

# Colorado LTAP

May 2008

Serving local transportation agencies throughout Colorado

Summer Issue

## National LTAP Conference Comes to

Reaching for the  
**PEAK**

C·O·L·O·R·A·D·O

**LTAP/TTAP 2008**

Breckenridge, Colorado

July 14-17, 2008



Colorado LTAP and the Region 8 LTAP centers - Wyoming, Montana, North Dakota, South Dakota - are hosting the 2008 National LTAP-TTAP Conference in Breckenridge, Colorado. Preparations are underway for the four-day event at the Beaver Run Resort July 14 - 17, 2008.

*Reaching for the Peak* is a fitting theme for a conference to be held in majestic Breckenridge. We aim to provide that western hospitality along with an outstanding program filled with training modules and opportunities to exchange ideas with experienced LTAP'ers surrounded by the breathtaking Rocky Mountains. There will be ~250 representatives from LTAP centers across the country, State DOTs, FHWA, and many other transportation agencies worldwide. There are over 20 educational sessions scheduled ranging in topics from retroreflectivity, FHWA's Mobile Laboratories, time management, and international transportation issues, to

better web page design, marketing tools, and dealing with disasters.

Colorado Governor Bill Ritter and Breckenridge Public Works Director Terry Perkins are the invited guest speakers - highlighting needs in the changing transportation industry.

The opening reception will be held in the Beaver Run's recently added Imperial Ballroom. With floor-to-ceiling windows and a sloped balcony, we'll welcome attendees with breathtaking panoramic views of Peak 9 and Ten Mile Range.

The annual banquet will be held mountainside at Ten Mile Station. At 10,234 feet, Ten Mile Station is a setting participants won't have to rely on photos to remember. With awe-inspiring views of the Continental Divide, huge picture windows beam all the glory of the Upper Blue

Valley inside. Vaulted ceilings and log construction match the beauty of their surroundings. Join us out on the oversized deck for music and dancing and enjoy an al fresco dinner 2 miles high!

For a conference brochure and information, visit our conference website at: [www.ltapt2.org/conference/2008](http://www.ltapt2.org/conference/2008).

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*2008 NLTAPA Conference*

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## Routing Slip

After reading this issue of Colorado LTAP, please initial below and pass it along to the rest of your staff.

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## Colorado LTAP

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The Colorado Local Technical Assistance Program is sponsored by the Federal Highway Administration, the Colorado Department of Transportation, and the University of Colorado at Boulder.

The Colorado LTAP Newsletter is published quarterly. Articles, pictures and comments are welcome.

For more information, contact:

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## Director's Corner

## Reaching for the Peak -

Colorado LTAP is busy preparing to host the 2008 National LTAP conference in Breckenridge, July 14 - 17, 2008. Renée and Lindsay are on the national conference planning committee and are in charge of location, registration, finance, and vendors. We look forward to welcoming participants - both foreign and domestic - to the Mile High City and beyond!

This spring was very productive. We completed 39 training programs between January and May. Returning by popular demand, some of the elective courses we offered were Chip Seal Applications, Erosion Control Supervisor Certification, and Basics of a Good Gravel Road. Due to a grant received from CDOT 402 funds, we also offered 5 Flagger Certification workshops free of charge at various locations along the south half of the state. There were 90 participants in these workshops that past the state exam and became flagger certified. There were 24

graduates of the *Roads Scholar* program this Spring.

We will not be holding any training over the summer months to allow you all to complete your full construction schedules. However, we are still here for technical assistance if you have any questions. Lindsay is working hard to develop this fall's training schedule. Keep an eye out for the fall training calendar to be sent this summer.

Please complete the included mailing list update form if any changes, additions, or deletions are needed. And please complete and return our Annual Needs Assessment Survey when it graces your desk in June - you could win \$25! ALSO - don't forget to submit a project for the *2008 You Show Us Contest*. Two of your employees could win a sponsored trip to this year's Local Road Coordinator's Conference in Rapid City, SD!

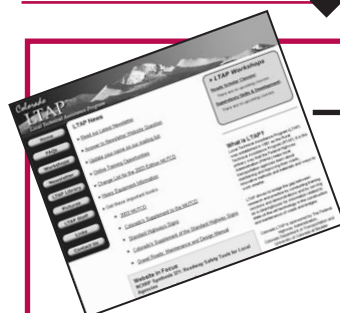
*Renée Koller*

## Quote of the Day

Insight of a 6 year old....

At dinner the other night, the 6 year old asks, "*Why couldn't we have chili dogs for dinner?*" I replied, "*Because I decided we needed to have something healthy for dinner this evening!*" We were having fish and rice. He eats a little more and then the 6 year old says, "*Fish is good for us? I like fish. I thought only things we didn't like to eat were good for us.*"

....Isn't that all too true.

