ARIZONA MILEPOST

ARIZONA LTAP ELECTRONIC NEWSLETTER

ISSUE FOCUS: SAFETY **Winter 2012: VOL 1, NO 1**

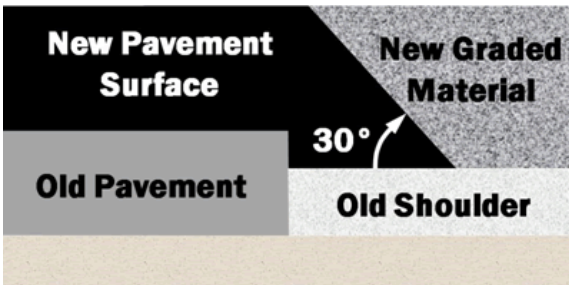
INSIDE

One of the core functions of the national LTAP program is to provide technical training for the local communities. AZ LTAP does not schedule classes on a regular or cyclical basis; rather our local agencies determine what the needs are, and when and where they would like them delivered to best meet their needs. All courses on the AZ LTAP training schedule have been requested by our customers. Please do not wait for training you need to be scheduled by someone else; request it for your agency by completing an on demand request form.

WHAT IS SAFETY EDGE$_{SM}$

BY LANDON MAYS

The Safety Edge$_{SM}$ is a construction design feature that creates a 30 degree tapered edge along the edge of a paved roadway. The pavement edge shape created by the Safety Edge$_{SM}$ device provides errant vehicles a gradual, rather than abrupt, transition back to the roadway. The Safety Edge$_{SM}$ design provides benefits before shoulders have been pulled back after resurfacing projects, as well as when shoulder materials wear away due to wear or erosion.



How Dangerous Are Pavement Edge Drop Offs

A Pavement edge drop off is caused by a difference in elevation between the shoulder and the roadway. The difference in elevation between the two surfaces is often caused by pavement overlays that are applied without appropriately raising the shoulder. Pavement edge drop offs can also be created due to shoulder material mitigation due to erosion and/or improper maintenance.

Pavement Edge Drop Offs and Run Off the Road Accidents

An estimated eleven thousand (11,000) Americans suffer injuries and one hundred-sixty (160) die each year in crashes related to pavement edge drop offs.

Vehicles can leave the roadway for numerous reasons, such as driver error, driving under the influence of drugs or alcohol, or poor roadway

surface conditions. Once a vehicle leaves the roadway, pavement drop offs pose a serious safety hazard to the driver. The vertical differences between the roadway and shoulder can affect a vehicle's stability and make the vehicle hard for the driver to control. As drivers try to re-enter the roadway, the vertical drop off causes "tire scrubbing".

Tire scrubbing occurs when the tire sidewall is forced into the pavement edge, resulting in friction between the tire and the pavement. Drivers often try to correct tire scrubbing by increasing the vehicle's steering angle. If the vehicle is able to re-enter the roadway, many drivers have usually overcompensated their steering to address the tire scrubbing that they can cross over the centerline resulting in a collision.

The Benefits of Implementing Safety Edge$_{SM}$

The Safety Edge$_{SM}$ has many benefits. The main benefit is providing easier vehicle re-entry onto the roadway.

Additional benefits of the Safety Edge$_{SM}$ include:

- Eliminates tire scrubbing
- Increased durability and longevity of pavement
- Reduces tort law liability
- Provides safety during construction while pavement edge is exposed
- Material costs are the same as regular paving methods

Tort liability claims from resulting from pavement edge drop offs cost agencies millions of dollars each year. Lawsuits brought against transportation agencies and their affiliates can be burdensome and costly, both monetarily and in terms of public perception. Attorneys representing their clients will usually try to prove another party is at fault in the event of an accident. Implementing Safety Edge$_{SM}$ on paving projects can show "due care" on behalf of agencies and can possibly mitigate or even eliminate monetary damages.

Safety Edge$_{SM}$ vs. Conventional Paving

During conventional paving processes, asphalt material at the edge of the pavement is not well compacted and lays loosely at about a 45 degree angle. The loose asphalt will usually cool faster than the rest of the compacted roadway, causing it to break away.

