From the Director
Asphalt Conference 2017
Safety Congress 2017
MACRS Spring Conference 2017
Calendar of Events
Transportation Learning Network
2017 Montana Highway-Rail Conf.
Congrats Road Scholars
Data Driven Safety Analysis
Montana LTAP Library
Parting Shot . . . Michele Beck
Hello! I am the new Director of the Montana LTAP. Montana LTAP has undergone some big changes this spring, though the mission remains the same. The mission of the national Local Technical Assistance Program is to foster a safe, efficient, environmentally sound transportation system by improving skills and knowledge of local transportation providers through training, technical assistance and technology transfer.

Administrative changes
I have spent the last 19 years in private consulting working, designing, and managing rural transportation and municipal infrastructure projects; managing right of way acquisition projects; and performing some unique safety studies. I have been in leadership positions with several professional organizations, and will apply the knowledge and skills gained in serving fellow professionals in the engineering world to this position. I will also apply my project management, project design, engineering analysis and client service experience to this position. I look forward to working with all LTAP stakeholders and partners. I have already met many of you at MACRS in Great Falls, and hope that you will allow me into your shops and offices as I travel around the state this summer. I hope to make appointments with many of you and visit you at your place of work throughout the year. I will be bringing some updated materials from LTAP for use in your offices, and to help you deliver safety training through LTAP to your employees.

We see a lot of opportunity for new training program development, and we are moving forward with reviewing and renewing many of our existing trainings, bringing them in line with national standards.

We are currently refining a draft Strategic Plan for Montana LTAP. We look forward to introducing some of the impacts from updating and reviewing all internal LTAP presentations and trainings. This will be done in cooperation with MDT and other certification program partners. You will likely see some changes, and an increased focus on our service to all of you.

Budget Changes
Thanks to our good friends at MACo, League of Cities and Towns, the Montana Legislature and others, the 2017 Legislature included a provision for additional support of the Montana LTAP Program. In reviewing the past 10+ years of LTAP Program Assessment reports, it has been over 5 years since we have seen any positive change in funding, and in ten years, the program budget grew a total of 3.1%. Accounting for inflation, LTAP has been losing its ability to serve our customers over this time. This funding was needed, and is already allowing us to move forward to better deliver on our mission.

I am excited to be leading this program in a positive direction, and I look forward to working with the excellent employees at LTAP and WTI to deliver on the Mission of LTAP.

Sincerely,
Matthew Ulberg, P.E., Montana LTAP Director

From Montana LTAP Director

Matthew Ulberg, P.E.
Director
matthew.ulberg(at)montana.edu

Genevieve Houska
Administrative Associate/Conference Coordinator
genevieve.houska(at)montana.edu

Shawna Page
Field Training Professional
shawna.page(at)montana.edu

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

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

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.

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 Blattle
MACo

Kris Christensen
Montana Dept of Transportation

Thomas Danenhower
MMIA

Kelly Elser
Town of Ennis

Eric Griffin
Lewis and Clark County

Justun Juelfs
Montana Dept of Transportation

Front Page Photo: Montana Road Work By Genevieve Houska

Matthew Ulberg, P.E., Montana LTAP Director
Asphalt Conference 2017 - A Hit!

With over ninety participants at this year’s Asphalt Conference in February, Dave Johnson, Asphalt Institute’s Senior Regional Engineer, was pleased not only with the turn out but also the conference agenda. Dr. Jon Epps, P.E., from Texas A&M Transportation Institute, Executive Associate Director, discussed asphalt interlayers design and usage. Dr. Louay Mohommad, P.E., from Louisiana State University, Irma-Louise Rush Stewart Professor discussed Hamburg Wheel-Tract test equipment and improvements to AASHTO T 324. Other topics covered were:

- AMRL Laboratory Certification Process and Benefits by Brian Johnson, AASHTO Lab Certification Manager
- Asphalt Construction Best Practices, Wayne Jones, P.E., Asphalt Institute Senior Regional Engineer
- Innovative Maintenance Practices in Montana by Doug McBroom, Montana Department of Transportation
- New Technologies in Asphalt Paving by Dave Johnson, P.E., Asphalt Institute, Senior Regional Engineering
- Balanced Asphalt Mix Designs by Dr. Shane Buchanan, Old Castle.

This partnership with the Asphalt Institute to provide this kinds of quality training sessions only strengthens each others’ mission in education. Genevieve Houska, Montana LTAP Conference Coordinator, expressed her appreciation for the support from vendors who attended also: Tractor and Equipment Company and Western Emulsions, Inc.

