



# LTAP MATTERS

Montana's Answers To Technical Education of Roads & Streets

College of Engineering Montana State University-Bozeman Bozeman, MT 59717-3910  
 Montana LTAP 1-800-541-6671

Fall 2006 October November December

Vol.24, No.4

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## Dips and Sags Repaired at 17th Annual Snow Rodeo

By Michele Beck, Montana LTAP

Snow was not on the minds of participants at the 17th Annual Equipment Operator Training & Snow Rodeo. Great Falls weather provided lots of September sunshine and high temps during the Rodeo.



Montana LTAP Director  
Steve Jenkins

LTAP Director Steve Jenkins greatly appreciated the partnerships with the City of Great Falls, Montana Department of Transportation, Cascade County Road Department, and Tractor

& Equipment Company. "Marty Basta and Debbie Kimball, City of Great Falls, once again did an outstanding job coordinating all the Snow Rodeo personnel," commented Jenkins. "MDT's involvement in helping with the Snow Rodeo judging and trial set-ups was always welcomed. During the equipment training, T&E's crew offered sound safety advice when doing their walk-arounds on the

equipment they provided," added Jenkins. Cascade County Road Department brought in their motorgrader for training, also.

### FIRST DAY - TRAINING

"How do you get rid of dips and sags in your roads?" questioned Jenkins. He then proceeded teaching his course on surveying and equipment. After his lecture, participants teamed up and went outside to take measurements on the field problem. The challenge was to find the most accurate readings out in the field using the sighting rods and transit-levels.

Jim Turnbow, City of Great Falls, was in the field to help those not familiar with surveying equipment and ways of achieving accurate measurements.

After obtaining their field numbers, teams came back inside to work on their computations. Jenkins assisted those working on the math portion of this exercise.

*Continued on Page 2....*



Jim Turnbow, City of Great Falls, on transit, far right, assisting participants on Equipment Training Day.

### PASS IT ON

After you have read this newsletter, copy what you need for your files and **pass it on** to other interested readers in your department:

\_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
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**Dan Williams**  
Montana Dept of Transportation

The Advisory Board meets annually to make recommendations and evaluate the effectiveness of the Montana LTAP program.

# Snow Rodeo (Cont'd from Page 1)

Prior to the surveying instruction, over sixty participants were certified in forklift safety.

Jenkins, along with LTAP Field Engineer Sam Gianfrancisco and Missoula County Equipment Operator Joe Miller, covered the basics of forklift fundamentals and operations. Jenkins reviewed the design and function of forklifts and explained how to figure load capacity.

Gianfrancisco emphasized how important it was not to become complacent when operating a forklift. He gave an example of a fellow worker with over 15 years of operating a forklift who was killed by a forklift because he did not follow the safety rules.



*L to R: Joe Miller and Dick Kushner ( Missoula County) and Sam Gianfrancisco, MT LTAP*

## Survey Winners

*1st Place: Richland County  
Keith Osborne and Duane Bieber*



*2nd Place: US Air Force: Standing L-R: Brian Kowalczyk, John Price, Paul Mitchell, Matt Sywassink, Phill Amsden. Seated: Daniel Berner*



*3rd Place: MDT L-R: Dennis Cornell, Brian Barnes, and Rona DeBolt*



# Snow Rodeo 2006 Winners



**All Around Champion:**  
Doug Nisbet  
Lewis & Clark County

## Snow Rodeo Winners

### Snow Plow:

1st: Steve Kurk, City of Bozeman  
2nd: Erik Lee, City of Missoula Street Division  
3rd: Ed Tinker, Lewis & Clark County  
1st Timer: Erik Lee, City of Missoula Street Division

### Backhoe:

1st: Larry Chapman, Lewis & Clark County  
2nd: Tim Chute, City of Missoula Street Division  
3rd: Doug Nisbet, Lewis & Clark County  
1st Timer: Cal Bramsen, Missoula County

### Motorgrader:

1st: Cal Bramsen, Missoula County  
2nd: Doug Nisbet, Lewis & Clark County  
3rd: Steve Kurk, City of Bozeman  
1st Timer: Cal Bramsen, Missoula County

### Loader:

1st: Matt Heckel, City of Bozeman  
2nd: Steve Kurk, City of Bozeman  
3rd: Larry Chapman, Lewis & Clark County  
1st Timer: Matt Heckel, City of Bozeman



*Lois Evans, MT LTAP, & Marty Basta, City of Great Falls*



*L-R: Cal Bramsen, Matt Heckel, Steve Kurk, Erik Lee, Tim Chute*



*Judges: Dave O'Neill & Tina Ball*



*Lynn Miller, MDT*



LTAP Matters is published by the Local Technical Assistance Program at Montana State University, Bozeman, Montana.

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## Low-volume Roads Engineering Best Management Practices Field Guide

The U.S. Forest Service's International Program's division has released a field guide that explores the ways and means of building adequate low-volume roads and constructing them in an environmentally sensitive and cost-effective way. The guide is designed to help address the most basic roads issues in as simple a manner as possible. It includes "do's" and "don'ts" along with relevant design information. It also contains a list of selected references for more detailed information. For additional information on the handbook, contact Gordon R. Keller of the U.S. Forest Service at [gkeller@fs.fed.us](mailto:gkeller@fs.fed.us). The guide can be found on line at [http://ntl.bts.gov/lib/24000/24600/24650/Index\\_BMP\\_Field\\_Guide.htm](http://ntl.bts.gov/lib/24000/24600/24650/Index_BMP_Field_Guide.htm)

## FHWA Issues Interim Guidance on High Risk Rural Roads Safety Program

The Federal Highway Administration has issued interim guidance on a new set-aside provision known as the High Risk Rural Roads Program. SAFETEA-LU introduced a new set-aside provision, the High Risk Rural Roads Program, which is a component of HSIP and is set-aside after HSIP funds have been apportioned to the states. It provides \$90 million of HSIP apportionment per year for high risk rural roads (HRRR) highway safety improvement projects. Projects may be selected on any public HRRR to correct or improve hazardous road locations or features. The state's HSIP, including the HRRR element, shall consider the safety needs on all public roads, whether state or locally owned. The interim guidance is available online by visiting <http://safety.fhwa.dot.gov/safetealu/hrrrattachment.htm>

## Safety Effects of Differential Speed Limits on Rural Interstate Highways

The U.S. Federal Highway Administration has released a report that examines the safety effects of universal speed limits for all vehicles as opposed to differential speed limits for cars and heavy trucks. Go to [http://trb.org/news/blurb\\_detail.asp?id=6558](http://trb.org/news/blurb_detail.asp?id=6558)

# Gravel Roads Workshop Success



*Motorgrader Operators & Trainers at Park County Gravel Roads Workshop*

There's a phone call, then questions about motorgrader training, and a gravel roads workshop gets scheduled for a county.