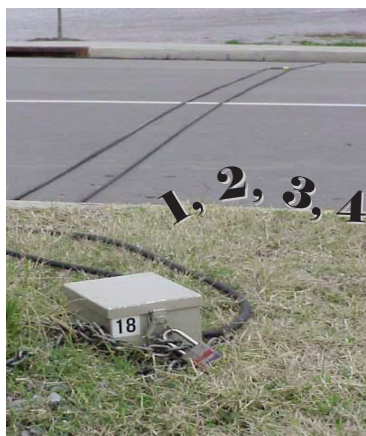


<http://ltap.colorado.edu>

Visit Colorado LTAP online today for online training, class registration, free lending library, and more.

# Traffic Data Collection

## CO Traffic Count Programs



Traffic counts are reported as the number of vehicles expected to pass a given location on an average day of the year. This value is called the "annual average daily traffic" or AADT and are represented on traffic count or traffic volume maps. The AADT is based on a short-term traffic count, usually 24 or 48 hours, taken at the location. The resulting counts are adjusted to an estimate of annual average daily traffic by compensating for seasonal influence, weekly variation and other variables which may be present. Annual ADT is necessary for presenting an agencywide picture of traffic flow, evaluating traffic trends, computing accident rates, planning and designing roadways and other purposes. An estimate of the "peak hour" traffic at points on the road system can also help in estimating the amount of congestion experienced, and shows how near to capacity a roadway is operating. Often times, a "peak month" ADT is also calculated, which is the average daily traffic for the month of heaviest traffic flow. This data is obtained because on many routes, high traffic volumes which occur during a certain season of the year are more representative of traffic

conditions than the annual ADT. This is especially true on many routes in Colorado during winter months and holiday weekends. The Eisenhower-Johnson Memorial Tunnels located sixty miles west of Denver on Interstate 70 experienced 170,362 vehicles this past President's Day weekend in February - a 14% increase over 2006.

There are a number of traffic count related projects going on around the State.

### Short-Duration Count Program

Now is the time to submit your requests for 24 or 48 hour short-duration traffic volume and classification count data. Colorado LTAP is partnering with the Colorado Department of Transportation (CDOT) to offer traffic counts FREE to local government agencies. CDOT is scheduling 2008 counts and will be collecting data throughout Colorado from May, 2008 to September, 2008. A list of currently scheduled 2008 traffic count station locations is available in a GIS Map or in a Microsoft Excel spreadsheet format. Contact Renée Koller (LTAP) or Elizabeth Stolz (CDOT) for additional information. Also, 2007 short-duration count data can be viewed on CDOT's website at: [http://www.dot.state.co.us/App\\_DTD\\_DataAccess/Traffic/index.cfm?fuseaction=TrafficMain&MenuType=Traffic](http://www.dot.state.co.us/App_DTD_DataAccess/Traffic/index.cfm?fuseaction=TrafficMain&MenuType=Traffic).

### Statewide Traffic Data Committee

CDOT is coordinating, organizing, and looking for volunteers to help in formalizing a statewide local agency traffic data committee. This committee is looking for volunteers to help with traffic data standards development, drafting survey questions to be distributed to local

...continued on page 9

## Colorado LTAP Advisory Committee Members

◆  
**Marlene Crosby**  
Gunnison County

◆  
**John Baker**  
Town of Snowmass

◆  
**Adam Lancaster**  
City of Cañon City

◆  
**Richard McKee**  
City of Longmont

◆  
**Tammie Crawford**  
Routt County

◆  
**Doyle Villers**  
LaPlata County

◆  
**Kevin Scott**  
Phillips County

◆  
**Beth Moore**  
CDOT

◆  
**Craig Larson**  
FHWA

◆  
**Yunping Xi**  
University of Colorado  
at Boulder

◆  
**Renée Koller**  
Colorado LTAP

◆

### Kevin Scott, Councilman

Congratulations! LTAP Advisory Committee member, Kevin Scott was recently elected to serve a four-year term on the city council of Holyoke, CO.

## Need a little Extra cash?

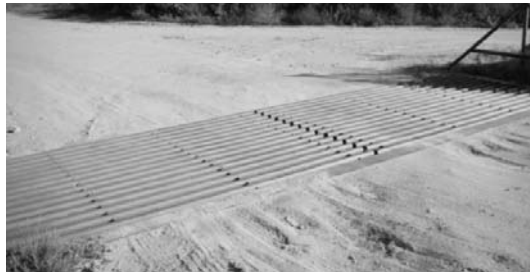


Your  
knowledge  
is worth  
something.

