Minnesota's Transportation Conference

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March 9–11, 2021

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Welcome to the first-ever Virtual Minnesota’s Transportation Conference!
We’ve planned a great program featuring new technology, important updates, the latest from transportation professionals in all areas, and lots of time for catching up with colleagues in fun, virtual forums. Earn points for visiting with our sponsors and win your way to the top of the leaderboard!
The conference is spread out over three days this year to make sure that your time is well spent and you stay engaged with the issues you care about the most. With a virtual platform we can offer lots of flexibility. Not sure about a particular session? Check numerous different breakout sessions. Want to spend more time visiting the virtual expo? No problem. Everything is just a click away. You can set up private meetings or visit with groups of people. And if you need technical assistance, we have staff available to help you out.
Our first day plenary session will focus on the future of transportation. We’ll explore how COVID-19 has impacted transportation and what trends we can expect as we move into recovery.
We’ll also hear from experts about the challenges of working from home and how this new phenomenon is impacting the transportation system with our plenary speakers on the second day.
Federal transportation funding is a huge focus right now along with all the changes in personnel at US DOT. We have folks in Washington DC lined up to provide the latest news and insights regarding federal funding and policy during our plenary session on the last day of the conference.
Our agenda is chock-full of breakout sessions that explore the latest developments in technology, public engagement, planning, funding, and major projects for a variety of modes. It will be easy to engage with speakers and get all your questions answered on these topics.

Thank you to our conference sponsors! Sponsors make the conference more valuable for everyone with displays and information on important new products and services. Please be sure to visit each booth and check out the latest innovations that can help you in your work. Our sponsors will have staff available to talk directly with you.
Thank you to the member organizations of Principal Planning Committee for the conference: MnDOT, the American Council of Engineering Companies of Minnesota, the Federal Highway Administration, the Center for Transportation Studies, the Minnesota Transportation Alliance, the Metropolitan Council, Minnesota County Engineers Association, Minnesota City Engineers Association, and the College of Continuing and Professional Studies.
We greatly appreciate your participation and hope to see you in person very soon!

Minnesota’s Transportation Conference Planning Committee

Twitter
Use hashtag #mntc2021 to continue this year’s conference conversation.
This year, Minnesota’s Transportation Conference is pleased to present a check for $10,000 to the Minnesota County Engineers Association to help fund needed scholarships that support the transportation industry into the future.

MCEA gives out multiple scholarships to civil engineering and civil technology students every year. In 2020 the association provided $23,000 in scholarships to future civil engineers and technicians. These are engineers and technicians that generally end up working in Minnesota not only for counties, but also for MnDOT, cities, consultants, and contractors.

The funding for these scholarships comes primarily from MCEA’s annual scholarship drive and raffle held at the annual conference. This year’s annual conference was, of course, virtual and pledges for the scholarship drive did not provide the level of funding typically raised. The MTC donation makes the fund whole for 2021 scholarship awards—awards that will mean a great deal to future industry professionals.

Thanks to your participation, the conference is able to make a difference for the future of the industry!

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Don’t miss out on the social hour with Gamification at 3:30 p.m. on Day 1, Tuesday, March 9

AICP Maintenance Credits

A complete list of approved sessions will be available at ccaps.umn.edu/mtc

Professional Development Hours

Attendees at this conference may receive up to 11 professional development hours. A PDH form is available at ccaps.umn.edu/mtc
# Program at a Glance

**Tuesday, March 9, 2021**

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<td>11:00 a.m.</td>
<td>Welcome and Plenary Session: INFRASTRUCTURE 2030–2050: Crisis, Renaissance, or Both</td>
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<td>12:15 p.m.</td>
<td>Networking Time</td>
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<td>12:30 p.m.</td>
<td>Concurrent Sessions</td>
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<td>New Transportation Needs and Funding Proposals</td>
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<td>Advancing CAV by Engaging Community Voices</td>
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<td>An Artificial Intelligence (AI) Based Public Engagement Tool: An Ongoing Adventure in the Midwest</td>
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<td>MnDOT Managing Risks Thru the Construction-Let Budget Setting Process</td>
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<td>Using Iteris ClearGuide with HERE Probe Data</td>
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<td>Strategies and Lessons Learned for Advancing Contracting Equity</td>
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<td>Mobility Management, COVID 19, and Looking Forward</td>
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<td>1:00 p.m.</td>
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<td>Triumphs and Trailblazing of DBE Graduation: Practices, Strategies, and Resources for Successful DBE Engagement</td>
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<td>Planning in a COVID World: District Freight Plans and Alternative Engagement</td>
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<td>Machine Learning Based Corridor Safety Assessment: Influencing Factors and Hotspots</td>
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<td>Pivoting Pandemic Public Engagement: How to Prioritize the User Experience</td>
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<td>Winning Back Transit Riders During a Pandemic</td>
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<td>1:30 p.m.</td>
<td>Networking Time</td>
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<td>2:30 p.m.</td>
<td>Concurrent Sessions</td>
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<td>Distance Based Fees: An Alternative to the Motor Fuel Tax</td>
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<td>White Bear Lake AV Shuttle Program</td>
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<td>Creating Opportunities: Forging a More Diverse and Inclusive AEC Industry</td>
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<td>Planes, Trains and No Automobiles: Around the Airport Project Communications</td>
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<td>Setting Local Speed Limits for Safety: Lessons from Minneapolis, St. Paul, and St. Louis Park</td>
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<td>The Value of Local Partners in an Urban Project: Hwy 61 Lake City Reconstruction</td>
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<td>Advancing Transit Title VI Equity Analyses</td>
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<td>3:00 p.m.</td>
<td>Consultations: How to Right-Size Investment in Twin Cities Highway Mobility</td>
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<td>Building Trust Between Tribal Nations and MnDOT</td>
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<td>Changing Speed Limits in Minnesota: Thinking Beyond the 85th Percentile</td>
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<td>Engagement: Understanding the User Experience</td>
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<td>Assessing the Twin Cities Bus Expansion Values: Bus Service Allocation Study</td>
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<tr>
<td>3:30 p.m.</td>
<td>Social Hour</td>
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<td>4:30 p.m.</td>
<td>Adjourn for the Day</td>
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# Program at a Glance