Safety Congress 2017

Montana LTAP’s 15th Annual Safety Congress was held in Great Falls, January 24, 25, and 26, 2017. The morning session provided Work Zone Technician certifications for participants. The afternoon began the Traffic Control Supervisor course which concluded at the end of the next day with an exam.

The workshop objective is to comprehend work zone safety of roads and streets and learn to implement temporary traffic control plans using the latest standards. A score of 80 percent is needed to pass both the Work Zone Technician and Traffic Control Supervisor exams. The TCS portion has a homework problem to assist students in understanding and following a temporary traffic control plan.

Participants brought their Manual On Uniform Traffic Control (MUTCD) manual in order to follow the instruction provided.

These two courses are required for the Road Master level in our Roads Scholar program. By attending these two temporary work zone courses, individuals will learn the basic necessary skills to understand work zone areas, receive flagger recertification, and be an effective Traffic Control Supervisor.
Montana Association of County Road Supervisors (MACRS) President John Anderson thanked his fellow officers who contributed to the outstanding agenda for this year’s 37th Annual Spring MACRS Conference held the end of March in Great Falls. Conference participation was well over 300.

“This four-day event is carefully planned with the MACRS Board meeting at the end of last year’s conference to review what worked and what didn’t,” explained Anderson. “In November we met again to review with each of the five district representatives who have discussed with their constituents what type of training needs to be addressed at the next spring conference. By covering all these bases, current topics are put on the agenda. There is always valuable information to be used at county road departments.”

**Pre-Conference: Day 1**
The preconference provided four hours of budgeting and funding options for counties presented by Rona Wichman, Fergus County Clerk & Recorder. The topics covered fund types, revenue accounts, expenditure accounts, capitalization of fixed assets, appropriation budget, inventory, and budget resolutions. Wichman also covered claims processing and designated independent contractors.

**MACRS General Session - Tuesday, March 28**
Opening the conference was the Presentation of Colors by Marine Corp Honor Guard and the Foothills Christian School singing the National Anthem. MACRS President Anderson, Fergus County Road Supervisor, welcomed all and encouraged new and not so new members to introduce themselves to the MACRS officers and be sure to express their concerns. He noted this organization exists for everyone to network and help each other. Laura Obert, Broadway County Commissioner, provided a brief welcome and commissioner perspective with regards to county roads and bridges. Joe Briggs, Cascade County Commissioner, thanked the MACRS organization for their continual support by holding the conference in Great Falls. The newly hired, Montana LTAP Director, Matthew Ulberg introduced himself to the MACRS participants. Ulberg provided a brief explanation of the LTAP program and his continued interest in supporting the MACRS organization and working with counties and their requests for training and technology transfer.

MACRS Keynote speaker, Tim Robertson, CEO of Century Companies, provided an informative discussion on succession planning in the workplace and the importance of leadership, promotion, and planning. Succession planning is the process of identifying the key leadership positions within each department and developing employees within your organization to assume these positions. It is a comprehensive plan to address both current and future leadership needs while maintaining the existing merit principles of your organization.

Following was Roberts Rules of Order presented by the Fergus County High School Debate team. The debate team discussed parliamentary procedure and the set of rules for conducting meetings. These procedures allow everyone to be heard and to make decisions without confusion. Today, Robert’s Rules of Order is the basic handbook of parliamentary procedures used by most clubs, organizations, and other groups.

Road Law was the topic for Tuesday afternoon. This session was conducted by Susan Swimley, Attorney-At-Law. Topics covered included: public road and public right of way; easements; prescriptive use; city streets and alleys; laying out, alteration and abandonment of county roads; subdivision roads; Platting Act; and 2017 Montana Legislative Session Bills involving roads. This session was followed by a lengthy questions and answer discussion.

**MACRS General Session - Wednesday, March 29**
After the Morning Prayer breakfast where MACRS President Anderson welcomed First Timers to the conference, the opening session was Bill Lloyd, P.E., and Karl Yalawich, P.E., from Great West Engineering discussing Preliminary Plan Reading. They discussed what the purpose of construction plans were and stated, “By failing to plan, you are planning to fail.” Lloyd and Yalawich discussed design standards; types of site plans; parts of a plan set; order of precedence for construction drawings; and examples of road plans and bridge plans.

Don’t Call It a Dream

Call It a Plan
Construction Math & Estimates was presented by Clint Smith, P.E., from Stahly Engineering. He discussed stockpile quantities, earthwork estimating, rate of application, slope & grades, culvert length calculation, road surfacing quantities, and survey stake reading. Smith reminded everyone that the rule of thumb for estimating approximate tons needed is to multiply the number of cubic yards of gravel needed by 1.5.

