Congratulations, Minnesota Mousetrappers!

Congratulations to the recipients of Minnesota's 2021 Build a Better Mousetrap Awards! First place goes to the City of New Brighton for its skid loader attachment (left), and second place to Freeborn County for step extensions for Macks. Read more on page 2.

Cargo securement strategies ensure safety

Heavy truck cargo can become dangerous if not secured properly. A Minnesota LTAP training event detailed the latest cargo securement strategies and outlined how drivers can use them to ensure safety.

Brian Barott, an equipment training specialist with the Minnesota Department of Transportation, described careful cargo securement as a form of defensive driving. He presented photos of truck cabs crushed by improperly secured loads and a video of cargo falling off its trailer as the truck rounds a corner.

Understanding vehicle dynamics, Barott said, is critical for safe and effective cargo securement. The overall goal is to ensure that nothing on the

Cargo continued on page 7

Driver training rules go in effect February 7

Is your agency ready? The Entry-Level Driver Training (ELDT) regulations from the Federal Motor Carrier Safety Administration (FMCSA) go into effect February 7, 2022.

Under the new requirements, an entry-level driver must successfully complete a program of theory and behind-the-wheel instruction prior to taking the Commercial Driver's License (CDL) test.

The ELDT Program sets the baseline for training requirements for entry-level drivers. This includes drivers applying to:

• Obtain a Class A or Class B CDL for the first time.
• Upgrade an existing Class B CDL to a Class A CDL.
• Obtain a school bus (S), passenger (P), or hazardous materials (H) endorsement for the first time.

The new rules support FMCSA's goal of ensuring that only qualified drivers are behind the wheel of commercial motor vehicles.

CDL continued on page 3
Mousetraps: An attachment, an extension, and a marker

First Place: City of New Brighton

**Skid loader attachment**

**Problem:** When dumping gravel and asphalt in smaller areas such as water main break sites, city staff were relying on a skid loader, shoveling, and a lot of hand labor to complete the job. This process was time- and labor-intensive and left a lot of material in the street to clean up.

**Solution:** The city purchased a skid loader attachment and modified it to allow workers to spread material faster, cleaner, and easier. Modifications included welding on a swivel plate, adding a hydraulic cylinder for leveling, creating and welding the tubing framework, and making screws in different widths. It took 60 hours to create and cost about $1,600. The attachment requires fewer workers, cuts the time it takes to do a job in half, and improves safety by helping keep workers out of traffic.

Second Place: Freeborn County

**Step extensions for Mack**

**Problem:** County workers could not safely scrape ice off of or clean the windows of their Mack trucks. It was dangerous trying to climb up onto the tire, especially while parked on the side of the road with other vehicles driving by.

**Solution:** The county purchased factory steps from Mack and modified them to make extensions to the existing cab entry steps, allowing workers to make a safe climb up onto the truck tires to clean their windows. The modification process required sheet metal, square tubing, a welder, a bandsaw, and it cost approximately $200 per truck for materials. The step extensions will reduce the number of slips, trips, and falls that may have happened when workers were climbing on things that said “no step” or trying to pull themselves up onto the big tires.

Runner-up: Otter Tail County

**Chip-seal marker installation tool**

**Problem:** When installing chip-seal markers, county workers had to spend a lot of time getting on and off the tailgate of the pickup truck, walking down the road, and bending over to place each marker.

**Solution:** County staff created a chip-seal marker installation tool that allows one person to drive the pickup truck while another person in the back installs the chip-seal markers without getting off the tailgate. The tool took about one hour to fabricate and cost less than $20 in materials. Chip-seal markers can now be installed at a minimum of double the speed with the same number of workers.

Submit your ideas for the 2022 Mousetrap competition!

As you work on projects throughout the year, please keep the 2022 contest in mind. We want to hear about your agency’s creative solutions, and submissions are welcome at any time. To enter, just submit an entry form by May 15, 2022. You’re also encouraged (but not required) to submit photos and short video clips showcasing your project along with your entry form. For more information, please contact Katherine Stanley at sell0146@umn.edu or 612-626-1023.

Minnesotans receive national APWA awards

Two Minnesota transportation professionals are among the 2021 award recipients from the American Public Works Association (APWA).

**Chris Petree** received the Harry S. Swearingen Award for Outstanding Achievement and Excellence in Chapter Service. Petree is a member of Minnesota LTAP's steering committee and a graduate of our Roads Scholar program. He has been in the public works profession over 28 years and currently is the director of Rochester operations for WSB in Minneapolis. He previously was Rochester's director of public works.

