

LTAP MATTERS

Montana's Answers To Technical Education of Roads & Streets
Vol. 34, No. 1

Winter 2016

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MONTANA
STATE UNIVERSITY

Local Technical
Assistance Program

From Montana LTAP Director

This past fall was filled with great turnouts for our Montana Association of County Road Supervisors (MACRS) equipment safety training for skid steers and front end loaders. The participants were thankful for the training brought to their districts per course evaluations. Having worked with MACRS for over thirty years, there have been outstanding individuals who looked beyond their own issues and united all in a common goal of improving the safety of our Montana roads and bridges. One particular effort recently initiated was a MACRS \$1,000 Scholarship. It is a relatively easy scholarship to apply for and "will be awarded to a student with a declared major of either equipment operations, mechanics, civil engineering or other transportation related studies."

The importance of supporting the education of our young people in the transportation industry is vital as the population increases and also grows older. As the statistics state, by 2030, there will be almost 60 million people age 65 and older, which is one in five people. By providing some financial assistance to those heading into the transportation field, MACRS is supporting their mission statement:

The Montana Association of County Road Supervisors mission is to facilitate education and to share ideas; thus helping to enable a safe, efficient, and consistent transportation system for each County throughout the State of Montana.

If you have any questions about this scholarship, please contact our LTAP office and we would be more than happy to assist you (1-800-541-6671). It is also out on our website: <http://www.coe.montana.edu/ltapv2/resources/macrs/index.html> On a similar note, this fall's meeting for Public Works Directors held at the League of Cities and Towns conference in Bozeman, covered a wide range of topics requested by directors. These included capital planning, asphalt seals, funding decisions for road improvement, weed control, storm water issues, driving safety reminders and road improvement districts.

We were proud to present Roads Scholars to Scott Gray, City of Miles City, and Brian Hensel, City of Missoula, who completed the required Montana LTAP ten classes to receive this award. They have joined the other 286 Roads Scholars and 15 Road Masters in our program. To date, there are over 2,600 city street and county road personnel in the Montana LTAP data base striving to complete their requirements

for a Roads Scholar award. If you need information about classes taken, contact our office or email genevieve.houska@montana.edu.

As our training information and registration becomes available, it will be on our website and sent out to our email listservs. To get on our listservs, just call us or email mbeck@montana.edu. I am looking forward to a new year of training with a variety of topics requested by you, our constituents.

*Travel safe and be prepared for winter weather,
Steve Jenkins, Montana LTAP Director*



L to R: Scott Gray, City of Miles City, and Steve Jenkins, MT LTAP



L to R: Steve Jenkins, MT LTAP, and Brian Hensel, City of Missoula

Local Technical Assistance Program

LTAP Matters is published by the Local Technical Assistance Program. LTAP is located at Western Transportation Institute, College of Engineering, Montana State University, Bozeman, Montana.

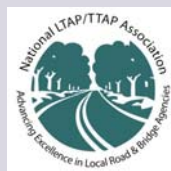
We can be reached at the following:

Phone: (800) 541-6671 or (406) 994-6100
FAX: (406) 994-5333
E-Mail: [MTLTAP\(at\)montana.edu](mailto:MTLTAP(at)montana.edu)



Our website lists upcoming training courses, registration forms, library information, our contact information, newsletters, various links, and MACRS information. Please go to: <http://www.coe.montana.edu/ltapv2/index.html>

The Local Technical Assistance Program/Tribal Technical Assistance Program (LTAP/TTAP) is a nationwide network of 58 centers - one in every state, seven serving Native American tribal governments and one in Puerto Rico.



Steven Jenkins, P.E.
Director
[stevenj\(at\)montana.edu](mailto:stevenj(at)montana.edu)

Genevieve Houska
Administrative Associate/
Conference Coordinator
[genevieve.houska\(at\)montana.edu](mailto:genevieve.houska(at)montana.edu)

Michele Beck
Graphic Designer/Librarian
[mbeck\(at\)montana.edu](mailto:mbeck(at)montana.edu)

The LTAP/TTAP Mission is to foster a safe, efficient, and environmentally sound surface transportation system by improving skills and increasing knowledge of the transportation workforce and decision makers.

MT LTAP ADVISORY COMMITTEE MEMBERS

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

Steve Albert
WTI Director

Harold Blattie
MACo

Kris Christensen
Montana Dept of Transportation

Thomas Danenhowe
MMIA

Kelly Elser
Town of Ennis

Eric Griffin
Lewis and Clark County

Justun Juelfs
Montana Dept of Transportation

Tim Burton
Montana League of Cities & Towns

Phil Hauck
City of Helena

Russ Huotari
Richland County

David Mumford
City of Billings

Jim Muskovich
MACo

Jim Rearden
City of Great Falls

Bob Seliskar
Federal Highway Administration

John Van Delinder
City of Bozeman

Front Page Photo: By Michele Beck, local Bozeman, MT road.

MACRS President John Stokes

This spring, March 28-31, 2016, Montana Association of County Road Supervisors will be holding their 36th Annual Conference in Great Falls, Montana. As President, I look forward to welcoming everyone to an outstanding agenda of training, speakers, and vendors.

My emphasis for this year's conference is safety, primarily worker safety. This is why the pre-conference on Monday, March 28, from 1:00pm to 5:00pm, will be MSHA training, Part 46 for those needing this type of training.



John Stokes
MACRS President
Pondera County

Starting on Tuesday, the first official conference day, our keynote speaker will be Blu Santee, HUB International's Senior Risk consultant. As stated on his flyer, "The amount of risk an individual takes is directed by their perception of the risk." I have attended his presentation and believe his real-life stories will connect to the MACRS audience.

The MACRS Board also lined out other training such as a Trenching Safety module, Ladder and Eye Safety, and CDL Montana Department of Transportation Physicals. During this first day we will wrap up the afternoon with a panel of Road Supervisors sharing their solutions to learning lessons they have had during their careers.

