

M A S S I N T E R C H A N G E

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LIGHTS... CAMERA... CALIBRATION !

New Baystate Roads Video

Baystate Roads has tapped our favorite snow and ice instructor, Paul Brown, and program coordinator, Matt Tassinari, to produce an "indie" on **"Sand and Salt Spreader Calibration."** Timing could not have been better; there are still enough shopping days to find that perfect Hawaiian shirt and adjust the spreader before the snow flies. Request your copy of [MO-256](#) (DVD or VHS format) along with a Calibration Chart by emailing: baystate_roads@hotmail.com

Salt can damage plant life, contaminate ground water, and rust vehicles. Sand can contribute to air pollution and clog drains and waterways. Budgets become tighter, resources more limited and salt and sand more expensive every year. If every truck in an average fleet spread an excess of 5% throughout the season, it could result in an over application of thousands of tons of salt. One solution to reducing waste, increasing efficiency and protecting the environment is better control of material

application and Paul will guide you through the process as he has done at many program workshops.

Whether your truck is equipped with a ground speed control or not, it is important to make sure every spreader is calibrated according to the manufacturer's specifications at the beginning of each winter season and anytime work is done on the spreader or its control system. Most trucks are now equipped with ground-speed oriented, spreader controllers (Ravens) to further help control the use of material. In the past, it was common practice to load a truck with material (50% salt/50% sand) and set the spreader to disperse all material on the prescribed route. The truck returned with just enough material to help provide weight for traction on slick roads and was reloaded and sent out again. The ground-speed oriented systems help reduce the amount of material spread by automatically monitoring the rate so just enough material is used to treat roads for a given situation.

LTAP Local Technical Assistance Program

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MassHighway

Project Development & Design Guide



One of the new sections of the guide is a toolbox chapter on **Access Management**. **Chapter 15** is organized to describe the context in which access management is commonly used; MassHighway's role in managing access, including guidelines and driveway design; other access management techniques; and in land use strategies that local jurisdictions can use as part of a program.

In relationship to context, the application of access management tools varies according to the area through which the roadway passes and the function of the roadway itself. It can be an important part of new designs or applied on retrofits of existing facilities. In Massachusetts, the vast majority of access management activities involve retrofitting existing facilities.

Access management must consider road design principles as well as land use planning principles to be effective with collaboration between MassHighway and the appropriate communities. While MassHighway is responsible for providing a safe transportation network, local jurisdictions are responsible for orderly growth patterns that minimize the impacts of land use on the transportation system.

Approaches to managing access through land use controls at the local level include:



Zoning and New Development

Local zoning revisions are often required to effectively implement access management. Land use and access control are improved when zoning addresses development in areas with good multi-modal access, requires shared access on roadways and reduces strip development.

Subdivision regulations and local ordinances should require minimum lot frontages, dimensions, and street layouts that recognize the intended function of the roadway (traffic flow versus property access). The higher the classification, the fewer the number of access points that should be provided along the roadway. When towns require minimum parcel frontages on important roadway corridors, enforcement of driveway spacing standards can be enforced. Chapter 7 of the *Access Management Manual* provides guidance on land use zoning, access controls and subdivision site plan review processes for full achievement of an access management plan.

Highway Corridor Overlay District (HCOD)

HCODs involve standards governing access, visibility, and corridor aesthetics regulating the number and location of access points, inter-parcel connections, size and location of signs, and landscaping and buffer requirements. These usually regulate parcels on an arterial highway.

Retrofitting Existing Development

It is important for a comprehensive access management plan to improve current problem areas and consider potential impacts of new development. While some land uses may be replaced in the future, a best-fit approach is ideal in trying to achieve objectives with existing uses; i.e. a new shopping center could provide an access road that connects to an existing church property allowing for modification of access to the church.

continued on page 5

David B. Rundle

Master Roads Scholar



The newest Master Scholar at Baystate Roads is David Rundle, PE, a retired city engineer from Holyoke, MA. Dave holds a BSCE degree from the Massachusetts Institute of Technology and has attended many of our workshops while employed for that city since 1976. He had a diverse background prior to then including two years as a construction engineering officer in the U.S. Army, as a private consultant for three different firms, as a transportation planner in Boston, and as a city engineer for Dover, New Hampshire.

After ten years at the Department of Public Works in Holyoke, Dave became the town engineer and acting public works director for South Hadley, MA, but returned to Holyoke the following year. The interlude in South Hadley was interesting in that the town was in the process of forming a public works department by combining the park, highway, landfill, and waste water treatment divisions under one heading. As director, Dave remembers a very long winter in that town because it seemed to snow every weekend and the work load was severe while trying to cover all the bases.

