

Catalyst


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New chair brings fresh lens to CTS Executive Committee

Nicole Griensewic, executive director of the Region Nine Development Commission, became the chair of the CTS Executive Committee on June 1. Here, she shares her thoughts for transportation priorities and economic growth.



Photo: Region Nine Development Commission

Toolkit aids community engagement in transitway planning

Effective public engagement for transit planning needs to involve community members from the very beginning. Technologies such as Zoom that gained wider use during the pandemic have made participation possible for many more people—especially underrepresented groups. In a recent project, U of M researchers developed a toolkit for use by community members, transit planners, and municipal works staff.



Photo: Freepik

Fad or future? Examining the post-pandemic outlook for remote work and transportation

The COVID-19 pandemic drove a massive shift to working from home, dramatically reducing the number of vehicles on our nation's roadways. Even now, the remote work trend is presenting major challenges and opportunities for both



employers and employees while simultaneously reshaping transportation. In a special CTS webinar, experts highlighted these trends and explored how telecommuting could shape the future of transportation



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Virtual activities introduce students to transportation topics, careers

The pandemic prevented CTS from welcoming K–12 students to the U of M campus this summer, so we leveraged a variety of virtual activities to engage their interest in transportation from home.



TPEC site hosts eWorkplace materials

Several of the resources that were available through the eWorkPlace initiative are now housed on the website of the U's Transportation Policy and Economic Competitiveness Program. eWorkPlace was a state-sponsored, multi-year initiative that helped Twin Cities-area businesses foster teleworking.



Photo: Andrew Neel on Unsplash

Join us online for the 2021 CTS Transportation Research Conference

Join us on November 4, 2021, for this year's CTS Transportation Research Conference, which is moving entirely online because of the recent increase in COVID-19 cases. We'll miss the chance to see our stakeholders in person, but the health and safety of our attendees, speakers, and staff is our top priority. Using a virtual platform, the full-day conference will convene researchers and practitioners to explore the latest innovations in transportation research, implementation efforts, and engagement activities.



Ethics in engineering course scheduled for Nov. 9

This fall, CTS is offering an online training course that will review why ethics is a core principle of the engineering industry. The two-hour course, scheduled for November 9, 2021, will use case studies to outline examples of ethical issues that engineers encounter throughout their careers.



CTS fall webinars: Cycling for sustainable cities, climate change impacts, and more

CTS kicked off our annual fall webinars on September 20 with a special event focused on cycling for sustainable cities. It explored how to make city cycling safe, practical, and convenient for a broad spectrum of ages, genders, and abilities. Other upcoming webinars, held in conjunction with CTS research council meetings, will begin in mid-October. Take a look at the lineup and register to join us for the events that interest you.



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New chair brings fresh lens to CTS Executive Committee

September 27, 2021



Nicole Griensewic became the chair of the CTS Executive Committee on July 1. Griensewic is the executive director of the Region Nine Development Commission, an agency based in Mankato that promotes a nine-county region of south-central Minnesota. She succeeds George Schember, former vice president of Cargill Transportation & Logistics, who served on the Executive Committee for eight years prior to his retirement.



Photo: Region Nine Development Commission

Below, Griensewic shares her thoughts for transportation priorities and economic growth.

What are some transportation challenges and opportunities in Greater Minnesota?

One issue is transit—many families are without a vehicle and need transit to reach jobs and other destinations. We need a transit-oriented thought process—bringing in local units of government, local developers, MnDOT, and others—to make development more transit-friendly. It's also exciting to think how connected and automated vehicles could one day provide service for those unable to drive, helping Grandma on the farm get to the doctor.

A second challenge relates to freight movement—the last-mile problem—which can be a major expense in the logistics chain for manufacturers. Federal infrastructure funding could

accelerate road and bridge projects statewide and support expansion of small airports and other facilities. Automated vehicles could also reduce last-mile costs, but we need to anticipate the workforce impacts of driverless trucks.

How are transportation and economic development connected?

