MASS INTERCHANGE

Volume 24, Number 2 Spring 2010

# Massachusetts Launches "GreenDOT' to Embed Sustainability at MassDOT


*Photo Credit: Natalia McKittrick, Pedal Power Photography, 2010*

*This article is provided by MassDOT.*

On June 2, Massachusetts Department of Transportation launched GreenDOT, a comprehensive environmental responsibility and sustainability initiative that will make MassDOT a national leader in "greening" the state transportation system. GreenDOT will be driven by three primary goals:

1. Reduce greenhouse gas (GHG) emissions;
2. Promote the healthy transportation options of walking, bicycling, and public transit;
3. Support smart growth development.

GreenDOT calls for MassDOT to incorporate sustainability into all of its activities, from strategic planning to project design and construction to system operation. In our statewide and regional planning and funding prioritization, we will work toward the GreenDOT goals. This includes regional infrastructure priorities that are considered by the Metropolitan Planning Regions. The initiative includes greenhouse gas reduction targets mandated under the Global Warming Solutions Act, signed by Governor Patrick in 2008. This law requires an economy-wide 2020 emissions reduction mandate of between 10 and 25 percent by January 1, 2011, the first step toward a required 80 percent reduction by 2050. The transportation sector generates more than one-third of the total greenhouse gas emissions produced in Massachusetts.

GreenDOT sets a goal of reducing greenhouse gas emissions over 2 million tons by 2020, a reduction of about 7.3 percent below 1990 transportation sector emission levels. If left unchecked, 2020 transportation emissions would increase by 19.0 percent over 1990 levels. Instead, the GreenDOT initiative, combined with other state and federal government policies, is expected to reduce 2020 transportation emissions by almost 30 percent below this "business as usual" level.

The GreenDOT initiative will achieve the greenhouse gas reductions through a range of measures. In cooperation with regional planning agencies, MassDOT will set statewide greenhouse gas reduction targets, and meet these targets by balancing highway system expansion projects with other projects that support smart growth development and promote public transit, walking and bicycling. Examples include transit and rail projects, complete streets planning that includes bicycle and pedestrian accommodations, and investments in greener, more efficient fleet vehicles and renewable power. MassDOT is also working to improve

*continued on page 4*

## JEFFREY T. KORANDA
## CONCORD PUBLIC WORKS
## MASTER ROADS SCHOLAR

I am proud to have worked for the Highway Division of Concord Public Works for over 22 years, and Baystate Roads Program has been a big part in providing the training and skills needed to perform my job. Chris Ahmadjian introduces new technology that makes us more effective in meeting our day-to-day responsibilities. So far, he has been "right on" with his choice of workshop topics and instructors. The Town of Concord, with a population of 15,000, expects only the best service and maintenance from its DPW, and our agency is able to provide it because of this training program.

Concord has one of the top GIS programs in the state, and I have been a part of that success by helping to compile the field work. We have over 400 outfalls, 3,700 catch basins and 1,700 manholes in the 120 miles of maintained roadways. With this technology at our disposal, our compliance with NPDES 2 is much more achievable.

My division works with the roads program on an annual basis by installing all new drains and culverts the year prior to its participation. All of the infrastructure within the road right-of-ways has been GPS located, from trees to signs.

I also recognize that having a good crew to work with helps tremendously. You are only as good as the crew who works with you. Since the early 90's, my division has been attending all of the Baystate Roads winter operations training available and has benefited greatly from the knowledge and innovation shared at those classes. Having known Chris before he joined Baystate Roads, the lesson I have most tried to employ in all my daily activities is "Safety First." Thank you, Baystate Roads Program.

## ROBERT A. BURGMANN
## BARNSTABLE DPW
## MASTER ROADS SCHOLAR

As Town Engineer, I have been responsible for all capital design and construction projects undertaken by the Barnstable DPW. This includes numerous road rebuilding and resurfacing projects, a profusion of drainage system replacements/expansion, repair/replacement of bridges, design and construction of docks, boat ramps and marinas, expansion of the town's wastewater collection/treatment facilities, and repairs to numerous non-school buildings.

Among other things, the Town Engineer is responsible for issuing house numbers and this has led to many interesting interactions with the public; it appears that many people take their house numbers very personally. I have also been "fortunate" to have been appointed the town's Fence Viewer leading to additional interesting debates with citizens regarding certain fences.

