

## SNOW AND ICE CONTROL WORKSHOP HIGHLIGHTS

Ashley Peterson, WV LTAP PR Assistant

Every fall the WV LTAP hosts the Snow & Ice Control Workshop to help West Virginia state and municipal roadway agencies prepare for winter and its many challenges. This year was no exception, as WV LTAP staff welcomed 170 attendees to the 26<sup>th</sup> Annual Snow & Ice Control Workshop, held in Summersville at the Summersville Arena and Conference Center. The workshop featured a variety of presentations and outdoor demonstrations to help attendees prepare for and battle winter weather.

Dale Calcamuggio from the Ohio DOT kicked off our workshop by discussing Direct Liquid Application (DLA), which is the application of snow and ice liquids directly to the pavement in lieu of, or in addition to, rock salt during and after a winter storm. Dale explained how using DLA could reduce an agency's plowing and post-storm clean-up, how deicing liquids are being applied, types of liquids and equipment that are used, and how they can fiscally benefit an agency.

Social media has changed the way we communicate. Knowing how to use social media effectively to engage and educate the public is vital for roadway agencies, especially during the winter months. Carrie Jones from the WVDOH presented attendees with ways to better use social media to communicate with the public.

Public works agencies are also concerned about their liability exposure arising out of alleged negligence in regard to snow removal and ice control activities.



Rodney Taylor, WVDOH Regional Equipment Operator Trainer, demonstrates how to properly install tire chains.

Ron Eck from the WV LTAP reviewed the facts with an actual tort claim example in his hands-on breakout session *Public Works Agency on Trial – You be the Judge*. Presentation attendees were given a real example where they were asked to assess the merit of the claim, and if the claim had merit, suggest lessons learned on how the road agency in the example might



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*Country Roads & City Streets* is published three to four times per year. The purpose of this newsletter is to provide information that is beneficial to decision makers, elected officials, and roadway construction, maintenance, and management personnel.

The material and opinions included in this newsletter are those of the West Virginia LTAP and do not necessarily reflect the views of the Federal Highway Administration or the West Virginia Department of Transportation. Every effort has been made to ensure the integrity and accuracy of both original and borrowed material; however, the West Virginia LTAP does not assume responsibility for any information that is found to be incorrect.

The West Virginia LTAP is part of the National Local Technical Assistance Program, which is funded by the Federal Highway Administration. The West Virginia LTAP also receives funding from the West Virginia Department of Transportation.

### MISSION:

The mission of the West Virginia LTAP 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.

To help achieve this mission, training, demonstrations, technical assistance, and resource materials are provided.



Attendees look over workshop materials while waiting for the event to start.



Welford Haines demonstrates a patching material that may come in handy to fill potholes formed over the winter months.

Outdoor demonstrations are an essential part of this workshop. (We were fortunate to have beautiful weather that day for this portion of the workshop!) Due to the large number of attendees, they were divided into four groups and rotated among four different demonstrations.

Dale Hill, Executive Director of the WV Builder's Supply Association, was the concluding workshop speaker with his presentation *Treating Concrete Surfaces*. Topics from his presentation included what winter maintenance treatments to use on concrete surfaces and how to properly use them.



Kevin Snyder demonstrates how to make a proper notch, when using a chainsaw.

prevent incidents from occurring in the future.

Maintaining equipment and practicing basic maintenance, such as cleaning salt and brine from equipment, is an essential part of any successful winter maintenance program. Bob Pritts, Gary Eye, and Bill Keller from the WVDOH-District 5 gave a brief presentation and then used an interactive question and answer format during the *Equipment Maintenance: Before, During and After Winter* breakout session.

John Jordan from the WVDOH discussed dry runs, including what the process includes, who is involved, and how to conduct a beneficial dry run. He also discussed lessons learned.

Kevin Snyder, shown in the photo below, also presented a breakout session titled *Chainsaw Safety and Operation in Winter Conditions*. Attendees learned about chainsaw safety and operation when dealing with downed trees and brush from ice or snow storms.

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***Thank you to all who helped make this year's workshop possible, including exhibitors, presenters, attendees, and the Summersville Arena and Conference Center staff!***

# WV LTAP NEEDS YOUR FEEDBACK

The WV LTAP is constantly striving to improve our center and services. One tool we use from time-to-time is a needs assessment survey. While we are aware most people do not like taking surveys, this is a vital tool for us to hear from you.

The survey is available in both electronic and printed form, and you should be able to complete it in less than ten minutes. You can access the electronic version on our website at [wvltap.wvu.edu/need.html](http://wvltap.wvu.edu/need.html).

If you would prefer a printed copy, please contact Kim by phone at 304-293-9924 or by email at [Kim.Carr@mail.wvu.edu](mailto:Kim.Carr@mail.wvu.edu). You can also download a PDF file from our website to print.

We would like to get your feedback as soon as possible, with a target date of before, or by, January 31, 2018.

