



LTAP MATTERS

Montana's Answers To Technical Education of Roads & Streets

College of Engineering

Montana State University-Bozeman
Montana LTAP 1-800-541-6671

Bozeman, MT 59717-3910

Fall 2005 October November December

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Record Number Attend 16th Snow Rodeo in Great Falls

On September 7, 2005, the Family Living Center at the Montana Expo Fairgrounds in Great Falls, Montana, was filled with almost 100 participants attending the 16th Annual Equipment Operator Training & APWA Snow Rodeo. Montana LTAP Director Steve Jenkins noted that this was the largest class yet to attend the first day of this two-day event.

Montana LTAP partnered with the City of Great Falls, Montana Department of Transportation, and Tractor & Equipment to make this all possible. "The efforts of Marty Basta and Debbie Kimball, City of Great Falls, are tremendous in their planning and coordination of this event," said Jenkins.

"It's great to see equipment operators from the county road departments, city road departments, Montana Department of Transportation, and Glacier National Park coming to these important safety training sessions," commented Jenkins. "Each year this rodeo grows, emphasizing the importance of hands-on safety training for new employees and for seasoned employees," Jenkins explained.

*Bill Meisner,
Ravalli County
Road Foreman,
& crew discuss
elevations*

First Day Training

The morning started with "Reading Grade Stakes: Leveling with You," an introductory to the basics of surveying using a hand level, survey equipment, and inexpensive laser levels taught by Steve Jenkins, P.E. and LTAP Director. Jim Turnbow, Great Falls Street Superintendent, assisted during the class also, demonstrating how to use and read various surveying equipment.

In the afternoon, the class gathered into teams and used a hand level to read the three elevation changes that were marked out on the grounds. Jenkins and Turnbow helped those unfamiliar with sighting elevation changes and how to compute elevations. *Continued on Page 2...*



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Montana Dept of Transportation

2005 Snow Rodeo (Cont'd from Page 1)



Panelists: (L-R) Moore, Escott, Henman, Nesbit, Miller, & Miland

The second portion of the morning session was led by a panel discussion covering various accidents that had occurred and what precautions to be aware of when driving large equipment such as motorgraders, front end loaders, snowplows and backhoes.

Panel participants included:

- Shane Escott, Madison County
- Joe Miller & Robin Miland, Missoula County
- Doug Nesbit, Lewis & Clark County
- Del Henman & Clay Moore, Yellowstone County

As each of the panelists discussed their particular incident, Jenkins called on audience participants to contribute their experience on how these particular kinds of situations happened to them and how they have added certain safety requirements for their drivers.

Major safety points included:

1. Use your seat belt!
2. With low visibility, use radio contact.
3. More injuries occur from getting on and off equipment. Use the Three Point System: 2 hands and 1 foot or 2 feet and 1 hand
4. NEVER back up without looking first.
5. Operators use mirrors too much, especially when working in town. Turn around and look when you are backing up.
6. When operating a motorgrader, be aware of the blind spot directly behind you. Although barricades are suppose to keep the driving public out, do not assume they will.
7. When backing up, remember - there isn't a SECOND chance after someone has been run over.
8. When plowing snow, always be scanning ahead.
9. When working with the backhoe or front end loader, always be aware of overhead obstructions such as powerlines, etc.

10. Watch for difficult places such as when the road rises and the powerlines dip down.

11. Be aware that not all the new utility locaters are knowledgeable enough to mark both sides of the road.

12. Know that gas lines may not be very well marked so be wary.

13. Be extremely careful of ground crew. Sometimes they become too trusting and stand too close to equipment.

14. Operators sometimes become aggressive and forget about where crew members are located. Don't assume operators can see you!

15. When lifting objects, such as large concrete culverts, make sure ground crew stand back. (Incident occurred where part of a cement culvert broke off as it was being lifted and moved into place. Hit worker on the side of his head and he was not able to work for over a year.)

16. Be aware of extension of bucket or back end when working in work zones. Communicate with flaggers to stop traffic until you have finished your job if your equipment swings out into the traffic lane.

17. Large excavator buckets, or any buckets, are not platforms for people to ride in.

18. Do not let people lean on machine, especially when working around electrical lines.

19. Remember the heavy part of graders is the rearend.

20. Because operators of large equipment cannot see everything and the public drives too close to the equipment, you cannot be too safe.

21. Montana Department of Transportation has helped public become aware of snowplow safety by running ads on TV. *Continued on Page 3...*



Andy Dean, Yellowstone County Road & Bridge Dept, reading elevations

2005 Snow Rodeo (Cont'd from Page 2)

22. Tire Pressure walk-around is vital to safety. Ten pounds of difference can make the ride incredibly unstable.

23. Keep recommended tire pressures for loads.

24. Remember--it is not always the new guy that has an accident. They can happen to the experienced operator who becomes complacent.

Clay Moore, Yellowstone County Road and Bridge Department, dug a shallow trench using the T&E backhoe for Jim Turnbow, City of Great Falls Street Superintendent. Turnbow explained the how's and why's of elevation when setting pipe in a trench. Participants had the opportunity to read the level and discover for themselves how to arrive at an appropriate measure when determining drainage.

Turnbow also demonstrated the new spray injection patching machine during the afternoon training session. *Continued on Page 4...*

Afternoon Activities:

In addition to the stake survey reading, Ray Woody and Tom Gossack from T & E were helping participants get checked out on the backhoe, motorgrader, and front end loader.

