New Technology for Back-Up Alarms

ELIMINATE NOISE NUISANCE COMPLAINTS AND IMPROVE SAFETY

Technologies that could mitigate problems from backup beepers have existed for over two decades. Nonetheless, the conventional single-tone backup alarm still dominates road construction and maintenance sites. If annoyance level is an indication, backup beepers may be one of the most harmful noises. In a 2010 report titled Technology for a Quieter America, the National Academy of Engineering cited backup beepers as one of the six top noise sources people associated with behavioral and emotional consequences. During Boston’s Big Dig project, which rerouted much of the traffic through the heart of the city, people lodged more complaints about noise than about any other annoyance factor and far more complaints about backup beepers than any other noise source.

Similarly, 20 State Departments of Transportation identified them as a major problem in generating nighttime construction noise. From a safety perspective, an investigation by the federal Occupational Safety and Health Administration (OSHA) found that an original equipment manufacturer backup alarm failed to prevent two-thirds of backover accidents analyzed.

One alternative technology to the traditional backup beeper is the broadband beeper. This type of device has the same cadence as the conventional beeper but broadcasts a “white-noise”, whooshing sound. According to the Health and Safety Executive, one quarter of all workplace vehicle accidents are caused by reversing vehicles and, as such, reversing alarms are one of the most important and cost effective devices you can fit.

Due to the wide spectrum of frequencies created, the hearing impaired are often able to detect some noise, unlike with narrow band single tone alarms.

http://ltap.colorado.edu/
Greetings Everyone!

Sorry for our recent lapse in publication; but the Colorado LTAP Newsletter is back! In 2015, our Center was without a Training Coordinator and working with just 1.25 FTE for six months of the year. We apologize that we were unable to accomplish some of our other technical services in additional to the training program. We are happy to report that we have hired a new training coordinator - Sarah Wilson. Please give Sarah a warm welcome to our LTAP family if you see her at an upcoming training class or conference! Sarah comes to us all the way from Alaska, and it has been a pleasure working with her. You can learn more about Sarah on page 7.

With some additional funding opportunities, you will start to see new projects and programs being developed in the coming year. One big change that Colorado LTAP is excited to implement is a new Learning Management System. This new system will allow individual training participants and supervisors to have their own access to course registrations & cancellations, online payment options, historical training records, past certificates and more, all with a personalized login. We are currently in the software purchasing stage and the system will take a couple months to implement, migrate files, and perfect; but we hope to be up and running in the Spring.

There will be more focus on innovation implementation and technology deployment. In one area, we will be adding new types of equipment to the Equipment Loan Program. Remember - we currently have THREE Sign Retroreflectometers free to loan to local agencies. We will also be developing projects to improve Rural Road Safety; and we continue to work with State and Federal partners to see if Colorado can implement a Safety Circuit Rider Program!

Many fun and exciting changes are on the horizon. We look forward to sharing them with you - and helping you to improve your communities!

Renée Railsback  
Program Director

Sarah Wilson  
Manager of Technical Assistance and Customized Training

Becky Miller  
Webmaster

The Local Technical Assistance Program (LTAP) is sponsored by the Federal Highway Administration, the Colorado Department of Transportation, and the University of Colorado at Boulder to provide information on the latest transportation issues facing Colorado’s state and local governments.

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TC3 is a technical service program within AASHTO that focuses on developing training products for technical staff in the areas of construction, maintenance and materials. TC3 offers more than 120 web-based training courses on topics needed by the technical workforce. TC3 currently offers courses in the following categories.

- Construction
- Maintenance
- Materials
- Employee Development
- Traffic and Safety
- Pavement Preservation

With more than 125,000 people in the technical workforce trained, now is a great opportunity to see how TC3’s training can impact you and your organization.

Their new Flexible Pavement Preservation Treatment Series provides participants with an introduction to the Pavement Preservation Treatment Construction Guide so that they can use it to better familiarize themselves with general information on pavement preservation concepts and techniques.

