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Inside

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2015 Moving Together

Be a part of the conversation at MassDOT's annual healthy transportation conference

Are you part of the conversation that will determine the future of transportation in Massachusetts? Make your voice heard by attending this year's Moving Together Conference (MT15).

MT15 will bring together leaders who are advancing healthy transportation.

A Full Schedule of Activities

Individuals attending this year's conference will have a full schedule of activities to choose from including:

• Attend workshops and panels that highlight current pedestrian, bicycle and public transportation topics.

Please see MT15 on page 16

Wellesley DPW Uses 'Green' Chemistry for New Thin Pavement

UMass Dartmouth creates new sustainable asphalt overlay from unique blend of recyclables

We would like to thank Paul Montenegro for suggesting this article to Baystate Roads.

The Department of Public Works (DPW) in Wellesley, Massachusetts recently overlaid the pavement at the town recycling and transfer center with a new sustainable asphalt maintenance mix that incorporates recycled materials and newly developed "green chemistry." Designed by Professor Walaa S. Mogawer, P.E., F. ASCE, Head of the Highway Sustainability Research Center (HSRC) at the University of Massachusetts Dartmouth, the experimental mix was produced by Benevento Companies of Wilmington, Massachusetts, and installed over a 2,200 square yard area at the facility by U.S. Pavement Services Inc. of Woburn, Massachusetts.

Installed just three-quarter inches thick, the dense-graded mix is designed to resist cracking and preserve the underlying pavement with an engineered blend of virgin asphalt binder and aggregates. This mix consists of recycled asphalt pavement (RAP), recycled asphalt shingles (RAS), a new polymer containing recycled ground tire rubber (GTR), asphalt rejuvenator, and warm mix asphalt technology (WMA).

GreenDOT Backs Warm Mix

The use of sustainable, or green, components in the new asphalt mix is in keeping with the GreenDOT initiative launched several years ago by the Massachusetts Department of Transportation (MassDOT). GreenDOT aims to incorporate sustainability into all of MassDOT's activities, with a focus on reducing greenhouse gases that contribute to global warming. One of the measures taken by MassDOT is the promotion of WMA for its asphalt paving projects.

WMA is produced by adding such materials as zeolites, waxes or other proprietary chemicals to the asphalt binder. These additives allow significantly lower temperatures for producing and installing asphalt mix, resulting in lower consumption of fossil fuels leading to the production of less carbon dioxide and other greenhouse gases. Furthermore, the WMA technologies help ease mix compaction and allow for paving in colder weather and longer hauls between asphalt plants and job sites.

In a move designed to take advantage of these benefits, MassDOT established WMA pavement as the standard state specification while phasing out hot mix asphalt. As an illustration of this commitment, approximately 68 percent of the 891,000 tons of asphalt mix placed by

Benevento Companies' Mack truck feeds sustainable asphalt mix to U.S. Pavement Services' LeeBoy 8510B Paver at the recycling center. By Paul Fournier

MassDOT on its projects in 2013 was WMA.

A Growing Trend

MassDOT's switch to more sustainable asphalt mixes reflects a growing trend across the U.S., according to the National Asphalt Pavement Association (NAPA). In partnership with the Federal Highway Administration (FHWA), NAPA conducted a mid-2014 survey of asphalt mix producers and state asphalt pavement associations. Survey results indicate that 106.4 million tons of WMA – almost a third of all asphalt pavement mix production – was used during the 2013 construction season. NAPA notes that this is a 533 percent increase in the use of WMA since 2009. NAPA reported that the use of reclaimed and recycled materials in asphalt pavements in 2013 totaled almost 72 million tons of RAP and 1.7 million tons of RAS in new asphalt pavement mixes in the U.S. Reclaiming and reusing the asphalt binder in RAP and RAS saved about $2 billion in 2013 than if 100 percent virgin asphalt binder was used. The use of RAP also conserved more than 68 million tons of virgin aggregate according to the survey report.* As reported by NAPA, other waste material was also repurposed into pavements. Survey respondents reported using nearly 1.2 million tons of steel and blast furnace slag and GTR in 2013 in the production of more than 6.6 million tons of asphalt paving mixes. (**National Asphalt Pavement Association, Annual Asphalt Pavement Industry Survey on Recycled Materials and Warm-Mix Asphalt Usage: 2009–2013.)*

Building on Prior Success

With the trend to green materials use in mind, Pavement Consultant R. Paul Montenegro, based in Rhode Island, approached Wellesley DPW Director Mike Pakstis with the idea of installing a thin asphalt maintenance mix incorporating the latest sustainable technology over existing pavement at the community's recycling and transfer center. Pakstis was responsive to the idea, indicating that the DPW was "willing to try new things," if the cost-effective alternatives can prolong pavement service life. As a case-in-point, Pakstis had approved an earlier project involving a trial mix overlay for the road leading to the recycling center. Director Pakstis and Town Engineer David Hickey had worked with Montenegro and Dr. Mogawer on the overlay installed late in 2007,that was witnessed by officials from the state and more than 20 other municipalities. The overlay placed in 2007 had a three-quarter inch compacted thickness and consisted of a dense-graded material containing 30 percent RAP, a proprietary warm-mix formulation, and an asphalt binder modified with 1.5 percent latex polymer. Dr. Mogawer's intent was to provide a thin wearing surface that would slow cracking.