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

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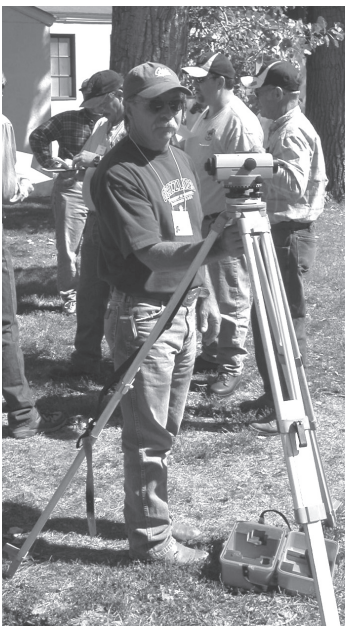
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Steve Jenkins Explaining Survey Results



Jim Turnbow setting up laser level



Glacier Park Crew Computing Elevations



Tom Gossack Reviewing Walk-Around

Clay Moore digging trench for classroom exhibit for pipe drainage & surveying





(L-R) Marty Basta and helper, Steve Kimball



Debbie Kimball



2005 Snow Rodeo (Cont'd from Page 3)

All Around Champion 2005 Clay Moore Yellowstone County Road & Bridge Dept



2005 Snow Rodeo Winners

Snow Plow:

- 1st Clay Moore, Yellowstone County
- 2nd Mike Longmire, Missoula County
- 3rd Lonnie Moyer, Lewis & Clark County
- First Timer: Lonnie Moyer, Lewis & Clark County

Loader:

- 1st Mike Longmire, Missoula County
- 2nd Del Henman, Yellowstone County
- 3rd Jon Bjornstad, MDT
- First Timer: Jon Bjornstad, MDT

Backhoe

- 1st Clay Moore, Yellowstone County
- 2nd Jerame Schepens, Richland County
- 3rd Doug Nisbet, Lewis & Clark County
- First Timer: Jerame Schepens, Richland County

Motorgrader:

- 1st Larry Chapman, Lewis & Clark County
- 2nd Robin Miland, Missoula County
- 3rd Randy Guenther, Sheridan County
- First Timer: Randy Guenther, Sheridan County



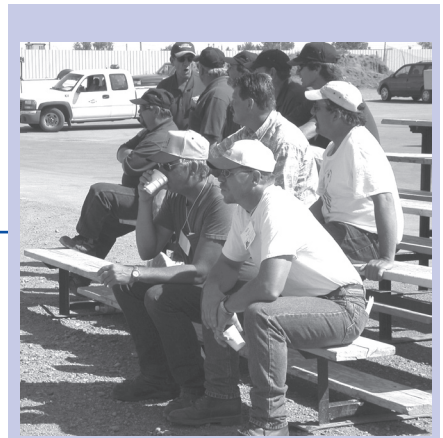
2005 Snow Rodeo (Cont'd from Page 4)

There were 69 contestants at the rodeo this year and 38 were first timers. Several of the events were timed this year, making the competition even closer. In the backhoe event, contestants had to knock down three bowling pins with a bowling ball attached to the end of a chain that was attached to the bucket. It took great finesse in handling the controls.

Marty Basta, Operations Branch Chief, and Debbie Kimball, City of Great Falls, organized all the folks who helped out with judging, setting up equipment, computing scores, and making sure everything ran smooth.

While waiting for the final results, Larry Ross, Cowboy Poet from Bozeman, entertained the crowd with great old western songs and a few poems.

Jim Rearden, Great Falls Director of Public Works, along with Marty Basta, handed out the awards. Steve Jenkins, Montana LTAP, awarded Clay Moore with a jacket for All-Around. "Everyone is a winner who attends these training sessions," concluded Jenkins.



First National Conference on Roadway Pavement Preservation
 October 31-November 1, 2005
6th National Conference on Transportation Asset Management
 November 1-3, 2005
TRBMeetings@NAS.edu
www.trb.org/conferences/preservation-asset/

12th World Congress on Intelligent Transport Systems
 November 5-10, 2005
Intelligent Transportation Society of America
 San Francisco, CA
 Sandra Fitzgerald-Collier
 202-721-4214
scollier@itsa.org
www.itsworldcongress.org

Transportation Finance Summit
 November 16 - 17, 2005
 International Bridge, Tunnel and Turnpike Association
 Washington, D.C.
 202-659-4620
info@ibtta.org
www.ibtta.org

TRB
 Transportation Research Board
 85th Annual Meeting
January 22-26, 2006
 Washington, DC
 Linda Karson
 202-334-2362
lkarson@nas.edu
www.trb.org

World of Asphalt 2006 Show & Conference
March 13-16, 2006
 Asphalt Pavement Alliance, Asphalt Institute, National Asphalt Pavement Association, State Asphalt Pavement Associations
 Orlando, Florida
 Megan Tanel
 800-867-6060
mtanel@aem.org
www.worldofasphalt.com

NACE's 50th Anniversary NACE 2006
April 9-13, 2006
Amway Grand Plaza Hotel
 Grand Rapids, Michigan
www.countyengineers.org

Annual Calendar 2005

January 2005	February 2005	March 2005																																																																																																																																												
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Some dates & locations subject to change. Call Lois Evans, LTAP, 1-800-541-6671 or 406-994-6100 to confirm.

