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

Spring 2006 April May June Vol.24, No.2

INSIDE

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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"Do You Have a Plan?"

By Michele Beck, MT LTAP

On January 19, 2006, Montana LTAP Director Steve Jenkins presented his new training module, Community & Personal Preparedness - Do You Have a Plan?, at the MACo Loss Control Conference in Fairmont.

"In light of the current events happening in the United States and the world, I feel that now is the time for counties to be more prepared for these types of disasters," Jenkins commented.

Possible Disasters

Jenkins pointed out that the major disasters that were possible in Montana's region included severe winter storms, such as the one that hit North Dakota in late November and stranded hundred of motorists in lethal snow banks, isolated scores of communities, and cut power to tens of thousands. Other concerns discussed were accidental toxic spills and hazardous spills. He then went on to list disasters created by explosions, commercial accidents, and weather-related traffic incidents such as fog and lightening. He noted that forest and prairie fires were always something to be reckoned with due to drought conditions. Jenkins also covered the major concern of earthquakes in the Yellowstone Park area.

Effective Emergency Response

Jenkins then went through various ways of planning and preprogramming so emergency alerts will be communicated with concise instructions. Discussion followed with various kinds of problems that occurred with Katrina and how response time became the key issue to the disaster.

Montana LTAP Director Steve Jenkins

Responsibilities & Roles

Jenkins addressed his audience in regard to their responsibilities and what roles they play in an emergency at the personal, city, county, state, and federal levels. He also brought into the mix the transportation department's roles in evacuation routes, shelters, emergency management signing, incident signing, transportation network - alternative routes, and personal versus civic duties.

Signage

His presentation then turned to the topic of Emergency Management Signing (2I - MUTCD). Jenkins quoted the Standard, "Emergency management signs shall be used to guide and control highway traffic during an emergency." He noted that there are three elements in a successful contingency plan during a disaster where highways cannot be used:

•A controlled operation of certain designated highways

•The establishment of traffic operations

•Emergency centers for civilian aid

Continued on Page 2 . . .

Advisory Committee Members

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Montana Association of Counties

Bob Burkhardt
Federal Highway Administration

Kelly Elser
Town of Sheridan

Eric Griffin
Lewis and Clark County

Alec Hansen
Montana League of Cities & Towns

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Richland County

Jack Knorr
Stillwater County

Jim Reardon
City of Great Falls

Donna Sheehy
U.S. Forest Service

Sue Sillick
Montana Dept of Transportation

Dan Williams
Montana Dept of Transportation

Incident Command System Guide Now Available

The "Simplified Guide to the Incident Command System for Transportation Professionals" FHWA-HOP-06-004) is now available electronically from the Federal Higway Administration at http://www.ops.fhwa.dot.gov/publications/ics_guide/index.htm

Do You Have a Plan? (cont'd from Page 1)

This topic concluded with the signage necessary for the different types of situations encountered such as an evacuation route signing, area closed signs, traffic control point signs, maintain top safe speed signs, road use permit required for thru traffic signs, emergency aid center signs, and shelter directional signs.

"Traffic Incident Signing is used when temporary traffic controls are needed," Jenkins said. He listed three general classes of duration in the MUTCD Chapter 6I:

Major - Expected duration of more than 2 hours

Intermediate - Expected duration of 30 minutes to 2 hours

Minor - Expected duration under 30 minutes

He discussed the primary functions of temporary traffic control at a traffic incident management area. One function was to move road users reasonably, safely, and expeditiously past or around the traffic incident. Another one was to reduce the likelihood of secondary traffic crashes. The third one was to prelude unnecessary use of the surrounding local road system.

In regards to 6I, Jenkins covered in detail the three classes of duration. He then went through the requirements for high-visibility safety apparel and use of emergency-vehicle lighting.

The next three topics Jenkins dealt with were winter survival, summer survival, and spill prevention control and counter measures rule.

72-Hour Kit

Jenkin's final discussion was focused on what a person needs to do to prepare for the seventy-two hours after a disaster. He noted that basic human needs begin with oxygen, then shelter, water, and food. He suggested that a first aid kit would contain items for bleeding, burns, broken bones, and CPR.

> Where should all this be ... In your mind or within your reach?

Because power may be out, Jenkins believed it would be a priority to have some type of fire-starting mechanism such as:

Strike Anywhere Matches
Cotton Balls
Fire Starter
Strike Force

For shelter, he listed the following:

Spare Woolen Clothing
Spare Base Layer - synthetic
Waterproof/Breathable Shell
Emergency Blankets
Wool Blanket - Sleeping Bag
Spare Socks
Military 550 Cord

Jenkins said if a person was stranded, it was important to be able to signal for help:

Signal Mirror
Strobe Light/Flashlight
Radio
Walki-Talki/Cell Phone
Signal Whistle

Other items he thought important to put into a 72-hour kit:

First Aid Kit
Food: Non-perishable Caloric-72 hours
Water: One gallon/person
Knife
Steel Cup

Other personal preparedness items Jenkins informed participants about would be to make a "Grab-and Go" case that has organized important legal, financial and insurance paperwork. He mentioned making a contact list and preparing a household inventory list.

"Where should all this be?" asked Jenkins, "In your mind or within reach?"

Disaster Response

Permission granted to reprint from APWA. Written by Dan Jensen, APWA Government Affairs Manager

APWA Participates in Katrina Review with Secretary Chertoff and White House Decision-Makers

On March 10, the Department of Homeland Security (DHS) invited APWA to participate in a "Public Stakeholders Summit" with other first responder associations, state and local homeland security authorities and other high-level government personnel to discuss the recently released White House report detailing the federal response to Hurricane Katrina.

During the eight-hour meeting, DHS officials provided an overview of the 228-page document which highlights specific problems with the federal response to Katrina. Then, the invited group of about 45 participants was broken down into three smaller groups and tasked with providing a critical review of the report based on each stakeholder's priorities and experiences.

During the "breakout" sessions, APWA had a unique opportunity to highlight post-hurricane challenges faced by members in the Gulf States with DHS decision makers. Participating in the individual meetings were David Paulison, Acting Director of the Federal Emergency Management Agency (FEMA), and the White House Homeland Security Council responsible for compiling the report. Following the sessions, each group reported their findings to DHS Secretary Michael Chertoff. APWA Government Affairs Manager Dan Jensen represented the Association at the Summit and was able to directly question Secretary Chertoff about two of the biggest problems faced by our members in the Gulf: inconsistencies in response and the reimbursement process as well as the need for FEMA to provide better resources to public works during future catastrophes.