**ltap**  
West Virginia

## 2017 Needs Assessment

The WV LTAP wants to ensure we are offering training and services that meet your needs. Please help us collect this information by taking approximately ten minutes of your time to complete the following needs assessment. Please email the completed form to [acolli15@mail.wvu.edu](mailto:acolli15@mail.wvu.edu).

WV Local Technical Assistance Program

### General Information

1. Which of the following best describes your organization or agency?

<input type="checkbox"/> Municipality (City/Town/Village)	<input type="checkbox"/> WVDOH – County Maintenance	<input type="checkbox"/> WVDOH – District
<input type="checkbox"/> WVDOH – Central Office	<input type="checkbox"/> WV Parkways Authority	<input type="checkbox"/> Federal Highway Administration
<input type="checkbox"/> Private	<input type="checkbox"/> Public Service District	<input type="checkbox"/> US Forest Service
<input type="checkbox"/> Home or Property Owners Assoc.	<input type="checkbox"/> Other _____	

2. How many employees in your agency are responsible for managing, maintaining, or working on the roadway or in the right-of-way?

<input type="checkbox"/> 0 - 5	<input type="checkbox"/> 6 - 10	<input type="checkbox"/> 11 - 20	<input type="checkbox"/> 21 - 35
<input type="checkbox"/> 36 - 50	<input type="checkbox"/> 51 - 75	<input type="checkbox"/> Over 75	<input type="checkbox"/> Other _____

3. Which of the following best defines your position?

<input type="checkbox"/> Manager/Director	<input type="checkbox"/> Engineer	<input type="checkbox"/> Technician	<input type="checkbox"/> Clerical/Office Staff
<input type="checkbox"/> Elected Official	<input type="checkbox"/> Crew Leader	<input type="checkbox"/> Equipment Operator	<input type="checkbox"/> Laborer
<input type="checkbox"/> Mechanic	<input type="checkbox"/> Other _____		

4. What interactions have you had with the WV LTAP? (Please select all that apply.)

<input type="checkbox"/> I have attended WV LTAP training.	<input type="checkbox"/> I have received technical assistance from WV LTAP staff.
<input type="checkbox"/> I have met WV LTAP staff at a meeting.	<input type="checkbox"/> I receive emails and mailings from the WV LTAP.
<input type="checkbox"/> Other _____	

### Computer and Internet Usage

1. What is your level of comfort using a computer and the internet?

<input type="checkbox"/> Very Comfortable	<input type="checkbox"/> Comfortable	<input type="checkbox"/> Uncomfortable	<input type="checkbox"/> Neutral
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2. What type of internet do you have access to at work?

<input type="checkbox"/> High Speed	<input type="checkbox"/> Satellite	<input type="checkbox"/> Dial-up	<input type="checkbox"/> Not Sure	<input type="checkbox"/> None
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3. What type of internet do you have access to at home?

<input type="checkbox"/> High Speed	<input type="checkbox"/> Satellite	<input type="checkbox"/> Dial-up	<input type="checkbox"/> Not Sure	<input type="checkbox"/> None
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4. What devices do you use to access the internet? (Please select all that apply.)

<input type="checkbox"/> Desktop/Laptop	<input type="checkbox"/> Tablet	<input type="checkbox"/> Phone	<input type="checkbox"/> None
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5. Would you use an online tool (forum/listserv) to communicate with your peers across the state?

<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Maybe
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Page 1 of 4

Please take a few minutes to give us your feedback!

You can complete our needs assessment in 10 minutes or less!

Questions we are seeking input on fall into the following areas:

- General Information
- Computer/ Internet Usage
- Training Logistics
- Training
- Communication

## ADVISORY BOARD

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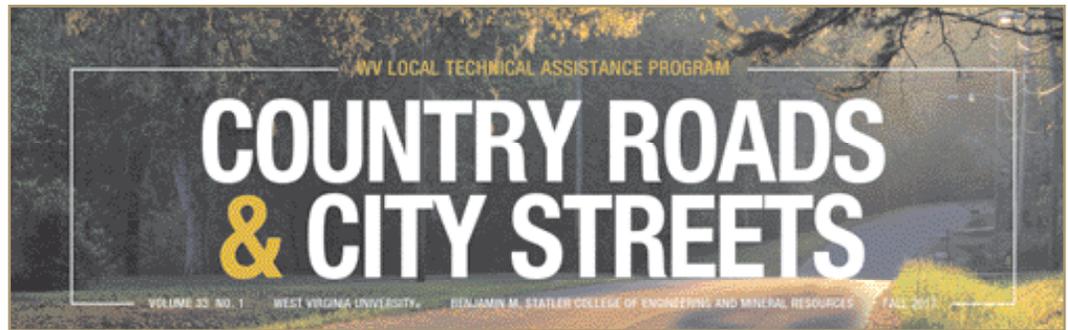
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## STAY TUNED ... COUNTRY ROADS & CITY STREETS MAKEOVER IN THE MAKING!



The last time this newsletter had a major redesign was in 1999, so even though we have tweaked items over the years, it is time to go all out with a complete design makeover!