Calendar: Fall/Winter Events 2005

MACRS Workforce Development Meetings

- **Great Falls** **Monday - September 26**
LaQuinta, 600 River Drive South, 406-716-2600
- **Missoula** **Wednesday - September 28**
Ruby's Inn, 4825 N Reserve, 406-721-0990
- **Butte** **Thursday - September 29**
Best Western Butte Plaza Inn, 2900 Harrison, 406-728-3100
- **Glendive** **Tuesday - October 4**
Best Western, 223 N. Merrill, 888-4-536-3483
- **Billings** **Wednesday - October 5**
Billings Convention Center, 1223 Mullaney Lane, 406-248-7151
Contact Lois Evans, LTAP Conference Coordinator, 1-800-541-6671, regarding registrations or inquiries

Montana Association of Counties Fall Conference

Billings, MT **September 25-29, 2005**
MACo's New Phone Numbers:
406-444-4360-Main Office or 406-444-4370-Insurance Office

APWA Rocky Mountain Chapter Board Meeting

Holiday Inn **October 19 - 20**
West Yellowstone, MT
Contact: Craig Brawner, President, 406-587-0721 or e-mail at:
cbrawner@m-m.net

MACRS Planning Meeting

Lewistown, MT **In November, 2005**
Contact Lois Evans, LTAP Conference Coordinator, 1-800-541-6671, regarding registrations or inquiries (Dates to be scheduled)

Montana Association of Counties Loss Control Conference

Fairmont, MT **January 18-20, 2006**
MACo's New Phone Numbers:
406-444-4360-Main Office or 406-444-4370-Insurance Office

Montana Association of Counties Mid-Winter Conference

Great Falls, MT **February 13-17, 2006**
MACo's New Phone Numbers:
406-444-4360-Main Office or 406-444-4370-Insurance Office

What's Coming Up

MACRS Spring Conference
April 3 - 6, 2006
Heritage Inn
Great Falls, Montana

Montana LTAP
Spring Work Zone Training
February/March 2006 Dates
To Be Scheduled

Self-Consolidating Concrete Conference

October 30-November 2, 2005
The conference will highlight innovative applications of self-consolidating concrete (SCC) worldwide. Topics will include mix design, structural performance, and test methods. Contact: Richard Garza, Center for Advanced Cement-Based Materials, 847-491-3858 (fax: 847-467-1078; email: scc205@northwestern.edu), or visit www.scc2005.info

FHWA Unknown Foundations Summit
November 14-16, 2005
Lakewood, CO

This summit will provide a forum to discuss the current standard-of-practice and state-of-the-art techniques available to manage bridges with unknown foundations. The summit will also provide attendees an opportunity to see and learn about numerous technologies available from a variety of vendors. Contact: Khamis Haramy at FHWA, 720-963-3521 (email: khamis.haramy@fhwa.dot.gov), or Cynthia Nurmi at FHWA, 404-562-3908 (email: cynthia.nurmi@fhwa.dot.gov).

2005 FHWA Accelerated Bridge
Construction Conference
December 14-16, 2005

San Diego, California
This conference will look at how prefabricated bridge elements and systems can be used to accelerate construction, minimize traffic disruption, increase quality, and lower life-cycle costs. Contact: Roland Nimis at FHWA, 415-744-1653 (email: roland.nimis@fhwa.dot.gov), or Vasant Mistry at FHWA, 202-366-4599 (email: vasant.mistry@fhwa.dot.gov). Info also available at: www.acceleratedbridge.com

Kentucky Transportation Cabinet District 4 Utilizes Sawdust as a Lightweight Fill to Repair a Difficult Landslide

by Steve M. Hall, P.E., County Maintenance Engineer, KYTC, and Bob Barrett, President, Soil Nail Launcher, Inc.

Kentucky Transportation Cabinet maintenance personnel fought two adjoining embankment failures on Highway 144 in Breckinridge County near the Ohio River for two years. What had begun as two small embankment slips coalesced into a large and rapidly deteriorating landslide. KYTC Maintenance personnel were adding material daily by the time the repair project began. In fact, they excavated more than 6 feet of asphalt and pavement millings in the top of the slide as part of the repair.

Following two wet years, the smaller slide expanded along the shoulder about 100 feet.



Placing and Compacting Lightweight Sawdust Backfill

The scarp was limited to the first few feet of asphalt in this expansion. There was appropriate concern that the slide would continue to grow, both into and along the roadway.

The major slide was in an embankment that was only about 25 feet high. It was about 80 feet across and the back scarp went to the center of the road. The slip plane was at a relatively low angle and flatter than would be expected for the silty, sandy clay soils in the area. The toe was bulging up in private property about 150 feet out.

Bedrock is quite deep at this slide, thus traditional methods of repair such as piling and caissons would have been both difficult and expensive. The alignment here is a long tangent, thus a road relocation, in addition to holding questionable odds for success, would have to be very lengthy and with some compromise in safety. Any repair would be very expensive, and maintaining the road surface was becoming prohibitive.

KYTC officials were looking for solutions and invited Soil Nail Launcher, Inc. personnel to look at the site. It was decided that the smaller failure could be repaired and the lane restored with Super Nails and a geosynthetically reinforced soil wall. The major slide could be repaired by removing material from the top of the slide and replacing it with light weight material.

The landowner allowed KYTC maintenance personnel to push the material in the top of the slide down onto the toe area. This added significantly to the overall effectiveness of the correction. The heavy soil and asphalt from the top of the slide then acted to buttress when it was dozed to the toe.

