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Sharing the Best in Transportation Technology

Inside

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Massachusetts Department of Transportation

U.S. Department of Transportation
Federal Highway Administration

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Baystate Roads Program
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The Way Forward:

A 21st Century Transportation Plan

Our Transportation System Before Reform

On March 28, 2007 – just 90 days into the Patrick-Murray Administration, a non-partisan committee of transportation experts, the Transportation Finance Commission, issued a report revealing a $15 billion to $19 billion funding gap for the maintenance of our statewide roads, bridges, and rail assets over 20 years. At the time, the transportation system was managed by six different public and quasi-public state bureaucracies, all overseen by a variety of boards with different legislative mandates. The agencies often competed against each other for scarce resources and worked at cross purposes without sufficient focus on coordinated transportation services or high-quality customer experiences. At the time, the Central Artery project – the 'Big Dig' – was incomplete and faced a significant shortfall in funding. Federal dollars were at risk as state bond authorizations for projects under construction were running out. At the same time, a risky financial transaction entered into by a prior administration, termed a 'swaption,' was coming due with a required payment of $263 million that, without a solution, would have resulted in a toll increase for the Boston Harbor tunnels to a total of $7 and an increase to $2 at the Allston

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Transportation

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and Weston tolls on the Massachusetts Turnpike. Bonds at the Massachusetts Turnpike Authority faced default and the Commonwealth's credit rating was at risk of being downgraded. The MBTA and the Commonwealth's 15 Regional Transit Authorities faced budget deficits and the need for fare increases and service cuts, while subway, bus, and commuter rail riders were experiencing increasing delays and chronically unreliable and inadequate service. Hundreds of structurally deficient bridges lacked proper maintenance and a long list of critical projects such as resurfacing thousands of miles of roads, fixing potholes, and repairing buses remained unfunded.

That was the reality of the Commonwealth's transportation system six years ago. It was clear that a continuing inability or unwillingness to acknowledge the true extent of our challenges would bankrupt our system and compromise public safety.

Changing Transportation Through Reform

Recognizing the crossroads at which the state found itself and acknowledging the critical role that transportation plays in supporting an economically competitive Commonwealth, Governor Patrick and the Legislature enacted An Act Modernizing the Transportation Systems of the Commonwealth in 2009, fundamentally changing the way the Commonwealth delivers transportation services. Once siloed and largely autonomous, disparate transportation agencies are now a single, coordinated Massachusetts Department of Transportation (MassDOT). In the three years since transportation reform went into effect, MassDOT has made significant changes in the way it provides transportation services, seeking new efficiencies and finding new avenues for collaboration both inside and outside the agency. Today, the unified MassDOT oversees the Commonwealth's roads, bridges, airports, rails, subways, buses, and Registry of Motor Vehicles with a commitment to customer service and safety. Transportation reform, coupled with ongoing improvement efforts, has resulted in a more transparent, safe, efficient, and cost effective transportation system. Furthermore, it has helped to create a transportation agency that it is better positioned to respond to the needs of the entire Commonwealth.

A Plan for the Next Generation of Transportation

On January 14th, Governor Deval Patrick, the Massachusetts Department of Transportation (MassDOT) Board, and Transportation Secretary and CEO Richard A. Davey announced a plan for the next generation of transportation investment in the Commonwealth entitled The Way Forward: A 21st Century Transportation Plan. The long-term financing plan shows that the state needs $684 million to operate the same system we have today. The plan calls for an additional investment in our transportation assets of $5.2 billion over ten years in road and highway repair in order to reduce the number of structurally deficient bridges and ease congestion on major arteries throughout the state; $3.8 billion to invest in existing transit services; and $275 million for Registry and airport maintenance. These investments will responsibly maintain the current transportation assets.

In addition, the plan identifies a number of high-impact transportation projects that, if built, will create thousands of jobs and spur economic development across the Commonwealth. In all, the plan identifies a $1.02 billion average additional need each year to create a 21st Century transportation network. Because these investments are spread throughout the Commonwealth, this Plan holds a great deal for the State's municipalities. In particular, this plan proposes to fund Chapter 90 at its highest level in years with an increase of $100 million to $300 million per year.

"Sustainability Principles" are at core of the Green DOT Implementation Plan

More than two years of research, collaboration, and public dialogue have gone into creating the GreenDOT Implementation Plan (The Plan) that provides the framework for embedding sustainability principles into the core business practices of MassDOT.

This Plan fundamentally changes MassDOT's priorities and choices across all elements of our transportation system, from facility operations to future project selection and design.

The Plan builds off the GreenDOT Policy, established in 2010 that contains three primary objectives: reduce greenhouse gas emissions; promote the healthy transportation options of bicycling, public transit and walking; and support smart growth development.

The Plan was developed in collaboration with each of the MassDOT Divisions and takes advantage of many innovations already under way including: use of low emission transit vehicles, retrofit of tunnel and traffic signal lights with energy efficient LED bulbs, issuance of Electric Vehicle License Plates, reduction of mowing along state highways, and repair of roadways with warm mix asphalt.