Our center is continuing its program to encourage local participation in the publishing of Colorado LTAP's quarterly newsletter. We would like the recipients of our newsletter to benefit from all the knowledge local agencies have in the areas of roadway maintenance, design, and construction. We are offering **\$50.00** to city, town, or county employees that submit an article that is chosen to be published in our newsletter. Articles can address current methods and procedures, best practices, innovative techniques, or projects in the transportation industry. Content should contain as much detail as possible, but we can provide assistance in editing and writing the final version. We request articles not promote any particular product. *Photos are encouraged.* To submit articles and/or photos, include author name and contact info, and mail or email to

[cltap@colorado.edu](mailto:cltap@colorado.edu)

# Can You Build a Better Mousetrap? "You Show Us" 2008



Colorado's 2007 State You Show Us contest winning entry - "Homemade Cattleguards".

Colorado LTAP is pleased to announce the 2008 "You Show Us" contest! This is the contest's 14th year. The concept began in 1994 as "You Show Us How".

We are very aware that often there are not enough transportation dollars available to maintain our transportation systems to the desired level of service. This is particularly true when it comes to local government transportation programs. The costs for repairs and improvements are increasing while the available finances are decreasing.

**Solving today's problems requires efficient use of existing funds, and the application of cost-reducing & innovative techniques.**

These problems are not easily solved with yesterday's solutions!

What is the best idea you have implemented for your agency within the last few years? Past entries have included unique safety and operational efficiency improvements, and time saving designs. Your entry could be related to these areas or many others. This is your opportunity to showcase something that has worked and of which you are proud, and to share this information with your counterparts across the state, and even the nation.

The contest is open to all government agencies in Colorado. All participating Colorado agencies will receive a certificate of participation and their entries will be published in our newsletter. The winning Colorado entry will be submitted to compete with state winning entries from Nebraska, North Dakota, South Dakota, and Wyoming to determine a regional winner.

Entries should be no longer than two typewritten pages and should include:

1. County Information
  - County Name
  - Contact Person
  - Contact Address
2. Problem Statement
3. Discussion of Solution
4. Labor, Equipment, Materials Used
5. Cost
6. Savings/Benefits to the County

**~Photographs are encouraged.~**



**WIN A TRIP**

Colorado LTAP will sponsor TWO employees to represent their state winning project at the 2008 Local Road Coordinators Conference.

State and regional awards will be presented at the conference, to be held in Rapid City, South Dakota October 29-30.

All entries must be received by **August 31, 2008** to be considered. You may mail or e-mail your submission. The state winner will be chosen at the LTAP Advisory Committee meeting and notified by September 12, 2008.

**Mail** entries to:

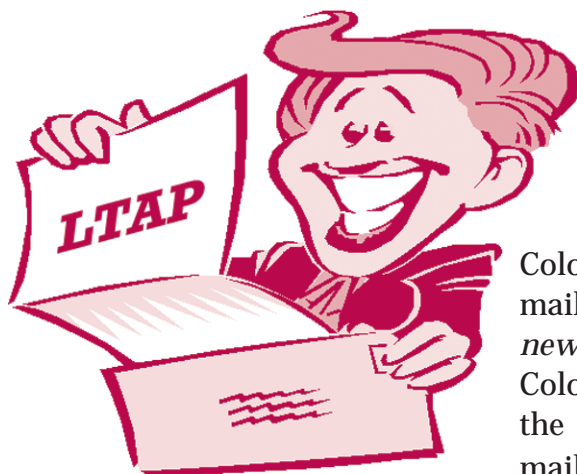
"You Show Us" Contest  
Colorado LTAP  
University of Colorado  
3100 Marine St., Rm. A-213  
UCB 561  
Boulder, CO 80309-0561

**E-mail** entries to:

[cltap@colorado.edu](mailto:cltap@colorado.edu)

*We look forward to your entry!*

For additional information call Renée or Lindsay at the Colorado LTAP Center, 1-888-848-5827.



# Mailing List Update

Colorado LTAP maintains a comprehensive mailing list. Our mailing list is divided into two sections: a *brochure* and a *newsletter* mailing list. Each mailing list is used only by the Colorado LTAP center in support of LTAP activities. They're the sole property of the Colorado LTAP center, and neither mailing list is sold or distributed.

**Brochure Mailing List:** Includes the names of the contact people at each agency who receive notification of registration for upcoming training and conferences through class brochures.

**Newsletter Mailing List:** Includes those people who receive our quarterly Newsletter.

In an attempt to keep our mailing list up-to-date, please make any changes, updates, or additions below and return to the Colorado LTAP office.