The name will stay the same; *Country Roads & City Streets* embodies our public works agencies across the state. The newsletter will be printed in full-color, including the image on the front page nameplate, which is shown above. You can continue to receive *Country Roads & City Streets* in print form, electronic form, or both. Please just let us know your preference by emailing Ashley at [acolli15@mail.wvu.edu](mailto:acolli15@mail.wvu.edu) or calling (304) 293-9930.

This new design will be fully unveiled in the spring 2018 newsletter. Please keep a look out for it in your postal mail or email, and remember that while the look has changed, the information we plan to include will not.

**1985** Microsoft Corporation releases the first version of Windows, Windows 1.0. WV LTAP introduced the first volume and edition of this newsletter, *Country Roads & City Streets*.

**1999** A prequel trilogy to *Star Wars* was released beginning with *The Phantom Menace*.

The WV LTAP did a complete revamp of the *Country Roads & City Streets* newsletter, which has lived on.

**2018** **A new year, with new possibilities, and a redesign of *Country Roads & City Streets*!**

## ROAD & STREET SPEAK – WV LTAP'S eNEWSLETTER!

A few years ago the WV LTAP introduced our eNewsletter *Road & Street Speak*, which has been published electronically every two to three months since its debut. *Road & Street Speak* strives to keep our readers more informed of national and West Virginia transportation-related news: WV LTAP news, training updates, and upcoming events; online training opportunities; useful tips; and other items we feel may be useful at the time, are interesting, or just plain funny. The WV LTAP also uses this eNewsletter to publish time sensitive announcements that cannot wait until our next printed newsletter *Country Roads & Streets* edition is published.

*Road & Street Speak* is sent via MailChimp, an email marketing service. Each time the WV LTAP publishes a *Road & Street Speak* edition, you will receive it in your email's inbox. From there, you can easily read through the eNewsletter and click on links within articles to sign up for training, continue reading complete articles, access the WV LTAP Facebook page, and more!

To receive the *Road & Street Speak* eNewsletter, complete an online subscription form by visiting [wvltap.wvu.edu/subscribe](http://wvltap.wvu.edu/subscribe). You can also contact Ashley at [AColli15@mail.wvu.edu](mailto:AColli15@mail.wvu.edu) to subscribe, ask questions about our eNewsletter, or share article ideas for upcoming editions.



## SUMMER 2017 STREET SMARTS TRIVIA WINNERS

In our summer edition of this newsletter, we asked readers to test their skills in our Street Smarts Trivia. The correct answer was Patteson Drive in Morgantown. Congratulations to the following individuals:



Craig Iser, Danielle Brookins, Roger McDaniel, John Crane, and Vincent Allison.

We originally were going to select the first three correct answers. However, due to high participation, the first five individuals that responded with the correct answers received a WV LTAP lunch tote!

*Look for future trivia questions in 2018!*

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# REGION READY WINTER RALLY

Carrie Jones, WVDOT Communications Specialist



When winter rolls in, the snow plows roll out. No matter what agency, the principles of snow removal and ice control are the same: treat roadways and keep them passable to ensure the safety of the traveling public.

Public relations officials with the Kentucky Transportation Cabinet (KYTC) approached the West Virginia Department of Transportation (WVDOT) with a bold idea. Why not team up to show the public that we're "region ready"? In 2015, the KYTC hosted the first tri-state winter preparedness rally in Ashland, Kentucky. The WVDOT along with the Ohio Department of Transportation (ODOT), the City of Ashland, and the City of Huntington had operators and equipment staged at the event. The media coverage was overwhelming with all local TV stations and newspapers in attendance.

After a successful turn out in Kentucky, the winter rally torch was passed to the WVDOT and a rally was hosted in Kenova, WV in 2016. This year, ODOT took the reins and rallied media from around the region to South Point, Ohio.

Along with information regarding manpower, equipment, and materials provided by representatives from each agency, reporters were given the opportunity to tour each state's snow plow trucks and conduct one-on-one interviews with highway crews. This interaction also allows reporters to get acquainted with the DOT personnel they can contact when future media requests arise.

The success of this tri-state event has led the WVDOT to reach out to different agencies and consider additional topics, like work zone safety, that could benefit from this type of event. Anyone interested in joining forces for a safety rally can contact the WVDOT Communications Office at (304) 558-0103.

## Formula for a Successful Event

- Invite the media - TV, Radio, and Newspaper
- Have a public relations representative from each state speak briefly on winter preparedness and tips for the public
- Bring one or two plows and two crew members from each state/municipality. It's best to have crew members with multiple years of winter maintenance experience, who are also comfortable in front of a camera.
- Provide handouts to the media on the winter maintenance budget and material costs, such as salt.
- Encourage reporters to get in the cab of the truck, check out the equipment, and talk to the crew members.
- Bring Santa! He's a fun addition, and the reporters always have fun interviewing him.