Mr. Chertoff assured APWA the National Response Plan NRP will be simplified to enhance consistency throughout the document for more effective implementation at all levels of response. He also assured our members that the form, reimbursement process and access to FEMA decision makers will be given the highest priority as the government restyles its response procedures before the new hurricane season starts on June 1.

"We don't want to federalize the [response] process," Mr. Chertoff said. "We have to make it work together."

Recommendations that could impact public works include:

National Response Plan

•A comprehensive review of the National Response Plan (NRP), including a 90-day review by an inter-agency team of senior planners with subject matter expertise.
•Establishment of a National Operations Center (NOC) to coordinate response.
•Increased military (Department of Defense) role in future catastrophic events.
•Set Standards for "pushing" the pre-positioning of federal assets to other states and locals in case of an imminent catastrophe.
•Revision of the NRP to conform to the new National Emergency Communications Strategy.
•DHS to partner with state and local governments to develop an efficient and transparent logistics system for the procurement and delivery of goods and services during an emergency.

Evacuations

•DHS should transfer planning authority for evacuations to the Department of Transportation (DOT).

Search and Rescue

•Creation of a national search and rescue volunteer certification plan.

Public Communications

•Establish an integrated public alert and warning system.

Critical Infrastructure

•DHS should review, revise and finalize the National Infrastructure Protection Plan (NIPP) within 90 days to standardize federal policy.
•DHS should share all information and delineate roles and responsibilities with the private sector.

Continued on Page 4 . . .

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

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It Costs How Much?

In the 2005 Urban Utility Report, by Texas Transportation Institute (TTI) at Texas A&M University, the estimated cost of U.S. traffic delays is $63.1 billion a year, based on 2003 figures.

"Working at the Speed of Night"

Permission was granted to reprint this article from John R. McCarthy, Alabama Technology Transfer Center

The annual National Work Zone Awareness Week (NWZAW) will be held from April 3 to April 9 of this year. The purpose of NWZAW is to educate the nation on work-zone related injuries and fatalities. This year the theme for NWZAW is "Working at the Speed of Night." More projects are being conducted at night to reduce the exposure of workers to high volumes of traffic and reduce the exposure of peak hour traffic to the hazards and dangers of work zones.

Informing the conditions can be encountered and avoided when driving through a roadway construction zone is part of this educational process. Summary data has been gathered on work zone crashes and fatalities by the National Work Zone Safety Information Clearinghouse (NWZSIC) to improve safety in highway work zones. The Clearinghouse is a part of the Texas Transportation Institute at Texas A&M University. Information on frequencies of work zone fatalities and fatal crashes is available on the NWZSIC web site for 1995 to 2004, as show in the table on the left-hand side of this page.

National Fatality Data

Year	Fatalities	Fatal Crashes
1995	789	665
1996	717	635
1997	693	594
1998	772	681
1999	872	772
2000	1026	966
2001	989	877
2002	1186	1035
2003	1028	919
2004	1068	936

National Fatality Data

Nationwide there were 1,068 persons killed in construction and utility work zones in 2004. This figure is up from the previous year when 1,028 persons were killed. Also, it is noted that nationwide the number of work zone fatalities each year from 2000-2004 is higher than each year from 1995-1999. That is, the average number of deaths nationwide has increased from 769 per year to 1059 per year, based on these five-year analysis periods. Thus, the average number of work zone fatalities has increased 38 percent in these five-year periods. Another way to express these national figures is to note that from 1995-1999, a work zone fatality occurred once every 11.4 hours, while from 1999-2004, a work zone fatality occurred once every 8.3 hours.

Information on worker injuries has been researched by the National Institute for Occupational Safety and Health (NIOSH). In the summary report of a past NIOSH workshop, injury prevention measures were noted as being the careful review of a traffic control plan and revising the Occupational Health and Safety Administration regulations to require adherence to the MUTCD. Data collection systems for non-fatal occupational injuries were also noted as providing insufficient detail to estimate the number of workers injured in work zones nationally. Better data collection to distinguish between injuries to motorists and injuries to workers was also recommended in the report.

APWA Disaster Response...Continued from Page 3

Non-Governmental Aid

•Condition state and local grants under the Homeland Security Grant Program on incorporating NGSs and the private sector into their emergency planning, training, exercises and disaster relief efforts.

•Establishment of an office responsible for integrating non-government and other resources into federal, state and local response plans and mutual-aid agreements.

•Remove legal and liability impediments to the use and coordination of non-governmental and private sector resources during a catastrophic event.

•Encourage NGOs to plan their giving streams at the local level in order to provide comprehensive support to affected areas during an emergency and prevent duplication of relief efforts.

Education and Training

•Finalize the Target Capabilities List (TCL).

•DHS should conduct state and local officials training and exercises.

•Establish a National Homeland Security University (NHSU) for senior officials to serve as a capstone to other educational and training opportunities.

These recommendations will be subject to inter-agency and stake holder review (in which APWA will be taking part) and will culminate with basic changes to federal response procedures taking place before June 1, 2006 - the start of hurricane season. The full report can be obtained at www.whitehouse.gov/reports/katrina-lessons-learned/.

Barriers Increase Workzone Safety

Courtesy of the Asphalt Pavement Association of Oregon, ACPA Concrete Pavement Progress (February 2006)

Portable concrete barriers, with their ability to keep wayward vehicles from hitting construction vehicles, have proven to improve safety in construction work zones.

However, the benefits of the barriers also include reducing construction time and user delay costs.

According to a publication released by the Turner-Fairbank Highway Research Center, the continuous longitudinal barrier formed by the precast concrete safety shape sections in a portable concrete barrier can prevent vehicles from hitting workers.

By reducing the lateral deflection of these barriers through the use of longer segments and using joints that can develop a bending moment of 6913 kg-m or more, the barriers serve their initial purpose of preserving work zone safety.

State DOT's also have discovered the added benefits of portable concrete barriers. Easily moved to allow for the highest traffic volume at all times, they can reduce the amount of construction time necessary to complete a project and user-delay costs.

For example, by using the portable concrete barriers, the Wisconsin Department of Transportation was able to complete the westbound Interstate 94 St. Croix River bridge project in one construction season, as well as reduce user-delay costs to $480,000. Without concrete barriers, the project was estimated to take two construction seasons and cost $1,810,000 in user-delay costs.