On the second day of the conference, the morning will start with Operation Life Saver, Railroad and Train safety followed by Bridge Safety and MDT 402 funding. The afternoon will focus on Incident Management, Electrical Safety, and concludes with the evening banquet, Road Scholar awards and entertainment.

On Thursday morning, the MACRS Business Meeting will include Election of Officers and Conference Overview. Registration forms and information are available on Montana LTAP's website:

<http://www.coe.montana.edu/ltapv2/training/index.html>

Be sure to contact the LTAP office at 1-800-541-6671 for any questions. I am looking forward to meeting and greeting all who attend. *Sincerely, John Stokes, MACRS President*



MACRS Mission Statement

The Montana Association of County Road Supervisors mission is to facilitate education and to share ideas; thus helping to enable a safe, efficient, and consistent transportation system for each County throughout the State of Montana.

MACRS Goals & Objectives

Goal #1: Advancing County transportation network maintenance by providing a forum for the exchange of ideas and information aimed at improving service to the public.

Objective A: Provide quality service to members.

Objective B: Increase active participation of membership and MACRS Conference attendance.

Objective C: Enhance the visibility of MACRS.

Objective D: Promote professional development of County Road Officials through training.

Objective E: Promote the professionalism of all County road transportation network maintenance.

Goal #2: Stimulate development, growth, and participation of County officials.

Objective A: Retain existing and expand membership.

Objective B: Develop and expand roles of Officers and Representatives. Increase participation from past presidents and past representatives.

Objective C: Expand and foster the relationship and communications between MACRS and LTAP.

Goal #3: Improving relations and cooperation among County Road Officials and other agencies and organizations.

Objective A: Expand and foster our relationship and communications with MACo.

Objective B: Expand and foster relationships and communications with other State and Federal agencies and organizations, and vendors.

Objective C: Develop and maintain effective communication strategies for MACRS.

Goal #4: Monitor legislative issues affecting the county transportation network

Objective A: Develop a legislative process. ❖

New Gravel Roads Manual

FHWA just published the **Gravel Roads Construction & Maintenance Guide**, August 2015. This new manual is a revision of the Gravel Roads Maintenance and Design Manual published in 2000 and 2005, which was based on Montana LTAP's Motor Grader Operator's Handbook first published in 1990 then 1992, 1995, and 2000.

The contents follow the 2005 manual with added comments and new photos along with more indepth explanations at railroad crossing and cattleguard grading techniques, and geotextile applications. Chapter 5 on dust control goes into greater detail about products and their uses. Chapter 6 on Innovations has recent updates. There is an added Appendix F for outlining temporary traffic control for work zones on unpaved roads.

This manual will be used in the spring Montana LTAP Gravel Roads workshops.



Save these dates for the three Gravel Roads courses tentatively scheduled for this coming spring:

May 3, 2016 - Missoula
May 4, 2016 - Great Falls
May 5, 2016 - Billings

Registration forms and information will be available in March or call Montana LTAP at 1-800-541-6671.

This manual is electronically available at this link:
<http://www.fhwa.dot.gov/construction/pubs/ots15002.pdf>. ❖

Before You Head Out - Winter Safety



Even though we have lived through numerous winters in Montana, it is always a good idea to review those items to keep us safe during winter weather travels.

Check the Weather Before Heading Out

Wait out the storm if possible. With great forecasting apps available, it is easy to determine what direction the storm is heading and how long it will last, along with the temperatures and precipitation being indicated for a ten-day period. Montana Department of Transportation's Traveler Information website provides not only road conditions but cameras on local highways so viewing the conditions can help make a determination if it is wise to travel: <http://www.mdt.mt.gov/travinfo/>. Always share travel plans and route with someone just in case.

Your Vehicle

Sub-zero conditions create the most dangerous situations if not prepared. Number one item is to make sure your vehicle is in top shape. Things like your ignition, brakes, wiring, hoses and fan belts, spark plugs, all filters, distributor, battery, tire wear and air pressure, and antifreeze level and freeze line have all been checked.

When warming up a vehicle, make sure it is never in an enclosed area, even with the garage door open. Carbon monoxide is a toxic gas and is colorless, odorless, tasteless, and initially non-irritating. Make sure the tailpipe is not being obstructed by snow, mud, or any object too, especially if you slide off the roadway and are trying to keep warm by running your engine.

Here's a few things to have in your vehicle:

- Properly inflated spare tire, wheel wrench and tripod jack
- Shovel
- Jumper cables
- Tow and tire chains
- Bag of salt or cat litter for better tire traction or to melt snow
- Tool Kit
- Flashlight and extra batteries

- Reflective triangles or flares
- Compass
- First Aid Kit
- Windshield Cleaner
- Ice Scraper and Snow Brush
- Matches in a Waterproof Container
- Scissors (Leatherman) and String or Cord
- Nonperishable, high-energy foods like unsalted, canned nuts, dried fruits and hard candy
- Mobile phone with emergency numbers
- Blankets, gloves, hats, food, water and any needed medication

Other recommendations for traveling:

- Always get the proper amount of rest before heading out to drive in the snow.
- Never mix radial tires with other tire types.
- Keep gas tank at least half full to avoid gas line freeze-up.
- If possible, avoid using parking brake in cold, rainy and snowy weather.
- DO NOT use cruise control when driving on any slippery surface (wet, ice, sand).
- Always look and steer where you want to go.
- Use your seat belt - always.

Out on the Road

- If snow-bound, stay with vehicle. It provides temporary shelter and makes it easier for rescuers to locate.
- DO NOT try to walk in a severe storm. It is easy to lose sight of your vehicle in blowing snow and become lost.
- Do not over exert yourself if you try to push or dig your vehicle out of the snow.
- Tie a brightly colored cloth to antenna or place a cloth at the top of a rolled up window to signal distress.
- At night, keep the dome light on if possible. It only uses a small amount of electricity and will make it easier for rescuers to find vehicle.
- If possible run engine and heater just long enough to remove chill and to conserve gasoline.