The excavation at the top was then filled with sawdust from two local mills. The sawdust was hauled in trucks and dumped onto the roadway. A loader pushed the sawdust over the edge and a dozer spread, leveled and compacted the sawdust all in one operation. The sawdust was covered with about 24 inches of asphalt millings and then paved. The sides were covered with a foot or more of clay and topsoil to seal the air. The base of the fill was graded to drain. This is the Kentucky Transportation Cabinet's first modern sawdust fill construction.

Cost for this solution was half or less compared to more traditional solutions. The entire project took only a few days to complete. The highway was open to one-way traffic during the work, with limited stops for trucks dumping and turning.

Lightweight fill replacement seems to be an under-utilized and often inexpensive solution for landslides. There are several slides in the Ohio Valley Region and beyond that could be repaired for relatively low cost with light weight fills -- sawdust, expanded shale and EPS.

For more information contact stevem.hall@ky.gov or bob@soilnaillauncher.com.

Permission granted to reprint article from Bob Barrett, President, Soil Nail Launcher, Inc.

Lessons from Katrina

by Todd Litman, Victoria
Transport Policy Institute, September 20, 2005

The following excerpts were taken from Todd Litman's document. To view it in its entirety go to: www.vtppi.org/katrina.pdf

Introduction

A good planning principle is to “hope for the best but prepare for the worst.” We often have trouble imagining the worst scenario until the terrible event occurs. Only then do we discover our planning failures.

Calamities often occur in groups. The Katrina disaster began August 29 with a hurricane, which lead to flooding, infrastructure damage, fires, civil disorder, toxic chemical dispersion, disease risk, and thousands of people isolated for days without water, food or medical care. Disaster response had to contend with all of these problems

What Failed

By most accounts, automobile evacuation functioned adequately. The plan, which involved using all lanes on major highways to accommodate outbound vehicle traffic, was well engineered and publicized (Wolshon, 2002). Motorists were able to flee the city in time, although congestion resulted in very slow traffic speeds and problems when vehicles ran out of fuel or had other mechanical problems.

However, there was no effective plan to evacuate residents who rely on public transportation.

The importance of buses for evacuation of the city became clear soon after the hurricane hit.

Emergency transportation action plans can include:

-Communication and support networks that serve the most vulnerable people. This involves a system to identify and contact vulnerable people, provide individualized directions for their care and evacuation, and establish a chain of responsibility for caregivers.

-Planning to allow quick deployment of buses, vans and trains. This requires an inventory of such vehicles and their drivers, and clearly established instructions for their use.

-A system to prioritize who should be evacuated first, based on factors such as geographic location and individual needs.

-Information on pickup locations and routes distributed to at-risk populations and all officials. This information should be distributed regularly, not just during major emergencies.

-Instructions on what evacuees should bring, and help for carrying baggage.

-Coordination of fuel, emergency repair and other support services.

-Priority given to buses and other high occupancy vehicles where bottlenecks occur or critical resources are limited.

Conclusions

Transport planners can help prevent future disasters by demanding that emergency response plans devote at least as much attention to non-automobile evacuation as to automobile-based evacuation.

Transportation professionals can play an important role in creating a more efficient and equitable transportation system that accommodates the needs of disadvantaged people and functions efficiently under unusual conditions. ●

FYI

In response to the recent hurricane disasters, forest fire emergencies, and winter months arriving, Montana LTAP Director Steve Jenkins is presently developing a 2006 workshop on how to prepare a plan of action at the personal, community, and state levels. Included in this module will be winter and summer survival, MUTCD Chapter 2I (Emergency Management) and Chapter 6I (Incident Management), and SPCC regulations. More information will be available in 2006.

Second International Transportation Technology Transfer Symposium 2006 July 30-August 3, 2006 St. Petersburg, Florida

Background: In 2001, the International Symposium on Transportation Technology Transfer brought together 450 participants from 53 countries in St. Petersburg, Florida. Participating organizations included the World Road Association (PIARC), the Pan American Institute of Highways and Technology Transfer Centers from Africa, Russia, Europe and Latin America. The symposium fostered networking, communication and exchange of information on issues of mutual interest. One concrete result of this symposium was the establishment of “pairing” or “twinning” relationships between several international and US Local Technical Assistance Program (LTAP) / Tribal Technical Assistance Program (TTAP) centers.

2006 Symposium: The goal of the 2006 Symposium is to create new channels of networking and communication leading to more successful sharing of knowledge (“The technology of technology transfer”). The symposium will bring together practitioners and researchers from around the world, fostering partnerships and collaboration among them, examining themes in cooperative technology exchange, and exploring best practices through analysis of case studies and assessment of successes and failures.

Focus: A major focus of the 2006 Symposium will be global issues with respect to technology transfer in transportation. Participants will explore ways in which research institutions, private industry and governments collaborate to bring about effective dissemination and implementation of transportation research globally.

For more information, contact Al Alonzi at (703) 235-0552, email: al.alonzi@fhwa.dot.gov or Roger Dean (730) 235-0550, email: roger.dean@fhwa.dot.gov or go to www.t2symposium.org/

The *Signalized Intersections: Informational Guide* discussed in this article is available from our LTAP Library. Request p-834 from our publications by calling 1-800-541-6671. We'll be happy to check it out to you for a two-week period.

Put the Brakes On Fatalities Day October 10, 2005



October was selected for the new safety observance because it is among the peak months for fatalities.

Traffic crashes cause more than 42,000 fatalities each year.

Nearly 300 children under 5 years old who were killed in motor crashes in 1999 were totally unrestrained.

Poor road conditions and obsolete designs contribute to more than 15,000 highway deaths annually.

