New tool helps you engage the public

To help overcome this communication barrier, the Minnesota Local Road Research Board enlisted the help of University of Minnesota Humphrey School of Public Affairs assistant professor Kathryn Quick. “Our aim was to develop a better understanding of the knowledge gaps surrounding local transportation funding that need to be addressed, then create a public engagement tool and conduct direct interventions to begin to engage the public in this issue,” Quick says.

The first challenge was explaining the complex nature of the road funding problem to a layman audience. To accomplish this goal, Quick and her research team—Zhirong Zhao, Guillermo Narvaez, and Emily Saunoi-Sandgren—developed an engaging presentation meant for a general audience that presents Minnesota’s road funding challenges in an accessible yet comprehensive way. The presentation outlines the nature of the problem, the reasons why the public should care about the issue, the history behind Minnesota’s road funding challenges, and the options for addressing the budget shortfall. “We found that even though most people weren’t aware of the road funding problem, once they became aware they did care about it,” Quick says.

Throughout the summer, the research team conducted a series of community meetings to engage the public. One major step the county took was to combine all 16 county departments into one centralized fleet management.
accurately track and manage fleet assets, Schlangen said. "If you don't spell them out to the user groups, they don't understand why they can't buy whatever piece of equipment whenever they want." Dakota County determines which equipment should be replaced using a points-based set of criteria, Schlangen said. "We recommend replacements by applying different points based on the equipment's age, miles or hours of use, type of service (e.g., squad car, snowplow, administrative sedan), reliability, maintenance and repair costs, condition, and energy efficiency," he said. For example, a vehicle is given one point for each year of chronological service, a point for each 10,000 miles of use, and 0 to 5 points depending on the condition. Points from each category are added together to get total points. Anything less than 18 points is considered to be in excellent condition; anything with 28 points and above needs immediate attention. "The county board knows that we use these criteria, and that we won't replace anything with 28 points and above needs immediate attention. Any piece of equipment, whenever they want."

A good fleet information system is necessary to accurately track and manage fleet assets, Schlangen continued. "If you don't track things, you will have no idea what your costs are. You need to be committed to tracking all costs 100 percent for everything including preventive and scheduled maintenance, non-scheduled repairs, fuel, and risk management. Otherwise, you will not have true numbers and can't make good decisions on what assets to replace."

Using the point criteria process and meticulously tracking every possible cost, Schlangen said that Dakota County has significantly trimmed its budget by anywhere from $1.4 million up to $2.5 million. "We reduced the size of our fleet by 103 pieces of equipment and saved $1.8 million," he said. "We right-sized 52 pieces of equipment, which saved $250,000. We've also added 51 pieces of equipment at a cost of $1.8 million, but 70 percent was paid for with grant funds we secured in part because we had all the pertinent information at hand for the grant application." In 2013, The 100 Best Fleets in North America™ program ranked Dakota County the third best fleet in the country, Schlangen said. "Out of 38,000 municipalities in North America, we rank number three in the United States. That type of recognition adds to our credibility and goes a long way with our (county) board and other elected officials.

For more information and assistance with fleet management in your organization, Schlangen recommended the following organizations, which offer resources and various professional certifications:

- American Public Works Association (APWA): apwa.net
- APWA—Minnesota Chapter: apwa-mn.org
- National Association of Fleet Administrators (NAFA): NAFA.org
- Association of Equipment Management Professionals (AEMP): aemp.org
- LTAP—Nancy Strege, LTAP freelance

Technology Exchange The Minnesota Local Technical Assistance Program (LTAP) is a statewide, non-credit course designed to improve information exchange among local practitioners and state agency representatives. LTAP is a coordinated effort supported by the Center for Transportation Studies at the University of Minnesota and cooperated by the Minnesota Local Road Research Board and the Minnesota Department of Transportation.

The University of Minnesota is committed to the policy that all persons shall have access to its educational and employment programs without regard to race, color, creed, religion, national origin, sex, age, marital status, family relationship, disability, ancestry, or status as a covered veteran.

The information provided here is for educational purposes only and should not be considered legal, accounting, or other professional advice. If you need legal or professional advice, contact a qualified professional.

Learn about equipment management from Minnesota LTAP

Minnesota LTAP periodically offers two workshops about fleet and equipment management:

- Equipment Management for Public Works Managers
- Preventive Techniques for Public Works Equipment

Details are online at mnltap.umn.edu/training. No offerings are currently scheduled, but let us know if your organization might be interested. We’ll let you know the next time the workshops are on tap.