The Maintenance Training Series trains individuals responsible for the maintenance of our nation’s roadways. The series includes information on various maintenance operations topics, ranging from the conceptual to the practical. Part of the newly launched Maintenance Training Series, both of the following courses are available at NO COST through November 2016.

Visit http://training.transportation.org to browse complete course details.

**Base and Subbase Stabilization and Repair**

Before preservation treatments can be applied, localized repairs may be necessary for a pavement's base or subbase. This course gives participants the knowledge they need to determine if the base or subbase must be stabilized or repaired, to select the appropriate stabilization and repair methods for a given project, and to ensure the repair is performed properly. Participants will learn to:

- Identify symptoms of a localized base or subbase problem that require greater depth of stabilization and repair than a hot-mix asphalt or portland cement concrete surface repair patch;
- Determine when it is appropriate to employ base or subbase repair on a preventive maintenance project;
- Identify the most appropriate repair methods if base or subbase failures are identified in a project.

**Roadway Drainage**

Shoulder, ditch, and pipe or culvert maintenance activities are performed frequently throughout the year. These activities are critical for avoiding hazardous roadway conditions and extending the life of pavements by controlling water flow along maintainable pathways. This course provides information on the purpose, function, and components of roadway drainage systems. Upon completion of the course, participants will be able to:

- Identify purpose and function of roadway drainage systems;
- Identify eight components of roadway drainage systems;
- Identify the purpose of a roadway drainage inventory;
- Identify the purpose of permits in roadway drainage maintenance;
- Identify the components of shoulders and ditches.
As Colorado becomes an ever more popular place to live and visit, our transportation systems are becoming more congested and experiencing increased crashes, and sadly, more deaths. The **Highway Safety Improvement Program** (HSIP) is a federally funded program (90% federal, 10% state/local) designed to achieve significant reductions in crashes on **all public roads**, especially crashes involving traffic fatalities and serious injuries. The program provides funding for projects that improve safety at locations where there is highest potential for crash reduction.

Local agencies in Colorado are strongly encouraged to apply for their share of these funds - request HSIP funding assistance for a traffic safety improvement project in your jurisdiction! CDOT is now accepting applications for HSIP project funds for fiscal years FY 2018-2021. Applications are submitted to your local CDOT Region Traffic Engineer, and must be received **no later than November 30, 2016**.

All public roadways within your jurisdiction are eligible for HSIP funding. It is suggested to consider locations where a crash history exists, as well as locations where analysis shows roadway safety risk factors exist, albeit not yet a crash history. Proposed projects should cost no less than $50,000; but smaller projects can be combined to meet the $50,000 threshold. Projects will be evaluated on their potential for crash reduction.

Additional application details and your Regional Traffic Engineer contact information is available at: [https://www.codot.gov/library/traffic/hsip](https://www.codot.gov/library/traffic/hsip).

**Related Resources**

When considering projects, there are numerous proven, researched, and documented mitigation strategies as well as emerging technologies that can help.

**Colorado Strategic Highway Safety Plan**

Colorado’s SHSP provides information on Colorado’s history of fatalities and priorities to reduce them. The SHSP embodies the state’s safety initiative: “**Moving Towards Zero Deaths**”. The SHSP provides innovative, data-driven approaches to address issues that impact traffic safety. It addresses goals, strategies, and action items for 8 key emphasis areas to reduce fatalities and serious injuries in Colorado.

**Guidance for Implementing SHSP Strategies**

AASHTO’s Strategic Highway Safety Plan (SHSP) includes strategies in 22 key emphasis areas that affect highway safety. Each of the emphasis areas includes strategies and an outline of what is needed to implement each strategy. A series of guides have been developed to assist local agencies in reducing injuries and fatalities in targeted emphasis areas. The guides correspond to the emphasis areas outlined in the AASHTO SHSP. Each guide includes a brief introduction, general description of problem, strategies/countermeasures to address the problem, and a model implementation process. Each volume of **NCHRP Report 500: Guidance for Implementation of the AASHTO SHSP** is assembled into a concise guide pertaining to specific types of highway crashes (e.g., run-off-road, head-on) or contributing factors (e.g., aggressive driving). These useful guides can be accessed at: [http://safety.transportation.org/guides.aspx](http://safety.transportation.org/guides.aspx).