*Sweetgrass Commissioners: Phillip Hathaway & Rick Reed*

"The Park County commissioners had concerns about finding motorgrader training for their new employees and called the LTAP office for help," said Steve Jenkins, Montana LTAP Director. "Our gravel roads workshop is the most highly requested workshop from Montana counties. I feel very fortunate that Sam Gianfrancisco, our Field Engineer, and Joe Miller, Missoula County Road Department, helped with this September workshop by providing a well-rounded gravel roads program for participants."

Just next door to Park County, Sweetgrass County Public Works Director, Jack Knorr, also was looking for this

type of training for his employees. He managed to get his crew involved for most of this training, in the midst of fall fire fighting emergencies.

"There's a little history behind the manual that is used for this course," said Jenkins. He continued, "This course used to be named 'Readin' Good Roads' and Montana LTAP developed a manual for motorgrader operators in 1995. We then revised that manual early in 2000 and called it *Gravel Roads - Back to the Basics*.

Federal Highway Administration along with the South Dakota LTAP developed a similar manual and came out with *Gravel Roads, Maintenance and Design Manual* in November 2000. Due to numerous requests, this manual was reprinted by the Federal Highway Administration in April 2005 and is used in our gravel roads workshop today."



*T&E Equipment Specialists: Kevin Sedgwick & Mike Cook*



# Winter Safety Tips

One of LTAP's partners is the Salt Institute. On their website: [www.saltinstitute.org](http://www.saltinstitute.org), there are a variety of informational pages that will help with upcoming "winter operations for professional snowfighters." Good common sense with the right attitude keep snowfighters safe. They are the ones who clear the roads of snow and ice during winter months, not only for emergency situations, but also for those traveling the roadways.

## BEFORE THE SNOW

Preparations before the snow flies keeps the snowfighters aware of any changes that may have occurred on the route. New driveways or culverts, low hanging wires or tree branches, new curbs or guardrails, all need to be noted because they won't be as identifiable when covered with snow.

Another item on the dry run that will help with the safety factor is to mark all obstacles with the idea of being able to see them during a snow-storm. Those trees that have grown may need a few branches taken off also.

## WHEN WINTER ARRIVES

The following checklists are good reminders for snowfighters:

### Crew Safety

- Adequate sleep or rest
- Multi-layers of warm clothing
- Hard hat, safety vest, safety shoes/boots, gloves
- First Aid Kit
- Thermos/lunch box
- Survival kit: flashlight/extra batteries, ice scraper/snow brush, jumper cables
- Tool kit, flares/reflectors, traffic control flags, shovel, sand, fire extinguisher

### Material Safety

- Materials Safety Data Sheet for chemical information with emergency procedures
- Remain in truck cab when truck is being loaded (unless you're the loader operator)

### Vehicles and Equipment Safety

- Pre-trip inspection of truck - check fluid levels, tire tread & inflation, brakes, windshield wipers & blades, heater, defroster
- Clean windows and mirrors
- Check all lights
- Back-up alarm, plow flags, & warning signs on rear of truck
- Radio communications
- Full fuel tank
- Final walk around inspection
- Safety belt

### Facilities Safety

- Good housekeeping
- Well-lit facility

Think safe  
and act safe  
to be safe

### Operations Safety

- Know your truck & equipment
- Know safe backing rules; circle of safety (Note: backing accidents number more than any other type of accident in our road maintenance operations.)
- Backup alarm standard equipment
- When spreading material & running with truck bed up, the bottom of the truck bed should not be higher than the top of the cab
- When changing plow blades, raise the plow and block it securely

- To unclog a spreader, turn off engine and all power to the spreader
- Relieve all pressure in the hydraulics and then use a tool to unclog (Even though all power is off, the reserve pressure in the hydraulic lines can still turn the augur as it is freed. Using a tool to unclog prevents the habit of sticking your hands in hazardous places.)

- Defensive driving & obey traffic laws
- Wear your safety belt
- Do not speed
- Keep adequate stopping distance

- Be aware of fatigue
- Know your own limitations

- Keep cool--Anger clouds judgment

Winning combination to winter operation safety: Professional snowfighters provide the vital service to maintain a safe transportation system, think safe and act safe to be safe.

Courtesy of Salt Institute - More info at: <http://www.saltinstitute.org/30.html> and/or <http://www.saltinstitute.org/snowfighting>

## What's Happening Next Door?

Go to the following web sites and see what training is listed in neighboring states at LTAP & T2 centers' calendars:

Washington T2 Training:  
<http://www.wsdot.wa.gov/TA/T2Center/Training/>

Oregon T2 Training:  
[http://www.oregon.gov/ODOT/TD/TP\\_T2/docs/TrainingCalendar.pdf](http://www.oregon.gov/ODOT/TD/TP_T2/docs/TrainingCalendar.pdf)

Idaho T2 Training:  
<http://www.webs1.uidaho.edu/ida-hot2/workshops.html>

Wyoming LTAP Training:  
<http://www.eng.uwyo.edu/wyt2/calendar/>

North Dakota LTAP Training:  
<http://www.ce.ndsu.nodak.edu/ndltap/workshops.htm>

South Dakota LTAP Training:  
<http://www3.sdstate.edu/Academics/CollegeOfEngineering/redirect/EngineeringResourceCenter/SD-LocalTransportationAssistanceProgram/TrainingandWorkshops/Index.cfm>

If interested in all LTAP centers, go to: <http://www.ltapt2.org/centers/list.htm>

### MDT Transit Management Fall Workshops

Missoula, MT - November 1 - 3, 2006  
 Glendive, MT - November 15 - 17, 2006

For more info: [http://www.mdt.mt.gov/mdt/ftw\\_reg.shtml](http://www.mdt.mt.gov/mdt/ftw_reg.shtml)

If you have any questions, please call David Jacobs at 406.444.9192

### MDT ACT (Assessment Course Treatment) Training Wingate Inn 2007 N. Oakes Helena, MT October 24 - 26, 2006

For more info: [http://www.mdt.mt.gov/mdt/act\\_reg.shtml](http://www.mdt.mt.gov/mdt/act_reg.shtml)

If you have any questions, please call Pam Buckman at 406.444.0809.

