



MARYLAND TRANSPORTATION TECHNOLOGY TRANSFER CENTER

Local Technical Assistance
Program (LTAP)
University of Maryland at
College Park

www.mdt2center.umd.edu

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Summer 2010 | Volume 27, No. 2

New Data Show Bicycling and Walking Up by 25 Percent *Report Looks at Efforts to Increase Bicycling and Walking in the U.S.*

The U.S. Department of Transportation recently released new data from the Federal Highway Administration's 2009 National Household Travel Survey which shows that both bicycling and walking trips have increased by 25 percent since 2001. The FHWA funded Pedestrian and Bicycle Information Center included this data in The National Bicycling and Walking Study: A 15-Year Status Report. The report details trends and changes in bicycling and walking since 1994.

"This report demonstrates what we've been saying here at the Department," said U.S. Transportation Secretary Ray LaHood. "Americans want and need safe alternatives to driving. And by making biking and walking safer and more accessible, we'll be able to provide Americans with more choices and help foster more active, livable communities."

Secretary LaHood recently announced a policy change to promote bicycle and pedestrian opportunities that encourage transportation agencies to go beyond minimum standards and provide safe and convenient facilities for pedestrians and bicyclists.

In the 1994 National Bicycling and Walking Study, the U.S. Department of Transportation established two goals: to reduce the number of bicyclists and pedestrians killed or injured in traffic crashes by 10 percent and to double the percentage of total trips made by bicycling and walking in the United States.

From 1993 to 2008, bicycle fatalities decreased by 22.3 percent and injuries decreased by 14.7 percent, and pedestrian fatalities dropped by 12 percent and injuries dropped by 17.8 percent, surpassing the goal in the 1994 report. However, in 2008, there were 4,378 pedestrians and 716 bicyclists killed in roadway crashes which indicates that there is still work to be done to make walking and bicycling safer and more convenient transportation options.

The number of reported walking trips has more than doubled since the first survey, from 18 billion in 1990 to 42.5 billion in 2009. Bicycling trips saw a similar increase, from 1.7 billion to four billion during the same period. While percentage increase in bicycle and pedestrian trips didn't fully meet the goal, the report also noted the population increase resulted in a greater number of overall trips and that progress is being made.

"We are proud of the work we've done to integrate walking and bicycling into people's transportation options," said Federal Highway Administrator Victor Mendez. "But we won't stop working until we find ways to prevent fatalities and create more livable communities across the country."

The National Bicycling and Walking Study: A 15-Year Status Report is a status update to the 1994 National Bicycling and Walking Study. This new report looks at progress toward goals outlined in the original study and outlines federal, state and local programs that promote bicycle and walking throughout the country.

The full report can be accessed at http://www.walkinginfo.org/15_year_report/.

For more information visit: www.fhwa.dot.gov



Written by Murray Pendleton, Chairman, Connecticut Police Chief's Association Highway Safety Committee

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 (NHTSA) 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 pick-up trucks, fire engines, etc. while using a cell phone, reading a road map, or talking to fellow employees is potentially dangerous.

- 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 not eat or drink while driving, but if you do, get something that is not messy and that you can hold in one hand. Set your food up next to you before you take off and make sure you use a cup holder for your drink.
- 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. Below is a list of common distracters:

Use of cell phones	Eating/drinking/smoking
Texting and e-mailing	Personal hygiene
Changing radio stations/CD's/DVD's	Sight seeing/gawking
Ipods	In-car information screens
Adjusting mirrors/heat/AC	Searching for items
GPS	Unsecured objects
Reading maps/directions/books/magazines/newspapers	

Such distractions may not only cause you to lose control of your vehicle, they may cost someone, including you....your life.



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More than half of the 43,000 annual U.S. highway fatalities are related to poor roadway conditions and the staggering cost to America is \$217 billion annually. That was the sobering testimony Ted R. Miller, Ph.D., delivered to an April 14 U.S. Senate Environment and Public Works Committee hearing on improving transportation safety.