Deaths and injuries on U.S. highways cost society over \$150 billion annually.

Safer driving behaviors such as the use of seat belts, not drinking and driving and obeying traffic laws would dramatically reduce the number of traffic-related injuries and deaths.

For more info: www.brakesonfatalities.org

Improving Signalized Intersections

by Joe G. Bared, P. E., Ph. D., Office of Safety Research & Development FHWA

The following excerpts are from Joe Bared's article in Public Roads, January/February 2005, Vol. 68, No.4. To view this article in its entirety go to: www.tfhrcc.gov/pubrds/05jan/03.htm

According to 2002 data compiled by the National Highway Traffic Safety Administration, 21 percent of crashes and 24 percent of all fatalities and injuries related to motor vehicle collisions occurred at signalized intersections. Research conducted by the Federal Highway Administration (FHWA), however, has shown that under the right circumstances installing traffic signals can reduce the number and severity of crashes. But signals that are not designed appropriately can have adverse effect on safety, so traffic managers need to design, place and operate them carefully.

Because traffic signals play a key role in enhancing safety, FHWA recently produced a comprehensive handbook that explains methods to evaluate the safety and operation of signalized intersections and that highlights tools to remedy deficiencies. *Signalized Intersections: Informational Guide* (FHWA-HRT-04-091) provides information and tools that can help traffic engineers, project managers, and other transportation professionals conduct insightful assessments of intersections and understand the trade-offs from potential improvement measures.

The guide includes examples of innovative treatments and best practices used by jurisdictions across the United States. These examples include low-cost measures such as improving signal timing and signs, and more expensive measures such as reconstructing intersections or grade separations. Although some treatments apply only to high-volume intersections, the guide provides solutions relevant to the entire range of traffic volumes.

The guide takes a holistic approach to signalized intersections and considers the safety and operational implications of a particular treatment on all system users, including motorist, pedestrians, bicyclists, and transit users. Also covered are intersection fundamentals, analysis methods, and solutions to intersection deficiencies.

"None of us learns in school how it is in the real world -- where the tire hits the road, so to speak -- so the guide provides that information," says Thomas Hicks, director of the Maryland State Highway Administration's Office of Traffic and Safety and a member of the committee that reviewed the guide. "You can read in a textbook about reaction time and how wide a lane should be, but the guide puts all the pieces together in terms that reflect what drivers actually see as they drive through an intersection."

Intersection Basics

Designing signalized intersections begins with knowledge of the fundamentals of road user needs, geometric design, and traffic design and illumination, all covered in separate chapters of the guide.

Road users, such as motorists, bicyclists, and pedestrians, are the operative players in the road system, and their perceptions and decisions affect their performance. In the 1980s, FHWA's Human Factors team began applying human factors-based knowledge to the design of roadways and signage. Termed **positive guidance**, the concept focuses on understanding how road users -- primarily motorists -- acquire, interpret, and apply information while driving.

The concept of positive guidance is simple: If drivers are provided with the information they need in a format they can read, understand, and react to in a timely fashion, then the chances of driver error will be reduced and safety will be improved.

Safer, More Efficient Intersections

Assuring the safe and efficient operation of signalized intersections is becoming an increasingly important issue as agencies attempt to maximize vehicle roadway capacity to serve the growing demand for travel. Enhancing safety and reducing crashes are key objectives whenever the design or operational characteristics of a signalized intersection are modified. ●

Meth Waste: Danger for Road Crews

From website: www.doj.state.mt.us/safety/methinmontana.asp

The danger of meth lab waste is a potential hazard for roadway employees. From 1999 to 2004, Montana taxpayers have spent \$2,490,730 to clean up over 400 meth labs in our state. Because the cost of clean up is increasing, so has the waste products from meth labs. Road crews need to be aware of the potential danger.

As roadway employees, be aware of propane cylinders that can be used to transport anhydrous ammonia. This ammonia can burn your skin and cause very severe respiratory damage. The brass fittings on the tanks can turn blue to blue green, indicating that they are very dangerous and can explode. If located, do not touch but call the nearest 911 center. The same holds true with any "mysterious" garbage found on the side of the road. Do not touch, smell, or examine it. Meth dumps contain or have potentially hazardous chemicals.

From the Meth Free Montana website at: www.methfreemontana.org:

Keep Watch

Strong Odors: Meth labs emit strong chemical odors. Labs may smell like cat urine, ether, ammonia, fingernail polish remover (acetone), or other chemical smells. These fumes are toxic and can cause itching and burn eyes, throat and lungs.

A Lot of Trash

Trash may include large quantities of Freon and starter fluid containers, lantern fuel cans, red-stained coffee filters, bed sheets and pillow cases, old clothing, duct tape, batteries, and clear glass containers.

Manufacturing meth produces 5 to 6 pounds of toxic waste for every pound of meth. Waste products from meth include compounds like sodium hydroxide and red phosphorus. Both are very dangerous and can cause fires and explosions for over 10 years after being discarded.

High Traffic

There is usually an increased number of people coming and going from the labs at unusual times. Traffic activity typically increases at night.

Look For

Blacked out windows and renters paying landlords in cash, also persons purchasing large quantities of the items listed as ingredients above.

Location

Meth can be made just about anywhere. Labs have been found in homes, barns, outbuildings, garages, hotel and motel rooms, storage facilities, vacant buildings, and vehicles. A make-shift lab can fit in a suitcase.