After the lunch break, Steve Monlux presented on the updated gravel specifications for counties. This three page gravel crushing specification is intended to produce gravel that will develop a good road crust, resist raveling and wash boarding and also retain chloride dust abatement. The Crushed and Stockpiles Gravel Road Surfacing Aggregate document is available to download on the LTAP website at http://www.montana.edu/ltap/resources/macrs/County%20Gravel%20Spec_Monlux.pdf.

JJ Conners from the Montana Department of Environmental Quality discussed the DEQ Virtual Gravel Permitting forms and process. Conners discussed the application process, where to find the current application forms on the DEQ website, and how to submit application materials. Opencut mining plan of operations and application information was the next topic explained to the MACRS audience. Conners closed the presentation with water protection, mining and processing; and finally the reclamation plan. This information can be found at www.deq.mt.gov/land/opencut.

The final session on Wednesday afternoon discussed drones and technology by Bob Marquiss of Sly Dog Productions and GIS by Luke Carlton of Morrison Maierle. Carlton discussed what a GIS can do for counties, GIS platforms, basic GIS data points, the display layers and symbols, Google Earth data. His entire presentation is available upon request from Montana LTAP.

Wednesday Evening Banquet - March 29 The evening banquet began with the raffle drawing for top donated gifts. Matthew Ulberg, P.E., Montana LTAP Director, spoke about the importance of safety training and appreciated the support LTAP receives from MACRS. He then announced and awarded the twenty-eight 2017 Roads Scholars. (See related article on Page 10.) The evening concluded the passing the gravel to the new MACRS President Doug Nisbet from Lewis & Clark County.

MACRS General Session - Thursday, March 30
At this year’s MACRS morning Business Meeting the following were elected:

- Doug Nisbet, MACRS President, 2017-2018
- Fergus County
- Clay Moore, MACRS 1st Vice President, 2018-2019
- Yellowstone County
- Bobby Wiedmer, 2nd Vice President, 2019-2020
- Fallon County
- Lloyd Omdahl, Secretary/Treasurer (Retained Position)
- Toole County

Overall review of MACRS 2017 Spring Conference indicated another successful venue. It was determined MACRS Spring Conference 2018 will be held in Great Falls at the Best Western Heritage. The Planning Meeting will be held in November 2017 in Great Falls at the Best Western Heritage Inn.

MACRS SCHOLARSHIP 2017/2018

Qualifications for MACRS Scholarship:
- Students must be residents of Montana.
- Students must be degree-seeking and enrolled in at least six credits.
- GPA of 2.5 or better
- If the student does not have a previous grade point average (GPA) to submit, the Scholarship Committee will review GED, COMPASS, ACT, or SAT scores to determine academic eligibility.
- Applicants will be reviewed and awarded up to a $1,000 Scholarship.

Materials to submit when applying for the MACRS Scholarship:
- High school and college (if applicable) transcripts
- One letter of recommendation from a non-relative assessing your abilities, character, motivation, and potential for academic success.
- Submit an essay not exceeding 500 words of how you will benefit from receiving the MACRS Scholarship.
- The completed and signed Scholarship application.

Amount
$1,000 maximum per academic year, $500 per semester

Deadline
Fall Semester Deadline – August 15th
Spring Semester Deadline – December 15th

For more information on these scholarships, please contact Montana LTAP at 406-994-6100.
### July 2017

<table>
<thead>
<tr>
<th>S</th>
<th>M</th>
<th>T</th>
<th>W</th>
<th>Th</th>
<th>F</th>
<th>S</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>8</td>
</tr>
<tr>
<td>9</td>
<td>10</td>
<td>11</td>
<td>12</td>
<td>13</td>
<td>14</td>
<td>15</td>
</tr>
<tr>
<td>16</td>
<td>17</td>
<td>18</td>
<td>19</td>
<td>20</td>
<td>21</td>
<td>22</td>
</tr>
<tr>
<td>23</td>
<td>24</td>
<td>25</td>
<td>26</td>
<td>27</td>
<td>28</td>
<td>29</td>
</tr>
<tr>
<td>30</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

4: Fourth of July Holiday - Offices Closed  
6: LTAP Advisory Board Meeting, Bozeman  
17-21: National LTAP/TTAP Summer Conference, Norfork VA  
25: MT LTAP Safety Webinar 7:30am-8:00am  