## Wednesday, March 10, 2021

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<th>Time</th>
<th>Session</th>
<th>Concurrent Sessions</th>
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</table>
| 8:00 a.m.  | Welcome and Plenary Session: Telework During COVID: Leveraging Behavioral Science to Improve Virtual Work and the Future of Commuting | Sustainable Transportation Advisory Council  
Connecting Minnesota: Leveraging the Highway Network to Support Broadband and Future Technologies  
How Can We Address Inequities in Minnesota through Transportation?  
Honoring Our Veterans Through the Highway 22 "Victory Drive" Corridor  
Lighting Roads for Safety  
Got a Bike Plan? Now Implement It!  
Arterial BRT: the (Network) Next Generation |
| 9:15 a.m.  | Networking Time                                                          |  
10:00 a.m. Concurrent Sessions |  
10:30 a.m. Concurrent Sessions |  
11:00 a.m. Networking Time |  
12:30 p.m. Concurrent Sessions |  
1:00 p.m. Concurrent Sessions |  
1:30 p.m. Adjourn for the Day |
| 10:00 a.m. |  
Climate Resilience and Transportation at MnDOT |  
Nationwide Scan of Reconstruction Project Experience |  
Unlike Anything Else: Supporting a New Environmental Approach for Unique Needs on Highway 13 |  
Safety Evaluations: Reduced Conflict Intersections, Flashing Yellow Arrows, and Pedestrians at Roundabouts |  
Separated Bikeways for All Users: A Hennepin County Experience |  
Gold Line BRT: Partnerships Pave the Way to Minnesota's First Dedicated BRT |
| 11:00 a.m. |  
12:30 p.m. |  
Using Location Based Services Data for Calculating the Greenhouse Emissions of Communities in Minnesota's Metropolitan Region |  
MnDOT TH 55 Connected Corridor Project: Lessons Learned and Next Steps |  
MnDOT's Statewide Pedestrian System Plan: An Equitable Approach to Investing in Walking |  
MnDOT's New MH Precast Beams |  
Planning Inclusive Walk Audits and Demonstration Projects |  
Pedestrian Safety: A Best Practices Tool Kit and Case Study on US Route 1 in Howard County, Maryland |  
Rapid Transit for All in Rochester |
| 1:00 p.m.  |  
The Integration of Natural Capital to Mitigate Climate Change |  
Highway 52 Connected and Automated Vehicle Study |  
A New Look at Pedestrian Safety: Examining Statewide Roadway Risk Factors in Context |  
MnDOT Use of Bridge Move Techniques and Precast Deck with UHPC |  
Anoka County: MnDOT ADA Small Business Initiative |  
Data-Driven Approaches to Identifying Nonmotorized Transportation Needs |  
Community Station Creation: How Rochester and its Residents are Designing its First BRT |
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<tr>
<th>Time</th>
<th>Session</th>
<th>Title</th>
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<tbody>
<tr>
<td>8:00 a.m.</td>
<td>Welcome and Plenary Session: Federal Transportation Funding: The Last</td>
<td>Action in D.C.</td>
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<td>Networking Time</td>
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<td>10:00 a.m.</td>
<td>Concurrent Sessions</td>
<td>Innovation in the Covid Era</td>
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<td>Networking Time</td>
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<tr>
<td>10:00 a.m.</td>
<td>Concurrent Sessions</td>
<td>Innovation in a Time of Uncertainty: How CAV is Adapting to a Global</td>
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<td>Networking Time</td>
<td>Pandemic</td>
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<tr>
<td>10:00 a.m.</td>
<td>Concurrent Sessions</td>
<td>Get Collaborative! How Gender Equity in Transportation Can Advance</td>
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<td>Networking Time</td>
<td>Safety, Access, and Mobility for All</td>
</tr>
<tr>
<td>10:00 a.m.</td>
<td>Concurrent Sessions</td>
<td>Third Time is the Charm for the US 14 Corridor through Byron!</td>
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<td>Networking Time</td>
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<tr>
<td>10:30 a.m.</td>
<td>Concurrent Sessions</td>
<td>Appalachian Development Highway System Integrated Planning Approach</td>
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<td>Networking Time</td>
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<tr>
<td>12:30 p.m.</td>
<td>Concurrent Sessions</td>
<td>3D Models for Subsurface Utility Engineering Investigations</td>
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<td>Networking Time</td>
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<td>1:00 p.m.</td>
<td>Concurrent Sessions</td>
<td>I-35W Stormwater Storage Facility Project</td>
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<td>Networking Time</td>
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<td>1:45 p.m.</td>
<td>Ethics: Operating in the Gray</td>
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<tr>
<td>3:00 p.m.</td>
<td>Adjourn Conference</td>
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Director of Mobility Advancement

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Bethany Brandt-Sargent  
Planner & Public Engagement Specialist

Kevin Mackey  
Travel Demand Modeler

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Welcome and Plenary Session  11:00 a.m.

INFRASTRUCTURE 2030–2050: Crisis, Renaissance, or Both

Eric Garland, Competitive Futures
Moderator: Jon Curry, American Council of Engineering Companies of Minnesota

Infrastructure matters. On the way to school, when turning on the heat in Texas, when planning for a storm in Puerto Rico, when going shopping in Duluth, or going to work in Bemidji, infrastructure is that societal investment which lets all of us focus on other problems. As transportation professionals have been warning year after year, we either invest in infrastructure as a society or find ourselves in the pages of history.

This year, we turn our vision toward the future and look at the trends creating the risks and opportunities in the transportation system of tomorrow, in Minnesota and beyond. In this presentation, Eric Garland, futurist and strategist for corporate and government leaders for over 20 years, takes us through the systems and trends that have been creating the transportation system of tomorrow, what it means for state governments, infrastructure industry professionals, citizens, and other stakeholders. We’ll discuss the future of the built environment, macroeconomics, implications of the post-COVID world, information technology, telework, taxation, and more.

The goal of the presentation is to be able to bring a sense of urgency to policymakers that infrastructure matters—and there’s no time like the present to invest in it, intelligently.

Networking Time  12:15 p.m.