**“Chris is passionate and dedicated to bringing education and learning opportunities to public works employees and APWA members, which benefits communities throughout the state of Minnesota and beyond,” says Mindy Carlson, MnTAP program director.**

Matthew Moreim, assistant city engineer for the City of St. Paul, received the Professional Manager of the Year award in the transportation category. One of the many achievements cited in his submission materials was developing and deploying an apprenticeship program (with the city’s human resources office) to bring new employees into the workplace without the normally required commercial driver’s license. These apprentices move into a street maintenance worker position after they gain their CDL.

And an unusual highlight: During the civil unrest and rioting in St. Paul following the murder of George Floyd in 2020, Moreim led the deployment of 12 plow trucks with street maintenance service workers to protect businesses in the University Avenue Midway business area. Public Works assisted with this effort until the National Guard arrived and took over the protection detail.

(Adapted from award submission materials. Read more about the awards at apwa-mn.org.)

### Minnesota LTAP Staff

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- City of New Brighton, Freedom County, Brian Bent, Shuterbs, Otter Tail County, APWA MN, City of Eagan, Lowes Heating Technology; Eva Dienst, MDOT, LRBD, Photo courtesy of MDOT.
- Chip-seal marker installation tool speeds up the process.

#### Contact us

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### Minnesota LTAP Steering Committee

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- **Joe Campbell, Federal Highway Administration:** Alaska-Florida, Pennington County, Minnesota LRRB Research Implementation Committee
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### Photo Credits

- Chip-seal marker installation tool speeds up the process.
**OPERA project: Trail plow cutting edges**

The City of Eagan, Minnesota, Public Works Department maintains 130 miles of trails and sidewalks. But standard steel cutting edges on trail plowing equipment typically need to be replaced annually and, often, multiple times per winter snow season. The cost for parts and labor can really add up over five years.

**Tungsten carbide vs. standard steel cutting edges**

Eagan maintenance staff found tungsten carbide cutting-edge sections performed well on roadway snowplows, so they decided to explore the feasibility of also using the blade edges on trail plows. They wanted to determine if the quality of snow removal would be adequate and cost-effective when installed on trail plows.

Eagan received a $5,000 grant through the Local OPERA Program to compare the effectiveness of tungsten carbide cutting edges to those of standard steel on trail plows.

A project team studied three pieces of trail plowing equipment, all equipped with V-plows. The standard steel cutting edge remained installed on one plow, while the other two were equipped with the tungsten carbide wear edges: one with standard 12-inch-wide cutting-edge sections, the other with the standard sections cut in half to 6 inches. The team also monitored the quality of snow removal by comparing three locations with similar pavement conditions on each trail plow route. Plow performance and cutting-edge wear were monitored over approximately 30 plowing events.

**Eagan chooses tungsten carbide cutting edges for all trail plows**

The team found each style of cutting edge provided acceptable finished results, with minimal snow left on the trail surface and significant portions of the trail surface scraped clean. Moreover, the team found no noticeable difference in the snow removal performance between plows with the 12-inch segments and 6-inch tungsten carbide segments. In addition, they had no issues with rocks or debris becoming lodged in joints of the tungsten carbide wear edges.

As a result of this study, the City of Eagan intends to use segmented 12-inch tungsten carbide cutting edges on all trail plowing equipment beginning with the 2021–2022 winter season. The project team also feels that other agencies may benefit from this research, too, because using tungsten carbide cutting edges on trail plows could provide a net reduction in replacement costs over the life cycle of the cutting edge while maintaining the quality of snow removal.

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**National Mousetrap: Paver smooths uneven spot repairs**

Officials with the Lower Heidelberg Township in Berks County, Pennsylvania, needed a solution to improve the daily commute of their residents. Their issue was uneven pavement after completing spot repairs or filling in shoulders using a hand shovel or rake. In addition to the uneven pavement, the manual repairs put road crews at risk for back injuries.

The Black Top and Shoulder Stone Paver was the solution. Developed by the road crew, the paver allows asphalt mix to be unloaded and laid down in just 6 to 8 minutes compared to 35 minutes using a hand shovel or rake. The paver, which costs $1,950, allows workers to set an even height for more level paving.

Township officials say this patch repair method is a huge cost-saver and provides a smoother riding surface for drivers and a safer task for road crews.