The 2007 overlay was installed as a preventive maintenance treatment, which is one of several methods of pavement preservation defined by the FHWA. Pavement preservation treatments can be used on pavements still in good condition before the onset of serious damage from weather and wear, thus restoring pavement to almost original condition and postponing costly rehabilitation and reconstruction. Other preventive maintenance treatments are asphalt crack sealing, chip sealing, slurry sealing and microsurfacing. Pakstis and Hickey have monitored the condition of the thin overlay for the past seven years. "We've had good performance from that three-quarter inch mix" Pakstis said.

After reviewing the concept with Montenegro, Director Pakstis decided to try the new sustainable asphalt maintenance mix developed at the UMass Highway Research Center to resurface the pavement at the recycling and transfer center. He said

Please see 'Green' on page 4

"Using as much recycled asphalt pavement and shingles as possible conserves stone and asphalt and therefore offsets the high cost of virgin asphalt,"

— Dr. Mogawer

A 3 ton Volvo DD29 Roller operating in static mode compacts three-fourths inch-thick overlay.

'Green'

Continued from page 3

he was encouraged by the fact that Dr. Mogawer was already involved in designing crack-resistant, high-RAP, WMA-based asphalt mixes under a research program for MassDOT.

Recycling-Focused Research

Dr. Mogawer was looking for a sustainable mix that would use recycled asphalt pavement and recycled asphalt shingles, and would advance cost-effective and environmentally friendly pavement preservation strategies. In addition, Dr. Mogawer wanted to develop a mix that would prevent pavement cracking propagation and have the potential to result in a service life of 12 years or more. "Using as much recycled asphalt pavement and shingles as possible conserves stone and asphalt and therefore offsets the high cost of virgin asphalt," said Dr. Mogawer. "In addition, we are interested in achieving lower mix production temperatures resulting in emission reductions and contribute to better for the health of workers."

He added that coincident to the research being conducted, Montenegro wanted to put together a demonstration project in Wellesley similar to the one performed in 2007, but this one would use RAS and other sustainable products. Since Montenegro's proposal meshed well with Dr. Mogawer's ongoing research for the GreenDOT initiative, he provided Wellesley with the mix design for the demonstration.

Tough Test for Sustainable Mix

Using the highway research center design for the Wellesley demonstration also offers researchers an opportunity to study the performance of a lab-designed, thin overlay on a 3 to 4 inch bituminous concrete pavement subjected to long-term weather and harsh traffic.

"We get between 800 and 1,500 residents' vehicles each day and about 4,000 on Saturdays," Pakstis said. "In addition, each day our own regular six wheel, 35,000 pound collector trucks use the facility, plus six to eight tractor-trailer trucks periodically pick up compacted refuse."

The trial overlay places Wellesley in the forefront of testing sustainable asphalt mixes. Furthermore, it provides experience with meeting requirements of provisional specifications for sustainable asphalt mixes for municipalities being developed by MassDOT. The provisional specifications will allow municipalities to obtain affordable maintenance asphalt mixes for the state's Chapter 90 projects, according to Montenegro.

Massachusetts' Chapter 90 entitles municipalities to 100 percent state reimbursement of expenditures for highway construction, preservation and improvement projects.

"The specification requires the mix to contain a minimum amount of asphalt from RAS and meet the new performance graded acceptance criteria," said Montenegro. "This is a step forward, because the State will not give recipe specs. Rather, the manufacturer will meet performance tested acceptance criteria developed at UMass Dartmouth," he said.

Shingles are a Rich Resource

The manufacture of the new mix

for this particular project is unique, in that all of the green chemicals are added to the RAS at one plant, after which the treated RAS is shipped to a hot mix asphalt plant where it is in turn combined with RAP and virgin materials to make the final product.

The Asphalt Roof Recycling Center in Stratford, Connecticut, grinds asphalt shingles and adds other products to the ground shingles inline at its new indoor facility. Shingles are a rich source of asphalt binder, with the asphalt cement content of fiberglass matt base shingles running between 19 and 22 percent, and asphalt cement content on felt matt base averaging between 30 and 36 percent, according to the National Association of Home Builders (NAHB). This compares to approximately 6 percent asphalt binder in RAP. NAHB estimates that shingle tear-off waste and installation scrap amounts to between 7 and 10 million tons each year.