**Training on Request:**  
- Summer Survival  
- Hand Safety  
- Slips, Trips, & Falls

### August 2017

<table>
<thead>
<tr>
<th>S</th>
<th>M</th>
<th>T</th>
<th>W</th>
<th>Th</th>
<th>F</th>
<th>S</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>6</td>
<td>7</td>
<td>8</td>
<td>9</td>
<td>10</td>
<td>11</td>
<td>12</td>
</tr>
<tr>
<td>13</td>
<td>14</td>
<td>15</td>
<td>16</td>
<td>17</td>
<td>18</td>
<td>19</td>
</tr>
<tr>
<td>20</td>
<td>21</td>
<td>22</td>
<td>23</td>
<td>24</td>
<td>25</td>
<td>26</td>
</tr>
<tr>
<td>27</td>
<td>28</td>
<td>29</td>
<td>30</td>
<td></td>
<td>31</td>
<td></td>
</tr>
</tbody>
</table>

22: MT LTAP Safety Webinar 7:30am-8:00am  
27 - 30: Public Works Expo, Orlando, FL  
29 - 30: MDT Highway Rail Conference - Helena

**Training on Request:**  
- Forklift  
- Sign Safety  
- Road Audits

### September 2017

<table>
<thead>
<tr>
<th>S</th>
<th>M</th>
<th>T</th>
<th>W</th>
<th>Th</th>
<th>F</th>
<th>S</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>8</td>
<td>9</td>
</tr>
<tr>
<td>10</td>
<td>11</td>
<td>12</td>
<td>13</td>
<td>14</td>
<td>15</td>
<td>16</td>
</tr>
<tr>
<td>17</td>
<td>18</td>
<td>19</td>
<td>20</td>
<td>21</td>
<td>22</td>
<td>23</td>
</tr>
<tr>
<td>24</td>
<td>25</td>
<td>26</td>
<td>27</td>
<td>28</td>
<td>29</td>
<td>30</td>
</tr>
</tbody>
</table>

4: Labor Day Holiday - Offices Closed  
6 & 7: 28th Annual Equipment Safety Training and Snow Rodeo - Bozeman, MT (MT LTAP)  
17-21: MACo 107th Annual Conference, Bozeman, MT  
www.mtcounties.org  
19: MT LTAP Safety Webinar 7:30am-8:00am  
27 - 29: 86th League of Cities & Towns, Best Western, Great Falls, MT

### October 2017

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

9: Columbus Day - Observed (Montana LTAP Offices Open)  
MACRS Fall District Meetings:  
10: Missoula - Leadership & Winter Safety  
11: Townsend - MSHA Part 46, Cattle Guards  
12: Havre - MSHA Part 46, Excavation  
17: Billings - Cattle Guards & Excavation  
18: Glendive - MSHA Part 46  
18-19: 32nd Regional Local Road Conference, Rapid City, SD  
31: MT LTAP Safety Webinar 7:30am-8:00am

### November 2017

<table>
<thead>
<tr>
<th>S</th>
<th>M</th>
<th>T</th>
<th>W</th>
<th>Th</th>
<th>F</th>
<th>S</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>5</td>
<td>6</td>
<td>7</td>
<td>8</td>
<td>9</td>
<td>10</td>
<td>11</td>
</tr>
<tr>
<td>12</td>
<td>13</td>
<td>14</td>
<td>15</td>
<td>16</td>
<td>17</td>
<td>18</td>
</tr>
<tr>
<td>19</td>
<td>20</td>
<td>21</td>
<td>22</td>
<td>23</td>
<td>24</td>
<td>25</td>
</tr>
<tr>
<td>26</td>
<td>27</td>
<td>28</td>
<td>29</td>
<td>30</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

8: Election Day - Offices Closed  
11: Veterans' Day  
14 & 15: MACRS Planning Meeting, 1-5pm and 8am - noon; Great Falls  
21: MT LTAP Safety Webinar: 7:30am - 8:00am  
24-25: Thanksgiving Holiday - Offices Closed

### December 2017

<table>
<thead>
<tr>
<th>S</th>
<th>M</th>
<th>T</th>
<th>W</th>
<th>Th</th>
<th>F</th>
<th>S</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>8</td>
<td>9</td>
</tr>
<tr>
<td>10</td>
<td>11</td>
<td>12</td>
<td>13</td>
<td>14</td>
<td>15</td>
<td>16</td>
</tr>
<tr>
<td>17</td>
<td>18</td>
<td>19</td>
<td>20</td>
<td>21</td>
<td>22</td>
<td>23</td>
</tr>
<tr>
<td>24</td>
<td>25</td>
<td>26</td>
<td>27</td>
<td>28</td>
<td>29</td>
<td>30</td>
</tr>
<tr>
<td>31</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1: LTAP Advisory Board Meeting - 1:00 pm, Helena, MT  
20: MT LTAP Safety Webinar: TBA  
25: Christmas Holiday - Offices Closed

