

INTERCHANGE

VOLUME 3 NUMBER 3

FALL 1988

Progressive Salting/Sanding Policies Established in Wellesley

During the summer of 1986, the Wellesley DPW evaluated their winter road maintenance programs with two major objectives in mind: 1.) "allow safe vehicle and pedestrian traffic for the convenience and safety of the public and all emergency services and similar support services," and 2.) "limit the amount of salt used to the minimum necessary for vehicular and pedestrian safety." The second objective responded to concerns voiced by interested parties regarding increased salt use and salt's environmental impact.

A study was conducted which surveyed local residents on winter road policies, reviewed current DPW policies and procedures, examined low/no salt policies in other communities, and determined if salt use could be reduced while maintaining roadway safety. Some major findings were:

- Current Wellesley DPW procedures are reasonable, with no serious impacts on the environment, water supplies, or public health and safety.
- Two watershed areas were identified as environmentally sensitive to salt.
- Residents want safe winter driving conditions and the use of less salt while also desiring better winter traffic conditions.
- Safety is more important to town residents than reduced salt.
- Auto accidents increase during storm periods.
- Few towns have written winter maintenance policies and procedures.
- Some towns that have tried a "no salt" policy have had to abandon it for safety reasons.
- Little data exists which shows that no salt strategies can maintain a level of vehicular safety and also maintain service qualities.
- The use of calcium chloride with salt can reduce salt use by roughly 15 percent or more.
- Operational flexibility within a sound policy framework is essential for an effective winter maintenance strategy.
- Annual salt usage and total annual snowfall cannot be meaningfully correlated.

CAUTION



**NO ROAD SALT
ON WATERSHED
SIDE STREETS**

DRIVE CAREFULLY

In light of these findings, the Town of Wellesley DPW adopted the following program:

- Incorporate DEQE's "Best Management Practices" as a framework for Wellesley's winter maintenance program.
- Use sand on side streets within town watershed areas (10:1 ratio), and straight salt on specified connector streets as conditions warrant.
- Substitute salt pretreated with calcium chloride at temperatures below 20-25 degrees on roads for which straight salt was previously used.
- Change the sand/salt mix from 8:1 to 10:1.
- Certify the calibration of salters/sanders on a yearly basis.
- Develop pounds per lane mile salt and salt/calcium chloride application rates for the calibrated equipment.

Salt cont. on p. 4

The "Highwayman"

by Warren Fowler

Highway superintendents come in all shapes and sizes...mostly large. A townspeople meeting a highwayman, and shaking hands, may feel he's having a Smithfield Ham proffered him but later realizes he's simply grasping a well-worn, oversized hand carrying the scars of countless wars and emergencies.

Emergencies fought in the dead of night, with hands so numbed with cold they don't feel the pinch of iron on flesh as they argue with feisty plow hitches. Other knowing hands heft a crowbar to a boulder perilously close to the new water main and deftly work their artistry, nudging it so the backhoe can finally do its job. You and I boast of ten fingers. Some hands we speak of don't carry a full complement. Whatever the problem, the knowing mind and those cankered hands of the highwayman always win the day.

Highwaymen are a curious mix of professions-no singular attribute stands out except...an infinite amount of patience. No matter how many times concrete has been poured for myriad, ordinary jobs, life has a way of throwing a curveball.

The highway crew pouring the parking area in front of the firehouse finds the cement's not running right. No reason. It should have been a piece of cake. Never mind, the crew gets the concrete poured, the job done right. The reason is: personal pride. Doing the job right. Lord knows it isn't because of their high pay scale.

The highway superintendent vies with the obstetrician for the number of sleepless nights. It's always 2 a.m. when the water main bursts; geysering volumes of precious water all over the place at the most critical part of the year. Summer, when the reservoir is already overtaxed.

The superintendent fights for every precious minute, knowing better than anyone else how much the town needs those wasted gallons. Not only is the pipe repaired; the next day he's back fixing the gullies caused by the swiftly flowing water. His last act of the day is one of a loving gardener. He deftly sows grass seed over the defaced area, erasing another problem so life can go on normally.

And if you're inclined to believe all small New England villages sport water mains and sewers-then think again. How about the hilltowns? Hamlets like Becket and Blandford. Chester and Egremont. Middlefield, Monterey and Mount Washington. We were talking about water mains and sewers weren't we? Pretty high class stuff, what? What about the highwayman who maintains plain, old, garden-variety dirt roads? What about him?

Yes, what about him? What's to maintaining a dusty, old country lane? Cows meander along it come milking time. A few beat-up trucks rattle along it daily. Then there's the guy from the city with three small kids and the pretty blonde wife. He's the big-time TV writer who bought the old Snow farmstead near the top of Jug End Mountain road. They also have a new Chevy Blazer so what's to worry about?



Well, ordinarily nuthin', but then our highwayman is suddenly awakened one night about two and a half hours after he's just snuggled down. Wide awake now because he's right in the middle of one of those high-tech, high-volume thunder and lightning storms the Lord sees fit to throw at mankind every once in a while in a fruitless effort to wash away their sins.