As a Cape Cod resident since 1976, I have served on Sandwich's Planning Board for 10 years. As a member of the Barnstable County Public Works Association, I served a two-year term as president and remain a member of its Board as well as a board member of the Massachusetts Highway Association. Several years were spent on the Barnstable County Incident Mangement Team training to deal with large scale disasters.

My background includes a B.S. in Civil Engineering from Northeastern University and service as an officer with the Army Corps of Engineers both stateside and in Viet Nam. Experience was also gained in the private sector as a project manager on waste water facilities.

When not working, American military history to detective fiction are reading choices. In warmer weather, I enjoy bicycling along many of Cape Cod's bike trails.

# DISTRACTED DRIVING CREATES DANGEROUS SITUATIONS

## This all starts with your commitment to not become a distracted driver

Driving large municipal trucks and special purpose vehicles, including cars, can be challenging enough even when full attention is given to the road and potential hazards. It only takes a second for a crash to happen. Distractions occur when drivers concentrate on something other than operating their vehicles--such as engaging in cell phone conversations. The National Highway Traffic Safety Administration estimates that 25% of all crashes involve some form of driver distractions.

National surveys show that most drivers at least occasionally engage in behaviors that draw some of their attention away from their driving task. The most common of these behaviors include such general activities as:

Talking or texting on a cell phone;
Talking with passengers;
Changing radio stations or CD's;
Eating or drinking while driving.

Operating municipal trucks is unique. The fact that most of the trucks have special equipment requires more attention to detail, leaving no room for distractions.

Driving is a full-time job, and operating snowplows, trash pickup trucks, fire engines, etc. while using a cell phone, reading a road map, or talking to fellow employees is potentially dangerous. Follow these tips:

Make adjustments to vehicle controls such as radios, air conditioning, or mirrors before beginning to drive or after the vehicle is no longer in motion;

Don't reach down or behind the driver's seat, pick up items from the floor, open the glove compartment, clean the inside windows, or perform personal grooming while driving;

You should never eat or drink while driving;

Know where you are going and how to get there before you start out.

For more than 10 years studies have been conducted which focus on the risks associated with various types of distractions. There clearly is ample information to believe a distracted driver is at an increased risk of a crash. Your complete attention to driving is not only in the best interest of you and your passengers but can clearly save lives as well as reduce serious injuries.

The National Safety Council estimates that 80% of Americans admit to using cell phones, and 20% admit to texting while driving. That amounts to about 100 million drivers. Driving while using a cell phone incurs a 4 times greater risk of crashing, which is equivalent to driving while drunk (with a 0.08 blood-alcohol level). For texters, the risk is eight times greater. Talking on a cell phone while driving slows down the reaction time of even the most experienced driver. All drivers of municipal vehicles must be commited to reducing serious injuries and deaths on our roadways.

*Written by Murray Pendleton, Chairman, Connecticut Police Chief's Association--Highway Safety Committee and reprinted with permission of the Connecticut LTAP.*

*continued from page 1*

sustainability and decrease impacts in our design and construction practices, including such measures as use of recycled materials and warm mix asphalt in pavement; procurement of low emission fleet and transit vehicles; retrofit of diesel vehicles; use of comprehensive environmental management systems in our facilities; and implementation of several solar and wind power projects in our state highway layout and other MassDOT property.

GreenDOT was designed as a strategic, comprehensive response to several existing state laws, Executive Orders, and MassDOT policies that together call for a more sustainable transportation system. These include the 2009 Transportation Reform Law that created MassDOT and established the Healthy Transportation Compact which promotes improved public health through active transportation; the Global Warming Solutions Act, which requires measurable and enforceable economy-wide greenhouse gas reductions; Leading by Example (Executive Order 484), which works to reduce the overall environmental impacts of state government operations, particularly climate and energy impacts; and MassDOT's Complete Streets design approach that calls for appropriate accommodation of all transportation system users.

