

# LTAP MATTERS

Montana's Answer To Technical  
Education of Roads & Streets

College of Engineering  
Montana State University-Bozeman  
Bozeman, MT 59717-3910  
(800) 541-6671



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## Drainage & Culvert Installation

*Written By Steven V. Jenkins, Director*

This year a new course was offered by the Montana LTAP program to help State and Local Agencies handle drainage issues. Now that Montana finally has water, preventing it from softening roadways helps to defer maintenance costs. For those who were unable to attend the Great Falls, Billings or Sydney courses, the following is available:

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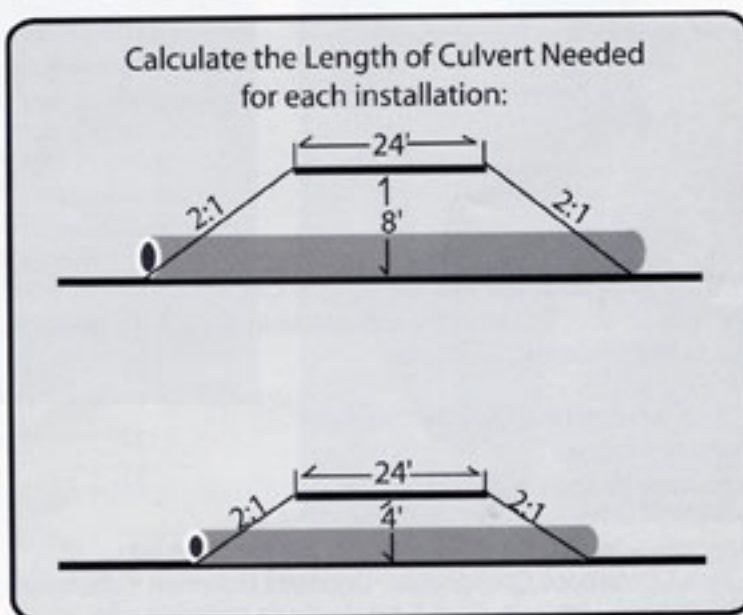
6 Road Rage

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- > CD - Power Point presentation on how ND deals with drainage problems.
- > NACE Action Guide Volume III-5 on Stormwater & Drainage
- > Video on culvert installation

For any of the material, please contact the LTAP office (800) 541-6671.

Here are a few exercises to test your knowledge with culverts. Determine how long the following culverts should be:



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## Drainage Continued

### ADVISORY COMMITTEE MEMBERS

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Montana Association of Counties

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**Sam Gianfrancisco**  
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Montana Department of Transportation

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Montana Department of Transportation

**Jack Knorr**  
Stillwater County

*continued from front page*

Now, assume your longest (56 feet) culvert is on a 4% slope and determine the difference in elevation between the inlet and outlet.

Now, for those of you who are really experienced; size a CMP culvert that is inlet control, the entrance geometry is a headwall and needs to handle flows of  $Q=70$ cfs. You should know that 6 feet of head is allowable on the upstream end. The NACE action guide referenced above has a nomograph that will help you size a pipe that can handle the flow. To find out if you got the right answer call me at the LTAP office or make sure to attend next spring workshops in Kalispell, Missoula and Helena.

The Drainage workshop includes sections on: general drainage, hydraulic design, culvert sizing and placement, compaction, materials, safe trenching and backfill. There is also a section of setting up and use of a surveying level to aid in culvert installation.

*continued on next page*

### Thin Hot-Mix Overlays

Thin hot-mix overlays are similar to conventional overlay maintenance treatments, but the thickness is less than 1.5 inches. They are used to correct surface irregularities that cannot be addressed with the other maintenance treatments. They include dense-, open- and gap-graded mixes, and often contain modified binders such as polymers or crumb rubber.

Dense- and gap-graded mixes seal the pavement surface, improving ride quality and skid resistance. Open-graded mixes improve ride quality, surface friction and enhance the ability of water to drain off the pavement. Similar to other preventive maintenance treatments, these do not appreciably correct the structural capacity of the existing pavement.

The performance of thin dense-graded overlays varies, with an expected life of two to ten years. Gap- and open-graded mixes tend to perform longer, partly due to their improved flexibility. Stone mastic asphalt and ultra-thin proprietary products also fall into this category.

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## Drainage & Culvert Installation Continued

The following pictures of the workshop begin with Russ Huotari, the only county road supervisor in the state who is also a registered land surveyor, shows how he sets up and uses a level. Russ Huotari has been with Richland County for 27 years.

Russ has also been the MACRS President, and Secretary for eleven years as well as a member of the LTAP Advisory Board since it started in 1983. Thanks to Russ, John Ostlund, Marty Basta and all those who helped host this workshop.