Everywhere. Intersectionality is everywhere. For example, transit-oriented planning needs to reflect where workers live and where jobs are located, both in the Twin Cities and in Greater Minnesota. We need expanded passenger rail to Rochester and more transit options connecting Mankato's many international students to MSP. Tourists want easy access to Duluth and regional bike trails when they get there—that's economic development.

In addition, transportation planning needs to be equitable and inclusive. People aged 8 to 80 of all abilities have places to go, which means things as basic as curb cutouts become important for mobility—that's economic development.

What transportation challenges should be prioritized for Minnesota's success?

We need broadband expansion. And climate change must be a priority—it affects every mode of transportation. Even in more conservative areas of the state, people are recognizing that climate impacts are larger and different than before. I'm optimistic that more of a conversation is happening, focused less on causes and more on solutions and forward-thinking investments.



Photo: Shutterstock

Autonomous vehicles offer great promise but will be disruptive for current industries and some segments of the workforce. We need to know when to expect these vehicles on the road and prepare for the impacts and the economic opportunities. Public-private partnerships, for example, could bring together transportation planners, economic developers, and business leaders to discuss growth potential for Minnesota manufacturers.

Longer term, we must find ways to fund transportation sustainably. Gas-tax revenues will

continue to decline with the growth of electric vehicles, and we need to be ahead of the curve.

As a pilot, I'm also a big supporter of aviation. MSP and our system of local airports make essential contributions to our economic growth and global competitiveness. At the same time, CO₂ emissions must decline—an area ripe for innovation.

Do you bring a different lens to transportation issues?

The University receives support from throughout Minnesota and it addresses issues that affect the whole state. I'll help bring the Greater Minnesota perspective to the committee and to CTS.

I'm also a member of the Gender Equity in Transportation Collaborative, an advisory group formed by Humphrey School researchers. The collaborative is spurring conversations among leaders and organizations to make transportation planning more equitable and inclusive. Researchers are studying how men and women make different travel decisions. Safety is an obvious factor: Women may choose a commuting option that feels safer when they're alone. That's the reality.

On a personal note, I became a pilot in 2016 in part to increase the percentage of women aviators—still only about 10 percent. Representation matters.



Toolkit aids community engagement in transitway planning

September 21, 2021



Effective public engagement for transit planning needs to involve community members from the very beginning. Technologies such as Zoom that gained wider use during the pandemic have made participation possible for many more people—especially underrepresented groups.



In a recent project, U of M researchers developed a toolkit for use by community members, transit planners, and

Photo: Freepik

municipal works staff. “With this toolkit, we’re not only providing tools for more robust community engagement—we’re also equipping both community members and transit planners to assess the equity and accessibility issues related to planned transitways,” says Professor Tom Fisher of the Minnesota Design Center, the project’s principal investigator.

The toolkit was one outcome of a two-phased project. In the first phase, researchers analyzed the accessibility of station areas along three planned transitways in the Twin Cities area. (This phase was part of a broader accessibility analysis of the lines.) They also looked at public works improvements that might improve safety, security, and accessibility for transit users, especially those populations who are most transit dependent.

In the second phase, the research team evaluated 56 digital platforms for possible use in transitway community engagement. “While each platform was found to have strengths and weaknesses, all allow for a greater diversity of participants than traditional in-person

meetings,” he says. (The evaluation is available in a searchable spreadsheet.)

Combining findings from the two phases, researchers developed the toolkit—a set of flexible tools that work independently of, but also complement, each other. The tools allow people to evaluate and score the options available to them, comment on existing and proposed conditions, and visualize what different alternatives might look and feel like once realized.

The tools apply to any type of transit in any location. They work remotely and in person, on digital platforms and in print, and asynchronously and synchronously.

To ensure equitable access, the tools use common words, photographs, and icons to help those who may have little or no experience with transit planning understand concepts and convey their ideas and concerns. The photographs and icons may also help people who have difficulty reading maps or who may not speak or read English.