Mail to: Colorado LTAP, University of Colorado Boulder  
3100 Marine St, UCB 561, Boulder, CO 80309-0561



Fax to: 303-735-2968



Email to: [cltap@colorado.edu](mailto:cltap@colorado.edu)

Changes and additions can also be made online on our website at: <http://ltap.colorado.edu>.



### Brochure Mailings

- Add
- Delete
- Update

### Newsletter Mailings

- Add
- Delete
- Update

Name: \_\_\_\_\_ Agency: \_\_\_\_\_

Job Title: \_\_\_\_\_ Address: \_\_\_\_\_

City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_



Phone: \_\_\_\_\_ Fax: \_\_\_\_\_

Email Address: \_\_\_\_\_

**PLEASE COPY THIS FORM FOR OTHERS IN YOUR AGENCY  
~THANK YOU~**

.....fold.....



  
**Colorado LTAP**  
  
**University of Colorado at Boulder**  
**3100 Marine St, A-213**  
**UCB 561**  
**Boulder, CO 80309-0561**

.....fold.....



# What's New in the LIBRARY?

All videos, publications and CDs in the LTAP lending library are available for checkout for a two-week period, free of charge. To check out materials or request a library catalogue, contact the Colorado LTAP office at 1-888-848-5827.

Below is a list of most recent materials added to the library. Our library materials can also be ordered online at: <http://ltap.colorado.edu/ltaplibrary>

## New CDs

### Location

### Title

CD WRIT

*Water/Road Interaction Toolkit*

This CD covers technology series, field guide, and WEPP series (Water Erosion Prediction Projects).

CD WZTLEC

*Work Zone Training Law Enforcement Course*

This program covers the safe and effective use of law enforcement personnel in work zones. A training course that provides the basic knowledge to save lives, avoid work zone crashes, and improve safety when working in a work zone. Course Benefits: Understand standards and guidelines related to temporary traffic control in work zones; Understand the role of law enforcement officers in work zones; Recognize the component parts of a typical work zone; and Recognize proper practices and procedures related to the use of law enforcement officers in work zones. Tools provided for this training course consist of an Instructors Manual, Participants Guide, Pocket Guide, and PowerPoint Training Modules. All these components are on the CD as well as a hard book copy #B5 WZTLEC.

CD RSP

*Ready, Set, Plow! Tips and Tasks for Preparing Your Fleet for Snow Season*

Winter weather is an annual force to be reckoned with. Learn how to plan ahead to ensure that both your equipment and plow operators are up to the task. This program features checklists, tips on alternate vehicle usage, and how to stretch your budget dollars.

CD TFRS

*Training First-Rate Snowfighters*

Put an end to persistent and inadequate snowfighting once and for all! If you didn't attend the 2005 North American Snow Conference, you can still experience the excitement of being onsite. This program discusses how to get the most value from your snowfighter training program. Training resources will be identified, as well as key concerns and practical tips for training both experienced and inexperienced snowfighters.

CD CSR

*Construction Site Runoff: A Proactive Approach to NPDES Compliance*

Stormwater flowing over a construction site often picks up a variety of pollutants that can upset the ecological balance of streams and lakes. NPDES Phase II regulations cover construction areas of one to five acres in size. Learn what steps you should take during the construction planning stage to meet these requirements and minimize pollution runoff on your projects.

CD ECCNP

*Erosion Control Compliance with NPDES Phase II*

Is development putting enormous pressure on you and your agency's efforts to enforce local erosion and sediment control ordinances and NPDES Phase II regulations? In this two-hour program, learn tactics for conducting inspections and enforcing the ordinances and regulations, get information on EPA's new Construction General Permit and electronic application system, how to more effectively implement erosion control programs, and much more.

## New DVDs

### Location Title

DVD 9THSWT *9 Traits of Highly Successful Work Teams*

This program covers skills you need to create teams that are efficient and effective through proven, practical tools. You'll discover the nine essential traits a team must have to function at its peak. Program highlights include: Why "purpose" is the backbone of any true team - How to craft a team mission statement that's more than a motto - The #1 reason why teams succeed or fail - 3 proven strategies for galvanizing diverse individuals into a unified team - The 5 styles of conflict resolutions - Recognizing the 4 most dangerous symptoms of team fragmentation - Simple techniques to keep teams fresh and more immune to burnout Learn what it takes to build efficient, and empowered work groups that can help your organization grow and prosper.

DVD HDWDP *How To Deal With Difficult People*

This program takes a look at what you can do to deal with the people who seem to delight in making your life miserable. Learn to co-exist with all kinds of difficult people and free yourself from their grip. Program highlights include: What to do when someone starts yelling or threatens you - The one mistake people make that's guaranteed to escalate conflict - What to do when your "difficult person" is your boss - When to call in a third party to resolve a stalemate - How to know when YOU are the difficult one.