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Fleet management certification

The National Association of Fleet Administrators (NAFA) has defined and recognized excellence in the fleet management industry through its Certified Automotive Fleet Manager (CAFM™) program. This certification program, which offers the most up-to-date fleet management education, is divided into eight disciplines covering the essential core competencies of fleet management: Asset Management, Business Management, Financial Management, Fleet Information Management, Maintenance Management, Risk Management, Vehicle Fuel Management and Professional Development.

Successful completion of the CAFM™ program requires passing all eight disciplines within a three-year period. For more information, visit fleetcertification.org/individual-certification.

Heads-up: NAFA’s 2014 conference will be held April 8–11 at the Minneapolis Convention Center.
OPERA Spotlight: Sign Inventory Storage Cabinets

Project leader: Scott Holmes  
Agency: Olmsted County Public Works Highway Department

Problem: Olmsted County lacked the ability to efficiently store and maintain its sign inventory. Signs were stored in locations that were unorganized and not easily accessible, such as on metal racks. Due to the high cost of signs that have either diamond grade or high-intensity sheeting, a more efficient means of storing, organizing, and maintaining the inventory was needed to prevent damage.

Solution: The county developed a storage cabinet system that was durable and could handle signs being repeatedly slid in and out of the storage compartment. The county constructed individual plywood cabinet dividers that fit inside metal racks. The dividers were built at several sizes to vertically store the county’s multiple sizes and shapes of signs. The system allows for easy access and protects the sign sheeting from damage.

Procedure: Multiple sizes of cabinets were built within the metal racks using three-quarter-inch plywood, with durability in mind. A one-quarter-inch piece of hard board was cut for the bottom of each cabinet opening to easily slide signs in and out of storage. This helps to eliminate wear on the plywood dividers and is easily replaceable once these pieces excessively wear. Multiple levels of metal racks were erected to store the individual wood cabinets, which gives the county the ability to store more cabinet units.

Results: Since the cabinet units have been erected and installed, sign inventory has become much more efficient. The county uses magnetic labels attached to the metal racks to identify sign types, making it quick and easy for staff to locate each sign to be loaded in the sign truck for installation. The system also helps the county to keep track of its sign inventory by making it simple to check and evaluate the condition of its stock inventory annually. In addition, the clean, neat, organized look of the cabinet shelving makes the sign shop a great environment in which to work.

Approximate cost: $7,963

OPERA funding: $6,500

Implementation: Olmsted County has added two more units in its cold storage building to help with the storage, organization, and maintenance of its inventory for temporary work-zone signage. In addition, the county has partnered with MnDOT District 6 to install multiple units for sign storage in its new facility.

Status: Complete LTAP

Fact sheets online
The Exchange regularly highlights projects completed under the LRRB’s Local Operational Research Assistance Program (Local OPERA). Project fact sheets, along with the full project reports, are posted on the OPERA website as they are completed throughout the year. All are available at mnltap.umn.edu/opera.

Synthesis: dust control of aggregate roads

More than half of U.S. roadways are gravel roads, making them an important part of our transportation system. One of the major drawbacks and biggest complaints about gravel roads is the dust produced when vehicles drive on them. In addition to affecting residents who live along gravel roads, dust can also adversely affect air quality, the environment, and driver safety.

To control the dust on gravel roads, local agencies apply various dust suppressants to their roadways (mainly calcium chloride and magnesium chloride). However, several alternative dust suppressant options exist. The LRRB has developed a new document, Aggregate Roads Dust Control—A Brief Synthesis of Current Practices, that summarizes a complete list of various dust suppressants, their effectiveness, and impacts.

For the project, two online surveys were completed. The first was a short survey sent to local agencies nationwide to determine if they have a dust control program and what products they have used. The second was a more in-depth survey asking those respondents who have a program to provide feedback about the dust control products they have used. The result is a detailed spreadsheet with the pros and cons of these products:

- Magnesium chloride brine
- Calcium chloride brine and flakes
- Water
- Organic petroleum product – cutback asphalt (liquid asphalt)
- Organic nonpetroleum product – vegetable oils

Other information in the spreadsheet includes application rate and frequency, environmental impacts, application tips, effectiveness, and cost.

The synthesis also discusses how agencies decide which road segments receive treatment and who pays for it—agencies, residents, or both. It concludes with a detailed list of additional resources.