'Green' Treating Ground Shingles

While the potential for recycling asphalt shingles is promising, there are limits to using RAS in pavement mixes according to PQ Corporation, the maker of Advera WMA. PQ Corporation notes that one of the challenges to using RAS in producing asphalt mix is that the RAS tends to clump together in the stockpile and in the mix. This can lead to an inconsistent feed rate, causing inconsistent mix results. Moreover, the mix is stiffer, making it difficult to handle. The company's proprietary Advera WMA, designed to reduce clumping, contains zeolite, a mineral that occurs naturally but is also produced industrially for use in making WMA . It was one of the chemicals added at the Connecticut facility to the RAS destined for the Wellesley project.

Another contributor to the sustainable Wellesley mix is a re-engineered, waste-stream modified polymer that includes GTR. The polymer is added to RAP or RAS on the conveyor belt – hence its name, Belt Added Modifier (BAM). Produced by EVR International, BAM is designed to improve mix resistance to cracking and rutting, and enhance resistance to tire skidding.

One characteristic that limits the amounts of RAS and RAP that can be used in hot or warm mix asphalt is the tendency of recycled binders to be stiffer and less strain-resistant than virgin asphalt, and therefore more susceptible to cracking. This is primarily due to oxidation from long-term exposure to weather. One deterrent to oxidation is a class of recycling agents known as rejuvenators. Research has shown that adding a rejuvenator to high-RAP and RAS mixtures improves the crack resistance of the asphalt mix.

Ed Naras, MassDOT Pavement Management Engineer (left), and Mike Pakstis, Wellesley DPW Director.

The rejuvenator added to the RAS for the Wellesley mix was developed by a team from Warner Babcock Institute of Green Chemistry, headed by Dr. John Warner. The Delta S rejuvenator, added to the RAS at the Connecticut facility, is designed to reverse existing asphalt aging and oxidation, and to retard future aging and oxidation. A product of Collaborative Aggregates LLC, Delta S is also a warm mix additive, and is marketed as a dual-action WMA and rejuvenator.

Mix Production and Installation

The completed RAS was transported to Benevento Companies' asphalt plant in Wilmington. Dr. Mogawer's design called for 5 percent RAS and 25 percent RAP (based on total weight of mix). The RAS and RAP mix was blended with three-eighths inch top size virgin aggregate and asphalt to produce the final mix for the Wellesley trial. The virgin asphalt binder was a PG64-28.

The mix was manufactured in Benevento's 300 ton per hour batch plant at between 250 and 255 degrees Fahrenheit. Benevento's trucking fleet delivered the mix to U.S. Pavement Services' LeeBoy 8510B Paver at between 200 and 215 degrees. Meanwhile, the paving crew had employed a LeeBoy Tack Wagon to cover the area with an RS-1 asphalt tack coat. Mat temperatures ran between 170 and 180 degrees after breakdown rolling by the crew's 3 ton, double-drum Volvo DD29 Roller operating in static mode.

Pakstis pointed out that the new overlay resembled the 2007 overlay in color and texture. He said the town will closely monitor the performance of this new sustainable pavement preservation treatment over the coming years, with the hope that it could achieve a service life of at least 12 years.

State Encourages More Recycling

MassDOT has expressed a strong interest in projects that utilize recycled materials such as the Wellesley overlay. Ed Naras, Pavement Management Engineer for the Highway Division of MassDOT, summed it up this way:

"The efforts to expand the use of recycled material in a responsible and sustainable manner is consistent with MassDOT's GreenDOT Policy and other long-standing initiatives. We hope to see an increase in the use of these products in pavement preservation and maintenance activities."