At the same time, the Plan looks to initiate new ideas and aggressive measures to take sustainability work to the next level. These include commitments to designing new facilities to green building standards including a carbon-neutral airport, purchasing hybrid and electric transit buses, retrofitting stream crossings to improve aquatic habitats, and undertaking a system-wide assessment of facilities to maximize efficiency opportunities.

MassDOT Secretary Richard A. Davey joins the 2012 relaunch of the Boston area Hubway bike sharing service.

Photo courtesy of MassDOT

The Plan is designed to be a usable guide for MassDOT to work collaboratively to lead the nation in delivering a sustainable transportation system.

MassDOT Stewardship Goal:

Operate the transportation system in a manner that embraces our stewardship of the Commonwealth's natural, cultural, and historical resources.

The Plan builds upon the MassDOT stewardship goal using the themes of: air quality; energy consumption; material procurement; land management; transportation planning and design; waste management; and water resources. The Plan establishes 15 broad sustainability goals to decrease resource use, minimize ecological impacts, and improve public health outcomes from MassDOT's operations and planning processes.

Each goal is supported by three to five tasks to be implemented over the next eight years. These tasks are then followed by specific indicators, which identify implementation time horizons and divisions responsible for implementation. The Plan utilizes symbols and charts to help users navigate through the themes, goals, tasks, and indicators. It is written as a usable guide for frequent reference and future adaptation.

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The Baystate Roads Program recognizes three new Master Roads Scholars

Lisa Grega
Canton, MA

As a graduate of Northeastern University with a B.S. in Civil Engineering, I have spent over 25 years with the Town of Canton. I am the Assistant Town Engineer in the Engineering Division of the Public Works Department. I am happy to say that I work with an extremely talented Public Works team and I could not be as successful in my job without all of them.

I have always gravitated towards the municipal aspects of engineering. Working for a municipality, to me, is synonymous with team play. I like seeing a project come together from beginning to end with the entire team working towards one common goal to get the job done. Anyone in the "Municipal Game" knows that changes are constant and without notice, especially in Public Works. Keeping track of technology, standards, and regulations is an ongoing battle and is precisely why the Baystate Roads Program has been beneficial for my professional development. The Baystate Roads Program has made countless workshops available. I have attended many of the workshops since 1998, and have gained insight, efficiency, and inspiration from various peers, experts, and authorities. These workshops have benefited me and the work I do for Canton.

Being a Public Works Engineer entitles me to work in a multi-faceted range of tasks from survey to design; from inspections to project management. One significant part of my job relates to Canton's paving program. I have managed and processed over $12 million in Chapter 90 Grants in the past 14 years of paving projects. The practice of attending Baystate Roads Program workshops have contributed significantly with this work.

When I'm not "on the job", I like researching family genealogy, traveling to Disney and other locations, spending time with my family and my dog, and I love to cook. I plan on spending the rest of my Engineering career with Canton, and attending more Baystate Roads Program workshops along the way. Chris Ahmadjian has been the leader of the Baystate Roads Program for all of the years that I have been attending, and I would like to acknowledge his efforts. He and his team have done an amazing job all these years. I look forward to many more.

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GreenDOT

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The Plan will require the implementation of numerous immediate projects along with a thorough inventory of resources, utility expenses, and system operations across all MassDOT facilities. While there are many facilities MassDOT does not own, for example, airports or leased office space, it is anticipated the goals and tasks will provide guidance to those operators and inform the standards applicable to MassDOT's provision of public funding. GreenDOT applies to MassDOT contractors, as well as our state's Metropolitan Planning Organizations (MPOs) and Regional Transportation Authorities (RTAs).

Additionally, the Plan should be utilized as a reference guide for our 351 municipalities to bring sustainable transportation to the local level. GreenDOT will become a key element of MassDOT's performance management and asset management systems. The sustainability goals are written to encourage innovation and responsible investments; however, they do not mean to create unfunded mandates nor conflict with federal regulations. The sustainability goals should become integrated in division budgets and procurement procedures. The tasks and indicators will be adjusted as each Division continues to implement the Plan.

For more information you can view or print out the complete GreenDOT Implementation Plan at: http://www.massdot.state.ma.us/GreenDOT/GreenDOTImplementationPlan.aspx

Baystate Roads Program
Local Technical Assistance Program (LTAP)
TECH notes

RETROREFLECTIVE BACKPLATE BORDERS #63
PART 1 of 2 - FHWA Proven Safety Countermeasure

Backplates with Retroreflective Borders

Backplates are added to a traffic signal indication in order to improve the visibility of the illuminated face of the signal by introducing a controlled-contrast background. The improved visibility of a signal head with a backplate is then made more conspicuous by framing the backplate with a retroreflective border. Taken together, a signal head equipped with a backplate with retroreflective border is made more visible and conspicuous in both daytime and nighttime conditions, which is intended to reduce unintentional red-light running crashes.

