



technotes

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MARYLAND TRANSPORTATION TECHNOLOGY TRANSFER CENTER

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

www.mdt2center.umd.edu

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Are Your Stormwater Grates Safe For Bicyclists?

As a bicyclist pedals over a storm grate on the edge of the road, he or she could be in danger if the grate is not designed with bicycling in mind. According to the U.S. Department of Transportation in Pedestrian and Bicycle Safety, "courts have become less sympathetic to agencies that do not consider the needs of pedestrians and bicyclists." Agency attention should be focused on making the roadway as safe as possible for every user.

Drain grates used to be designed with bars running parallel to the direction of traffic, which bike tires slipped into, pitching the rider off the handlebars. Safety problems also occur if the drain grate is raised from or sunken into the road.

Lawsuits across the country have resulted from situations such as these. In 2001 The Urban Transportation Monitor reported that cities and counties face 2 to 3 road-related lawsuits per year, with an average settlement for each at \$230,000, not including defense fees. To head off lawsuits regarding storm grates, at least one state (Oregon) has passed a statute prohibiting the installation of storm grates that pose a danger to bicyclists.



"Bicycle-safe" storm grate designs that can replace outdated and dangerous drain grates. California uses a honeycomb pattern, such as the image above. Kansas DOT's Bureau of Design uses its "inlet manhole special" design and adds a grate manufactured by Neenah Foundry (www.nfco.com) or a similar product.

Some other suggestions for quickfixes for dangerous grates are to place a cover over the top of the grate with steel straps or to paint warning markings on the street.

The MD T² Center is offering some great courses related to this article this spring:

Tort Liability & Risk Management (April 21st)

Pedestrian & Bicycle Accommodation (April 22nd)

Traffic Sign Retroreflectivity (April 23rd)

For more courses check out pages 9-11 or visit: www.mdt2center.umd.edu

Sources:

Pedestrian and Bicycle Safety. "Tort Liability and Risk Management." U.S. DOT.

<http://www.tfhr.gov/safety/pedbike/pubs/05085/chapt22.htm>

Basic Improvements for Bicyclists, by John Williams, <http://www.bikeplan.com/locond21.pdf>.

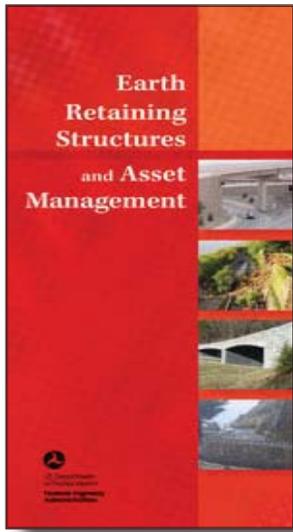
Oregon Statute Makes Dangerous Storm Drains Illegal. Swanson Thomas & Coon,

http://www.stc-law.com/storm_drain.html.

*Reprinted with permission from the fall 2007 KUTC Newsletter,
a publication of the Kansas Local Technical Assistance Program (LTAP)
at the University of Kansas Transportation Center.*

Earth Retaining Structures: An Essential Part of an Asset Management Program

Earth retaining structures (ERS) are a critical component of America's surface transportation network, with more than 14 million square m (160 million square ft) of permanent ERS constructed in the United States each year, including such structures as cantilever walls and mechanically stabilized earth walls. The use of ERS in highway projects can accelerate construction, reduce project costs, lessen the environmental impacts of highway and bridge construction, and enable the use of complex geometric designs. A new brochure available from the Federal Highway Administration (FHWA), *Earth Retaining Structures and Asset Management*, highlights how ERS should be included in a transportation asset management program, along with pavements, bridges, and ancillary structures, to help maintain these valuable infrastructure assets and ensure optimal use of available transportation funding.



Permanent ERS, which may vary in height from 1.2 m (4 ft) to more than 30 m (100 ft), are built to withstand significant technical demands. They frequently must be constructed in challenging site conditions, including mountainous terrain, soft ground, and sites that are below water. The safety of the structures is a primary concern, as most ERS installations either directly support bridge components or roadways, or support ground and other transportation features that are immediately adjacent to a bridge or highway. Asset management offers important tools and techniques to assist agencies in collecting and evaluating information on the inventory, condition, maintenance needs, and performance of ERS assets. Some of the questions that can be answered by using asset management techniques and data tools include:

- How many ERS does your agency own?
- How old are the structures?
- What is their condition and what is their remaining service life?
- What is the likelihood that one could collapse? What risk or impact would such a collapse present to the traveling public or adjacent property?

As transportation agencies begin to recognize the importance of this asset investment, a few agencies have developed ERS inventories that will allow them to begin systematic evaluations of their ERS networks, develop strategies for maintenance and rehabilitation, and develop appropriate monitoring protocols to assess long-term behavior. For example, the City of Cincinnati, Ohio, has been using a retaining wall inventory and inspection system since 1990. The system tracks 6,796 retaining walls within the right-of-way, allowing the city to maintain a prioritized list of repairs and replacements based on regular inspections.

The Oregon Department of Transportation (ODOT), meanwhile, recently initiated a retaining wall management program to inventory and assess this asset across the State. ODOT estimates that the State has more than 10,000 retaining walls. The National Park Service (NPS) also recently began implementing an ERS asset management program. FHWA's Federal Lands Highway Division office is developing an inventory and condition assessment of all ERS associated with roadways and structures throughout the NPS park road system, including data on location, number, size, condition, consequences of failure, and estimated cost of replacement or repair. To date, 26 parks have been inventoried, with data collected on nearly 3,200 ERS.

To obtain a copy of *Earth Retaining Structures and Asset Management* (Publication No. FHWA-IF-08-014), visit www.fhwa.dot.gov/asset/if08014. For more information on using asset management to inventory and evaluate ERS, contact Shyan-Yung Pan in FHWA's Office of Asset Management, 202.366.1567 (email: shyan.pan@fhwa.dot.gov).



FHWA's new brochure highlights how earth retaining structures, including the mechanically stabilized earth walls shown here, should be included in an asset management program.

Reprinted from the October 2008 issue of FOCUS, a publication of the United States Department of Transportation and the Federal Highway Administration.

Here are 10 basic tips to help maintain and keep your roads in good condition.

1 *Keep Water Away From The Road*

Drainage cannot be overemphasized in road construction and maintenance. Water affects the entire serviceability of a road. Too much water in the base material weakens the road. Water allowed to remain on top of a gravel or black topped road weakens the surface and, combined with traffic, causes potholes and cracking. If improperly channeled, water causes soil erosion and a breakdown of pavement edges. Whether it is mud in the spring or frost heaves in the winter, the presence of water in roads is nothing but trouble.