## New Publications

### Location Title

50 CWZBP *UPDATED: Colorado Work Zone Best Practices Safety Guide*  
Updated in February 2008, this CDOT guide provides information and tools needed to create a safer work zone environment. This guide focuses on reducing vehicle intrusion into work zones; reducing work zone accidents, injuries and deaths; ensuring contractor compliance; educating the public; and reducing construction impacts to traveler mobility and safety. Also available online.

60 ECTSG *Erosion Control Treatment Selection Guide*

This 53 page guide presents a strategy and information to assist professional judgment in developing cost-effective erosion control treatments for conditions commonly encountered on USDA Forest Service lands. This guide focuses on erosion control treatment and does not specifically address sediment control.

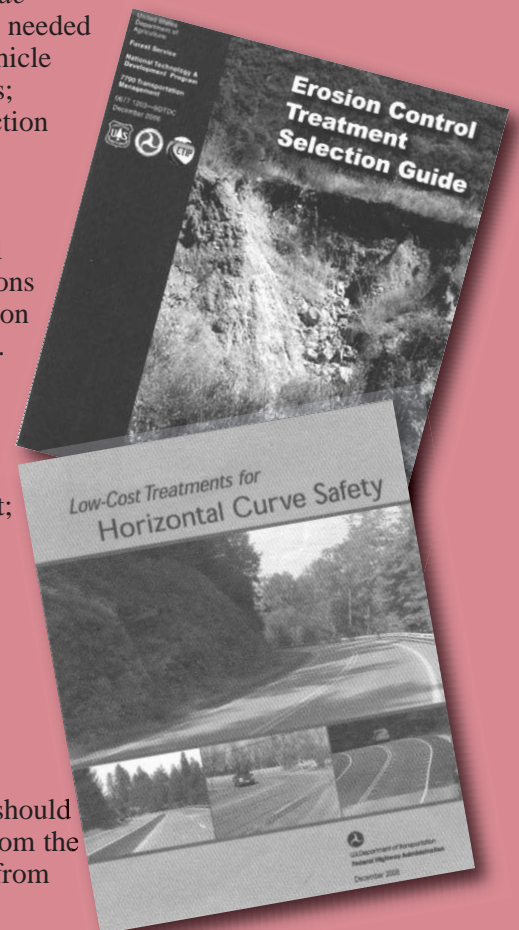
20 HCS *Low Cost Treatments for Horizontal Curve Safety*

This publication was designed to provide practical information on low-cost treatments that can be applied at horizontal curves to address identified or potential safety problems. The publication concisely describes the treatment; shows examples; suggests when the treatment might be applicable; provides design features; and where available, provides information on the potential safety effectiveness and costs. Treatments include:

- Ⓞ Basic traffic signs and markings found in the MUTCD
- Ⓞ Enhanced traffic control devices
- Ⓞ Additional traffic control devices not found in the MUTCD
- Ⓞ Rumble Strips
- Ⓞ Innovative and experimental treatments
- Ⓞ Minor roadway improvements

The publication concludes with a description of maintenance activities that should be conducted to keep the treatments effective. FREE copies are available from the Colorado LTAP center library at <http://ltap.colorado.edu/ltaplibrary>; or from the FHWA Report center online and for PDF download at:

[http://safety.fhwa.dot.gov/roadway\\_dept/pubs/sa07002/index.htm](http://safety.fhwa.dot.gov/roadway_dept/pubs/sa07002/index.htm)





# Traffic Data Collection

## Colorado Traffic Count Programs

continued from page 3...

agencies throughout the State, and a traffic data newsletter. If you are interested in volunteering, receiving more information, becoming a committee member, or becoming a participant of the committee that includes attending one of the Traffic Data Committee meetings, please contact Elizabeth Stolz, CDOT Traffic Analysis Manager at 303-757-9495, or email Elizabeth.Stolz@dot.state.co.us.

### USDOT – States Traffic Data Management and Information Technology Solutions Study Results

In May 2007, CDOT conducted a national study to gather information from all the State DOT agencies throughout the United States. The study was conducted by gathering information from an electronic survey requesting that DOT participants answer questions related to traffic data management, field data collection, and traffic software solutions that have been implemented in their respective states. The study results were compiled in tables that provided information for display and analysis purposes. The results of this study were then analyzed and presented in a report. This final report can be downloaded at [http://www.dot.state.co.us/App\\_DTD\\_DataAccess/traffic/survey.cfm](http://www.dot.state.co.us/App_DTD_DataAccess/traffic/survey.cfm).