“The cost of crashes involving deficient roadway conditions dwarf the costs of crashes involving alcohol, speeding, or failure to wear a safety belt,” Miller said. “Focusing as much on improving road safety conditions as on reducing impaired driving would save thousands of lives and billions of dollars each year.”

He also told the committee that crashes related to road deficiencies cost American businesses \$22 billion and governments \$12 billion, and result in \$12 billion in medical spending annually.

Miller, an internationally-recognized safety economist with the Beltsville, Maryland based Pacific Institute for Research & Evaluation (PIRE), is the primary author of a July 2009 study, “On a Crash Course: The Dangers and Health Costs of Deficient Roadways” for the Transportation Construction Coalition (TCC).

Beyond assessing costs, Miller outlined practical solutions to reduce fatalities. “Immediate solutions for problem spots include: using brighter and more durable pavement markings, adding rumble strips to shoulders, mounting more guardrails or safety barriers, and installing traffic signals and better signs with easier-to-read legends,” he said. “More significant road improvements include replacing non-forgiving poles with breakaway poles, adding or widening shoulders, improving roadway alignment, replacing or widening narrow bridges, reducing pavement edges and abrupt drop offs, and clearing more space on the roadside.”

Miller concluded his testimony telling members of the committee that the upcoming highway and transit authorization bill provided an important opportunity to make additional investments to “improve the safety built into roads and bridges.”

About the Transportation Construction Coalition

Established in 1996, the Transportation Construction Coalition (TCC) includes 30 national associations and labor unions with a direct market interest in the federal transportation programs. The TCC focuses on the federal budget and surface transportation program policy issues. The TCC is co-chaired by the American Road & Transportation Builders Association (ARTBA) and the Associated General Contractors (AGC) of America.

For more information about TCC or to read the PIRE report visit:
www.transportationconstructioncoalition.org.

CITE Blended Courses for 2010

The Consortium for ITS Training and Education (CITE) announces its Blended Course schedule for 2010. A “blended” course combines the best features of both instructor-led and web-based instruction. Features include: live discussions through the use of conference calls, convenient, flexible web-based learning, a specific time schedule in which to complete the course, and student interaction through the use of a discussion board.

Scheduled courses include:

- Managing High Technology Projects in Transportation, September - October
- Traffic Signal Timing, September - October
- Principles and Tools of Road Weather Management, October - December
- Introduction to Systems Engineering, October - December

For more information about or to register
for CITE’s Blended Courses visit:
www.citeconsortium.org



Texting is a Major Distracter

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 committed to reducing serious injuries and deaths on our roadways. This all starts with your commitment to

DO NOT become a DISTRACTED DRIVER

*Reprinted with permission from the Spring 2010 issue of Connecticut Technology Transfer,
a publication of the University of Connecticut School of Engineering*

Recycled Materials in Roadway Construction: The Many Ways of Going Green

From reclaimed asphalt pavement (RAP) to recycled concrete aggregate (RCA) and the reuse of such materials as fly ash, tire rubber, and shingles, incorporating recycled materials in roadway construction offers the benefits of going green while saving money and maintaining quality and performance. A recent Webinar sponsored by the Federal Highway Administration's (FHWA) National Highway Institute (NHI) and Highways for LIFE program showcased resources available to assist transportation agencies in expanding their use of recycled materials. Also featured were case studies of three successful project applications. Future Webinars will present information on additional applications.

"In an era of tight budgets and increased concern about the environment, the use of recycled materials can help agencies save money and demonstrate their commitment to environmental stewardship," said Webinar moderator Steve Mueller of FHWA. FHWA's recycling policy, issued on February 7, 2002, and available online at www.fhwa.dot.gov/legregs/directives/policy/recmatmemo.htm, asks agencies to "consider recycling first." The use of recycled materials should be considered early in the planning and design process. Options include the use of RAP and RCA, as well as both hot and cold in-place asphalt recycling, which takes an existing pavement and recycles 100 percent of it on site for use in the new pavement or base material.