Upon his return to the Holyoke DPW, Dave's responsibilities covered drainage, sewerage, traffic, parks engineering, surveying, subdivision and site development review as well as inspection and review of plans by other agencies. Tasks also included the design of sewers, drains, street reconstruction, athletic fields, and traffic improvements. He worked with private consultants, state officials, and other agency personnel to design major arterial reconstruction, infrastructure for regional malls, bridge

rating reports, recreational facilities, and sewer and drainage improvements.

Accomplishments include establishment of survey coordination and city standards for traffic signals, subdivision roads, sidewalks, benches, street signs and drive-ways. Dave has been instrumental in excluding invasive exotic plants from city projects, subdivisions, and commercial and industrial projects. The City of Holyoke has benefited from his expertise through improved traffic signal coordination, aesthetics, and operations in addition to the removal of unwarranted signals. Sewer separation with the highest benefit/cost ratio has reduced the demands on Holyoke's taxpayers. Of course, this was all achieved after attending "millions upon millions" of meetings.

Since retiring in 2001, Dave has done a minor amount of private consulting and continues to participate in various town committees in South Hadley where he and his wife live. They have two grown daughters. He is active in environmental organizations that are particularly focused on control of invasive exotic plants and in protecting land crucial to the survival of important ecosystems.

Please join us in congratulating Dave Rundle on his fine achievement. Even though retired, he still attends our workshops and will be a valued participant at the Baystate Roads Advisory Board meetings. We look forward to profiting from his expertise and learning which plants are offensive.

MUTUAL AID AGREEMENTS and NIMS TRAINING

The hurricanes striking Florida and the Gulf Coast in the last two years have made preparedness and emergency response hot issues in communities around the country. The term first responder now includes emergency management, public health, and public works as well as police, firefighters and EMTs. This recognition is only fitting, given the assistance that public works personnel have provided in getting facilities back in working order for the public.

WHAT IS NIMS?

Under Homeland Security Presidential Directive 5 (HSPD-5), the Department of Homeland Security (DHS) is responsible for the coordination of the federal preparations, response and recovery from terrorist attacks, major disasters and other designated emergencies. HSPD-5 directed DHS to create two documents: a National Incident Management System (NIMS) and a National Response Plan (NRP) which provide a single, comprehensive national approach to incident management. Beginning October 1, 2006 federal preparedness funding is conditioned upon full compliance with NIMS. The six components included in NIMS are:

- ☑ Command & Management
- ☑ Preparedness
- ☑ Resource Management
- ☑ Communications & Information Management
- ☑ Support Technologies
- ☑ Ongoing Management & Maintenance

The key component is **Command & Management** but from a public works perspective, the next most important is **Preparedness** which recognizes that response is significantly enhanced if personnel have worked together prior to an incident. NIMS addresses these training issues by offering on-line courses.

All personnel with a direct role in emergency preparedness, incident management or response must take the introductory **Course IS-700 NIMS** (one hour on-line). Obtain course materials or take the course on-line:

<http://training.fema.gov/emiweb/IS/is700.asp>



Charles Beaupre, a FEMA official, and Tewksbury's DPW superintendent, William Burris, Jr., inspect a section of Pond Road damaged during the March 2001 storm.

MUTUAL AID

In emergency management, mutual aid is a formal agreement among emergency responders to lend assistance across jurisdictional boundaries when required; either by an emergency that exceeds local resources or a disaster. Three important elements to consider for emergency preparedness are:

- ☑ Hazards that may impact a municipality
- ☑ Risks from these hazards
- ☑ Resources available to respond to hazards.

Many communities have organized their own mutual aid connections and The Massachusetts Highway Association (MHA) has formalized this concept by drafting legislation for "An Act Facilitating the Formation of a Statewide Mutual Aid Agreement for Public Works" that will amend Chapter 40, Section 4. This will establish a Statewide Mutual Aid Advisory Committee to develop procedural plans, protocols, and programs for intrastate cooperation to be used by public works agencies in response to an incident. This effort will be taken up again when the next legislature meets in 2007.