Using Iteris ClearGuide with HERE Probe Data
Brian Kary, MnDOT
Moderator: Catherine Manzo, StreetLight Data

The MnDOT purchases a software subscription from a company called Iteris that allows the department to track travel times and average speeds on state highways throughout Minnesota. The software platform, Iteris ClearGuide, allows access to probe data provided by HERE Traffic. The Iteris ClearGuide platform provides an easy-to-use interface that converts the HERE Traffic data into real-time and historical visualizations and reports. This helps MnDOT planners and engineers identify problem areas and make decisions on how to relieve these problem areas. This presentation will introduce MnDOT and consultant staff to the ClearGuide product and to provide example use cases.

Mobility Management, COVID 19, and Looking Forward
Tom Gottfried, MnDOT Office of Transit and Active Transportation – Minnesota Council on Transportation Access
Moderator: Kate Miner, Stonebrooke Engineering, Inc.

This presentation will include the background and context of the Minnesota Council on Transportation Access (MCOTA). The presentation will focus on the impact that COVID-19 had on these different Mobility Management organizations.

Advancing CAV by Engaging Community Voices
Tara Olds, MnDOT; Dan Pfeiffer, WSB; Katie Caskey, HDR Engineering Inc.
Moderator: Todd Polum, SRF Consulting

Recent survey data shows that Minnesotans tend to be more excited about the future of CAV compared to the country as a whole. How do we harness this excitement to build trust in Minnesota’s CAV program? How do we use CAV to help Minnesota communities realize their goals? How do we ensure all Minnesotans see the benefits from CAV? Can CAV help mitigate existing inequities in our transportation system? This presentation will focus on how MnDOT, its consultant partners, and the University of Minnesota are engaging Minnesotans on CAV. This session will address what we can do with CAV now, what we can do in the next 3–5 years, and how you can be part of the conversation.

Twitter
Use hashtag #mntc2021 to continue this year’s conference conversation.
Strategies and Lessons Learned for Advancing Contracting Equity

Mary Schmidt, MnDOT; Ted Shoenecker, Ramsey County
Moderator: Melissa Brand, MnDOT

Presenters from Ramsey County and MnDOT will highlight strategies, outcomes, and lessons learned from their experience using small contracts to create opportunity for small businesses, with a focus on Minnesota’s Uniform Municipal Contracting Law and other statutes that enable counties and cities of all sizes and from all parts of our state to use public works dollars to advance social, economic, and geographic equity.

An Artificial Intelligence (AI) Based Public Engagement Tool: An Ongoing Adventure in the Midwest

Dan McNiel, Ali Nahvi, Jono Cowgill, SRF Consulting Group
Moderator: April Lucas, MnDOT

Natural Language Processing, or NLP, is a field of AI that offers the ability to read, understand, and derive meaning from human languages. This presentation will discuss a tool that allows engagement professionals to conduct sentiment analysis on massive numbers of survey comments and help to inform projects by conducting survey and topic analysis on participants’ feedback. Recently, a dashboard was used to analyze survey comments for the US-14 Corridor Analysis Study to evaluate public sentiment and analyze feedback based on the demographic profile of respondents. This combination of analysis can help to process millions of records in a couple of minutes, improving interpretation accuracy that results in project time savings and a better understanding of who provided input and what they are saying about a project.

MnDOT Managing Risks Through the Construction-Let Budget Setting Process

Todd Clarkowski, Jay Hietpas, Eric Jansen, Chris Roy, MnDOT
Moderator: Peter Muehlbach, WSB

MnDOT continues to work toward on-time and on-budget delivery of its projects to gain customer trust. Balancing letting schedules, establishing the volume of lettings in each quarter, and reaching toward goals of reducing the amount of negative float in project schedules are just some of the on-time efforts occurring now. On-budget efforts have recently included establishing new guidelines to allow MnDOT to further refine the construction cost estimates of projects, well in advance of lettings, that now also incorporate the known risks while anticipating unknown risks. This presentation will discuss why project construction budget setting is important, how MnDOT will establish construction budgets on all let projects, and how projects should be managed to a budget. Key components to establishing and managing the budget include development of quality risk registers, scoping, and cost estimating principals by MnDOT and its consultants. Districts will consider the threats and opportunities to their project schedules and budgets and then incorporate those additional potential costs into the construction cost estimate, expected at the time of letting. New MnDOT policies have been updated now to incorporate the Construction Let Budget Setting guidance. By managing risks more effectively on each project, cost estimating accuracy at time of letting is expected to improve and will move another step toward MnDOT’s goal of on-budget delivery.

New Transportation Needs and Funding Proposals

Margaret Donahoe, Minnesota Transportation Alliance; Erik Rudeen, MnDOT; Ann Johnson Stewart, Minnesota Senate District 44
Moderator: Jody Martinson, WSB

Minnesota’s transportation system continues to be underfunded. As the legislature works to develop a new two-year state budget, transportation funding and the potential for increasing dedicated revenue on a permanent basis will be a topic of debate. This session will review the funding proposals put forward by the governor, legislators, and advocates to address the needs and make the transportation system safer and more effective into the future.
Concurrent Sessions 1:00–1:30 p.m.

**Machine Learning Based Corridor Safety Assessment: Influencing Factors and Hotspots**

*Ali Nahvi, Sharvari Sangle, David Huft, SRF Consulting Group*

**Moderator:** Mike Marti, SRF Consulting

As part of the North/West Passage (NWP) corridor safety study, we implemented a machine learning technique to quantify contributing factors to severe crashes within the network. The project started with collecting safety data for each state and combining the data to one common format. Then an interactive dashboard was developed for the exploratory analysis and identifying problematic locations. To evaluate the extent of contribution of each factor to severity of the crashes, machine learning was used to explore and quantify safety features’ importance. In the end, recommendations were made for improving identified issues. The methodology developed in this study may enable transportation agencies to detect and quantify the main cause of the severity of crashes.

**Winning Back Transit Riders During a Pandemic**

*Len Simich, CEO, Southwest Transit*

**Moderator:** Matt Gjersvik, WSP USA Inc.

The presentation will describe various methods Southwest Transit has used to encourage riders to get back on the bus during the COVID19 shutdown, and include direct marketing, targeted marketing to especially-vulnerable populations and riders of choice in the Southwest service areas, and efforts to improve the lives of those in the community who need support and assistance in grocery shopping, reaching medical facilities and fighting isolation.