As the shoulder begins to wear away due to tire wear, erosion, and/or improper maintenance, the poorly compacted edge is exposed. Weathering and erosion remove the loose asphalt material on the pavement edge. This process leaves a steep vertical edge that can cause tire scrubbing in the event of a roadway departure.

Paving processes implementing the Safety Edge$_{SM}$ create a compacted 30 degree pavement edge with asphalt material that would otherwise be lost during the conventional paving process.

As the shoulder begins to wear away due to tire wear, erosion, and/or improper maintenance, the sturdier, safer, compacted edge is now exposed. The Safety Edge$_{SM}$ is more resistant to weathering and erosion due to its design. The 30 degree wedge shape remains in tact, preventing tire scrubbing, and allowing errant vehicles to return to the roadway safely.

Safety Edge$_{SM}$ Grants Available

The Federal Highway Administration Arizona Division Office (FHWA) and the Arizona Department of Transportation Local Technical Assistance Program (AZ-LTAP) is administering a one-of-a-kind Local Agency Safety Edge$_{SM}$ Grant Program. The goal of this grant program is to accelerate the use of the Safety Edge$_{SM}$ technology with local agencies such as counties, cities and tribal agencies across Arizona. Local agencies who are recipients of a grant award become owners of the Safety Edge$_{SM}$ Shoe Device and in turn lend it out to contractors on paving projects in their jurisdictions. The grant also provides free training and technical assistance for engineers, inspectors and contractors on using the Safety Edge$_{SM}$ Shoe Device. The benefit

of this grant program is that the Shoe Devices are already procured, eliminating the federal funding and contract process. Because over half of rural roadways with run-off-the-road fatalities in Arizona are on local roadways, this Grant Program is a unique, efficient way to implement Safety Edge$_{SM}$ where it is most needed.

Local agencies that program paving projects are scheduled are encouraged to apply. The application process has been newly streamlined and application forms can be found on the Arizona LTAP website www.azltap.org. Fifteen (15) Safety Edge$_{SM}$ Devices are available on a first-come, first-serve basis, so those interested should apply as soon as possible before all the Devices are disbursed. For more information, e-mail Landon Mays (AZLTAP) at lmays@azdot.gov or Kelly LaRosa (FHWA) at kelly.larosa@dot.gov.

Every Day Counts Innovation Initiative

The Federal Highway Administration (FHWA) introduced its Every Day Counts Innovation Initiative in 2010. The purpose of the program is to identify and deploy innovation aimed at shortening project delivery, enhancing the safety of our roadways, and protecting the environment. The Safety Edge$_{SM}$ is just one of the many beneficial technologies being marketed through this initiative.