The New England Chapter of APWA was instrumental in obtaining a grant of \$40,000 from the Southeast Region Homeland Security Advisory Council to develop a mutual aid web site and education program. It was the first grant of its type awarded for a public works type project. The grant was awarded to the Plymouth

continued on page 7



Another new section is **Chapter 17 – Work Zone Management**. The planning, design, and preparation of contract documents for modification of normal traffic and pedestrian patterns during construction is commonly known as work zone traffic control. **Traffic management plans (TMPs)** are the result of this planning and design. Detailed information on the preparation of TMPs is provided in MassHighway's *Standard Details and Drawings for the Development of Traffic Management Plans* and Part 6 (Temporary Traffic Control) in the *Manual on Uniform Traffic Control Devices (MUTCD)*.

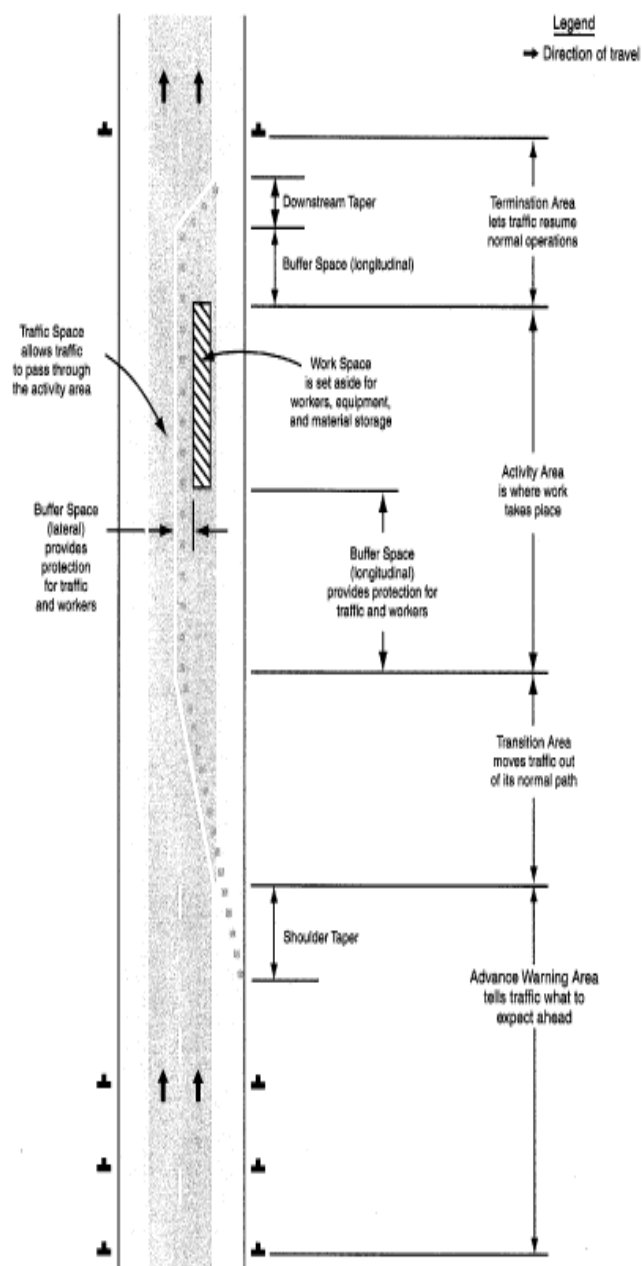
A full complement of barriers, warning signs, pavement markings, and impact attenuators are available for use in different work zone management situations. **Temporary Traffic Control (TTC) Plans** depict the basic layout of the worksite, the resulting configuration of lanes, and the placement of signage, barriers, and other traffic control devices. Basic work zone traffic management configurations include:

- Lane narrowing, where the basic number of lanes is maintained;
- Lane closure of one or more lanes;
- Alternating one-way operations for a segment of a two-way roadway with temporary traffic control;
- Use of a temporary bypass constructed within the roadway's right-of-way;
- Intermittent closure of the roadways for short periods of time;
- Crossover of traffic onto one side of a median, often separated by a temporary barrier; shoulder use of traffic diversion;
- Paved median use for traffic diversion;

- Detour of traffic to alternate routes; and
- Construction between lanes on multilane segments (lane separation).