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**Send us your OPERA ideas: Tools, processes, or tips for COVID-19**

Do you have ideas for improving tools or processes? Or maybe you’ve been finding solutions for COVID-related impacts to your job that could benefit other agencies? If so, please send your ideas to the LRRB’s Local Operational Research Assistance (OPERA) Program. The submission deadline is September 24, and funding is limited. Please see the OPERA web page for details: mnltap.umn.edu/opera.

**Download free OPERA/ Mousetrap poster for your shop**

Minnesota LTAP has created a 11x17-inch poster encouraging maintenance staff to submit their OPERA and Mousetrap ideas. Please post it in your shop or other work areas. It’s free for downloading at mnltap.umn.edu/opera.

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**CDL from page 1**

To find training providers or learn how your agency can become a training provider, please visit https://tpr.fmcsa.dot.gov. You may also subscribe for news and updates. And stay tuned—Minnesota LTAP will also be providing updates and potential training opportunities from Minnesota agencies and colleges.

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**Learn more:**

- Matt Clay, road foreman, Lower Heidelberg Township, Berks County, 484-256-3558, mclay@lowerhbtwp.org
Managing winter maintenance in a changing environment

Management techniques for snow and ice operations are undergoing a shift, and supervisors need to adapt their strategies if they wish to keep ahead in a changing environment. A webinar at the 2021 American Public Works Association (APWA) Snow and Ice Conference detailed how...

Lee Perkins, director of public works and engineering for Renfrew County in Ontario, Canada, said that the gold standard for management strategies has changed in recent decades toward a more team- and communication-oriented approach. This is in part because of the unique, multi-generational mix of workers in the winter maintenance field—many with varying work philosophies and familiarity with technology.

This change is also needed because of the steady development of new technologies. Fast-paced data has become a central part of maintenance planning, and specialized training is becoming increasingly important as computers and other complicated (and expensive) technologies integrate with maintenance vehicles.

Winter maintenance success will increasingly depend on effective planning, training, communication, and teamwork. Adapting to these changing needs, Perkins said, will be a slow process, since traditions tend to die hard and government organizations are generally slow to change.

Team-focused strategies
Taking a team- and communication-focused approach to management can serve as solid bedrock for creating an effective winter maintenance system, Perkins said. The “keys for success” include:

• Communicating effectively
• Developing staff and delegating roles effectively
• Promoting an honest, fair, and cordial work environment
• Caring for the needs of the team members
• Being able to work well under stressful conditions
• Taking a proactive approach to issues
• Giving sincere feedback
• Listening to staff
• Developing and promoting effective training

Overall, the welfare and success of the team should be a top priority. “It’s never about the role,” Perkins said. “It’s not about climbing the ladder, getting to the next level and all that. It’s always about the goal.”

Winter maintenance planning
Developing an official, written winter maintenance plan is important for a number of reasons, Perkins stressed. For the public, it outlines what levels of service they should expect from the department. Within the department, it serves to identify responsibilities and roles, outline strategies and resources, and establish a line of succession.

“If you’re prepared, luck is definitely on your side,” Perkins said. He outlined what an annual winter maintenance plan might look like:

Late spring/early summer
• Forecast personnel/staffing needs.
• Estimate vehicle/equipment requirements.

Late summer
• Issue new contracts.
• Develop public outreach for the coming year.
• Finish any planned maintenance/upgrades of facilities.
• Check that you have or can get necessary equipment/materials.

Early fall
• Issue winter operations plans/maps.
• Brief officials and the public on the plans.
• Conduct training.
• Issue equipment.
• Inspect routes.
• Conduct practice dry-runs.

Early/mid-winter
• If there’s no snow yet, double-check equipment, materials, route plans, and communication/notification systems.
• If there’s snow, have an active strategy in place for inspecting, reviewing, and fixing any equipment or plans that need alteration.

Late winter/early spring
• Begin again.
• “It really is just an endless planning cycle,” Perkins said.

Planning resources
The APWA offers a Winter Maintenance Supervisor Certificate workshop during its annual North American Snow Conference. Perkins also recommended looking at existing winter maintenance plans for guidance, such as MnDOT’s Maintenance Manual: dot.state.mn.us/maintenance/manual.html.

—Sophie Koch, MnLTAP Freelancer

U researchers and Edina snowplow drivers team up to reduce salt in Minnesota’s waters

University of Minnesota researchers collaborated with the City of Edina on a research project that aimed to gather data and create tools for reducing road salt contamination in Minnesota’s urban waters.