Meth Prescription

Meth is often made from over-the-counter medicines and chemicals containing ephedrine, red phosphorus, ether and hydrochloric acid. The following items are used in large quantities to produce them:

- Starter Fluid
- Lantern Fuel
- Cold Medicines
- Antifreeze
- Lye
- Anhydrous Ammonia

Keep Informed

Roadway employees are especially at risk when cleaning roadsides. Keep in contact with your local law enforcement and be aware of possible meth incidents. ●

Do not touch, smell, or examine "mysterious garbage. Meth dumps contain or have potentially hazardous chemicals. Call the nearest 911 center.



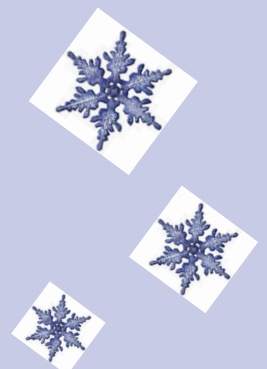
Looking for Winter Training

The following workshops are available by contacting Steve Jenkins, Montana LTAP Director, 1-800-541-6671.

Winter Maintenance: Winter road maintenance, when to use salt and sand, anti-icing, winter snow removal operations and winter travel hazards.

Winter Survival: Overview of winter travel hazards faced by vehicle and equipment operators. Simple survival techniques, survival kits and equipment needed, hypothermia and treatment.

Technical Leadership: For Commissioners, Road Supervisors, City Street Superintendents and other technical leaders. This course is designed to help communication, expectations and professionalism. Leaders will learn the difference between leadership and management as shown in the award winning Covey Leadership.



Making America Walkable: It's a challenge we all share

By Emily Smith, University of North Carolina Highway Safety Research Center

Julia Mitchell says she would like to be able to walk to her neighborhood store, but there is no safe way to get there.

"If you had a good arm, you could probably throw a baseball all the way to the drugstore," she said. "But it's very rare that you see pedestrians walking there."

That's because pedestrians in her Arlington, Va. neighborhood must cross a busy four-lane road to get to the store.

"I'd like to see a light put in there," said Mitchell, the mother of two elementary-school-age children. "Right now, there's a crosswalk marked with white stripes painted in the road and depending on the time of day, it can be difficult to cross."

"Even though it's less than an eighth of a mile, I'd rather drive it than walk it because it's much safer," she said.

Evelyn Moe, 30, lives in Sumner, Wash., but has the same problem as Mitchell. She says she would like to be able to walk to the nearby DairyMart for milk but there is no safe route.

"I've done it a few items but decided not to do it anymore because of cars roaring by so fast," she said. "If there were sidewalks, I'd feel a lot more comfortable, but this is a county area so funding for sidewalks is much more limited than in a city."

"There's not even a shoulder on the road," she added. "There's just enough room for the cars to go by. If you wanted to walk there, you'd be walking out in the muddy fields along the side of the road."

No Room for Pedestrians

The experiences of Mitchell and Moe are increasingly common to many Americans, according to Jerry Scannell, president of the National Safety Council in Chicago.

"Everybody out there is a legal user of the space between the right-of-way lines, but frequently, there's only enough space for cars," he said. "And we have many situations where we've almost designed out of our highway system any kind of accommodation for pedestrians."

According to Dan Burden, the state bicycle and pedestrian coordinator of the Florida Department of Transportation, pedestrians have been ignored by the transportation system for many years.

Pedestrians in Peril

The fact of the matter is that these days, it often is unsafe to walk in many places in the United States. Few people realize that for the past few years approximately one in seven motor vehicle crash fatalities in the United States have involved a pedestrian. According to the U.S. Department of Transportation (US DOT) 5,472 people were killed in pedestrian traffic crashes in the United States in 1994 alone. That year, another 89,600 were injured in pedestrian traffic crashes -- many of them quite seriously.



"One of the biggest things we can do is put in sidewalks," said Charles Zegeer, associate director of roadway studies at the University of North Carolina Highway Safety Research Center in Chapel Hill, N.C. and member of the Institute of Transportation Engineers, a Partner agency.

"The lack of sidewalks or even paved shoulders is a big problem," he said. "Many neighborhoods across the country don't have sidewalks on either side of the street. This is because many cities don't spend the money on sidewalk installations and don't even require developers to build sidewalks in housing areas."

In rural areas, where pedestrian volumes are generally low, there's also very little consideration for pedestrians," he said. "Not even a paved shoulder or a shoulder

Continued on Page 13...

Making America Walkable

(cont'd from Page 12)

of any kind is provided in many situations and pedestrians are forced to walk in the street or in the roadway which can be very dangerous, particularly at night.”

Zegeer recommended that cities require sidewalks on both sides of their streets and that rural areas which tend to have less pedestrian traffic, put in at least an asphalt path or grassy shoulder on both sides of the road for people to walk.

Many people claim, however, that putting in sidewalks and pedestrian paths involves complicated legal squabbles over land rights that local governments don't have the time or finances to untangle.

Burden, however, says this is no real excuse.

“Do you have the same problems when you build a roadway?” he asked. “The answer is yes. But when you're faced with traffic problems, engineers solve them. When it's just sidewalk and pedestrian problems, they tend to let them slide.”

Partnership member Bill Wilkinson agreed: “I think we're poised at our last chance to reclaim our communities and rethink how communities go about developing transportation systems.”

Enforcing Traffic Laws

“These design factors are complicated by human behaviors,” according to Dr. Alfred Farina, a research psychologist in charge of pedestrian and bicycle safety research for the USDOT National Highway Traffic Safety Administration (NHTSA).