*Photos courtesy of WVDOT.*

# APWA MID-ATLANTIC CHAPTER HIGHLIGHT

Jeff Wilkerson, City of Martinsburg, WV Public Works Director

*At a national level, LTAP partners with the American Public Works Association (APWA) to provide more comprehensive services to public works agencies across the country. We encourage you to check out the services that APWA has available, in addition to the services you receive from the WV LTAP. Jeff Wilkerson, Public Works Director for the City of Martinsburg, WV is an APWA member and a graduate of the Public Works Institute. We appreciate Jeff sharing this information.*

The Mid-Atlantic Chapter of the American Public Works Association (APWA) consists of municipalities, contractors, and other businesses located in Washington, D.C., Maryland, Virginia, and West Virginia. The APWA Mid-Atlantic Chapter advances professional excellence and public understanding through education, advocacy, and community stewardship. The members of the APWA Mid-Atlantic Chapter are public works professionals that collaborate on education, projects, employee development, and many other aspects regarding the public works industry.

*I would like to invite all West Virginia municipalities to join the APWA Mid-Atlantic Chapter. This organization has many resources and activities that can help with education, training, and employee development for a municipality of any size. This Chapter has several events that would be beneficial to attend, including the annual conference and equipment show, several "lunch and learn" sessions, workshops on many public works related topics, and a leadership institute for employee development. More information can be obtained on the Chapter's website [www.midatlantic.apwa.net](http://www.midatlantic.apwa.net).*

The City of Martinsburg has been a member of the APWA Mid-Atlantic Chapter for six years, and uses the available resources several times a year. The National APWA website has free resources in the bookstore that are available to members, which have been a big help for us. I am also looking

to have the City of Martinsburg Public Works Department go through the APWA agency accreditation process in the near future.

## PUBLIC WORKS INSTITUTE

I recently completed the Mid-Atlantic Chapter's Public Works Institute, a two year program for employee development. I recommend the Public Works Institute for future leaders, current leaders, and directors. The sessions are taught by public works and industry leaders who have years of experience in their topic areas. It is also a great networking opportunity to get to know industry and public works leaders from private and public entities throughout the Mid-Atlantic region (MD, DC, VA, and WV).

The Mid-Atlantic Public Works Institute provides necessary training for those in, or aspiring to be in, key leadership positions in the public works field. Whether you are a team member on a small project, or managing a multi-million dollar budget, it means coordinating, communicating, scheduling, and maintaining focus. Blending academic theory with real-life processes, technologies, hard and soft management skills, and the best learning methodologies, the Institute can empower you to become a more effective leader and team member, and be confident in your ability to strategically execute projects and programs.

The Institute is a two-year program that involves

The mission of the nationally accredited Mid-Atlantic Public Works Institute is to "strengthen public works organizations by preparing leaders through professional development, education, and networking opportunities."

four separate sessions. Participants can enter the program at any session as long as all four separate sessions are attended before completion. The separate sessions provide different educational components.

- Session I - Intro to Supervision
- Session II - Leadership and Management
- Session III - Finance, Law, Media and Communications
- Session IV - Executive/Leadership Management

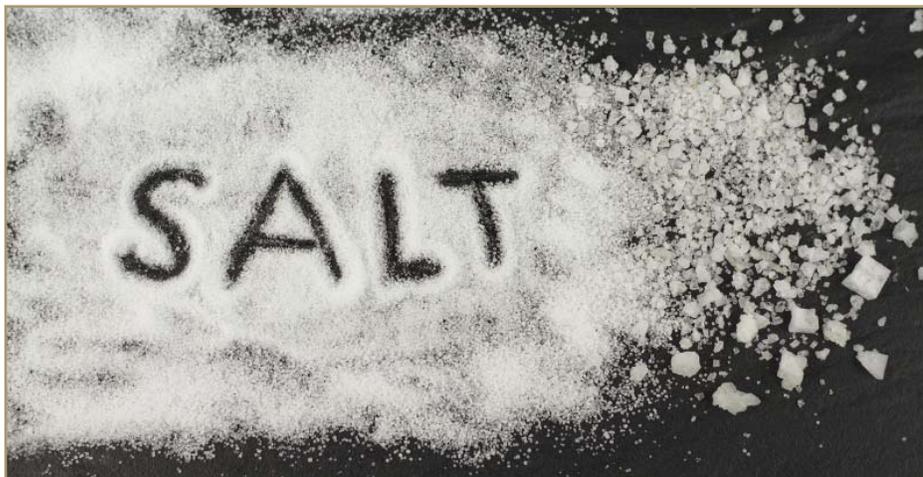
## CONTACT

If you are interested in learning more about becoming a Chapter member, attending the Leadership Institute, or have general questions, please visit the Chapter's website [www.midatlantic.apwa.net](http://www.midatlantic.apwa.net). You can also contact me directly at [jwilkerson@cityofmartinsburg.org](mailto:jwilkerson@cityofmartinsburg.org) or 304-676-3689.