# Annual Calendar 2006

January 2006	February 2006	March 2006																																																																																																																																										
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Some dates & locations are subject to change. Call Lois Evans, LTAP, 1-800-541-6671 or 406-994-6100 to confirm.

# Calendar of Winter Events 2006

## MACRS District Meetings

- Butte **Tuesday - October 10**  
Best Western Butte Plaza Inn, 2900 Harrison  
406-494-3500
- Missoula **Wednesday - October 11**  
Ruby's Inn, 4825 N Reserve  
406-721-0990
- Great Falls **Thursday - October 12**  
LaQuinta, 600 River Drive South  
406-761-2600
- Glendive **Wednesday - October 18**  
Best Western, 223 N. Merrill  
406-377-5555
- Billings **Thursday - October 19**  
Best Western, 5610 S. Frontage Road  
406-248-9800

Contact Lois Evans, LTAP Conference Coordinator, 1-800-541-6671, regarding registrations or inquiries

## The League of Cities & Towns 25th Annual Conference

West Yellowstone, MT **October 4-6, 2006**  
West Yellowstone Conference Center  
Contact: 406-442-8768 League of Cities & Towns

## APWA Rocky Mountain Chapter 2006 Fall Conference

West Yellowstone, MT **October 3 - 4, 2006**  
Holiday Inn Sunspree Resort  
1-800-646-7365  
APWA Contact: Debra Arkell at 406-582-2315

## MACRS Planning Meeting

Lewistown, MT **November 14-15, 2006**  
Contact Lois Evans, LTAP Conference Coordinator, 1-800-541-6671, regarding registrations or inquiries

Winter Maintenance &  
Winter Survival  
Available  
October, November, December  
Upon Request

Look for announcements on our website:  
[www.coe.montana.edu/ltap](http://www.coe.montana.edu/ltap)

## Spring 2007 Workforce Development Week

LTAP is trying something new with spring training: an entire week of various types of training, including Gravel Roads Workshop; various equipment training modules; safety engineering with regards to edge, slope and clear zones; surveying; leadership; summer survival; and permanent/temporary signing. During the months of March, April, and May, various sites will host the week-long training. Brochures will be sent well in advance so counties and cities can plan for their training needs.

## MACRS 27th Annual Convention in Kalispell March 26-29, 2007

Mark your calendars for the 27th Annual MACRS Convention March 26-29, 2007 at the Red Lion in Kalispell! Brochures will be sent out in January 2007 with registration forms and information.

## NACE 2007 April 22-26, 2007 Milwaukee, Wisconsin

For online information go to:  
[www.countyengineers.org](http://www.countyengineers.org)

## Automated Speed Enforcement and Safety

The Texas Transportation Institute recently released a study report on automated speed enforcement and its relationship to speeding and safety. Included in their study is the implementation of automated speed enforcement program. Check it out at: <http://tti.tamu.edu/documents/TTI-2006-4.pdf>

## Retroreflectivity Changes Proposed to MUTCD

In an earlier Notice of Proposed Amendments (NPA), the Federal Highway Administration (FHWA) proposed to amend the Manual on Uniform Traffic Control Devices for Streets and Highways (MUTCD) to include methods to maintain traffic sign retroreflectivity.

Based on the review and analysis of the numerous comments received in response to the notice, FHWA has decided to substantially revise the proposed amendments to the MUTCD and has issued a Supplemental Notice of Proposed Amendments (SNPA). Under the SNPA, FHWA proposes to amend methods to maintain traffic sign retroreflectivity at or above these levels.

Comments must be received on or before November 6, 2006. For further information, contact Debra Chappell, FHWA Office of Safety Design (202) 366-0087. More information is posted in the May 8th Federal Register: [http://www.access.gpo.gov/su\\_docs/fedreg/a060508c.html](http://www.access.gpo.gov/su_docs/fedreg/a060508c.html)

# Safe at Any Speed

*From The Wall Street Journal (New York, NY), Editorial (Summer 2006)*

In 2005, according to new data from the National Highway Safety Administration, the rate of injuries per mile traveled was lower than at any time since the Interstate Highway System was built 50 years ago. The fatality rate was the second lowest ever, just a tick higher than in 2004.

As a public policy matter, this steady decline is a vindication of the repeal of the 55 miles per hour federal speed limit law in 1995. That 1974 federal speed limit was arguably the most disobeyed and despised law since Prohibition. "Double nickel," as it was often called, was first adopted to save gasoline during the Arab oil embargo, though later the justification became saving lives. But to Westerners with open spaces and low traffic density, the law became a symbol of the heavy hand of the federal nanny state. To top it off, Congress would deny states their own federal highway construction dollars if they failed to comply.

In repealing the law, the newly minted Republican majority in congress declared that states were free to impose their own limits. Many states immediately took up this nod to federalism by raising their limits to 70 or 75 mph. Texas just raised its speed limit again on rural highways to 80.

This may seem non-controversial now, but at the time the debate was shrill and filled with predictions of doom. Ralph Nader claimed that "history will never forgive Congress for this assault on the sanctity of human life." Judith Stone, president for the Advocates for Highway and Auto Safety, predicted to Katie Couric on NBC's "Today Show" that there would be "6,400 added highway fatalities a year and millions of more injuries." Federico Pena, the Clinton Administrations Secretary of Transportation, declared: "Allowing speed limits to rise above 55 simply means that more Americans will die and be injured on our highways."

We now have 10 years of evidence proving that the only "assault" was on the sanctity of the truth. Per mile traveled, there were about

5,000 fewer deaths and almost one million fewer injuries in 2005 than in the mid-1990s. This is all the more remarkable given that a dozen years ago Americans lacked today's distraction of driving while also talking on their cell phones.

Of the 31 states that have raised their speed limits to more than 70 mph, 29 saw a decline in the death and injury rate and only two -- the Dakotas -- have seen fatalities increase. Two studies, by the National Motorists Association and by the Cato Institute, have compared crash data in states that raised their speed limits with those that didn't and found no increase in deaths in the higher speed states.