---

**Safety Meeting Webinars from Montana LTAP**  
Monthly Safety Webinars held at 7:30am usually on Tuesday Mornings  
Call Montana LTAP at 1-800-541-6671 for more information!  
Recorded safety webinars: [http://www.montana.edu/ltap/resources/webinars/index.html](http://www.montana.edu/ltap/resources/webinars/index.html)

---

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
# Calendar of Events • January 2018 - June 2018

## January 2018

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

1: New Year’s Day - MT LTAP Offices Closed  
15: Martin Luther King Day - Offices Closed  
16: MT LTAP Safety Webinar 7:30am - 8:00am  
23-25: 16th Annual Safety Congress - Helena, MT (MT LTAP)

## February 2018

<table>
<thead>
<tr>
<th>S</th>
<th>M</th>
<th>T</th>
<th>W</th>
<th>Th</th>
<th>F</th>
<th>S</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>8</td>
<td>9</td>
<td>10</td>
</tr>
<tr>
<td>11</td>
<td>12</td>
<td>13</td>
<td>14</td>
<td>15</td>
<td>16</td>
<td>17</td>
</tr>
<tr>
<td>18</td>
<td>19</td>
<td>20</td>
<td>21</td>
<td>22</td>
<td>23</td>
<td>24</td>
</tr>
<tr>
<td>25</td>
<td>26</td>
<td>27</td>
<td>28</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

12-15: MACoMid-Winter Conference: Billings  
19: President’s Day - Observed (Montana LTAP Offices Closed)  
20: Asphalt Institute - Bozeman, MT  
27: MT LTAP Safety Webinar: 7:30am - 8:00am

## March 2018

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

13: Work Zone Flagging - Havre  
14: Work Zone Flagging - Great Falls  
15: Work Zone Flagging - Billings  
20: MT LTAP Safety Webinar TBA 7:30am  
26 - 29: MACRS 38th Annual Conference - Heritage Inn, Great Falls, MT

## April 2018

<table>
<thead>
<tr>
<th>S</th>
<th>M</th>
<th>T</th>
<th>W</th>
<th>Th</th>
<th>F</th>
<th>S</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>8</td>
<td>9</td>
<td>10</td>
<td>11</td>
<td>12</td>
<td>13</td>
<td>14</td>
</tr>
<tr>
<td>15</td>
<td>16</td>
<td>17</td>
<td>18</td>
<td>19</td>
<td>20</td>
<td>21</td>
</tr>
<tr>
<td>22</td>
<td>23</td>
<td>24</td>
<td>25</td>
<td>26</td>
<td>27</td>
<td>28</td>
</tr>
<tr>
<td>29</td>
<td>30</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

10: Work Zone Flagging - Miles City  
11: Work Zone Flagging - Glendive  
12: Work Zone Flagging - Glasgow  
17: Work Zone Flagging - Bozeman  
17: Work Zone Flagging - Billings  
24: MT LTAP Safety Webinar: 7:30am - 8:00am  
22 - 26: NACE Annual Conference 2018, Wisconsin Dells, WI

## May 2018

<table>
<thead>
<tr>
<th>S</th>
<th>M</th>
<th>T</th>
<th>W</th>
<th>Th</th>
<th>F</th>
<th>S</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>7</td>
<td>8</td>
<td>9</td>
<td>10</td>
<td>11</td>
<td>12</td>
</tr>
<tr>
<td>13</td>
<td>14</td>
<td>15</td>
<td>16</td>
<td>17</td>
<td>18</td>
<td>19</td>
</tr>
<tr>
<td>20</td>
<td>21</td>
<td>22</td>
<td>23</td>
<td>24</td>
<td>25</td>
<td>26</td>
</tr>
<tr>
<td>27</td>
<td>28</td>
<td>29</td>
<td>30</td>
<td>31</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

8: Equipment Training - TBA  
9: Equipment Training - TBA  
10: Equipment Training - TBA  
15: Equipment Training - TBA  
16: Equipment Training - TBA  
22: MT LTAP Safety Webinar: TBA 7:30am - 8:00am  
28: Memorial Day - Offices Closed  
30 - 31: Regional LTAP Meeting - TBD

## June 2018

<table>
<thead>
<tr>
<th>S</th>
<th>M</th>
<th>T</th>
<th>W</th>
<th>Th</th>
<th>F</th>
<th>S</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>8</td>
<td>9</td>
</tr>
<tr>
<td>10</td>
<td>11</td>
<td>12</td>
<td>13</td>
<td>14</td>
<td>15</td>
<td>16</td>
</tr>
<tr>
<td>17</td>
<td>18</td>
<td>19</td>
<td>20</td>
<td>21</td>
<td>22</td>
<td>23</td>
</tr>
<tr>
<td>24</td>
<td>25</td>
<td>26</td>
<td>27</td>
<td>28</td>
<td>29</td>
<td>30</td>
</tr>
</tbody>
</table>