The project was funded by Transitway Impacts Research Program. The toolkit team included Joseph Hang (design and research fellow) and Dan Ogranovich and Lynda Chao (graduate students) of the Minnesota Design Center.

The five tools in the toolkit

Transit and Urban Design Flashcards: This set of 20 flashcards describes the physical features related to transitways and urban design more generally. The flashcards ensure that everyone has the same basic understanding of the terms being used and ideas being discussed. Each category is represented by a visual icon that is then used in the other tools.

Station Area Mapping: This tool locates transit station stops on a GIS map and draws a quarter-mile circle around each one. Based on this mapping, the tool uses Google Streetview images and the icons from the new flashcards to highlight what exists—or doesn't exist—along the routes to key destinations.

Experiential Mapping: In face-to-face community meetings, people often mark



Station area mapping uses Google Streetview images and icons to highlight what exists—or doesn't exist—along the routes to key destinations.

maps and make notes about their everyday experiences. Digital tools now allow that same kind of annotation. The icons from the flashcards provide a quick way for people to raise an issue or identify a problem worth discussing.

Station Evaluation: This tool lets people rate a proposed station area on a three-point scale. The tool uses 11 categories (such as street lighting) related to those in the flashcards.

3-D Visualization: This tool allows users to turn a layer on or off to show what a particular improvement might look like in a particular setting. The tool uses the icons developed for the flashcards to indicate what each layer might show.



Fad or future? Examining the post-pandemic outlook for remote work and transportation

September 13, 2021



The COVID-19 pandemic drove a massive shift to working from home, dramatically reducing the number of vehicles on our nation's roadways. Even now, the remote work trend is presenting major challenges and opportunities for both employers and employees while simultaneously reshaping transportation. In a special CTS webinar, experts highlighted these trends and explored how telecommuting could shape the future of transportation.



Photo: Shutterstock

"Long before the pandemic, I'd been working to expand telecommuting because it is a win-win-win for employers, employees, and communities," said Adeel Lari, director of the Institute for Urban and Regional Infrastructure Finance at the Humphrey School of Public Affairs. "COVID-19 led the world to go remote and suddenly there was no congestion. Now it's the time to remember the saying 'Never let a crisis go to waste.'"

According to Lari, the actions companies and organizations take now will determine whether the pandemic's traffic reduction can be sustained. "At this point we don't know what types of lasting change this will create for employees and companies," he said. "We need to partner with those companies and organizations that are already making long-term changes and further encourage others less inclined to make desirable changes."

In addition, Lari pointed out the many inequities in remote work; data show telecommuting opportunities are much less available to Hispanic and Black workers, workers without college degrees, low-income workers, and women. “We have already seen that low-income and minority communities were more severely impacted by COVID-19 due to a limited ability to work remotely and limited transportation options,” Lari said. “We need policies that do not leave anyone behind and prevent the creation of an even wider gap between the haves and the have-nots.”

Transit organizations such as Metro Transit have seen the impact of the pandemic on their ridership patterns, with the near elimination of weekday commute peaks. “What we see today is a ridership pattern that slowly builds throughout the day, similar to a weekend,” said Kristin Thompson, Metro Transit assistant director of service development. “In response, we are focusing on strengthening service for all-purpose trips and building out the METRO network to meet the needs for all-purpose, all-day travel.”

At the local level, there is no one-size solution for the lasting effects of COVID-19. League of Minnesota Cities Executive Director David Unmacht observed that the pandemic’s effects were not felt equally across all local governments. “Transformational change is happening, but we can’t yet conclude what the end game will be,” he said. “The impact of the pandemic was very different from city to city, even among cities of the same size across the state depending on their economic conditions, organization, and leadership.”

At the state level, Minnesota Department of Transportation (MnDOT) leadership is considering how to lead by example and continue to leverage the positive impacts of telework and hybrid work. “As we went through the pandemic, we were already thinking about how we could document our experience with telework for future use,” said Katie Walker, MnDOT director of innovation and research. “Our goals for telework are to be an employer of choice and an industry leader, to create a positive impact on our business needs, performance, and customer satisfaction, and to improve the environment and community.”