Jim Baxter, president of the National Motorists Association, says that by the early 1990s "compliance with the 55 mph law was only about 5% -- in other words, about 95% of drivers were exceeding the speed limit." Now motorists can coast at these faster speeds without being on the constant lookout for radar guns, speed traps and state troopers. Americans have also arrived at their destinations sooner, worth an estimated \$30 billion a year in time saved, according to the Cato study.

The tragedy is that 43,000 American still die on the roads every year, or about 15 times the number of US combat deaths in Iraq. Car accidents remain a leading cause of death among teenagers in particular. The Interstate Highway System is nonetheless one of the greatest public works programs in American history, and the two-thirds decline in road deaths per mile traveled since the mid-1950s has been a spectacular achievement. Tough drunk driving laws, better road technology, and such improving auto safety features as power steering and brakes are all proven life savers.

We are often told, by nanny-state advocates, that such public goods as safety require a loss of liberty. In the case of speed limits and traffic deaths, that just isn't so.



# October 10, 2006 - Put the Brakes on Fatalities Day - Help Save Lives!

There are three primary components to highway safety:

- Driver Behavior
- Vehicle Equipment, Design and Maintenance
- Roadway Design, Signage and Road Improvements



Remember to Practice & Promote SAFE

Driving Behaviors:

- Ensure your vehicle is safe; e.g., clean & properly maintained
- Allow yourself enough time to arrive safely
- Be physically sound & mentally sharp
- Buckle up
- Maintain clear sight picture
- Pay complete attention on driving
- Follow signals, signs, speed limits & striping
- Maintain safe following distance
- Be a non-aggressive, courteous & conscientious driver
- Be a safe defensive driver

NACE (National Association of County Engineers) is a member of the coalition promoting safety on our public roads. For more information about this important effort and ideas about what you can do, visit the PBFD website at [www.brakesonfatalities.org](http://www.brakesonfatalities.org).

## Bikeability Checklist

More and more communities are encouraging people to ride their bikes. It offers an avenue for physical exercise, helps the environment, and can actually save you money.

At [www.hsrc.unc.edu/safety\\_info/bicycle/](http://www.hsrc.unc.edu/safety_info/bicycle/) there is a bikeability checklist to discover how bikeable your community measures up. This is the Pedestrian and Bicycle Information Center at the University of North Carolina Highway



Safety Research Center web site, sponsored by National Highway Traffic Safety Administration and US DOT.

The first set of questions include sharing the roadway, what type of surface you ride on, what were intersections like, do drivers behave well, how do you make your ride safer. There is a list to rate your community based on the number of points you assigned the above questions.

If you found something that needed changing, suggestions are offered for things you can do immediately. For long-term solutions, there is a list of ways to become involved in your community to affect changes.

At the end of this site, there are over twenty resources to get more information under headings such as:

- Street Design and Bicycle Facilities
- Education & Safety
- Paths & Trails
- Health
- Advocacy and User Groups
- Other Useful Resources



### US Transportation Fatalities: 2005

The National Transportation Safety Board (NTSB) has released preliminary figures on deaths from transportation accidents in the United States in 2005. According to the NTSB, a total of 45,636 people were killed in transportation accidents, up from 45,092 in 2004. Go to: [http://www.trb.org/news/blurb\\_detail.asp?id=6777](http://www.trb.org/news/blurb_detail.asp?id=6777)

### Bicycle and pedestrian websites for info:

<http://www.fhwa.dot.gov/environment/bikeped/index.htm>

[http://safety.fhwa.dot.gov/ped\\_bike/bike/index.htm](http://safety.fhwa.dot.gov/ped_bike/bike/index.htm)

<http://www.nhtsa.dot.gov/portal/site/nhtsa/menuitem>

<http://www.pedbikeinfo.org/>

<http://www.apbp.org/website/>

# Montana LTAP Lending Library

## Publications

Welcome to the LTAP Lending Library where publications, videos, DVD's and software may be borrowed for two weeks and then returned to the Library.

Up to three videotapes may be borrowed from the LTAP Lending Library rent-free for two weeks.

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[www.coe.montana.edu/ltap](http://www.coe.montana.edu/ltap)

At this web site you can also keep track of upcoming workshops, our newsletter, and "What's New" items that change periodically.

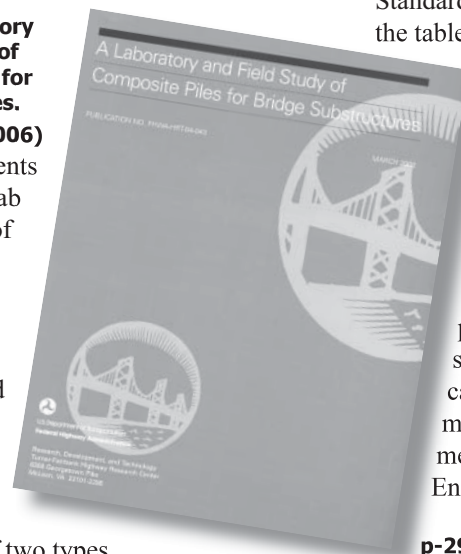
**p-69: Job Site Evaluation of Corrosion-Resistant Alloys for Use as Reinforcement in Concrete (FHWA June 2006)**

The use of corrosion-resistant materials in bridge construction has increased due to the requirement of the 75-100 year design life now implemented. This publication's goal was to evaluate and provide a historical record of approved State bridge construction projects that have used these materials. The study includes site visits, documentation of attributes and any problems associated with the various types of reinforcement types, acquisitions, and testing of samples. (86 pages)

**p-77: Assessing Stream Channel Stability at Bridges in Physiographic Regions (FHWA July 2006)** This study expands and improves on a rapid channel assessment method previously developed to include additional factors. Another goal of this study was to tailor Thorne's reconnaissance method for bridge inspection and stability assessment needs. Site visits were conducted at 57 stream-bridge intersections and all the info collected was tabulated and rated. (157 pages)

**p-78: A Laboratory and Field Study of Composite Piles for Bridge Structures. (FHWA March 2006)**

This report presents the results of a lab and field study of composite piles for use as foundation elements for bridges. It covers Axial and lateral short-term displacement behavior and mechanical properties of two types of composite piles; a fiber-reinforced polymer (FRP) concrete-filled shell and a plastic pile reinforced with a welded steel cage. (384 pages)