6: MACRS Executive Meeting, 1-5pm - Bozeman  
7: MT LTAP Annual Advisory Board Meeting, 9am-12pm - Bozeman  
19: MT LTAP Safety Webinar -TBA 7:30am

---

**Training Opportunities at Montana LTAP Website:**  
[http://www.montana.edu/ltap/training/index.html](http://www.montana.edu/ltap/training/index.html)
Montana LTAP clients have access to on-demand technical presentations through a four-state partnership that contracts with the Upper Great Plains Transportation Institute at North Dakota State University.

Although summer is a critical time for construction, breaks and downtime are a good time to access webinars, self-paced modules and presentation recordings. The opportunities are a part of the technology transfer, research, and education available through a distance-based environment called the Transportation Learning Network (TLN). A wide variety of topics is offered, including:

- Construction
- Gravel and asphalt road maintenance
- Work zone safety
- Project management
- Mower safety
- Conflict management
- Snow and ice control
- Erosion and sediment control
- Pavement preservation

TLN emphasizes technology transfer and presentations selected by executive and programming committees of DOT and university personnel in the region. A robust online learning management system provides 24/7 access to past video conferences, webinars and self-paced training modules as it maintains a record of learning achievements for all users.

Montana LTAP clients can access recorded sessions by creating an account on the TLN learning management system. Accounts must be verified and authorized so there can be up to a 72-hour wait if the request is made on a weekend, otherwise authorization should be relatively quick. For resources explaining how to create an account and how to access the recorded sessions, go to http://www.translearning.org/resources/lms-help.php. For assistance in creating an account or registering, the TLN help desk can be reached at 701-231-1087. Shannon Olson and Sue Hendrickson will be happy to help you.

As the construction and maintenance season winds down, TLN will ramp up its offering of live presentations, creating a dynamic learning environment that provides a library of presentations on past topics as well as live presentations on key technology and emerging issues. Live presentations typically begin after Sept. 1. Live video conferences are accessible at the central and district or regional offices across a 4-state region.

In addition to the DOTs of Montana, North Dakota, South Dakota and Wyoming, TLN is also supported by the Mountain Plains Consortium, a part of USDOT’s University Transportation Center program. TLN assists in extending the consortium’s research to professionals across the region.

---

2017 MONTANA HIGHWAY-RAIL CONFERENCE

The Montana Department of Transportation in collaboration with BNSF Railway, Montana Rail Link, Inc., Federal Highway Administration, and Federal Railroad Administration is hosting a 2017 Montana Highway-Rail Conference at the Radisson Hotel in Helena, MT August 29th – 31st. Railroads operate through 51 of 56 counties in Montana impacting its many communities and counties. This is a unique opportunity for state and local governmental personnel to learn, network, and ask questions about the rail industry.

Montana Rail Link, Inc. and BNSF Railway are providing an exciting opportunity for attendees to hop aboard the “Rail Safety and Networking” train ride over Mullan Pass on Wednesday. This will give you time to get to know railroad representatives and enjoy the beautiful scenery along this historic rail route.

Don’t miss out! Sign Up Early! There is no registration fee. Conference website is at www.mdt.mt.gov/highwayrail. We look forward to seeing you there!
Congratulations Roads Scholars 2017!

Montana LTAP’s Roads Scholar program continues to provide not only an incentive for city and county road personnel, the safety training ensures a safety culture for the future.

“It’s an honor to present these Roads Scholar awards to these very deserving individuals,” commented Matthew Ulberg, MT LTAP Director. “Their commitment to keeping our roadways safe and also keeping themselves safe by attending workshops is commendable. At LTAP, we provide the most updated transportation resources available for city and county transportation personnel.”

The following twenty eight will join the roster of 334 Roads Scholars. Presently there are 2,531 participants seeking to attain Roads Scholar standing. Congratulations to the following 201 Roads Scholars:

- Gary Alzheimer, Teton
- Michael Bacon, Dawson
- Bill Brownell, Gallatin
- Maggie Clark, Missoula
- Mike Divish, Gallatin
- Kelvin Gover, Ravalli
- John Hutzenbiler, Yellowstone
- Pete Jerral, Chouteau
- Steve Kaphammer, Pondera
- David Augare, Pondera
- Dustin Blockeel, Pondera
- Will Buniger, Park
- Tim Collins, Meagher
- Mike Fritz, McCone
- Ronnie Harvey, Rosebud
- Rob Jaynes, Phillips
- Jerry Jochinsen, Missoula
- Mike Miller, Missoula
- Ronald Nelson, Fergus
- Preston Pierce, Gallatin
- Dave Skagen, Musselshell
- Tom Stockert, Musselshell
- Jesse Whitford, Lewis & Clark
- Michael Nygaard, Missoula
- Lonny Rand, Beaverhead
- Steve Stewart, Wheatland
- Dennis Mason Tobiason, Park
- Todd Young, Valley