Tim Brooks of Roscoe Steel helping instruct the workshop.



Tim Brooks and Jerry Otto, Hill County, working with surveying equipment

## Calendar of Events

### 2002 Calendar of Events

Snow Rodeo	September 4-5, Great Falls, MT Civic Center
MACO	September 22-25, Big Sky, MT Huntley Lodge
MACRS Regional Meetings- Winter Maintenance	October 1, Glendive, MT October 2, Billings, MT October 3, Ft. Benton, MT October 7, Whitehall, MT October 8, Missoula, MT
Montana League of Cities & Towns	October 9-11, Butte, MT Ramada Copper King Inn
Public Works Directors Meeting: League of Cities and Towns	October 9, Butte, MT Ramada Copper King Inn
Winter Safety & Survival	Upon Request
Winter Maintenance & Use of Anti Icers	Upon Request
Motor Grader, Loader, Forklift	Upon Request
Leadership for New Commissioners	Upon Request

### 13th Annual Equipment Operator Training & Snow Rodeo Coming this September 4-5, 2002 in Great Falls, Montana

Watch for the brochure that will be coming to you in August. Remembering from last year's competition, here were the overall winners:

- **Del Henman**, All Around Champion from Yellowstone County
- **Larry Chapman**, Motorgrader from Lewis & Clark County
- **Doug Nisbet**, Loader from Lewis & Clark County
- **Del Henman**, Snowplow from Yellowstone County
- **Robin Midland**, Backhoe from Missoula County

Last year's first time participant winners were:

- **Robin Miland**, All Around Champion, Missoula County
- **Robin Miland**, Motorgrader
- **Robin Miland**, Backhoe
- **Jim Avant**, Loader from MDT Red Lodge
- **Darren Kobelt**, Snowplow from Yellowstone County

Come and enjoy this year's competition with us. Be sure to register through LTAP as soon as the registration information is mailed to you.

*Enjoyment and Learning are our top priorities!*



## Conferences

### 93rd MACO Conference

September 22-23

The 93rd Annual Conference for Montana Association of Counties will be at Huntley Lodge at the ski area in Big Sky, Montana, September 22-25, 2002. The host for the event is Madison County; the co-host is Gallatin County. The Conference opens Sunday evening at 6:00 pm with the traditional President's Reception and Banquet in the Gallatin/Madison Room.

Monday's General Session will include annual reports, review of resolutions and the call for officer nominations.

All ten MACo Committees will be meeting Tuesday morning with two tracks of workshops for the afternoon. Workshops being offered are Rules for Lobbying, Personnel Issues, Intergovernmental Transfer, Legislative Lobbying, Contemporary Issues, and Temporary Assistance for Needy Families (TANF).

Speakers at this conference include Karen Miller, NACo President-Elect, Boone County, Missouri; Judy Martz, Governor of Montana; Karla Gray, Chief Justice, Montana Supreme Court; Don Hargrove, Montana State Senator, Belgrade; Mike Pichette, NorthWestern Energy.

In addition to this week's activities, a three-day spouse program is being offered also.

### Montana League of Cities and Towns Public Works

#### *Directors Meeting*

#### **Butte-Silver Bow County**

#### **Ramada Copper King Inn, Butte, MT**

**October 9, 2002**

- |          |  |
|----------|--|
| 8:00 am  | PASER System-Road Management<br>Steve Jenkins, LTAP<br>Chris Hertz, City of Billings               |
| 9:00 am  | Treasure State Endowment Funding<br>Jim Edgcomb, TCEP  |
| 9:30 am  | Break  |
| 10:00 am | Storm Water Requirement-Phase II<br>Bonnie Lovelace, DEQ<br>Brian Borgstadt, Morrison Maierle Inc. |
| 12:00 pm | Lunch - On Your Own  |
| 1:00 pm  | APWA Information Link<br>John Nowak, City of Billings<br>Bill Enright, Morrison Maierle, Inc.      |
| 2:00 pm  | Butte-Silver Bow Tours<br>1. Facilities tour<br>2. Metro Sewer Site                                |

### **8th International Conference on Low-Volume Roads**

**Coming June 23-25, 2003 to Reno, Nevada**

The 8th International Conference on Low-Volume Roads is scheduled in Reno, Nevada on June 22-25, 2003. This conference is held every four years. The last one was held in Baton Rouge in 1999 and had an attendance of nearly 400, representing 30+ countries. The Transportation Research Board is leading the conference planning effort. For the Conference Announcement and Call for Papers, please go to the following Web site: [[www4.trb.org/trb/calendar.nsf/web/lvr8](http://www4.trb.org/trb/calendar.nsf/web/lvr8)].