Writer: Megan Tsai



Virtual activities introduce students to transportation topics, careers

September 8, 2021



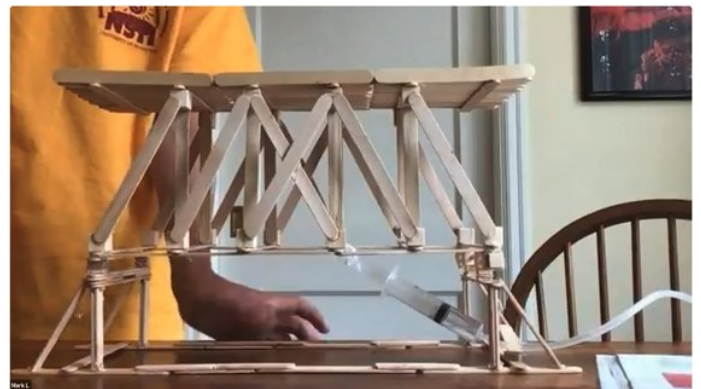
The pandemic prevented CTS from welcoming K-12 students to the U of M campus this summer, so we leveraged a variety of virtual activities to engage their interest in transportation from home.

In July, CTS offered a one-week virtual version of our annual National Summer Transportation Institute (NSTI). Fourteen students entering grades 7-9 attended the online camp, which aims to attract a diverse range of students to education and potential careers in transportation.

NSTI is funded by the Federal Highway Administration and administered by the Minnesota Department of Transportation (MnDOT).

Camp instructors and presenters from MnDOT, the City of Golden Valley, HDR, the Minnesota Pollution Control Agency, and WSB used presentations and hands-on activities to introduce students to topics ranging from pedestrian safety to road construction to the environment.

“Our partners did an outstanding job of creating content that was engaging and interesting for the students,” says Claire Johnson, CTS camp coordinator. “We really appreciate the extra effort required to deliver their presentations and activities in a virtual environment.”



With guidance from MnDOT bridge engineers, NSTI campers used popsicle sticks, glue, syringes, and plastic tubes to make working hydraulic bridges.

Campers took virtual tours of maintenance facilities and construction sites, watched virtual equipment demos, built “green machine” vehicles out of materials in their at-home recycling bins, and learned about pavement engineering by making their own asphalt cookies. Students also played our *Gridlock Buster* traffic control game, designed their own community street on the Streetmix website, and constructed their own small solar cars and hydraulic bridges from camp-provided kits.



The City of Golden Valley took NSTI campers on a series of virtual tours and equipment demos.

Student-reported highlights included the asphalt cookie activity, building and showing off their bridges, and learning about various jobs related to transportation.

“My son would give me a recap after each session of the things he learned,” one parent said in an evaluation. “The projects were great!”

To reach a broad range of students beyond our NSTI campers, CTS also created a simplified, video-guided version of the bridge-building activity that kids can complete anytime, anywhere. By following along with “The Great Dinkytown Bridge Challenge” video, students can design, build, and assess a model bridge that meets real-world standards out of Legos, popsicle sticks, spaghetti, cardboard—whatever they have on hand! The activity is free to use and available to kids, parents, and teachers on the CTS website.

Earlier in the summer, CTS also partnered with Minnesota 4-H on a webinar focused on the theme of driving change through transportation, open to students in grades 3 and up. Part of the 4-H Engineering Design Challenge program, the June webinar featured guest speaker Katie Gilmore, unmanned aircraft systems (UAS) program manager at MnDOT, sharing examples of drone technologies. Students joined in to hear Gilmore talk about how MnDOT is using UAS technology to solve problems, explore how drones will affect the future of transportation, and discuss exciting drone-related careers.