# IS THERE TOO MUCH SALT IN YOUR ROAD'S DIET?

Andrew Morgan, WV LTAP Program Coordinator



For eighty years, public works agencies have been striving to effectively melt snow and ice to improve road safety during winter driving conditions. In 1938, salt was experimentally spread for the first time in New Hampshire. Within three years, salt usage increased to 5,000 tons nationwide. Today, public works agencies in the United States use nearly 20 million tons of rock salt to treat roads; that is approximately 15 times more salt than producers use to package food. With roughly 264 million vehicles nationally, that equals over 150 pounds per vehicle.

While salt is a natural compound that is safe in small quantities, it can be dangerous in high concentrations. With these high levels of salt usage, water sources that receive roadway runoff, such as lakes, streams and wells, increase in salinity. These high concentrations of salt can be toxic for both humans and aquatic life.

The increased costs and environmental concerns of using salt in winter maintenance activities are driving forces in using salt more effectively, in smaller amounts. Much of the focus has been using a variety of salt-based products (sodium chloride, potassium chloride, magnesium chloride, etc.) and applying them as liquid brine. Experience and research have found properly pretreating roads with brine before a storm is beneficial in many ways. Pretreated roads tend to have less problems with an ice pack forming and snow sticking to the roadway as much. Also, when rock salt is used in conjunction with brine, bounce and scatter of the rock salt is minimized. Both of these practices reduce waste and have been implemented in many states across the country.

At the 2017 WV LTAP Snow and Ice Control Workshop, Dale Calcamuggio presented on the Ohio Department of Transportation's (ODOT) recent implementation of using salt brine during and after the storm, referred to as Direct Liquid Application (DLA). DLA is a technique currently being used in only a handful of states, but the results have been very promising. The process requires an application of brine every two hours during the storm. By applying brine, rather than rock salt, the chemical reaction that melts ice begins immediately, with very little waste. The process also works in all temperature conditions by varying the types of salt brine used; ODOT has used Beet Heet, Aquasalina, calcium chloride, and sodium chloride.

*Per Dale Calcamuggio's presentation, ODOT's experience to-date includes:*

- Minimizes post-storm cleanup, resulting in a quicker return to traffic speeds
- Maintains a continuous level of service for a wider variety of conditions
- Can produce "instantaneous" results
- Additional ice and snow fighting tool
- Very little plowing
- Requires 50% less material compared to rock salt applications
- Cost savings of over 30%

# WINTER THEMED WORD SEARCH

During this winter maintenance season, work can become quite hectic and stressful. Doing a word search or other word game activity can help you relax and provide a fun workout for your brain. It's important to remember mental exercises are as important as physical exercises in keeping you at your best.

A S C E J U E A J S W N Z W L	<b>Anti icing</b>	<b>Road</b>
S N B B T R C R P C O O W Z L	<b>Blizzard</b>	<b>Salometer</b>
A O T R G W D R M I M C O T A	<b>Brine</b>	<b>Salt</b>
L S U I O F E Z T G N S L K F	<b>Calcium</b>	<b>Snow</b>
O G Y N I A R A B Y A R P S W	<b>Callibration</b>	<b>Snowfall</b>
M D P E D C R Y M L F L O N O	<b>Deicer</b>	<b>Spraybar</b>
E P R E U B I U D E I C E R N	<b>Ice</b>	<b>Spreader</b>
T W R A I K I N N H Y K E H S	<b>LTAP</b>	<b>Storm</b>
E B I L Z C M A G N E S I U M	<b>Magnesium</b>	<b>Truck</b>
R R L N L Z T B T U E W J G Z	<b>Melt</b>	<b>Winter</b>
J A O A T R I L X V A G O G V	<b>Plow</b>	
C L C A U E A L M R O T S N H		
F T P C D S R I B J W D F S S		
P A K U U L C G F M E L T K C		
B P F S R E E J Z A Y C Z T W		



## WHAT TREATMENTS ARE BEST FOR CONCRETE SURFACES?

Andrew Morgan, WV LTAP Program Coordinator

There are long held beliefs that concrete pavements, such as sidewalks, are easily damaged by chemicals, such as salt. There is some truth to this, but that does not mean chemicals must be completely avoided. When deicing chemicals are applied to a concrete pavement, the pavement can be damaged in one of two ways. 1) The deicer can chemically react with the surface of the pavement. 2) Deicers create heat when they react with ice; this quick change in temperature can damage the concrete as well. In both events, scaling or pitting can occur, which is the loss of the concrete's surface, leaving the subsurface exposed to weather.

Rock salt (sodium chloride) is the least harmful traditional chemical deicer, as it only minimally reacts to the concrete. Applying brine to the concrete should also be considered before a significant winter storm. As with roads, this process reduces the total amount of salt placed on the sidewalk, thus reducing the damaging impacts. Calcium and magnesium chloride can be much more harmful based on their reactive characteristics to the concrete and the speed at which they cause temperature changes.

It is important to remember these facts when deciding whether to apply chemicals. If applied, during or after the storm, they should be spread at the appropriate rate; sidewalks are often over salted, causing even more damage. Finally, by focusing on plowing or shoveling these surfaces, you can reduce the amount of salt required to clear your sidewalks, thus reducing the damage caused by these chemicals.