#### **Areas of subject content include:**

- |   |                                      |
|---|--------------------------------------|
| >Planning and Finance                   | >Materials, Stabilization, Recycling |
| >Technology Transfer                    | >Pavement Design & Construction      |
| >Traffic Operations                     | >Pavement Management                 |
| >Erosion                                | >Roadway Safety                      |
| >Unsealed Roadways & Surface Treatments |                                      |



# Don't Fall Prey to Road R A G E

*-Adapted from Men's Health*

Anyone who does any commuting to and from work knows how it can turn into an exercise in frustration. It can be like a war zone out there. But as tempting as it is to retaliate for rude driving, don't make a bad situation worse.

Follow these rules:

**\*Don't escalate aggression.**

That means don't tailgate a driver who tailgated you first. Don't respond to the road bullies.

**\*Don't tap your brakes when someone is tailgating.** You may be giving the driver a friendly reminder that he's following too closely, but it may be interpreted as a hostile act. More likely than not, the driver behind you has simply drifted his attention elsewhere and isn't even aware that he's following too closely. Just give him a minute and he'll drop back on his own.

**\*Don't make eye contact.** You really just want to let a driver know that she's been driving like an idiot,



so as you pass her, you give her a look that lets her know you're not happy. Problem is you don't know a thing about that driver or what frame of mind she's in. Don't risk angering her.

**\*If you're being followed by a hostile driver, don't go home.** Drive instead to a public place like a gas station or restaurant. Better yet, head to a police station if one is nearby. If you have a cell phone call the police and report the driver.

**\*Never, ever get out of your car.** A confrontation at a stoplight is not worth risking violence. The other driver may have some kind of weapon. If the driver gets out of the car, lock your doors and close your window. If you can drive away, do so. Or if you have a cell phone, call the police.

**\*Follow the golden rule.** The best defense against road rage is to drive as you would have others drive.

## Adapting to Change

In basketball, teams usually have a plan as they move from their backcourt toward the opponent's basket. Things go wrong largely because the opponent is intent on defending against the plan. In order to succeed in scoring, the offense has to quickly develop an alternate plan based on the realities of the situation. The difference between the best teams and average ones is that in the best teams the coach and players are able to assess and cope with the ever-changing realities on the court.

It's the same anytime change presents us with challenges. You can have a plan, but you need to keep an open mind and remain flexible to the changing dynamics in any given situation. You can't be like the Australian bushman who got a new boomerang and spent the rest of this life trying to throw the old one away.

-- Adapted from *In Business as in Life You Don't Get What You Deserve, You Get What You Negotiate*, by Chester L. Karrass



## Humor.....

### **Extreme Travel Budgeting!**

You know your company is in deep financial trouble when they start sending out memos, like the following, to reduce the travel budget:

*Travel budgets effective immediately*

### **Transportation**

Hitchhiking in lieu of commercial transport is the preferred choice. Luminescent safety vests will be issued to all employees prior to their departure on company business trips. Bus transportation will be used whenever hitchhiking is not possible. Airline tickets will only be authorized for purchase in extreme circumstances and the lowest fares will be used.

### **Lodging**

All employees are encouraged to stay with relatives, friends or mere acquaintances while on company business. If weather permits, public areas such as parks, roadside rests and parking lots should be used for temporary lodging sites. Bridges and tunnels may provide shelter in periods of inclement weather.

### **Meals**

Expenditures for meals will be limited to the absolute minimum. It should be noted that certain grocery chains often provide free samples of promotional items. Entire meals can often be consumed in this manner.

Travelers should also become familiar with indigenous roots, berries and other protein sources available at their destination. If restaurants must be utilized, travelers should seek establishments offering "all you can eat" salad bars. This will be especially cost effective to employees traveling together, as a single plate can be used to feed the entire group. Employees are also encouraged to bring their own food while on company business.

Entertainment while on travel is strictly discouraged. If such extravagances are required on customer contacts, the customer should be encouraged to "pick up the tab". Such action will save company money and convince the customer that we are concerned about spending money on providing a good product – not on useless frivolities. The hospitality provided to our customers who visit our facility shall also be tasteful, yet cost effective. In lieu of extravagant dinners, a picnic bench will be placed in the parking lot near the dumpster and a green garden hose will be made available so that liquid refreshments can be provided to our guests.

-From Joke4Today.com

### **Request for Videotapes & Publications**

The publications and videotapes in the LTAP library are available free or for a nominal charge upon request. Publications and Software marked "Lending Library" may be borrowed for several weeks, but must be returned to LTAP. Anyone may borrow up to three videotapes at a time rent-free for two weeks.

You may order any videos or publications by calling toll-free (800) 541-6671. Contact Donnetta Bohman if you have any questions or concerns.



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## Editorial Contributions Welcome

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

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