Arizona LTAP Center
CONTACT INFORMATION
~~~~~~~~
General Information
ttraining@azdot.gov
Office: (602) 712-4050
Fax: (602) 712-3007

Rebecca Mayher
Program Manager
rmayher@azdot.gov
Office: (602) 712-4252

Recommendations for Addressing Pavement Edge Drop Off

State and local transportation agencies should provide training on the hazards associated with pavement edge drop offs. At a minimum, training should include personnel who work in road maintenance and construction. Local Technical Assistance Program (LTAP) and FHWA offices in each state are good resources for information and training.

Agencies should also develop paved shoulder practices. The Safety Edge$_{SM}$ can be used on all new paving projects, as well as roadway improvements such as asphalt overlays.

Research on pavement edge drop offs within the local agency's jurisdiction should be conducted. Data showing crash frequency, severity, and drop off height are key elements that should be included in the assessment.

National Safety Edge$_{SM}$ Implementation

The Safety Edge$_{SM}$ technology is being used in several states across the country. As word and knowledge about this technology spreads, more states will continue to realize its many benefits. The map below shows the current Safety Edge$_{SM}$ implementation status across the country. To date, Iowa and Georgia are the only two states to adopt the Safety Edge$_{SM}$ as standard practice.

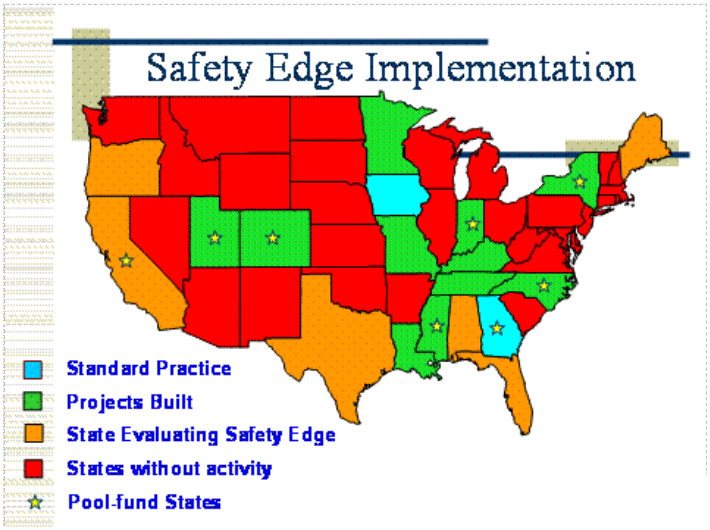
Georgia Develops and Implements the Safety Edge$_{SM}$

The Georgia Department of Transportation (GDOT) conducted research on a 13.3 mile asphalt overlay project that used the Safety Edge$_{SM}$. The focus of this research was to analyze the constructability and durability of the 30-degree angle the Safety Edge$_{SM}$ provides. The research findings showed the pavement built with the Safety Edge$_{SM}$ not only provided a safe shape, but showed fewer signs of cracking than the section built using conventional paving techniques.
~~~~~~~~

Iowa Adopts Safety Edge$_{SM}$ as Standard Policy

A national study conducted by the Federal Highway Administration and the AAA Foundation for Traffic Safety found that as many as eighteen percent (18%) of roadway departure crashes in the state of Iowa may have been partially caused by the pavement edge.

The Safety Edge$_{SM}$ was used on several road projects with a history of roadway departure crashes. During one of the projects, the paving contractor's safety officer noticed the benefits of the Safety Edge$_{SM}$. A reduction in contractor liability, as well as reduced pavement edge drop-off height was apparent. Since then, the Iowa Department of Transportation (IDOT) has adopted the Safety Edge$_{SM}$ as standard policy across the state.



Barriers to Safety Edge$_{SM}$ Implementation

Understanding how to lower these barriers is one foundation for advancing Safety EdgesM Implementation. The barriers to Safety Edge$_{SM}$ Implementation can be attributed to three (3) thought processes. These three thought processes are:

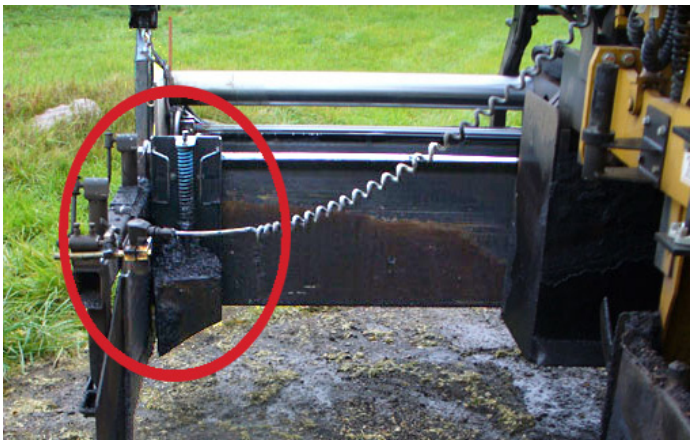
1. Slow to change.
2. Skepticism of new fads or technology.
3. Need of practical proof to adopt new method(s).

The "Slow to change" thought process can be associated with some roadway professionals. There are a number of things that contribute to this tendency; assumptions about new technology, difficulty in obtaining training, and unclear or incorrect information. This leads to an environment where the use of new technology in a particular area is at least one step behind what is being used in other areas.

With all new technologies come both early adopters and hardened skeptics. Although the Safety Edge$_{SM}$ has been used successfully on several projects nationwide and has been adopted as a standard practice in Iowa and Georgia, there are still skeptics who believe new technologies, like the Safety Edge$_{SM}$, are a waste of time and money.