"It is most cost effective to reuse materials on site, rather than hauling them away and using them elsewhere," said Rick Givan of the Recycled Materials Company, Inc. (RMCI), in Colorado. RMCI's projects include using a mix design with 75 percent recycled materials to pave a section of I-70 in Colorado, as well as a massive 10-year project to remove and recycle pavements from taxiways, runways, and aprons at Stapleton International Airport in Denver, Colorado. "We removed and recycled 6.5 million tons of concrete and asphalt, creating what we call 'the urban quarry,'" said Givan.

When measured on a tonnage basis, hot-mix asphalt (HMA) is among the most recycled materials in the world, amounting to nearly 73 million metric tons (80 million tons) in the United States alone. Materials such as fly ash, tire rubber, shingles, slag, and foundry sand can also be reused in roadways, resulting in enhanced performance and cost savings, in addition to benefiting the environment. The reuse of foundry sand in HMA, for example, can reduce the cost of sand as the fine aggregate by about 40 percent. Approximately 91,000 metric tons (100,000 tons) per year are now being used in HMA and for such purposes as structural fills and embankments. More information can be found in FHWA's publication, Foundry Sand Facts for Civil Engineers (Pub. No. FHWA-IF-04-004), which is available at www.fhwa.dot.gov/Pavement/pub_details.cfm?id=55.

Also staying out of landfills and finding new uses in roadway applications are scrap tires. Tires are shredded to create tire-derived aggregate (TDA), which can be used as a substitute for gravel, sand, and other lightweight

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fill materials. Tire shreds are not only lightweight but have low earth pressure, good thermal insulation, and good drainage. “This is very beneficial where there is poor soil structure and can improve engineering performance,” said Michael Blumenthal of the Rubber Manufacturers Association. The use of tire shreds can increase slope stability, reduce settlement, and stabilize potential landslides. TDA can also cost much less than other lightweight fill options. “Roadway applications include lightweight fill for highway embankments, retaining wall backfill, and insulation to limit frost penetration,” said Blumenthal. Additional information is available at www.rma.org/scrap_tires.



Reclaimed asphalt shingles (RAS) may also be coming soon to a roadway near you. The use of RAS in HMA can help States reduce costs, save landfill space, and improve the quality of their pavements. These recycled shingles are residential roofing shingles that have been processed to meet specifications. Debris is then removed and the RAS is ground to less than 1.27 cm (.50 in) in size for use in HMA. Made using high quality aggregate, the use of RAS in HMA can increase rut resistance and improve the high temperature performance of the asphalt.

The Missouri Department of Transportation (MoDOT) first allowed RAS in a roadway project for evaluation purposes in 2005. After the success of that project, MoDOT revised its specifications to allow the use of both RAS and RAP. As Missouri is not permitting any new landfills to open in the State, the reuse of materials is now more important than ever. Seventeen materials processors and 13 HMA producers in Missouri are currently using RAS. For more information about RAS applications in Missouri, visit www.shinglerecycling.org.

To learn more about the range of by-products that can be used in pavements, download the FHWA Recycled Materials Resource Center's User Guidelines for By-products and Secondary Use Materials in Pavement Construction at www.recycledmaterials.org. With an advisory board that includes Federal, State, and industry representatives, the Resource Center serves as a recycling research and outreach facility for the world's highway community.

For more information on using recycled materials in roadway construction, visit www.recycledmaterials.org.

at www.fhwa.dot.gov/pavement/t504037.cfm is an FHWA Technical Advisory that discusses using RCA as aggregate for new concrete pavements. RCA generally comes from Portland cement concrete pavements, bridge structures and decks, sidewalks, curbs, and gutters that have been removed from service, had their steel removed, and have been crushed to a desired gradation. Commercial construction debris can also be used for RCA, provided that it is cleaned of material such as brick, wood, steel, and glass.