**Triumphs and Trailblazing of DBE Graduation: Practices, Strategies, and Resources for Successful DBE Engagement**

*Sirish Samba, PE, Sambatek, Inc; Mike Barnes, MnDOT; Tracey Jackson, Ashanti Payne, Metropolitan Council*

**Moderator:** Lyssa Washington, 4RM+ULA

A panel of speakers comprising leaders from MnDOT, MetCouncil, Partnering Consultant, and CSB (Certified Small Business) share their perspectives on small business programs with respect to entering the DBE arena, overcoming the challenges, and ultimately graduating out of the DBE program. The presentation will provide practical insights on strategies and resources it takes to nurture win-win-win relationships.

**Pivoting Pandemic Public Engagement: How to Prioritize the User Experience**

*Jono Cowgill, Dan McNiel, SRF Consulting Group*

**Moderator:** Molly Kline, MnDOT

The broad-scale cancellation of group events across the state and region due to the COVID-19 pandemic required governments and public engagement practitioners to quickly deliver alternative options for connecting with the public. The SRF Public Engagement Team has worked closely with a variety of clients to deliver high-quality and adaptable engagement tools designed to serve as alternatives to planned in-person engagement activities. This presentation will share lessons that have been learned from pivoting public engagement activities online and highlight how ongoing engagement efforts can work to ensure a high-quality user experience.

**Planning in a COVID World: District Freight Plans and Alternative Engagement**

*Andrew Andrusko, MnDOT; Stephanie Castellanos, MnDOT District 3 Public Engagement*

**Moderator:** John Tompkins, MnDOT

This session will introduce MnDOT’s approach to collaboratively developing regional freight plans as well as the challenges and successes in engaging key freight stakeholders, manufacturers, government representatives, and the public during a challenging time set within the COVID-19 pandemic. Presenters will share lessons learned about planning and examples of how engagement and consensus building can still be accomplished through media even during times when we are not able to meet in person.

**Networking Time** 1:30–2:30 p.m.
Concurrent Sessions 2:30–3:00 p.m.

Planes, Trains and No Automobiles: Around the Airport Project Communications

Brian Miller, Stephanie Roth, HDR Engineering Inc.; Aaron Tag, MnDOT Metro West Area Engineer; Gail Vold Greco, MnDOT Metro Communications & Engagement
Moderator: Ben Lodin, Sambatek, Inc.

Learn about the planning and partnering that went into delivering the Around the Airport construction project in 2020, a year unlike any other. More than one year before the eastbound Highway 5 closure, the project team began shaping its strategy to inform a broad public, infrequent travelers, and target audiences within a six-hour radius of the Minneapolis-St. Paul International Airport. Not only did this project adjust for COVID-19, it required MnDOT to communicate a little differently to reach people before they traveled to or through the area. Hear from the project team on what was different, how things shifted over time and the silver lining.

Setting Local Speed Limits for Safety: Lessons from Minneapolis, St. Paul, and St. Louis Park

Ethan Fawley, City of Minneapolis; Ben Manibog Jr., City of St. Louis Park
Moderator: Kate Miner, Stonebrooke Engineering, Inc.

In 2019, Minnesota law changed to give local cities the authority to set speed limits on streets under their jurisdiction. At this session, you will hear from three cities who have recently changed their speed limits on their approach to determining appropriate speed limits and implementing the change.

Advancing Transit Title VI Equity Analyses

Jackie Nowak, Jake Knight, SRF Consulting Group
Moderator: Robin Cauzman, Metro Transit

Federally mandated Title VI fare and service equity analyses create windows of opportunity for regular analysis of transit system equity. A case study will be presented to show how a procedural Title VI project was leveraged to create a better understanding of transit system use and distribution of benefits and adverse impacts across race/ethnicity and income. Following the case study presentation, session participants will be asked to share in a discussion of how transit practitioners can go beyond mandated Title VI requirements to gain more value for planning processes and ultimately promote more equitable outcomes.

White Bear Lake AV Shuttle Program

Daryl Taavola, AECOM; Ellen Hiniker, City of White Bear Lake
Moderator: Jeff Rhoda, AECOM

The City of White Bear Lake and AECOM and its partners have developed a groundbreaking Automated Vehicle (AV) program to provide innovative transportation solutions that target enhanced mobility for persons with disabilities, better travel options for elderly communities, the establishment of AV career pathway programs, and how to integrate AV solutions into a typical Minnesota small urban or rural community. The project includes a 12-month live AV shuttle pilot on a residential city street and implementation of a high school campus test route to support student workforce development and AV University research. Come learn about an exciting project that will drive emerging mobility solutions for the citizens of Minnesota.

Creating Opportunities: Forging a More Diverse and Inclusive AEC Industry

Bret Weiss, Laura Rescorla, WSB
Moderator: Stephanie Malinoff, University of Minnesota

The communities in which we live and work are far more diverse than our industry. WSB believes that a more diverse workforce will help drive innovation and strengthen our communities. By making investments in the future and helping to remove barriers, WSB is supporting a more diverse and inclusive AEC industry through several diversity, equity, and inclusion initiatives. Learn more about their Opportunity+ Training Program, a straightforward pathway program to recruit and train people for careers in the civil engineering industry and the firm’s work with local community partners to support development opportunities for people of color.
Communication and engagement can help bolster a project that has become a divisive community issue. This panel will outline how MnDOT, City of Lake City, Lake City Chamber of Commerce and the contractor, Rochester Sand and Gravel, committed to a team effort during the reconstruction of Hwy 61 in Lake City. They built a responsive, informative and respectful communications network utilizing a range of platforms, people and plans. The range of partners ensured that the different segments of the community were reached in effective ways by trusted sources. The discussion will focus on the communication and engagement strategies the team used, including how they remained nimble and adapted to changes as the COVID-19 pandemic unfolded.

Distance-Based Fees: An Alternative to the Motor Fuel Tax

Kenneth Buckeye, MnDOT
Moderator: Marthand Nookala, SRF

A distance-based fee (DBF) is one potential way to close the highway funding gap and ensure everyone is paying their fair share. DBFs are charges for use of the road based on distance traveled.