The full report (2013RC67), which includes additional information on Minnesota and Iowa practices, is available at lrrb.org, along with a two-page technical summary (2013RC67T15), LTAP.

In a national survey, 53% OF RESPONDENTS said they have a dust-control program.

New videos

Grab some popcorn and take a look at the following helpful videos.

Frost Damage in Pavement: Causes and Cures (full length, 13:28 minutes); Executive Summary (4:37 minutes)

This video explains the causes of frost damage and gives design methods for avoiding frost heave. (Developed by the LRRB, MnDOT, Alaska DOT, TRB, and ASCE cold regions members)

Construction Road Safety: Our Responsibility (4:08 minutes)

Scott Gabrio is a MnDOT maintenance worker who was seriously injured by a distracted driver in a construction zone. This video shows what happened to Scott and what we can all do to prevent similar crashes from happening in the future. (Produced by the LRRB)

Road Closed Signs: Beware and Be Aware (3:46 minutes)

A tragic accident occurred in Cambridge, Minnesota, when a driver ignored a Road Closed sign and drove into a 30-foot deep trench. This video shows the choices that led to this crash, the dangers of entering a construction area, and the importance of obeying Road Closed signs. (Produced by the LRRB) LTAP

What one survey respondent said:

“The term dust control is a misnomer. A better term would be dust suppressant. The point here is that many new rural residents associate dust control with not having any dust. The real fact, in my experience, is that you have less dust with treatment than you would without it. Ever wonder why the old timers set their houses back so far from the rock road? It wasn’t just to have a lot to graze sheep!”
Public infrastructure: neglect it now, pay more later

Ancient Romans understood the importance of infrastructure to maintaining their empire and quality of life, Professor Roberto Ballerini asserted in the keynote address at the American Public Works Association–Minnesota Chapter fall conference. The same holds true today, he contends, in that a nation’s security depends on its infrastructure. “I believe, and others are starting to believe, that for the United States, the state of our infrastructure today is one of our top national security issues.” At one time, the United States had an infrastructure second to none, Ballerini continued. Today, that once-great infrastructure is deteriorating. “Hundreds of thousands of bridges are functionally obsolete…this is mediocrity, and the biggest problem with mediocrity is that people get used to it and think it’s okay.” How have we let this happen, he asked, when Americans are the richest they have ever been?

From 1982 to 2013, the Gross Domestic Product (GDP) in the United States expanded from $3 trillion to $14 trillion, explained Ballerini, a civil engineering professor at the U of M. “In 1982, we spent about 4 percent of our GDP on infrastructure investment; but in 2013 our infrastructure investment was less than 2 percent of the GDP, China, one of our biggest (economic) competitors…spends around 10 percent of its GDP on infrastructure.” For each year we wait to invest in our infrastructure, he added, the cost to improve goes up. “In 2001, we needed $1.3 trillion in investment; today we need about $4 trillion.” The solution comes down to prioritizing and long-term planning, Ballerini said. “Building infrastructure provides a positive return on investment for our nation. It creates jobs and technical expertise.”

With the country’s political system, “if we decide to do something, we can do it with our vote every couple of years and put the right people in place… but we need engineers to go into politics; people who have an interest in doing things technically and who also are very good at convincing people to invest in certain businesses. And we need to make major [infrastructure] investments in this country now; otherwise, we will always be chasing our tails,” he said. “Ultimately, I am very optimistic and think many of our infrastructure problems can be solved because Americans are very good at responding to crisis.”

Minnesota Representative Alice Hausman next explained some of the political roadblocks that have recently hindered infrastructure funding in Minnesota. “Last year I wrote a bonding bill for $800 million [containing several infrastructure projects for all parts of the state]…out of 134 legislators, I needed 81 votes [to pass the bill]. That meant I needed to be as collaborative as possible. I laid out a lot of facts…I explained that the bonding bill was responsible in size,… and I showed that it covered the entire state and would be good for regional infrastructure.”

Minnesota 2050 creates tools to advocate for infrastructure investment

It’s no news to those who work in transportation that our infrastructure needs some serious attention. The general public, however, doesn’t always share this understanding. Minnesota 2050 was launched in 2009 to help make the case for increased infrastructure investment—to today’s citizens and leaders, and to those yet to come.