Background

A project initiated in 1998 by the Insurance Corporation of British Columbia and the Canadian National Committee on Uniform Traffic Control investigated the effectiveness of applying retroreflective tape around the borders of traffic signal backplates. A small number of signalized intersections were treated and followed up with a simple before/after study, which concluded that the enhancement was effective at reducing crashes. A larger number of sites were subsequently treated and a more robust statistical study was performed.

Since their initial introduction in Canada, several U.S. State highway departments and local road agencies have adopted practices and policies concerning this countermeasure. Additionally, the FHWA has encouraged this treatment as a human factors enhancement of traffic signal visibility and conspicuity for older and colorblind drivers. Adding retroreflective borders is also advantageous during periods of power outages when the signals would otherwise be dark. The retroreflective sheeting continues to provide a visible cue for travelers to take note of the dark signal and adjust their actions accordingly. Per the study included in the Crash Modification Factor Clearinghouse, the use of backplates with retroreflective borders may result in a 15 percent reduction in all crashes at urban, signalized intersections.

Guidance

Backplates with retroreflective borders should be considered as part of efforts to systemically improve safety performance at signalized intersections. Adding a retroreflective border to an existing signal backplate can be a very low-cost safety treatment, as the materials are simple strips of retroreflective sheeting. For existing traffic signals that lack even standard backplates, the addition of backplates with a retroreflective border can often be accommodated on existing mast arm and span wire assemblies, but the structural capacity of the supports must be properly evaluated. The most

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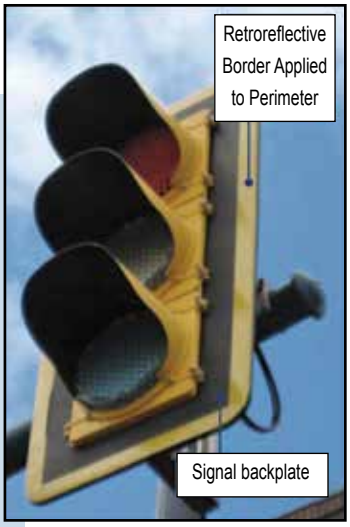

MassDOT Requirements for Backplates

MassDOT has required the use of a retroreflective border on backplates for projects since September, 2012. Any major modification or reconstruction of a traffic signal will include this safety enhancement. In addition, MassDOT staff may elect to swap out existing backplates for ones with the border during routine maintenance operations.

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Backplates

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effective means of implementing this proven safety countermeasure is to adopt it as a standard treatment for signalized intersections across a jurisdiction so that it is consistently included with all new construction and modernization projects, as well as being a worthy retrofit project for existing signals at intersections with red-light running crash histories. It is important to note that the Manual on Uniform Traffic Control Devices (MUTCD) specifically allows this treatment as an option that is discussed in Part 4. In terms of color and size, implementation of backplates and retroreflective borders must be consistent with the latest edition of the MUTCD.

MassDOT

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Prior to including retroreflective backplates on new signals, or retrofitting existing ones, MassDOT staff recommends following these guidelines:

- The face of the new backplate should have a dull black finish. The back side (facing away from approaching traffic) shall match the color of the signal housing.
- The border shall be made from an adhesive-backed retroreflective yellow micro-prismatic sheeting, Type III or IV, and cover the entire perimeter of the backplate.
- The border shall be 1 to 3 inches wide. For use on louvered backplates, the maximum width shall be 2 inches.
- On louvered backplates the sheeting shall be placed no closer than ½-inch to any single louver, and no sheeting shall cover any portion of a louver.
- Signals mounted with existing backplates may be retrofit using louvered backplates without any additional load calculations.
- Adding backplates to housings that currently are without them should not be done without checking the necessary design load calculations.
- Backplates are not recommended for use on aluminum mast arms or with any housing that is not rigid-mounted.

Key Resources

Retroreflective Borders on Traffic Signal Backplates - A South Carolina Success Story
http://safety.fhwa.dot.gov/intersection/resources/casestudies/fhwasa09011/

Manual on Uniform Traffic Control Devices (2009 Edition), Part 4D Traffic Control Signal Features
http://mutcd.fhwa.dot.gov/htm/2009/part4/part4d.htm#section4D12

FHWA Interim Approval for Use of Retroreflective Border on Signal Backplates (prior to 2009 Edition)
http://mutcd.fhwa.dot.gov/pdfs/ia_retroborder.pdf

Florida Department of Transportation, Plan Preparation Manual, Chapter 7 Traffic & ITS Design (Section 7.4.17)
http://www.dot.state.fl.us/rddesign/PPMManual/2009/Volume1/zChap07.pdf

Senior Mobility Series: Article 4 - Marking the Way to Greater Safety, FHWA Public Roads Volume 70/No. 1
http://www.fhwa.dot.gov/publications/publicroads/06jul/08.cfm

Crash Modification Factor (CMF) Clearinghouse [quick search "retroreflective backplate"]
http://www.cmfclearinghouse.org/

