Tools help expand the transportation workforce

Local transportation agencies in Minnesota are facing a growing workforce shortage. In a recent project, Minnesota LTAP led the creation of tools to help expand the transportation workforce and fill open positions—today and tomorrow. The tools take a two-pronged approach: One set helps local agencies attract and retain workers in the short term, while another focuses on training and technical assistance.

New rules for CDL applications: How can drivers and organizations prepare?

On February 7, 2022, the federal government will implement new training requirements for commercial driver’s licenses (CDLs). These requirements will standardize but also complicate the licensing process. Any organization that relies on CDL drivers should begin preparing early.

Background on the new rules

Historically, CDL training has not had consistent standards. The new regulations are part of an initiative from the Federal Motor Carrier Safety Administration (FMCSA) to standardize CDL training requirements across the nation.
Recessed lane indicator holds up better and costs less

Schweitzer Mountain Road in the Independent Highway District (IHD), Idaho, gets anywhere from 100 to 300 inches of snow annually. Maintenance crews clear the road multiple times per day, which results in the scaping away of pavement markings.

The reduction in visibility presented a safety hazard for drivers and for snowplow teams trying to get up and down the well-traveled route to the local ski area.

“The road is one curve to the next and snowplow trucks tend to drive in a straight line. We needed a way to keep the trucks on the road and not in the drop-offs,” says Mel Bailey of the IHD.

The IHD developed the Recessed Lane Indicator process involves marking the lane using reverse stencils on the roadway's centerline using metal plates and then covering them with thermoplastic markings that remain visible for up to five years.

“We looked at other options that included the use of deicers, but they were too bulky for snow removal. And we considered receding stripping the road, but the cost was too high, and it would only hold up for five years,” Bailey says.

According to the IHD, the Recessed Lane Indicator works better, holds up better, and costs less. “Everyone was especially happy about this because it did not change the aesthetics of the road,” says Bailey.

The IHD is comprised of three people and has a small budget. The biggest challenge with the innovation was working with the thermoplastic.

According to Bailey, “It has to be heated with a torch or flame, but there’s a fine line between burning the material and melting it to get it to stick to the pavement properly. That’s a skill that is gained by doing the job. It doesn’t take too long for someone to learn the skill. When heated partially, the surface should look like a toasted marshmallow over a campfire.”

The IHD’s advice to agencies hesitant to try out the process is to be bold. “There is nothing ventured—nothing is gained by not trying. Listen to the workers in the field. Ideas start from the ground-up. Don’t be afraid to try something different than what you’ve done before,” Bailey says.

The project received the 2021 Mousetrap Pioneer Award from the Federal Highway Administration (FHWA) Center for Local Aid Support contracts, which was surprising Bailey says.

The project was submitted and won the 2021 FHWA Build a Better Mousetrap contest.

Learn more: • Dale Lefever, 717-665-4508, publicworks@penntwplanco.org

Snow fence winner promotes safety—and easier storage

In Penn Township, Pennsylvania, snow fencing is used to cut down on drifting and blowing snow on high-trafﬁc routes. It increases safety and prevents snow from accumulating in areas with tall grass, corn stalks, or other debris, putting fencing up and taking it down manually— as well as rolling it tightly— was inefficient and strenuous for the township’s public works crew.

To help make the process easier, the crew created a snow fence winner for winter maintenance that is moveable, offers storage, holds up well, and is easy to carry.

Benjamin Perry purchased the snow fence lifter from a tractor supply store. “One thing I have made it a point to do in my career as the highway superintendent is to listen to the crew, get feedback, brainstorm, and then put things into motion to make things easier for everyone.”

The kit comes with two spring systems. “You will have to modify cable length to ﬁt your truck,” Perry says. "Be sure you have a hardware store do the crimping—unless you have the proper tool to crimp the cable to ensure it is secured properly.”

The project received a 2021 Mousetrap Innovative Project Award honorable mention from the FHWA Center for Local Aid Support.

Learn more: • Benjamin Perry, 518-392-2651, ghenthwy@fairpoint.net

Submit your ideas for the 2022 Mousetrap competition!

We want to hear from your agency’s creative solutions! 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.

Contact Katherine Stanley at sal0146@umn.edu or 612-626-1023.