“When operators have the right tools to do their jobs, they can maintain a high level of service and use less salt,” says Jessica Wilson, Edina’s water resources coordinator.

The first step in this project was to gain a better understanding of how chloride moves from roads to watersheds, says Larry Baker, the principal investigator and a professor in the Department of Bioproducts and Biosystems Engineering. One noteworthy finding is that chloride movement doesn’t tend to be gradual—rather, it comes in short bursts during a handful of events spread across the year. During both winters of the study (2017–18 and 2018–19), the researchers found that around 90 percent of the yearly chloride loading moved off the roads in under eight non-consecutive days.

“It occurs when you have these large melt events,” Baker says. “Particularly these ‘winter mix’ events, where you might have snow falling that accumulates, melts, and then freezes.” A contributing factor in this pattern may be roadside snow piles, which were shown to accumulate large amounts of chloride.

The researchers then developed scenario models to evaluate chloride movement throughout larger watersheds. They also created an Active Management Toolkit with a training guide and spreadsheet tools. One spreadsheet, for example, allows users to forecast chloride concentrations in groundwater depending on the percentage of impervious surfaces. This active management approach—checking the effects of actions and making adjustments—is one way that local agencies may be able to reduce salt use while maintaining winter traffic mobility, Baker says.

The U team also coordinated workshops with Edina public works staff at the end of each winter of the study. The workshops brought together the researchers and plow operators and their supervisors to share data and knowledge for improving operations.

The workshops generated a suite of solutions to reduce salt use. For example, operators in the first workshop proposed the purchase of carbide blades to improve ice removal, which led the city to purchase and install five carbide blades in 2018. The carbide blades seemed to improve ice removal and had the side benefit of being far less noisy than steel blades, Baker says.

The research was funded by the Minnesota Local Road Research Board. The final report, toolkit, and two videos are available on MnDOT’s research project website.

—Sophie Koch, MnLTAP Freelancer

Learn more:
• Adaptive Management to Improve De-icing Operations (MnDOT, 2021)
An asset management program can help public works departments organize resources, finances, and risks and manage public expectations. Speakers at the 2021 APWA Snow and Ice Conference outlined a “road map” that details how to create one. In 2018 the APWA created the National Asset Management Technical Committee to provide support for members. One of the committee’s more recent projects is the Asset Management Road Map—an online, 12-step guide for creating an asset management program.

An asset is defined as any item that provides value—and for a public works department, this can include many things. A paved road is an asset, as is a road sign or a snowplow.

Toby Rickman, deputy director for public works in Pierce County, Washington, and a member of the technical committee, said that the Road Map was designed as an interactive, living tool, with each step supplemented by resource libraries.

“This is an opportunity for all of you, as members, to share information with each other and add to these libraries that will grow over time,” Rickman said.

Each step in the Road Map is called a stop. Becky Bonebrake, senior civil engineer at the City of Overland Park, Kansas, and another member of the technical committee, traded off with Rickman describing each one.

Stop 1 – Organize roles, responsibilities, and assignments
Pick the people who will be responsible for delivering the asset management plan overall and identify the positions, competencies, and responsibilities of each person. Ideally, they should be from all levels of the public works organization.

Stop 2 – Establish asset management policy and strategy
In clear, concise, and simple language, determine what the overall goals of the asset management plan should be and what specific tactics it will use to meet those goals.

Stop 3 – Set levels of service for the system
Determine, in a quantifiable manner, the quality and availability that the community should expect from the agency’s assets.

Stop 4 – Collect asset management information
Create an inventory database for the agency’s assets. For a public works department, this might include information such as location, materials, manufacturer, install date, condition, and work history.

Stop 5 – Assign criticality/risk
Criticality is defined as a measure of how important an asset is; the more critical it is, the more impact it will have if it fails. Risk combines criticality with the probability of an asset failing. Assigning criticality and risk can be used to prioritize assets and juggle funding.

Stop 6 – Set target level of service (operational)
Analyze the service needs of the community and establish how those needs will be prioritized. If a road needs maintenance, for example, it is wasteful to do repairs too early but dangerous to do them too late.

Stop 7 – Develop maintenance and operational strategies
Create a plan that details how and when to service the needs of the community.