“Minnesota 2050 is an initiative to create awareness in private citizens, in politicians, and in public agencies about the vast infrastructure network that supports the health, safety, and economic well-being of every Minnesotan,” says Brad Henry, a MN2050 steering committee member and a lecturer in the U of M Infrastructure Systems Engineering program. “The initiative includes the importance of not only building infrastructure but of sufficiently maintaining it so that it will continue to support Minnesotans for the foreseeable future.”

MN2050 is a nonprofit coalition of 17 professional and industry organizations representing public works infrastructure and related fields. It has three main goals:

- Increase public awareness about the importance of our state’s critical infrastructure.
- Establish a platform to help professionals research and advance our infrastructure management message.
- Develop K through 12 infrastructure-related curriculum to educate Minnesota’s 2050 leaders, and partner with educators, coalitions, and foundations to integrate the STEM education fields and infrastructure knowledge.

The initiative was started in 2009 following a challenge from Larry Frevert, then national president of the American Public Works Association, to the Minnesota Chapter to take on a statewide effort to change the downhill direction of infrastructure investment. Dana Gang, then Minnesota Chapter president and now chair of the MN2050 steering committee, started things rolling by inviting representatives of several state professional organizations to meet and

Engagement from page 1

engage the public with the road funding issue in three Minnesota counties. The most comprehensive of those interventions occurred in Beltrami County, where the research team worked directly with a diverse group of stakeholders including county commissioners, county engineers, volunteer fire departments, school district transportation supervisors, local businesses, and interested members of the general public. “We gauged the interests and concerns of these various groups,” Quick says. “Then, we presented them with a range of options including changing roads from blacktop to gravel, adding restrictions and fees for heavy vehicles, having the county commission create a local sales tax, and even doing nothing.”

According to Quick, the process generated interesting and promising results. The group’s attitude toward a local option sales tax changed throughout the intervention period: at the outset many people were strongly opposed to a new tax, and by the end of the process most individuals and the group as a whole expressed strong support for a new tax. County transportation officials also gained a better understanding of what options stakeholders would and would not be willing to support. In addition, there was a strengthening agreement that doing nothing was highly undesirable. “Everyone agreed that this was a real issue, and that’s an important message for policymakers,” Quick says.

Beltrami County officials plan to use the insight gained during this process to help guide their transportation decision making. “Moving forward, we now have a core group of stakeholders who are knowledgeable of the transportation planning and funding issues that the county faces. Hopefully they will be advocates for any future changes in policies or funding,” says county engineer Bruce Hasbargen. “Overall, these meetings have helped lay the foundation for future planning and funding discussions.”

Researchers will document this public engagement process in their final report (due May 2014); they anticipate that the process will serve as a model for the many other counties throughout the state and country facing similar challenges. In the future, the research team hopes to complete similar public meetings in additional Minnesota communities.

In the meantime, local road officials looking for an immediate way to engage the public in their decision-making process can use the presentation developed by the research team, available at hhh.umn.edu/centers/pnlc/projects_local_roads.html. LTAP —Megan Tsai, LTAP Freelance
Design standards aim to unify, simplify stormwater management

Over the past several years, stormwater management has evolved from simply moving water off the landscape quickly and reducing flooding concerns to keeping the raindrop where it falls and mimicking natural hydrology to minimize the amount of pollution reaching lakes, rivers, streams, and ground waters.

In response to this change, the Minnesota Legislature allocated funds to develop performance standards, design standards, and other tools to enable and promote the use of low-impact development (LID) and other stormwater management techniques (Minnesota Statutes 2009, section 115.03, subdivision 5e). And thus, the Minimal Impact Design Standards, or MIDS, project was born.

“MIDS is an attempt to unify and simplify stormwater standards to create consistency in design and performance,” said Clayton Eckles, public works director for the City of Woodbury, at the American Public Works Association–Minnesota Chapter fall conference. “It brings all of the different regulations together into one set of objectives.”

Randy Neprash, civil engineer with Stantec and technical consultant to the Minnesota Cities Stormwater Coalition, explained that upon passage of the legislation, a stakeholder group was created to guide the Minnesota Pollution Control Agency (MPCA) in developing MIDS. This group—made up of developers, municipal planners, public works personnel, and others involved in new development and redevelopment projects—met monthly for three years and was instrumental in creating a set of MIDS tools that can be used to better manage stormwater and comply with regulatory requirements related to antidegradation and Total Maximum Daily Loads (TMDL).