**p-85: Bridge Management Experiences of California, Florida and South Dakota (FHWA 2006)** This publication describes how CA, FL and SD have used the Pontis Bridge Management System to shape their Asset Management Programs to be more efficient and cost effective. It discussed ways each state has integrated it into their existing programs such as Citrix MetaFrame Access Suite and the Project Level Analysis Tool. (28 pages)

**p-227: Deep Patch Road Embankment Repair Application Guide (USDA October 2005)** Provides an application guide that describes the background, performance, design, and construction details of the deep patch road embankment repair technique. Also details a method for designing deep patches. (21 pages) Also found at [http://www.fs.fed.us/eng/pubs/pdf/hi\\_res/05771204hi.pdf](http://www.fs.fed.us/eng/pubs/pdf/hi_res/05771204hi.pdf)

**p-290 A: AASHTO 2006 Provisional Standards** This publication includes a complete set of current protocols containing a total of 41 provisional standards. A chronology of year-to-year status of the Provisional Standards is included immediately following the table of contents. This is the tenth addition of the AASHTO Provisional Standards.

**p-290 B: AASHTO 2006 Provisional Standards – Standard Specifications for Transportation Materials and Methods of Sampling and Testing Part 1A - Specifications** The 26 annual AASHTO Transportation materials and methods of sampling and testing standard specifications. This report contains 165 materials specifications and 36 recommended practices, which both contain English and Metric units of measure.

**p-290 C: AASHTO 2006 Provisional Standards – Standard Specifications for Transportation Materials and Methods of Sampling and Testing Part 2 A- Tests** The 26th annual AASHTO Transportation materials and methods of sampling and testing. Contains 214 test methods and equipment

# Lending Library - Publications Cont'd

standards of which both contain English and Metric units of measure.

**p-290 D: AASHTO 2006 Provisional Standards – Standard Specifications for Transportation Materials and Methods of Sampling and Testing Part 2B - Specifications**

The 26 annual AASHTO Transportation materials and methods of sampling and testing standard specifications. This report contains 165 materials specifications and 36 recommended practices, which both contain English and Metric units of measure.

**p-290 E: AASHTO Provisional Standards – Standard Specifications for Transportation Materials and Methods of Sampling and Testing Part 2B - Tests**

The 26th annual AASHTO Transportation materials and methods of sampling and testing. Contains 214 test methods and equipment standards of which both contain English and Metric units of measure.

**p-393: Optimization of Traffic Data Collection for Specific Pavement Design Applications (FHWA May 2006)**

The purpose of this study is to establish the minimum traffic data collection effort required for pavement design applications satisfying a maximum acceptable error under a prescribed confidence level. A three-dimensional plot was produced that can be used to establish the minimum required traffic data collection effort, given the acceptable error and the desired confidence level. (126 pages)

**p-423 Interim Recommendations for the Use of Lithium to Mitigate or Prevent Alkali-Silica Reaction (ASR) (FHWA July 2006)**

This report provides practitioners with the necessary information and guidance to test, specify and use lithium compounds to combat Alkali-Silica reactions (ASR) in new concrete construction, repair and service. (94 pages)

**p-424 Guide for Curing Portland Cement Concrete Pavements, Volume II ( FHWA August 2006)**

This report contains information on the current state of knowledge of curing hydraulic-cement concrete and on concrete curing practice. ( 170 pages)

**p-443 A: Highway Concrete Pavement Technology Development and Testing: Volume I – Field Evaluation of Strategic Highway Research Program (SHRP) C-202 Test Sites (Alkali-Silica Reaction (ASR))(FHWA August 2006)**

This report describes and quantifies the differences between test sections and the results of the various treatments used to combat ASR. The 4 test sections in CA, NV, NM, and SD were monitored for 5 years. Visual surveys, faulting measurements, relative humidity, petrographic examination and compressive strength and elastic modulus were tested. (185 pages)

**p-443 B: Highway Concrete Pavement Technology Development and Testing: Volume II – Field Evaluation of Strategic Highway Research Program (SHRP) C-203 Test Sites (Freeze-Thaw Resistance)(FHWA August 2006)**

This report documents the results from 2 field sites used to research the resistance of concrete to freezing and thawing. The sites were monitored for long-term performance to verify the effectiveness of freeze-thaw resistance technology. The monitoring included annual distress surveys, and physical testing of cores taken from the concrete slabs at both sides. In addition one site was evaluated for D-cracking. The results show very little visual distress or physical distress. Results and conclusions are provided. (47 pages)

**p-443 C: Highway Concrete Pavement Technology Development and Testing: Volume II – Field Evaluation of Strategic Highway Research (SHRP) C-205 Test Sites ( High-Performance Concrete) (FHWA August 2006)**

The report discusses in detail the effects of climate and material properties on the HES concrete durability. 8 High-Early-Strength (HES) concrete patches were constructed and examined over 7 years for durability. The report also presents comparisons of the rapid chloride permeability and AC impedance test results and the rate of strength gain for the mixes evaluated. (69 pages)

**p-443 D: Highway Concrete Pavement Technology Development and Testing: Volume IV – Field Evaluation of Strategic Highway Research Program (SHRP) C-206 Test Sites (Early Opening of Full-Depth Pavement Repairs) (FHWA August 2006)**

The objective of this study was to monitor and evaluate the performance of experimental full-depth repairs made with high-early-strength(HES) materials. The goal was to establish guidelines for the minimum strength required at opening time to ensure adequate performance of full-depth PCC pavement repairs. This report presents the results of annual surveys and analysis of the collected data. (51 pages)

## MDT Safe Routes to School

MDT has a new public information site for Safe Routes to School Program. Although still under construction, visit this web site at: <http://www.mdt.mt.gov/pubinvolve/saferoutes/> There is also a phone number listed: 406.444.4210 at this site

Free workshops are planned in Missoula on October 3rd and in Billings on October 4th. If you are interested in developing a SRTS program in your community please contact MDT at the above web site (emails listed) or phone number.