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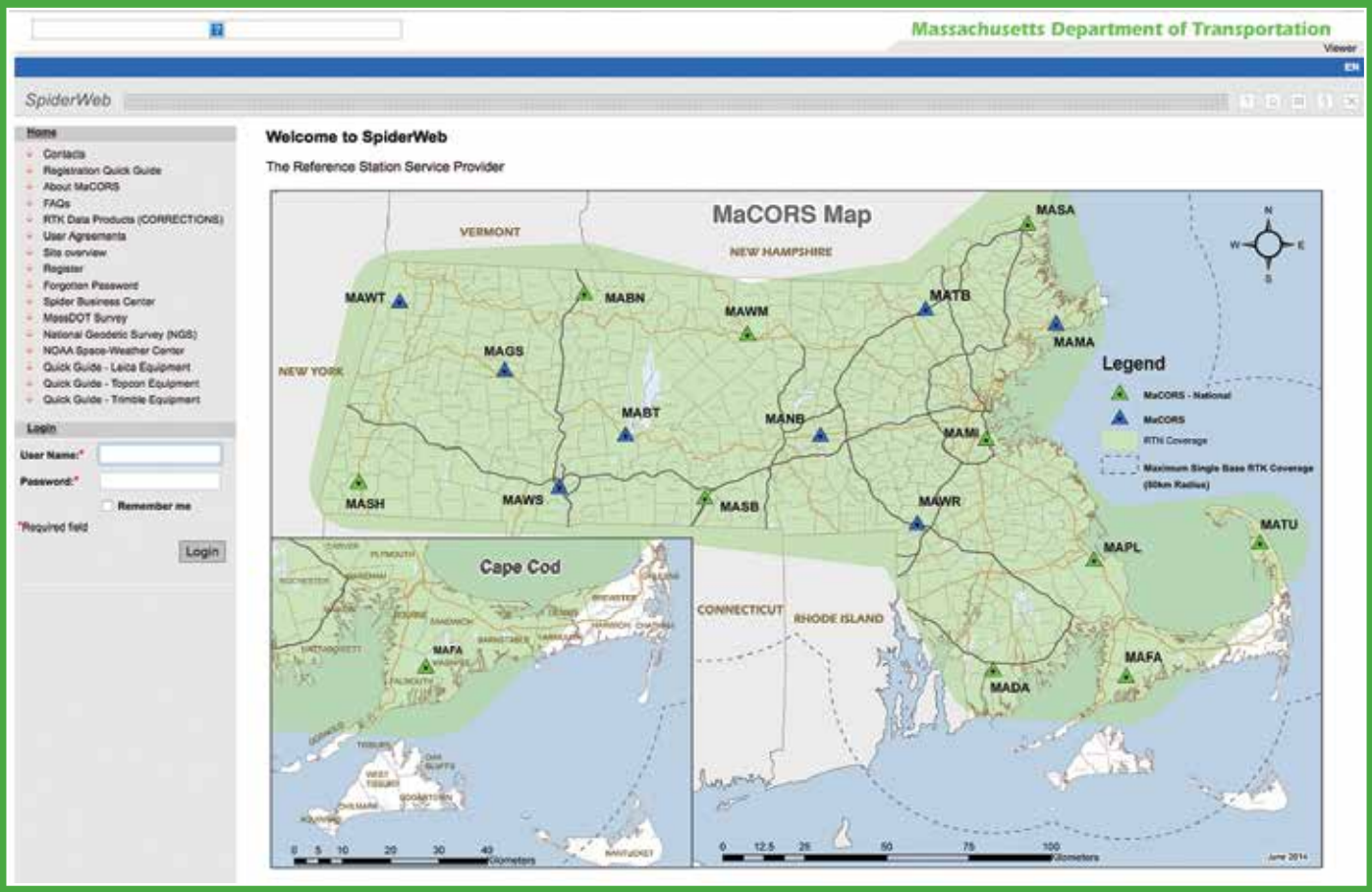
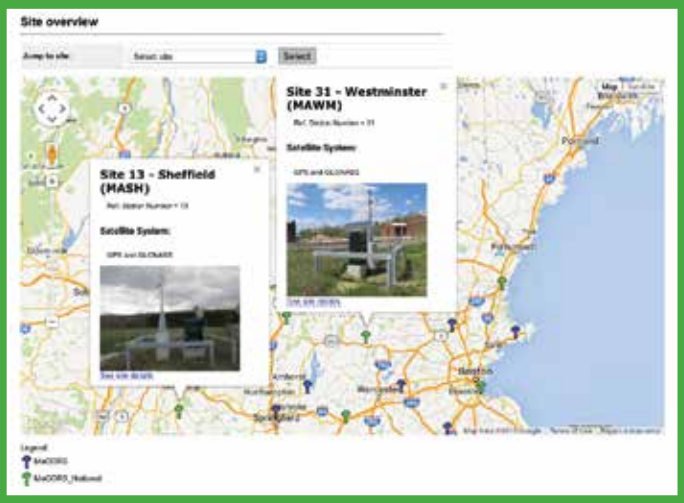


MassDOT's Real-Time GPS Network Now Available For Use

MassDOT is now granting public access to its CORS/Real-Time GPS Network. The MaCORS Network is administered by the Survey Section of the MassDOT Highway Division. Many sectors throughout the Commonwealth that utilize precise positioning applications will benefit from its availability.

Follow the link below for access to the MaCORS website.

http://macors.massdot.state.ma.us



About MaCORS

The Massachusetts Continuously Operating Reference Station Network (MaCORS) is a system of continuously operating Global Navigation Satellite System (GNSS) reference stations located throughout Massachusetts. It is designed to assist surveying, engineering, and GIS mapping professionals in a variety of static and real-time differential GNSS positioning applications. It is comprised of 18 GNSS base stations located in MassDOT maintenance facilities throughout Massachusetts which are approximately 50 km apart.

Positional information can be obtained from this network through the post-processing of raw static GNSS data downloaded from this website, or in real-time through the use of correction data broadcast via the internet. Depending on equipment and procedures, MaCORS can provide users the ability to achieve 1-3 centimeter positioning for surveying applications or sub-meter positioning for GIS mapping applications.
The MassDOT Survey Office is responsible for the maintenance of the horizontal and vertical network of geodetic survey control stations throughout Massachusetts; MaCORS serves to enhance this network.