Traffic Safety Facts from NHTSA

From the National Center for Statistics and Analysis, their "Traffic Safety Facts" report noted that in 2004, 42,636 people were killed in the estimated 6,181,000 police-reported motor vehicle traffic crashes. There were 2,788,000 people injured and 4,281,000 crashes involved property damage only.

Fortunately in 2004, the fatality rate per 100 million vehicle miles of travel fell to a new historic low of 1.46. The 1994 rate was 1.73 per 100 million vehicle miles traveled. An 80 percent safety belt use rate nationwide and a reduction in the rate of alcohol involvement in fatal crashes--to 39 percent in 2004 from 43 percent in 1994--were significant contributions to maintaining this consistently low fatality rate. Unfortunately, the economic cost alone of motor vehicle crashes in 2000 was $230.6 billion.

In 2004 there were 16,694 fatalities in alcohol-related crashes. It is a decrease of 2.4 percent compared to 2003 (17,1005 fatalities). This means that on the average there was an alcohol-related fatality every 31 minutes.

NHTSA estimates that alcohol was involved in 39 percent of fatal crashes and in 7 percent of all crashes in 2004.

From the Federal Highway Administration Work Zone Fact Sheet:

Congestion on our roads is growing, vehicle miles of travel are growing at a greater rate than miles of roadway

Work Zone activity is significant

Work Zone activity is increasing, many highways, including the interstates, are approaching their expected life span and need repair, which means more work zones

The majority of road work takes place on existing roads already carrying traffic

Work Zones cause delay, often on already congested roads

Motorists and workers are increasingly exposed to work zones

Work Zone safety continues to be a concern

Road users are frustrated by work zones

Night work is increasingly being used to manage work zone delay and reduce exposure of workers and motorists.

For further information about these points, go to: http://www.ops.fhwa.dot.gov/wz/resources/facts_stats.htm

2006 APWA North American Snow conference
April 30-May 3, 2006
Peoria, Illinois
http://www.apwa.net/meetings/snow/2006/

NACE
April 9-13, 2006
Grand Rapids, Michigan
www.countyengineers.com

2006 Concrete Bridge Conference
May 7-10, 2006
Reno, Nevada
www.nationalconcretebridge.org/cbc

NACo to Co-Sponsor Restoration 2006 Conference
May 16-17, 2006
New Orleans, Louisana
www.restoration2006.org

Fifth National Seismic Conference on Bridges and Highways
September 18-20, 2006
San Francisco, California
www.mceer.buffalo.edu/meetings/5nsc

Call for Presentations on Low Volume Roads (LVR) and Disasters:

A workshop is being planned at the TRB 9th International Conference on Low Volume Roads in Austin, Texas, from June 24-27, 2007. The workshop coordinator is seeking participants to present the results of their experiences at the workshop. The Scope of the Workshop (3 1/2 hours, Sunday afternoon, June 24, 2007): For the purposes of the Workshop, "disaster" will span the full range from Hurricane Katrina type events, to small local events, such as tank trucks in distress on LVR, in danger of exploding. Contact Rob Douglas, New Zealand School of Forestry, University of Canterbury, Christchurch, New Zealand, email: rob.douglas@canterbury.ac.nz

Annual Calendar 2006

January 2006

S	M	T	W	Th	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

4: Winter Survival - Missoula
12: Work Zone Flagging - Bozeman
18-20: MACo"s Loss Control Conference, Fairmont, MT
31: Slips, Trips, & Falls - Dillon

February 2006

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3: Culvert/Trenching - Bozeman
6: Work Zone Flagging - Helena
7: Train the Trainer: Helena
8-9: Work Zone Supervisor: Helena
13-17: MACo's Mid-Winter Conf - Great Falls
22: Work Zone Training - Bozeman
23: Work Zone Training - Butte
28: Work Zone Training: Wolf Point

March 2006

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Work Zone Training:
1: Glendive
2: Miles City
6: Missoula
7: Kalispell
8: Great Falls
10: Billings

Full Depth Recycling Seminar:
1: Billings
2: Bozeman

9: Slips/Winter Survival/Dump Truck - Phillips Co
20-24: Regional USFS Training-Missoula

April 2006

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3-6: MACRS 26th Annual Conf.-Great Falls, MT
11-13: Gravel Roads - Pondera County

Training on Request: Gravel Roads, Loader, Forklift, Mowing

May 2006

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10-11: Traffic Control Supervisor - Fairmont
25: City of Bozeman - Dump Truck Safety

Training on Request: Gravel Roads, Loader, Forklift, Mowing

June 2006

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Training on Request:
*Work Zone Training
*Gravel Roads & Maintenance

July 2006

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30	31					

30-31: Nat'l LTAP, Ft. Lauderdale, FL

Training on Request

August 2006

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1-3: Nat'l LTAP, Ft. Lauderdale, FL

Training on Request:
Summer Survival; Forklift; Mowing

September 2006

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5-6: 17th Annual APWA Equpment Training & Snow Rodeo, Great Falls, MT
24-28: MACo Annual Conference, Bozeman, Grantree Inn

October 2006

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2-5: MACRS District Fall Meetings

Training on Request: Spill Prevention, Containment, & Countermeasures

November 2006

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MACRS Planning Meeting, Lewistown, MT

Training on Request: Winter Maintenance & Winter Survival

December 2006

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31						

Training on Request
*Winter Travel-Survival
*Winter Maintenance
*Leadership

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

Calendar of Spring Events 2006

MACRS 26th Annual Conference

Great Falls, MT **April 3 - 6, 2006**

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

Gravel Roads Workshop - Three Days

Conrad, MT **April 11-13, 2006**

Conrad Super 8: 406-278-7676

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

Day One

8:00 Registration & Coffee
8:30 Routine Maintenance & Rehabilitation
9:30 Drainage
10:00 Break
10:30 Surface Gravel
12:00 Lunch Provided
1:00 Equipment Operations
2:00 Dust Control & Stabilization
3:00 Break
3:30 Maintenance of Unpaved Roads Near Wetlands
4:15 Innovations
4:30 Adjourn

Day Two

8:00-12:00 **On Location in the Field:**
- Joe Miller Walk-Around
- "Follow the Experienced Operator" Bob Smith, Powder River County

Noon Lunch Provided

1:00-4:00 **Field Sieve Analysis**

Day Three

8:00-2:00 **On Location in the Field: Techniques of Experts**
- Joe Miller, Missoula County
- Del Henman, Yellowstone County
- Cedrec Coolahan, Powder River County

(Lunch on your own)

Traffic Control Supervior Training Course

Fairmont Hot Springs **May 10-11, 2006**

Fairmont, Montana
1-406-797-3241 or 1-800-332-3272

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

Workshop Objective:
To learn to implement temporary traffic control plans using the latest standards.