Stop 8 – Develop capital improvement strategy
Create a plan that details how to fund assets. Having a long-term view is generally advisable; this involves considering the long-term storage and maintenance of assets. Criticality and risk should also enter into the plan, as it helps prioritize funding.

Stop 9 – Develop financial strategy
This ties in with Stop 8 but takes a broader approach to budgeting: in the long term, what is the most cost-effective way of accomplishing the asset management goals?

Stop 10 – Assemble asset management plan
Put everything together and outline the necessary activities/programs in each area of the plan. Again, think in the long term (10 to 20 years).

Stop 11 – Implement asset management plan
Get the plan out to government bodies and the public and set things in motion.

Stop 12 – Review and adjust
Analyze the effectiveness of the plan and make adjustments as necessary.

Look for version 1.0 of the Road Map on the technical committee’s website in the fall of 2021. A long-term plan and discussion about version 2.0 is already being developed, which Rickman said might include expanded library resources and any necessary adjustments or expansions to the stops.

Sophie Koch, MnLTAP freelancer

‘Road Map’ will help organize and prioritize public works assets

New from Clear Roads
Following are some recent materials from the Clear Roads national research consortium: clearroads.org.

Pre-wetting methods and procedures
Researchers detailed the current state of the practice for pre-wetting salt and other solid materials, capturing details on equipment, methods, materials, and application rates. The project also identified a list of preliminary recommendations to help agencies get the most benefit from pre-wetting.

Advanced technologies for winter operations
This project produced a guide to implementing eight emerging and recently developed winter maintenance technologies. By understanding the options and their benefits, agencies can make better-informed decisions about which technologies to invest in.

Tools and strategies for developing severity indexes
Researchers created a step-by-step guide and a flowchart tool to help agencies identify or develop severity index methods that fit their needs and their available data sources. Once implemented, these storm and winter severity indexes will allow winter maintenance managers, researchers, and transportation agencies to more effectively compare winter operations among localized areas, districts, and states. Agencies are also better able to compare individual storms across years.

Road weather data improves performance dashboards
A six-page fact sheet describes how agencies may leverage road weather data to develop and improve performance measures for enhanced storm management and performance management dashboards. The document was developed by the Every Day Counts (EDC) Weather Responsive Management Strategies (WRMS) team.

Performance management is an important application for WRMS. It enables agencies to better guide investments and measure progress by using historic and real-time data as well as forecasted information. WRMS data management tools can use road weather data from mobile and connected vehicle technologies to enhance agencies’ existing performance measures.

The fact sheet discusses considerations for data collection; development of road weather performance indices; and data usage, application, and sharing. It provides resources for topics such as performance measures in snow and ice control operations, snow removal performance metrics, and examples of state DOT dashboards.

(Adapted from EDC News, July 15, 2021.)
**Asphalt membrane reduces air voids, improves performance**

J-Band is a void-reducing asphalt membrane (VRAM) product. These products—mixes of asphalt binder, polymer, and modifiers—hold new asphalt in place and migrate upward into the asphalt layer, filling air voids. MnDOT and other agencies rely mostly on anecdotal evidence and manufacturer claims to judge VRAM products and applications. In a MnDOT-funded project, researchers evaluated the use of J-Band in an asphalt pavement on State Highway 22. Tests showed higher bond strength, lower permeability and air void levels, and improved crack resistance.

**Maintenance Operations Research kick-starts the study**

Potholes and similar asphalt failures typically occur at the seams between lanes. At these edges, asphalt’s higher air void content makes it more susceptible to moisture penetration, freeze-thaw damage, and other failures. Typically, the density within 6 inches of the longitudinal joint is lower than the density throughout the mat. To mitigate potential failures, crews can spray a VRAM product at the seam location before the asphalt paving.

In 2017, Jerry Geib and Charlie Kremer submitted a proposal to MnDOT’s Maintenance Operations Research (MOR) program. Geib, research operations engineer with MnDOT’s Office of Materials and Road Research, and Kremer, materials engineer in MnDOT District 7, requested $15,000 to test J-Band for longitudinal joint treatments. Their proposal was approved, and the funding was used to purchase the J-Band product.

In 2018, a 1-mile section was paved on TH 22 and treated with J-Band. At the test site, in Blue Earth County south of Mankato, J-Band was applied in an 18-inch-wide band at the longitudinal joint followed by a top layer of 1.5 to 2 inches. Another mile of pavement with no VRAM served as a control. MnDOT then funded a study by Iowa State University to evaluate J-Band’s performance. Researchers gathered a sample of the hot-mix asphalt to determine binder and mix gradation and collected about 40 cores from the two sections. They conducted lab tests on the cores for a range of properties. They then returned to the paving site in October 2019 to do a visual survey for signs of distress and examine the density of mat locations and joints.