BAYSTATE ROADS
Local Technical Assistance Program (LTAP)
TECH notes

#70 - STOP SIGN INSTALLATION

Background

STOP signs are traffic control devices that drivers come across regularly. The function of a STOP sign is to improve the safety and operation of intersections by defining who has the right of way. Since STOP signs have considerable control over traffic, they should be installed only where necessary. The Manual on Uniform Traffic Control Devices (MUTCD) provides guidelines for the installation of STOP signs through the development of warrants. Unwarranted STOP signs may create problems either at the intersection or along the roadway itself by:

• Encouraging motorists to drive faster between intersections in order to save the time lost by stopping.

• Encouraging violation of traffic laws. For example, if STOP signs are installed at a location where the driver does not perceive a need for them, the rate of STOP sign violations tends to increase at that and other locations.

• Encouraging the use of alternate, often more local, routes by drivers trying to get around the STOP sign.

• Increasing the chance that drivers will disregard conflicting vehicle and pedestrian traffic, thus increasing the risk of collisions and injuries.

Did You Know?

STOP sign compliance studies show that when all way stop control was installed, but not warranted, an average of 30% of the motorists approaching the intersection do not come to a complete stop. (Source: City of Fargo, ND – Stop Sign Facts)

STOP Sign Regulations

In accordance with the MUTCD, a STOP sign shall be an octagon with white legends and border on a red background, and include only the word STOP. An "ALL WAY" supplemental plaque may

Continued on next page

Continued from previous page

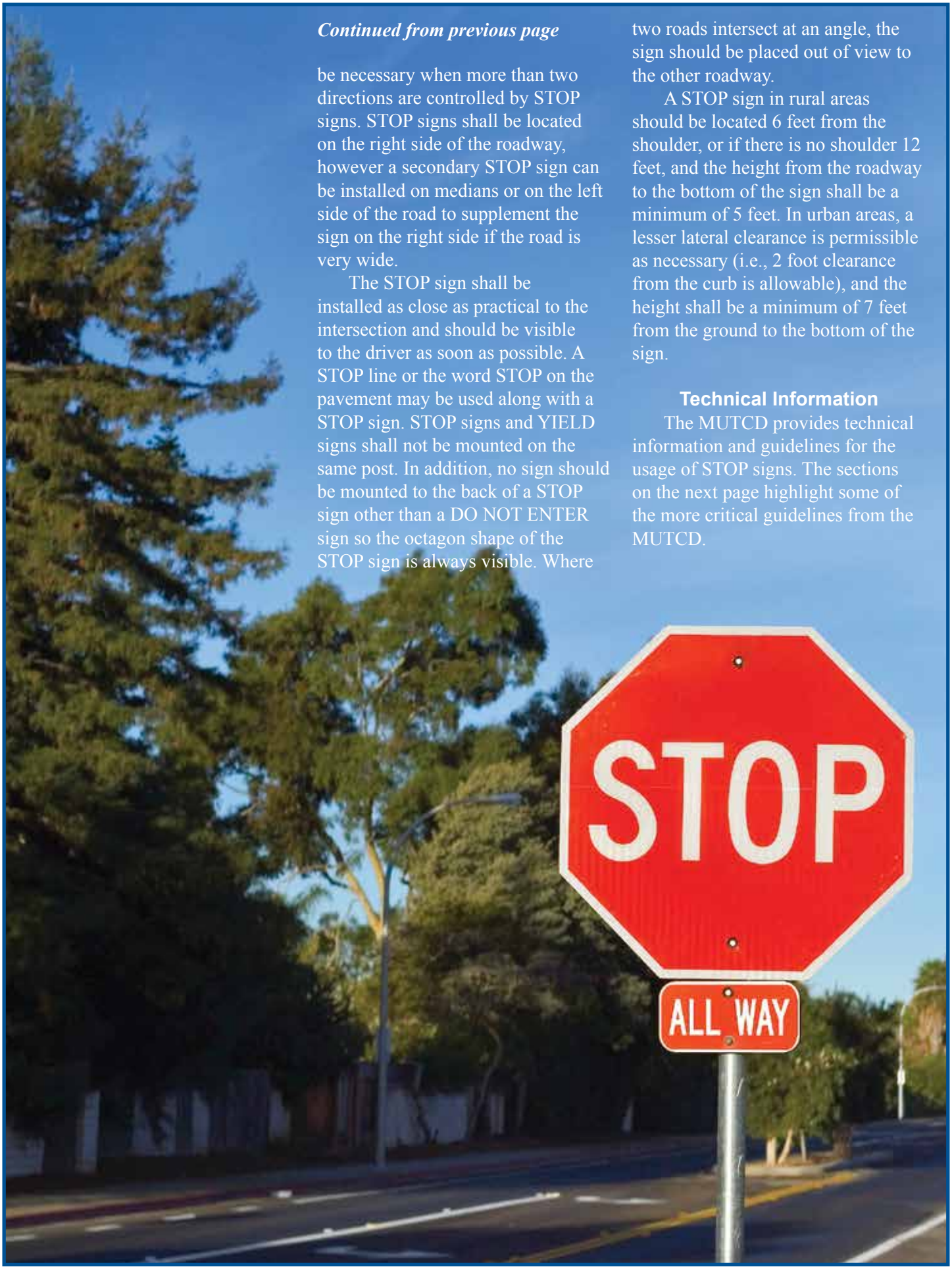
be necessary when more than two directions are controlled by STOP signs. STOP signs shall be located on the right side of the roadway, however a secondary STOP sign can be installed on medians or on the left side of the road to supplement the sign on the right side if the road is very wide.