All participants will be given a copy of the second edition of the Traffic Control Supervisor Manual and the Guidelines for Temporary Traffic Control 2005 booklet. Participants should bring their 2003 MUTCD for reference.

Workshop Description
This two-day course will cover Traffic Control Standards, Fundamental Principles, Traffic Control Devices, and components of the Temporary Traffic Control Zone. A score of 80 percent is needed in order to pass the exam.

Who Should Attend:
Those transportation employees who want to learn basic skills necessary to be an effective Traffic Control Supervisor.

Participants must meet the following requirements in order to become TCS certified:

•Current Flagger Card (Montana, Idaho, Oregon, Washington, or ATSSA)

•Successful Completion of Traffic Control Technician Course

•2000 hours - Verifiable Field or Design Work Zone Traffic Control Experiences

•Two Reference Letters

•Successful Completion of TCS Course

•Pass TCS Exam

A Guide for Reducing Work Zone Collisions

To view this complete report from the Transportation Research Board's web site as a PDF, go to: http://www.trb.org/news/blurb_detail.asp?id=5901

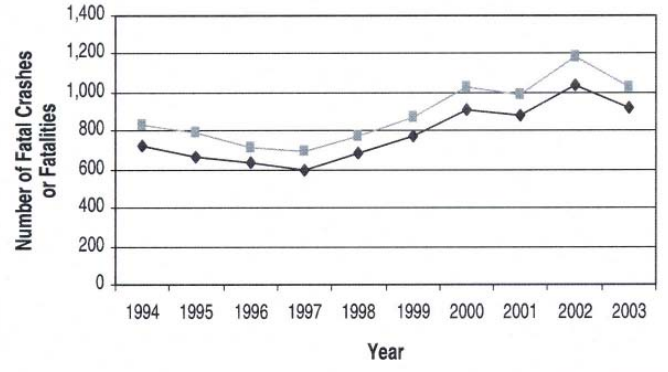
In 1998, the American Association of State Highway and Transportation (AASHTO) approved its Strategic Highway Safety plan, which was developed by the AASHTO Standing Committee for Highway Traffic Safety with the assistance of the Federal Highway Administration, the National Highway Traffic Safety Administration, and the Transportation Research Board Committee on Transportation Safety Management. The plan includes strategies in 22 key emphasis areas that affect highway safety. The plan's goal is to reduce the annual number of highway deaths by 5,000. Each of the 22 emphasis areas includes strategies and an outline of what is needed to implement each strategy.

Over the next few years the National Cooperative Highway Research Program (NCHRP) will be developing a series of guides to assist state and local agencies in reducing injuries and fatalities in targeted areas. Each guide includes a brief introduction, a general description of the problem, the strategies/countermeasures to address the problem, and a model implementation process.

One of these guides in now available, *Volume 17: A Guide for Reducing Work Zone Collisions. (NCHRP Report 500)* This implementation guide provides guidance to highway agencies that desire to implement safety improvements in work zones. It includes a variety of strategies that may be applicable to specific work zones or to agency procedures.

Exhibit I-1 displays a trend of increasing deaths attributed to work zones from 1994 to 2003. During this timeframe, anecdotal evidence suggests that the number of work zones have increased, although no definitive evidence or study encompasses all types of work zones. As more and more of the nation's infrastructure reaches the end of its life cycle, work zones are expected to remain a familiar sight on our roadways.

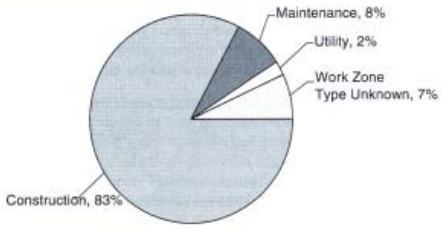
EXHIBIT I-1
Number of Work Zone Fatal Crashes and Fatalities, 1994–2003



Source: FARS Web-Based Encyclopedia, January 2005, http://www-fars.nhtsa.dot.gov/

Exhibit 1-2 shows the types of work zones in which fatal crashes occurred in 2003. The preponderance of crashes occurred in long-term construction zones.

EXHIBIT I-2
Work Zone Fatal Crashes by Work Zone Type in 2003



Source: FARS Web-Based Encyclopedia, January 2005 http://www-fars.nhtsa.dot.gov/

A review of FARS data for 2003 yields additional insight into fatal crash characteristics in work zones:

- More than half of all fatal work zone crashes occurred during the day.
- More than twice as many work zone fatal crashes occurred on weekdays as on weekends.
- Fatal work zone crashes occurred most often during the summer months.
- Almost 30 percent of fatal work zone crashes occurred on Interstate roadways.
- Almost 60 percent of fatal work zone crashes occurred on roads with a posted speed limit of 55 mph or greater.
- Single-vehicle crashes accounted for over half of all fatal work zone crashes.
- Rear-end fatal crashes were 25 times more common in work zones relative to all fatal crashes.
- Ten percent of work zone fatalities were pedestrians and bicyclists.
- Heavy trucks were involved in more than 20 percent of fatal work zone crashes.
- Alcohol was involved in almost 40 percent of fatal work zone crashes.

In addition to the trends identified in FARS, an American Road and Transportation Builders Association (ARTBA) review of federal data from the Bureau of Labor Statistics indicates that roadway construction workers are killed at a rate nearly three times higher than other construction workers and eight times higher than general industry workers.

The report discusses six objectives and strategies: Reduce the number, duration, and impact of works zones; Improve work zone traffic control devices; Improve work zone design practices; Improve driver compliance with work zone traffic controls; Increase knowledge and awareness of work zones; and Develop procedures to effectively manage work zones.

Roadwise "Spring Cleaning"

By Former Western Satellite Coordinator Jim Hennen, South Dakota LTAP. Reprinted with permission from Special Bulletin #36, South Dakota LTAP.

It's time to shift gears from winter to spring operations. Now is the time to service and prepare machinery that will be needed not only for immediate spring work but also for summer and fall use. Tractors, mowers, air compressors, distributors, self-propelled rollers, brush cutters, concrete power screeds, lay-down machines and power tools need to be gone over and made ready for what's ahead.