The site includes a guide on each of the following topics:

- Aggressive-Driving Collisions
- Unlicensed, Suspended, Revoked License Drivers
- Trees in Hazardous Locations
- Head-On Collisions
- Unsignalized Intersection Collisions
- Run-Off-Road Collisions
- Horizontal Curve Collisions
- Utility Pole Collisions
- Older Driver Collisions
- Pedestrian Collisions
- Increasing Seat Belt Use
- Signalized Intersection Collisions
- Heavy Truck Collisions
- Drowsy and Distracted Drivers
- Enhancing Rural EMS
- Crashes Involving Alcohol
- Work Zone Collisions
- Collecting and Analyzing Highway Safety Data
- Reducing Head-On Crashes on Freeways
CO LTAP received the following technical assistance question. Gravel Roads expert, Ken Skorseth, submitted the following reply and supplemental photos.

What is the recommended amount and application rate of Magnesium Chloride used for DUST abatement for a second treatment applied about a year later?

[Ken] It is hard to give a concise answer due to these factors:

• The quality of the surface gravel has so much impact on this. Good surface gravel prepared well for MagChloride (MgCl₂) generally performs well, but ---

• The rate of application of initial treatment also has an impact on following treatments. We generally use between 0.45 and 0.6 gallons per square yard for the initial treatment.

• Thereafter, traffic volume and moisture received through the season will have some impact on the succeeding year as well.

• Having said all of the above, we often see second year treatment at the same rate as the first year, or 0.1 to 0.2 gallons per square yard less than the initial treatment.

• In succeeding years, we sometimes see treatments down to half of original application rates.

• The local agencies who do this very well nearly always say something like this, “there isn’t a set rate for treatment; you have to observe the road and use field judgement to determine it.”

• These photos show several different situations to demonstrate.

1/4
GOOD: 6-6-13 Just after treatment at 0.5 gal per sq yd. Commercial dairy road. Heavy truck traffic ~AADTT 30 - 40. Road looks good.

2/4
POOR: 7-16-13 Same road, already failing!

3/4
POOR: 7-16-13 Almost total dust control failure

4/4
POOR: 10-7-13 After another 0.3 gal per was applied same season still not performing well. This is such poor surface material it won’t go into a bound state no matter how you maintain it. There is no way the MgCl₂ can work even with 0.8 gal per sq yd applied in one year!

Here’s the critical issue: It was applied to poor material (reclaimed concrete) usually not compatible with chloride treatment.
Colorado LTAP Advisory Board has a position open for YOU!

Colorado LTAP is now accepting applications to fill open positions on the Colorado LTAP Advisory Board.

Celebrating 30 Years

An initial meeting of the Advisory Board for the “Transportation Information Center”, as LTAP was originally known, was held in 1986. The Advisory Board was developed to provide direction to the Center’s staff, assist as a resource for developing training and special projects, and to provide insight into the needs of local transportation agencies. 30 years later, these goals hold true today. The current Colorado LTAP Advisory Board continues to serve as a resource for developing new programs and provide insight into more effective ways to serve Colorado’s local transportation agencies.

Join an Elite Group of Professionals

The LTAP Advisory Board is composed of transportation specialists throughout the state. Through the years, there have been many familiar faces on the committee. Some of the longest running retired members of the LTAP board include: Max Rothschild - El Paso County (9 years), Jan Gertsenberger - Colorado Municipal League (9 years), Drew Sheltinga - Weld County (9 years), Doug Cline - City of Grand Junction (10 years), and Marlene Crosby - Gunnison County (11 years). Currently, Doyle Villers - La Plata County (17+), Kevin Scott - Phillips County (16+) Tammie Crawford - Park County (14+), and John Baker - Town of Snowmass Village (11+) have all served more than 10 years and counting!