*Catherine Cagle*
*MassDOT Manager*
*Sustainable Transportation*

# Safe Motor Grader Operation


1. Read the operator's manual.
2. Always perform a pre-trip inspection.
3. Clean windows, lights, etc. and any debris from floor of grader.
4. Do not let anyone ride along (inside or outside).
5. Look, then check again, before backing up.
6. Drive at a slow speed in congested areas.
7. Give the right-of-way to loaded vehicles.
8. Watch for overhead dangers.
9. Know your work area: check weight limitations, types of surfaces, and clearances.
10. Report defective equipment immediately.
11. Stay focused on the job.
12. Select a safe parking area.
13. Wear hardhats and seatbelts.
14. Wear safety gloves and appropriate safety gear.
15. Remove ignition key when leaving grader.
16. Ground the blade when leaving grader unattended.
17. Use colored flags at each end of moldboard when blading.
18. Shift blade to center and lock it when parking.
19. Be aware that boarding and exiting grader may put you in danger of slipping, tripping or fall ing. Use a three-point (two feet and one hand or one foot and two hands) approach when entering or exiting the cab.
20. Be sure these items are always onboard:
    - A slow moving vehicle triangle for the back of the grader.
    - A visible fire extinguisher; know how to use it and make sure it is properly charged.
    - A hand shovel in good condition.
    - The operator's manual.
21. Communicate with traffic:
    - Use flashing safety lights when blading.
    - Keep headlights on whenever operating.
22. Be alert to traffic waiting to pass, and provide the driving public passing opportunities.
23. Use signing and proper flaggers to warn traffic of work in progress.
24. Be sure your signs and locations conform to the ***Manual of Uniform Traffic Control Devices***.

**SAFETY EQUIPMENT SUGGESTIONS**

Reflective vest
Road work ahead signs
Hard hat
Radio or phone
Close fitting clothing
Work gloves
Ear protection
Safety work shoes

# MassCCD 2010

About 1,300 high school students attended the 8th Annual Massachusetts Construction Career Days (MassCCD) to learn about industry job opportunities including the construction, engineering and environmental fields with both union and open-shop companies. The industry faces a shortage of young, qualified workers and MassCCD was created to help address the shortage and educate high-school students about the wide range of rewarding, well-paying career opportunities available in the constructon industry. The 45 exhibitors at MassCCD included construction and related companies, vendors, equipment dealers, labor unions, apprentice programs, colleges and others. They all donated their time, equipment and, in some cases, operators but beyond that there was no cost to exhibit. The two-day event was a great way to work with state government and industry partners to attract a future work force. Here are some thoughts and comments from attendees.


*Students loved the interactive meeting with heavy machine operators and the opportunity to try the equipment.*

*Teachers and students all reported that the supervision was superb, in that it gave the students some degree of independence in working with the machines, but also made sure that everyone was safe.*

*It opened up other career paths that many students had never thought about.*

*Students wanted more time at most exhibits.*

*On-site staff provided invaluable practical and educational knowledge.*

*Diversity of career options, tree climbing, everything hands-on, surveying, bridge-building computer simulation, and hands-on woodworking activitiy were terrific.*

*Never realized math was so important.*

*Great day for the kids; it made they aware of what it takes and how to enter these professions.*

*Dedication of the volunteers was impressive.*

*Students were impressed with how much the presenters loved their jobs.*

# TOO BUSY TO TRAIN? THINK AGAIN!

OOPS!

How many times have you wished your managers and field crews were as good as you? Maybe some of them are struggling to do things the way you want them done and are failing. Others may take longer to master new tasks and, therefore, you find it takes them too long to complete a job.

There is no doubt that workers in many industries today are pushed to produce more in less time and that may be why research shows that today's workers are less satisfied with their jobs versus a decade ago. In addition, as large numbers of baby boomers prepare to leave the work force, they will be increasingly replaced by younger workers who tend to be more dissatisfied with their jobs than older workers. They also have different attitudes and expectations about the role of work in their lives. This transition presents a new challenge for many employers and may be impacting your ability to get managers and field crews to reach their full potential.

The answer to the problem for many agencies is to provide more training and coaching of their employees. If your field personnel get below eight hours of training per year, it won't lead to any changes in their production. Many organizations offer more training for their management and while that is good, construction companies make or lose most of their money out on the jobsite, not in the office. Quality, service and productivity happens, to a great extent, out in the field.

Most public agencies do not have formal training programs and making time to train employees is challenging because as a manager there are time constraints on you. But leaving people to learn by doing or by trial and error is costly. Set a goal to give training to help your employees excel. Your training goal should be to provide 40 hours of training per year, per employee. The total cost probably will not be more than two percent of your payroll cost but your return will be much higher improvement in bottom-line productivity.

To get started, call a meeting with your managers or team to select and prioritize as many different training topics needed to build your agency. In future years, make it a habit to cover the same topics plus add new ones--there are always new people and refresher classes reinforce correct performance. Allocate training time each week such as 30 minutes every Tuesday morning. Remember, training can be held in the office or on the jobsite but it should be interactive. Use the old method of telling them what you are going to tell them, tell them, show them, let them do it and tell them again. Follow up by coaching participants until they get it right then recognize those who did a good job. Share training duties among your crew, based on experience and skill, so everyone gets a chance to teach.

