 2000*
D&C-78	**Thaw Weakening & Load Restriction Practices on Low Volume Roads** US Army Corps of Engineers *June, 2000*
TRA-71	**Roundabouts: An Informational Guide** FHWA *June, 2000*

New Videos



ST-187 Anti-Icing and Deicing Iowa DOT 30:19 minutes

Covers use of abrasives, deicing and snow fences. Use of greater chemical electives, improved equipment, better trained personnel, weather forecasting and RWIS data have made job more effective and cost efficient. Anti-icing is proactive weather fighting measure and deicing is a reactive measure to break the bonds.

ST-188 Pre-Season Preparation Iowa DOT 29:55 minutes

You will learn how to mount snow removal equipment: reversible plows, V-plow, light-duty plow trucks and all mounted equipment.

ST-189 Plowing Techniques Iowa DOT 29:46 minutes

Basic snow plowing techniques and procedures for cleaning two-lane roads and multiple-lane highways. Special techniques for clearing intersections, bridges, railroad crossings, ramps, gores, curbs, and islands. How to use the heavy-duty wing, ice blade, and V-plow along with reversible plow.

ST-190 Equipment Operation Iowa DOT 10:29 minutes

Regular equipment checks that you should make each time you leave and return to the shop with a plow truck. Proper radio procedures and protocol. The best clothing to wear for winter operations.

Please FAX your requests by code number to Baystate Roads at 413-545-6471 or call 413-545-2604

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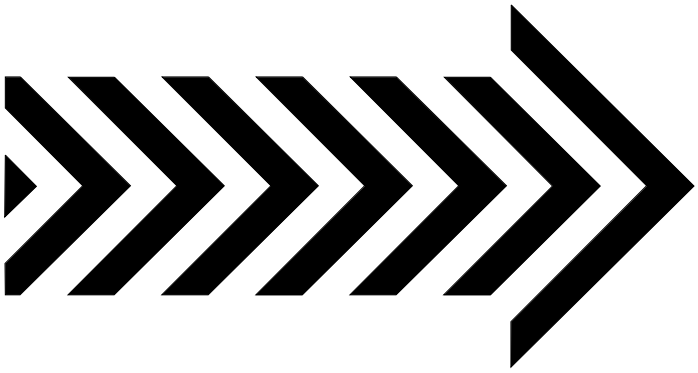
Edge line markings shall be placed for paved traveled ways on streets and highways with the following characteristics.

1. Freeways
2. Expressways
3. Rural arterials with traveled ways 20 feet (6 meters) or more in width with an ADT of 6000 or greater.

Edge line markings should be placed on paved travel ways for streets and highways with the following characteristics.

1. Rural collectors with traveled ways 20 feet (6 meters) or more in width.
2. Other paved streets and highways where engineering study indicates a need.

Edge line markings may be placed on the traveled way on any other street or highway with or without center line markings. Edge line markings may be excluded based on engineering judgement where the travel way edges are delineated by curbs or other markings.



The compliance date is the earliest of the following:

1. **January 3, 2003 or**
2. **When pavement lane markings are replaced within an established pavement marking program or**
3. **When the highway is resurfaced or reconstructed.**

This article was adapted from material on the FHWA web site. The MUTCD web site itself can be accessed as: http://mutch.fhwa.dot.gov and the PowerPoint presentation of the final ruling can be found at : http://mutch.fhwa.dot.gov/ppts/Cntredg.ptt.

Reprinted with permission from the May 2000 issue of the Idaho LTAP Center newsletter, Gem State Roads.

Reduce Sign Vandalism Costs

The Federal Highway Administration's Manual on Countermeasures for Sign Vandalism lists many ways to reduce the costs associated with sign theft and vandalism.

$ Remove unnecessary signs, comount signs and maximize the use of utility poles.

$ When fabricating signs use thicker gauge sign blanks, less expensive substrate materials, plywood or other nonmetallic substrates.

$ Apply sign face treatments, such as clear coating or transparent overlay film, which allow removal of substances with no further refurbishing.

$ Install signs with anchoring systems, anti-twist devices and mounting hardware that make it difficult and discouraging to remove a sign.

$ Affix or imprint identification of ownership, tampering penalties and the installation date of signs. Ownership information is a key element in prosecuting sign vandals.

A favorite technique of Vermont road crews is to apply a heavy coat of axle grease on the back side of the sign and on the signpost itself. Now, that's discouraging.

Reprinted with permission from Vermont Local Roads News, March 2000.

Check Out The New Baystate Roads Web Page

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

You will find a Baystate workshop calender, videotape and publication libraries, quarterly newsletters, Tech Notes, and links to related transportation websites.

Drive in and explore!

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, the Department of Civil and Environmental 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.

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