We don't know how successful the Lord was with the sinners, but He sure as hell knows how to pick the right crevice on a sloping dirt road, match it up with a wisp of a rivulet so that in the space of two or three hours He's managed to create a spectacular torrent of water. This newly formed river has easily eaten a four-foot gully across that dusty old road used by some cows, ancient trucks and the city slicker with his new four-wheel drive vehicle filled to the brim with kids.

Kids! God, suppose lightning strikes their new house? How's Josh gonna get those damned old cows of his to pasture tomorrow? And if Norm can't get down the road to get his Eagle on time the highwayman will be hearing about that 'til the next town meeting. There's no need to go on, is there? You know what's coming next, don't you? Think so? Well, read on anyhow.

He drags himself out of bed. Phones his helper. Meets him on the gullied road; puts up the safety barriers. Then he's off to the sand bank. He loads the truck with trap rock.

Because he's played this scenario before he knows by instinct this is going to be one of those infamous rainstorms that can drop as much as eight inches of water on his hilltown in less than two hours. Back at the gullied road he grinds up the hill in low-low, half praying he won't get mire down or run off the shoulder with all that heavy-duty tonnage right behind his head. How many hours? Who knows?

Highwayman cont. on p. 4

Advisory Committee Meets

On Wednesday, August 31, the Baystate Roads Advisory Committee met at the MDPW maintenance headquarters in Wellesley. The agenda included an update of Baystate Roads activities, a review of proposed workshop topics, a discussion of expanded Program options, and the selection of a new Committee Chairman. Gerard Daigle, the first chairman of the Advisory Committee, received a certificate of appreciation for his valued contributions. The new Chairman will be Richard Tracy, Highway Superintendent in Westhampton.

Statistics on past workshop attendance showed that last year, almost half the communities in the State (167 different municipalities) attended at least one Baystate Roads workshop; two thirds of these municipalities attended more than one. Most communities claimed savings from what they learned, some, optimistically, as great as \$500,000. The Advisory group strongly supported the workshop choices and format.

Talk of an expanded Program centered on three elements: a traveling video roadshow to bring mini-training sessions directly to highway department personnel; the employment of retired engineers or public works superintendents to conduct the video roadshows; and the expansion of the number of workshops annually presented. The magnitude and precise features of an expanded Program are still undecided at this time; therefore, feedback to Advisory Committee members on the three proposed elements is encouraged.

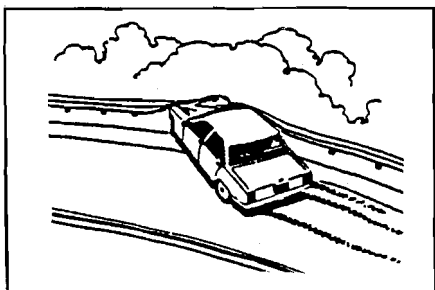
For more information about the Advisory Committee meeting, and to offer additional feedback, please call one or more of the following Advisory Committee members: Charles Reavey, Princeton Highway Department, (508) 464-2752; Gregory Dillard, Circuit Rider for Southhampton, Westhampton, and Chesterfield, (413) 527-8460; Gerard Daigle, Bellingham High-



Gerry Daigle (right) receives certificate from Paul Shuldiner

way Department, (508) 966-0203; Phillip Pattison, South Hadley DPW, (413) 538-5033; Leighton Peck, Plymouth DPW, (508) 747-1620; Ernest Virgilio, Mashpee DPW, (508) 477-1828; Don DeHart, Danvers DPW, (508) 777-0001; Robert Noyes, Sudbury Highway Department, (508) 443-2209; George Munyon, Lunenburg DPW, (508) 582-4232; Warren Anson, Egremont Highway Department, (413) 528-0182; Richard Tracy, Westhampton Highway Department, (413) 527-0136; Edward Bates, Metropolitan Area Planning Council, (617) 451-2770; Stanley Ziomek, Amherst DPW, (413) 253-3355; Matthew Turo, MDPW, (617) 235-6100; Richard Buser, FHWA, (617) 494-2316; and Meryl Mandell, Paul Shuldiner, or John Collura, BRP, at (413) 545-2604.

FREE GUARD RAILS



Do you have damaged guard rails or other highway appurtenances (signs, light poles, call boxes) resulting from a recent traffic accident? If your town has insurance, you can save your municipality money, time, and effort on accident repairs to damaged public property. For State owned property damage, approval for the repair project "release and authorization" is made through the Commonwealth's Accident Recovery Program (ARP). If insured town property is damaged, use one of the ARP's prequalified contractors. In

either case, the procedure is simple and straightforward.

Just supply a copy of the accident report describing the property damage to one of the ten insured, prequalified, approved contractors participating in the Accident Recovery Program. Whether the damage is on a State or town road, they will do just about all the work from that point on... It is the contractor's responsibility to apply for insurance coverage for the repairs, work with Massachusetts Department of Public Works (MDPW) District personnel for project approval, handle all paperwork, document the accident site, provide emergency repairs if necessary, make approved repairs, and generally do all the legwork associated with accident repair work.