The STOP sign shall be installed as close as practical to the intersection and should be visible to the driver as soon as possible. A STOP line or the word STOP on the pavement may be used along with a STOP sign. STOP signs and YIELD signs shall not be mounted on the same post. In addition, no sign should be mounted to the back of a STOP sign other than a DO NOT ENTER sign so the octagon shape of the STOP sign is always visible. Where two roads intersect at an angle, the sign should be placed out of view to the other roadway.

A STOP sign in rural areas should be located 6 feet from the shoulder, or if there is no shoulder 12 feet, and the height from the roadway to the bottom of the sign shall be a minimum of 5 feet. In urban areas, a lesser lateral clearance is permissible as necessary (i.e., 2 foot clearance from the curb is allowable), and the height shall be a minimum of 7 feet from the ground to the bottom of the sign.

Technical Information

The MUTCD provides technical information and guidelines for the usage of STOP signs. The sections on the next page highlight some of the more critical guidelines from the MUTCD.



For two way stop control, the MUTCD indicates that STOP signs should be used if engineering judgment justifies that one or more of the following exist:

A. An intersection of a less important road with a main road where application of the normal right-of-way rule would not be expected to provide reasonable compliance with the law;

B. A street entering a designated through highway or street; and/or

C. An un-signalized intersection in a signalized area.

D. High volume, restricted view, or crash records indicate a need for control by the STOP sign.

A different application of the STOP sign is multiway control, which is limited to intersecting roads of relatively equal volume and characteristics. In accordance with the MUTCD, the following criteria should be considered in an engineering study for a multiway STOP sign installation:

A. Where traffic control signals are justified, the multi-way stop is an interim measure that can be installed quickly to control traffic while arrangements are being made for the installation of the traffic control signal.

B. Five or more reported crashes in a 12-month period that are susceptible to correction by a multi-way stop installation. Such crashes include right-turn and left-turn collisions as well as right-angle collisions

C. Minimum volumes:
1. The vehicular volume entering the intersection from the major street approaches (total of both approaches) averages at least 300 vehicles per hour for any 8 hours of an average day; and

2. The combined vehicular, pedestrian, and bicycle volume entering the intersection from the minor street approaches (total of both approaches) averages at least 200 units per hour for the same 8 hours, with an average delay to minor-street vehicular traffic of at least 30 seconds per vehicle during the highest hour; but

3. If the 85th-percentile approach speed of the major-street traffic exceeds 40 mph, the minimum vehicular volume warrants are 70 percent of the values provided in Items 1 and

D. Where no single criterion is satisfied, but where Criteria B, C.1, and C.2 are all satisfied to 80 percent of the minimum values. Criterion C.3 is excluded from this condition.

Please see STOP on page 10

STOP

Continued from page 9

Additional criteria that may be considered in an engineering study related to installation of multi-way stop control is available in MUTCD Section 2B.07.

Once the decision has been made to install a stop sign, there are several critical elements to consider regarding the placement of the sign. Specifically, the MUTCD list three standards governing the placement of a STOP sign as follows:

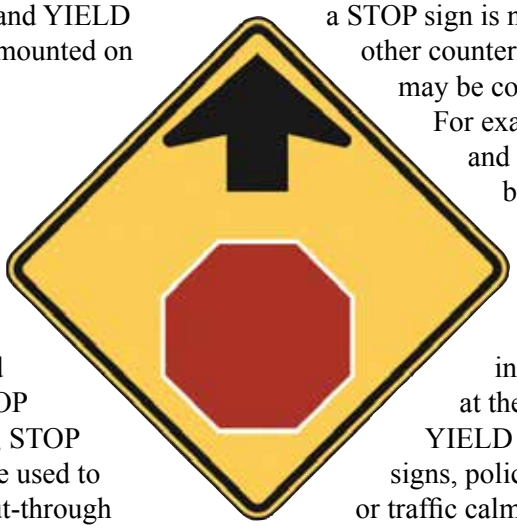
• The STOP sign shall be installed on the right side of the approach to which it applies. When the STOP sign is installed at this required location and the sign visibility is restricted, a Stop Ahead sign shall be installed in advance of the STOP sign.

• The STOP sign shall be located as close as practical to the intersection it regulates, while optimizing its visibility to the road user it is intended to regulate.

• STOP signs and YIELD signs shall not be mounted on the same post.