Bridges

Winter operations often leave an accumulation of icing sand along the curb and gutter of bridge decks as well as on top of the curb and around the bridge guardrail posts.

After sweeping the deck with a power broom it is a good idea to come along with a power wash to thoroughly remove the residual sand from expansion seals/joints and from around the base plates of the rail posts. The power washing operation also will clean areas of the steel railing and components that have been scratched or in some way damaged by the plows during winter.

These areas of cosmetic damage can then be prepared for touch-up painting to minimize any damage from corrosion. It is especially important to maintain the protective coating around base plates and anchor bolts because water and slush tend to sit there for extended periods of time.

Make sure that deck drains are cleaned out and check super-structure elements beneath the deck that need cleaning, painting or some other type of attention.

Spring also is when minor accident damage and deck spalls appear that were not evident during the winter.

Your spring work plan should include vegetation control. Large vegetation needs to be removed from beneath the structure before it causes channel flow problems or impedes inspection. Sometimes it is advantageous to chemically treat some areas to stem the proliferation of undergrowth instead of fighting the problem by continuously mowing or using the chain saw.

Spring also is the best time to review your most recent bridge inspection reports and see what the engineer's recommendations were in regard to scour repair, weight limit postings, etc. For greater efficiency try to take care of all the maintenance at once.

Signs and Delineators

Winter operations can be hard on roadside markers such as signs and delineators. This is especially true on rural highways that lack sizeable shoulders and thus require locating markers near the edge of the roadway. Signs and markers that have not become misaligned or completely destroyed often need attention as well.

The melting snow combined with the dust and grit accumulation on the road surface make for a murky slush that vehicles splatter on signs and delineators. This debris destroys their reflectivity needed for night visibility. You want to clean the signs and delineators once the slush season has passed.

Where there is a sufficient right-of-way area for signs and delineators, you may want to consider moving them farther away from the edge of the roadway surface. In particularly splash-prone areas this could be an activity scheduled for upcoming months to minimize damage and the need for as much cleaning in the future.

Guardrails

Most guardrails are located on hills and curves--the areas that receive the bulk of the sanding during winter maintenance operations. Consequently, the icing sand buildup around the posts and beneath the rail itself must be removed and hauled away.

Leaving this build up can eventually create a ramp effect for an errant vehicle to be vaulted to a height that reduces the guardrail's effectiveness. Although there are machines designed specifically to remove this material from beneath the rail and from around the posts, most crews employ a more labor-intensive method that involves pulling the material out toward the roadway and loading it with the use of a small ski loader.

Simply shoving the material out from under the rail and over the inslope is not a recommended procedure from an environmental standpoint or where appearance of the roadside is a consideration.

Culvert Inspection and Clean Out

Early spring runoff can cause conditions around smaller drainage structures that need to be taken care of to allow them to work. The accumulation of debris around the inlet will impede the flow of the water entering the culvert.

Culverts that have not been properly sized or installed can develop problems at the outlet end that require constant attention. Water velocity through the pipe that is too high can cause a deep scour hole where the water exits the pipe.

When the velocity is too low, water-borne silt will tend to settle at the outlet. If allowed to build up, the silt eventually will reduce the carrying capacity to the point of burying that end of the culvert.

Sometimes the scour hole problem can be corrected by using rip rap so that the water velocity is dissipated before entering the natural drainage channel farther down stream. Generally, the silting problem only can be addressed by periodically inspection and cleaning out the channel when the situation requires that something be done.

National Transportation Week
May 14-20, 2006
For more information: http://www.ntweek.org/

National Public Works Week
May 21-27, 2006
This week is devoted to educate the public on the importance of the contribution of public works to their daily lives: planning, building, managing, and operating the essence of local communites. The theme this year is "Public Works: The Heart Of Every Community." For Information: www.apwa.net/npww

Engineering Fact
Next to teaching, enegineering has the largest number of professional practitioners, and electrical enginnering encompasses the largest number of engineers. (The Institute of Electrical & Electronics Engineers, Inc.)

Perpetual Pavement Concept

Courtesy of the Asphalt Pavement Association of Oregon - Centerline, volume IX, Issue 2, Summer 2005

"Build your roads like you build your house." That's how Jim Huddleston, executive director of the Asphalt Pavement Association of Oregon, sums up his thoughts on the design and construction of roads built for perpetual life. "You don't build your house with the expectation of having to replace it in 20 years. We shouldn't build our roads that way either," he explained.

Huddleston's argument is that the life expectancy of any road, designed thoughtfully and maintained regularly, could be 50 years or more - not the mere 20 that until recently has been accepted as the standard.

"Perpetual pavement" is a concept that has been developed and marketed primarily for high-volume applications like freeways and interstates. While design and construction specification are different for low-volume applications, the concept is still applicable, and the results remain the same - a pavement built for long life without requiring major structural rehabilitation or reconstruction, and needing only periodic surface renewal in response to distresses confined to the top of the pavement.

> ...savings achieved by perpetual pavement designs can far exceed any money saved during initial construction.

While up to 70 percent of paved centerline miles in the U.S. could be classified as low-volume roads, no formal standard exists with regard to designing and constructing these roads to meet a perpetual pavement specification. There are two primary reasons why this concept has taken longer to catch on for low-volume applications.

First, "We've always done it this way." Since the interstate program was established, a 20-year life expectancy has been the norm supported by AASHTO guidelines in the U.S., as well as paving standards in other countries. Without the benefit of knowledge we have today, and with an inability to predict future traffic demands, the Federal Highway Administration historically funded highways that were built to last 20 years, and did not appropriate funds for exploration of designs or concepts with potential for longer life.