Evaluating Impact on Safety of Improved Signal Visibility at Urban Signalized Intersections
http://pubsindex.trb.org/view.aspx?id=800943

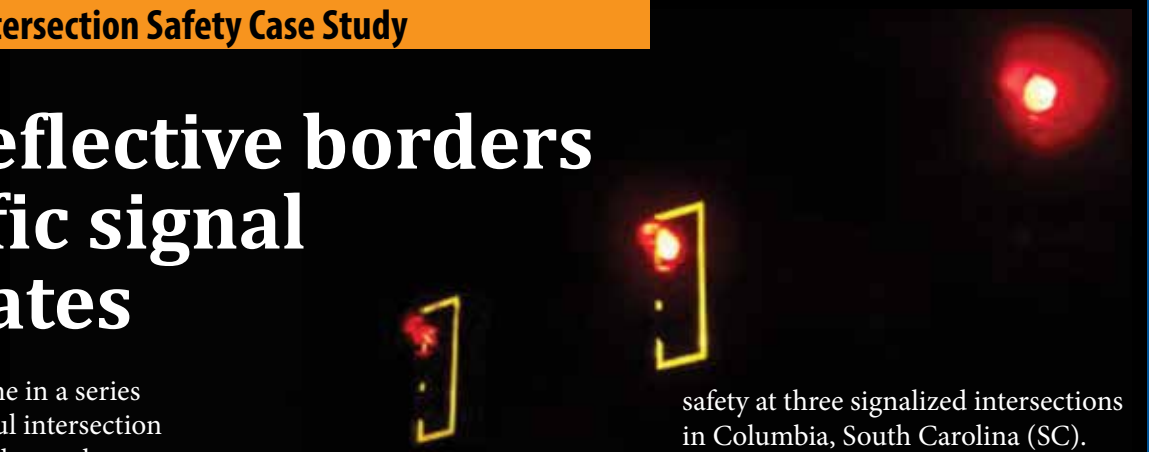
Road Safety Performance Associated with Improved Traffic Signal Design and Increased Signal Conspicuity
http://mutcd.fhwa.dot.gov/texts/miska/miska02.htm#toc

The Baystate Roads Program *is a cooperative effort of the Federal Highway Administration, Massachusetts Department of Transportation (MassDOT), and the University of Massachusetts. Program Director, Dr. John Collura, and Program Manager, Dr. Christopher J. Ahmadjian, provide technology transfer assistance to all communities in the Commonwealth. Our purpose is to provide information and training on transportation and related topics, to answer the needs and problems of local agencies, to identify and transfer new technologies and innovations into a usable format, and to operate as a link between transportation research and practicing highway personnel.* ***www.baystateroads.org.***

Baystate Roads Program
Local Technical Assistance Program (LTAP)
TECH notes

RETROREFLECTIVE BACKPLATE BORDERS #63
PART 2 of 2 - An Intersection Safety Case Study

Retroreflective borders on traffic signal backplates



This case study is one in a series documenting successful intersection safety treatments and the crash reductions that were experienced. Traffic engineers and other transportation professionals can use the information contained in the case study to answer the following questions:

- What is a simple inexpensive treatment to reduce crashes at signalized intersections in urban areas that occur due to reduced visibility?
- How many crashes did this treatment reduce?
- Are there any implementation issues associated with this treatment, and if so, how can they be overcome?

Introduction

Red-light running is one of the most serious traffic problems that Americans face today. It is estimated that vehicles running red lights cause more than 200,000 crashes, 170,000 injuries and approximately 900 deaths per year[1]. Some of these crashes occur because drivers are unaware of the presence of an intersection or are unable to see the traffic control device in time to comply.

The use of retroreflective borders on existing signal backplates to increase the visibility of traffic signals (particularly at night or under low-visibility conditions) is a simple, inexpensive countermeasure that can reduce crashes by improving driver awareness of traffic signals[2].

Objective

The following case study showcases a successful and effective low-cost treatment that measurably improved safety at three signalized intersections in Columbia, South Carolina (SC). The treatment consisted of adding a retroreflective border to the existing signal backplates.

Treatment Summary

All intersection examples used in this report are from Columbia, SC. Existing intersection treatments met minimum Manual on Uniform Traffic Control Devices (MUTCD) standards.

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of a three-inch, yellow retroreflective border to existing signal backplates (framing the signal head) at three intersections. The border was visible during the day, but its visibility increased significantly at night and under limited visibility conditions. In addition, retroreflective borders added to signal backplates can help road users to more readily detect the presence of a signalized intersection during power outages.

Evaluation Methodology

This case study examines three signalized intersections in Columbia, SC, with a high incidence of crashes due to driver violation of the traffic signals.

Crash reduction results were based on a review of "before and after" data from these intersections during 54 -month periods, between 2003 and 2007.[3] (The "before" and "after" observation periods ranged from 25 to 29 months).