Looking ahead, FHWA and the National Concrete Pavement Technology Center are sponsoring an International Conference on Sustainable Concrete Pavements, to be held September 15–17, 2010, in Sacramento, California. The conference will present innovative processes for achieving sustainable concrete pavements throughout a pavement's life cycle. For more information, visit www.fhwa.dot.gov/pavement/concrete/2010acptpconf.cfm.

In addition to highway materials recycling, environmental benefits are being realized by the growing use of warm mix asphalt (WMA). Using this technology, the temperature at which asphalt is mixed and placed on the road can be lowered by 10 to 38 °C (50 to 100 °F), resulting in reduced fuel consumption and emissions. WMA projects have now been completed in 40 States. Boosting the advancement of the technology is a Warm Mix Asphalt Technical Working Group (TWG) that includes representatives from State transportation agencies, FHWA, National Asphalt Pavement Association, National Center for Asphalt Technology, and the American Association of State Highway and Transportation Officials. TWG members meet regularly to discuss WMA issues and share knowledge and best practices. For more information, visit www.warmmixasphalt.com.

A recording and presentations from the FHWA Webinar, “The Use of Recycled Materials in Roadway Construction,” are available on the NHI Web site at <http://fhwa.na3.acrobat.com/n1340832010march/>. For more information on recycling, WMA, and other environmental stewardship topics, visit www.fhwa.dot.gov/pavement/enstewardship.cfm. Information is also available by contacting Jason Harrington, FHWA, at 202.366.1576 or at jason.harrington@fhwa.dot.gov, or Steve Mueller, FHWA Resource Center at 720.963.3213 or at steve.mueller@fhwa.dot.gov.

*Reprinted from the April 2010 issue of FOCUS a publication of the
United States Department of Transportation and Federal Highway Administration*

Get the inside story on \$30 million in construction cost savings with the Federal Highway Administration's (FHWA) new Prefabricated Bridge Elements and Systems Cost Study: Accelerated Bridge Construction Success Stories. The publication looks at nine bridge projects across the country where prefabrication was used to accelerate on site construction time and reduce the impact to motorists.

"Each project is an example of how various combinations of prefabrication and effective contracting strategies were used to achieve the accelerated on site construction time line. In all cases the on site construction time was significantly reduced, and five of the projects were completed with no impact to rush hour traffic," says Reggie Holt of FHWA. These strategies added up to \$30 million in combined cost savings for the nine projects, with savings defined as the difference between the engineer's estimate and the awarded bid.

An overview is provided for each project, outlining a brief description of the project and information on the benefits realized by using accelerated bridge construction (ABC). Also featured are descriptions of the construction process and contract requirements, including incentives and disincentives. Construction costs are then discussed, including the engineer's estimate, number of bidders, low bid and second lowest bid, savings realized in both time and money, and incentives that were paid. Contact information is also provided for each project.

Among the project highlights is the New Jersey Department of Transportation's (NJDOT) replacement of three bridge decks on the Route 1 Freeway through Trenton. The replacement was NJDOT's first "Hyperbuild" project. The Hyperbuild initiative is designed to shave years off road construction projects and save millions of dollars in design, construction, and road user costs. To qualify for Hyperbuild, a project should have a well-defined scope and, if possible, have limited right-of-way acquisition, utility relocation, and environmental impacts.

All three of the Route 1 bridge decks were replaced through weekend closures in 2005, with no impact to rush hour traffic. Using conventional methods, the project would have taken 22 months. The first bridge was closed at 7 p.m. on a Friday in August 2005, and traffic rerouted onto an 8-km (5-mi) detour. After the bridge was demolished in place, the existing abutments were repaired and new bearing seats constructed. The prefabricated concrete superstructure was then erected and the longitudinal joints between superstructure segments sealed. The bridge was reopened in 56 hours. Replacement of the two other bridges followed a similar time line in September and October 2005. Each new bridge has been designed for a 75- to 100-year service life. The design and construction savings, including savings in user costs, were estimated to be more than \$2 million.