Driving in the Snow

- Accelerate and decelerate slowly.
- Drive slowly - give yourself time to maneuver.
- The following distance from car ahead should be increased to eight to ten seconds to provide the longer distance needed if you have to stop.
- Know your brakes. Whether you have antilock brakes or not, the best way to stop is threshold breaking. Keep the heel of your foot on the floor and use the ball of your foot to apply firm, steady pressure on the brake pedal.
- If you can slow down enough to keep rolling until a traffic light changes, do it.
- Do not power up hills.
- Do not stop going up a hill, if possible.

These reminders along with other winter safety tips can be found at AAA: <http://exchange.aaa.com/safety/roadway-safety/winter-driving-tips/#.VktcGb-2UTM> and at the National Center for Safety: <http://www.nsc.org/learn/Pages/safety-events-winter-safety.aspx>. Or just Google "Winter Safety Driving Tips." ❖

Snow Plow Policies

The following information was derived from various county road departments' snow plowing policies. These may be something to add to your department's manual.

Suggested Policy - Snow Plowing

Districts

Each equipment operator is assigned a certain area for snow plowing during the year. When need arises, operators will assist in other areas of the County, depending on snow conditions.

School Bus Routes

School bus routes are given first priority.

High-Use Roads

High Volume Roads are given second priority.

Other Roads

Paved roads that are not school bus routes are given third priority. Gravel roads which are not school bus routes are given fourth priority. Unimproved dirt roads will be plowed as time allows and upon request.

Snow Removal for State Hwy or other Jurisdiction

Contract services with providers or cooperative agreements with MDT, Cities, BLM, FWP, or other government agencies.

Operations

Equipment used for snow removal includes snowplows, motor graders, loaders, trucks, and chemical applicators.

Abrasive material used to improve traction once a snow or ice floor (or frost) is established will be 3/8 minus graded material and sand. Rock salt or proprietary products may also be used.

Liquid Products: Salt brine, Magnesium Chloride, Calcium Chloride, may also be used for a variety of applications. Applications include:

1. Anti-icing
2. Deicing
3. Treatment with abrasives

Snow fences are established in areas to prevent drifting of snow on roadways.

Procedures

Jurisdiction roads will be kept as passable and as safe as natural occurrences allow. Winter storms vary in duration and severity. Officials will use forethought, judgment and skill to match maintenance application to winter storms and allowable budget. As a storm moves in, a likely sequence might be:

1. Observe Weather Predictions.
2. Apply anti-icing chemicals.
3. Observe presence of snow and ice.
4. Plow to remove excessive snow.
5. Continue to plow and apply chemically treated abrasives in key areas such as intersections and approaches.
6. De-ice with chemicals in key areas using care not to use chemicals where drifting snow could cause refreezing.
7. Repeat Steps 1 and 2 as well as pray for sunshine.

General Policies

Normal snow plowing shall be conducted during daylight hours between 6:00 a.m. and 5:00 p.m., five days per week.

Upon the discretion of the Road & Bridge Superintendent, snow plowing roads shall occur during early morning hours and/or weekends.



The "Department" will not plow snow during high winds, unless it is an emergency.

The "Department" will not be liable for any fence damage that occurs to fences which lie within the County's right-of-way.

The "Department" will not be liable for any mail boxes knocked over or damaged due to snow being plowed. However, the "Department" will replace any mail boxes which are physically hit by the "Department's" snow plows. Paved roadways will be plowed when there is a significant accumulation of snow.

Graveled roadways will be plowed when there is a significant accumulation of snow according to priority list.

The "Department" will sand subdivision approaches inside the County right-of-way during emergency situations only.

When necessary, paved roads will be sanded on regular basis at major intersections, hills, curves, etc.

Graveled roads will be sanded only in emergency situations, or at the discretion of the Road & Bridge Superintendent.

Training New Drivers

Become familiar with designated snow routes.

Become familiar with School Bus routes.

Drive routes in summer or fall when roads are clear to become aware of hazards.

Keep driver consistent with route when possible.

Have new driver ride with experienced operators.

Inform driver to get proper rest and nutrition. If driver is unable to perform safely he should not be used. ❖

Calendar of Events • January 2016 - June 2016

January 2016

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

1: New Year's Day - MT LTAP Offices Closed
 10-14: 95th Transportation Research Board, Washington, DC
 18: Martin Luther King Day - Offices Closed
 19: MT LTAP Safety Webinar-Forklift Safety 7:30am-8:00am
 25-26: 14th Annual Safety Congress - Great Falls, MT (MT LTAP):
 25am: Work Zone Tech
 25pm: Traffic Control Supervisor
 26: Traffic Control Supervisor

February 2016

S	M	T	W	Th	F	S
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21	22	23	24	25	26	27
28	29					

1-4: MACo Mid-Winter Conference: Heritage Inn, Great Falls
 2: Asphalt Institute - Helena, MT (MT LTAP)
 8-12: Montana Safety Fest - Missoula - <http://www.safetyfestmt.com/>
 15: President's Day - Observed (Montana LTAP Offices Closed)
 16: MT LTAP Safety Webinar - Front End Loader 7:30am-8:00am

SAVE THE DATES:
MACRS 2016 Spring Conference
March 28 - 31, 2016

March 2016

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		

14-17: MSU Spring Break
 14: Work Zone Technician - Missoula (MT LTAP)
 15: Work Zone Technician- Great Falls (MT LTAP)
 16: Work Zone Technician- Miles City (MT LTAP)
 17: Work Zone Technician- Billings (MT LTAP)
 18: Flagging Certification Course - Billings (MT LTAP)
 22: MT LTAP Safety Webinar WZ Flagging Safety 7:30am-8:00am
 28 - 31: MACRS 36th Annual Conference-
 Heritage Inn, Great Falls, MT (MT LTAP)

April 2016

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11-15: National Work Zone Awareness Week (ATSSA)
<http://www.atssa.com/Events/NationalWorkZoneAwarenessWeek.aspx>
 19: MT LTAP Safety Webinar: -Road Stabilization Safety 7:30-8:00am
 24-28: NACE Annual Conference 2016, Tacoma, WA