A good surface drainage system is the best way to lessen water damage on a road. Proper surface drainage prevents water from infiltrating the pavement surface and removes water from the driving lanes in a constant thin sheet to the side ditches, which carries the water away from the roadway. A surface drainage system has four main components: road crown, shoulders, ditches, and culverts.

The road crown, or superelevation of the road surface, drains water off the road surface. Shoulders are an extension of the road surface and allow for the continued flow of water to the ditches. Ditches are used to carry water away from the roadway. They need to be kept clean and protected from erosion. Water left in the ditch can sometimes leak back into the base. Water collected and carried in the ditch has to be directed away from the roadway at frequent intervals, sometimes using culvert pipe. Culverts usually channel water from one side of the road to the other, helping to control the flow of water and slowing it down to reduce erosion. Road managers are guided by the principles that water runs downhill, that water needs outlets at the bottom of all grades, and that puddles mean problems.

2 *Build On A Firm Foundation*

A highway wears out from the top, but it falls apart from the bottom. This is another way of saying that the road base determines the service- life of a road. The base supports everything above it, including traffic.

Without adequate support, the road will deteriorate rapidly. A good road requires a suitable foundation composed of stable material. A road material is stable if it has negligible soil settlement with a change in moisture content and does not deform excessively under repeated loads whether the material is wet or dry.

3 *Use The Best Soils Available*

The supply of natural, good quality soils and aggregates is beginning to disappear. Blended or crushed gravel is a more expensive alternative. The quality of soils used by a road manager often depends on local availability and budget. In deciding what is available, consider the long-term consequences of using lower quality material. Using inferior base material may require excessive maintenance during the road's life and, perhaps, expensive rehabilitation. The adage "pay me now or pay me later" applies to road building.



4 *Compact Soils Well*

The more dense the material is, the stronger it is. When soil is improperly compacted, future traffic loads or changes in moisture content can cause settling and failure of the roadway.

Compaction is achieved by pressing soil particles together, which expels some of the air from the mass, making the material more dense. Well-graded soils having a fairly even distribution of particle sizes will compact more easily than poorly graded soils that have mostly one particle size. Crushed or angular particles will compact to a more stable condition than rounded particles of similar size. A certain amount of moisture is necessary for good compaction.



5 *Design For Winter Maintenance*

In areas that receive substantial snowfalls, roads that are designed for winter maintenance should be adequate for the rest of the year. Consider the following: if the traveled way is wide enough to allow a snowplow and a school bus to meet, it should be wide enough for the rest of the year.

If ditches and roadside areas are wide enough to store snow, chances are they will accommodate spring thaws and heavy water flows. Grades should be a minimum of 1% for drainage purposes and should not be greater than 10% if at all possible. If the road is steeper, it is difficult for heavy equipment to maneuver, especially in the wintertime. Sight distance should be considered in designing a road. For safety's sake, a driver should be able to see 75 to 100 ft. up the road for every 10 mile per hour driving speed.

6 *Build For Traffic Loads And Traffic Volumes*

Thin ice on a pond may support a young skater, but it will crack and break apart under the weight of an automobile. Similarly, a road built to serve residential traffic will break down when it starts carrying a number of large trucks. Road managers know that roads, like bridges, should be designed with the expected traffic type and volume in mind.

A rule of thumb is to design a road to accommodate the largest vehicles that will use the road under normal operation. If in doubt, design the road for the largest piece of equipment that maintains it in all kinds of weather.

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Ten Essentials of a Good Road (concluded from page 3)

Road managers can get information and guidance from their State transportation agencies about the type and thickness of pavement mixes to apply to a gravel road. Generally speaking, a low volume road with some truck traffic may provide good services with a “chip seal” or “sand seal.” As traffic volumes and weights increase, cold-mix asphalt and hot-mix asphalt pavement may be better alternatives.

7 *Pave Only Roads That Are Ready*

Some agencies make the mistake of paving over a road that is not properly prepared in their haste to get rid of another dusty gravel road. The result may be a complete waste of money. Paving will not cure the other problems that the gravel road may have. It still must be built of well compacted layers of free draining soil, be able to carry expected traffic loads, and be able to drain well. The cost of rebuilding a mistake is much higher than not making the mistake and doing it right the first time.

8 *Build From The Bottom Up*

A road that has a poor base and poor drainage cannot be adequately improved with a top dressing of gravel or new pavement. It may be necessary, in some cases, to dig out the old road, put in new materials, and build up the road in layers.

Before doing anything to correct a road surface problem, road managers should take into consideration what is causing the problem underneath. Improper drainage, insufficient depth of base, or poor quality gravel may be the culprit. These should be corrected before spending money on the surface.

9 *Protect Your Investment*

Roads and bridges need regular maintenance to keep them from deteriorating. The increased weight and frequency of traffic on roads, combined with adverse weather conditions, means an increased rate of road and street deterioration. Regular road and bridge maintenance preserves our road investment and prevents costly major rehabilitation later on.

Maintenance activities include: Roadway surfaces: blading and shaping, patching, resurfacing; dust control; snow and ice removal. Drainage: cleaning and repairing culverts and ditches. Roadside: cutting bushes, trees, and grass; repair and prevention of roadside erosion. Bridges: clearing channels; repair of rails, decks, and structure; cleaning and painting. Traffic services: sign maintenance; cutting vegetation to maintain visibility. Special projects: restoration or improvements; emergency work such as removing slides, repairing washouts, and repairing retaining walls.



10 *Keep Good Records*

Road managers know their roads like the back of their hands. Most of them are walking history books when it comes to the roads they manage every day. This knowledge is of little use, however, when the road manager is ill, moves, or retires.

Good record keeping makes roadwork much easier for everybody. It is easier to formulate budgets and to show the citizens a plan for roadwork. Recording which type of work was done on roads or bridges, when, and what materials were used can help a lot in making decisions later on.

Agencies can start by doing an inventory of all roads and bridges, listing length, width, surface types, culverts, problem areas, and other items. Placing these items on a map helps. Next comes listing and prioritizing needed improvements, putting a price tag on them, and taking care of a few problems each year.

Reprinted with permission from the National Association of County Engineers (NACE) from www.naco.org



Faced with the daunting combination of aging highway infrastructure, rising congestion, and shrinking budgets, transportation departments nationwide are looking for new methods to meet these challenges and reconstruct and rehabilitate roads and bridges better, faster, safer, and more cost effectively.



The Michigan DOT's first performance contracting project includes rehabilitating 5.5 miles of roadway on M-115 and replacing the superstructure on two bridges.