The Ohio Department of Transportation replaced the U.S. Route 22 Bridge in Pickaway County in 48 days, saving \$2.3 million.

Additional Hyperbuild projects completed in recent years include the rehabilitation and reconstruction of the I-280 Stickel Bridge between Newark, East Newark, and Harrison, and the reconstruction of I-78 from Route 24 to the Garden State Parkway in Union Township.

In one of the Ohio Department of Transportation's (ODOT) first accelerated construction projects under its Fast Track Bridge Program initiative, the agency replaced the U.S. Route 22 Bridge over the Scioto River in Pickaway County, 48 km (30 mi) south of Columbus. The bridge provided a vital transportation link for the local school district, trucks transporting grain from harvest fields to mills across the bridge, and emergency response services. However, the 45-year-old concrete slab and steel girder bridge had

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Accelerated Bridge Construction (concluded from page 6)

deteriorated girders and needed to be widened to accommodate local farm equipment. In 2003, the new wider bridge was completed in 48 days using a design-build contract, 12 days ahead of schedule, despite the challenge of heavy rains and flooding. This compared to an expected 18 months using conventional construction methods.

The new bridge features high performance steel girders and a high performance concrete deck. Accelerated construction techniques included using steel girders that were erected as simply supported and later made continuous for live load conditions by pouring integral concrete diaphragms over the intermediate supports. Other innovations that saved time were the use of prefabricated galvanized steel pier caps and galvanized permanent metal deck forms instead of traditional wooden deck forms that would have to be removed. Contract terms containing incentives and disincentives of up to \$50,000 a day were also used to encourage faster construction. Ultimately, the project realized savings of \$2.3 million. "This fast-track project was extremely successful," says Robert Taylor, District Bridge Engineer for ODOT. "The bridge has performed very well and is in like new condition".

Photo Credit: © Ohio Department of Transportation

The new U.S. Route 22 Bridge features high performance steel girders and a high performance concrete deck.

Prefabricated Bridge Elements and Systems Cost Study: Accelerated Bridge Construction Success Stories is available online at www.fhwa.dot.gov/bridge/prefab/successstories/091104/index.cfm. For more information, contact Reggie Holt, FHWA at 202.366.4596 or reggie.holt@fhwa.dot.gov; Claude Napier, FHWA Resource Center at 804.775.3327 or claudenapier@fhwa.dot.gov.

To learn more about ABC, visit www.fhwa.dot.gov/bridge/prefab/index.cfm or www.fhwa.dot.gov/bridge/accelerated/index.cfm.

Like What You're Reading?

If you're interested in learning more about what you've read so far in our newsletter, try one of the following courses available through the Maryland T2 Center:

Pedestrian & Bicycle Accommodation - This workshop provides current information on the design, operation and maintenance of successful pedestrian and bicycle facilities. Emphasis is placed on making participants aware of the characteristics and needs of pedestrians and bicyclists and on the importance of an interdisciplinary approach to planning and implementing pedestrian and bicycle programs. Request this course at www.mdt2center.umd.edu

Asphalt Recycling - This course discusses the advantages of asphalt recycling as part of your road maintenance program. It covers techniques for recycling asphalt pavement, including surface recycling, hot mix recycling (both in plant and on-site), and cold mix recycling. The course emphasizes cold mix recycling, full depth reclamation, reviewing materials, equipment and operations. It also presents recent examples of asphalt recycling projects in several states. The following topics will be discussed: advantages; review of techniques -materials, equipment, and operations for surface recycling, hot-mix recycling, cold-mix recycling, and full depth reclamation. Don't miss out, this course is scheduled for August 12, 2010.

Bridge Maintenance Inspection - This one day course will cover inspection of bridge maintenance. A brief summary of the topics to be covered are as follows: approach, deck maintenance, deck joints, deck drains, bearing maintenance, concrete beams, steel beams, timber beams, bridge seats and caps, piles and bents, truss maintenance, painting, and winter maintenance. The class is for the actual field maintenance worker who has to do the repairs. Don't miss out, this course is scheduled for September 2, 2010.