Colorado LTAP would also like to welcome new member, Ryan Cushenan, City of Montrose. We thank all past and current members of the committee for their dedication to improving the quality and safety of the transportation system through interactive relationships and information exchange. Board luncheon meetings are held quarterly around the state, and although Advisory Board members are not paid for their participation, they are reimbursed for expenses related to attending meetings. We’re looking for new members willing to share their experiences and ideas about what works well (and what does not) to help develop our program into a real asset. We’re always looking for more City/Town representation. Interested parties should submit a letter outlining their qualifications and reasons for wanting to serve as a board member to the Colorado LTAP Center.

Deep appreciation to Marlene Crosby, Gunnison County Public Works Director, for her 11 years of service on the Colorado LTAP Advisory Board.

In September 2016, Marlene Crosby, Gunnison County Public Works Director, resigned her position on the Colorado LTAP Advisory Board. She was a dedicated and supportive member on the board for 11 years. Her contributions through the years are greatly appreciated and will be missed. We bid Ms. Crosby all the best in her future endeavors.
MEET LTAP’S NEW TRAINING COORDINATOR

Sarah Wilson

Sarah joined the Colorado Local Technical Assistance Program in December 2015 as the new Manager of Technical Assistance and Customized Training – frequently referred to as the LTAP Training Coordinator. She was quickly thrust into the fire, successfully navigating a busy spring training program. Although not directly related to her background, Sarah has enjoyed learning about transportation related issues and working for the LTAP Center at the University of Colorado Boulder. Soon after joining the Center, she successfully represented the Center at the North Central Regional LTAP meeting in Laramie, Wyoming and presented on LTAP’s Successes and Challenges. Although new to Colorado, she has eagerly crisscrossed the state several times attending training and conferences. Last spring, local agency participants at the Street Conference in GJ trained Sarah on the heavy equipment available for operation.

Sarah has a B.A. in Anthropology and Archaeology from the University of British Columbia in Vancouver, B.C. Her training in Archaeology has prepared her for some aspects of the job as her classes included GIS, Remote Sensing, and Geology. Before going to school in Canada, Sarah grew up in Anchorage, Alaska. She enjoys cross-country skiing, running, hiking, camping and traveling. On the side, Sarah is an avid seamstress, occasionally teaches children’s sewing classes, and sells her art at craft fairs. Look for her booth at a local fair near you!

Apart from the high summer temperatures, Sarah is adjusting well to Boulder and is looking forward to continue working for the Colorado LTAP Center.
PROBLEM STATEMENT

Every year our guardrails would gather material; either common road debris or sand spread by plow trucks, and space below guardrails would shrink. In worst case scenarios, even the overall height of the guardrail would diminish. In order to clean them, a crew consisting of flaggers, 3 shovel hands, a skid steer or loader, dump truck and occasionally a motor grader would be used to clean the guardrails. Even with this level of manpower and equipment, progress was slow and amount of material removed was not nearly enough to regain the original functionality of the guardrail. With the increase in miles of guardrail in the county, time spent cleaning them began to be a concern.

DISCUSSION OF SOLUTION

We decided that using the skid steer to replace the 3 shovel hands and the blade while increasing efficiency, would be a beneficial endeavor. After a brief discussion with crew members, the keys to a successful implement were clear. It needed to be both a bull blade and a scraper, it needed to be level to the road surface, and it needed to work under the guardrail (short in height). The resulting implement fits over the forks on a skid steer, eliminating the need to buy a hitch or attachment system specifically for this implement. It chains to the forks so that there are no modifications needed to the forks or skid steer. It has a replaceable blade that accommodates different guardrail post widths (although most are a standard width) and allows for replacement of the edge as it wears out. The design has the ability to carry the bucket so that the skid steer can swap between the reclaimer and the bucket once on the jobsite so that an additional loader is not needed. The implement also meets all of our initial guidelines for functionality.
The construction of the guardrail reclaimer was not an expensive endeavor. The purchase of 10 feet of 4” x 2” box steel and a 6 foot cutting edge were the only material costs. The rest of the materials were scraps from other projects. The reclaimer was built by one employee and it took about 8 man hours.