“High pedestrian crash figures are found in many of our large cities and design problems

may abound there,” he said. “But poor pedestrian and driver behaviors also contribute to the problem. Obviously both factors need to be addressed.”

Seattle's crackdown on pedestrian laws began in 1987, said John Moffat, director of the Washington Traffic Safety Commission and member of the National Association of Governors' Highway Safety Representatives, a Partner agency.

“...we can make significant strides in improving pedestrian safety without sacrificing mobility. The technology is there. All we've got to do is get people to ask for it.”

“To me, it's been a real cultural shift for Seattle,” Moffat said. “And now, when I go to other locations and see the problems they have, I think we're making progress in Seattle.”

“Our public planning and transportation agencies have got to be assigned and held accountable for providing a friendly environment for people on foot,” Wilkinson said. “When people walk out the front door of their home, school or place of work, they ought to have a choice about whether they want to walk, take a bicycle, take their car to wherever they want to go and the majority right now doesn't have that choice. The agencies that are in charge of developing a transportation service have put all their eggs in one basket.”

Scannell agreed: “I believe that we can make significant strides in improving pedestrian safety without sacrificing mobility. The technology is there. The resources are there. All we've got to do is get people to ask for it.”

To read the entire article, go to: www.tfhr.gov/safety/pedbike/articles/walkable.htm

A Comparative Analysis of Bicycle Lanes Versus Wide Curb Lanes: Final Report

Publications No. FHWA-RD-99-034
December 1999

The overall conclusion of this research is that both Bicycle Lanes and Wide Curb Lane facilities can and should be used to improve riding conditions for bicyclists, and this should be viewed as a positive finding for the bicycling community.

The identified differences in operations and conflicts were related to the specific destination patterns of bicyclists riding through the intersection areas studied. Given the stated preferences of bicyclists for Bicycle Lanes in prior surveys (e.g., Rodale Press, 1992), along with increased comfort level on Bicycle Lanes found in developing the Bicycle compatibility Index (Harkey et al., 1998), use of this facility is recommended where there is adequate width, in that Bicycle Lanes are more likely to increase the amount of bicycling than Wide Curb Lanes.

Increased bicycling is important because in the United States there are but a few communities that have a significant share of trips made by this mode. Overall, we have not yet reached the critical mass necessary to make motorists and pedestrians aware of the regular presence of the bicycle. When this critical level of bicycling is reached, gains in a “share the road” mentality will come much more quickly than at present. Certainly not all the problems will disappear, but the ability to develop and implement solutions will be greatly enhanced.

This report is available in its entirety at: www.tfhr.gov/safety/pedbike/pubs/99035.pdf

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"If you are dissatisfied with my work, tell me, not everyone else."

Russ Alber's Uncle

Publications

p-5: Covered Bridge Manual:The manual focuses on the nuances of the engineering aspects of covered bridges, including some issues not addressed currently by national bridge specifications. The chapter on timber connections provides a comprehensive discussion of covered bridge joinery and represents an important contribution to covered bridge engineering. The manual is intended primarily for engineers and historic bridge preservations to provide technical and historical information on preservation of covered bridges. It may be of interest also to lay people, owners, and contractors involved with covered bridges. (FHWA April 2005)

p-21: Field Observations and Evaluations of Streambed Scour at Bridges (2005) This report describes the most comprehensive set of real-time field measurements of bridge scour ever assembled. It represents more than 6 years of dedicated effort by the US Geological Survey researchers to collect scour data during flood events wherever they occurred in the United States. The report will be of interest to bridge engineers and hydraulic engineers involved in bridge scour evaluations and to researchers involved in developing improved bridge scour evaluation procedures. (FHWA May 2005)

p-412: Computer-Based Guidelines for Concrete Pavements, Volume 1: Project Summary (2005) This report documents the investigation, modeling and validation of the enhanced High PERFORMANCE PAVING (HIPEPAV®) II, a comprehensive, yet user-friendly software package. HIPERPAVE II primarily incorporates a set of guidelines for the proper selection of design and construction variables to minimize early-age damage to Jointed Plain Concrete Pavement (JPCP) and Continuously Reinforced Concrete Pavement (CRCP). This is a three-volume set. Volume II is the User's Manual and Volume III is the Technical Appendixes (III will be available on-line: <http://www.tfhr.gov/pavement/pccp/hipemain.htm>). This report will be of interest to those involved in concrete pavement mix design, as well as the design and construction of concrete pavements. (FHWA Feb 2005)

p-413: Computer-Based Guidelines for Concrete Pavements Volume II: Design and Construction Guidelines and HIPERPAV® II User's Manual (2005) This report provides general instructions on the use and application of the HIPERPAV II. (See p-412). (III will be available on-line: <http://www.tfhr.gov/pavement/pccp/hipemain.htm> or on CD). This report will be of interest to those involved in concrete pavement mix design, as well as the design and construction of concrete pavements. (FHWA Feb 2005)

p-837: Validation of Accident Models for Intersections (2005) This report describes the results of validation and calibration of motor vehicle crash models for rural intersections. Both the validation and recalibration activities were conducted in pursuit of one overriding research objective, which was to make marginal improvements to an existing set of statistical models for predicting crashes at two- and four-lane intersections, with the primary intent to be used in IHSDM (Interactive Highway Safety Design Model). (FHWA July 2005)