May 2016

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22	23	24	25	26	27	28
29	⑳	31				

3: Gravel Roads Maintenance & Design - Missoula
 4: Gravel Roads Maintenance & Design - Great Falls
 5: Gravel Roads Maintenance & Design - Billings
 10: Work Zone Flagger Certification - Great Falls
 11: Work Zone Flagger Certification - Havre
 15-21: National Public Works Week(APWA)
<http://www.apwa.net/discover/National-Public-Works-Week>
 16-20: SafetyFestMT - Miles City: www.safetyfestmt.com
 17: MT LTAP Safety Webinar: Weed Mowing Safety 7:30-8:00am
 22-25: APWA North American Snow Conference: Hartford, CT
 More info: <http://www.apwa.net/Snow>
 30: Memorial Day - Offices Closed

*Some dates and locations are subject to change.
 Call Genevieve Houska, LTAP, 1-800-541-6671 to confirm.*

6 Montana LTAP Winter 2016

June 2016

S	M	T	W	Th	F	S
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1-2: LTAP North Central Regional Meeting: Laramie, WY
 7: Work Zone Flagging - Bozeman
 8: MACRS Executive Meeting, 1-5pm - Bozeman
 9: MT LTAP Annual Advisory Board Meeting, 9am-12pm - Bozeman
 21: MT LTAP Safety Webinar - ABC's of First Aid - 7:30am-8:00am

Safety Meeting Webinars from Montana LTAP

January 19: Forklift Safety
 February 16: Front End Loader Safety
 March 22: Work Zone Flagging
 Monthly Thirty-Minute Safety Webinars held at 7:30am on Tuesday Mornings
 Call Montana LTAP at 1-800-541-6671 for more information!

Calendar of Events • July 2016 - December 2016

July 2016

S	M	T	W	Th	F	S
					1	2
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4: Fourth of July Holiday - Offices Closed

19: MT LTAP Webinar: Leadership 7:30-8:00am

18-21: National LTAP/TTAP Summer Conference, Madison, WI

Training on Request:

Summer Survival

Hand Safety

Slips, Trips, & Falls

August 2016

S	M	T	W	Th	F	S
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21	22	23	24	25	26	27
28	29	30	31			

16: MT LTAP Webinar: Gravel Road Materials - 7:30-8:00am

Training on Request:

Forklift

Sign Safety

Road Audits

September 2016

S	M	T	W	Th	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
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5: Labor Day Holiday - Offices Closed

7 & 8: 27th Annual Equipment Safety Training and Snow Rodeo - Helena, MT (MT LTAP) Brochure available in July

18-22: MACo 107th Annual Conference, Billings, MT

www.mtcounties.org or MACo's Karen Houston 406-449-4360

20: MT LTAP Safety Webinar: Protecting Your Hearing 7:30am-8:00am

October 2016

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23	24	25	26	27	28	29

30 31

MACRS Fall District Meetings: TBA

5-7: 85th League of Cities & Towns, Hilton Garden Inn, Missoula, MT

5: Public Works Directors Meeting - Hilton Garden Inn, Missoula, MT

TBA: Put The Brakes On Fatalities Day - 16th Anniversary (go to: www.brakesonfatalities.org)

10: Columbus Day - Observed (Montana LTAP Offices Open)

18: MT LTAP Safety Webinar: TBA - 7:30am-8:00am

18-20: 31st Regional Local Road Coordinators Conference, Rapid City, SD

November 2016

S	M	T	W	Th	F	S
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20	21	22	23	24	25	26
27	28	29	30			

11: Veterans' Day - Offices Closed

TBA: LTAP Leadership - Great Falls - 8am - noon

TBA: MACRS Planning Meeting, 1-5pm and 8am - noon; Great Falls

15: MT LTAP Safety Webinar: TBA - 7:30am - 8:00am

24-25: Thanksgiving Holiday - Offices Closed

December 2016

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

20: MT LTAP Safety Webinar: TBA - 7:30am-8:00am

26: Christmas Holiday - Offices Closed

Some dates and locations are subject to change.

Call Genevieve Houska, LTAP, 1-800-541-6671 to confirm.

If you injure or kill someone while DUI, you can be convicted of vehicular homicide while under the influence. Expect a prison term up to 30 years and fines up to \$50,000, or both. DON'T DRINK & DRIVE! § 45-5-106, MCA

Training Opportunities at Montana LTAP Website:

<http://www.coe.montana.edu/ltapv2/training/index.html>

NEW! Unsignalized Intersection Improvement Guide

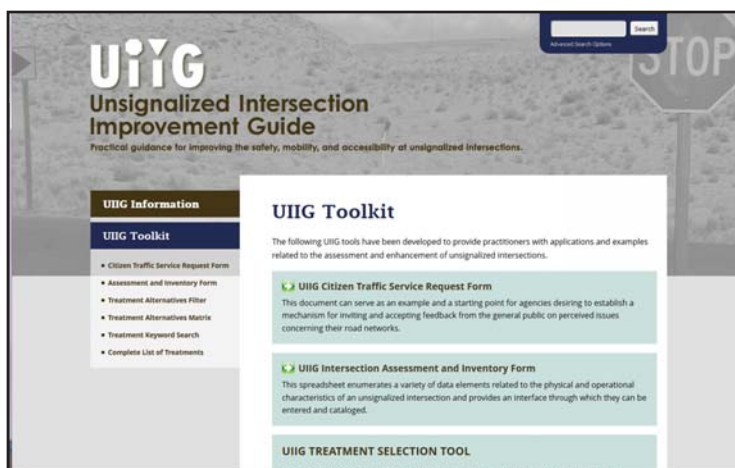
NLTAPA (National LTAP Association) Safety Work Group recently listed new interesting products and publications available for all on their website: <http://www.nltapa.org/workgroups/safety>. One guide of particular interest for local government agencies is the “Unsignalized Intersection Improvement Guide” found online at this link: <http://www.ite.org/uiig/default.asp>.