Concurrent Sessions 3:00-3:30 p.m.

Assessing the Twin Cities Bus Expansion Values: Bus Service Allocation Study

Cole Hiniker, Daniel Pena, Metropolitan Council
Moderator: Patrick Watz, HNTB

The Twin Cities region is constantly grappling with the difficult choice of where to invest in expanded transit services. On one end, the region could invest in areas where transit can be the primary means of travel for all of life’s daily needs, where frequent service is more readily available for the region’s residents and jobs. On the other end, the region could invest in serving new areas or better serving suburban areas that primarily only have express service or very infrequent service today. The Metropolitan Council conducted several workshops with regional stakeholders to ask these very questions: Where should we prioritize service expansion? What values should expansion reflect? This session will demonstrate how the analysis was conducted and what the next steps are for this policy discussion.

Building Trust between Tribal Nations and MnDOT

Adrien Carretero, Duane Hill, MnDOT
Moderator: Paula Berger, WSP USA Inc.

This session is about relations between tribal government and state government. The context and foundation for this unique legal relationship will be presented as well as the impact tribes have on MnDOT. Examples of partnerships in northeastern Minnesota will be examined in addition to the role of MnDOT’s Operations Division.

Engagement: Understanding the User Experience

Dan Pfeiffer, WSB
Moderator: Brenda Thomas, KLJ

Physically distanced engagement has been in a supporting role for years. After COVID-19 hit, it was necessary for these tools and techniques to move into a leading role. To select appropriate tools and techniques, engagement professionals and project managers need to understand the user’s experience. What barriers to participation does the user face? Do they have access to the internet? Is the tool easy to use? Is the tool accessible (WCAG)? Is the call to action clear?

Setting the Target: How to Right-Size Investment in Twin Cities Highway Mobility

Brian McLafferty, Paul Morris, SRF Consulting Group; Steve Peterson, Metropolitan Council; Paul Czech, MnDOT
Moderator: Nick Thompson, Metropolitan Council

This presentation will highlight the MnDOT and Metropolitan Council’s effort to measure the effectiveness of highway mobility investment on state highways in the Twin Cities Metropolitan Area. It will cover the process used to identify and prioritize highway mobility performance measures, recommend performance targets, and model future performance outcomes at different investment levels. The presentation will also explore the investment needed to achieve agency goals and the role of social equity in setting mobility targets.
In 2019, Minnesota law changed to allow cities to establish speed limits on certain streets. These changes make it easier for cities to change speed limits on streets under their authority, many of which had a statutory speed limit of 30 mph unless otherwise posted. As part of this new authority, many communities are determining how to go about setting speed limits on their local roads. Feeling the push from nonmotorized roadway users to lower speed limits, cities are looking at the latest speed limit research regarding vehicle, pedestrian, and bike safety. Across the United States, this conversation is expanding beyond the 85th percentile speed. Bolton & Menk has been working with MnDOT to lead discussions with the goal of developing a unified vision for setting speed limits in Minnesota. Our presentation will cover the latest research and literature in speed limit setting. We will discuss the Minnesota process where engineers, planners, and nonmotorized advocacy groups engaged through a stakeholder process to define a unified vision for speed limits. We will also detail the lessons learned throughout the process.

Social Hour 3:30 p.m.
Adjourn for the Day 4:30 p.m.
include an overview of the STAC process and STAC recommendations to MnDOT. A panel of STAC members will describe their experience participating in work groups focused on reducing vehicle miles traveled, fueling and powering transportation with clean energy, and enhancing transportation system resilience to our changing climate.

**Arterial BRT: The (Network) Next Generation**

_Adele Hall, SRF Consulting Group; Kyle O'Donnell Burrows, Metro Transit_

_Moderator: Ashley Hudson, Bolton & Menk, Inc._

Ridership growth on the A Line (opened on Snelling Avenue in 2016) and the C Line (opened on Penn Avenue in 2019) has been steady and significant. The rider response to A Line and C Line investments offers proof of concept: build high-quality, high-capacity transit lines in dense urban neighborhoods, and they will be well-used services with a high return on the public’s investment. As momentum for arterial BRT builds, construction continues: D Line (Emerson/Fremont/Chicago Avenues) will open in 2022, and planning is well underway for B Line (Lake Street/ Marshall/Selby Avenues) and E Line (Hennepin/France Avenues). So, what’s next? Where will F Line be? G Line? H? Join presenters from Metro Transit’s BRT Projects department and SRF Consulting to learn where the next generation of arterial BRT lines will be built and the engagement, planning, data analysis, and evaluation that went into making the decisions.

**Connecting Minnesota: Leveraging the Highway Network to Support Broadband and Future Technologies**

_Kristin White, MnDOT; Mike Misrahi, Ernst and Young; Rohit Tandon, MnIT Assistant Commissioner_

The State of Minnesota believes that by strategically investing in broadband, we can use this infrastructure to save lives with CAV technology, and also provide better access to transportation, jobs and health care, make communities safer, and advance equity so no community is left behind.

**How Can We Address Inequities in Minnesota through Transportation?**

_Dave Cowan, Tara Olds, MnDOT; Nissa Tupper, MnDOT – Complete Streets; Gloria Jeff, MnDOT – Rethinking I-94_

_Moderator: David Peterson, Bolton & Menk, Inc._

Transportation plays a critical role in everything we do. It provides us access to markets, health care, education, communities, and recreation. However, not everyone has the access they need nor the access they want. The current transportation system doesn’t meet the needs of all people in Minnesota and transportation inequities can further perpetuate other inequities in our state by creating additional barriers to access. This session will explore what offices within MnDOT are doing to address current inequities within transportation and what they are doing to not create new inequities with our ever-changing transportation system. How is MnDOT examining equity in a holistic manner, looking at equity from the lenses of community, sustainability, active transportation, and emerging technologies?