Innovations that are transforming today's project development and delivery process include alternative contracting methods such as warranty contracting, design-build, and performance contracting for construction. Using the performance contracting approach, a transportation agency defines a desired project outcome and then allows the contractor to determine how to carry out the work to meet the performance goals, following the acceptance methods and criteria, rather than specifying the methods to be used.

“Where project outcomes are clear and mutually understood, performance contracting can save time and money and improve contract management,” says Jim Sorenson of the Federal Highway Administration's (FHWA) Office of Asset Management. Contractors can also benefit from having the flexibility to determine how best to accomplish the desired outcome.

Performance Contracting: A New Way of Doing Business

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To encourage the implementation of performance contracting, FHWA's Highways for LIFE (HfL) program has developed a Performance Contracting for Construction (PCfC) Implementation Framework. This framework was developed with input from several State highway agencies, the Associated General Contractors, and the American Road and Transportation Builders Association. HfL will also hold workshops in up to six pilot States to assist agencies with using performance contracting on specific projects. The first workshop was held in Lansing, Michigan, in April 2007. Officials and staff at the Michigan Department of Transportation (MDOT) were interested in learning more about how they could use performance contracting to improve quality and reduce construction time for a planned reconstruction of M-115 in Clare County. The project would include rehabilitating 8.8 km (5.5 mi) of roadway and replacing the superstructure on two bridges. The concrete pavement had originally been placed in 1940 and subsequently overlaid with hot-mix asphalt, while the two bridges had been built in 1938.

Workshop attendees included representatives from MDOT, FHWA's Michigan division office, and local contracting firms and industry associations. "The workshop laid the foundation for this performance contracting project," says Jack Hofweber of MDOT. "It was very helpful and covered both the establishment of good performance goals and how to measure and test performance."

The workshop was invaluable," adds Tom Fudaly of FHWA's Michigan division office. "It helped guide all of us through the process of implementing performance contracting."



Michigan's performance-based contract includes a five-year pavement performance warranty.

Michigan applied for and received \$1 million in HfL funding for the project. The project was bid in December 2007, and construction began in spring 2008. Performance goals established by MDOT include baselines for when M-115 is to be fully open again to traffic; pavement performance, including ride quality; worker safety; and minimization of motorist delay. The \$4.5 million contract includes up to \$400,000 in incentives for meeting performance goals, as well as disincentives. While the initial cost for the performance-based contract is higher than a traditional contract would have been, "we believe it has increased the value and helped us achieve a better fix," says Hofweber.

Work on the new bridges is now complete. Phase two of the project, reconstructing the roadway, began in August. The project is expected to be completed by November 2008. If the road is open to traffic, as defined in the contract, before November 11, the contractor would meet the target performance goal. The contract includes a 5-year pavement performance warranty.

"The planning and construction have gone very well to date," says Hofweber. An added benefit is that the contract has helped to spur the use of innovations to meet the performance goals, including rapid bridge construction. Accelerated bridge construction techniques such as prefabrication of the new bridge deck have been successfully used on the project. "This has definitely speeded up construction," says Fudaly. "We've been happy with the process and think that the use of the performance contract will result in a better quality job."



The mid-section of the precast superstructures for a bridge on M-115 is placed as part of the Michigan DOT's performance contracting project.

"Performance contracting has been a great learning experience for Michigan's contractors," says Douglas Needham of the Michigan Infrastructure and Transportation Association. "The cooperation and communication among industry, MDOT, and FHWA has proven beneficial throughout the process. Although cost is always a consideration when selecting a contractor, on future performance contracting projects, we would encourage an even greater emphasis be placed on innovation."

"As experience is gained with performance contracting, we would expect this alternative contracting method may even be competitive with or lower than the traditional low bid process," says Sorenson. "We have seen this as States have moved from using method-based mix designs to a contractor-furnished job mix formula for hot-mix asphalt. The effective contractor has been able to control costs when bidding his or her own job mix formula for hot-mix asphalt."

For more information on Michigan's M-115 project, contact Jack Hofweber at MDOT, 989.775.6104, ext. 302 (email: hofweberj@michigan.gov), or Tom Fudaly in FHWA's Michigan division office, 517.702.1831 (email: thomas.fudaly@fhwa.dot.gov). To learn more about the PCfC Implementation Framework or becoming a HfL pilot State, contact Mary Huie at FHWA, 202.366.3039 (email: mary.huie@fhwa.dot.gov). The draft framework is available on the HfL Web site at www.fhwa.dot.gov/hfl/framework.



The pavement is rubblized on M-115 in Clare County, Michigan.

The contract has helped to spur the use of innovations to meet the performance goals, including rapid bridge construction.

Reprinted from the September 2008 issue of FOCUS, a publication of the United States Department of Transportation and the Federal Highway Administration.

Top Seven Keys to Successful Workplace Communication

Improving your communication skills will enable you to establish better working relationships. Poor workplace communication skills will have negative effects on your business relationships and may result in decreased productivity.

These 7 keys will help you unlock the door to successful communication not only at work, but also in all your relationships.

1. Personal contact is important. People relate to one another better when they can meet in person and read each other's body language, so they can feel the energy the connection creates. If personal contact is not possible, the next best way to connect is by talking on the telephone.
2. Develop a network. No one achieves success alone. Make an effort to become friends with people in different departments within your company, meet new people in your community, and look for experiences or interests you have in common.
3. Always be courteous in your communications with others. Courtesy lets people know that you care. The words "Thank You" show that you appreciate a person's efforts. Try saying, "would you please..." instead of just, "Please..." You will sound less dogmatic.
4. Be consistent and clear in your workplace communications. Consistency builds trust. Asking, "Did I explain this clearly?" will assure that people understood what you said.
5. Compromise decreases the tension associated with conflict. Ask, "What is best for the company?" so that co-workers will not take the conflict personally.
6. You cannot hold a person's interest if you have nothing interesting to say. Here are some of the ways you can learn to be an interesting communicator. Read your hometown paper daily. Read industry literature so you can know what is going on in your industry. Rehearse telling a few short personal stories about your interesting experiences.
7. Listen to what others are saying and show interest in the conversation. Listening demonstrates respect and admiration. Make your conversation like a game of tennis and keep the ball going back and forth.

Visit <http://www.ConfidenceCenter.com> for tips on low cost ways to raise employee morale. Visit <http://confidencecenter.com/confidencequiz.htm> to take a free confidence quiz. You may also want to visit <http://www.BecomeABetterLeader.com> for tips and strategies for improving workplace leadership skills. All are compliments of Harriet Meyerson, president of The Confidence Center and author of this article.