Take a look on the next page for more of our currently scheduled courses and we hope to see you soon at one of them!

The following courses are currently scheduled and we are still adding to the list! For more information or to schedule a class, contact Janette Prince at 301.403.4623 or register online by visiting us at www.mdt2center.umd.edu.

ASPHALT ROADS COMMON MAINTENANCE PROBLEMS

Ed Stellfox

August 11, 2010, 8:30am – 12:30pm

College Park, Maryland

\$59 All Participants

Municipal employees with road maintenance responsibilities should understand the causes of common maintenance problems on asphalt roads and be familiar with proper repair materials and methods. This course discusses causes and repair procedures for common problems such as cracking, potholes, rutting, corrugations, etc. The procedures cover materials, equipment, techniques for lasting repairs, and a brief discussion of surface treatment.

ASPHALT RECYCLING

Ed Stellfox

August 12, 2010, 8:30am – 12:30pm

College Park, Maryland

\$59 All Participants

This course discusses the advantages of asphalt recycling as part of your road maintenance program. It covers techniques for recycling asphalt pavement, including surface recycling, hot mix recycling (both in plant and on-site), and cold mix recycling. The course emphasizes cold mix recycling, full depth reclamation, reviewing materials, equipment and operations. It also presents recent examples of asphalt recycling projects in several states. The following topics will be discussed: advantages; review of techniques -materials, equipment, and operations for surface recycling, hot-mix recycling, cold-mix recycling, and full depth reclamation.

ASPHALT RESURFACING

Ed Stellfox

August 19, 2010, 8:30am – 12:30pm

College Park, Maryland

\$59 All Participants

This course reviews the various asphalt mixes, their components and their uses. Asphalt resurfacing procedures are covered, including preparation, material, equipment, operation and safety. Special emphasis is placed on proper rolling and compaction of the asphalt overlay. Superpave mix design is discussed as well.

CONSTRUCTION MATHEMATICS

Ed Stellfox

August 26, 2010, 8:30am – 3:00pm

College Park, Maryland

\$89 All Participants

CEU's: 0.5

The course was designed for road workers, foremen, superintendents, construction inspectors and supervisors in need of a refresher, especially in preparation for the Construction Inspections class. Depending on the interest of the participants, the course may cover: whole number and fractions, decimals (for measurement and payment), mixed operation fractions and decimals, formula

evaluation, techniques of algebra, ration and proportion, percentage, hints for problem solving, useful formulas, square and square roots, conversion, and transportation construction examples.

FLAGGER CERTIFICATION

Juan Morales

August 26, 2010, 8:30am - 12:30pm

College Park, Maryland

\$100 All Participants

The safety of workers, motorists and pedestrians is dependent upon the flaggers' performance. Since the flagger position involves safety, proper training is vital; flaggers are expected to pass a test to prove their proficiency and competence level. A MD SHA-approved ATSSA (American Traffic Safety Services Association) flagger card will be issued upon satisfactory completion of this course. This will be valid for 4 years and is acceptable in several states, including MD, VA and DC. The class is presented in PowerPoint© and will include a 25-question multiple choice exam and a flagger demonstration (dexterity test). Students will receive their ATSSA Flagger Certification card the day of the course (upon passing the exam). The course is intended for anyone whose actions affect safety of contemporary traffic control work zones, including traffic managers, traffic technicians, inspectors and designers.