**TOTAL COST**

The total construction cost of the new implement is estimated to be $650.
- $350 – Wages
- $100 – Steel
- $200 – Cutting edge

**SAVINGS AND BENEFIT TO AGENCY**

This implement has changed the way that we approach cleaning guardrail. It is no longer an onerous task for the crew. Not only are we cleaning more feet of guardrail every year, but we are removing more material and establishing better drainage and a higher level of safety than when we did the task entirely by hand. We also eliminated 3 FTE’s and at least one piece of equipment from this task. Additionally, our crews have an increased level of buy-in because they designed and built the implement themselves. The low initial cost and improved outcome achieved for this task has made this an overall success for Gunnison County.
ELIMINATE NOISE NUISANCE & IMPROVE SAFETY

White Noise Reversing Alarms

Reversing beep-beep alarms were first introduced to Europe in the 1970s. At the time, they provided a vital step forward in safety, but have been shown to have a number of inherent problems; specifically concerning their environmental impact, but also in terms of compliance and safety. Advances in technology mean there is a new alternative – the BBS-Tek® White Noise Reversing Alarm manufactured by Brigade Electronics.

In contrast to the beeping sound of the old fashioned high pitched pure Tone alarm, the BBS-Tek® back up alarm uses broadband sound, also known as “white sound”. It is easier on the ears, yet equally as effective as a conventional alarm, even 5 decibels quieter. Additionally, because broadband sound dissipates at twice the rate of a pure tone sound, it doesn’t cause noise nuisance to neighboring residents or other workers on site. This multi-frequency device operates by emitting sound at multiple frequencies attenuated above 4000Hz so that the sound is perceived to dissipate more quickly.

The Science Behind It

The way we react to a broadband sound is part of our survival system. Deep inside both human and animal brains is the superior colliculus which alerts us when it hears certain noises. The noises it reacts to are not narrow-band sounds with their tighter frequency range, but rather broadband (white noise) sounds which give away their direction and make our heads turn towards them. The “white” description derives from white light which is composed of all the colors in the spectrum. Similarly, white sound is composed of all frequencies in the audio spectrum. White sound has the unique characteristic of its source being instantly locatable. White sound does not have to rely on high sound pressure (decibels) in order to be heard because, when it hears certain noises. The noises it reacts to are not narrow-band sounds with their tighter frequency range, but rather broadband (white noise) sounds which give away their direction and make our heads turn towards them. The “white” description derives from white light which is composed of all the colors in the spectrum. Similarly, white sound is composed of all frequencies in the audio spectrum. White sound has the unique characteristic of its source being instantly locatable. White sound does not have to rely on high sound pressure (decibels) in order to be heard because, being multi-frequency, competing single frequencies cannot mask it. At their lowest setting of ~92-95 dB, these alarms are about three-quarters as loud as standard backup beepers. Quite literally, you only hear the white noise reversing alarm if you’re in the danger zone where you need to.

Safety Impact

The white noise reversing alarm is also considered safer because unlike conventional alarms whose noise can be heard all around the work site, broadband is localized. This means the sound is directed only into the hazard zone and not everywhere else which increases response to the alarm and diminishes the chance of it being ignored. In a busy working or urban environment, anyone in the danger zone can recognize that the sound is coming directly from the reversing vehicle near them. Even in areas where the background noise levels vary considerably, the smart auto-adjusting models automatically monitor and set the warning sound level to between 5 and 10 decibels above ambient level to ensure optimum safety.

Instantly locatable, it enables pedestrians to discern exactly which vehicle is moving and in which direction, allowing them to move to safety. This also makes them a safer option for the visually impaired who may not be able to see the vehicle reversing but will hear the direction it is reversing in. The wide spectrum of frequencies created, means the hearing impaired are often able to detect some noise, unlike with narrow band single tone alarms.