# ROAD WEATHER MANAGEMENT - WEATHER SAVVY ROADS

AN EDC 4 INNOVATION

Reprinted from FHWA's Every Day Counts



***Integrating mobile observations and Pathfinder strategies can help agencies manage road systems and inform travelers ahead of, and during, adverse road weather conditions.***

Heavy rain, snow, and other storms can have significant impacts on the safety, mobility, and productivity of road users. Over the last 10 years, 22 percent of all vehicle crashes were weather related. On average, these crashes resulted in nearly 6,000 deaths and more than 445,000 injuries each year. Likewise, the delays associated with adverse weather can be profound and have significant economic impacts.

Through round 4 of Every Day Counts (EDC-4), this effort deploys two distinct road weather management solutions that allow state and local agencies to be proactive in managing the surface transportation system ahead of and during adverse weather events.

## PATHFINDER IMPLEMENTATION PLAN

Pathfinder is a collaborative effort between the National Weather Service (NWS), state departments of transportation (DOTs), and state DOT support contractors who provide road weather information to share and translate weather forecasts into consistent transportation impact statements for the public.

The Pathfinder Implementation Plan lays out a multi-step process on what information to share when and how before, during, and after high-impact weather events. This provides the public with consistent and actionable messages on potential impacts to the transportation system.

## INTEGRATING MOBILE OBSERVATIONS

Integrating Mobile Observations (IMO) involves collecting weather and road condition data from government fleet vehicles, such as snowplows. The focus

is on supplemental data from ancillary sensors installed on the vehicles, such as pavement temperature sensors, and it also includes native vehicle data such as windshield wiper status and anti-lock brake or traction control system activation.

The data provides maintenance managers with an extremely detailed view of the weather and road conditions along the road network. This information supports a number of road weather management strategies, such as a winter maintenance decision support system that enables agencies to use only the necessary amounts of labor and equipment to pre-treat roads with salt and other materials. It also supports traveler advisories and warnings, ultimately resulting in improvements in safety and mobility.

## PATHFINDER BENEFITS

**Enhanced Collaboration.** Working together to execute the Pathfinder Implementation Plan strengthens the relationships between the NWS and DOTs.

**Informed Travelers.** Cohesive weather impact statements enable drivers to make better decisions regarding whether, when, and where to travel.

**Improved Safety, Mobility, and Economy.** Consistent impact messages can reduce traffic demand, with the ultimate goal of saving lives and property and minimizing the impact of weather events.

## IMO BENEFITS

**Cost-Efficient Operation.** Employing sensors on existing fleets is a relatively low-cost method of gathering road

weather observations that can support numerous maintenance, traffic, and performance management strategies.

**Proactive Management.** Vehicle-based technologies provide agencies with the information needed to proactively manage roadway systems before the negative impacts of road weather occur.

**Improved Safety, Mobility, and Economy.** Connected vehicles technologies, advanced weather prediction and targeted decision support enable operators to more effectively maintain a high level of service on roads, which decreases crashes and keeps traffic moving smoothly.

### STATE OF THE PRACTICE

Pathfinder was born out of the success surrounding the coordination between the Utah DOT and the NWS local forecast office during the 2002 Winter Olympics. The FHWA and NWS worked with the Utah DOT to document the processes, and then expanded it to be applicable across the country. The document was next used by the Nevada and Wyoming DOTs and then refined to become the Pathfinder Implementation Plan.

Most state DOTs have implemented some form of vehicle-based technology, usually for automatic vehicle location and real-time communication. IMO builds on these capabilities by adding

ancillary sensors to collect road weather data, while also tapping into the engine's "black box" to collect and disseminate resident data. The Minnesota, Michigan, and Nevada DOTs are deploying such systems, and FHWA is working with them to document the lessons learned from the implementation process as well as the management strategies (such as traveler information systems and road weather performance management systems) that these data improve.

[https://www.fhwa.dot.gov/innovation/everydaycounts/edc\\_4/roadweather.cfm](https://www.fhwa.dot.gov/innovation/everydaycounts/edc_4/roadweather.cfm)

## 2017 ROADS SCHOLAR II GRADUATES



Lee Thorne from WVDOH-D5 is the first District Engineer to become a Roads Scholar II Graduate.



Richard Coulter, WVDOH Transportation Engineering Technician, is shown receiving his framed certificate and leather padfolio from Steve Cole, District Engineer for WVDOH-D9.

Bradley Sampson, formerly with the WVDOH-D10, also became a Roads Scholar II Graduate. (photo not available)

# ARE ALL PAVEMENTS ALIKE WHEN IT COMES TO SNOW AND ICE TREATMENTS?

Information for this article is excerpted from the Utah DOT's *Comparison of Winter Temperature Profiles in Asphalt and Concrete Pavements, Report No. UT-14.01*. The full report can be found online at the UTAH DOT's website: <https://www.udot.utah.gov/main/uconowner.gf?n=15630615913681227>



which more freeze-thaw cycles of the underlying soil occur.