CONSTRUCTION INSPECTION FOR LOCAL AGENCY EMPLOYEES

John Hopkins

September 1, 2010, 8:00am - 4:00pm

College Park, Maryland

\$110 Maryland Local Government Employees

\$125 All Other Participants

This one day session will cover some of the major duties and responsibilities of an individual responsible for the quality of a project. It will address the importance of understanding the plans, the contract, the order of operations, the materials to be used and the various quality control tests used in project inspection. This course is presented in a straight forward manner and deals with the reality of everyday factors involving contractors and agencies. Qualified field inspection personnel with one to three years of field experience are encouraged to attend; participants must possess basic math skills in geometry and algebra. **Participants should bring a calculator, scale and straight edge; notebooks will be provided.*

BRIDGE MAINTENANCE INSPECTION

John Hopkins

September 2, 2010, 8:00am - 4:00pm

College Park, Maryland

\$110 Maryland Local Government Employees

\$125 All Other Participants

This one day course will cover inspection of bridge maintenance. A brief summary of the topics to be covered are as follows: approach, deck maintenance, deck joints, deck drains, bearing maintenance, concrete beams, steel beams, timber beams, bridge seats and caps, piles and bents, truss maintenance, painting, and winter maintenance. The class is for the actual field maintenance worker who has to do the repairs. It is mostly concerned with what to look for from a maintenance standpoint not a structural rating perspective.

BASIC DRAINAGE

Ed Stellfox

September 15, 2010, 8:30am - 3:00pm

College Park, Maryland

\$89 All Participants

This course emphasizes the importance of good drainage with discussions of water and its effects on roads, problems caused by improper drainage, and ways to handle these problems. It covers types of drainage facilities, ranging from ditches, culverts, subdrains, inlets and end structures. Their uses, materials, installation and maintenance as well as erosion control are addressed. It also introduces geosynthetic drainage applications.

ROAD SURFACE MANAGEMENT

Ed Stellfox

September 16, 2010, 8:30am - 12:30pm

College Park, Maryland

\$59 All Participants

This course provides participants with the basic concepts of road surface management including inventory, distress identification, condition survey, strategies, programs, budgets, and field surveys. A Road Surface Management Systems software demonstration will also be conducted during this course.

PREVENTIVE PAVEMENT MAINTENANCE

Ed Stellfox

September 21, 2010, 8:30am - 3:00pm

College Park, Maryland

\$89 All Participants

The course covers preventive maintenance treatments such as chip seals, slurry seals, and micro-surfacing and discusses when and where each technique could be effective. It presents application methods, including preparation, materials, equipment, operations and safety, along with practical tips on how to avoid trouble.

WINTER MAINTENANCE

Ed Stellfox

September 22, 2010, 8:30am - 3:00pm

College Park, Maryland.

\$89 All Participants

This course covers all aspects of winter operations- planning and organizing, methods of snow and ice control, salt usage, and winter

equipment maintenance. This lesson will include usage of snow maps, formal snow plans, snow plow and salt spreader operation. This course is intended for municipal officials, road commissioners, supervisors, superintendents, public works and maintenance personnel, equipment operators, and city or town managers.

TRAFFIC SIGNS

Ed Stellfox

October 12, 2010, 8:30am - 12:30pm

College Park, Maryland

\$59 All Participants

This half-day course will cover the regulations and guidelines for traffic signs including; regulatory signs, warning signs, and guide signs. A review of the Manual on Uniform Traffic Control Devices (MUTCD) will also be covered. An in depth discussion of sign examples, installation and maintenance, as well as sign management will be covered.

BLUEPRINT READING FOR HIGHWAY WORKERS

Glynn Stoffel

October 18, 2010, 8:00am - 4:00pm

College Park, Maryland

\$125 Maryland Local Government

\$150 Maryland State Government

\$175 All Other Participants

Today's highway workers use a variety of blueprints and drawings to guide them in accurately performing the construction and maintenance of roadways and related components. Upon successful completion of this course the student will be able to read and interpret many of these blueprints as well as demonstrate the ability to produce accurate and legible field sketches.

TECHNIQUES FOR REDUCING CONSTRUCTION & MAINTENANCE COSTS

Ed Stellfox

October 13-14, 2010,

Day 1: 8:30am - 3:00pm, Day 2: 8:30am - 12:30pm

College Park, Maryland

\$99 All Participants

Inflation, increasing cost of labor, materials and fuel have risen steeply in the past few years. At the same time, municipal budgets have not kept pace. It is essential to conserve resources, find energy efficient and low maintenance materials and to use more efficient techniques. This workshop will conclude with groups of participants developing a cost control plan for a project.