Results

Problem: Drivers were violating traffic signals at three signalized intersections due to low visibility, leading to a high number of crashes at these intersections.
Solution: The South Carolina Department of Transportation (SCDOT) installed yellow retroreflective borders around the perimeter of the face of existing signal backplates at selected signalized intersections in June, 2005.

Table 1: Summarizes the "before and after" crash analysis at the treated intersections. On the next page is a brief discussion of the results at each intersection.

Locations	Implementation Date	Before				After				Percent Reduction In Crashes/Year		
		Months	Total Crashes	Injury Crashes	Late-night/Early-morning Crashes	Months	Total Crashes	Injury Crashes	Late-night/Early-morning Crashes	Total Crashes	Injury Crashes	Late-night/Early-morning Crashes
Sumter Highway (US 378) with Lower Richland Boulevard (S-37)	June-05	29	33	17	7	25	21	10	6	26.2%	31.8%	0.6%
I-26 Westbound (WB) with Piney Grove Road (S-1280)	June-05	29	13	5	8	25	9	1	1	19.7%	76.8%	85.5%
Piney Grove Road (S-1280) with Jamil Road (S-1791)	June-05	29	19	0	8	25	10	1	3	38.9%	NA	56.5%
TOTAL		87	65	22	23	75	40	12	10	28.6%	36.7%	49.6%

Table 1: Summary of "Before" and "After" Results at the Treated Intersections.

1 Federal Highway Administration Office of Safety Red-Light Running web site (http://safety.fhwa.dot.gov/intersection/redlight). 2 The Manual of Uniform Traffic Control Devices (MUTCD) allows the optional use of signal backplates, stating that a signal backplate is "a thin strip of material that extends outward from and parallel to a signal face on all sides of a signal housing to provide a background for improved visibility of the signal indications" (Section 4A.02 Definitions Relating to Highway Traffic Signals of the 2003 MUTCD). While the use of only the backplates does increase the contrast between the signal head and its background, backplates are only effective in lighted conditions for increasing the signal head's visual target size and for providing contrast against backgrounds such as trees, sky, clouds, and, especially, sun. (Section 4D.17, Visibility, Shielding, and Positioning of Signal Faces of the 2003 MUTCD).
3 Note that crash reduction averages in this report reflect the percent reduction per year based on the difference between the total number of "before" and "after" crashes. Only crashes occurring within 250 feet of the intersections were considered.

Sumter Highway (US 378) with Lower Richland Boulevard (S-37)

Sumter Highway (US 378) has three lanes in each direction; while Lower Richland Boulevard (S-37) consists of a single lane in each direction, with an additional right-turn lane at US 378. Both roadways have a speed limit of 45 mph. Average daily traffic (ADT) at this intersection decreased from 37,900 in the "before" period to 35,725 in the "after" period[4]. Retroreflective borders were installed only on signal backplates on Sumter Highway (US 378).

The treatment resulted in an average crash reduction of 26.2 percent and reduced injury crashes by 31.8 percent per year at this intersection. The total number of late night/early-morning crashes remained relatively stable.

I-26 Westbound (WB) with Piney Grove Road (S-1280)

The I-26 WB on-ramp has two lanes, while the off-ramp has three lanes (one left-turn only, one shared left/through lane, and one right-turn only). Piney Grove Road (S-1280) has a speed limit of 40 mph, with two through lanes and a separate left-turn lane in each direction.

Intersection ADT was 29,480 for both the "before" and "after" periods. Retroreflective borders were installed only on Piney Grove Road (S-1280).

The treatment resulted in an average crash reduction of 19.7 percent, reduced injury crashes by 76.8 percent per year and reduced late-night/early-morning crashes by 85.5 percent per year at this intersection.

Piney Grove Road (S-1280) with Jamil Road (S-1791)

Piney Grove Road (S-1280) has a speed limit of 40 mph with two through lanes and a separate left-turn lane in each direction. Jamil Road (S-1791) has a 35 mph speed limit with a single through lane and a separate left-turn lane in each direction. Intersection ADT was 35,940 for both the "before" and "after" periods.

Retroreflective borders were installed only on Piney Grove Road (S-1280). This intersection experienced the largest drop in total crashes. The treatment resulted in an average crash reduction of 38.9 percent and reduced late-night/early-morning crashes by 56.5 percent per year. Injury crashes increased slightly from zero in the before period to one in the after period.

Discussion

Implementation Issues

SCDOT experienced no implementation issues with this countermeasure. However, if a traffic signal is not equipped with a backplate, implementation plans will need to account for the addition of backplates, as well as an increase in needed support strength to accommodate the backplate load on the mast arm or cable.

Cost

The costs for implementing the countermeasure were approximately $1,500 per intersection[5].

Time Frame

The installation of the retroreflective border on existing signal backplates at each intersection was completed within two hours.