**Results: J-Band extends pavement service life**

The researchers found that J-Band migrated up into the top asphalt layer and reduced air voids from 8.5 to 5 percent. The product reduced water incursion and improved pavement strength. In laboratory testing, VRAM outperformed control sections in terms of bond energy, fracture energy, work of fracture, and surface energy.

“VRAM is performing as advertised,” says Eddie Johnson, research project engineer with MnDOT’s Office of Materials and Road Research and the technical liaison for the study. “It reduced water flow greatly. Mechanical tests indicated that J-Band strengthens the pavement structure.”

Cost savings over time could be significant. “Trying to solve longitudinal joint cracking through compaction effort is not really possible,” says Joseph Podolsky, bituminous materials scientist with Iowa State University and the study’s principal investigator. “Using VRAM products is easier. The material should benefit long-term pavement performance where it is used.”

Kremer notes that the cost of J-Band (or similar products) would be affected by product availability and application logistics.

MnDOT’s Office of Materials and Road Research is writing a special provision for VRAM use, Geib says.

**Learn more:**
- **Use of J-Band to Improve the Performance of the HMA Longitudinal Joint (MnDOT, 2020)**
Avoid securement devices hooked to tracks (device can move on track, pad, or cleat). Look for manufacturer tie-down hook points. Tie-down system (chains) should be crossed when equipment is wider or closer than the trailer. Also, must have 80% of the mask or tie supported by trailer deckings.

**Cargo** from page 1

trailer—even the tie-downs being used—can move in any direction.

"If you tip it over," Barott said, "the cargo should stay with the trailer." Barott’s presentation largely focused on cargo loads at or over 10,000 pounds. According to state and federal regulations, the tie-downs (or combination of tie-downs) holding the cargo in the forward, rearward, and lateral directions should each be able to carry at least 50 percent of the cargo’s weight.

Cycling Past 50: A Closer Look into the World of Older Cyclists (Minna Transportation Institute, April 2021)

Reports on 2,300 responses to a nationwide survey of older adults who cycle, including the impact of COVID-19 on older adults’ cycling habits, the impact of aging on ability and agility, the impact of the built environment, types of bicycles, and opportunities to cycle with others.

Evaluation of the Filtration Effectiveness of Dewatering Bags and Assessment of Potential Improvements (Virginia Transportation Research Council, April 2021)

Evaluates the filtration effectiveness of dewatering bags approved for use by VDOT and selected dewatering bags that are not currently approved by VDOT but are claimed to provide a higher level of filtration performance.


Determines how traffic speeds and different speed measures interact with roadway characteristics and weather conditions to influence the likelihood of crashes.

Street-level Flooding Platform: Sensing and Data Sharing for Urban Accessibility and Resilience (City of Alexandria, April 2021)

Describes the FloodSense project that began in 2020.


Summarizes state DOT practices for selecting pedestrian and bicycle projects, excluding design elements.

Rural Transit Fact Book (Upper Great Plains Transportation Institute, May 2021)

Provides statistics and information on rural transit in America.

Transportation Research Circular E-272: Technology Exchange on Local Roads Bridge Programs (TRB, May 2021)

Summarizes panel discussions of the Local Roads Bridge Programs.

Design and Development of an Automated Truck Mounted Attenuator (Safe-D National UTC, May 2021)

Describes an automated TMA system that will remove the driver in future phases from the TMA vehicle in mobile and short-duration work zone operations using a short following distance leader-follower control concept.


Explains a speed limit setting procedure that considers factors beyond the 85th percentile speed, including both driver speed and perceived speed. This is a close-up of the left rear tie-down system. It is a flatbed—all tracked and rubber tire equipment. Barott said, "If you tip it over," Barott said, "the cargo should stay with the trailer."...
MnLTAP plans in-person and virtual training

Minnesota LTAP will experiment with multiple options of in-person and virtual workshops this fall. Dates and delivery mechanisms are listed below and posted on our website. “We’re pleased to resume some on-site workshops,” says Sandy Carlson, LTAP program manager. “And because of the tremendous success our virtual workshops had reaching audiences we have never reached before, we want to continue our virtual training as well.”