Pavement edges and their impact on road safety have been studied since the 1980s. One recent study shows Safety Edge$_{SM}$ implementation has led to an estimated a 5.7% reduction in all crashes. Although the transition to the Safety Edge$_{SM}$ does have an upfront cost of $3000-$5000 for the safety shoe (the device that creates the Safety Edge$_{SM}$), the benefits of using this technology far exceed the initial cost.

Three to five thousand dollars can be considered expensive by some transportation departments; which are why some roadway professionals, especially in this economic environment, need to be shown practical proof that the Safety Edge$_{SM}$ can increase roadway safety while also being cost effective. Now that a limited number of Safety Edge$_{SM}$ shoe devices are being offered at no cost to Arizona local agencies having jurisdiction over local transportation systems (cities, towns, counties, tribes) through the Local Agency Safety Edge$_{SM}$ Grant Program, it is the perfect time to implement the Safety Edge$_{SM}$ on your agency's paving projects.



Announcing New Videos!

New Videos for Library- DVD

Bloodborne Pathogens: Just the Facts
Let this program help you meet the annual training requirement for any employee who can be reasonably expected to be exposed to blood or bodily fluid on the job and use it to prepare all employees to deal safely with this type of exposure. This will give all viewers a complete picture of the risks of exposure, the kinds of diseases potentially present in blood and bodily fluids and the best practices to implement in order to stay safe in the event of exposure. 14 min.

Combustible Dust: Up in A Flash

Combustible dust is a danger in any workplace that creates or accumulates dust. This life-saving training will show your employees how to control the danger with good housekeeping measures and safe work practices. 13 min.

Fire Safety: Alert, Aware, Alive

The heat is off with this program. Show your employees life-saving information on the different types of fires, how they can be prevented and what should be done in case of a fire. Elements a fire needs to burn. Prevention.Fire extinguishers.

Heat Stress for Public Employees: Seeing Red

Heat stress, heat stroke, heat rashes, heat cramps – all are dangerous to your employees. This training will give them the knowledge they need to avoid the dangers of working in hot, humid conditions. 14 Min.

Back Protection: Defending Your Safety Zone

Eight out of 10 Americans will seek medical attention for a back problem sometime in their lives. That's an alarming stat. Help your employees' avoid back injuries to maximize efficiency and put an end to these injuries. Give them reliable techniques for back safety. The program also compares the rigors of professional sports with those of ordinary jobs and examines the facts on: Defending your safety zone. Safe lifting . Posture and exercise. Back injuries and prevention.

Lockout/Tagout: Controlling the Beast

Energy is well and good, provided you keep it under control. Supplement your company's lockout/tagout plan with this program. Get a good grounding on lockout/tagout procedures and hazardous energy sources and comply with OSHA 1910.140.

Fall Protection: The Right Connection

Make sure your workers' fall arrest gear is secure and well-connected. Link up now with this life-saving program on fall protection use in general industry.

PPE: Reality in the Public Sector

Trends may come and go, but safety will not. All the time, everytime, public sector employees must wear their PPE. They face a lot of risks and must be prepared. Otherwise, the results can only be tragic. Give them a first-hand look at the consequences of not wearing PPE, through a worker's recounting of his accident. Stress the importance of using protective equipment. 19 Min.

Proactive Safety Attitudes: Looking Out for Number One

Incidents don't have to happen, and you have to spot them before they do. Take a unique look at safety training with this program. It explains the three-step-formula for an incident-free workplace: prevention, responsibility and protection - and features gripping interviews of workers who've met nasty accidents at work.

Electrical Safety: Beware The Bite!

An electrical shock is like the bite of a poisonous snake! Take the sting out of the danger now and protect your employees with life-saving information. Sink your teeth into this program that gives the low-down on electrical safety.

Respiratory Protection: A Breath of Fresh Air

Airborne hazardous substances may be lethal; but the dangers can be eliminated. Comply with OSHA's Respiratory Protection Program;1910.134; and its requirements; written program; respirator use;

selection and maintenances; fit testing; seal check; breathing air quality; medical evaluations for the eligible and emergency procedures.