This Program may sound too good to be true, but it isn't. If you're still skeptical, just ask Highway Superintendent Ralph Chipman of Framingham (508) 620-4891, Highway Super-

intendent Robert Bartlett of Hopkinton (508) 435-3862, or Highway Superintendent John Antelek of Natick (508) 651-7310, who have all saved their towns time and money by using the prequalified contractors authorized to repair State owned appurtenances for State and municipal appurtenance repairs. The ten approved contractors as of August 28, 1987, are: Bartlett Consolidated in Plymouth (508) 746-4246 or (617) 742-6735; Municipal Technologies Corp. of Framingham (508) 872-1276; Paul E. Bleile Co. of Norwalk, Ohio (419) 688-2877; Metropolitan Fence Co. of Dorchester (617) 265-7636; Guthrie Fence Co., Inc. of West Springfield (413) 734-2128; N.E. Chain Link Fence Co. of Dorchester (617) 288-7777; G.B. Hastie Fence Co., Inc. of West Springfield (413) 732-6541; T.L.T. Construction Co. of E. Hartford, CT (203) 528-6508; F.M. Severyn Co. of Ludlow (413) 583-3945; and Delucca Fence Company Inc. of Methuen (508) 688-2877.

Highwayman (cont.)

Who cares? He isn't being paid by the hour anyhow. Those taxpayers only know about overtime when it pertains to them...not him.

The road's finally fixed. The city slicker wonders where all that rock came from during the night. Josh chews on his cigar and allows, "It ain't a bad job, but I wouldn't ha' done it that way." Norm got his Eagle, and the highwayman sinks back into his rumpled bed while the rest of the world is up at its normal time doing normal things. The reason the rest of the world lives normal lives is because the life of a highwayman, by comparison, is quite un-normal.

When life's running smoothly and his day's work's over, he's apt to go home, shower, grab a quick bite; then back to the Town Hall playing the role of diplomat for the town's selectmen. He plies his trade well, for he knows the tortuous journey through the minefields the selectmen have laid for him. His hands hurt, his body sags a little, he has indigestion from his hurried meal, but he doggedly sticks to his guns until he's convinced the selectmen how badly he and his men need that new vehicle.

We paint a pretty bleak picture of a superintendent's life. What does he do for recreation? Are there no justifiable rewards in his job? Of course there are. He gets to play "Gotcha" in the wintertime which helps relieve those long, mindnumbing hours behind the wheel of the snowplow.

For the innocent who's never played, the rules are quite simple. All the player needs is the support of Mother Nature. In those early winter snows, before Jack Frost really knows whether he's going to hang around for the rest of the season or not, he's sometimes lax enough not to really make crisp, light, dry snow. In his slovenly way he produces a mixture of wet, heavy slush. This is a product no one really enjoys-least of all the highway plowman. But to keep those lonesome hours from becoming too deadly, our friend might just adjust the speed and thrust of his plow so that every aluminum RFD mailbox becomes his arcade.

Most homeowners are on to his game and consequently have braced their boxes against the impish wiles of the highwayman. However, there's always the fellow who says, "Aw, this is good enough for now...I'll really do a good job before the cold weather comes."

This is the guy who warms the bones of our weary plowman. As our highwayman sees "I'll-Do-it-Later"'s mailbox caroming end over end into the darkness where his headlights never shine, our victor smiles to himself, wiggles down deeper in his lumpy seat, and, as he feels a surge of refreshing vigor creep over his tired bones, murmurs to himself, "Gotcha!"

Finally he plays his last role-that of loving father and husband. He's already put in a day that would break most men, but he's on stage again for the last few hours of the day, doing what's expected of fathers; playing his part as husband. He doesn't really object to either role, but a cold beer and a snooze in front of the TV wouldn't be such a bad thing either.

So here we have the composite picture of the highway superintendent. A man with the patience of Job. The insomnia problems of the obstetrician. The artistic eye of the land-

scape artist, the political wiles of a Disraeli, the vexation of an imp, the gentleness of a father, and the warmth of a loving husband.

Argumentative at times, like the rest of us, but it's the warmth in his heart, driving him to do his best for the sake of humanity that creates the final image.

Quite a complex individual, our "highwayman." He wears shoes not every man can fill...big ones.

[Reprinted in its entirety from the Berkshire County Highway Association membership brochure.]

Salt (cont.)

- Build a concrete floor and provide cover to sand-piles in the off season (salt piles are already fully enclosed).
- Educate the public regarding winter safety concerns on local roads, especially in salt restricted areas.
- Work with neighboring communities and the Mass. DPW to protect common environmentally sensitive areas.
- Formalize employee training on winter maintenance policies and practices.
- Keep more detailed records on salt use and accident location and frequency.
- Consider use of Verglimit for future selected applications if cost effectiveness improves.

In summary, the goal of the Wellesley DPW is to maintain the current level of vehicular safety and service while minimizing the environmental impacts of sodium use. By using calcium chloride, tailoring chemical application rates, and diluting the sand/salt mixture, Wellesley estimates a 15% reduction in sodium use townwide. In watershed areas, a 33% reduction in salt use is forecast, which should decrease groundwater sodium levels. However, because salt reductions in watershed areas could impact driver safety, accident rates will have to be monitored closely.