The structural features of perpetual pavements have been the most discussed issues over the past few years. It has been acknowledged that beginning with a solid foundation for construction and long-term stability, the pavement structure needs to consist of a thick cross section of hot mix asphalt with the layers engineered to resist specific types of distresses.

Preventing Fatigue Cracking

Fatigue cracking, which can be the most devastating form of failure, can be handled by first considering the level of traffic. In high-volume facilities such as Interstate and primary highways, fatigue is best countered using a total HMA thickness that keeps the bending strain under the vast majority of heavy traffic loads below a threshold of about 70 microstrain. This will ensure that cracks do not originate at the bottom of the structure and propagate up to the surface. Thus, the need for full-depth patching or complete reconstruction of the HMA can be avoided.



For medium-volume roads, this may mean a minimum HMA thickness of about 11 inches, and for heavier trafficked roads, it could mean structures of 15 inches to 16 inches at the thickest. Of course, the thickness in a given situation depends upon the traffic, soil, foundation and climate.

In low-volume roads, heavy loads may be very infrequent. So it would not be cost effective to consider the same 70 microstrain criterion to resist fatigue. Instead, it would be better to consider the accumulation of damage and minimize the accumulation over

a long period of time. Depending upon climate, support conditions and the particular traffic, this leads to low-volume road HMA thickness of 6 inches to 8 inches.

Rut Resistance

In addition to designing against bottom-up fatigue cracking, it is also important to consider the possibility of deep rutting within the pavement structure.

This is controlled in design by the vertical compressive strain at the top of the subgrade. If this strain is high, more than 200 microstrain, it indicates that the pavement structure is weak and incapable of resisting permanent deformation deep within itself.

Perpetual Pavements Last Decades Without Major Reconstruction

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An Ounce of Prevention

Preventing Backovers of Road Construction Workers

On July 18, 2006, a 21-year-old road construction worker was killed when a dump truck partially loaded with asphalt backed over him. The victim was working at night on a state highway paving project. The dump truck driver was backing through the work zone with the truck's back up alarm sounding.

The paver and paving crew had already re-positioned to the next section of roadway to be paved. The dump truck driver was watching the driver's side mirror as he was backing to align the truck with the re-positioned paver. As he was backing up, he did not see anyone behind the truck. He then saw something appear out from under the front of the truck, at which time he stopped the truck. Evidence suggests the victim had his back to the dump truck. The victim had not been assigned tasks within the workzone but may have been shoveling spilled asphalt. Emergency medical services (EMS) personnel were called and arrived on the scene to find the victim deceased.

Preventable Deaths

Every two weeks a highway construction worker is killed by a construction vehicle in a "backover" accident. The death in the sad story above, as described in a National Institute of Occupational Safety and Health (NIOSH) fatality report (#2006-03), could have been prevented. Consider this:

1. A dump truck weighs about 40,000 pounds. A construction worker weighs about 200-250 pounds. If you pick a fight with a dump truck, you will lose.
2. Dump trucks have tremendous blind spots for drivers. That huge truck bed in the back that holds the dirt or asphalt blocks the driver's view. He cannot see what is behind him. He could not know a worker might be back there.

There are many ways to prevent these types of deaths:

Back Up Alarms

The first line of defense is having an operational back up alarm. However, back up alarms may not be effective. Work sites are generally noisy, and alarms are often hard to distinguish or locate. New types of alarms have been developed that are easier to hear and to distinguish from background noise (see for example: www.reverseinsafety.co.uk). You should make sure all vehicles have functioning back up alarms when they come on the site. Do not let trucks come on the site unless their alarms are working. Talk with the truck owners about getting better back up alarms.

Spotters

Another line of defense is a spotter. Whenever anyone is working near a dump truck, they need to have someone else watching their back. These "spotters" need to be constantly alert and in communication with the drivers. Spotters have also been run over by vehicles while doing their jobs. If you can't see the driver, then the driver can't see you.

The state of Washington now has a law that requires a spotter or a back up camera whenever workers have to work behind a vehicle. If the driver loses communication (sight) with the spotter, he must stop. Federal Occupational Safety and Health Administration (OSHA) standards require a spotter if you have no back-up alarm. A device has also been developed called the "Truck Stop," which allows a spotter to signal the truck driver to stop using a buzzer in the cab.

Internal Traffic Control Plans

Another line of defense is to have a construction traffic control plan for inside the work area and not just for traffic going through the work zone. This plan is called an Internal Traffic Control Plan (ITCP). This plan has a few simple principles:

1. Set aside areas as walking routes for workers and mark them clearly so drivers will not go there;
2. Mark other areas as routes for traffic;
3. Make traffic flow in one direction, entering one way and exiting another to reduce backing up; and
4. Let all workers and drivers coming into the area know about the plan and that it will be enforced.

If trucks are not backing up as much, the risk of back over fatalities is much lower. The Laborers' Health

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CITE Blended Courses for 2009

The Consortium for ITS Training and Education (CITE) announces its 2009 Blended Course schedule for 2009. Scheduled courses include:

- Introduction to Telecommunications Technology, February - March
- Advanced Telecommunications Technology, April - May
- Improving Highway Safety with ITS, April - May
- Fundamentals of Database Management Systems, June - July
- Managing High Technology Projects in Transportation, September - October
- Traffic Signal Timing, September - October
- Principles and Tools of Road Weather Management, October - November
- Introduction to Systems Engineering, October - November
- Configuration Management, December

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

An Ounce of Prevention - Preventing Backovers of Road Construction Workers (concluded from page 7)

and Safety Fund of North America has developed a booklet with the American Road & Transportation Builders Association, NIOSH, and others to explain how to develop an ITCP.

The booklet can be downloaded at the National Workzone Safety Clearinghouse at: www.workzonesafety.org.

Back-Up Video, Radar, & Tag-Based Warning Systems

Many new cars now offer a back up video camera or radar system so drivers can see or be alerted to what is behind them when they back up. The radar systems will beep louder or faster as you approach the rear of your garage or the car parked behind you. Several large companies like UPS now use cameras on their delivery trucks. Similar equipment exists for construction trucks.

NIOSH has been testing various equipment on jobsites to see what works best. They have concluded that back up video cameras are helpful in giving operators a view of what is behind them. They work best when you also have a radar system that alerts the driver something may be behind them and directs their attention to a monitor.

Problems & Solutions

One potential problem being worked out is that radar systems may be too sensitive and give too many false alarms. One potential solution is a new system that gives each worker a tag to wear with a chip that emits a signal picked up by the system. Then the detector will only respond to workers in the back up area.