Powered Hand Tool Safety: Handle With Care

Safety is literally in your workers' hands. They have to be expert handlers of powered hand tools, and they must know these devices inside and out. Hand over this safety program to them, which thoroughly explains PPE, pre-use inspection, predicting dangers and housekeeping.

Hazard Communication: The Road to Safety

OSHA regulations are strict and, if violated, can be costly. The road to safety and compliance starts with this program, which offers vital information to help your employees identify hazards and understand warning labels and MSDSs. It contains sections on: Identifying potential hazards. Warning labels. MSDSs.

AZ LTAP Training Library

Arizona LTAP maintains a video and publication library. Topcis range from safety issues, preventative methods, to new technoloogy, the center loans any of the videos listed in the library catalog; and newly available publications are listed in the AZ Milepost newsletter and Electronic Tapping In! update emails. See the library at http://www.azltap.org/Library/Library.html

AZ LTAP EQUIPMENT LOAN PROGRAM

AZ LTAP loans a Retroreflectometer and Turning Movement Counters at no charge to member agencies. AZ LTAP will take requests from agencies via phone 602-712-4050 or via email: ttraining@azdot.gov on a first come first served basis. Agencies will be required to provide an estimated length of use (a maximum of two weeks) and a schedule to pick up and return the equipment.

See our website for details: http://www.azltap.org/Services/EquipLoan/EquipLoanProg.html

FHWA Corner

By Sharon V. Gordon

January 2012

Happy New Year! This is a new year for change and opportunity to gain and share knowledge.

In effort to keep the Arizona Local governments knowledgeable about the Federal-aid Highway Program, Federal Highway Administration (FHWA)- Arizona Division Local Program Engineer, Sharon Gordon will provide articles, interesting insight and guidance on various subject topics in the "FHWA Corner" segment of the LTAP News Letter.

In 2012, Arizona Department of Transportation (ADOT) Statewide Project Management Group will introduce a new ADOT Local Public Agency Projects Manual. The manual also referred to as the Local Government Manual, will be a main source of procedural guidance for local public agencies to gain vital information for developing, administering and constructing Federal-aid Highway Projects. In addition to the New ADOT Local Public Agency Projects, ADOT is developing Local Government Manual training for local agencies to participate and learn the federal aid process.

FHWA is also embarking on new changes that will be essential to ADOT and local public agency sponsors. From a national perspective, FHWA found that more emphasis in the LPA program area was needed. In the summer of 2012, FHWA will introduce the LPA Essentials web training, a new innovative and interactive local government training modules that can be viewed at your desk. The modules will provide an easy to learn step by step training on all the vital areas within the Federal-aid Highway Program. To top it off, the modules are only 10 to 15 minutes long, so no need to sit in a long class all day. Stay tuned there is more to come!

Calendar of Events

AZ LTAP Calendar of Events
http://www.azltap.org/Calendar/calendar.html

January 30, 2012: American Society of Civil Engineers- Webcast-An Introduction to the Design of Erosion Control Measures Using Riprap For More Information Visit http://www.asce.org/Content.aspx?id=12884904131

February 7-9, 2012 : Second Biennial Evacuation Conference New Orleans For More Information Visit http://www.trb.org/Calendar/Blurbs/166025.aspx

February 14, 2012: APWA Audio/Webcast- Small Projects-Big Results http://www2.apwa.net/events/eventdetail.asp?ID=5350

February 16, 2012: Recycled Materials in Construction - Divert that Waste Stream! APWA Audio/Webcast-http://www2.apwa.net/events/eventdetail.asp?ID=5324

April 23-27, 2012: National Work Zone Awareness Week

April 30- May 3, 2012: 2012 International Conference on Winter Maintenance and Surface Transportation Weather. For More Information Visit http://www.trb.org/Calendar/Blurbs/164319.aspx

July 16, 2012: National Asphalt Pavement Association Midyear Meeting Chicago, IL http://www.asphaltpavement.org/index.php?option=com_jcalpro&Itemid=560&extmode=view&extid

Road Scholar News

Arizona LTAP is proud to announce 3 new Road Scholar III classes available soon!