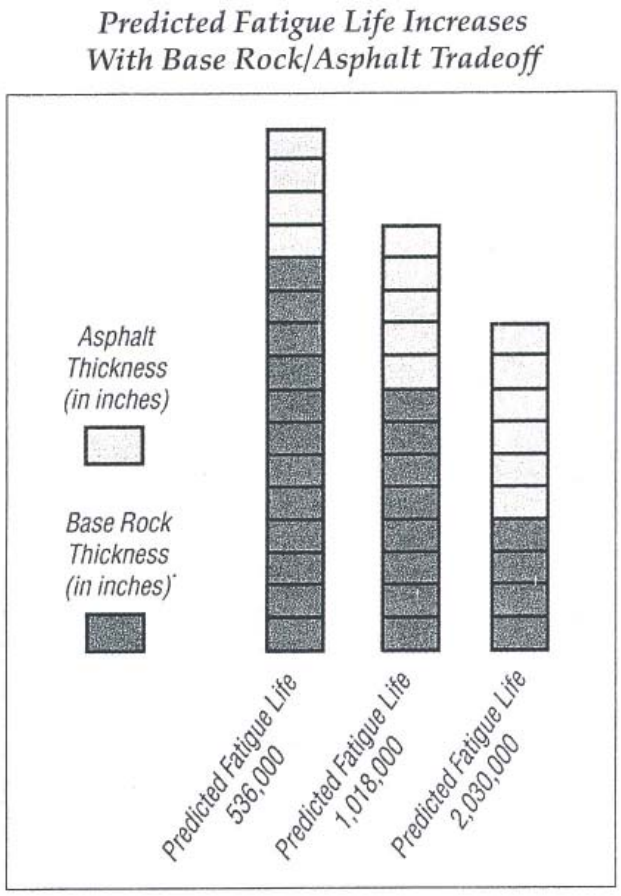
Second, there is a misconception of true costs. While highway departments have begun questioning the 20-year approach to road construction in favor of more forward-thinking concepts like perpetual pavement, local agencies often continue to construct 20-year designs on the premise that they are saving money. It's true that initial construction costs *may* be lower of a 20-year design versus pavement designed for longer life--but that is not always the case, Huddleston explained. And when you consider maintenance and rehabilitation costs over the life of the pavement structures, the saving achieved by perpetual pavement designs can *far exceed* any money saved during initial construction.

So what is the real difference between a long-life pavement designed for low-volume applications and a more "disposable" option? In the past, common practice was to design the pavement structure utilizing a relatively thick aggregate base and minimal asphalt surface thickness. These designs were typically adequate to protect the subgrade from deforming, but proved to be inadequate in terms of fatigue resistance in the asphalt layer. In 20 years or less, a road constructed on this premise would have full depth alligator cracking and the all too familiar potholes that come with full depth failures. Corrective

Perpetual Pavement Concept (cont'd from Page 10)

options are limited to full depth repairs with thick overlays or total reconstruction--either of which is expensive, time consuming and typically "not in the budget."

What we have learned from recent studies and past experience is that the asphalt fatigue life is not highly influenced by the thickness of the aggregate base course. It is, however, very sensitive to the thickness and properties of the asphalt layer. The best approach to optimize the fatigue life, Huddleston explained, is to use only enough aggregate or improved sub-base material to support construction equipment and properly grade the site. "Anything more is a waste of money," he said.



The remaining structural requirements should be placed in the asphalt layer, a practice which can actually result in saving at the construction stage. Huddleston explained the cost advantages of this approach, stating that approximately 1 inch of additional asphalt can reduce the aggregate base requirement by 4 inches. With 1 inch of asphalt costing roughly the same as 3 inches of aggregate, saving multiply each time the materials are traded. And, thinner aggregate bases require less excavation, resulting in additional savings. Add to that the fact that each additional inch of asphalt effectively *doubles* the fatigue life of the pavement. The following chart illustrates the benefit of an additional inch of asphalt and the potential performance and cost benefits of shifting the primary structural burden from the aggregate layer to the asphalt layer.

"There is a misconception that perpetual pavement designs are much more expensive (than 20-year or disposable pavements)," Huddleston said, "but when you consider the potential to effectively double the structural life on lower volume roads by adding only 1 inch of asphalt thickness, the true cost may not be that much more." Adding an inch of asphalt to an existing project typically increases the cost only by that of the material delivered to the site. In that case, it is the cheapest inch of asphalt an agency will ever purchase. "When you consider maintenance and rehabilitation costs over the life of the pavement, as well as increased fatigue life, the long-term savings are substantial," he concluded.

Warning From the Illinois DOT and State Police:

IDOT Secretary Timothy W. Martin said, "If you are caught speeding in a work zone, at minimum you will be looking at a fine of $375, at worst, you can kill yourself, a loved one or a worker." Two-time offenders are subject to a $1,000 fine, including a $250 surcharge to hire Troopers, and the loss of their license for 90 days. In addition, drivers who hit a worker are subject for up to a $10,000 fine and 14 years in prison.

Golden Anniversary

On June 29, 2006, the U.S. Interstate Highway System will celebrate it's 50th anniversary. The 46,508 miles of superhighways was one of the biggest engineering projects ever undertaken. For more information: http://www.interstate50th.org/

4th Annual Alsaka Tribal Transportation Symposium

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How to Provide Safer Crossings for Pedestrians

A report is now available from the Pedestrian and Bicycle Information Center written by the Federal Highway Administration. In the report there are recommendations on how to provide safer crossings for pedestrians. This report looked at whether marked crosswalks at uncontrolled locations are safer than unmarked crosswalks under various traffic and roadway conditions. Data information includes traffic volume, pedestrian exposure, number of lanes, median type, speed limit, and other variables.

For more information: http://www.trb.org/news/blurb_detail.asp?id=5700

New Jersey Bicycle Helmet Law Changes

Effective March 1, 2006, New Jersey's Bicycle Helmet law will change. Young people under the age of 17 will be required to wear an approved helmet when cycling, roller skating, in-line skating, or skateboarding. The law currently effects riders under the age of 14.

Safe Routes to Schools

Available on the web is the Safe Routes to School Program on the FHWA web site at http://safety.fhwa.dot.gov/safroutes/index.htm

Amendments to ADA Regulations

Permission granted to reprint from APWA. Written by Jim Fahey, APWA Government Affairs Director

The U.S. Department of Transportation (DOT) issued a notice on February 27 to amend its Americans with Disabilities Act (ADA) regulations. The regulations cover policies and practices by transit operators as well as detailed criteria for transportation facilities and vehicles.

The recent notice seeks to clarify responsibility of transportation providers to make reasonable modifications to their policies and practices to ensure program access. In addition, the notice addresses boarding platform access at commuter and intercity rail stations that would preserve requirements in the current standards for transportation facilities in light of DOT's plan to update its standards based on the new guidelines the Board has issued under the ADA.

The notice is available for comment until April 28, 2006. DOT is also seeking public feedback on other issues including bus rapid transit, classification of key stations, vintage street cars, coverage of intercity rail, and other issues where clarification in the regulations is needed. Comments on this part of the notice are due by May 30, 2006. The notice and related docket information is available on DOT's Web site at http://dms.dot.gov.