Effectiveness

The addition of a retroreflective border to existing signal backplates was effective in reducing overall crashes at these signalized intersections. SCDOT attributes their success to targeting appropriate intersection approaches that would benefit from this enhanced treatment. Specifically, intersections where conditions allow an approaching driver to see the enhanced traffic signal at a distance, in time to respond. Further, SCDOT is in

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the process of implementing a district wide (District One) program to install retroreflective borders at other signalized intersections.

Summary of Results

The "before" treatments at all three intersections met minimum MUTCD standards. The safety enhancement discussed in this study increased the visibility of the traffic signal and reduced crashes. The three intersections

combined experienced a 28.6 percent reduction in total crashes, 36.7 percent reduction in injury crashes, and 49.6 percent reduction in late-night/ early morning crashes after the installation. The average reductions in crashes achieved by the treatments exceed the expected crash reductions for adding retroreflective borders to signal backplates in urban areas of 15 percent mentioned in the Desktop Reference for Crash Reduction Factors (September 2007), published by the United States Department of Transportation (USDOT) FHWA[1].

4 Note that crash reduction averages in this report reflect the percent reduction per year based on the difference between the total number of "before" and "after" crashes. 5 Cost estimate does not include costs of the signal backplate

References

1) Desktop Reference for Crash Reduction Factors, FHWASA-07-015, USDOT FHWA September 2007.
2) Senior Mobility Series: Article 4: Marking the Way to Greater Safety by Gene Amparano and David A. Morena FHWA July/August 2006 · Vol. 70 · No. 1.
3) MUTCD - Interim Approval for Use of Retroreflective Borders on Signal Backplates, Regina S. McElroy, Director, Office of Transportation Operations. February 6, 2004; (can be accessed at http://mutcd.fhwa.dot.gov/res-interim_approvals.htm).
4) Miska, E., P. de Leur, and T. Sayed. "Road Safety Performance Associated with Improved Traffic Signal Design and Increased Signal Conspicuity." ITE, 72nd Annual meeting, Philadelphia, PA. Washington, DC, 2002.
5) Sayed, T., Abdelwahab, W., and Nepomuceno, J., "Safety Evaluation of Alternative Signal Head Designs," Transportation Research Record, Transportation Research Board, Vol. 1635, pp. 140-146, 1998.

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Visit FHWA's intersection safety web site to download this and other case studies highlighting proven intersection safety treatments from across the country: http://safety.fhwa.dot.gov/intersection

The Baystate Roads Program *is a cooperative effort of the Federal Highway Administration, Massachusetts Department of Transportation (MassDOT), and the University of Massachusetts. Program Director, Dr. John Collura, and Program Manager, Dr. Christopher J. Ahmadjian, provide technology transfer assistance to all communities in the Commonwealth. Our purpose is to provide information and training on transportation and related topics, to answer the needs and problems of local agencies, to identify and transfer new technologies and innovations into a usable format, and to operate as a link between transportation research and practicing highway personnel.* ***www.baystateroads.org.***

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2013 MASSACHUSETTS Pavement Preservation Techniques SHOWCASE

Marriott Courtyard in Marlborough, June 12, 2013

Register Today!

Join MassDOT and the Baystate Roads Program for the 2013 Massachusetts Pavement Preservation Techniques Showcase. We are bringing together industry experts and municipal public works professionals to discuss the technical merits of pavement preservation maintenance treatments and to hear about how municipalities in Massachusetts are putting them to work.

Don't miss this opportunity to learn more about Ultrathin Overlays, Stress Absorbing Inter-layers (SAMI), Micro-surfacing, Hot-in-place recycling, Cold-in-Place recycling, Polymer Additives, and more.

Tentative Agenda

8:00 - 8:30	Registration
8:30 - 9:00	ED NARAS, MASSDOT Pavement Preservation Opportunities
9:00 - 9:20	FST Evaluating Pavements for Preservation Treatments
9:20 - 9:40	SEALCOATING, INC. Slurry Seal / Micro Surfacing
9:40 - 10:00	COMER CONTRACTING Chip Seal
10:00 - 10:20	VHB Pavement Management Systems
10:20 - 10:40	Break and Networking
10:40 - 11:00	ASMG Ultra-thin Bonded HMA (NovaChip)
11:00 - 11:20	CRAFTCO Crack Sealing
11:20 - 11:40	CRAFTCO Polymer Modified Patching
11:40 - 12:00	ROAD RECYCLING COUNCIL Cement Stabilize Fold-up Reclamation
12:00 - 12:20	KRATON Performance Modification with Polymer Additives
12:20 – 1:20	Lunch and Networking
1:20 - 1:40	FELIX MARINO COMPANY Comprehensive Pavement Restoration
1:40 - 2:00	MAAPA Pavement Economics
2:00 - 2:20	GALLAGHER ASPHALT CORP. Hot-in-Place Recycling
2:20 - 2:40	HIGHWAY REHAB Hot-in-Place Recycling
2:40 - 3:00	GORMAN GROUP Cold-in-Place Recycling
3:00 - 3:15	Wrap-up and Adjourn

For additional information or to Register for the event go to: mass.gov/baystateroads and click on "Workshops"

If you have questions please email cindy@baystateroads.org or call 413-577-2762

Come Join Us June 12, 2013!
at the Marriott Courtyard,
75 Felton St., Marlborough, MA

Scholars

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Edward Dahill
Chesterfield, MA

I began my career in public works working for the Town Of Huntington in 1980 as an equipment operator/ driver. I worked there until January of 1988 when I took the position of Highway superintendent for the Town Of Chesterfield which I still maintain today. I have been involved in the Baystate Roads Program from the beginning of my time as Highway Superintendent. The program has always been a great help not only in the training classes but in being able to network with other Highway Departments. My goal as highway superintendent has always been to make things better for people that live on the roads we work on.