Asphalt and concrete behave differently because they have very different thermal properties from each other. Three important thermal properties are albedo, specific heat, and thermal conductivity.

Because winter maintenance is so costly, Utah Department of Transportation (UDOT) personnel asked researchers at Brigham Young University to determine whether asphalt or concrete pavements require more winter maintenance. Differing thermal properties suggest that, for the same environmental conditions, asphalt and concrete pavements will have different temperature profiles. [Climate] data from 22 environmental sensor stations (ESSs) near asphalt roads and nine ESSs near concrete roads were used to 1) determine which pavement type has higher surface temperatures in winter and 2) compare the subsurface temperatures under asphalt and concrete pavements to determine the pavement type below

**Albedo** – Latin for whiteness and is a measure of how much solar radiation is reflected back into the atmosphere

**Specific Heat** – is a measure of how much energy is required to increase temperature

**Thermal Conductivity** – is a measure of how quickly heat is transferred through a material

## RESEARCH FINDINGS

The statistical analysis predicting pavement surface temperatures showed that, for near-freezing conditions, concrete pavements tend to have warmer surface temperatures for evening, night, early morning, and late morning, while asphalt pavements tend to have warmer surface temperatures for early afternoon

and late afternoon. Although the analysis indicates that the difference between surface temperatures for asphalt and concrete pavements is statistically significant, the difference is not practically important.

The average of all air temperatures corresponding to the freezing point of asphalt pavements is exactly the same as the average of all air temperatures corresponding to the freezing point of concrete pavements, showing that, although asphalt is better in the afternoon and concrete is better for other times of the day, neither pavement type is better, on average. From the standpoint of surface temperatures, asphalt and concrete are equally likely to collect snow or ice on their surfaces, and both pavements are expected to require equal amounts of winter maintenance, on average. Finite-difference analysis results confirmed that, for times of low incident radiation (night), concrete has higher surface temperatures than asphalt, and, for times of high incident radiation (day), asphalt has higher surface temperatures than concrete.

## 2018 HIGHLIGHTED EVENTS - SAVE THE DATES

### Snow and Ice Control Workshop

September 27, 2018 • Summersville, WV

The 2018 workshop will be held on September 27 at the Summersville Arena and Conference Center. This workshop covers topics pertinent to winter road maintenance activities and will interest anyone involved with snow and ice control.

We are always looking for topic suggestions and presenters! Please email, call, make a post on our Facebook page, fax, use carrier pigeons, or whatever mode of communication works for you. (See page 5 for our contact information.)



# 2018 HIGHLIGHTED EVENTS - SAVE THE DATES CONT'D

## Partnering for a Better Future

**April 18 - 19, 2018**  
**Morgantown Marriott**  
**Morgantown, WV**

The WV LTAP, in conjunction with the WV Association of the Metropolitan Planning Organizations (WVAMPO), is hosting a conference tailored to individuals involved with transportation planning, design, maintenance, and management. The target audience includes, but isn't limited to, transportation planners, public works directors, transportation engineers, city managers, elected municipal officials, county commissioners, WVDOH and FHWA employees.

The theme of the conference is *Partnering for a Better Future*, and it underscores the importance of different agencies bringing their expertise and skill sets to help make our transportation networks and communities stronger and more vital.

*The preliminary program includes a variety of topics.*

**Asset Management**

**Proven Safety Countermeasures**

**Road Safety Audit Overview**

**Pavement Preservation**

**ADA Accessibility**

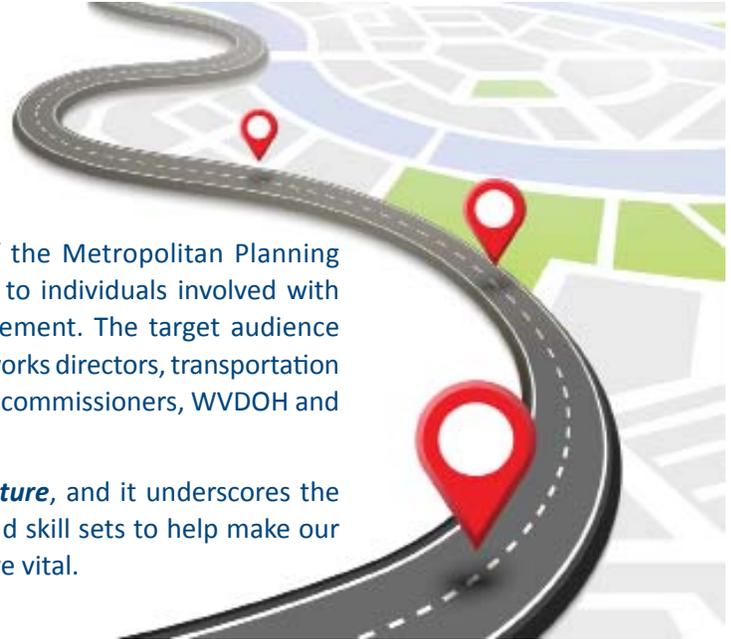
**Rural Planning Process**

**Safety Targets and Strategic Highway Safety Plan**

**Transit Impact Study**

**and more**

After the first of the year, more information will be available on the WV LTAP's webpage and WVAMPO's webpage, including registration information and more program details. We encourage you to put this event on your calendar and we hope to see you in Morgantown this April. [wvltap.wvu.edu](http://wvltap.wvu.edu) or [wvampo.org](http://wvampo.org)