p-862: In-Vehicle Display Icons and Other Information Elements; Volume I: Guidelines (2004) This is one of a series of reports produced as part of a contract to develop precise and detailed human factors design guidelines for in-vehicle display icons and other information elements. The contractual effort consists of three phases: analytical, empirical, and integrative. This report is a product of the integrative phase. This handbook summarizes human engineering data, guidelines and principles for use by designers during the development and evaluation of in-vehicle icons and other information elements. (FHWA Sept 2004)

p-944: Full Road Closure for Work Zone Operations: A Case Study – Interstate 95 in Wilmington, Delaware (2004) One of three case studies intended to provide transportation agency personnel and elected officials with a better understanding of the considerations necessary to implement full road closure on a project, and the benefits that can be obtained. Each case study describes the project specifications and why the State decided to use full closure, how the State planned for the full closure, operational strategies used during the full closure, benefits and impacts, and issues and lessons learned. (FHWA Dec 2004)

p-945: Full Road Closure for Work Zone Operations: A Case Study –I-84 Banfield Freeway in Portland, Oregon (2004) One of three case studies intended to provide transportation agency personnel and elected officials with a better understanding of the considerations necessary to implement full road closure on

a project, and the benefits that can be obtained. Each case study describes the project specifications and why the State decided to use full closure, how the State planned for the full closure, operational strategies used during the full closure, benefits and impacts, and issues and lessons learned. (FHWA Dec 2004)

p-946: Full Road Closure for Work Zone Operations: A Case Study – M-10 Lodge Freeway in Detroit, Michigan (2004) One of three case studies intended to provide transportation agency personnel and elected officials with a better understanding of the considerations necessary to implement full road closure on a project, and the benefits that can be obtained. Each case study describes the project specifications and why the State decided to use full closure, how the State planned for the full closure, operational strategies used during the full closure, benefits and impacts, and issues and lessons learned. (FHWA Dec 2004)

p-1032: Safety Evaluation of Red-Light Cameras (2005) The objective of this final study was to determine the effectiveness of red-light-camera (RLC) systems in reducing crashes. The analysis showed an aggregate crash cost benefit of RLC systems. A disaggregate analysis found that the greatest economic benefits are associated with the highest total entering average annual daily traffic, the largest ratios of right-angle to rear end crashes, and with the presence of protected left turn phases. There were weak indications of a spillover effect that points to a need for a more definitive, perhaps prospective, study of this issue. (FHWA April 2005)

p-1036: Evaluation of LS-DYNA Soil Material Model 147 (2004) This report documents the evaluation of a soil material model that has been implemented into the dynamic finite element code, LSL-DYNA, beginning with version 970. (There is also another publication regarding the manual for LSY-DYNA. P-1037) This report will be of interest to research engineers associated with the evaluation and crashworthy performance of roadside safety structures, particularly those engineers responsible for the prediction of the crash response of such structures when using the finite element code LS-DYNA. Although extensive progress has been made on the soil material model, there is considerably more to be accomplished before the model would be effective in most roadside safety applications. (FHWA Nov 2004)

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Publications (cont'd)

p-1037: Manual for LS-DYNA Soil Material Model 147 (2004) This report documents a soil material model that has been implemented into the dynamic finite element code, LS-DYNA, beginning with version 970. This material model was developed specifically to predict the dynamic performance of the foundation soil in which roadside safety structures are mounted when undergoing a collision by a motor vehicle. (FHWA Nov 2004)

Software

SW-220: Introduction to the Inspection of Ground Anchors and Soil Nails (2002) This CD is a cooperative effort by the CTIP (Coordination Federal Lands Highway Technology Implementation Program) introducing through video clips how to inspect ground anchors and soil nails. (CTIP 2002)

SW-221: Inspection of Ground Anchors (2002) This two-disk program was developed by the Coordinated Federal Lands Highway Technology Implementation Program. Disk 1 covers the preconstruction phase of ground anchors through video clips and diagrams. Disk 2 explains the construction phase using ground anchors through various media. (CTIP 2004)

SW-330: Various Pavement Courses from NHI National Highway Institute (Package) The package contains 20 CD's by the NHI Course Number covering pavement courses with instructor's manuals, workbooks, and powerpoints. Topics include Pavement Distress Identification, Management Systems, Rehabilitation, Overlay Design, Superpave Fundamentals, and various other topics. (NHI from 1997 - 2005). Please call LTAP 1-800-541-6671 if you want a list of these CD's or view them on our webpage at www.coe.montana.edu/ltap.

SW-402: High Performance Concrete: Structural Designers' Guide (2005) The main objective of this Guide is to provide a source of information to structural designers for the design and construction of highway bridges and related structures using HPC (High Performance Concrete). It can also be found at <http://knowledge.fhwa.dot.gov/hpc> and go to What's New. (FHWA 3/2005)

SW-615: Erosion Control: Handbook for Local Roads (2003) The handbook, instructional guide, and materials were developed to provide a useful guide for complying with storm water construction permitting requirements on projects. (Minnesota LTAP, Minnesota LRRB Research Implementation Committee, Federal Highway Administration, and Environmental Protection Agency 2003)

SW-2355: Local Government Environmental Management System (EMS) Toolkit (2005) This toolkit includes a Windows Media (audio/video file) recording of the webcast called "Environmental Management Systems: A Powerful Tool to Help Local Government Managers and Public Works Directors Minimize Environmental Liability, Increase Efficiency, and Improve Financial Health." There are also individual PowerPoint presentations of each speaker, a number of publications, and Internet links providing more information about EMS. (APWA/ICMA 2005)



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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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