At the beginning of this website, the introduction explains why this particular online guide was developed:

“From 2010 to 2012, there were nearly 21,000 fatal crashes occurring at or related to intersections across the United States. Of those, more than 15,000—more than 70 percent—occurred at intersections that are not under the control of a traffic signal. (*Query of Fatality Analysis Reporting System (FARS) Web-Based Encyclopedia, National Highway Traffic Safety Administration, accessed on December 4, 2014.*) The majority of these unsignalized intersections are owned and operated by local agencies, many of which do not have professional traffic engineers on staff. This Unsignalized Intersection Improvement Guide (UIIG) has been developed to assist practitioners at such agencies in selecting design, operational, maintenance, enforcement, and other types of treatments to improve safety, mobility, and accessibility at unsignalized intersections. Originally produced under Project No. 03-104 of the National Cooperative Highway Research Program, the web-based UIIG is now hosted by the Institute of Transportation Engineers (ITE) under the sponsorship of the Federal Highway Administration (FHWA) Office of Safety.”

Also noted on the introduction page, there is a particular order for users to first consider the “Information” to gather an understanding of their roadway issue and then using the “Toolkit” to determine possible solutions.

“The purpose of the UIIG is to assist and guide users through the process of evaluating their unsignalized intersections and identifying opportunities to enhance their safety and operational performance. The contents of the UIIG are presented under two sections—Information and Toolkit. The Information section provides important background material related to the types, users, common problems and treatments, and general considerations associated with unsignalized intersections. The Toolkit provides a number of resources to assist the user in (1) collecting data on the existing conditions and characteristics of the intersection and (2) identifying potential treatments that may improve the safety and mobility at the intersection. These tools include a sample citizen input form, a Microsoft Excel-based unsignalized intersection assessment and inventory form, and an unsignalized intersection treatment selection tool.”



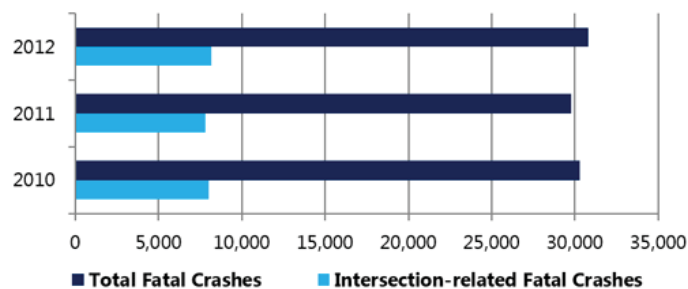
If this is the first time on the website, they recommend to review the Information section to become familiar with the basic principles and issues concerning unsignalized intersections. The “Improvement Process” outlines a series of steps for identifying and addressing problem

locations. Then the “Treatment Selection Tool” can be used to identify alternative treatments for individual problem locations or systemically across a jurisdiction. There are many external resources that have been hyperlinked to provide a “wealth of information related to the safety, mobility, and accessibility at unsignalized intersections.” If the user is considering some of these resources, it is recommended to consult a licensed Professional Engineer if considering any substantive changes to their transportation network.

Introduction to the UIIG

On the introduction page of the UIIG, they begin with the background information of intersections:

“The convergence of two or more roads can take the form of an at-grade intersection or a grade-separated interchange. Because an intersection is the point at which multiple pathways directly cross one another, it inherently presents increased opportunities for conflicts between those who traverse it. Intersection collisions are not at all uncommon and often result in severe injuries and fatalities. As depicted below, crashes at or related to intersections have accounted for more than one of every four fatal crashes in the U.S. in recent years.”



Total & Intersection-related Fatal Crashes in U.S.
(based on query of NHTSA FARS database)

There is also a feedback/comment section to keep up to date on issues that will need to be addressed in the future. Take the time to become familiar with the resources and navigation. For example, there is an Intersection Assessment and Inventory Form available for downloading. There is a link to numerous manuals for rural roads. Pictorial examples of stop and yield sign applications are available. Thanks to ITE and FHWA Office of Safety for providing such a valuable tool.

Richland County Public Works Wins “You Show Us” Award

Over 300 attendees were at this year’s Local Roads Conference held October 2015 in Rapid City, South Dakota. In addition to outstanding presentations for local roads participants, awards for the “You Show Us” Contest were presented to the winners.

This contest encouraged county road and city street departments to submit their innovative ideas. During the Local Roads Conference, entries that came from different states in the LTAP/TTAP North Central Region were judged and awards were distributed. Top entries will be sent to the National Competition in July 2016 from all LTAP/TTAP regions.

This contest started back in 2000. There are National Entry Booklets (starting 2009) available electronically with innovative ideas from across the United States. It’s worth reviewing these time saving ideas: <http://www.ltap.org/resources/mousetrap.php>.

Congratulations to Richland County Public Works’ Ed Pepos, Shop Foreman, and Scott Johnson, Construction Foreman, for winning Montana’s “You Show Us” Contest with their Cement Spreader Innovation! See full story on Page 10 and 11 in the fall 2015 issue of MT LTAP’s MATTERS at this link: http://www.coe.montana.edu/ltapv2/newsletter/MT_LTAP_2015_Fall.pdf ❖

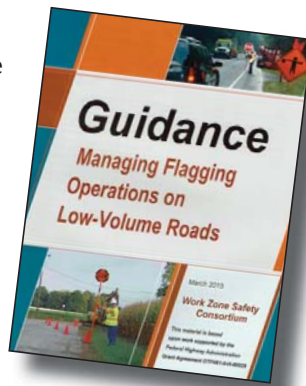


L to R: Ed Pepos, Shop Foreman, and Scott Johnson, Construction Foreman. Richland County Public Works

Flagging on Low Volume Roads

The following information is from the 2009 MUTCD, the recent booklet “Guidance-Managing Flagging Operations on Low Volume Roads” from ARTBA funded by FHWA grant, and from MT LTAP work zone training modules.