## Roadway Management Conference is Returning!

**October 15 - October 17, 2018**  
**Gettysburg, PA**

The Mid-Atlantic (Delaware, Maryland, Pennsylvania, Virginia, and West Virginia) Transportation Technology Transfer (T2) Centers and Local Technical Assistance Programs (LTAP) are excited to announce the 17<sup>th</sup> Roadway Management Conference (RMC) is being held in Gettysburg, PA at the Eisenhower Hotel. The Conference dates are October 15 - October 17, 2018. We hope you can join us.

The RMC is targeted to practitioners who manage, construct, and maintain state, county, and municipal roads and streets. This group includes elected and appointed officials, managers, engineers, technicians, supervisors, and contractors.

In addition to a variety of conference topics we will also have companies showcasing products and conducting demonstrations. Stay tuned for more details and save the date for this event!

# WV LTAP 2018 BUILD A BETTER MOUSETRAP COMPETITION

## *Recognizing Innovative Inventions and Improvements*

### HAVE YOU BUILT A BETTER MOUSETRAP?

Have you or one of your coworkers built an innovative gadget? Or have you developed an improved way or process to accomplish an everyday task? If any of these apply, you've built a better mousetrap, and now is the time to show off a project your public works agency is proud of in the WV LTAP's Build a Better Mousetrap Competition.

Your entry can be anything from the development of tools or gadgets to equipment modifications to processes that increase safety, reduce costs, improve efficiency, or improve the quality of transportation. The purpose of this competition is to collect and disseminate real world examples of best practices, tips from the field, and assist in the transfer of technology.

If you have something you think would qualify for this competition, submit your entries by June 1, 2018. Entries will be judged by WV LTAP Advisory Board members using the criteria of cost savings, benefits to the community and/or agency, ingenuity, transferability to others, and effectiveness.

Winners will be recognized in this newsletter and receive a prize. WV LTAP staff members are also available to help with your write-up and take photos or videos. We know that you and your crews are doing phenomenal things, on limited budgets, but with unlimited imagination and foresight. Help us share your challenges and solutions with other agencies!

The winning entry will be submitted into the Regional and National LTAP Build a Better Mousetrap Competitions. Winners of the national competition will be announced at the annual LTAP/TTAP national conference this summer.

To enter the competition, complete the entry form on the following page and mail it to the WV LTAP or visit the WV LTAP website at [wvltap.wvu.edu](http://wvltap.wvu.edu) to submit online. The competition deadline is June 1, 2018.

If you have questions or need an application, please email Kim Carr at [Kim.Carr@mail.wvu.edu](mailto:Kim.Carr@mail.wvu.edu) or call (304) 293-9924.



### JUDGING CRITERIA

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The competition is judged on the criteria listed below within the framework of a five-point rating scale. The winner is the entry that has the highest number of overall points.

#### Judging Criteria

- Cost Savings
- Benefits to the Community
- Ingenuity
- Transferability to Others
- Effectiveness

#### Five-Point Rating Scale

- 5 = Excellent
- 4 = Very Good
- 3 = Good
- 2 = Fair
- 1 = Poor

# WV LTAP 2018 BUILD A BETTER MOUSETRAP COMPETITION ENTRY FORM

Photographs and videos are strongly encouraged but are not mandatory. You may use more than one page per entry. This form can also be completed online at [wvltap.wvu.edu](http://wvltap.wvu.edu).

Entry Title: \_\_\_\_\_

Problem Statement: \_\_\_\_\_

Discussion of Solution: \_\_\_\_\_

Labor, Equipment, Materials Used: \_\_\_\_\_

Cost: \_\_\_\_\_

Savings/Benefits to the Community: \_\_\_\_\_

Agency Name	_____		
Contact Person	_____		
Contact Phone	_____	Contact Email	_____
Contact Mailing Address	_____ _____		

Please return your completed form by June 1, 2018 to Kim Carr.

WV LTAP • PO Box 6103 • Morgantown, WV 26506

Email: [Kim.Carr@mail.wvu.edu](mailto:Kim.Carr@mail.wvu.edu) or Fax: 304-293-7109

Questions? Please call Kim at 304-293-9924.

## Country Roads and City Streets

A Newsletter of the WV Local Technical Assistance Program



West Virginia Local Technical Assistance Program  
West Virginia University  
Benjamin M. Statler College of Engineering and Mineral Resources  
Department of Civil and Environmental Engineering  
PO Box 6103  
Morgantown, WV 26506-6103



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# Season's Greetings

*As we roll into a new year, the WVLTAP staff wish you a holiday season filled with peace, love, and joy.*