Work Zone Traffic Control III includes a brief review of basic and Work Zone Traffic Control II material. It then covers traffic incident and work zone time durations. The main topics will be writing traffic control plans, night time traffic operations, barriers, traffic control devices, changes to the MUTCD 2009 with the Arizona supplement, and checklists pertaining to the traffic control facilities, wok areas and flagger stations. There will be practical exercises in determining applicable requirements and writing the traffic control plans to specific scenarios.

Work Zone Traffic Control III is being held as a pilot class in Phoenix on February 29, 2012. Participants must have completed **Work Zone Traffic Control II** in order to attend. Please submit an enrollment form and submit to ttraining@azdot.gov or fax to 602-712-3007.

Other classes soon to be scheduled as pilots in the Phoenix area are **Asphalt Pavement Maintenance II** and **Project Management Techniques**. Participants must have attended **Asphalt Pavement Maintenance** prior to attending Asphalt Pavement Maintenance II.

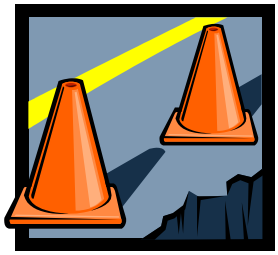
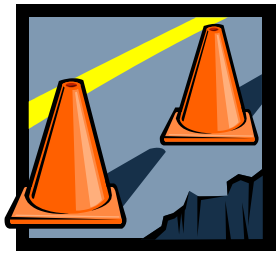
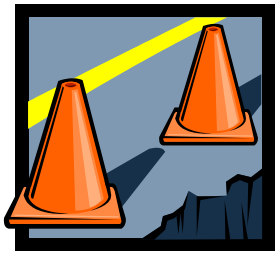
The Asphalt Pavement Maintenance II course is designed to help road and highway engineers, supervisors and crews become familiar with the concept of preventative maintenance, selection of most cost-effective maintenance treatment, maintenance materials, and various maintenance treatments for asphalt.

Topics Include:

- The Case for Preventive Maintenance
- Engineering a Preventative Maintenance Program
- Materials for Preventative Maintenance
- Fog Seals and Rejuvenators
- Chip Seal
- Slurry Seal and Micro-Surfacing
- Thin Hot-Mix Asphalt Overlays (Conventional, Asphalt Rubber, Novachip)
- Crack Treatments for Flexible Pavements

The objectives taught in **Project Management Techniques** include:

- Understanding the difference between a project and project management.
- Developing working knowledge of how to properly scope a project for success.
- Learning characteristics of Successful Project Managers.
- Scheduling project activities using a GANTT chart.

Changes to the Road Scholar Award Program coming soon.

LOCAL GOVERNMENT SECTION

The Local Government Section reviews and processes or approves all project documents and reports submitted by local governments. This Section also reviews and gives ADOT approval to Design Concept Reports, Design Memorandums, Drainage Reports and other engineering-related documents as may be appropriate. The project required environmental analysis is reviewed by the Environmental Planner and approval is obtained from the Environmental Planning Group.

The function of the Local Government Section is to provide service to Counties, Cities, Towns and Tribal Governments in the area of programming, technical planning, scheduling, engineering expertise, project documents & construction plans reviews/approvals, coordination with FHWA, appropriate ADOT groups/ sections, and provide project development guidelines. The Local Government Section is a part of the Statewide Project Management Group.

To find out more about the Local Government Section, visit
http://www.azdot.gov/highways/Localgov/index.asp

http://www.azdot.gov/Recovery/Local_government_guidance.asp

http://www.azdot.gov/Recovery/local_government.asp

John Dickson
1615 W. Jackson St. MD EM 11
Phoenix AZ 85007
602-712-8683
602-712-3347 Fax
jdickson@azdot.gov

YOUR LOCAL TECHNICAL ASSISTANCE PROGRAM

Stay informed: Request to be added to the Email list for our weekly update

Electronic Tapping In!

(email request to ttraining@azdot.gov
Please include Name, Agency, Location, Email Address)

1130 NORTH 22ND AVENUE
PHOENIX, ARIZONA 85009
www.azltap.org
TTRAINING@AZDOT.GOV
602-712-4050