There are times when you should use outside people to instruct on new or technical tasks. Bringing a specialist in to train or sending employees offsite to interactive seminars and workshops can be worth the investment providing you coach them after they get back on the job so they are implementing their new skills correctly.

People want to make a meaningful contribution on the job and want to be recognized for their efforts. Training does this and it also fosters team spirit and more enthusiasm for their work. Use training and coaching to build productivity, quality of work, motivation, and company loyalty.

*Reprinted with permission of Linda Hanson, CMC, a certified management consultant and author of 10 Steps to Marketing Success. Contact: www.llhenterprises.com.*

PLAN NEXT SEASON'S TRAINING BY CHECKING OUT BAYSTATE ROADS PROGRAM WORKSHOPS ON PAGE 8 and www.mass.gov/baystateroads

## RUN-OFF-THE-ROAD/ RUMBLESTRIP DVD

The Roadway Safety Foundation in conjunction with the South Carolina DOT has launched a public safety education campaign called Recognize, React, Recover: Using Runblestrips to Prevent Run-off-the-Road Crashes. A new DVD details the benefits of runblestrips and is available free by contacting Cathy Gillen at: **202-857-1203** or **cathygillen@roadwaysafety.org.**

## LIFE CYCLE OF A HIGHWAY

The Missouri DOT created a video illustrating the death of a highway by showing how layers of rock and soil under the pavement crumble after 50 years even though the driving surface might remain smooth. This was used to demonstrate to funding agencies that the road had gone through its life cycle and needed to be replaced. Check out the video on: **www.youtube.com/modotvideo** for tips on how to convince your town officials that work is required.

## MINI-ROUNDABOUTS

This technical summary explores the unique characteristics of mini-roundabouts while reinforcing the need to apply a principles-based approach. The report, FHWA-SA-10-007, describes the benefits, user considerations, operational analysis, design considerations, and costs. It is a summary of the principles outlined in the FHWA document ***Roundabouts: An Informational Guide*** (2000) and can be used by transportation managers, decision makers and practitioners in making informed choices of mini-roundabouts as intersection alternatives.

## LOCAL ROADS SAFETY RESOURCE CD

Whether you are a local road safety advocate, a practitioner, an elected official, or a community leader, you need information and tools to plan and implement roadway safety improvements. This new CD provides quick and easy access to the latest information on local roads safety. Organized by topic area, the CD provides guidance, tools, and other resources from government agencies and national associations. **FHWA-SA-10-003** is easy-to-use and portable making it a vital resource for your agency's library. Order this free CD at: **http://safety.fhwa.dot.gov/local_rural/resourcecd.**

In 2008, 56% of the 37,261 U.S. highway deaths occurred on rural roads, according to NHTSA. About 23 % of the population lives in rural areas where the fatality rate for crashes is more than twice the fatality rate for urban crashes. CD topic areas include:

Crash Data
Countermeasures Guidance
FHWA Safety Programs
Older Driver Safety
Policy Guidance
Planning Resources
Research Reports

BAYSTATE ROADS PROGRAM
UMass Transportation Center
214 Marston Hall
130 Natural Resources Road
Amherst, MA 01003
***ST131775***

Non-Profit Organization
U. S. Postage Paid
Permit No. 2
Amherst, MA
01002

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 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

MassDOT
Federal Highway Administration
UMass Transportation Center

## *BAYSTATE ROADS WORKSHOP*

**Traffic Signal Systems for Municipalities**
**August** Sites TBD

**Chain Saw Safety (2 days)**
**November 4 & 5** Site TBD

**Two Stroke Engine Repair/ Maintenance (1/2 day)**
**November 1, 2, & 3**
Sites TBD

**Snow & Ice (planning stage)**

Additional classes are also in the planning stage; please check website **www.mass.gov/baystateroads**

## in this issue

MassDOT Launches GreenDOT.....1
New Master Roads Scholars.....2
Distracted Driving.....3
Safe Motor Grader Operation.....4
MassCCD 2010.....5
Too Busy to Train?.....6
New Resources.....7

## *BRAIN SHARPENER*
### *from our Road Math Class*

**Excavation & Volumes**
A 30" wide trench is 32 feet long. It is 4.75 feet deep at one end, and 6.25 feet deep at the other end. What is the volume of the trench?
***ANSWER in next newsletter***