William Edgerton, Program Manager for the Wellesley DPW, recommends that, "...each community considering a restricted road salt program study it fully, and carefully craft a policy that balances potential environmental gains with the need to maintain vehicular safety, while being logistically, administratively, and financially feasible. We also recommend a concerted public education campaign. In Wellesley this was done through specially designed road signs, advertisements, posters, bill inserts, special mailings and public service announcements."

This article is based on the report, "Town of Wellesley Department of Public Works Sanding and Salting Policy and Winter Maintenance Practices - October 1986." To obtain a copy of the report, contact Program Manager William Edgerton, Wellesley DPW, 455 Worcester St., Wellesley, MA 02181; (617) 235-7600.

PRIVATE WEATHER FORECASTING FOR WINTER HIGHWAY MAINTENANCE

by
JOHN P. MURPHY
Vice President
Weather Services Corporation
Bedford, Massachusetts

Every winter season snow and ice storm emergencies take top priority for highway crews. Dependable weather forecasts specially tailored to the exact location of each highway department's area of responsibility can make the emergency more manageable.

SOURCES OF WEATHER INFORMATION

Weather information from many sources is available. The National Weather Service (NWS) provides routine weather forecasts for rather large general areas. It also provides most of the observational data and computer products used by all private meteorological offices. These forecasts are not designed to describe specific weather conditions over a relatively small geographic area, especially when conditions change rapidly and unexpectedly. Local radio and TV forecasts augment NWS forecasts, but are perishable unless you "stay tuned."

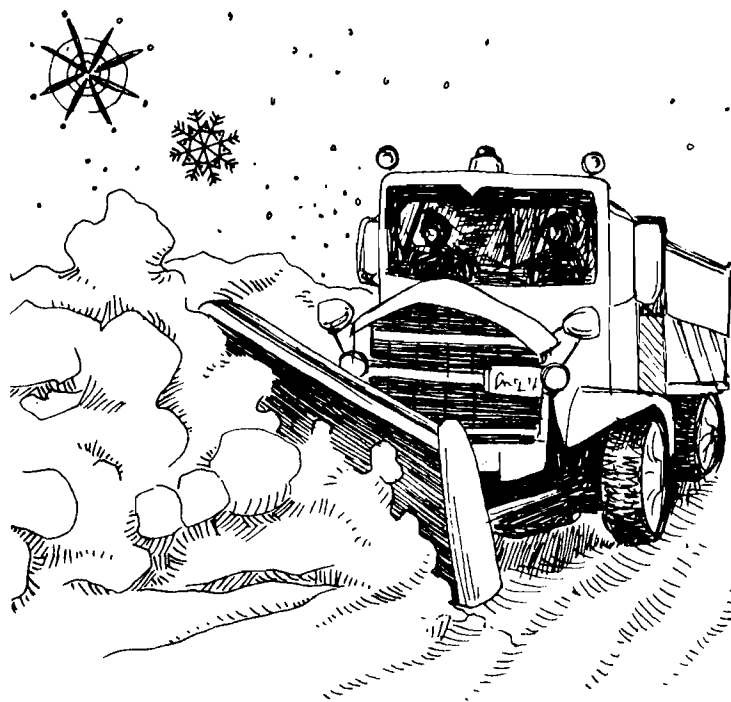
PRIVATE WEATHER SERVICES

Private weather services more or less step in where the NWS leaves off. Forecasts are refined for the exact area of interest with generalities limited to an absolute minimum. Experience is invaluable in pinpointing a weather forecast to a specific location. Temperatures may vary as much as ten to fifteen degrees within a radius of a few miles. This can mean the difference between ten inches of snow which must be plowed, or an inch of rain flowing harmlessly down catch basins.

A good private weather service provides just what the name implies, service. Forecasters are well briefed as to the weather sensitivity of each client. Revised forecasts are communicated immediately upon the detection of any consequential change in expected weather. If a weather situation develops unexpectedly after working hours, the client is notified, even if it has to be at his home. The client may also telephone and consult directly with the meteorologists.

PROFILE OF STORM WARNING SERVICE USERS

1. State highway departments, toll roads, or county headquarters: require continuous scheduled daily information, monitoring and updating of storm developments; communicate by telefacsimile, high speed printer, or personal computer (telephone used for special storm consultations); cost roughly \$3,000.00 to \$15,000.00 per year.
2. Other state agencies, bridge authorities, and large cities with 24 hour snow and ice control operations: single



telephone forecast for the entire area; client notified of expected snow or ice; fee range of \$1000.00 to \$3000.00 per year.

3. Small municipalities and towns: private weather service initiates all calls and provides telephone "alerts" for snow or ice threats or for storms that threaten life or property; basic service fees of \$1000.00 per year, with additional seasonal services to \$1800.00 per year.