## Highlights from the AASHTO SSOM Meeting September 27, 2006

The American Association of State Highway and Transportation Officials (AASHTO) Subcommittee on Systems Operations and Management (SSOM) recently met in a joint meeting with the AASHTO Special Committee on Transportation Security (SCOTS) from September 17-20 in Orlando, Florida. By participating in roundtable discussion topics such as evacuation, emergency operations management and incident management, the committees had an opportunity to learn from the experiences of state Departments of Transportation (DOTs) from across the country and discuss solutions to common challenges. Go to this site to read a recap of the meeting: <http://www.nctotalks.com/articles/SSOM.php>



## Lending Library - Publications Cont'd

### TRB 86th Annual Meeting

January 21-25, 2007  
Washington, DC

Transportation professionals from around the world will gather at the meeting to share their knowledge and perspectives on current developments in transportation research, policy, and practice. The spotlight theme for 2007 is "Transportation Institutions, Finance, and Workforce: Meeting the Needs of the 21st Century." For information, visit the TRB Annual Meeting Web site at [www.trb.org/meeting](http://www.trb.org/meeting). Questions about the meeting can be emailed to [TRBMeetings@NAS.edu](mailto:TRBMeetings@NAS.edu). Attendees are encouraged to review hotel reservation information in the announcement and to make hotel reservations as soon as possible, since hotels often have all rooms booked before November. Attendees are also encouraged to register on line by November 30, 2006, to take advantage of the lower advance registration fees.

"Without enough sleep, we all become tall two-year olds."

-- Jojo Jensen

#### **p-443 E: Highway Concrete Pavement Technology Development and Testing: Volume V – Field Evaluation of Strategic Highway Research Program (SHRP) C-206 Test Sites (Bridge Deck Overlays)**

**(FHWA August 2006)** The objective of this study was to monitor and evaluate the performance of two concrete overlays; silica fume concrete (SFC) and latex-modified Type III PCC (LMC-III). One is a long-term low permeability overlay and the other is a high early strength overlay. The overlays were studied for 6 years and the results and conclusions are summarized in this report. (80 pages)

#### **p-444 A: Identifying Incompatible Combinations of Concrete Materials. Volume I – Final Report (FHWA August 2006)**

This study reports on unexpected interactions in Portland cement concrete such as stiffening or excessive retardation, potential for uncontrolled early-age cracking, and unstable or unacceptable air void systems. It develops a protocol to allow users to monitor their materials and concrete systems. It has determined simple field tests to provide early warning signs of potential problems. (159 pages)

#### **p-444 B: Identifying Incompatible Combinations of Concrete Materials. Volume II – Test Protocol (FHWA August 2006)**

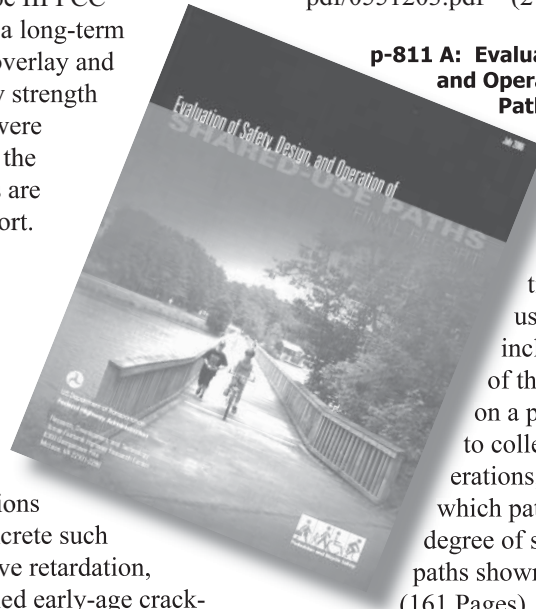
This study reports on unexpected interactions in Portland cement concrete such as stiffening or excessive retardation, potential for uncontrolled early-age cracking, and unstable or unacceptable air void systems. It develops a protocol to allow users to monitor their materials and concrete systems. It has determined simple field tests to provide early warning signs of potential problems. (83 pages)

**p-515: Vehicle Cleaning Technology for the Controlling of Noxious Weeds and Invasive Species (USDA October 2005)** Summarizes the concepts for removing seeds from vehicles and equipment to control the

spread of noxious weeds, invasive species, and disease. Many silvicultural and land management activities on national forest land involve moving vehicles and equipment at off-road locations. As a result, seeds and spores can be picked up, transported, and transplanted over great distances. Also found at <http://www.fs.fed.us/eng/pubs/pdf/0551203.pdf> (27 pages)

#### **p-811 A: Evaluation of Safety, Design and Operation of Shared-User Paths – Final Report and Calculator; A User's Guide (FHWA July 2006)**

This report developed a Level of Service (LOS) estimation method for shared-user-paths. The research included the development of the theory of traffic flow on a path, an extensive effort to collect data on path operations, and a survey through which path users expressed their degree of satisfaction with the paths shown in a series of videos. (161 Pages)



#### **p-811 B: Shared-Use Path Level of Service Calculator; A User's Guide (FHWA July 2006)**

The User's Guide provides step by step instructions on how to use the Level of Service (LOS) procedure and spreadsheet calculation tool for Shared-Use-Paths. (67 Pages)



#### **p-849: Underground Transportation Systems in Europe: Safety, Operations, and Emergency**

**Response (FHWA June 2006)**

The objectives of the 11-member scan team were to learn what is being done internationally for underground transportation systems in the areas of safety, operations, and emergency response. This report lists nine initiatives and practices that relate to human factors, planning, design, and incident and asset management. The scan team developed a detailed implementation plan covering these nine areas. (48 pages)

# Lending Library - Publications Cont'd

**p-905: Managing Travel Demand: Applying European perspectives to U.S. practice (FHWA May 2006)** This study analyzes the programs and policies used to manage travel demand in Germany, Italy, the Netherlands, Sweden and the United Kingdom. This was to help develop a strategy to address the negative consequences of traffic congestion in the U.S. They found a different way of thinking that attempts to influence travelers before they get in their vehicles to travel. The recommendations for U.S. implementation include demonstration projects on congestion and demand management measures observed in Europe, technical support and training. (76 pages)

**p-931: Basic Traffic Control for Utility Operations: Guide to Temporary Traffic Control for Utility Operations (ATSSA June 2002)** This small guide offers a quick reference to utility companies working with temporary traffic control. (49 pages – booklet size)

**p-952: Developing and Implementing Transportation Management Plans for Work Zones (FHWA December 2005)** This guide is intended to serve as a technical resource to help transportation agencies design and implement effective transportation management plans (TMPs) for work zones. It is the third of four guides used to support implementation of the Work Zone Safety and Mobility Rule. (117 Pages)

**p-2645: Coordinated Freeway and Arterial Operations Handbook (FHWA May 2006)** The focus of this guide is on operating freeways and adjacent arterials together in a coordinated manner that treats these roadways not as separate entities, but as an interconnected traffic operations corridor. The purpose of this document is to provide direction, guidance and recommendations for transportation management engineers, and planners on how to proactively and comprehensively coordinate freeway and arterial street operations. (152 pages.)