Additional Considerations

Many traffic safety problems are complex and cannot be resolved by installing a STOP sign. For example, STOP signs should not be used to reduce speed or cut-through traffic. In fact, the improper use of STOP signs in these instances may have unintended and adverse impacts which may be opposite of the original intent. In addition, another consideration may be cost. Although the physical installation of a STOP sign is relatively inexpensive, other costs that need to be considered relate to its maintenance, and to extra fuel consumption, increased air and noise pollution and lost driver time. If a STOP sign is not necessary, other countermeasures may be considered. For example, trees and bushes can be trimmed or parking restrictions can be installed to increase visibility at the intersection. YIELD or warning signs, police enforcement, or traffic calming measures may also be effective strategies for consideration.



W3-1

A Stop Ahead (W3-1) sign shall be used where a STOP sign is not visible for a sufficient distance to permit the road user to bring the vehicle to a stop at the STOP sign.

Resources

Massachusetts Traffic Safety Toolbox Series

This series of fact sheets provides information on safety improvements that can be implemented at the local level. Information on problem areas, possible countermeasures, and implementation considerations is included in each fact sheet which can be found at www.mass.gov/mhd/safetytoolbox/

The Manual on Uniform Traffic Control Devices (MUTCD)

Published by the FHWA, the MUTCD defines the standards used by transportation professionals nationwide to install and maintain traffic control devices on all streets and highways. The most recent version (2009) can be found at http://mutcd.fhwa.dot.gov/

Baystate Roads** is a cooperative effort of the Federal Highway Administration (FHWA), Massachusetts Department of Transportation (MassDOT), and the University of Massachusetts. Program Director, Dr. Mike Knodler, 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. **mass.gov/baystateroads.

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Congratulations Master Roads Scholars

Earle Elliott is the Operations Manager of Highway and Fleet for the Town of Bedford.

Earle has held this position since 2000, after previously working as a District Superintendent at the former Metropolitan District Commission (MDC). He is responsible for planning and the oversight of roadway, drainage and sidewalk projects, as well as, specifying and maintaining a fleet of 135 vehicles and pieces of equipment. The fleet includes construction equipment, police cruisers, and the Town's new 10-wheel Mack, which was out fitted with a 10-foot wing plow and a pre-wetting system. Earle is part of the Town's Emergency Management Operations and has been involved with blizzards, hurricanes, and flooding events. In

2009, the Town of Bedford was noted as one of the top municipalities in the International City/County Management Association (ICMA) Citizens Survey for snow and ice removal.

Earle has been attending Baystate Roads seminars throughout his tenure in Bedford and uses the knowledge gained to help his crew's work effort. He also benefited from information presented at the various asphalt workshops and appreciates the numerous and various training opportunities available through Baystate Roads.

Steven J. Tyler, P.E. is the DPW Director for the Town of Spencer.

Steve also serves as Chairman of the Central Massachusetts Transportation Improvement Program (TIP) Advisory Committee (2 years), as a member of the Regional Homeland Security Emergency Evacuation Planning Committee and on the Baystate Roads Program Advisory Committee. In addition, he is an Executive Committee Member and a Certified Trainer for the Traffic Incident Management System (TIMS) Training Task Force and an Executive Committee Member for the Strategic Highway Safety Plan Program. He is also a member of the MassHighway Association and the Worcester County Highway Association.

Steve's prior experience includes 20 years as Vice President, Environmental Manager, and Project Manager/Engineer at Bayside Engineering. In those capacities, he worked on a wide variety of bridge, roadway and highway projects for MassDOT and municipalities. Notable bridge projects include

the 2010 Award Winning Historic Stone Arch Design-Build Bridge Replacement on Pleasant Street over the Blackstone River in Grafton, MA, and the 1800 foot long Summer Street Bridge Replacement over the Reserved Channel in South Boston, MA.

Steve has been trained as an emergency first responder and site supervisory since 1988 and is trained in the Incident Command System. His knowledge includes: hazardous, radioactive and mixed waste remediation transport and disposal; super-overload transportation; and all aspects of environmental permitting in Massachusetts.

Steve is currently manager for the Design Engineering Department at an environmental engineering firm specializing in the assessment, remediation and cleanup of contaminated sites including hazardous, radioactive and mix waste materials.

Steve holds a Bachelor of Science Degree in Engineering Design from East Tennessee State University, and a Master of Science Degree in Environmental Health Sciences with an emphasis in Hazardous and Solid Waste Materials Management from East Tennessee State University. He has lived in Massachusetts, Rhode Island, North Carolina, Puerto Rico, Georgia, Texas, California, Philippines and Tennessee.