WHY SUBSCRIBE TO A PRIVATE SERVICE

- Safety** - to insure that their men and equipment will be available when needed for the protection of life and property.
- Economy** - to allow the maximum use of men and equipment at the lowest possible cost.
- Ecology** - to prevent the unnecessary or promiscuous use of chemicals which could be detrimental to the environment.
- Legal** - because of the increasing litigious nature of our society, some clients are anxious to have the records show that their department is making every reasonable effort to maintain safe traveling conditions in their area of responsibility.

When one considers the amount of money spent on snow and ice control each year and measures it against the cost of a private weather service, there does not seem to be much question as to the potential for substantial savings. If the starting time of a storm is predicted within one or two hours, the service could pay for itself for the season. In a border line situation of whether or not to call out the plows, the correct decision could justify the service cost for an entire year.

SELECTING A PRIVATE WEATHER SERVICE

Major factors relevant to selecting a private weather service are the background and experience level of

Weather cont. on p. 11

THE WORD ON THE STREET

The Law on State Curb Cut Permits

Municipalities have bylaws or ordinances for regulating curb cuts onto local roads. Curb cuts on state highways within municipalities are governed by state law. However, municipal officials may review and comment on state curb cut applications. Some highlights on the state curb cut permit law follow:

- No one may dig up, make an opening onto, or place or remove trees on a state highway without a written curb cut permit from the Massachusetts Department of Public Works (MDPW)
- MDPW can not issue the permit if the municipality objects in writing that the permit will adversely affect highway safety, and MDPW accepts this finding

- A 1988 ammendment requires a permit for sites with an existing curb cut if a new project will result in a "substantial increase in or impact on traffic"
- Municipalities are helping enforce the law by not issuing building permits until a curb cut permit has been obtained (or applied for)
- Verification of a road as a state highway can be made by the District MDPW Office
- Municipalities are not routinely notified of state curb cut permit applications
- If local officials have questions concerning project compliance with the state curb cut law, they should notify their MDPW District Office



NOTE: The above summary is based on a longer memorandum prepared by Attorney Leonard Kopelman, of the Boston law firm of Kopelman and Paige. For a copy of the complete memorandum, write or call the Baystate Roads Program (413) 545-2604.

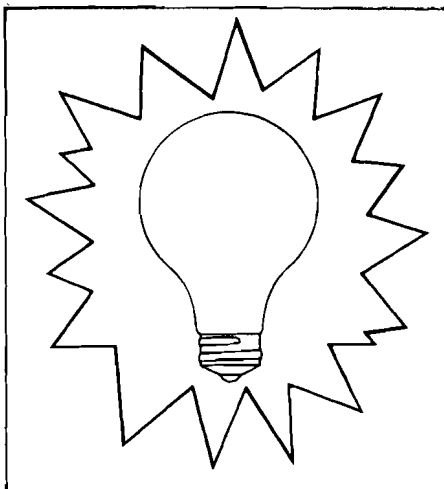
BRIGHT IDEAS...Had any lately?

"A motorized four-wheel drive toy truck is being used by sewer inspectors in Portsmouth, VA, to pull a television camera through sewer lines. The truck, which costs \$11, saves the city \$100 per hour over the old sewer line inspection method. In the first year of the truck's operation, the savings has totaled approximately \$4,500." - From the June 6 ICMA Newsletter, submitted by Connie Gray, Planning and Professional Development Coordinator, Division of Local Mandates, Boston, MA.

Have you seen or heard about some nifty, time saving, cost saving idea that your neighbor might find useful? Maybe you even came up with the brainstorm yourself? If so, please send it to Meryl Ann Mandell at the Baystate Roads Program (413) 545-2604, and GET YOUR NAME AND TOWN IN MASS INTERCHANGE.

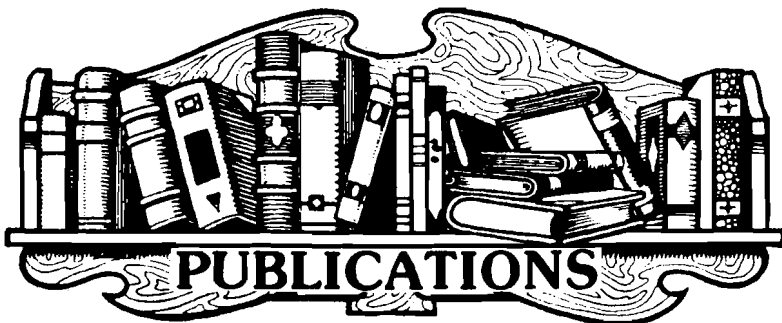
CONGRATULATIONS! to Earl Fay, Highway Superintendent in Pelham, and Saeed Kashi, Assistant Town Engineer in Falmouth, for spotting a mis-

take in the *Inspector's Job Guide for Highway and Street Construction/Road and Highway Maintenance Tables* produced by the Baystate Roads Program. On the page one table "Square Yards of Road Surface for Various Road Widths," under the column "road width," 19 and 20 should correctly read 20 and 22. With these two changes, the square yards of road surface figures are correct. Thank you both for letting us know about the mistake.