Approved for use in construction vehicles in all areas of New York City, and implemented on the equipment here at the Town of Snowmass Village, CO, white noise reversing alarms are proving to be an optimal choice for many municipalities and local authorities wishing to minimize noise pollution and increase pedestrian safety in confined or densely populated work areas.

References:
1. Brigade Electronics; http://brigade-electronics.com
8. BBS-Tek White Sound Reversing Alarms – YouTube Video https://www.youtube.com/watch?v=4hL1ckg8bPI

With ongoing noise concerns your agency may be experiencing from equipment reverse alarms while plowing snow in the early mornings and late evenings, this new technology could possibly be a solution.

John Baker, Road Supervisor, Town of Snowmass Village
When the Transportation Information Center opened its doors in 1985, Colorado became the 39th state to establish a technology transfer center. One of the original goals was to provide workshops on various transportation related topics and technical assistance to local municipal agencies. We pledged to offer training at a minimal cost and to bring workshops to various locations across the state. 30 years later, the Colorado Local Technical Assistance Program (LTAP) as it is now known, is part of a strong national network of 58 centers. We are still committed to providing affordable training (Roads Scholar classes have only increased $5 in 25 years!), technical assistance, and timely information resources to even more local agencies throughout Colorado. With only 2 full-time staff, we have grown the program to over 70 classes offered each year, and added valuable programs such as the Equipment Loan Program, You Show Us Innovative Solutions Award, and a Learning Management System. Our information listserv for the public works community continues to grow and is becoming an important knowledge sharing tool for our community. We represent local agency needs on several State and Federal committees; and work with national association partners to increase awareness of local and rural transportation issues. We are committed to working together to leverage our resources to help provide the best quality training and technical services in areas of most critical need. All of us at LTAP have worked hard over the past 30 years to develop a strong reputation for being a valuable resource to local agencies. We are proud of our accomplishments and will work even harder over the next 30 years to provide the best quality programs and services.

25th Anniversary
ROADS SCHOLAR I

Started in 1991, RS I is designed to provide participants with the training necessary to increase their knowledge of transportation safety, local road maintenance and construction procedures and improve their technical skills by attending a wide variety of programs available at reasonable costs.

15th Anniversary
SUPERVISORY SKILLS & DEVELOPMENT PROGRAM

Started in the fall of 2001, SSDP is designed to help educate, prepare, and provide public works employees with the background necessary to comfortably and confidently perform in a supervisory position. The courses chosen are intended to provide a fundamental understanding of the roles and responsibilities of a supervisor and to develop tools for succeeding in management.

All training program graduates in 2016-2017 will receive a commemorative ANSI Type III work zone vest with Anniversary logo.
Colorado LTAP
Recent Graduates

ROADS SCHOLAR II
Frank Castillo - City of Castle Rock
KayDawn Simpson - C. of Colo Spgs
Marvin Kramer - City of Golden
Vic Schroeder - Summit County

ROADS SCHOLAR I
Keith Bohan - City of Arvada
Zachary Meyer - City of Black Hawk
Everett Nielsen - City of Black Hawk
Daniel Sotomayor - City of Calhan
Kevin Miller - City of Calhan
Megan Lobban - City of Castle Rock
Michael Medina - C. of Castle Rock
Alan Curtis - City of Delta
Mike Dallas - City of Erie
Larry Nelson - City of Erie
Paul Whillock - City of Golden
Paul Whillock - City of Golden
Frank Wagner - City of GJ
Jared Muir - City of Lafayette
Mark Anthony Romero - Lafayette
David Pickett - City of Littleton
Matt Martinez - City of Monument
Monica LaSalle - City of Nederland
Justin Menu - City of Northglenn
Charles Chavez - C. of Westminster
Gary Aldrich - City of Westminster
Ken Breneman - City of Windsor
Russ Chameroy - C. of Winter Park
John Spruill - El Paso County
Steve Johnson - El Paso County
Scott Hall - El Paso County