Currently, the MIDS tool package includes performance goals for new development, redevelopment, and linear projects, as well as flexible treatment options when a site cannot meet the standard goals. It also contains a calculator used to quantify reductions in post-development runoff and pollutant loading from a wide variety of LID practices. In addition, a Community Assistance Package (CAP) is being developed to provide ordinances and tools that help integrate LID principles, including the MIDS performance goals and calculator, into a package that can be used by local units of government. The MPCA has established a MIDS pilot community project in Washington County to provide a testing ground for applying the new MIDS tools.

“Right now, adopting MIDS is voluntary,” Eckles reported. “But because all of the agencies that regulate stormwater were part of the process, I think ultimately MIDS will become the unified standards used by all agencies, watersheds, and local government.”

Janna Kieffer of Baer Engineering then discussed the new MIDS calculator, describing it as a tool to evaluate a development site’s conformance with the MIDS performance goals. “This calculator allows individuals to enter a project’s site conditions and determine the amount of stormwater volume retention needed and the pollution loading, including sediment and phosphorus,” she explained. The calculator also provides a method to enter the stormwater practices of choice and determine the amount of stormwater volume and pollution reduction they can achieve. Currently, the calculator includes LID practices for green roofs, bioretention basins, infiltration basins, permeable pavement, infiltration trenches, tree box, swales, filter strips, and sand filters. Other practices will be added in the future.

This free calculator is due to be released for use in early 2014 at http://stormwater.pca.state.mn.us/index.php/MIDS_calculator.

More information on the MIDS project can be found on the MPCA’s website: pca.state.mn.us LTAP —Nancy Strege, LTAP freelancer

The Minnesota Pollution Control Agency (MPCA) recently reissued the National Pollutant Discharge Elimination System (NPDES) State Disposal System (SDS) General Permit (MN0400000) for discharges of stormwater associated with small Municipal Separate Storm Sewer Systems (MS4s), effective August 1, 2013. The small MS4s covered in this permit include municipalities, townships, counties, military bases, hospitals, prison complexes, highway departments, and universities.

The stormwater program for MS4s is designed to reduce the amount of sediment and pollution that enters surface and ground water from storm sewer systems to the maximum extent practicable. The 2013 permit reissuance contains a number of improvements and changes from the 2006 permit. Municipalities reauthorized to discharge stormwater under the reissued permit are required to update their existing stormwater pollution prevention program (SWPPP) to include best management practices (BMPs) applicable to their MS4.

“We are into the period of time where local governmental units are submitting their SWPPP documents and application forms,” explained Randy Neprash at the APWA–Minnesota Chapter fall conference. “For the time being, and for a while in the future, all MS4 permittees will operate under the 2006 permit. The new permit is in effect, but you are not yet covered under it.”

Neprash was careful to point out the difference between the SWPPP document and the SWPPP itself. The SWPPP document is part of the MS4 permit application process. It informs the MPCA and the public of what the permittee has committed to in its SWPPP (program) and what it will implement to comply with the permit requirements, similar to a summary or plan. The SWPPP itself is a comprehensive stormwater management program developed by the applicant/permittee, which includes procedures for complying with the permit, he explained.

“Only the SWPPP document is due with your permit application. You will later need to make changes to meet the new permit requirements in your SWPPP program. In almost every case, the changes to your SWPPP (program) are not due until 12 months after you receive permit coverage...for most of you that will be sometime in 2015.”

For more information on the MS4 program, contact Randy Neprash at randy.neprash@stantec.com or visit pca.state.mn.us/water/stormwater /stormwater-ms4.html. LTAP —Nancy Strege, LTAP freelancer

Reissued MS4 general permit requires updates to stormwater plans

Stormwater filtration systems help keep pollutants out of our lakes and rivers.

A free Minimal Impact Design Standards (MIDS) calculator will be available early this year.
Training helps workers advance from line to leadership

The “gray tsunami”—the tidal wave of aging baby boomers—could mean big changes in the workplace. Organizations need to be thinking now about grooming their younger employees to become effective supervisors and fill the shoes of retiring boomers.

Minnesota LTAP partnered with Hennepin Technical College (HTC) last fall to help local transportation agencies meet this critical workforce development need. They offered a one-day workshop—“From Line to Leadership: Transitioning from Operations to Supervision”—in October in St. Cloud and Rochester.

“We hope for this to be the first in a series of workshops we offer in this category,” says Mindy Carlson, LTAP training manager.