Back up video camera systems cost a few hundred dollars to add on to a construction vehicle, but this cost is minor compared to the hundreds of thousands of dollars that the vehicle costs and the value of the lives it would save. Construction companies buying new vehicles should ask about adding such equipment.

The MD T² Center is currently working on offering our customers an Occupational Safety and Health Administration (OSHA) standards course. Please keep checking our course list at www.mdt2center.umd.edu for more information.

Older vehicles can be retrofitted in the shop during regular maintenance. The NIOSH report on backover technology can be found at: www.cdc.gov/niosh/mining/pubs/pdfs/ri9660.pdf.

In Conclusion

We do not have eyes in the back of our heads, but we can put eyes in the back of a vehicle, we can minimize the amount we have to back up or have spotters' eyes watching us while we work. Maybe then we will never again have to hear that our friend or co-worker has been killed by a mammoth truck.

*Written by Scott Schneider, division director, Laborers' Health & Safety Fund of North America.
For more information about LHSFNA visit: <http://www.lhsfna.org/index.cfm>*



Perpetual Pavements Lasts Decades Without Major Reconstruction (concluded from page 6)

The rut resistance must start at the top with a high quality surface mix, followed by a binder and base courses that allow the aggregate structure to transmit the load to the pavement foundation. It may be a granular layer or a stabilized subgrade with sufficient thickness to minimize the effects of seasonal weakening.

Per Road (version 3.0) can be used to design perpetual pavements for low to high traffic volumes. It is available for free download from the Asphalt Pavement Alliance at www.asphaltalliance.com.

Life-Cycle Costs

Not completely divorced from the pavement design is the issue of economy.

If one compares a typical rural interstate highway pavement design using the 1993 AASHTO Pavement Design Guide for a 25,000 ADT 4-lane facility, a conventional design might be 8 inches of HMA over 10 inches of granular base material versus a perpetual pavement consisting of 14 inches of HMA over 6 inches of granular base.

Assuming a typical surface for the conventional design and a high-quality SMA for the perpetual pavement, with the initial overlay intervals of 15 years and 18 years respectively, the conventional HMA section might need to be replaced in 35 years whereas the perpetual section would only need periodic resurfacing.

The perpetual pavement would require 25 percent less aggregate and 20 percent less liquid asphalt. This is a significant savings of resources that can be used elsewhere.

Reprinted from Nevada Milepost, Fall 2007, Nevada Technology Transfer Center.

The following courses are scheduled for 2009, and we are still adding to the list! Sign up now for our currently scheduled courses, hurry, they fill up fast! 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 RECYCLING

Ed Stellfox

April 8, 2009, 8:30am - 12:30pm

College Park, Maryland
\$50 Maryland Local Government
\$65 Maryland State Government
\$75 All Other 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, 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, surface recycling, hot-mix recycling, cold-mix recycling, full depth reclamation, materials, equipment, operations, and examples of projects.

TORT LIABILITY & RISK MANAGEMENT

Ronald Eck

April 21, 2009, 8am - 4pm

College Park, Maryland
\$125 Maryland Local Government
\$150 All Other Registrants

This one-day workshop will provide an overview of the legal duties and responsibilities of roadway personnel. Key legal concepts relating to the liability of roadway agencies are reviewed from a risk management standpoint. Common types of claims/lawsuits brought against street departments and highway agencies are identified through examples/case studies. Risk management principles and practical risk management activities will be identified.

PEDESTRIAN & BICYCLE ACCOMMODATION

Ronald Eck

April 22, 2009, 8:30am - 4:30pm

College Park, Maryland
\$125 Maryland Local Government
\$150 All Other Registrants

This one-day 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.

TRAFFIC SIGN RETROREFLECTIVITY

Ronald Eck

April 23, 2009, 8:30am - 12:30pm

College Park, Maryland
\$50 Maryland Local Government
\$75 All Other Registrants

This one-day workshop will help practitioners gain a better understanding of sign retroreflectivity issues in order to improve the overall nighttime visibility of traffic signs. Topics covered will include: sign retroreflectivity importance; basic retroreflectivity science; types of retroreflective materials; measuring retroreflectivity; minimum retroreflectivity levels; and maintenance/management methods.

INTRODUCTION TO TEMPORARY TRAFFIC CONTROL

Juan Morales

April 28, 2009, 8:15am - 4pm

College Park, Maryland
\$125 Maryland Local Government
\$150 State and Federal Government
\$195 Private and Out-of-State

An introductory course to temporary traffic control in work zones, TCC is a one-day course designed to give participants a complete overview of traffic control in work zones, including applicable standards, devices used, component parts and their requirements, and installation/removal considerations.

WORK ZONE DESIGN

Juan Morales

April 29-30, 2009, 8am - 4pm

College Park, Maryland
\$250 Maryland Local Government
\$295 State and Federal Government
\$325 Private and Out-of-State
CEU's: 1.2

The course will give participants knowledge of the entire temporary traffic control (TTC) process: planning, design, review, installation, maintenance, and evaluation of proper maintenance of traffic (MOT) controls for work zones. While the functions of planning, design, review, and operation of temporary traffic control are covered in detail, issues concerning safety of pedestrians and highway workers, human factors, and legal responsibility are also addressed.

ACCESS TREATMENT TO STATE & LOCAL ROADS

Dane Ismart

May 5-6, 2009, 8:15am - 4pm

College Park, Maryland
\$195 Maryland Local Government
\$275 Maryland State Government
\$295 All Other Participants
CEU's: 1.2

Since access control reduces the number, complexity, and spacing of events to which the driver must respond, it results in improved traffic operation and reduces accidents. Other benefits include reduced delay, improved traffic flow, increased capacity, and improved fuel economy. This course formally titled Access Management, covers not only why, but also how to manage access, from a policy, legal, and design perspective.

BASIC DRAINAGE

Ed Stellfox

May 13, 2009, 8:30am - 3pm

College Park, Maryland
\$75 Maryland Local Government
\$95 Maryland State Government
\$110 All Other 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.

Our Currently Scheduled Courses (continued from page 9)

ASPHALT ROADS COMMON MAINTENANCE PROBLEMS

Ed Stellfox

May 28, 2009, 8:30am - 12:30pm

College Park, Maryland
\$50 Maryland Local Government
\$65 Maryland State Government
\$75 All Other Participants

Municipal road crews should understand the causes of common maintenance problems on asphalt roads and be familiar with proper repair materials and methods. This course taught by Ed Stellfox, discusses causes and repair procedures for common problems such as cracking, potholes, rutting, corrugations, etc. The procedures cover materials, equipment, and techniques for lasting repairs.