William Martin - El Paso County
James Walton - Garfield County
Steven West - Garfield County
Bob Collier - Garfield County
Lanny Koberg - Grand County
Lanny Koberg - Grand County
Carlos Catalan - Lockheed Martin
Dale Sizell - Mesa County
Derek Smith - Mesa County
Brandon Bruton - Mesa County
Tom Page - Mesa County
Sean Tafoya - Montrose County
Jay Jensen - Montrose County
Armando Medina - Pitkin County
Jeff Harper - Teller County
Adam Bosch - Teller County
Dennis Aragon - Weld County
Randy Kinnison - Weld County
Abel Martinez - Weld County

SUPERVISORY SKILLS
Rene Martinez - City of Avon
Chris Sheffield - City of GJ
Bob Sullivan - Greenwood Village
Geoff Bradley - City of Silverthorne
Pam Muleavey - Snowmass Village
Charwon Walter - City of Windsor
Robert Winter - City of Windsor
Brian Rowe - City of Windsor
Tony Adamic - Fremont County
Annette Ortega - Fremont County
Gordon Thompson - Gilpin County
Scott Mattice - Pitkin County
Rick Speer - Summit County

LTAP Fall 2016 Training Schedule
Full class details & registration at: http://ltap.colorado.edu

Effective Motivation of Maintenance Employees
October 26 - Castle Rock
November 1 - GJ

Roadway & Roadside Drainage
October 31 - La Junta
November 3 - Loveland
November 7 - Silverthorne
November 9 - Montrose

Nuts & Bolts of Local Government
November 10 - Denver

ROW Maintenance Safety
November 14 - Loveland
November 16 - Colorado Springs
November 21 - Rifle

Electrical Systems Maintenance Safety
November 15 - Castle Rock
November 22 - GJ

Safety on the Job
November 15 - Pueblo
November 17 - Northglenn

Best Practices for Crack Seal & Wide Crack Repair
November 18 - Colorado Springs

Dos & Don'ts: Legal and Liability Issues
December 6 - Denver

Above: KayDawn Simpson, City of Colorado Springs is presented with her RS II plaque by FHWA LTAP Managers Patricia Sergeson & Bill Haas. Below: RS II Graduate Vic Schroeder, Summit County is presented with his Plaque.
Education and Public Works agency support are foundational components of the American Public Works Association (APWA). The APWA recognizes that budget reductions associated with the recent recession are still impacting many organization’s ability to provide exceptional public services. As Public Works agencies, organizations, and companies continue their struggle to meet increasing customer expectations through lean economic years, the APWA Colorado Chapter is pleased to announce two new funding assistance opportunities. The Colorado Chapter and West Slope Branch have each developed unique Internship Assistance Programs to support Public Works agencies and introduce new people to our profession. Both programs seek to “bridge the gap” between administrative and field level professionals by encouraging participation in any of the numerous facets of public works.

2017 will mark the third year of a very successful West Slope Branch Internship Assistance Program. To date, five Public Works Departments from five west slope cities and towns (Steamboat Springs, Montrose, Delta, Vail, and New Castle) have received financial support to hire and develop future public works professionals. These interns were exposed to a variety of public works jobs including street maintenance, engineering, utility system operation, fleet maintenance, and employee housing management. Some were retained by their employer to become full-time public works employees! A total of $15,000 has been awarded through the program to date. The West Slope Branch Board is committed to strengthening our profession by developing future leaders through this program. The program will likely be expanded in 2017.

Also in 2017, the main Colorado Chapter Board will introduce its first Internship Assistance Program. This program encourages Public Works organizations to hire students with little or no relative experience by providing program financial support. Each student intern is paired with a mentor to provide encouragement, professional insight, technical training, and leadership development throughout the program. The organization is able to

....continued on page 14
develop employee skills that meet its unique needs, while the student intern receives valuable industry experience.