Chesterfield is a small town in western Hampshire County. It has elevations ranging from 900 ft. to 1,300 ft. which makes for much lower temperatures in the winter . I have always found the Baystate Roads snow and ice workshop very helpful. My department consists of two other workers besides myself with 58 miles of road with a little less than half still being gravel.

With the help of a great select board and very knowledgeable employees in the last 25 years we have been able to repave or rebuild all our paved roads which brought Chesterfield from a town known for the worst paved roads to one that is among the best. My employees have also taken advantage of training from the Baystate Roads Program.

I have been a member of the Massachusetts Highway Association and the Massachusetts Tri-County Highway Superintendents Association since 1988. I have also been a member of the Berkshire County District 1 Highway Superintendent's Association since 1993 when the state consolidated 7 Highway Districts into 5 and Chesterfield moved From District 2 to District 1. I hold two associate degrees, one in Science in Engineering and one in Arts & Science in Arts. Though I have worked in Chesterfield for the past 25 years I'm still a resident of Huntington where I grew up and serve as the Deputy Fire Chief.

Ron LaBrecque
Lowell, MA

I began my career with the City of Lowell as a draftsman in 1969. I worked in the City Engineers Office drawing maps for assessment purposes. Several years later I started to do construction inspections for underground telephone, electric, water and sewer lines for new subdivisions that were being built throughout the city.

When the City of Lowell began to construct new schools, there were not enough Clerk of Works/Engineers to oversee each school to be built. I was sent out for three years to oversee the construction of three new schools. After getting back into the office, I handled inspections of city streets that needed to be reconstructed, and also collected estimates and quantities for the new contracts.

I spent many years gathering quantities and estimates in order to write contracts for streets needing reconstruction. I have also spent many years with the Baystate Roads Program, improving my skills through its many workshops.

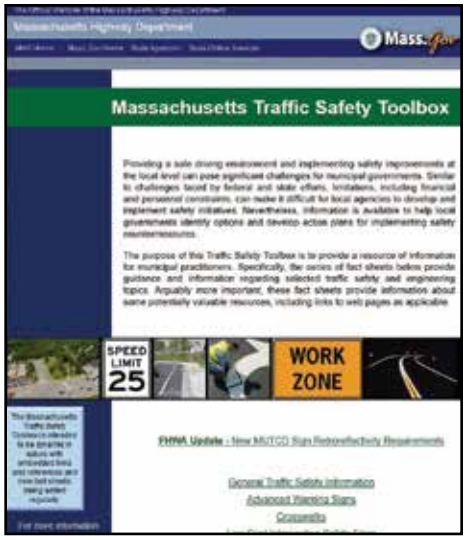
After 43 years with the City Engineers, I'm now the Sr. Assistant City Engineer for the City of Lowell. I supervise the reconstruction of streets and review new contracts for bid, many of which are for Chapter 90 funds.

The Baystate Roads Program would also like to congratulate the following individuals for achieving Road Scholar status

John J. Bedard, MassDOT
Thomas Curran, Framingham
Lisa E. DeMeo, Lowell
John DePriest, Chelsea
Roland A. Goudreault, Haverhill
Renee Hunter, Danvers
Elizabeth L. Marshall, Amherst
Modris Pukulis, Swansea
Christopher Reed, Longmeadow
Michael D. Smith, Heath
Bertram Taverna, Chelsea
Alan Twarog, Greenfield
Brutus Cantoreggi, Franklin
Steven J. Tyler, Spencer
Corey York, Acton
James Kicza, Easthampton
Joseph Pipczynski, Easthampton
David Karras, Orange

Take the Massachusetts Traffic Safety Toolbox Survey

MassDOT has asked the Baystate Roads Program to survey cities and towns throughout Massachusetts to see if they use the Massachusetts Traffic Safety Toolbox available on the MassDOT's website. This survey shouldn't take more than a few minutes, and your response is extremely important to help MassDOT serve the engineering needs of local municipalities. Thank you for your time and suggestions.