Because Montana LTAP’s work zone training deals mostly with low volume roads (less than 400 annual average daily traffic), this new reference booklet on flagging for low volume roads is a valuable addition to the Montana LTAP library. It is also available online by searching for “Guidance - Managing Flagging Operations on Low-Volume Roads.” The Guidance booklet has an interesting table listing common flagging challenges and possible solutions.



Stated at the beginning of this manual, “Low-volume roads pose a number of unique challenges to those responsible for their management. This document was created to supplement the 2009 Edition of the national Manual on Uniform Traffic Control Devices (MUTCD) by providing commentary to assist decision makers in planning flagging operations on these roads. Other useful resources, listed in the References section, are also available to assist in further refining plans developed with this document.”

Many Montana county road and city street departments attend Montana LTAP’s work zone flagging courses certifying their employees every three years. Montana LTAP Director Steve Jenkins emphasizes the importance of having flagging certified employees due to possible liability issues involved in work zones.

At the upcoming 14th Annual Safety Congress on January 24 and 25, 2016, Jenkins will be instructing the Work Zone Technician course followed by the Traffic Control Supervisor course and certification. Go to Montana LTAP’s website to register for these classes at: <http://www.coe.montana.edu/ltapv2/training/index.html>.

Jenkins works closely with the Montana Department of Transportation’s Safety Committee to insure there is consistency in work zone training and temporary traffic control signage across the state. By having this consistency, the traveling public will know what to expect when driving through the various work zones in Montana.

As stated in the MUTCD 2009, “The purpose of traffic control devices, as well as the principles for their use, is to promote highway safety and efficiency by providing for the orderly movement of all road users on streets, highways, bikeways, and private roads open to public travel throughout the Nation.” (Section 1A.01, Paragraph 1, Page 1). For more information on the MUTCD, go to this link to read about the **20-Year Vision and Strategic Plan for the Manual on Uniform Traffic Control Devices** (January 2014): <http://www.ncutcd.org/doc/MUTCD-20%20Year%20Vision%20NCUTCD%20Appvd%201-9-14%20FINAL.pdf>

Because the MUTCD is reviewed and revised every eight to ten years, the next MUTCD is currently expected to come out in 2017. In the meantime, the 2009 MUTCD Edition with Revision Numbers 1 and 2 incorporated, dated May 2012, is available as a pdf at this link: http://mutcd.fhwa.dot.gov/pdfs/2009r1r2/pdf_index.htm ❖

Montana LTAP Library

Welcome to the LTAP Lending Library where publications, videos, DVD's, and software may be borrowed for a two-week period. We have a limit of three videotapes or DVD's for a rent-free two-week period. Some publications are free or for a nominal charge upon request.

For information or checkout procedures, please call Genevieve Albert or Michele Beck, LTAP, 1-800-541-6671. If you have computer access, please e-mail us: [mtlap\(at\)montana.edu](mailto:mtlap(at)montana.edu).

We have new lists for the library publications, software, DVD's, and videos at our web site, just click on Resources: <http://www.coe.montana.edu/ltapv2/> (Note: Many of our publications are electronically available.)

At this web site, you can also keep track of upcoming workshops, past and present newsletters, and workshop announcements.

Our 2015-2016 Needs Assessment Survey is available at this web site. Thank you in advance for taking time to complete it.

Publications

p-229.1 Low Volume Roads 2015, Volume 1, TRB No. 2472 (TRB 2015) The three volumes of this series present a keynote paper and 79 technical papers pertinent to low-volume roads, 44 by authors from the United States and 36 by authors from 16 other countries. Volume 1 contains topics on Design, Environment, Safety and Traffic Engineering. (242 pages) www.TRB.org/TRROnline

p-229.2 Low Volume Roads 2015, Volume 2, TRB No. 2473 (TRB 2015) The three volumes of this series present a keynote paper and 79 technical papers pertinent to low-volume roads, 44 by authors from the United States and 36 by authors from 16 other countries. Volume 2 contains topics on Maintenance & Pavements, Geotechnical Engineering, Stabilization, and Geosynthetics. (249 pages) www.TRB.org/TRROnline

p-229.3 Low Volume Roads 2015, Volume 3, TRB No. 2474 (TRB 2015) The three volumes of this series present a keynote paper and 79 technical papers pertinent to low-volume roads, 44 by authors from the United States and 36 by authors from 16 other countries. Volume 3 contains topics on Materials, Pavement, Freeze-Thaw, Heavy Load, and Construction. (224 pages) www.TRB.org/TRROnline

p-320 Evaluation of Pavement Safety Performance (FHWA February 2015) The intent of this study was to isolate the effects of various low-cost pavement treatments on roadway safety. This was a retrospective study of pavement safety performance, looking back at crash data before and after treatments were installed. (154 pages) <https://www.fhwa.dot.gov/publications/research/safety/14065/14065.pdf>

p-377 Use of Radio Frequency Identification Tags in Pavements (FHWA April 2015) This document presents the results of evaluations of radio frequency identification (RFID) for a set of pavement applications. The intended audience for this report is transportation engineers involved in pavement construction, quality acceptance testing for paving materials, pavement design, and pavement management. (208 pages) <https://www.fhwa.dot.gov/publications/research/infrastructure/pavements/14061/14061.pdf>

p-395.45 Evaluation of LTPP Climatic Data for Use in Mechanistic-Empirical Pavement Design Guide Calibration and Other Pavement Analysis (FHWA March 2015) This document presents the results of an evaluation of climate data from