BRIEFS

Reminder: the Baystate Roads Program is still looking for retired engineers and public works officials to strengthen the link between the BRP and transportation agency professionals. We hope to use the many talents of retired professionals to help us design and offer educational and training programs to meet local needs. The BRP is considering an expanded training program where we would bring videotapes and a VCR to local highway garages. To do this, we need certain resources, the most important of which are trainers who could lead the mini-workshops. The trainers would work with the municipalities to select topics, choose videotapes, present the materials, and handle questions that arise during the videotape showing. The retiree would be reimbursed for traveling expenses, and paid a negotiated hourly rate. This outreach program is at the "talking" stage, but it could optimistically be implemented during 1989. Please call Meryl at (413) 545-2604 if you are interested, or if you know of someone who might be interested.



Unless indicated, these reports are available to public agencies at no cost, while supplies last, from the Baystate Roads Program. There is a small fee for private agency requests. Reports listed in previous issues of "Mass Interchange" are available while supplies last. To obtain a copy, indicate your choice(s) in a letter to the Program, or call Meryl Ann Mandell at (413) 545-2604.

New Listings

- The Kansas University Technology Transfer Center has produced four excellent topical newsletters. Articles from numerous sources were compiled into the following issues: Street Maintenance and Management Issue (20 pages - 2/88); Bridge Maintenance and Management Issue (20 pages - 5/88); Microcomputer Applications in Transportation (20 pages - 8/88); and Management and Financing Issues (20 pages - 11/88). Photocopies of each of these are available.
- "Cutter on Wheel Loader Does Job on Aged Asphalt," Roads and Bridges, (2 pages - September 1987). A shop-designed cutter wheel that attaches to the bucket of a loader is described. It is used for removing distressed pavement quickly and quietly for neighborhood street repair and maintenance.
- "Paser Manual - Pavement Surface Evaluation and Rating," Transportation Information Center, University of Wisconsin - Madison, (39 pages - 1987) A rating system is developed to evaluate pavement surface condition and distress problems. Asphalt problem pavements are described, along with suggestions for appropriate repairs. The rating system is presented using photographs to show the distresses.
- "Pavement Design and Rehabilitation," Course Notes, Univ. of WA, Oregon State, WA State DOT, for Western Direct Federal Division, Federal Highway Administration (287 pages - 1988). These technically oriented short course notes were used as part of a training course for engineers. They outline the concepts and development of mechanistic pavement designs for flexible pavements.
- "Surface Treatment Manual," Chevron U.S.A. Inc., (54 pages - 1985). This very basic manual provides an overview of numerous surface treatments, why they should be used, when different treatments should be used, some general considerations, the materials that are used, and construction procedures. Photographs and graphics accompany the text.
- "Retroreflectivity of Roadway Signs for Adequate Visibility: A Guide," Bellomo-McGee, for FHWA (49 pages - 1987). This comprehensive manual covers many aspects of roadway sign reflectivity, including interpretation and test procedures for sign sheeting reflectivity. The following topics are presented: principles and characteristics, considerations for selection, specification and testing, fabrication, handling, stockpiling, installing, inventory, inspection, replacement, and maintenance.
- Two training program notebooks are available from International Support Services, a consulting company contracted to develop training programs for rural transit providers. They are "Substance Abuse Awareness in Rural Transit," and "Understanding

the Needs and Capabilities of Special Passengers." Both come with audio and videotapes on the material, and cost \$92.50 and \$155.00 respectively. Order directly from ISS, at 8330 Old Courthouse Road, Suite 885, P.O. Box 405, Vienna, VA 22180. The phone number is (703) 761-3030.

- "Maintenance Management Systems Course Manual, Equipment Management Systems Course Manual", M2 Ltd., for FHWA (1985). These manuals explain how to implement an MMS and an EMS. It is aimed at the Maintenance Manager and the Equipment Manager, and presents in a straightforward manner the concepts for designing and developing an MMS and EMS. These were used at a recent Baystate Roads workshop, and will be used again when the workshops are repeated from January 31 to February 2. Either one or both of the manuals can be requested, however, only a small number are on hand.

Videotape Lending Library New Acquisitions

The videotapes listed below have been added to our Video Lending Library Holdings. To borrow a copy, or obtain a complete listing of our holdings, send a note or call the BRP with your request. A Borrower's Registration Card must be on file before a tape can be borrowed.