**Honoring our Veterans through the Highway 22 “Victory Drive” Corridor**

_Robert Jones, MnDOT District 7; Peter Muehlbach, WSB_

_Moderator: Ronda Allis, MnDOT_

Highway 22 in Mankato is designated as “Victory Drive.” The project included a landscape plan for the 12-mile reconstruction project along with monuments at each end of the project. These were constructed to honor all five branches of the military, now recognizing all military veterans instead of just those that fought in WWI and WWII.
Got a Bike Plan? Now Implement It!

Renae Kuehl, SRF Consulting Group; Chad Millner, City of Edina

Moderator: Andrew Plowman, WSB

The “Bicycle Facility Implementation Guide” was developed by the LRRB, based on a survey of local agencies’ bicycle facility design practices, questions, and concerns. It is intended to demystify common questions about appropriate facility selection and designed to help practitioners confidently implement low-stress bicycle transportation networks. The Guide provides information on the variety of bicycle facility selection and design guidance documents available, and it identifies which to use as primary resources in Minnesota. This presentation will highlight key components of the document and how agencies can use it to implement bicycle facilities.

Lighting Roads for Safety

Derek Leuer, MnDOT

Moderator: Jim Miles, MnDOT

The presentation will include a focus on the safety-oriented policy of Wisconsin’s Department of Transportation (WisDOT) for managing their statewide roadway lighting system. The presentation will provide context for WisDOT’s policy for applying lighting as a roadway safety measure, including considerations for maintenance, energy management, and performance measures. Intersection lighting is an important topic when it comes to safety in a rural context. See how MnDOT and St. Louis County have come together to deliver on the lighting needs in the community. Learn about the challenges that come from finding a power source and who is responsible for maintaining power source. Discover how solar power can be used in these settings along with the drawbacks to using solar power from the people that work in this area on a regular basis.

Unlike Anything Else: Supporting a New Environmental Approach for Unique Needs on Highway 13

Paul Morris, SRF Consulting Group; Angie Bersaw, Bolton & Menk, Inc.; Carolyn Adamson, MnDOT

Moderator: Jason Staebell, Hennepin County

Highway 13 provides both north/south and east/west connections for south Metro commuters crossing the Minnesota River via I-35W and Highway 169 in Savage and Burnsville. But did you know that this segment of Highway 13 has double the region’s average heavy truck trips and is the only access to one of the busiest multimodal ports for agricultural commodities serving Greater Minnesota and the Upper Midwest? To address mobility and safety needs to be addressed in this corridor, MnDOT faced the challenge of securing environmental approval for both the corridor vision and the design of the port access. The solution was found in the Hybrid Environmental Assessment, a new tool developed with FHWA that combines corridor- and project-level environmental reviews. This presentation will summarize the technical and environmental analyses, evaluation metrics, and public engagement strategies that the project team employed to support the hybrid EA process and meet the unusually tight timeframe.

Safety Evaluations: Reduced Conflict Intersections, Flashing Yellow Arrows, and Pedestrians at Roundabouts

Maxwell Moreland, Mark Wagner, MnDOT

Moderator: Jake Duppong, Stonebrooke Engineering, Inc.

The Safety Section of MnDOT’s Office of Traffic Engineering is conducting evaluations that focus on the safety impacts of reduced conflict intersections, pedestrians and bicycles at roundabouts, and flashing yellow arrows. These evaluations use multiple analysis techniques to review crash data at locations with these treatments in Minnesota. The impacts these treatments have on crash severities and crash types are being analyzed and will be discussed in this presentation.

Climate Resilience and Transportation at MnDOT

Jeffrey Meek, MnDOT

Moderator: David Montebello, SRF Consulting

Minnesota has recently closed out its wettest decade on record and is experiencing increased rainfall depths, intensities, and frequencies. These changes can have meaningful and direct impacts on the transportation system and are expected to increase in the coming years. MnDOT staff will share a brief overview of current efforts to anticipate the impacts of these projected conditions, determine the most vulnerable assets, and increase transportation resilience to benefit all Minnesotans.
Gold Line BRT: Partnerships Pave the Way to Minnesota’s First Dedicated BRT

Lisa Wall, Kimley-Horn and Associates; Chris Beckwith, Metro Transit; Ed Sanderson, MnDOT
Moderator: Scott Reed, HDR

As the first of its kind in the Twin Cities Metro, the Gold Line project has established a unique partnership between Metro Transit, MnDOT, Ramsey County, and Washington County to deliver this $461M transit project. The presentation will focus on this unique partnership, discussing how numerous agencies came together to make key design decisions for the project and provided key leadership roles on the project. We will specifically explore the Interstate 94 right-of-way, discussing solutions that were implemented to mitigate right-of-way pinch points along the Interstate 94 corridor for existing and future conditions.

Nationwide Scan of Reconstruction Project Experience

Steph Fenner, Gloria Jeff, MnDOT
Moderator: Janelle Borgen, Ideate Consulting

MnDOT conducted a nationwide scan of Departments of Transportation (DOTs) and Metropolitan Planning Organizations (MPOs) to identify states and localities with reconstruction project experience where earlier construction had harmed communities of color. Key project findings included that as reconstruction projects are increasingly becoming the norm for DOTs and MPOs across the country, the goal of public engagement should be that the public speaks while the DOT listens, and that this project can set the tone for how MnDOT is perceived into the future. These findings and others will be discussed as this presentation will outline which states and cities participated, as well as an overview of each project’s background, current status, demographics, and structure. Additional content relates to recommended practices for future projects and how this research informs MnDOT’s Rethinking I-94 project.

Separated Bikeways for All Users: A Hennepin County Experience

Bryan Nemeth, Bolton & Menk, Inc.; Jason Pieper, Hennepin County
Moderator: Kelly Agosto, Hennepin County

Separated bikeways, including cycle tracks, have recently been implemented throughout Minnesota. Since these are relatively new, there are numerous lessons to be learned from the different designs and their impact to users and maintenance activities. Hennepin County recently completed two separated bikeway designs: one in Minneapolis and one in Richfield. Both projects provided an opportunity to understand the benefits and shortcomings of the designs that can then be implemented on future separated bikeway designs. We will review the 66th Street design in Richfield and the results of the Cycle Track evaluation implemented on Washington Avenue in Downtown Minneapolis, as well as how the projects influenced 4th Street in Minneapolis, Lyndale Avenue in Richfield, and each other.

Networking Time 11:00 a.m.–12:30 p.m.