Exhibit 17-6

Component Parts of A Temporary Traffic Control Zone

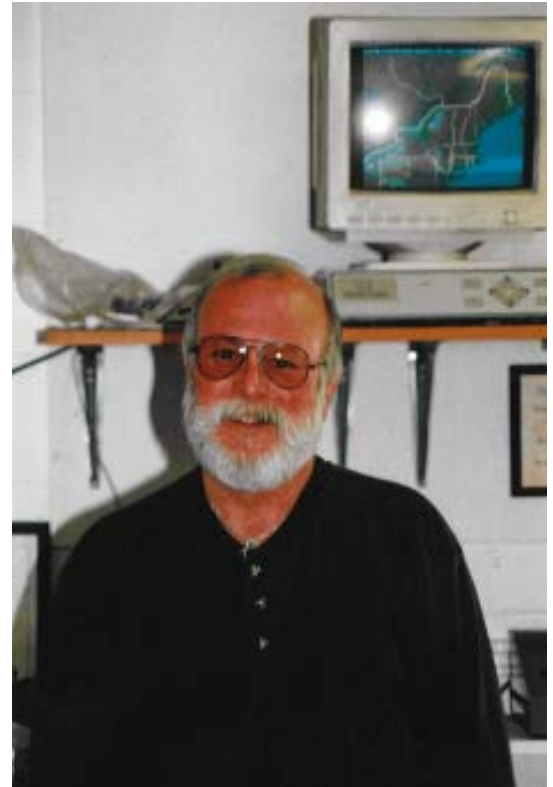
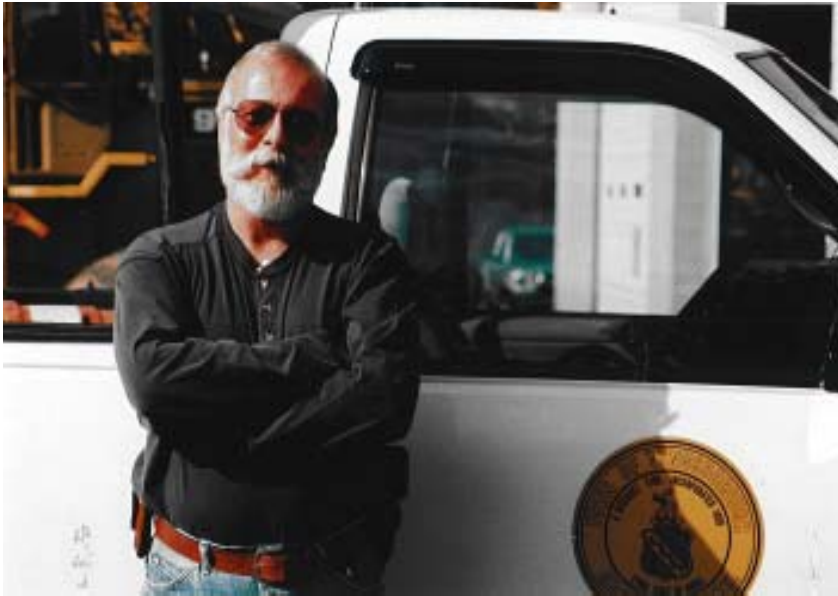


Source: Manual on Uniform Traffic Control Devices, 2003, Part 6 Temporary Traffic Control.

The *Project Development & Design Guide* can be accessed at: <http://www.mhd.state.ma.us>

Frederick P. Flanagan

Master Roads Scholar



Fred Flanagan grew up in the Town of Tyngsborough, a community that borders Nashua and Hudson, New Hampshire, as well as Lowell, Massachusetts. Over the years the town has grown substantially from the 3,000 when he was young to approximately 12,000 current residents. Along with the increase in population, of course, the roadways have expanded as well to over 100 miles.

Fred (aka Ric) has been with the Tyngsborough Highway Department for eighteen years. Eight years ago, he was promoted to administrative assistant of the Highway Department and has been supervising it ever since. Mr. Flanagan oversees eight full-time employees, two summer park workers and fifty independent plow operators during the snow season.

As with most communities, Fred battles a constant challenge in striving to maintain optimum services while operating with an ever decreasing budget. Working closely with other town departments such as administration, selectboard, police, and fire, he has been successful in fulfilling their requests for assistance from the Highway Department. With budget and staff reductions, however, this has impacted decisions within his office

and created demands that are difficult to overcome. Ric is currently applying for Chapter 90 funding that would allow his small town to consider additional roadway improvements and maintenance.

This summer a 6 foot high culvert collapsed creating an emergency situation. Ric's crew was able to keep this main thoroughfare open during the three days required for repairs while also diverting traffic efficiently.

Off the road, Ric enjoys fishing, vegetable gardening and activities and events involving antique one lungers engines.

The Advisory Board will welcome Ric at the next meeting where the traditional warm winter jacket and engraved plaque will be awarded. The program is always eager to hear from experts in the field regarding improvements to our training and technology sharing capacities.

Please offer Ric congratulations on his achievement when you see him at the next workshop.