Lightening workers’ loads with tailgate lift system

Raising and lowering heavy truck tailgates are essential daily duties for many employees in the Town of New York, New York, Department of highways. Crews there created a lift system to help workers regardless of their individual size or strength. Using strategically placed tension cables, the Truck Tailgate Lift System drastically reduces the amount of force needed for one person to operate a tailgate. It also increases safety and enhances workforce productivity.

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Could solar panels on snow fences, s...
What’s behind the transportation workforce shortage—and what can local agencies do about it?

A University of Minnesota study identified the causes of the growing workforce shortage in the transportation industry and recommended that public agencies can use to attract and retain staff.

According to the study, shifting demographics and labor market conditions are a major reason for the workforce shortage. The US labor force is aging rapidly and baby boomers are retiring. The labor force is also becoming more diverse, and immigration remains a key driver of population growth.

In addition, younger generations are bringing different values to the job, with many concerned more about career advancement and less about long-term job security. They are less likely to accept reductions in pay or the work, “says Stephanie Malinoff, MnLTAP director.

The project was guided by a technical advisory group that included representatives from public transportation agencies and interested organizations, and the project’s principal investigator: “Positions remain open for a long time and sometimes are never filled. Attrition build, agencies remain understaffed, and maintenance and construction projects get delayed—none of which are ideal conditions,”

The study was sponsored by the Minnesota LRRC. The lead researcher was Professor Kenneth Bartlett Jr. (see above) and learn how you might use the findings and recommendations at your agency.

Tools to meet short-term needs

Recruitment Toolkit for Local Agencies. This one-page toolkit includes best practices and resources such as sample job descriptions and job postings; social media, targeted advertising; and other strategies; and Minnesota employment services.

Workforce Planning and Human Resource Development Strategies for Minne- sota’s Public Transportation Agencies (LRB/MnDOT, March 2021)

Learn more:

• The tools plus links to other resources: meltpc.umn.edu/workforce

• Recruitment:闵�b Technologies Exchange

What can local agencies do about it?

A recent project from the Clear Roads research pro- gram investigated the challenges for recruiting and retaining highway maintenance workers. It identified factors that have long-term impacts on recruitment and retention, including pay, training, and promotion. One factor in this is an ongoing shortage of CDL drivers, which, according to a report from the Clear Roads research program, is driven in part by generational differences, upskilling retraining, emerging skills, and other life skills. Participants are also offered opportuni- ties to complete CDL training. The idea is to make inroads on work release eligible for state jobs. The first step included removing questions on job applications that asked about former convictions or felons. This was a step in the right direction because this state cannot disqualify an applicant based on prior convictions.

Successful retention strategies: incentives, leadership programs

Emphasizing benefits and incentives works to improve employee retention. In addition to a competitive benefits package, Minnesota DOT offers its own maintenance employee an incentive that allows plow drivers to earn up to an additional $500 a week. This incentive provides additional pay for each week a worker maintenance worker is available to plow. The workers receive this pay at the end of the winter season. If they leave the DOT before season end, they receive no allowance. This has created an incentive for workers to remain on through the entire winter season when it is critical for the DOT to keep skilled staff.

The webinar is intended for HR staff and public works supervisors responsible for hiring at local government agencies. The webinar will take place from 9:00 to 10:00 a.m. CST. For more information, see meltpc.umn.edu.

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February 17 webinar looks at workforce issues

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ECD synergy: Unmanned aerial systems and advanced geotechnical methods

Planning a geotechnical site characterization program for a transportation project begins with recognizing potential hazards and planning where to land the drone in an emergency. During flight, pilots are also expected to have an understanding of the environment and to engage in proper safety practices. These practices include:

- Pre-flight maintenance checks: Ensuring the drone is in good condition before taking off.
- Pilot training: In-service training can help pilots stay current with regulations and best practices.
- Weather monitoring: Checking the weather before and during flights to avoid storms or low visibility.
- Site safety: Inspecting the location before taking off to ensure there are no obstructions.

These guidelines help ensure that unmanned aerial systems (UAS) can be used safely and effectively in transportation projects.
MNISITTECHNOLOGY EXCHANGE

TRAINING

Check out Civil 3D and other training options!

Minnesota LTAP is offering a new training series: Roadway Design Using AutoCAD and Civil 3D. The series includes instructor-led virtual courses and self-paced online learning.