### DRCOG – Regional Traffic Count Collection Program

The Denver Regional Council of Governments (DRCOG) is a central repository for traffic counts in the nine-county Denver Region. DRCOG assembles traffic counts from local governments, CDOT, highway authorities (such as E-470 Public Highway Auth.), developers and others for locations within the DRCOG region. DRCOG has six

primary program functions that use traffic counts: 1) Validation and calibration of the regional travel demand model to match actual volumes about every five years, 2) Congestion mitigation program assessments in a four year cycle, 3) Corridor traffic signal coordination, as needed, 4) ITS monitoring, 5) Calibration of travel behavior inventory survey data, and 6) Responding to requests for site specific counts and model forecasts.

To further aid local government agencies, DRCOG has shifted from only collecting hourly directional counts, and now requests 15-minute directional counts. DRCOG also prefers to acquire 72-hour count data as it yields better quality counts that otherwise might be affected by weather, equipment failures, nearby construction or special events. When practical, DRCOG desires vehicle class counts. DRCOG also provides average weekday daily traffic (AwDT) and AM/PM traffic volume forecasts for roadways on the Regional Transportation Plan.

DRCOG is making the traffic counts it collects available to the local governments, via downloadable files. They have over 4,900 traffic counts at over 2,000 count locations in 2005, 2006, and 2007. They have created a *Transportation Map Application* for presenting information via the web on the location and 24-hour volume data that is available. It is an interactive web program allowing anybody to quickly find count information. Acceptable data is made available in a downloadable Microsoft Access database: <http://www.drcog.org/index.cfm?page=RegionalTrafficCountProgram1>.

For more information on the DRCOG program, please contact Lawrence Tilong, at 303-480-6761 or via [ltilong@drcog.org](mailto:ltilong@drcog.org)

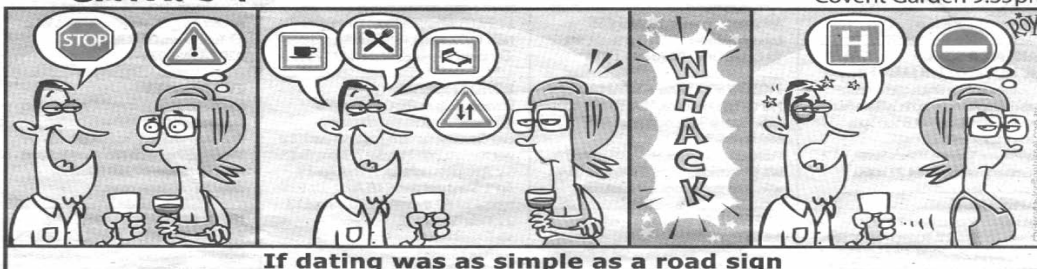
### Pedestrian Road Safety Audit Guidelines and Prompt Lists



A road safety audit (RSA) is a formal safety examination of a roadway plan or project or an in-service facility that is conducted by an independent, experienced multidisciplinary RSA team. All RSAs should include a review of pedestrian safety; however, some RSAs may be conducted to improve an identified pedestrian safety problem. **The Pedestrian Road Safety Audit Guidelines and Prompt Lists** provides transportation agencies with a better understanding of the needs of pedestrians of all abilities. The Guide has two primary sections: Knowledge Base and the Field Manual. The Knowledge Base section discusses the basic concepts to be familiar before conducting an RSA, such as understanding the characteristics of all pedestrians, analyzing pedestrian crash data, pedestrian considerations in the eight-step RSA process, and use of the Guide. The Field Manual section includes the guidelines and prompt lists, providing detailed descriptions of potential pedestrian safety issues. The guidelines and prompt lists will help familiarize you with potential pedestrian issues and help to identify specific safety concerns related to pedestrian safety throughout the RSA process. <http://drusilla.hsrrc.unc.edu/cms/downloads/PedRSA.reduced.pdf>

### THE OMNIPRESENT

Covent Garden 9.35pm



If dating was as simple as a road sign

< More tidbits from my travels around the world. I found this comic on a recent trip to London, England. From **thelondonpaper** a free newspaper, published by NI Free Newspapers Ltd. [www.thelondonpaper.com](http://www.thelondonpaper.com)

# Ideas That Work

## Saving Your Agency Time & Money

### Cattleguards, Morgan County 2007 You Show Us Contest Colorado State Winner

#### Problem Statement:

How to construct CHEAP cattleguards that were heavy enough as to be immune to road graders, farm machinery, oilfield traffic, blowing sand, and were wide enough for all the aforementioned, but would be relatively maintenance free and easy to maintain.