County Highway Association and BETA Group, Inc. was selected to complete the work. The web site has been developed with the assistance of five pilot communities from the southeastern region. To date three education sessions have been conducted for Worcester County Highway Assn., Southeast Regional Planning Council Transportation Committee, and the Norfolk/Bristol/Middlesex Highway Assn. The web site will allow communities to access information about equipment and personnel resources held by member communities and can be accessed by town name as well as by entering a radius of "X" miles to check availability in the immediate area. Communities can also enter data concerning equipment and personnel directly into that web site. For current progress on mutual aid activities in the state, go to:

<http://www.masshighway.org>

<http://newengland.apwa.net>

FEMA worked with six states including Massachusetts on a pilot project to establish a National Mutual Aid System. This will catalog resources into a single repository making it easier for states to review and order necessary resources since all participants will use standard terminology. One of the results of this effort is an "Intergovernmental Emergency Mutual Aid Agreement" that can be downloaded at:

www.fema.gov/pdf/government/grant/pa/dmappd.pdf

The Massachusetts Municipal Association will present a panel discussion on "**When Disaster Strikes, Mutual Aid May Save the Day**" at their Annual Meeting on Saturday, January 13, at the Hynes Convention Center, Boston. James Coppola, VP of the New England APWA, Kathy DesRoches, founding member of the New Hampshire Public Works Mutual Aid Program, and Jarrett Barrios, Senate chair of the Joint Committee on Public Safety and Homeland Security, will explain the features and benefits of a statewide network and how it could be implemented in Massachusetts.

New Publications

Email requests to:

baystate_roads@hotmail.com

BIK-29 Evaluation of Safety, Design, and Operation of Shared-Use Paths
FHWA 2006

COC-149 Identifying Incompatible Combinations of Concrete Materials: Vol. I Final Report & Vol. II Test Protocol
FHWA 2006

SAF-154 Excavator's Manual (Pocket Guide)
Dig Safe System, Inc. 2006

TRA-117 Traffic Analysis Toolbox: Vol. I Tools Primer & Vol. II Decision Support Methodology
FHWA 2004

Available on Web

Interactive Highway Safety Design Model: Safer Roads Through Better Design

FHWA-HRT-06-100

Highlights 5 evaluation modules for two-lane rural highways that include policy review, crash prediction, design consistency, intersection review, and traffic analysis. Download software/information:

www.tfhr.gov/safety/ihsdm/ihsdm.htm

A Guide for Reducing Work Zone Collisions

National Cooperative Highway Research Program Report 500, Vol. 17

http://onlinepubs.trb.org/onlinepubs/nchrp/nchrp_rpt_500v17.pdf

Aggregate Tests for Hot-Mix Asphalt Mixtures Used in Pavements

National Cooperative Highway Research Program Report 557

http://onlinepubs.trb.org/onlinepubs/nchrp/nchrp_rpt_557.pdf

Congratulations to the newest Baystate Roads Scholars on their fine achievement. Keep saving those certificates and you, too, could be listed here.



Thomas Bergeron, Montague DPW

Gary Kellaheer, Sherborn DPW

James Zarozinski, Ashburnham DPW

Baystate Roads Scholars!

MOVING TOGETHER 2006

*Commissioner Paiewonsky
shared information on
how roads are now designed*



In This Issue

Sand and Salt Spreader Calibration.....	1
Project Development & Design Guide.....	2
Master Roads Scholar–David Rundle...3	
Mutual Aid and NIMS Training.....	4
Master Roads Scholar–Fred Flanagan.6	
New Publications and Websites.....	7

On October 18, Massachusetts Highway Department Commissioner Luisa Paiewonsky greeted more than 195 enthusiastic participants as she presented her keynote speech at the annual statewide bicycle-pedestrian conference, [Moving Together 2006](#). She cited several important projects that were recently completed, such as the [MassHighway Project Development & Design Guide](#).

Eleven conference workshops were presented covering a wide range of subjects. Registrar of Motor Vehicles Anne Collins addressed strategies to improve roadway safety for pedestrians, bicyclists and motorists alike.

Three sessions addressed trail-related topics: selecting trail surfaces, surmounting encroachments, and building public support. The relationship of public health, bicycling and walking was covered in several workshops, including one on the increasingly popular Safe Routes to School Program, and another on the effect of the built environment on transportation.

This year's conference enabled people with a wide range of interests to learn and to advance the agenda of improving bicycling and walking conditions in the Commonwealth.

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). This newsletter is prepared in cooperation with The Executive Office of Transportation (EOT) and the United States Department of Transportation Federal Highway Administration. FHWA is joined by EOT, UMass Transportation Center 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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