The second instructor-led course in the new series, Civil 3D Practical Application, begins at the end of January 2022. The 10-week course will teach students how to use computer-aided design and drafting (CADD) software to design a simple series of roadways. The cost to attend is $150.

Please take a look at 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.

Calendar

Minnesota's Best Practices for Traffic Sign Maintenance and Management
(1 RS Maintenance credit) LTAP
Jan. 13, virtual

Asphalt Pavement Rehabilitation: Products, Processes, and Strategies
(1.5 RS Maintenance credits) LTAP
Feb. 9, Mankato
Feb. 10, Waite Park
Feb. 15, virtual

ATSSA Northland Chapter “How To”
(0.5 RS Maintenance credits) LTAP
March 14–16, Fargo

Gravel Road Maintenance and Design
(1 RS Maintenance credit) LTAP
March 15, location TBD
March 16, location TBD
March 17, location TBD

Crack Sealing, Filling, and Mastic Crack Repairs
(1 RS Maintenance credit) LTAP
Apr. 7, location TBD
Apr. 24, location TBD
Apr. 28, location TBD

Minnesota's Best Practices for Pavement Management
(1 RS Leadership credit) LTAP
May 18, location TBD
June 1, virtual

Minnesota Roadway Maintenance Training and Demo Day
(1 RS Maintenance credit) LTAP
May 19, Fergus Falls

LTAP 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.

MnLTAP online courses

Culvert Design and Maintenance – $45
(1 RS Maintenance credit) LTAP

Sign Maintenance and Management for Local Agencies – $45
(1 RS Maintenance credit) LTAP

Gravel Road Maintenance and Design – $45
(1 RS Maintenance credit) LTAP

Fundamentals of Construction Inspection – Free
(1 RS Maintenance credit) LTAP

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/roadscholar.

Other online courses eligible for RS credit

Maintenance Stormwater – Free
(0.5 RS Maintenance credit)

Math Basics for Maintenance Technicians
(1 RS Maintenance credit) – Free

Administration and Management Basics
(1 RS Leadership credit) – Free

Installation and Management of Roadside Turfgrasses – $175
(1 RS Maintenance credit)

Submissions open for 2022 internships

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 provides Minnesota’s local agencies with free access to marketing and program support services to streamline their summer internship hiring process.

The program is sponsored by Minnesota LTAP with funding from the Minnesota Local Road Research and program support services to streamline their summer internship hiring process.

Research Board and is administered by the Center for Transportation Studies. 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 until February 15. Beginning in December, 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

will be critical in the years to come to ensure that agencies and their employees are able to respond to ongoing shifts to Minnesota LTAP, housed within CTS, has a track record of providing such a service. And, working with partners across the state, we intend to improve and add to our training offerings in order to respond to the needs and priorities of a diverse set of agencies and people they serve.

We will continue to focus on our core trainings about traffic control and work-zone safety, road management and maintenance, and drainage and vegetation along roadways. These remain important lines of training and ensure our public roadways are operating smoothly and with safety for users at the fore. But we also hope to meet the needs of public agencies in an ever-changing transportation landscape through specialized courses and research.

One example of this effort is a recently produced set of tools on how to recruit and train civil engineering technicians (see page 1). The need for this work, which was identified by the Minnesota Local Road Research Board as a high priority project and conducted by MnLTAP staff, has only grown in recent months as the labor shortage and dearth of qualified applicants has been felt across many sectors. The workforce output provides all agencies with a set of tools to share information about career paths within engineering and helps agencies think about how to recruit a diverse workforce and keep them well-prepared to do the jobs of the future.

We hope to use the MnLTAP program to continue to iterate and meet the needs of our agency partners. We can develop on-demand training that helps meet the needs of individual communities and can work with our stakeholders to get trainers out to locations throughout the state, helping to ensure that the essential work being done each day is not unduly interrupted by extensive travel. We also strive to bring the most innovative technologies and approaches derived from University of Minnesota research into these conversations and flag for our partners where we think new technologies may drive training needs.

To build trainings that best meet pressing needs, though, we need to hear from our partners. We know that smaller, outstate communities and counties have different training needs or priorities than large cities or urban counties. Please share those needs with our team—and let’s work together to make sure Minnesota continues to have one of the best transportation workforces in the nation.

—Kyle Shelton, CTS director