ENGINEERING FABRICS, GRIDS, WEBS AND CELLS (WHAT THEY ARE AND HOW THEY'RE USED)

Ed Stellfox

October 20, 2010, 8:30am - 12:30pm

College Park, Maryland

\$59 All Participants

This course is an introduction to geosynthetics, beginning with a discussion of geosynthetics, what they are, how they are made and how they can be used in a road maintenance program. The course then looks at other geosynthetics and their road system uses, including geogrids, geocells and geoweb, presenting new materials with new applications.

UNDERSTANDING ROAD DESIGN AND MAINTENANCE FOR ELECTED OFFICIALS

Ed Stellfox

October 21, 2010, 8:30am – 3:00pm

College Park, Maryland

\$89 All Participants

This course is the first step in understanding the problems that a Municipal Road department faces on a daily basis. This course designed for elected officials conveys an understanding of design and maintenance of municipal roads that will make your life easier when dealing with Road Superintendents, Public Works Directors, Foremen, etc. It also gives elected officials a better understanding of what is involved in a road and street budget.

WINTER MAINTENANCE

Ed Stellfox

November 10, 2010, 8:30am – 3:00pm

College Park, Maryland.

\$89 All Participants

This course covers all aspects of winter operations-planning and organizing, methods of snow and ice control, salt usage, and winter equipment maintenance. This lesson will include usage of snow maps, formal snow plans, snow plow and salt spreader operation. This course is intended for municipal officials, road commissioners, supervisors, superintendents, public works and maintenance personnel, equipment operators, and city or town managers.

Training on Demand!

Taking our cue from the entertainment industry, the Maryland Transportation Technology Transfer (MD T2) Center is now excited to offer Training on Demand! Why wait for a course to be scheduled and then have your employees travel to us. Simply request a course and we'll work with you to deliver our course to your location. Our staff at the MD T2 Center understands the economic hard times we all are facing and that most of us are dealing with travel restrictions which can be problematic in getting the training your staff requires.

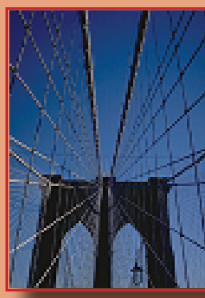
To request a course, simply visit us on the web at www.mdt2center.umd.edu, on the left menu bar, click on Training and then click on the Request Training, this will bring you to a request training form which you simply fill out and one of our staff members will contact you to arrange your Training on Demand.

What you'll need: a room to accommodate your employees taking the class (you can also invite other company's employees to attend this class). The room's lights should be able to darken to accommodate our projector. If you have a projector screen we could utilize that's great, if not, a bare wall will work too. Our instructor would appreciate a pot of coffee to help stimulate the mind and help to keep the lecturer caffeinated!

If you are interested in finding out more information, please contact Janette Prince at 301.403.4623 or at janette@umd.edu.

We look forward to serving your Training on Demand needs in 2010!





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Need Training but budget cuts won't allow travel?

Request a class and we'll bring it to you!

We understand your training needs and the tremendous budget cuts everyone is dealing with in this economy. By logging on to www.mdt2center.umd.edu and requesting a course that 10 or more of your employees need, we'll bring our course to you. We'll need a room where your employees can learn and either a white board or bare wall for our projector and a pot of coffee for our instructor.

Requesting a course is simple, visit www.mdt2center.umd.edu and fill out our request training form or call Janette Prince at 301.403.4623 and she'll be glad to assist you.

MD T² Advisory Board Committee

Ed Adams	Baltimore County Department of Public Works
Greg Africa	County Engineers Association of Maryland (CEAM)
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Dean Dashiell	Ocean City Department of Public Works
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Thomas Hicks	Maryland State Highway Administration, OOTS
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