SITE IMPACT ANALYSIS

Dane Ismart

June 2-3, 2009, 8:15am - 4:30pm

College Park, Maryland
\$250 Maryland Local Government
\$285 Maryland State Government
\$325 All Other Participants
CEU's: 1.2

This two-day workshop gives participants the opportunity to learn the standard techniques for estimating the traffic impacts of both small and large site developments. Content includes procedures for land use forecasting, trip generation, trip distribution and assignment, site impact layout design, and level of service designation. This is an excellent course for transportation engineers, traffic engineers, and concerned planners.

CONSTRUCTION MATHEMATICS

Ed Stellfox

June 10, 2009, 8:30am - 3pm

College Park, Maryland
\$95 Maryland Local Government
\$110 Maryland State Government
\$125 All Other Participants
CEU's: 0.5

Construction inspectors may need to brush up on math skills specifically related to construction inspection, especially basic geometry, fractions, area, volume and conversions. The class is a good refresher, and excellent preparation for the construction inspection class. Participants should bring a calculator, a scale, and a straight edge.

BRIDGE MAINTENANCE INSPECTION

John Hopkins

June 15, 2009, 8:15am - 3:30pm

College Park, Maryland
\$95 Maryland Local Government
\$125 All Other Participants

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.

CONSTRUCTION INSPECTION FOR LOCAL AGENCY EMPLOYEES

John Hopkins

June 16, 2009, 8:15am - 4:30pm

College Park, Maryland
\$95 Maryland Local Government
\$125 All Other Participants

This course 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.

FLAGGER CERTIFICATION

Juan Morales

June 16, 2009, 8am - 12:30pm

College Park, Maryland
\$100 All Registrants

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).

CONSTRUCTION INSPECTION – INTERMEDIATE LEVEL

John Hopkins

June 17-18, 2009, 8am - 4pm

College Park, Maryland
\$225 Maryland Local Government
\$275 Maryland State Government
\$295 All Other Participants
CEU's: 1.2

This intermediate class focuses on the construction, inspection, measurement and testing of materials associated with road way construction. Includes real-life scenarios and problems faced on the job, and covers general practices and Maryland standards. **Please Note:** A test will be administered to acquire class credit. Participants should bring a calculator, scale and straight edge; notebooks will be provided.

INTRODUCTION TO GEOSYNTHETICS

Ed Stellfox

July 15, 2009, 8:30am - 12:30pm

College Park, Maryland
\$50 Maryland Local Government
\$65 Maryland State Government
\$75 All Other 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 following topics will also be covered: history, materials, geotextile fabrics, geogrids, geocells and geoweb, uses & applications, drainage, inflation, erosion control, reinforcement, separation, and reflective crack control.

TRAFFIC ENGINEERING SHORT COURSE

Tom Hicks, Woody Hood, Dane Ismart, Wamabdhri Williams, and Rick Hawthorne

July 20-24, 2009, 8am - 4:30pm

Lithicum, Maryland
\$350 Maryland Local Government
\$715 Maryland State Government
\$765 All Other Participants
CEU's: 3.5

This five-day short course covers many aspects of traffic engineering, including design, data analysis, operation and management. Also, related factors, such as road use characteristics, public influence and traffic calming are addressed in the class. Materials include a student workbook and "Fundamentals of Traffic Engineering," a publication by ITS, Berkeley.

PREVENTIVE PAVEMENT MAINTENANCE

Ed Stellfox

August 19, 2009, 8:30am - 3pm
College Park, Maryland
\$75 Maryland Local Government
\$95 Maryland State Government
\$110 All Other Participants

This 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.

UNPAVED GRAVEL ROAD MAINTENANCE

Ed Stellfox

September 9, 2009, 8:30am - 12:30pm
College Park, Maryland
\$50 Maryland Local Government Only
\$65 Maryland State Government
\$75 All Other Participants

This course addresses basic maintenance techniques for unpaved and gravel roads. Topics include road maintenance, blading or dragging, reshaping or regrading for proper crown, regravelling, stabilization or full-depth reclamation, and dust control, with an introduction to road management techniques.

ROUNDBOUT PLANNING & DESIGN

Dane Ismart

September 15, 2009, 8am - 4pm
College Park, Maryland
\$115 Maryland Local Government
\$125 Maryland State Government
\$140 All Other Participants

This course will provide participants with an introduction to the planning and design of the modern roundabout. Topics covered in the roundabout course will include geometric design, signing, striping, safety, and accommodation of pedestrians and bicyclists. An important component of the course will be a discussion of the advantages and disadvantages of roundabouts.

INTERSECTION DESIGN & ANALYSIS

Dane Ismart

September 16-17, 2009, 8:30am- 4pm
College Park, Maryland
\$225 Maryland Local Government
\$275 Maryland State Government

\$300 All Other Participants
CEU's: 1.2

This course will have broad general coverage of at-grade intersection analysis and design features. The analysis will include signalized, unsignalized and roundabout intersections. Specific coverage will include capacity, analysis, signal warrants, queue analysis and safety selected design features.

ROADWAY SAFETY FUNDAMENTALS

Mark Hood

September 30, 2009, 8am- 4pm
College Park, Maryland
\$125 Maryland Local Government
\$150 Maryland State Government
\$175 All Other Participants

This course will cover the following topics:

- Basics of road safety: why, when, and where crashes occur
- Solving fundamental traffic safety problems
- Using traffic control devices to improve safety: signs, signals, pavement markings, and maintenance
- Common roadway safety issues: curves, stopping sight distance, edge drop-offs, etc.
- Basic Intersection Safety

SIGNAL WARRANT & INTERSECTION CONTROL ANALYSIS

Dane Ismart

October 8, 2009, 8:30am - 4pm
College Park, Maryland
\$120 Maryland Local Government
\$150 Maryland State Government
\$175 All Other Participants
CEU's: 0.6

This course will cover the eight MUTCD signal warrants: eight-hour vehicle volume, four-hour vehicle volume, peak hour, pedestrian volume, school crossing, coordinated signal system, crash experience, and roadway network. The course will also cover warrants for four-way stops as well as alternatives to traffic control signals.

WINTER MAINTENANCE

Ed Stellfox

October 14, 2009, 8:30am - 3pm
College Park, Maryland
\$75 Maryland Local Government
\$95 Maryland State Government
\$110 All Other 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 and formal snow plans.

LOW COST SAFETY IMPROVEMENTS

Mark Hood

October 22, 2009, 8:15am - 4pm
College Park, Maryland
\$100 Maryland Local Government
\$125 All Other Participants

This course provides participants with methods for implementing effective, low cost safety improvements targeted at high crash areas. It emphasizes the basic and enhanced application of traffic control devices, low cost safety improvements, and their specific safety benefit (crash reduction factors). Traffic crash data collection, identification of hazardous locations, and engineering study procedures are also discussed. Emphasis is placed on low cost solutions that may be made at the local level.