Applications for both 2017 programs will be available in February and the selection process is anticipated to take three weeks. Successful applicants will be notified in early spring 2017 to allow adequate time for hiring summer interns, although hiring is not limited to any particular season. While neither program requires a specific cash match commitment, applicants should understand that available funding typically does not cover all agency intern compensation costs. Selected applicants are also expected to invest a significant amount of staff time training and developing intern skills. Participating agencies have reported that their programs were rewarding and that the program mentors appreciated the opportunity to hone their employee training skills.

The APWA Colorado Chapter and West Slope Branch continue to invest in Public Works throughout the state. The goal of each Internship Assistance Program is to generate interest in our profession and develop future Public Works employees. By supporting succession planning efforts of Public Works agencies, the Colorado Chapter hopes to ensure future leaders within our profession are equipped to carry the torch for generations to come.

Article by John Harris, Public Works Director, City of Montrose

City of Delta Interns’ on-the-job training.
PROBLEM STATEMENT
According to the U.S. Census Bureau, Arapahoe County, Colorado has a total area of 805 square miles; of which 798 square miles is land. The county measures 72 miles east to west and 4 to 12 miles south to north. Within this area, the Road & Bridge department is responsible for maintaining 1100 lane miles of paved roads and depending on the time of year, tracking maintenance work can be a daunting task.

DISCUSSION OF SOLUTION
The County Patching Supervisor worked with the GIS Administrator to build a real-time tracking system for monitoring upcoming and completed pothole and major patch work. The system utilizes the County’s GIS, both on desktop PC’s and mobile devices (Android or Apple), to provide real-time map data viewing and collection anywhere in the County, in the office, or in the field. This powerful tracking system provides the ability to identify work on a map with status indicating icons and details about the work. The details include a wide range of important information specific to each project, as well as the ability to attach pictures of the job. These photos show the desktop interface, the smartphone app interface and an overall County screen shot within the desktop interface.

LABOR, EQUIPMENT MATERIALS
The project progressed for close to a year so it’s difficult to say how many hours were solely dedicated to the project. Much of the communication was via e-mail and phone calls to discuss ideas as the project moved forward. The system was able to utilize the County’s GIS which was already in place.

TOTAL COST
There were no additional costs accrued during the formation of this system (normal wages for the employees.)

SAVINGS AND BENEFITS TO AGENCY
The results and success have far exceeded their original expectations. The County started with trees and potholes as initial reportable incidents. Since then and through trial and error, the program has broadened to include major patches, cutbacks for concrete work and wide crack repair. In addition, a color coded status indicator function has been added for quick progress identification (red is new, green is completed). The ability to input, especially citizen driven work, from either the desktop in the office or the smartphone in the field saves a significant amount of time. The access to crucial job information in real-time all but eliminates those “surprises” you find on almost any job. Laying out daily asphalt work for the crews and reporting the production to management is virtually seamless.

CONTACT: Arapahoe County Road & Bridge
Keith Runyan, Patching Supervisor
krunyan@arapahoegov.com, 720-874-6821
SIGN RETROREFLECTOMETER LOAN PROGRAM

Local agencies are responsible for maintaining their Signs to a minimum level of service. A retroreflectometer can play a key role to ensure quality and accuracy when implementing an effective sign management program. To help local agencies who are unable to afford or don’t warrant enough need to purchase their own meter, Colorado LTAP owns three DELTA RetroSign® GR3 sign sheeting retroreflectometers with GPS capability, and has implemented a local agency loan program. An extension pole to extend the users reach 9 ft is also available. Colorado LTAP accepts loan requests from local government agencies via phone, mail or email, and loans the equipment FREE for an initial 2-week period, on a first-come first-serve basis. The equipment may be available for longer, depending on the current wait list. Agencies may also call ahead to schedule a loan for a future date. Center staff provide training on all equipment before use. For more info or to sign up, please call the Colorado LTAP Center at 303-735-3530.