**p-3120: NHI Training Catalog – Transportation Training Resources Catalog – (FHWA 2006)** This is the 2006 Course Catalog for classes offered by the National Highway Institute. (198 Pages)

**p-3540 Benefits and Costs of Full Operations and ITS Deployment – 2003 Simulation for Cincinnati, OH (FHWA July 2006)** US DOT sponsored research using the latest simulation techniques to assess the potential benefits and costs of “full deployment” of ITS and transportation operations in three cities. This document covers the 2003 simulation for Cincinnati, OH. This simulation focuses on varying weather and work zone conditions as well as traffic conditions. (32 Pages)

**p-3541: Benefits and Costs of Full Operations and ITS Deployment – 2003 Simulation for Seattle (FHWA July 2006)** US DOT sponsored research using the latest simulation techniques to assess the potential benefits and costs of “full deployment” of ITS and transportation operations in three cities. This document covers the 2003 simulation for Seattle, WA. This simulation focuses on decreasing travel times, delays, and improving flow of traffic. (32 Pages)

**p-3542: Benefits and Costs of Full Operations and ITS Deployment – 2025 Forecast for Tucson, AZ (FHWA July 2006)** US DOT sponsored research using the latest simulation techniques to assess the potential benefits and costs of “full deployment” of ITS and transportation operations in three cities. This document analyzes Tucson, AZ using a forecast for traffic in 2025. (32 Pages)

**p-3543: Archived Data Management Systems – A Cross-Cutting Study: Linking Operations and Planning Data (FHWA December 2005)** This document is one in a series of products designed to help you provide ITS solutions that meet your local and regional transportation needs. We have developed a variety of formats to communicate with people at various levels within your organization and among your community stakeholders. (40 pages)

**p-3544: Intelligent Transportation Systems (ITS) – Benefits, Costs, and Lessons Learned. (FHWA 2005 Update)** This report is a continuation of a series of reports providing a synthesis of the information collected by US DOT ITS Joint Program Office on the impact that ITS projects have on the operation of the surface transportation network, and the costs of the ITS deployment and operations and evaluation experience. (192 Pages)

## ITS Lesson of the Month for September 2006

The topic of September’s Lesson of the Month is finding innovative funding resources to help finance management and operations (M&O) strategies and Intelligent Transportation Systems (ITS). The lesson describes the experience of several agencies with innovative funding. Go to: <http://www.itslessons.its.dot.gov/its/benecost.nsf/DisplayXOTM?OpenForm&LOTM^LOTM>

## ITS Oregon Debuts New Web Site

The Intelligent Transportation Society of Oregon (ITS Oregon) is a volunteer organization whose members foster ITS deployment through partnership building, education and outreach. Its new Web site contains recent posts on ITS information. *(Check out the last article on their page regarding “talking signs”--interesting!)* Go to: <http://itsoregon.wordpress.com/>

Thinking is when your mouth stays shut and your head keeps talking to itself.

-- Fred Hoyle

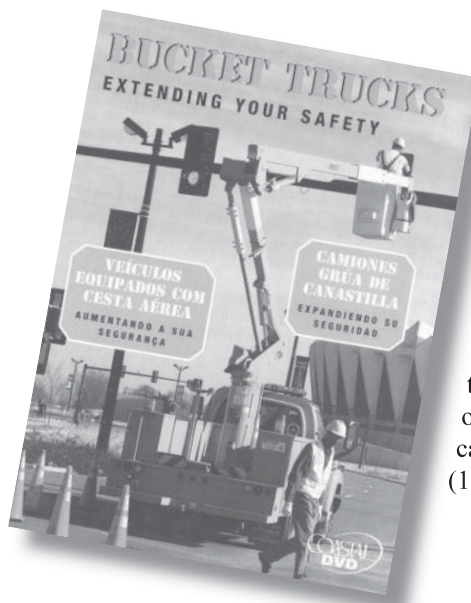
Six New ITS Standards Fact Sheets Released and ITS Standards Status Updates Available at US DOT ITS Standards Website

The US DOT ITS Standards Program has released six new Standards Fact Sheets which provide concise, "plain English" descriptions of ITS standards. The ITS Standards Website has also been updated with several ITS Standards Status changes. Go to: <http://www.standards.its.dot.gov/news.asp>

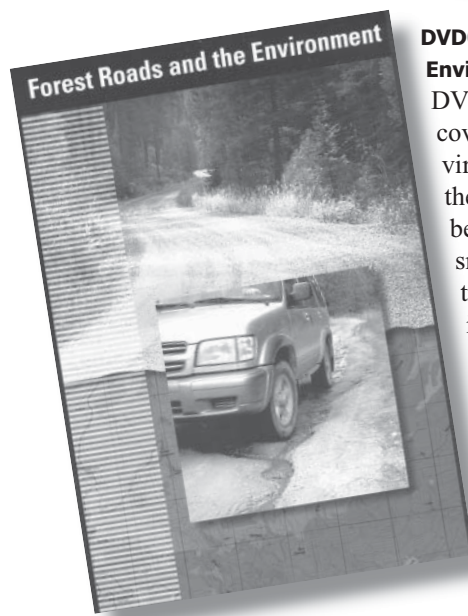
NHTSA Releases List of Model Year 2007 Vehicles for Crash and Rollover Testing

The National Highway traffic Safety Administration announced the 2007 model year vehicles that will undergo crash and rollover testing as part of the agency's annual consumer safety ratings program. Go to: <http://www.dot.gov/affairs/nhtsa1006.htm>. The ratings for the 2007 models, as well as for previous years, can be found at: [www.safercar.gov](http://www.safercar.gov)