Concurrent Sessions 12:30–1:00 p.m.

Using Location-Based Services Data for Calculating the Greenhouse Emissions of Communities in Minnesota’s Metropolitan Region

Catherine Manzo, StreetLight Data; Liz Roten, Mauricio Leon, Metropolitan Council
Moderator: Tony Fischer, Metropolitan Council

It’s one thing to know that transportation is a significant cause of greenhouse gas emissions. It’s another to quantify how much. And in order to make meaningful changes for our climate, it’s critical to find out. Local governments have historically lacked appropriate resources and technology for conducting climate action planning for transportation and land use. Time, resources, and technical assistance have all been barriers to learning the information they need to make meaningful changes. Luckily, thanks to advances in big data resources derived from mobile devices, innovative use of Census data, and extensive research, these barriers are breaking down. To address the scarcity of transportation emissions data in Minnesota, the Metropolitan Council of the Twin Cities has developed greenhouse gas emission estimates for transportation and land for cities, townships, and
counties of the Twin Cities Metropolitan Region. In this session, Mauricio Leon and Liz Roten of the Metropolitan Council, along with Catherine Manzo of StreetLight Data, will demonstrate how they’ve leveraged big data to centralize research, save public funding, and enable communities to focus their efforts on implementing strategies to become more sustainable, rather than doing data analysis.

Rapid Transit for All in Rochester

James Gersema, SRF Consulting Group; Jarrett Hubbard, City of Rochester
Moderator: Andrew Wells, Rani Engineering

To accommodate future growth in jobs, homes, retail, and hotels, Rochester aims to have 50 percent of commuter trips travel to downtown by modes other than single-occupancy automobile by 2040. This includes transitioning the proportion of commuters arriving by transit from the current 10 percent to 30 percent. This will be achieved by creating multimodal transit, walking, and bike connections and a network of walkable streets linked to public spaces. Rochester Rapid Transit, the first phase of a new rapid transit system, will be a key component of this strategy. Rochester Rapid Transit will streamline current transit service in the corridor by replacing several shuttles currently operated by Mayo Clinic and providing dedicated transit lanes to accommodate local bus service and Rapid Transit. Rochester Rapid Transit will operate on 2nd Street SW, one of the most heavily used corridors in the City of Rochester, carrying more than 21,800 vehicles and 13,000 transit riders each day. The corridor is already near capacity, and congestion causes significant delays for transit users, drivers, and others traveling through the area. Closely coordinated with the Destination Medical Center and Mayo Clinic, this rapid transit line is focusing on improving accessibility and efficiency of transit through this already-dense and rapidly growing area.

MnDOT’s New MH Precast Beams

Arielle Ehrlich, MnDOT
Moderator: Andrew Nordseth, Stantec

In 2018, the MnDOT (MnDOT), in collaboration with our MnPA (Minnesota Precast Association) partners, developed standard plan details for 30-, 35-, and 40-inch-deep prestressed “I” shape concrete beams. This presentation will address the development of the new shapes and other innovations in the MnDOT precast beam procedures.

Planning Inclusive Walk Audits and Demonstration Projects

Kristen O’Toole, Maria Wardoku, Alta Planning + Design; Emily Smoak, Minnesota Department of Health
Moderator: Katie Togramadjian, Isthmus Engineering

Planning and street design processes benefit from incorporating the expertise of people with disabilities; when a street is accessible for people with disabilities, it is accessible for all people. The Minnesota Department of Health, through the Inclusive Pedestrian Planning project, is studying two aspects of pedestrian planning: walk audits and demonstration projects. Walk audits are a common public engagement activity used in pedestrian planning, but often are not accessible to or inclusive of people with disabilities. The Inclusive Walk Audit Facilitator’s Guide provides specific guidance and information on how to better include people with disabilities and to highlight disability in walk audits so that planning processes are more inclusive. The Guide centers the experiences of people with disabilities—it was developed with a work group that consisted entirely of people who identify as having a disability. The presentation will describe methods for including people with disabilities in virtual and in-person walk audits. It will also describe suggestions to organize and lead more inclusive meetings, whether virtual or in person. The session will discuss strategies for more inclusive demonstration projects especially as they relate to developing virtual walk audits to gain insight about temporary pedestrian-focused projects.
Pedestrian Safety: A Best Practices Tool Kit and Case Study on US Route 1 in Howard County, Maryland

Albert Guiney Engel, Paul Silberman, Mead & Hunt
Moderator: Samantha Lorenz, Terra Soma

State and local transportation agencies, along with consultants, are faced with the challenge of responding to citizen requests and implementing pedestrian safety improvements that respect the variety of contexts where they are needed, while still conforming to driver and pedestrian expectations that apply to a larger area. This session will explore how the Maryland Department of Transportation State Highway Administration established consistent, quantitative best practices guidelines for pedestrian safety treatments across the state’s diverse urban, suburban, and rural areas. To illustrate how the guidelines work, the session will present how they were applied to the case of US Route 1 in Howard County, Maryland, a redeveloping suburban corridor with growing pedestrian activity.

MnDOT’s Statewide Pedestrian System Plan: An Equitable Approach to Investing in Walking

Jacob Rueter, Hannah Pritchard, MnDOT; Kristen O’Toole, Colin Harris, Alta Planning + Design
Moderator: Samantha Lorenz, Terra Soma

MnDOT began work on its first Statewide Pedestrian System Plan in March of 2019; the plan will be completed in early 2021. The project builds upon Minnesota Walks, a guiding document that established a joint vision for walking held by both MnDOT and the Minnesota Department of Health. The Statewide Pedestrian System Plan translates the Minnesota Walks vision into action items for MnDOT. Major themes echoed throughout the plan include creating a multimodal transportation system, advancing equity, and mitigating climate change. These themes are described throughout the plan in terms of investment guidance, recommended pedestrian improvements according to land use context, and policy recommendations to center the plan in MnDOT’s day-to-day work. The plan’s recommendations were informed by hearing from priority populations throughout the state including people of color, Native Americans, people with disabilities, older adults, youth, people with low incomes, and small rural communities. Public engagement encompassed two phases and invited people into a conversation about how MnDOT can better meet the needs of people walking.