The workshop is tailored for new supervisors and those thinking of taking their career to the next level, as well as for current supervisors who want to enhance their leadership skills, communication, and effectiveness. It focuses on avoiding common pitfalls and identifying ways to make the most of a leadership role.

Students brought a range of experience to the October classes. Todd Majerus, who became a foreman with Goodhue County Public Works this summer, found the class very useful. “I learned...about how to become a better boss...my strengths and my weaknesses,” he says. Kurt Reblein, a maintenance supervisor/foreman in Albert Lea, has been a supervisor for more than 10 years. “I learned communication is a big thing,” Reblein says. “The biggest issue is keeping everybody informed, keeping everybody on track, and keeping everybody happy.”

Hennepin Technical College developed the initial version of the workshop in collaboration with industry partners, and it has expanded the program in response to overwhelmingly positive feedback. HTC offers 8- and 32-hour classes throughout the year at its Eden Prairie facility and also conducts shorter, custom-designed training sessions at organization work sites.

“Our industry partners said they wanted this training because they are anticipating a skills gap and a leadership gap, and they didn’t have a way to effectively move people from operations to team leader,” according to Mike Colestock, HTC’s associate dean.

Retaining employees and promoting from within also benefits an organization’s bottom line. The average cost-per-hire for all U.S. companies is $3,479, according to a 2011 study of U.S. companies with 100 or more employees, conducted by Oakland, Calif.-based research firm Bersin & Associates.

The trigger to offer a version through Minnesota LTAP came in part from the Minnesota LTAP Steering Committee. “When many highway/street/public works departments need a new supervisor, they look to promote their existing employees since those employees know the facilities, the equipment, the mission of the organization—they know the ropes,” says Greg Isakson, county engineer of Goodhue County and a member of the committee. “Unfortunately, the skills to operate a machine do not relate to supervising others. The operator with the best potential to become a supervisor may not possess the set of new skills required to become a successful supervisor. This class was designed to fill that gap and provide those basic supervisory skills,” he explains.

The LTAP workshop is subsidized through funding from the LRBB and the Federal Highway Administration. LTAP offers a short video about the training at mnltap.umn.edu.

What is the urgency? Tom Eggum, also a steering committee member and a former St. Paul public works director and city engineer (and now a senior consultant with TKDA), explains: “From our parents and grandparents, we inherited passenger rail; and water, wastewater, and stormwater. But what about roads and bridges; aviation; ports and waterways; freight and distribution? Infrastructure documentary to air on TPT

MN2050 and Twin Cities Public Television (TPT) are co-producing an engaging video about the state’s infrastructure. The first segment, focusing on roads and bridges, will be airing on TPT early this year and posted on the MN2050 website. The video will also serve as a resource for high school and college students. (The other four infrastructure areas will be added to the video as funding becomes available.) Check tpt.org or your local listings for air times. LTAP
### Workshops & Training

**Online Training:**

- Gravel Road Maintenance and Design—Online (0.5 RS required credit) [LTAP](https://www.mnltap.umn.edu/training)
- Work-Zone Safety Tutorial [LTAP](https://www.mnltap.umn.edu/training)
- Turfgrass Maintenance (1 RS elective credit) [LTAP](https://www.mnltap.umn.edu/training)
- Archived webinars:
  - Gravel Roads: Drainage Maintenance and Design (1 RS elective credit) [LTAP](https://www.mnltap.umn.edu/training)
  - Local Concrete Flatwork Specifications (1 RS elective credit) [LTAP](https://www.mnltap.umn.edu/training)
  - ADA Transition Plan Requirements: A Model Plan for Local Agencies (1 RS elective credit) [LTAP](https://www.mnltap.umn.edu/training)

**Courses and Workshops:**

#### Truck-Weight Compliance Training (1 RS elective credit) [LTAP](https://www.mnltap.umn.edu/training)
February through April, various locations

#### Work-Zone Traffic Control Seminar [LTAP](https://www.mnltap.umn.edu/training)
February–April, various locations

#### APWA-MN Underground Utilities Construction Inspector School
- February 11, Richfield
- March 14, Richfield
- April 20, Richfield

#### Transportation Career Expo [LTAP](https://www.mnltap.umn.edu/training)
February 18, Minneapolis

#### Management and Maintenance Practices for Asphalt Pavement Preservation (1 RS required credit) [LTAP](https://www.mnltap.umn.edu/training)
February 19, Carlsont
February 26, Blaine
March 12, Rochester