Please visit our calendar for a variety of learning opportunities being offered by Minnesota LTAP and other agencies. Thank you for your patience and support as we maneuver through this ever-changing transitional time.

More agencies take MnLTAP online classes

By going virtual because of the pandemic, Minnesota LTAP was able to attract new people to our classes. “I was really pleased and amazed at the total number of people who attended the virtual work-zone traffic control classes,” says Kathy Schaefer, LTAP instructor. “We were able to reach approximately 41 agencies that have not requested this training in the past!”

Calendar

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<td>RS</td>
<td>Oct. 6–7, St. Cloud</td>
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<td>Sign Maintenance and Management</td>
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<td>Minnesota LTAP online courses</td>
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<td>Products, Processes, and Strategies</td>
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MnLTAP training

LTAP training is marked above with an LTAP. Check the web for details and to register: mnltap.umn.edu. To be added to our mailing list, email mnltap@umn.edu or call 612-625-1813.

Roads Scholar Program

You can earn credits in Minnesota LTAP’s two Roads Scholar (RS) certificate programs by completing LTAP and other cosponsored training. One certificate is focused on maintenance operations and the other on leadership and supervision. To learn more or enroll in the program, visit mnltap.umn.edu/roadsscholar.

Program connects local agencies and interns

Will your agency need an intern next summer but you’re not sure how to find one? The Local Agency Transportation Internship Program (LATIP) connects local agency employers across Minnesota with current students pursuing careers in the field of transportation. LATIP aims to help city, county, and township agencies attract and develop the future workforce while giving students experience with real-world transportation projects.

The program is sponsored by Minnesota LTAP with funding from the Minnesota Local Road Research Board and is administered by the Center for Transportation Studies.

How it works

The program gathers summer internship postings and posts them in one online location for students to view and apply. LATIP also markets this collection of opportunities to agency employers across Minnesota with current students pursuing careers in transportation-related areas of study through the program’s connection to student groups, faculty, and career services staff. LATIP offers agencies support and follow-up during the interviewing and hiring process. This includes providing insight into applicant pool trends, suggested timelines, and additional opportunities for students. There’s no cost to submit a posting or to participate in the program. However, your agency is responsible for interviewing, hiring, and paying your selected candidate(s).

Students find direct links to agency applications on the LATIP website.

Pilot results

In 2021, a total of 16 positions were posted from 11 participating agencies. In a follow-up survey, 100 percent of the respondents said they would participate in the program in future years and that it was very easy to participate. More than 40 percent of responders said they think participating in LATIP led to an increase in applicants. One survey comment: “This was a great start, and I think it will be a great program moving forward that we can expand.”

Plans for next year

In 2022 the program will expand its reach and include targeted marketing to community and technical school students in Minnesota.

“This new element of the program will help provide more students access to internships with transportation and public works departments in local agencies across the state, including those students pursuing two-year degrees,” says Stephanie Malinoff, director of Minnesota LTAP.

Learn more about how the program works and why your agency should consider posting a job next year with LATIP by visiting our page for employers. Job postings will be accepted November 1 to February 15. Beginning January 1, postings will be added to the website on a weekly basis. Student outreach will begin in late January to coincide with the start of spring semesters.

Learn more:
- Local Agency Transportation Internship Program: mnltap.umn.edu/training/internship

The new internship program builds on a long-established version with MnDOT.

MnLTAP online courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
<th>Fee</th>
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<tbody>
<tr>
<td>Culvert Design and Maintenance</td>
<td>RS</td>
<td>$45</td>
</tr>
<tr>
<td>Sign Maintenance and Management for Local Agencies</td>
<td>RS</td>
<td>$45</td>
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<tr>
<td>Gravel Road Maintenance and Design</td>
<td>RS</td>
<td>$45</td>
</tr>
<tr>
<td>Fundamentals of Construction Inspection</td>
<td>RS</td>
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Other online courses eligible for RS credit

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<tr>
<th>Course</th>
<th>Credits</th>
<th>Fee</th>
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<tbody>
<tr>
<td>Maintenance Stormwater</td>
<td>RS</td>
<td>Free</td>
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<tr>
<td>Math Basics for Maintenance Technicians</td>
<td>RS</td>
<td>Free</td>
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<tr>
<td>Administration and Management Basics</td>
<td>RS</td>
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<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>Roadside Turfgrass Maintenance</td>
<td>RS</td>
<td>$175</td>
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</table>

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