Public Works Director Talks E-Waste With Congressional Staff

Permission granted to reprint from APWA. Written by Julia Anastasio, APWA Government Affairs Senior Manager

As technology continues to evolve and improve, Americans are discarding approximately 2 million tons of used electronics each year, including computers and televisions, and nearly 128 million cell phones. With toxic chemicals such as lead and mercury in the devices, discarded electronics pose a threat to human health and the environment. Roger Flint, chair of APWA's Solid Waste Management Committee and director of public works and utilities for the City of Spokane, Washington, briefed House and Senate staff members about implications and cost of e-waste and electronic recycling on March 7.

Washington has pending legislation for a shared-responsibility model of electronic recycling between manufacturers, retailers, consumers and local jurisdictions which would ease the burden from disposal facilities. The state is also developing a manufacturer-implemented and financed state-wide system for recycling computers, monitors, and televisions. The program would be cost-free to households, small businesses and government, school districts and nonprofit organizations.

The briefing was one in a series of congressional briefing sponsored by APWA to provide information about the role and needs of public works and infrastructure in local communities.

Time Management Horse Sense

Permission granted to reprint this article from Dr. Donald E. Wetmore

Every horse race has a first place winner and a runner-up, second place contender. It is not uncommon for the first place horse to earn twice the prize as the second place finisher. Curiously, the number one horse did not have to run twice as fast or go twice as far as the competition to get twice the money. It only had to be a nose ahead of the competition to reap twice the rewards.

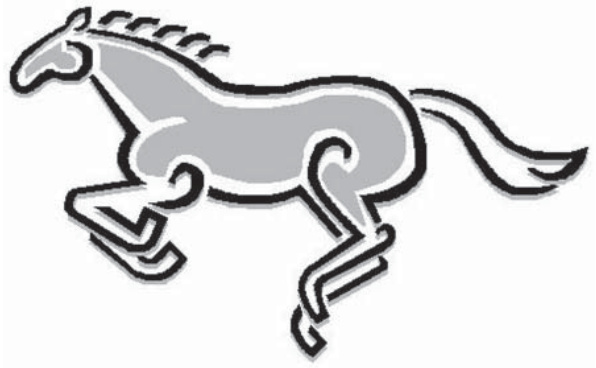
Time management, personal productivity, and success in life are a lot like the horse race metaphor. To get twice as much in life, in any of our many dimensions, health, family, financial, intellectual, professional, social, and spiritual, we do not have to double our effort and input. We only need to get a nose ahead of where we are now to realize significant increases in our results.

Five suggestions, when applied, can help us to get a "nose ahead."

First, plan your day, every day, preferably, the night before. Then, when arriving at work, there is a plan of action to direct us forward. Without a plan, temptations may draw us into unproductive avenues where we may serve the loudest voice that demands our time rather than dealing with the most productive opportunity.

A simple plan consists of a list of all the items we ideally might want to accomplish during the next day. Prioritize those items in order of their importance. (#1 for most important, #2 for next most important, etc.) Begin the most important item first, then go to the next most important item, etc. Typically, it is unlikely that all items on the list will be completed, but that is fine. Success has little to do with how much was left undone at the end of the day but, rather, what was actually accomplished. We will always leave undone more than we do get done simply because we all have more to do than time permits which says a lot of good things about how good we really are, to have so much entrusted to us by so many!

Second, overplan your day to take advantage of "Parkinson's Law" which teaches that, "a project tends to take the time allocated for it." If you give yourself one thing to do during the day, it will likely take all day to complete it. If you give yourself two things to do during the day, you will likely accomplish both. If you give yourself twelve things to do during the day, you may not get all twelve done, but you may complete seven or eight items. Having a lot to do creates a healthy sense of pressure on us to naturally become better time managers. With a lot on our plate, we tend to be more focused, we tend to suffer interruptions less so, and we delegate better.



Third, work with a clean desk and work environment. There is truth in the saying, "Out of sight; out of mind." Equally true is the reverse, "In sight; in mind." When items are in our field of vision, we cannot help but be distracted and pulled in the wrong direction where we may major in the minors, busy all day long, but accomplishing little of significance.

Fourth, restrict meetings. During any typical business day, there are reportedly 17 million meetings being conducted in the United States. A meeting is two or more people getting together to exchange common information. Simple enough, but probably one of the top institutional time wasters. Always ask, "Do I contribute anything to this meeting?" and "Do I get anything of value from this meeting?" If the answer to both questions is "no," try to find a way out of attending the meeting.

Finally, handle paper just once. Get out of the "shuffling blues" when paper is looked at and relooked at again and again while deadlines slip through the cracks as we get buried under a blizzard of paperwork. As you encounter each new piece of paper, if it can be responded to quickly, in a minute or less, respond then and there. If it will require a longer effort, schedule it for a time when you will get to it and then put it away.

Riparian Roads and Restoration

The National Riparian Roads Team developed presentations for minimizing impacts on riparian/wetland areas and restoring or improving riparian wetland ecosystem health. These presentations are now available in CD form produced by the US Department of Agriculture Forest Service San Dimas Technology and Development Center in partnership with the FHWA Coordinated Federal Lands Highway Technology Implementation Program. For information or copies, contact Greg Napper at (909) 599-1267 ext. 290 or at email gnapper@fs.fed.us

Montana LTAP Lending Library

Welcome to the LTAP Lending Library where publications, videos, 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. Some publications are free or for a nominal charge upon request.