SITE IMPACT ANALYSIS

Dane Ismart

November 17-18, 2009, 8:15am- 4:30pm
College Park, Maryland
\$250 Maryland Local Government
\$285 Maryland State Government
\$325 All Other Participants
CEU's: 1.2

This two-day workshop gives participants the opportunity to learn the standard techniques for estimating the traffic impacts of both small and large site developments. Content includes procedures for land use forecasting, trip generation, trip distribution and assignment, site impact layout design, and level of service designation. This is an excellent course for transportation engineers, traffic engineers, and concerned planners.

(Another) New Work Zone Safety Rule For Federal Aid Projects

Last October, the national *Work Zone Safety and Mobility Rule* took effect requiring work zone safety policies to specifically address safety and mobility of the traveling public. Special requirements apply to “significant” (high impact) road construction or repair projects, but FHWA recommends they be considered for all work zone projects. Now another new rule is adding some more requirements and guidance for work zone policies— specifically targeted toward worker safety. The rule, officially known as the Temporary Traffic Control Devices Final Rule—Subpart K to 23 CFR Part 630, or the *Positive Protection Rule* for short, will take effect December 4, 2008— coming right up! The Rule is applicable to all federal-aid projects.

This article will outline the main contents of the Positive Protection Rule—as a heads-up to the local governments in Missouri that need to comply with it (cities that do their own letting on federal-aid projects) and as information for the other local agencies that may want to improve their work zone procedures.

“Basically the Positive Protection Rule is about planning ahead to protect workers” said David LaRoche, safety engineer for FHWA’s Kansas Division. It requires or recommends measures that are just good common sense. Probably a lot of local agencies are doing most of them already,” he said.

The Rule requires agencies to anticipate the potential worker safety impacts in advance, and design the layout of the work zone traffic control to minimize risk. It was crafted around these goals:

- Avoid or minimize worker exposure to motorized traffic through strategies such as full road closures; detours; and rolling road blocks during work zone setup and removal;
- Where exposure cannot be adequately managed, reduce risk to workers from being struck by motorized traffic through the use of appropriate positive protective devices (such as concrete barriers);
- Where exposure and risk reduction is not adequate, possible, or practical, manage risk with appropriate intrusion countermeasures including, but not limited to, the use of uniformed law enforcement officers;
- Assure that the quality of temporary traffic control devices is maintained for the project duration; and
- Provide for the safe entry/exit of work vehicles onto/from the travel lanes.

The Rule also contains some language about payment for positive protection devices. Below is an outline of the Rule, adapted from a Q&A document from FHWA.

Who Does the Rule Apply To? All federal-aid highway projects, including highway construction, maintenance, and utility projects that are funded in whole or in part with federal-aid funds. However, agencies are encouraged to apply the good practices that the Rule fosters to all highway projects.

What Are The Key Components Of The New Rule?

- **Positive protection devices** use **shall** be based on an engineering study:
 - Strategies and devices to be used may be determined by a project-specific engineering study, or determined from agency guidelines that define strategies and approaches to be used, based on project and highway characteristics and factors.
 - Use of positive protection **shall** be considered in work zone situations that place workers at increased risk from motorized traffic and where positive protection devices offer the highest potential for increased safety for workers and road users.
- **Exposure control** measures **should** be considered to avoid or minimize exposure for workers and road users.
- **Other traffic control measures** **should** be considered to reduce work zone crashes, and risks and consequences of intrusions into the work space.
- **Law enforcement.** [The agency] shall develop a policy addressing the use of uniformed law enforcement on Federal-aid highway projects.
- **Safe entry/exit** for work vehicles should be addressed by the agency processes, procedures, and/or guidance.
- **Payment** for traffic control features and operations:
 - Payment **shall** not be incidental to the contract, or included in payment for other items of work not related to traffic control and safety.
 - Separate pay items **shall** be provided for major categories of traffic control devices, safety features, and work zone safety activities.
- Quality guidelines **shall** be implemented to help maintain the quality and adequacy of the temporary traffic control devices for the duration of the project.

Is the FHWA planning on providing additional guidance on the use of positive protection, such as defining the depth of a drop-off that will require positive protection? Yes and no. While additional guidance relating to the use of positive protection is being developed under the umbrella of the Work Zone Safety Grants, this guidance is unlikely to include any values that would specifically require the use of positive protection.

Does This Rule Require That Law Enforcement Officers Be Used On Projects? No, but it does require the agency to develop a policy addressing the use of uniformed law enforcement on federal-aid highway projects. The agency should consider situations where the use of uniformed law enforcement officers could improve the safety of the road user and workers. Several examples of conditions are provided in Section 630.1108(d) of the Rule.

Continued on Page 13

Will Our Agency Have To Adopt ATSSA's Quality Guideline?

No. The *ATSSA Quality Guideline* was included in the rule language as an example of the type of guidance that should be used to help control and maintain the quality of temporary traffic control devices. If the agency currently has a similar mechanism/process in place to address the quality of devices, that should be adequate.

How Will The Rule Be Enforced? "To assess effectiveness of the procedures, the state should perform a process review least every two years with FHWA participation," said LaRoche. "The results of the review are intended to improve work zone processes and procedures, data and information resources, and training."

What Kind Of Documentation Of Procedures Is Needed? The rule is flexible concerning the form of the policy. It may take the form of processes, procedures, and/or guidance, and may vary based on the characteristics and expected work zone impacts of individual projects or classes of projects," said LaRoche.

Does FHWA Recommend Any Particular Resources Or Guidance For Designing Work Zone Traffic Control, Other Than The MUTCD? We recommend the use of multi-disciplinary teams in designing work zones," said LaRoche. "All devices within the clear zone should be NCHRP 350 compliant."

LaRoche said that FHWA has a number of guides and Web pages to help agencies implement the 2006 WZ Safety and Mobility Rule and the 2008 Positive Protection Rule, and these resources contain information on work zone protection. He also noted that everyone involved with work zones needs to be trained commensurate with their individual responsibilities.

How Will This New Rule Affect Our Agency's Liability? LaRoche said that if your agency is required to follow the rule, and you don't, you will be at risk. Most local agencies in Kansas (those that do not let federal-aid projects) are not required to comply, but are encouraged to follow principles outlined in the rule. For those agencies, not following the Rule should not increase risk, unless the procedures in the Rule become standard of practice over time.