Please go to the link below to take this short survey.

http://www.surveymonkey.com/s/HC766CM

Upcoming Workshops at the Baystate Roads Program

How To Read Municipal Plans	Peabody	05/01/2013
Municipal Right of Way & Title VI	Lenox	05/16/2013
Municipal Right of Way & Title VI	Northampton	05/23/2013
Municipal Right of Way & Title VI	Marlborough	06/06/2013
Improving Stream Crossings	Pittsfield	06/17/2013
Pavement Preservation Techniques Showcase	Marlborough	06/12/2013
Municipal Right of Way & Title VI	Woburn	06/20/2013
Municipal Right of Way & Title VI	Taunton	06/26/2013
FHWA-NHI-380095 Geometric Design: Applying Flexibility & Risk Management	Worcester	07/17 & 07/18/13

Save Time, Postage and Paper...**REGISTER ONLINE** at **www.mass.gov/baystateroads**

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If you are a person with a disability who requires accommodation, please contact the Baystate Roads Program so that we may reserve services.

If applicable, make checks payable to: **University of Massachusetts**

Please include course name and full name of attendee on check

Mail to: Baystate Roads Program,
214 Marston Hall, 130 Natural Resources Rd., Amherst, MA 01003

Workshop Title:

_____

Dates Requested: _____

Location (city/town):

_____

REGISTRATION FEE $_____

Make checks payable to
The University of Massachusetts

Cancellations must be received 4 days prior to the workshop or you will be invoiced.

You're Also a Teacher

By Dr. Rockie Blunt
Contributing Writer

You're busy every day doing your scheduled jobs, learning new ones, and switching off to other ones that come up suddenly and have to be done right away. There's always something to do. But every now and then there's one more thing you are called upon to do, and it's an important one: you need to teach someone else how to do something that you know how to do. Yes, you're called upon to be a teacher. You may feel confident when you do it, or maybe not, but take heart. It's easier than you think because 1) you don't have to be a college professor to teach someone how to do something, and 2) there's a simple four-step process of communicating information to a coworker in a limited amount of time. I call it "training on the fly."

Dr. Rockie Blunt

STEP 1 Prepare the Learner.

Yes, there is a step before the actual teaching, and it's an important one: helping the person receive the learning that is about to follow. This is done by explaining what the goal of the learning is. Sometimes even experienced teachers forget to begin by outlining what is to be covered and why it is important. The learner needs to know what he or she will be able to do once the task is mastered. Asking them if they've ever attempted this kind of work before will tell you if you need to start explaining things at the very beginning or at a more advanced level. It is also important to help the person relax. Explain that you are not expecting perfection the first time, and encourage him or her to ask questions if they are confused. It is crucial to treat all questions with respect. If you criticize someone for asking a question, that's the last time they'll let you know they don't understand something.

STEP 2 Deliver the Lesson.

Whether they need to gain new knowledge or learn how to perform a new task, this is when you do the teaching. Remember to break down the task, step by step, and try not to talk too fast. If you have been doing a particular activity for years and you know it inside out, you might find yourself explaining it very fast. The learner, though, is new to the information and needs to hear it more slowly. Furthermore, avoid using jargon, buzzwords, abbreviations or acronyms when describing processes or equipment; these special terms are familiar to you but not necessarily to the inexperienced employee.

STEP 3 Have the Learner Perform the Operation or Repeat Back the Information.

Once you have taught the trainee, ask them to teach it back to you. Whether it's a physical operation or a set of information, build in some practice time, encouraging the individual to explain what they're doing while they're doing it. Assure them that they may not get it perfectly the first time, and that you'll be patient with them. Anything you can do to help people feel relaxed while learning will help make them faster, more confident learners.

> ***"Above all, the important thing is not to show the other person how much you know, but to help them increase what they know."***
>
> *— Dr. Rockie Blunt*

STEP 4 Evaluate Their Performance

After they have demonstrated what they have learned, give them specific feedback. If the person gets the hang of it the first time, a compliment is in order. But if the results are mixed, I strongly suggest you deliver the feedback this way: plus-minus-plus.

Please see TEACHER on page 16

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130 Natural Resources Road
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ST 140031

MASS
Interchange

Mass Interchange is a quarterly newletter published by The Baystate Roads Program. The Baystate Roads Program 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 Massachusetts Department of Transportation (MassDOT) and the United States Department of Transportation Federal Highway Administration. FHWA is joined by MassDOT, 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
mass.gov/baystateroads

Teacher

Continued from page 15

Tell them what they have done well (plus), point out areas that could be improved (minus), and give them positive guidance on how to reach that improvement (plus). Let them know you have confidence in them, and that you will be available for them as they continue to practice what they have learned.

Please keep in mind that even though there are four steps to this method, going through the entire process can take as little as ten or twenty minutes. The key is to devote as much time as necessary to each step, depending on the complexity of the material to be learned as well as the learner's prior experience with the task.

Above all, the important thing is not to show the other person how much you know, but to help them increase what they know. Keep the focus on them. That's what the best trainers do — even those who do "training on the fly."

Dr. Rockie Blunt, president of West Boylston-based Blunt Consulting Group, has worked with municipal and state agencies for many years. This is the first in a series of articles he will be writing on learning, communication and management.