Modern-Era Retrospective Analysis for Research and Applications (MERRA) for use in the Long Term Pavement Performance (LTPP) program and for other infrastructure applications (138 pages) <http://www.fhwa.dot.gov/publications/research/infrastructure/pavements/ltpp/15019/15019.pdf>

p-395.50 Long-Term Pavement Performance Ohio SPS-1 and SPS-2 Dynamic Load Response Data Processing (FHWA March 2015) This report documents the reinterpretation of the dynamic load response (DLR) traces for selected Long-Term Pavement Performance (LTPP) test sections in Ohio. This new LTPP DLR data will serve as a unique resource for researchers in investigating the dynamic interaction between truck axle loads and pavements, validating their pavement dynamic loading models, and developing mechanistic pavement performance prediction models. (169 pages) <https://www.fhwa.dot.gov/publications/research/infrastructure/pavements/ltpp/14088/14088.pdf>

p-795.10 Safety Evaluation of Centerline Plus Shoulder Rumble Strips (FHWA June 2015) The research documented in this report was conducted as part of the Federal Highway Administration (FHWA) Evaluation of Low-Cost Safety Improvements Pooled Fund Study (ELCSI-PFS). The results of this evaluation show that head-on, run-off-road, and sideswipe-opposite direction crashes were significantly reduced, and application of centerline and shoulder rumble strips also has potential to reduce crash severity for all types of crashes (59 pages) <https://www.fhwa.dot.gov/publications/research/safety/15048/15048.pdf>

p-971 MMUCC Guideline, Model Minimum Uniform Crash Criteria (Fourth Edition (2012) (On a thumbdrive in the library – no hard copy) This guideline presents a model minimum set of uniform variables or data elements for describing a motor vehicle crash. The use of MMUCC data elements will generate data that can be employed to make more informed decisions which will lead to improvements in safety and at the national, State and local levels. States are encouraged to adopt as many recommended MMUCC data elements as possible when they next update their PARs. http://mmucc.us/sites/default/files/MMUCC_4th_Ed.pdf

p-986 Travel Better, Travel Longer: A Pocket Guide to Improve Traffic Control and Mobility for Our Older Population (FHWA 2003) This guide highlights specific traffic situations that are particularly troublesome for older roadway users, such as left turns and temporary traffic control zones, and provides information on the use of TTC devices to maximize safety in these circumstances. (44 pages) <http://mutcd.fhwa.dot.gov/pdfs/pocketguide0404.pdf>

p-987 Field Operations Guide for Safety/Service Patrols (FHWA December 2009) This guide is for use by Safety/Service Patrol operators and supervisors to use as a quick reference while performing patrol tasks. This guide is not designed to stand alone, but in conjunction with training and exercises that will indoctrinate the Safety/Service patrol operators into these good practices as well as Agency formal Standard Operating Guidelines or Procedures. Includes 9 visor cards. (94 pages) <http://ops.fhwa.dot.gov/publications/fhwahop10014/fhwahop10014.pdf>

p-988 Guidance – Managing Flagging Operations on Low-Volume Roads (FHWA March 2015) This document supplements the MUTCD by focusing on the TAs and solutions most often used on low-volume roads. Specifically, TTC control methods such as t2-flagger, single-flagger, self-regulating and mobile operations are all discussed with specific commentary on applying these methods to low-volume roads. (21 pages) https://www.workzonesafety.org/files/documents/training/courses_programs/rsa_program/RSP_Guidance_Documents_Download/RSP_LowVolumeRoads_Guidance_Download.pdf

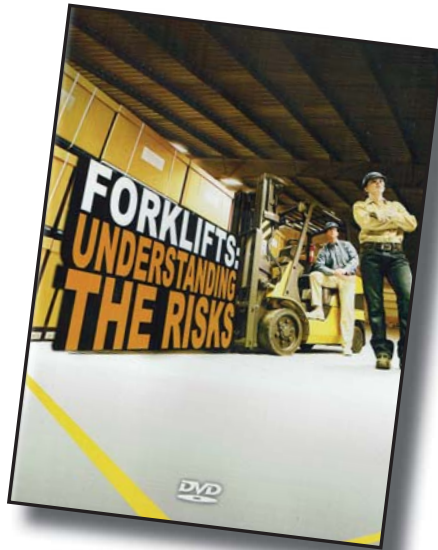
Montana LTAP Library (cont'd from Page 10)

p-1216 A Resident's Guide for Creating Safer communities for Walking and Biking (FHWA January 2015) This guide includes information on identifying problems, taking action to address pedestrian and bicycle concerns, finding solutions to improve safety, and resources to get additional information. (92 pages) http://safety.fhwa.dot.gov/ped_bike/ped_cmnty/ped_walkguide/residents_guide2014_final.pdf

DVDs

DVD 168 Forklifts: Understanding the Risks (Coastal 2014)

This DVD describes the common hazards of operating forklifts. It reviews the importance of understanding how to correctly operate forklifts, factors that can lead to incidents, and the importance of inspecting vehicles before and during operation. (16 minutes)



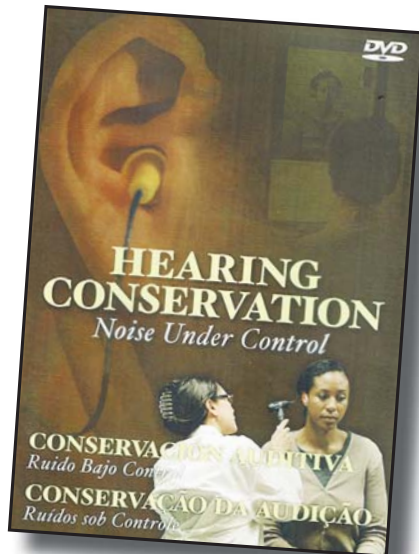
DVD 191 Supplemental

Equipment Training Videos (LTAP/TTAP 2015) This DVD contains numerous short clips of equipment operation presented by Oklahoma DOT such as Angle Blade, Auger, Backhoe, Box Blade, Disc, Dozer operation, Dumpbed, Motorgrader, Mowing, Pneumatic Roller, PTO, Snowplow, Sprayer Tank, Tractor, Truck Safety. (Varies from 3 to 10 minutes per clip)

DVD 826 Hearing Conservation: Noise Under Control (Coastal 2012)

Noise is all around us; at work, at home, and in the car. With all of the noise that is associated with the machinery and technology we surround ourselves with every day, it is critical to be alert to hazardous noise. Many times hearing loss happens gradually and by the time we realize it, it's too late to turn back the clock. That's the case for a couple of the characters in **Hearing Conservation: Noise Under Control**.