Now they will begin working toward their Road Masters award where twenty classes are required. There are 15 Road Masters to date. Required classes for Road Master include Work Zone Technician, Traffic Control Supervisor, Motorgrader and Forklift certifications, two Winter Maintenance or Winter Safety classes; two leadership classes; serving in some capacity with MACRS or League of Cities & Towns; and 12 optional classes.
Data Driven Safety Analysis
Center for Accelerating Innovation, FHWA


Traditional crash and roadway analysis methods rely mostly on subjective or limited quantitative measures of safety performance. Data-driven safety analysis (DDSA) uses new, evidence-based models that enable transportation agencies to quantify safety impacts with more confidence.

In Every Day Counts round four (EDC-4), the Federal Highway Administration is promoting two DDSA approaches that State and local agencies can implement individually or in combination:

Predictive analysis helps identify roadway sites with the greatest potential for improvement and quantify the expected safety performance of project alternatives.

Systemic analysis uses crash and roadway data to identify characteristics common to particular crash types, such as fatal and serious injury crashes. Once these characteristics are determined, locations can be identified across the targeted system for treatment with low-cost safety countermeasures.

With DDSA, agencies and their customers can benefit from more informed decisionmaking on safety investments, better targeted investments that optimize available funding, and improved safety on the Nation’s roads.

View an EDC-4 Innovation Spotlight video on DDSA.

Arizona Workshops Focus on EDC Innovations
The Maricopa County, AZ, Department of Transportation partnered with FHWA on a June 8 workshop on automated traffic signal performance measures (ATSPMs). The event enabled more than 70 participants from 15 agencies to learn how ATSPMs can be used to manage signal performance, improve traffic operations, and increase safety in the Phoenix metropolitan area. Speakers from the Utah Department of Transportation and city of Overland Park, KS, discussed how they use ATSPMs to enhance traffic operations. Private sector representatives reviewed developments in ATSPM technologies. Participants identified next steps for advancing improvements in signal management in the Phoenix area. ATSPM workshops are planned for San Francisco, CA, and Atlanta, GA, in August. To schedule an ATSPM workshop, contact the EDC coordinator in your State’s FHWA division office.

The Arizona Department of Transportation (ADOT) hosted an FHWA workshop on May 31 to assess road weather management capabilities as part of the department’s implementation of the EDC-4 weather-savvy roads innovation. Representatives of the National Weather Service and a private weather service provider joined ADOT staff to discuss statewide capability levels in business processes, systems and technology, performance measurement, workforce, culture, and collaboration. Participants also discussed how EDC-4 road weather management strategies—the Pathfinder process and integrating mobile observations—can fill gaps in Arizona’s road weather management processes. To schedule a similar workshop in your State, contact Roemer Alfelor of the EDC-4 Road Weather Management—Weather-Savvy Roads Team.

Michigan Signs Stakeholder Partnering Team Charter
In addition to providing grants, the Accelerated Innovation Deployment (AID) Demonstration program offers award recipients an opportunity to share their experiences applying proven innovations in reports available to the transportation community. “Sharing the Innovation Experience” in the latest issue of Public Roads magazine highlights four AID Demonstration projects and insights from the agencies involved:

• The Kentucky Transportation Cabinet built a roundabout to improve safety at an intersection.
• The Michigan Department of Transportation (MDOT) used slide-in bridge construction to replace two bridges.
• MDOT partnered with local agencies to use warm-mix asphalt to rehabilitate a road.
• The South Dakota Department of Transportation used high-friction surface treatments to improve safety on curves.

Deadline Approaches for STIC Excellence Award Nominations
Nominations close July 1 for the 2017 State Transportation Innovation Council (STIC) Excellence Award. FHWA’s Center for Accelerating Innovation (CAI) partners with the American Association of State Highway and Transportation Officials (AASHTO) Innovation Initiative on the award, which recognizes STICs that have achieved significant results in fostering an innovative culture. The 2017 award recipients will be announced at the AASHTO Annual Meeting in September. For information, contact Sara Lowry of CAI.
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 Houska, LTAP, 1-800-541-6671. If you have computer access, please e-mail genevieve.houska(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://ou.montana.edu/ltap/index.html (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 2016-2017 Needs Assessment Survey is available at this web site. Thank you in advance for taking time to complete it.