#### Discussion of Solution:

We designed a cattleguard using scrap 2 -3/8" oilfield pipe, pieces of 16 x 42lb per foot bridge girders. The base is constructed of the girder steel welded into a rectangle 24 feet long and 8 feet wide, with two separate grates constructed from the oilfield pipe, that are supported from inside the base and may be removed separately.

#### Labor, Equipment, and Materials Used:

30 - 2-3/8" x 11'-4" pipe  
86 - 16" x 42lb Steel I-beam  
Approximately 160 man hours  
Cutting torches, angle grinders, arc welders

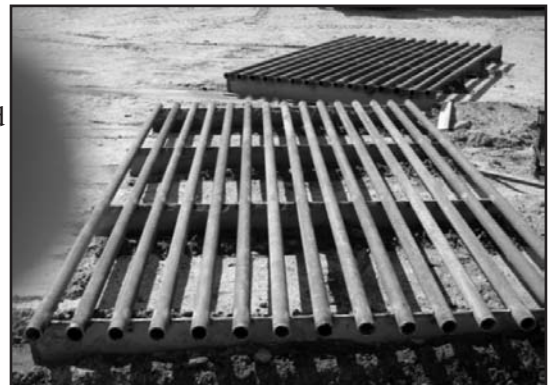
**Total Cost:** Zero materials cost. The materials we used were all scrap from our bridge construction. Our only cost was the labor involved. We worked on this project when there was inclement weather or we had slack time between other jobs. We probably used \$50.00 of cutting torch gases and \$50.00 worth of welding rod.

#### Savings and Benefits:

We got price quotes from different sources that were in the five to six thousand dollar range. Their durability was possibly equal, but not superior to what we built. We have been building and using these cattleguards for over fifteen years and have only repaired one. The removable grates allow us to leave half of the roadway open to local traffic while we are cleaning accumulated trash and gravel out of the base box, or under the grates. They are wide enough that most farm machinery can fit through without tearing up the machinery. Thus, making the tax paying landowners happy. They are strong enough to support any type of legal truck load. We have had numerous houses moved across these cattleguards and none the worse for it. The cost is minimal and the product is superb!

#### For more info contact:

Richard Early, Morgan County, 17303 MCR S, Fort Morgan, CO 80701, (970) 542 -3560.



## Upcoming Events

### Upcoming Training

NOTE: The Fall training schedule is currently under development. Please contact the Colorado LTAP office for an updated schedule, or check online at <http://ltap.colorado.edu>.

#### Road Scholar Core Classes

**Safety on the Job**  
October 2008

**Drainage**  
November 2008

#### Road Scholar Electives

**Motorgrader Training**  
August 2008 - Southeast CO

**Topics on Concrete Pavements**  
September 2008

**NEW! Low-Cost Treatments for Horizontal Curve Safety**  
September 2008

**NEW! Retroreflectivity Standards - Compliance and Maintenance**  
October 2008

**Road Materials: Soils & Gravels**  
October 2008

**Safety Risk Management**  
November 2008

**NEW! Winter Survival**  
November 2008

Remember!

You can register *online* at:  
<http://ltap.colorado.edu>

#### Supervisory Skills Classes

**Dos & Donts: Legal and Liability Issues**  
October 2008 - Castle Rock

**Whole New World**  
*Local & State Government Operations*  
November 2008 - Castle Rock

**So You Are a Supervisor Now**  
*Supervisory Roles and Responsibilities*  
December 2008 - Grand Junction

**Successful Employees Make Successful Supervisors**  
December 2008 - Grand Junction

### Conferences

**National LTAP-TTAP Conference**  
July 14 - 17, 2008  
Breckenridge, CO  
Visit <http://ltap.colorado.edu/conferences/national/>

**APWA West Slope Snow & Ice**  
September 4 - 5, 2008  
Gunnison, CO  
For more info call Gunnison County, 970-641-0044.

**APWA Western Snow & Ice Roadeo**  
September 23 - 26, 2008  
Estes Park, CO  
Visit the website for more info:  
[www.westernsnowandice.com](http://www.westernsnowandice.com)



### SPRING COLORADO ROADS SCHOLAR GRADUATES

#### City of Boulder

*John Hadenfeldt  
Bryan Ortiz  
Dale Cramblet  
Sam Crespin  
Mike Lozano  
Darrol Meddaugh  
Mike Morgan  
Robert Sandoval  
Neng Xiong*