During this program your employees will see how their choices today can have an everlasting effect on their future. This program will also help your employees learn to recognize high noise hazards, identify actions to take for preventing hearing loss and understand the importance of wearing proper hearing protection. (19 minutes)



DVD 829 Every Choice Matters (Coastal 2011) According to the U.S. Bureau of Labor Statistics, over 4,300 people have been killed in workplace accidents over the past few years. In the same year, more than three and a half million people were injured on the job. **Every Choice Matters** poignantly demonstrates that when your employees choose safety it's about more than just them. It's about their family and caring about their co-workers and their families and loved ones.

Editorial Contributions Welcome

LTAP welcomes contributions to **LTAP MATTERS**. Those wishing to submit relevant material to be published in the next newsletter can submit their ideas and articles to: Michele Beck, Local Technical Assistance Program, PO Box 173910, Bozeman, MT 59717-3910 (800) 541-6671 or (406) 994-6100 Fax: (406) 994-5333 email: [mbeck\(at\)montana.edu](mailto:mbeck(at)montana.edu)

LTAP MATTERS is published quarterly. Funding for this program is provided by the Federal Highway Administration, 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 for you and your community.

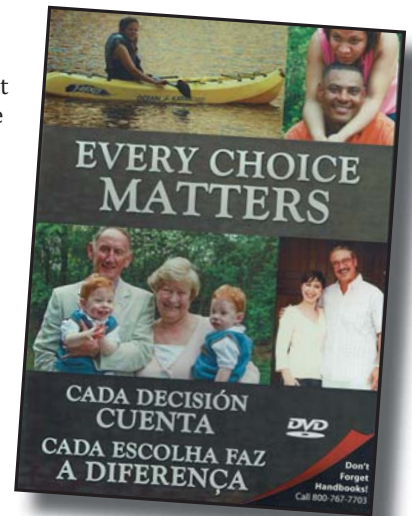
• Present and past issues are available at <http://www.coe.montana.edu/ltapv2/newsletter/index.html> or by calling 1-800-541-6671.

• Approximately 100 copies of this public document were published at an estimated cost of \$2.19 per copy for a total cost of \$218.82 for printing. Several copies have been distributed but the majority are now electronically disbursed to over 350 agencies and available on our website.

• LTAP attempts to provide accommodations for any known disability that may interfere with a person participating in any service, program or activity. Alternative accessible formats of this document will be provided upon request.

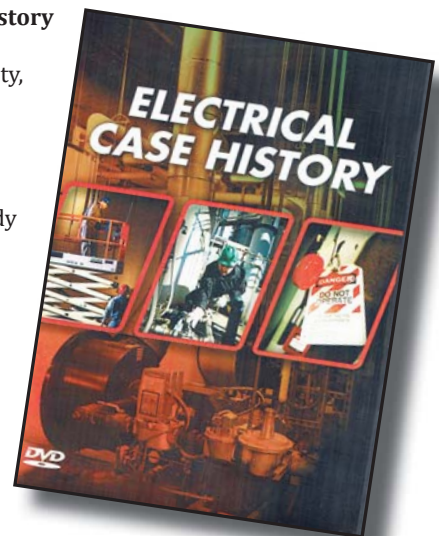
• Please send us any comments or concerns you may have regarding this newsletter with your name and address in order that we may respond in a timely manner.

When someone is seriously injured or hurt on the job, the pain and devastation that follows doesn't stop with the individual. It continues to cut into the lives and hearts of family members, friends and coworkers long after the incident is over. This program features interviews with those whose lives were changed forever by a workplace incident. Motivate your employees to make the safe choice each and every time with this high-impact program. (19 minutes)



DVD 852 Electrical Case History (Coastal 2013)

Because of complacency around electricity, on average, one worker is electrocuted every single day of every year! **Electrical Case History** takes a close look at the details of a real-life tragedy to help your employees understand the potential dangers of working around this powerful force. It specifically presents proper lockout/tagout procedures and how to operate a scissor lift safely, especially around electrical sources. (15 minutes) ❖



Parting Shot . . .

In order to share their wisdom, this special column is dedicated to those who are retiring, or recently retired, and wish to pass on some gems from their years managing county roads or city streets. The following comments are from Jerry Backlund, Custer County Road Supervisor, retiring effective December 31, 2015.

I started with Custer County as a part-time mower hand. I worked my way up running trucks and equipment. We had an older crew when I started so I became Foreman rather quickly due to retirements. Inexperienced at the Foreman position, I had to learn fast. Thanks to LTAP and MACRS, it made it much easier.

The knowledge I gained from these two organizations was amazing. The worker safety, equipment training, and leadership guidance from LTAP was invaluable. Enough can't be said about the excellent job Steve, Michele and Genevieve do at LTAP. They are always there to help and answer questions.

The exchanging of ideas and different ways of doing things, as well as the advice from others' experiences I received when attending MACRS was priceless. Don't be afraid to become involved in MACRS! It's a great organization because everyone is willing to help and it helped me tremendously with leadership skills. MACRS is your organization.



***Jerry Backlund, Custer County
Road Supervisor - soon to retire***

I would say that if I had any words of wisdom to pass on it would be communication and patience.

Communication is not only important in our private life, but even more so in our place of employment. I had to communicate with the County Commissioners to keep them informed and updated of what was happening at the Road Department because they answer to the public as well.

Communicate with your crew, also. Listen to them and ask for their input so they can become part of the team. All this takes patience, especially when someone is complaining to you.

In parting it has been a great career and learning experience. Over the past twenty-six years, I have been fortunate to have made many good friends. Thank you for allowing me to serve and good luck to all in the future.

Sincerely, Jerry Backlund