**Publications**

**p-88 Best Practices for RAP and RAS Management (NAPA January 2016)** The bump at the end of the bridge has long been studied for highways and railways, yet experts from across the transportation industry continue to identify it as one of the most prevalent substructure factors affecting bridge performance. This guideline describes the methodology for measuring bridge approach transitions using inertial profilers. Details include bridge sectioning and site information, data collection procedures and data analysis, and reporting approaches.


**p-2269 Analysis of Construction Quality Assurance Procedures on Federally Funded Local Public Agency Projects.** This report documents current construction QA practices from both State transportation department and LPA perspectives, identifies specific issues or areas of weakness in QA practices, identifies existing successful QA practices, and makes recommendations that can be implemented to generally improve construction QA across the full spectrum of LPA projects and State transportation department programs. Recognizing that there are significant differences in LPA capabilities and project types, the recommendations consider both large and small LPAs, and differences among State transportation department programs.


**p-3126 Communication Reference Guide.** This document presents guidelines for developing, writing, and constructing research and development publications. Federal Highway Administration Office of Research, Development, and Technology employees, researchers, contract office representatives, contractors, and support staff are the main audiences.


**p-1061 Safety Evaluation of Intersection Conflict Warning Systems.** FHWA organized a pooled fund study of 40 States to evaluate low-cost safety strategies as part of its strategic highway safety effort. One of the strategies selected for evaluation was intersection conflict warning systems (ICWSs). This strategy is intended to reduce the frequency of crashes by alerting drivers to conflicting vehicles on adjacent approaches at unsignalized intersections. Geometric, traffic, and crash data were obtained for four-legged, rural, two-way stop-controlled intersections with ICWS installations in Minnesota, Missouri, and North Carolina. To account for potential selection bias and regression-to-the-mean, an empirical Bayes before-after analysis was conducted, using reference groups of similar four-legged, rural, two-way stop-controlled intersections without ICWS installation.


**p-396 Traffic Bottlenecks: Identification and Solutions.** The objective of this project was to develop practical methods for prioritizing and mitigating traffic bottlenecks, which are one of the top causes of surface transportation congestion in the United States. Through this project, the following were developed: a new approach for ranking traffic bottlenecks, a new playbook of 70 bottleneck mitigation strategies, a benefit-cost (B/C) analysis of 5 low-cost bottleneck mitigation strategies, and 3 new bottleneck mitigation strategies.


**p-397 MEPDG Traffic Loading Defaults Derived from Traffic Pooled Fund Study.** This report provides an assessment of the original MEPDG axle loading defaults, describes WIM data selection criteria, including data reliability assessment, presents findings from the LTTP SPS traffic pooled fund study traffic data review, describes a methodology to generate new MEPDG traffic loading defaults, and provides a description of the new traffic loading defaults and recommendations for their use.


**p-1062 Safety Evaluation of Continuous Green T Intersections.** The continuous green T (CGT) intersection is characterized by a channelized left-turn movement from the minor street approach onto the major street, along with a continuous through movement on the major street. The continuous through movement typically has a green through arrow indicator to inform drivers that they do not have to stop. Past research has consistently shown that there are operational and environmental benefits to implementing this intersection form at three-leg locations when compared with a conventional signalized T intersection. These benefits include reduced delay, fuel consumption, and emissions. The safety effects of the conventional signalized T intersection are less clear.


**SAVE THE DATE!**

**September 6 & 7, 2017**

**APWA Snow Rodeo, Bozeman**
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 article is an announcement of LTAP’s Graphic Designer and Librarian’s retirement.

Please join us in extending our best wishes to Michele Beck, who retired from Montana LTAP on March 31, 2017. Michele has been an esteemed member of the LTAP family for 15 years, and she will be greatly missed by our office and colleagues alike. We have all benefited from her great personality, innovative style, and artistic nature. She has been an inspiration to us all and she will be sorely missed.

We know you all will join us in wishing Michele well as she starts a new chapter in her amazing life. We know she is eager to catch up on the traveling, painting, and photography she loves so much. LTAP wishes Michele the best of luck in her new venture!!

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:

Genevieve Houska,  
Local Technical Assistance Program,  
PO Box 173910, Bozeman, MT 59717-3910  
(800) 541-6671 or (406) 994-6100  
Fax: (406) 994-5333  
email: genevieve.houska(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.montana.edu/ltap/newsletter/index.html or by calling 1-800-541-6671.

• Please contact LTAP if you are in need of a printed copy. This newsletter is 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.