- MO-159 Maintenance Management System, Equipment Management System (35, 38 min) - from recent BRP workshop
- MO-160 Blading Unpaved Roads (22 min) - produced by NACE
- MO-161 Road Sense with Calcium Chloride (18 min) - from General Chemical
- PA-112 Local Pavement Management Workshop 6/14/88 (210 min) - from recent BRP workshop

CALENDAR

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

November 2-4

APWA Education Foundation
Household Hazardous Waste Management
Boston, MA
Contact: APWA
(312) 667-2200

early November

First Meeting
MA Inst. of Transp. Engineers
Open to all
Contact: John Kennedy
Meeting Coordinator
(617) 783-7000

November 9

Fall Meeting
Massachusetts Highway Association
Quality Inn, Chicopee
Contact: Harry Loftus
MHA Secretary
(508) 485-1973

November 9

NE Chapter APWA
Microcomputer Workshop
am - CAD; pm - Equip. Mangt. Sys.
Colonial Hilton, Wakefield
Contact: Lon Hultgren
(203) 429-3332

November 9

Amer. Soc. of Civil Eng.
Design & Const. Using Geotextiles
Holiday Inn, Randolph
Cost: \$295 members, \$345 non-mem.
Contact: ASCE
(800) 548-2723

November 30

NE Chapter APWA
Snow and Ice Workshop
Durham, New Hampshire
Contact: S. Robert Pryzby
Secretary-Treasurer, NE APWA
(203) 659-2711

December 7

NE Inst. of Transp. Engineers
Annual Section Business Meeting
Providence, R.I. Area
Contact: John Kennedy

December 15-17

Travel Forecasting with Microcomputers:
the Quick Response
U. Tenn. Transp. Center
Cost: \$395
Contact: Jean Spangler
(615) 974-5255

January 6-8, 1989

MA Municipal Association
Annual Meeting
Boston, MA
Contact: MMA
(800) 882-1498*
*Note: BRP and MHA will
cosponsor a mini-workshop
on "Information and Training
for Municipal Highway Employees"
- call Meryl for details

January 17-19

Training Course for Worksite
Traffic Supervisors
American Traffic Safety

Services Association

Cost \$275 members, \$395 non-mem.
Boston, MA
Contact: ATSSA
(800) 272-8772

January 22-26

Transportation Research Board
Annual Meeting
Washington, D.C.
Contact: Conference Manager
(202) 334-2934

January 31-February 1

Maintenance Management Systems
February 1-2
Equipment Management Systems
One and 1/2 day workshops
Baystate Roads Program
Contact: Meryl Ann Mandell
(413) 545-2604
See enclosed enrollment form
(size limit of 30)

mid February

Annual Dinner Dance
NEITE
Mystic, CT
Contact: John Kennedy

February 9

Winter Meeting
Massachusetts Highway Association
Lantana Restaurant, Randolph
Contact: Harry Loftus

March 6-7

APWA Education Foundation
Emergency Management in Public Works
Boston, MA
Contact: APWA

March 8,9

Personnel/Labor Relations
Baystate Roads Program
Contact: Meryl Ann Mandell
Note: Watch for a brochure

Construction Definitions:

Contractor: a gambler who never gets to shuffle, cut, of deal.

Bid Opening: a poker game in which the losing hand wins.

Bid: a wild guess carried out to two decimal places.

Low Bidder: a contractor who is

wondering what he left out.

Engineer's Estimate: the cost of construction in heaven.

Project Manager: the conductor of an orchestra in which every musician is in a different union.

Critical Path Method: a management technique for losing your shirt under perfect control.

Delayed Payment: a tourniquet applied

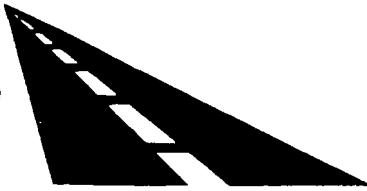
at the pockets.

Completion Date: the point at which liquidated damages begin.

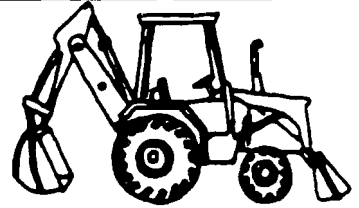
Liquidated Damages: a penalty for failing to achieve the impossible.

Auditor: person who goes in after the war is lost and bayonets the wounded.

Lawyer: person who goes in after the auditors and strips the bodies. (from The Bridge, Spring 1988)



Back by popular demand, the Baystate Roads Program is pleased to announce a repeat performance of two one and one half day workshops, offered on three consecutive days, on the design and implementation of a



Maintenance Management System (MMS) and an Equipment Management System (EMS)

When: January 31, February 1, 2, 1989. MMS course check-in is at 8:00 am, January 31, with the workshop starting at 8:30 am and ending after lunch on Wednesday at 1 pm. EMS course check-in is after lunch at 12:30 on February 1, with the workshop beginning at 1:00 pm and ending on Thursday at 4 pm.

Where: The Comfort Inn; 235 Elm Street; Dedham, Massachusetts.

Purpose: MMS will help your organization:

- Set up performance goals and policies in your organization
- Define work activities, quantity standards and performance standards
- Develop a feature inventory, a work program and a performance budget
- Distribute manpower, materials and equipment to achieve your annual objectives
- Perform short-term scheduling and control the assignment and performance of work and evaluate the success of your program.

EMS will help your organization:

- Develop a long-range fleet program and control equipment to achieve maximum utilization
 - Design and improve maintenance procedures to decrease downtime and repair costs
 - Design and implement a system for ordering, stocking and controlling parts and supplies
 - Distribute manpower, materials and equipment to achieve maximum productivity within your budget
 - Set up an integrated information system to plan, record and track use of equipment.
-

Objectives: Upon completion of the workshops, participants should:

- Understand the function of the components of maintenance and equipment systems
- Understand how to design and use these systems
- Justify maintenance and equipment program needs through a systematic approach
- Understand how computers can make the use and design of these systems easier.