#### Minnesota’s Transportation Conference
March 4–5, Bloomington

#### Northland Chapter ATSSA Annual “How to” Safety Training Workshop (1 RS elective credit) [LTAP](https://www.mnltap.umn.edu/training)
March 18-19, Fargo

#### Concrete Paving Association of Minnesota 53rd Annual Concrete Paving Workshop
March 20–21, Alexandria

#### Seal-Coat Operations: A Workshop for Practitioners (0.5 RS required credit) [LTAP](https://www.mnltap.umn.edu/training)
March 19, Arden Hills
March 26, Minnetonka

#### Micro/Slurry Surfacing: A Workshop for Practitioners (1 RS required credit) [LTAP](https://www.mnltap.umn.edu/training)
April 2, Carlock

#### Minnesota Roadway Maintenance Training and Demo Day (1 RS elective credit) [LTAP](https://www.mnltap.umn.edu/training)
May 15, Alexandria

#### 25th Annual CTS Transportation Research Conference
May 21–22, St. Paul

**CTAP Workshops:**

- Circuit Training and Assistance Program (CTAP) workshops bring LTAP services to your neck of the woods. [CTAP](https://www.mnltap.umn.edu/training) uses a fully equipped van to provide on-site technical assistance and training. Each CTAP workshop counts as 0.5 RS elective credit. Current CTAP training courses and special presentations are:
  - Asphalt Pavement Maintenance and Preservation
  - Culvert Installation and Maintenance
  - Gravel Road Maintenance / Dust Control
  - Roadside Vegetation Management and Erosion Control
  - Snow and Ice-Control Material Application
  - Snowplow Controller Hands-on Workshop
  - Work-Zone Traffic Control and Flagger Training

For more information or to schedule classes, call the CTAP instructor, Kathy Schaefer, at 651-366-3575, or e-mail Kathleen.Schaefer@state.mn.us [LTAP](https://www.mnltap.umn.edu/training)

**Roads Scholar Credit:**

You can earn credits in Minnesota LTAP’s Roads Scholar (RS) program by attending LTAP and CTAP workshops and other cosponsored events. To graduate, you must earn eight credits from a combination of required and elective courses within a five-year period. To learn more or enroll in the program, visit [mnltap.umn.edu/roadscholar](https://www.mnltap.umn.edu/roadscholar).

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**Pedestrian Snow Removal Best Practices and Lessons Learned (MINOSS)**

This report provides a comprehensive review of existing practices and polices from other states, as well as a summary of valuable publications.

**Snow Removal at Extreme Temperatures (Wesern Transportation Institute/Clear Roads Program)**

This report discusses best practices for plowing, chemical usage, and abrasives to improve performance at extremely low temperatures.

**Best Practices for Road Weather Management (FHWA)**

This report contains 27 case studies of systems in 22 states that improve roadway operations under inclement weather conditions.

**46th Street Pilot Street Lighting Project (LEED)**

This report compares manufacturer performance claims for induction and light-emitting diode (LED) light sources against actual results in Minneapolis. The report also ranks energy-efficient lighting according to consumption, operating costs, maintenance, light levels, quality, and public response.

**Best Practices Synthesis and Guidance in At-Grade Trail Crossing Treatments (Wisconsin Traffic Operations and Safety Laboratory/MN/DOT)**

This document synthesizes best practices observed statewide and nationally to provide engineers and other professionals with guidance on safety applications at rail crossings.

**Western Iowa Missouri River Flooding—Geo-Infrastructure Damage Assessment, Repair, and Mitigation Strategies (Iowa State University Institute for Transportation/ FHWA)**

This report explains advanced technologies for rapidly assessing the damage to geo-infrastructure and developing effective repair and mitigation strategies for future floods in Iowa.

**Left-Turn Accommodations at Unsignalized Intersections (FHWA)**

This design guide discusses the basic information (e.g., traffic volumes, speeds, crash history, and delay or gap acceptance data) a practitioner needs to make a decision on whether to install a left-turn lane and how the practitioner can compile that information.

**Development of Left-Turn Lane Warrants for Unsignalized Intersections (FHWA)**

This project used a benefit-cost approach to determine when a left-turn lane would be justified.

**Speed Management Toolbox for Rural Communities (Midwest Transportation Consortium)**

This toolbox summarizes various traffic-calming treatments and their effectiveness. It focuses on roadway-based treatments, particularly for communities with transition zones.