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1-800-541-6671

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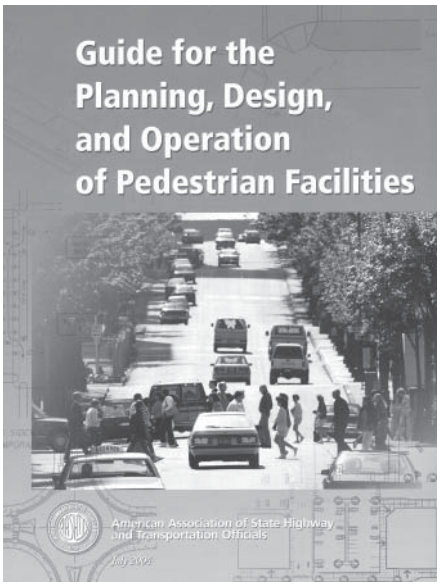
Never approach a goat from the front, a horse from the rear or a fool from any side.
...Yiddish Proverb

Publications

p-384: Improving pavements With Long-Term Pavement Performance: This report is a compilation of award-winning technical papers from the Third Annual International contest on LTPP Data Analysis 2001-2002, various authors. (FHWA 11/2005) 137 pages

p-442: Pavement Preservation Checklists: #7 – 13 (National Center for Pavement Preservation, Rec'd 1/2006) Seven small flip booklets regarding pavement preservation: #7 Diamond Grinding of Portland Concrete Pavements; #8 Dowel Bar Retrofit for Portland Cement Concrete Pavements Checklist; #9 Partial Depth Repair of Portland Cement Concrete Pavements Checklist; #10 Full Depth Repair for Portland Cement Concrete Pavements Checklist; #11 Hot In-Place Asphalt Recycling Application Checklist; #12 Cold In-Place Asphalt Recycling Application checklist; #13 Slurry Seal Application checklist (National Center for Pavement Preservation, Rec'd 1/2006) Page length ranges from 9 to 17.



p-650: Summary of Trenchless Technology for Use with USDA Forest Service Culverts: This report, which summarizes the trenchless technologies most appropriate for USDA Forest Service roadway culvert applications, can help USDA Forest Service engineers best determine where and when to use this rapidly evolving technology. Techniques for replacing or rehabilitating corrugated metal pipe (CMP culverts, 18 inches or greater in diameter) are emphasized because they are commonly use for USDA Forest Service culverts. (USFS 9/2005) 17 pages

p-1024: FHWA Retroreflective Sheeting Identification Guide: One sheet explaining Rigid sign surfaces made with glass beads; prisms; non-signing applications, and flexible signs. There is also a contact list regarding retroreflective sheeting on the guide. (FHWA 9/2005) One sheet – two-sided information

p-2572: Guide for the Planning, Design, and Operation of Pedestrian Facilities: The purpose of this guide is to provide guidance on the planning, design, and operation of pedestrian facilities along streets and highways. It focuses on identifying effective measure for accommodating pedestrians on public rights-of way. (AASHTO 7/2004) 127 pages

p-2700: 57th Annual Road Builders' Clinic 2006 Proceedings: These proceedings provide a complete listing of presenters, their papers, and addresses. (Washington State University and University of Idaho 3/2006) 286 pages

p-3003: 2005 OPCD Annual Report: This annual report illustrates the efforts of OPCD, Office of Professional and Corporate Development, and the many contributions of their partners and stakeholders during 2005 to improve all aspects of transportation. (FHWA, Rec'd 1/2006) 34 pages

p-3531: Safety Applications of Intelligent Transportation Systems in Europe and Japan: This scanning study of intelligent transportation systems (ITS) applications was deployed in France, Germany, and Japan to understand how they mitigated traffic safety problems. (FHWA 1/2006) 52 pages

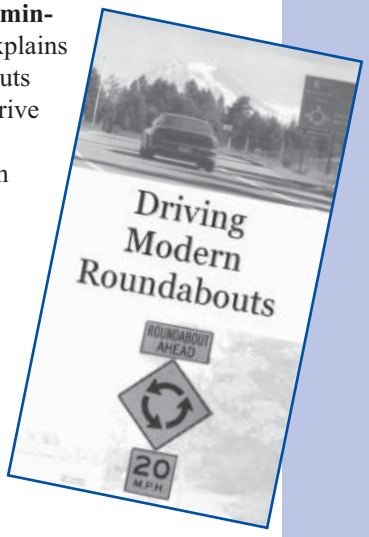
LTAP Lending Library Library

Videos

EO 149: Forklift Safety – Real Life: 16 minutes: Each year, over 100 workers are killed and almost 95,000 seriously injured in forklift accidents. This valuable program provides important information about safe forklift operating procedures that will protect your workers from painful injuries and financial loss. (Coastal 2002)

SG 203: Safety: The Good Fight: 15 minutes: This video covers the real-life accident of a young man who lost his life in a grain elevator accident. It discusses the need for safety at all times for new workers as well as experienced employees. (Coastal 2003)

SG 216: Driving Modern Roundabouts: 10 minutes: This video explains the ways roundabouts work and how to drive in and out of them safely. (Washington State DOT 2002)



SG 220: Hearing Protections – Sounds Good to Me: 14 minutes: The importance of hearing and how to protect it are illustrated in this video. Remember if you lose it, you can't fix or replace it! (Coastal 2000)

Software

SW-340: Managing Pavement Edge Dropoffs to improve Safety and Reduce Tort Liability: This CD multi-media record of the proceedings, presentations and documentation of 2/11/2004 Georgia and 1/10/2005 Omni Shoreham workshops covered pavement edge drop-off issues and treatment options available to reduce associated crashes. Contains workshop presentations defining crash, tort liability and research issues as well as presentations on practical solutions by highway agencies in Texas, Kansas, Georgia, Idaho, New York and Gwinnett County, Georgia. Also includes a presentation on the potential problem caused by shoulder wedge buildup due to multiple overlays. (FHWA Rec'd 3/2006)

SW-757 Minnesota Snow and Ice Control: Field Handbook for Snowplow Operators: Describes the tools, best practices and limitations for snow and ice control. Explains when to use and when not to use these tools and practices. Covers basic concepts, before the winter, before the storm, during the storm, and after the storm. Can also be found at: http://www.mnltap.umn.edu/pdf/snowicecontrolhandbook.pdf (MN LTAP 2005)

Promo-The Original Hottape, Zumar Industries: Promotional CD, Tacoma, Washington (Rec'd 3/2006)

Promo-Asphalt Zipper, Northwest Municipal: Promotional CD – The Future of Road Repairs and Utility Trenches (Rec'd 3/2006)

Promo-Utility Vault: Promotional CD – An interactive Virtual Tour – Product Catalog, Auburn, WA (Rec'd 3/2006)

Promo-US Bridge: Promotional CD – Cambridge, Ohio (Rec'd 3/2006)

Promo-Universal Operations Guide, for Drivers in Paratransit, Baltimore County, Maryland: Sample contents of their guide covering driver training, operations guide, manual for drivers to read and have a record for safety issues. (Rec'd 3/2006)

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Please send us any comments or concerns you may have regarding this newsletter with your name and address in order that we may respond in a timely manner.

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 or by calling 1-800-541-6671.

Editorial Contributions Welcome

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

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