More information about the "Positive Protection" Rule, including a link to a recorded Webinar explaining the Final Rule can all be accessed on the FHWA Operations Web site: <http://ops.fhwa.dot.gov/wz/resources/policy.htm>

*Reprinted with permission from the Summer 2008 edition of the KUTC Newsletter,
a publication of the Kansas Local Technical Assistance Program (LTAP) at the University of Kansas Transportation Center.*

Maryland's Economic Recovery

*Maryland's Strategy to Stimulate the Economy and Protect Jobs through Transportation Investment -
A Message from Governor Martin O'Malley*

These are challenging times in Maryland and across our nation. The current economic downturn is impacting both families and businesses throughout our State, putting jobs at risk and causing great hardships for many of our families. Yet, despite these difficult economic times, there is still reason for optimism. We remain a strong State and we have tremendous new partners in the Obama Administration who share our commitment to progress. Through the passage of the American Recovery and Reinvestment Act, President Obama is giving us the tools we need to help our families pull through these tough economic times quickly, while working to secure a better future for generations to come.

Here in Maryland, this legislation is already allowing us to make crucial investments in our roads, bridges, tunnels, and public transit system, while sustaining as many as 20,000 infrastructure-related jobs throughout our State. Following a visit from Vice President Joe Biden earlier this year, we have already been able to give the green light to critical improvements to our MARC station in Laurel, Maryland, a symbol of the important investments in our aging infrastructure that will be made across our One Maryland.

Only 24 hours after President Obama signed this landmark legislation into law, we had already announced the first wave of transportation projects in Maryland that will benefit from this federal investment. By moving aggressively, Maryland was able to begin construction in early March on the first project in the nation to be approved by the Federal Highway Administration under the American Recovery and Reinvestment Act. It is especially important that we move quickly so that we can quickly create jobs for Marylanders who will begin the work of strengthening our

Continued on Page 14

infrastructure. The funding we receive will be focused on "shovel ready" system preservation projects. These are projects that are ready to go, and do not require significant pre-construction work.

Now, through this website (www.marylandtransportation.com/Planning/Economic_Recovery/index), every citizen can stay up-to-date on all the transportation investments we are making with this federal economic recovery funds. You can find information on "Phase I" transportation investments already available on this site, and the projects that make up "Phase II" are available as well. The decisions for how to use federal funding for transportation projects rest on these key principles:

Fix It First: Maryland's highest priority will be on system preservation - the repair and rebuilding of our roads, bridges, transit and other transportation infrastructure that is already in place.

One Maryland: Transportation projects funded with these federal dollars will be located in every region of the State to address transportation needs utilizing the local workforce wherever possible.

Maximize Benefit: MDOT will aggressively pursue any and all funding, including discretionary funding, to invest in Maryland's transportation infrastructure.

Transparency and Accountability: The process for the selection of projects and the benefits of their construction will be made readily available to the public so that citizens can see what has been done and why.

The information provided at this site is the first step towards delivering on these principles. Please visit the site often, as the content will evolve and updates will be made on a regular basis as we begin this historic investment in Maryland's infrastructure.

We will continue to work with all our local elected officials, municipal planning organizations and citizens throughout our State as we continue moving forward toward building that better future we all prefer.

Reprinted with permission from the Maryland Department of Transportation.

Roadway Management Conference - 2009 Postponed

The T2 (LTAP) Centers in Delaware, Maryland, Pennsylvania, Virginia, and West Virginia have sponsored the Roadway Management Conference (RMC) each March since 1992. The next conference was scheduled for next spring in Newark, Delaware.

The conference planning committee, representing all of the Centers, has reluctantly decided to suspend the 2009 RMC. Our review of the survey results and numerous deliberations suggested that the current economic downturn has already negatively affected transportation agencies' travel and training budgets and the situation may only worsen in the coming months. We believe a significant reduction in conference attendees would compromise the conference's value for participants. Nonetheless, we all remain hopeful that we can resume the RMC in 2010.

In the meantime, we have redirected our collective resources to several web-based presentations that many local and state personnel can participate in at their work sites or nearby locations. Reflective of your input to our survey are two topics we intend to develop first: (1) the new Road Surface Management System (RSMS) software, and; (2) pedestrian safety and management issues. We hope to have our first presentation this coming spring, and we will keep you well informed of our progress as they develop.

Reprinted from the Winter 2008 issue of Travel-Log, a publication of the University of Delaware Technology Transfer Center

Dr. Ali Haghani, Chair of the Civil and Environmental Engineering Department, has announced the selection of Thomas H. Jacobs to fill the position of Director of the Center for Advanced Transportation Technology (CATT) and the Maryland Transportation Technology Transfer (MD T²) Center. “I am excited about this opportunity to build upon the excellent foundation established by the Center’s founder, Phil Tarnoff. My goal is to expand on our agency and University partnerships to further the development and application of innovative approaches to existing and emerging transportation needs through Transportation education, training and deployment assistance,” said Jacobs.

Also providing assistance in the directorship of the MD T² Center is co-director Ed Stellfox. Mr. Stellfox is currently in his 24th year with the Local Technical Assistance Program (LTAP) and his 41st year working with the Public Works sector. He has a B.S. in Civil Engineering, a Master’s in Education from Penn State University. He has more than 20 years of experience in transferring transportation technology, and is the head instructor for the MD T² Road Scholar Program.



About Tom

Tom is no stranger to CATT as he has been employed with the Center since 1999. He has served as Program Director of the Center’s Capital Wireless Information Net (CapWIN) initiative, helped oversee the initial establishment of the nationally renowned Center for Advanced Transportation Laboratory (CATT Lab), participated in a number of National Cooperative Highway Research projects, and led numerous projects in support of the Maryland State Highway Administration’s CHART Program and other regional transportation agency ITS programs.

For more information about Tom visit: <http://www.mdt2center.umd.edu/people/director.html>.

MD T² Delivers!

The Maryland Transportation Technology Transfer (MD T²) Center delivers; private courses that is. Our staff at the MD T² Center understands the economic hardtimes 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. We have a solution! Request any of our courses and we can bring it to you!

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 requested class.

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). This 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 the lecture!

In 2008, we found these privately offered courses to be extremely popular and we’d like to continue to offer this service to our customers in 2009. 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 needs in 2009!





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Address Change?

The MD T² Center is continuously updating its mailing list, please let us know if you have a new address. Email us your new address at mdt2@umd.edu or call Ellen Neal at 301.403.4239 and we'll be glad to update your information.

Requesting Technotes

To reduce the number of printed newsletters, we are no longer mailing technotes. If you wish to receive a printed copy, please email us at mdt2@umd.edu to request one.



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