#### City of Grand Junction

*Jack Albright  
Jason Brown  
Scott Norton*

#### City of Firestone

*Theo Abkes*

#### City of Cañon City

*Tim Olson*

#### Arapahoe County

*Jeff Kaiser  
Devin Jones  
Kenneth Ross*

#### Teller County

*Tony Macy  
Clay Sutton*

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## ACROSS

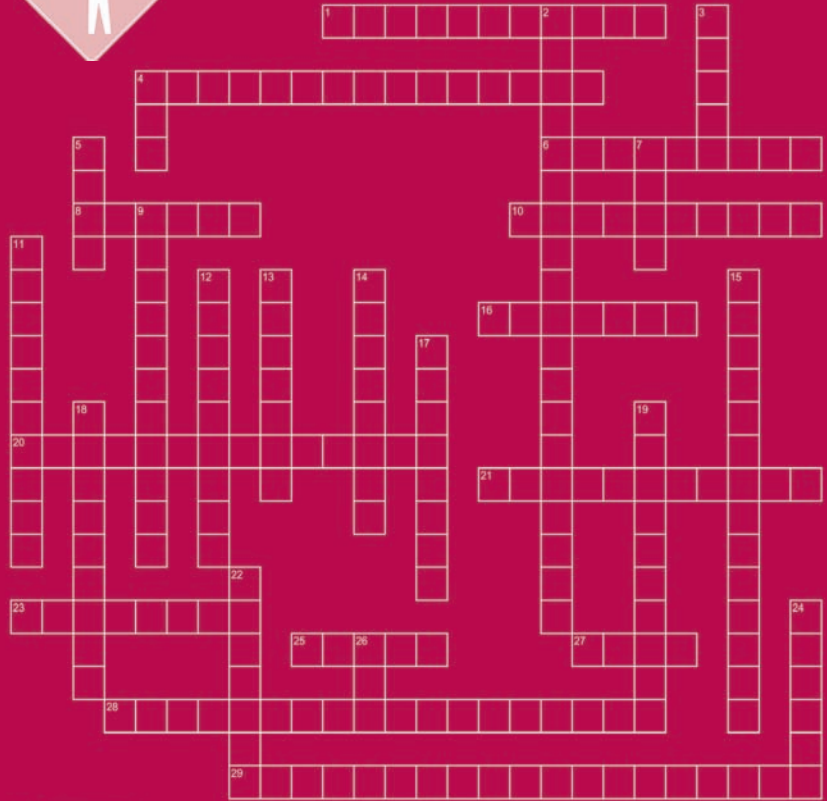
- 1 Flaggers are required to have their workstation \_\_\_\_\_ during nighttime operations.
- 4 At night, traffic control devices must be \_\_\_\_\_.
- 6 Operations conducted between sunset and sunrise.
- 8 Work that moves intermittently (stops up to 15 minutes) or continuously.
- 10 Signs that impose legal restrictions and may not be used without permission from the authority with jurisdiction over the roadway.
- 16 One way to indicate "all clear" is to lift your \_\_\_\_\_.
- 20 Shall be provided for workers on cone-setting vehicles.
- 21 Should be scheduled routinely for compliance and to record how traffic is reacting to traffic control devices.
- 23 Flaggers should stand in a safe position on the \_\_\_\_\_.
- 25 Compliance with the most current edition of this manual is required on all construction projects where work is being conducted in the public right-of-way.
- 27 When giving clear hand signals, expose your \_\_\_\_\_.
- 28 Is required by the MUTCD and must consider safety as an integral part of each project considering motorist, pedestrian, cyclist and worker safety.
- 29 Includes tubes, cones, drums, vertical panels, barricades and barriers.

## DOWN

- 2 In work zone set-up, \_\_\_\_\_ are installed first.
- 3 When flagging, it is important to stay \_\_\_\_\_.
- 4 Flag color used in emergencies.
- 5 Display a variety of messages, but are typically used to display changing condition information.
- 7 Don't stand over the crest of a \_\_\_\_\_.
- 9 Preliminary area that provides protection for workers and traffic and should NOT include any work activity, storage of equipment, vehicles or material.
- 11 When in doubt whose turn it is, you should stop \_\_\_\_\_.
- 12 Ideally, \_\_\_\_\_ are installed from upstream to downstream.
- 13 When signs are not in use, it is required that they be taken down or fully \_\_\_\_\_.
- 14 A work zone is removed in the \_\_\_\_\_ direction of set-up.



# Work Zone Safety



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- 15 The primary traffic control device for flaggers.
- 17 Barricade stripes should point \_\_\_\_\_ toward the path of travel.
- 18 Signs which are taken down or faced away from traffic, must be stored outside of the \_\_\_\_\_.
- 19 For safety, always have an \_\_\_\_\_.
- 22 Don't ever turn your back on \_\_\_\_\_.
- 24 When sight distance is an issue, it may be necessary to extend \_\_\_\_\_ and buffer spaces.
- 26 Most common number of flaggers to control traffic.



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