TPEC site hosts eWorkplace materials

September 16, 2021



Several of the resources that were available through the eWorkPlace initiative are now housed on the website of the U's Transportation Policy and Economic Competitiveness (TPEC) Program.

eWorkPlace was a state-sponsored, multi-year initiative that helped Twin Cities-area businesses foster teleworking. Its initial goal was to promote telecommuting as a way to reduce greenhouse gas emissions and traffic congestion (see [related article](#)). TPEC researcher Adeel Lari evaluated eWorkPlace and summarized the outcomes and lessons learned in a 2019 [final report](#).



Photo: [Andrew Neel](#) on Unsplash

Since then, COVID-19 has renewed overall interest in teleworking and made the findings from the initiative even more relevant. TPEC researchers led by Lari are studying and monitoring telecommuting trends and impacts; their work focuses on the equity impacts of telecommuting, including disparities by income, gender, race, and educational attainment.

The [TPEC site](#) now includes the following eWorkPlace resources:

- Telework toolkit for employers (contains six customizable Microsoft Word documents)
- Telework benefits for employers and employees
- Telework case studies and research

- Presentation materials





Join us online for the 2021 CTS Transportation Research Conference

September 22, 2021



Join us on November 4, 2021, for this year's CTS Transportation Research Conference, which is moving entirely online because of the recent increase in COVID-19 cases. We'll miss the chance to see our stakeholders in person, but the health and safety of our attendees, speakers, and staff is our top priority.



Using a virtual platform, the full-day conference will convene researchers and practitioners to explore the latest innovations in transportation research, implementation efforts, and engagement activities.

Highlights include:

- An opening keynote presentation by Jonathan Foley, executive director of Project Drawdown, focused on the intersection of transportation, sustainability, and climate change. A panel discussion will follow the presentation.
- An afternoon keynote presentation by Andrew Wishnia, deputy assistant secretary for climate policy in the Office of the Assistant Secretary for Transportation Policy at the US Department of Transportation.
- A variety of concurrent sessions on topics including health and equity in transportation, lessons learned from COVID-19, CAVs, safety, electrification, shared mobility, transit impacts, and more.

The cost to attend is \$75, which includes access to recordings of all conference sessions after the event.

More information and registration is available on the [conference web page](#).



Ethics in engineering course scheduled for Nov. 9

September 15, 2021



This fall, CTS is offering an online training course that will review why ethics is a core principle of the engineering industry.

The two-hour course will use case studies to outline examples of ethical issues that engineers encounter throughout their careers and introduce tools and resources to help them stay on the right professional path. It will be held via Zoom on November 9, 2021, from 9:00 a.m. to 11:00 a.m. Central. The cost to attend is \$65.



The course is designed for engineers in the private and public sectors as well as professionals in academia, and it meets the ethics-related requirements for engineers (2.0 PDHs) to renew their credentials in Minnesota.



CTS fall webinars: Cycling for sustainable cities, climate change impacts, and more

September 28, 2021



CTS kicked off our annual fall webinars on September 20 with a special event focused on cycling for sustainable cities. During the webinar, guest speakers Ralph Buehler from Virginia Tech and John Pucher from Rutgers University explored how to make city cycling safe, practical, and convenient for a broad spectrum of ages, genders, and abilities.



Buehler and Pucher discussed the latest cycling trends and policies around the world and considered specific aspects of cycling. Based on 2019–2020 data from cities around the world, they also examined the impacts of COVID-19 on cycling levels and government policies to promote cycling. If you were unable to attend, a recording is now available on the [event web page](#)—we hope you'll check it out!

Other upcoming webinars, held in conjunction with CTS research council meetings, will begin in mid-October. Take a look at the lineup and register to join us for the events that interest you:

- October 13, 1:30 p.m. Central
[Reducing Climate Change Impacts in Minnesota](#)
- October 19, 9:00 a.m. Central
[Innovative Materials and Advanced Technologies for a Sustainable Pavement Infrastructure](#)

- October 26, 9:00 a.m. Central
Community-Engaged Transit Planning
 - November 9, 2021, 1:00 p.m. Central
The Pedestrian Crossing Experience in Minnesota
-