## Lending Library - DVD's



**DVD0170: Bucket Trucks (Coastal 2006)** This DVD covers all safety factors to consider when operating a bucket truck, such as required safety equipment on board, work clothes, pre-planning at the job site, safety at the jobsite, overhead considerations, electrical safety, and bucket etiquette. (15 minutes)



**DVD0205: Forest Roads and the Environment (USFS 2005)** This DVD has five separate clips covering forest roads and the environment (18 minutes), reading the traveled way (16), reading beyond the traveled way (16), smoothing and reshaping the traveled way (17), maintaining the ditch and surface cross drains (16), and dangerous travelers (noxious weeds) (26). (Total 116 minutes)

**New DVD - Highway Safety and Trees: The Delicate Balance**

The new DVD available from the Federal Highway Administration, Highway Safety and Trees: The Delicate Balance, offers sound advice when discussing roadway design--we should look at finding a balance of good engineering judgment and landscape design, particularly when trees come into the equation. The DVD explores the safe placement of trees along our country's roadsides, stressing that the

design of highway projects should be a cooperative effort involving the highway agency, concerned communities, organizations, and individual citizens. To get a copy (FHWA-SA-06-13), send an email to [report.center@fhwa.dot.gov](mailto:report.center@fhwa.dot.gov) or fax a request to 301-577-1421. Also, check out the FHWA Road Departure Safety web site at [http://safety.fhwa.dot.gov/roadway\\_dept/index.htm](http://safety.fhwa.dot.gov/roadway_dept/index.htm) (Information from NACE News August 2006)



# Lending Library - Software

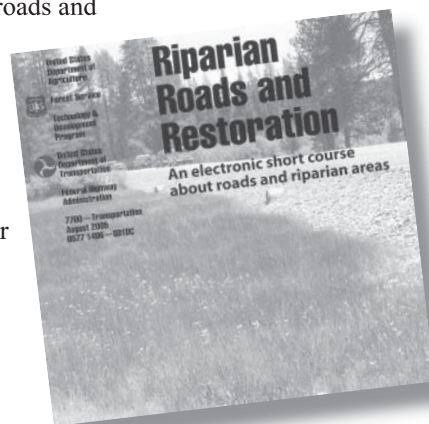
**SW0005: HPM Training (High Performance Materials) – FHWA Resource Center, June 2006** This 2-CD set contains powerpoint presentations from five HPM seminars hosted by Oregon DOT in February and March 2006.

This training covers areas such as bridge management and inspection, bridge security, structural design, high performance bridge materials and accelerated bridge construction/prefabricated bridge elements and systems.

**SW0225: Highway Materials Engineering Soils – NHI, January 2002** This CD from National Highway Institute Course Number 131023A for Chapters 9-14. Coverage includes materials control and acceptance-quality assurance; soil and foundations; steels, welding, and coatings; aggregates and unbound bases; asphalt materials and paving mixtures; and Portland Cement Concrete.

**SW0616: Design and Implementation of Erosion and Sediment Control – NHI, 2001** This NHI course number 134054 provides course materials for a joint effort between FHWA and Environmental Protection Agency which reflects the agencies' commitment to providing education and training on planning, design, implementation, enforcement, inspection and maintenance strategies to control erosion and sediment on highway construction projects, as well as to ensure that regulator issues are addressed accurately and uniformly.

**SW0625: Riparian Roads and Restoration – US Forest Service, August 2005** This is an electronic short course about roads and riparian areas. It addresses minimizing impacts on riparian/wetland areas and restoring or improving riparian wetland ecosystem health. The course is broken into nine areas of discussion, with an individual instructor lecturing on their area of expertise (live clip), with powerpoint presentation on the other side of the screen.



**SW0850: Pedestrian Facility Design – NHI – August 2002** This NHI Course Number 142045A was developed to provide information and application opportunities for those involved in the design of pedestrian facilities. The ADA requires newly construed and altered sidewalks to be accessible and usable for people with disabilities, and accessibility improvements need to be implemented for existing facilities. Instruction centers on two case examples involving corridor design and intersection design issues.

**SW0851: Bicycle Facility Design – NHI May 2002** NHI Course Number 142046A assists planners and designers in learning how to apply the existing standards and how to deal with other technical issues involved.

**SW0911: Road Safety Fundamentals – FHWA, March 2006** This CD contains materials for a course which covers: road safety basics, solving traffic safety problems, traffic control devices, roadway design criteria, improving roadside safety, and intersection safety. Included is a field reference guide, instructor's notes, movie files, presentation, participant's notebook, and "Road Safety Fundamentals September 2005".

**SW0940: Basic Traffic Control for Utility Operations – A Modular Course – ATSSA - 2002** This CD contains seven powerpoint modules covering traffic control for utility operations.

## A Few Transportation-Related Web Sites

AASHTO (American Association of State Highway and Transportation Officials): <http://www.transportation.org/>

APWA (American Public Works Association): <http://www.apwa.net>

ATSSA (American Traffic Safety Services Association): <http://www.atssa.com>

MDT (Montana Department of Transportation): <http://www.mdt.mt.gov/>

NACE (National Association of County Engineers): <http://www.countyengineers.org>

National LTAP Association: <http://www.ltap.org>

Salt Institute: <http://www.saltinstitute.org>

TRB (Transportation Research Board): <http://www.trb.org/>

Federal Highway Administration - Office of Administration: <http://www.fhwa.dot.gov/orgadmin.htm>

Federal Highway Administration - Office of Safety: <http://safety.fhwa.dot.gov/>

"I am a great believer in luck, and I find the harder I work the more I have of it." -Thomas Jefferson



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The Local Technical Assistance Program Newsletter, **LTAP MATTERS**, is published quarterly. Funding for this program is provided by the Federal Highway Administration through the Montana Department of Transportation, Montana State University and a portion of Montana's gas tax revenues.

This newsletter is designed to keep you informed about new publications, techniques, and new training opportunities that may be helpful to you and your community.

Present and past issues are available at [www.coe.montana.edu/ltap](http://www.coe.montana.edu/ltap) or by calling 1-800-541-6671.

## Editorial Contributions Welcome

LTAP welcomes contributions to **LTAP MATTERS**. Those wishing to submit relevant material to be published in the next newsletter can submit their ideas and articles to:

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