Instructor: This FHWA workshop will be taught by Michael R. Pellet, of *M² Ltd.*, one of the course developers.

For Whom: These one and one-half day workshops are designed for municipal superintendents, maintenance managers, fleet managers and others responsible for the management and supervision of maintenance and equipment operations.

How Many: Both courses are limited to the first 30 registrants. Registrants may sign up for one or both workshops.

Cost: The course fee is \$30 for one workshop and \$50 for both workshops

Accommodations: A block of rooms has been reserved in the Comfort Inn for the nights of January 30, 31, and February 1. Attendees should contact the hotel directly at (617) 326-6700, no later than January 24, 1989, for reservations. Be sure to request the rooms held for "Baystate Roads." Hotel rates are \$59 single and \$64 double occupancy.

DIRECTIONS

The Comfort Inn/Thackeray's - Dedham

Take Rte. 128 to Exit 15A (Rte. 1 Dedham); turn right at the first traffic light onto Elm Street. The Comfort Inn/Thackeray's is at 235 Elm Street, a 1/4 mile on the right.

DETACH & MAIL

Enrollment Form

Name _____
Title _____
Agency _____
Address _____
City _____ Zip _____
Telephone _____

Return this form directly to:

MERYL ANN MANDELL
BAYSTATE ROADS PROGRAM
MARSTON HALL 214F
DEPARTMENT OF CIVIL ENGINEERING
UNIVERSITY OF MASSACHUSETTS
AMHERST, MA 01003
TEL: (413) 545-2604

Registration Fee:

\$30.00 for one workshop

\$50.00 for both workshops

Workshop Choice(s)

January 31 & February 1 - MMS

February 1 & 2 - EMS

Make checks payable to:

University of Massachusetts

Workshop fees are due by January 16. (If a check cannot be issued by the 16th, call by the 16th to have a space reserved. Checks and cash are acceptable payments; we do not handle purchase orders.)

Hotel Accommodations should be made directly.

Lunch and course materials are included.

Mailing List Update

Help us keep our mailing list up to date!! This is your opportunity to ask us to:

- ☐ remove my name from the mailing list
- ☐ correct my name as shown below
- ☐ change the mailing label to reflect a new town employee
- ☐ add my name or a friend's name to the mailing list
- ☐ stop sending me duplicate copies of everything

Old Mailing Label

PLEASE TAPE OLD LABEL HERE

New Mailing Label

Full Name

Title

 Agency

Address

Street

City

 State

 Zip

Telephone ()

Comments or Suggestions:

DETACH & MAIL

NOTICE: "AGENCIES WITH SIGN DATING PROGRAM NEEDED"

The Federal Highway Administration is conducting a research project entitled "Service Life of Retroreflective Signs." The objectives of the study are to: isolate variables (sign age, sheeting color and type, orientation, etc.) which affect sign reflectivity deterioration; and develop predictive equations to estimate the specific intensity for signs in use, for inclusion in the FHWA Sign Management System.

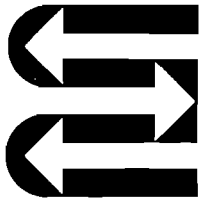
In order to accomplish these objectives, a national sign sampling effort will be undertaken by the contractor,

Bellomo-McGee, Inc. They are in the process of identifying State and local agencies that have had a sign dating program for a number of years. If your agency marks the date of installation or fabrication on the sign or has a computer inventory that includes date of installation, please contact the principal investigator, Mr. Kent Black, at Bellomo-McGee Inc., 8330 Boone Boulevard, Suite 700, Vienna, Virginia 22180, Phone (703) 847-3071. No manpower requests will be made of your agency as a consequence of your responding.

Weather (cont.)

the weather service facilities, and the organization's particular experience and reputation in serving clients with similar requirements. Before deciding on a private weather service, obtain a list of clients for first hand information concerning forecast accuracies, the type of service you may expect, and the availability of professional consultation services after normal office hours.

This article is adapted from Baystate Roads Bulletin B-07-88, of the same title.



Massachusetts Department of Public Works
Federal Highway Administration
University of Massachusetts/Amherst



Route to:

1. _____

2. _____

3. _____

Non-Profit Organization
U.S. POSTAGE PAID
Permit No. 2
Amherst, MA
01002

Baystate Roads Program
Dept. of Civil Engineering
University of Massachusetts
Marston Hall 214F
Amherst, MA 01003

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The Baystate Roads Program, which publishes *Mass Interchange* each quarter, is a Technology Transfer (T²) Center created under the Federal Highway Administration's (FHWA) Rural Technical Assistance Program (RTAP). FHWA is joined by the Massachusetts Department of Public Works, the Department of Civil 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 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.

To contact Baystate Roads staff to receive future copies of this newsletter at no cost, or to submit ideas or articles to *Mass Interchange*, call Meryl Ann Mandell at (413) 545-2604.