Carl Maria is the Crew Leader of the Highway Department for the Town of Acton

Carl Maria began working for the Town of Acton in 1998 as a Grounds Keeper in the Cemetery Department. In 1999, he transferred to the Highway Department and became a Light Equipment Operator. Over the next few years, he was able to gain valuable training and mentoring from experienced co-workers at the Highway Department. He participated in various town-wide projects including drainage and paving work, sidewalk construction, and snow and ice removal. To further advance his career he sought training from the Baystate Roads Program. Some of the classes he participated in were Snow and Ice Operation, Paving, Plan Reading, Basic Surveying, and Succeeding as a Foreman series (1-5).

As a result of his experience and training, Carl was promoted to Heavy Equipment Operator in 2007. In 2008, Carl became a Roads Scholar. He was also promoted to his current position as Crew Leader of the Highway Department. He is thankful for the opportunities the Town of Acton and the Baystate Roads Program have afforded him and he was proud to become a Master Roads Scholar in 2014.

Kevin Farrell is the Assistant Superintendent of Streets for the Town of Acton.

In 1980, Kevin Farrell began his municipal career working for the Town of Stow. While there he obtained his Commercial Driver's License and Hoisting license. In 1988, he began working for the Town of Acton in the Transfer Station/Recycle Department. Kevin started taking Baystate Roads classes to gain knowledge to move forward in his career. He has

progressed from truck driver laborer, to heavy equipment operator, to crew leader, to his current position as Assistant Superintendent of Streets.

The following statement shows Farrell's gratitude to his employees and the Baystate Roads classes:

"I would like to thank my 15 member crew for their help and cooperation during my transition from a union worker to manager. Because of them it went very smoothly. My favorite Baystate Roads classes were the Succeeding as a Foreman Series (1-5) by Rockie Blunt".

Chris Pompi is the DPW Superintendent for the Town of Lee.

Chris graduated from UMASS/ Amherst in 1986 with a BS in Civil Engineering and again from UMASS/ Amherst in 2001 with an MBA. He is a Licensed Professional Civil Engineer in Massachusetts. His Civil Engineering career began in 1981 in the private sector working for one of the largest civil consulting firms in the country. While in the private sector he designed and built buildings, dams, bridges, roadways, landfills, water treatment plants, and wastewater treatment plants. Chris remained in the private sector until 1992. In

1992, He began working for the Massachusetts Highway Department (MHD) where he was involved in the design and construction of roadways and bridges. In 1999 he left MHD to pursue management positions and to utilize his MBA and Civil Engineering degrees.

Chris manages the day-to-day operations of the Water, Sewer, and Highway Departments with the assistance of talented supervisors and crew members. Chris has been attending Baystate Roads seminars/ classes for years. Chris explained that "They (Baystate Roads Classes) are extremely beneficial to myself, both personally and professionally,...thank you to Dr. Chris Ahmadjian and the rest of the Baystate Roads team."

Baystate Roads Congratulates the Following Roads Scholars

Tam Nyugen from Framingham | Daryl Amaral - Mass DOT District 2 | Paula Simmons - MassDOT

MassDOT INNOVATION + TECH TRANSFER Exchange

March 11 & 12, 2015, The DCU Center, Worcester

Missed a presentation?
They are online at
www.MassDOTInnovation/agenda.html

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The 2016 Innovation & Tech Transfer Exchange

March 8 & 9, 2016

More photos at https://www.flickr.com/photos/baystateroads/

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MASS
Interchange

Mass Interchange is a quarterly newsletter published by Baystate Roads (LTAP). The Local Technical Assistance Program (LTAP) is a national effort of the Federal Highway Administration (FHWA) designed to improve access to highway, road, and street technology for local agencies. Local capabilities and needs differ, and it is the recognition and accommodation of this fact that has been primarily responsible for the program's success. Flexibility in the delivery of technology is a key to responding to the multitude of needs felt by a group as diverse as the local agencies. LTAP is, therefore, based on a policy that employs a national network of technology transfer centers established in partnership with the State highway agencies and staffed with personnel skilled in providing an interface with their respective local constituencies. Because the program relies on input from many sources, inquiries, articles and ideas are encouraged.

To contact Baystate Roads
call (413) 545-2604 or FAX 413-545-9569
mass.gov/baystateroads

MT15

Continued from page 1

• Network with colleagues representing diverse interests from the public, academic and private sectors.

• Participate in site visits and mobile workshops led by engineers and bicycle/pedestrian advocates.

• Attend a public meeting on the Program for Mass Transportation - "Focus 40" – the MBTA's 25-year Capital Plan, co-chaired by MassDOT Secretary Stephanie Pollack, or attend the interactive mega session on MassDOT's Complete Streets Program.

We can all move together toward healthy transportation in Massachusetts by attending this year's conference on Wednesday, November 4, 2015, from 7:45 AM to 4:30 PM, at the Boston Park Plaza Hotel, 50 Park Plaza at Arlington Street, Boston, MA.

MT15 is a MassDOT/GreenDOT event. GreenDOT is MassDOT's comprehensive sustainability policy that helps promote the healthy transportation modes of walking, bicycling and transit.

This is the one conference you don't want to miss. Register today at www.MovingTogetherMA.org!