**Alkali Aggregate Reactivity Facts Book (FHWA)**

This document provides detailed information on alkali-aggregate reactivity.

**Search me**

The Minnesota LTAP website features custom search engines to help you find information. You can search:
- LTAP & CTAP Centers
- State DOTs
- Transit Agencies
- University transportation centers Bookmark [www.mnltap.umn.edu](https://www.mnltap.umn.edu)/publications/library

Another great resource is MnDOT Library’s catalog, which includes resources from CTS. Bookmark dot.state.mn.us/library.

**The Shelf**

Minnesota LTAP provides a variety of information resources and services to help you improve your skills and knowledge. We partner with the Mn/DOT Library to operate a state-of-the-art service that can help you track down almost any resource from Minnesota or beyond. Our comprehensive website contains resources such as videos, handbooks, and manuals. Each issue of the Exchange contains the “Shelf” with recent items.

**Questions? Contact Marilee Tuite, Minnesota LTAP librarian, 612-626-8753, ctslib@umn.edu.**

### Calendar

If your professional organization meets on a regular basis, let us include the information here. Contact us at [mnltap@umn.edu](mailto:mnltap@umn.edu). For details and an up-to-date list of events in Minnesota, please see [mnltap.umn.edu/training](https://www.mnltap.umn.edu/training).

**Roads Scholar credit**

You can earn credits in Minnesota LTAP’s Roads Scholar (RS) program by attending LTAP and CTAP workshops and other cosponsored events. To graduate, you must earn eight credits from a combination of required and elective courses within a five-year period. To learn more or enroll in the program, visit [mnltap.umn.edu/roadscholar](https://www.mnltap.umn.edu/roadscholar).

**LTAP workshops**

LTAP workshops, along with events cosponsored by Minnesota LTAP, are marked with an “LTAP” at left. Check the web for details and to register online: [mnltap.umn.edu/training](https://www.mnltap.umn.edu/training). To be added to our print or electronic mailing lists, e-mail [mnltap@umn.edu](mailto:mnltap@umn.edu) or call 612-626-1813.

**CTAP workshops**

Circuit Training and Assistance Program (CTAP) workshops bring LTAP services to your neck of the woods. LTAP uses a fully equipped van to provide on-site technical assistance and training. Each CTAP workshop counts as 0.5 RS elective credit. Current CTAP training courses and special presentations are:

- Asphalt Pavement Maintenance and Preservation
- Culvert Installation and Maintenance
- Gravel Road Maintenance / Dust Control
- Roadside Vegetation Management and Erosion Control
- Snow and Ice-Control Material Application
- Snowplow Controller Hands-on Workshop
- Work-Zone Traffic Control and Flagger Training

For more information or to schedule classes, call the CTAP instructor, Kathy Schaefer, at 651-366-3575, or e-mail Kathleen.Schaefer@state.mn.us [LTAP](https://www.mnltap.umn.edu/training).
If you want to learn new skills, enhance your job performance, or climb the ladder to a leadership role, training from the Minnesota Local Training Assistance Program (LTAP) can be the foundation for your success.

Circuit Training and Assistance Program (CTAP)
CTAP brings LTAP training to your site. Classes are offered on seven topics: asphalt pavement, culverts, gravel roads, roadside vegetation, snow and ice control, snowplow salt and sander calibration, and work-zone traffic control.

Truck-Weight Education
The Minnesota Truck-Weight Education Program promotes voluntary compliance to reduce damage to public roadways from overweight vehicles. Workshop attendees learn how to haul the most legal weight without violating truck-weight laws. The program website has helpful features such as sample truck-weight calculations.

Workshops Throughout the State
Minnesota LTAP offers workshops in these categories:
- Drainage and Erosion Control
- Equipment
- Information and Management Systems
- Roadway/Bridge Maintenance
- Traffic Control
- Workforce Development

Online Training, All the Time
To provide affordable and convenient training, Minnesota LTAP offers these options:
- Gravel Road Maintenance and Design
- Turfgrass Maintenance
- Work-Zone Flagger Tutorial
- Archived Webinars on Various Topics
- Coming this Summer–Culvert Maintenance

Roads Scholar Program
The Roads Scholar Program combines Minnesota LTAP's training options into a structured curriculum. Graduates earn a valuable professional development credential. There is no enrollment fee.

Want to learn more?
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