The Integration of Natural Capital to Mitigate Climate Change

Ginny King, Dale Grove, Stantec Consulting
Moderator: Luke Charpentier, MnDOT

Economic challenges, climate change impacts, social demand for quality of life improvements, and expanding urban sprawl are all impacting transportation projects. Managing these issues is a challenge, but it also provides an opportunity for the transportation community to use Natural Capital to develop sustainable practices that support the pressures and demands that come with them. This presentation will provide an overview of a practical integration of Natural Capital into transportation projects to manage for climate change in concert with generating additional benefits, cost effectively.

Anoka County: MnDOT ADA Small Business Initiative

Rich Haavisto, MnDOT Office of Advancing Equity; Jerry Auge, Anoka County; Mary Schmidt, MnDOT
Moderator: Farveh Makhssous, Sambatek, Inc.

In 2020, MnDOT and Anoka County embarked on a partnership to build the capacity of small businesses to prove they can perform ADAAG standards on Anoka County infrastructure. This presentation will describe the innovative approach to making government infrastructure accessible to all and demonstrate a capacity-building approach that is replicable across many types of public works.

MnDOT Use of Bridge Move Techniques and Precast Deck with UHPC

Matt Christie, WSP USA Inc.; Paul Pilarski, MnDOT
Moderator: Marc Parker, Collins Engineers, Inc.

During the 2019–2020 construction seasons, WSP partnered with MnDOT to replace two bridges at one of Minnesota’s busiest interchanges, joining trunk highways I-494 and I-94 in Woodbury, MN. Two different accelerated bridge construction techniques were used in replacing the existing bridges. A bridge slide of one of the existing bridges onto a temporary alignment was used to minimize impact to the traveling public during new bridge construction. In addition, precast deck panels utilizing ultra-high performance concrete were implemented.
A New Look at Pedestrian Safety: Examining Statewide Roadway Risk Factors in Context

Thomas Hillman, Jessica Schoner, Toole Design Group; Sonja Piper, MnDOT Office of Traffic Engineering

Moderator: Kristine Hernandez, MnDOT

The MnDOT’s Office of Traffic Engineering initiated a research project to analyze pedestrian crashes and systemic risk factors across the state. The goal of the project is to better understand the underlying factors contributing to pedestrian injuries and fatalities to support MnDOT in selecting appropriate and effective countermeasures and programmatic changes. The session will review the analysis methodology, results, and preliminary data gaps identified.

Highway 52 Connected and Automated Vehicle Study

Jacob Folkeringa, SRF Consulting Group; Cory Johnson, MnDOT

Moderator: Jamie Bents, WSP USA Inc.

The Highway 52 CAV study is a partnership among MnDOT, SRF, the Highway 52 Coalition, and other stakeholders to understand which CAV technologies could benefit the communities between Saint Paul and Rochester. These applications could help solve winter weather driving challenges, work zone safety concerns, or other applications the study will review. These CAV technologies will be used to advance safety, equity, accessibility, mobility, and sustainability on Highway 52.

Community Station Creation: How Rochester and its Residents Are Designing its First BRT

Alicia Valenti, SRF Consulting Group; Jarrett Hubbard, City of Rochester

Moderator: Sophia Ginis, MetroTransit

The Rochester Rapid Transit Project is the first of a series of planned investments in bus rapid transit (BRT) in Rochester, MN. The Rochester community is highly civically engaged, and it is a priority of the City to create a project that is embraced by and welcoming to all its residents, employees, and visitors. To this end, the City coordinated with diverse community organizations to hire a team of ten Rochester residents who are working with project staff to codesign the Rochester Rapid Transit stations in a way that reflects their community values and priorities. The codesign process is particularly beneficial during the COVID-19 pandemic, as it enables project staff and codesigners to conduct meaningful community engagement while adhering to social distancing and other public health guidance.

Data-Driven Approaches to Identifying Nonmotorized Transportation Needs

Steve Gazdik, Austin Hauf, WSB

Moderator: Haila Maze, Bolton & Menk, Inc.

MnDOT initiated Rethinking I-94 to develop a vision for I-94 between Minneapolis and Saint Paul. The I-94 corridor serves multiple transportation modes and is home to roughly 34,000 residents and many destinations that are commonly identified as desirable for people walking and biking, including transit stops, grocery stores, schools, parks, and more. To better understand baseline conditions, MnDOT conducted several analyses including pedestrian and bicycle travel sheds and Multimodal Level of Service (MMLOS), and it leveraged a web-based interactive GIS tool known as Datafi. Because Datafi is GIS-centric, it allowed for easy communication of results alongside data on key destinations, existing and planned facilities, StreetLight data, and other key datasets. The tools and analyses provided an improved understanding of needs and travel sheds for people walking and biking. Learn how MnDOT leveraged digital tools to identify needs in the corridor and communicate the message in easily understood formats.

Adjourn for the Day 1:30 p.m.
Welcome and Plenary Session

Federal Transportation Funding: The Last Action in D.C.

*Dennis McGrann,* Folger Square Group LLC; *Ward McCarragher,* American Public Transportation Association (APTA)

**Moderator:** *Margaret Donahoe,* Transportation Alliance

With a new president, stimulus funding packages, and the upcoming expiration of the FAST Act, a lot is happening in Washington, DC. Hear from our DC insiders about the prospects for new transportation funding at the federal level.

Networking Time

Concurrent Sessions

Innovation in the Covid Era

*Chris Mavis,* Hennepin County; *Don Elwood,* City of Minneapolis

**Moderator:** *Brad Henry,* MN2050

This presentation will describe innovations in three agencies resulting from COVID-19: Hennepin Avenue Construction, Hennepin County’s use of the Sharepoint tool to facilitate property transfers, and Met Council’s successful implementation of telecommuting and other innovations.

Mobility-as-a-Service: A Revolution in Multimodal Travel in Minnesota?

*Elliott McFadden,* MnDOT; *Adam Mehl,* Metro Transit

**Moderator:** *Christine Beckwith,* Metro Transit

Mobility-as-a-Service (MaaS) has the potential to transform multimodal transportation and drive transit and shared mobility ridership to new heights. MaaS is a transportation ecosystem that allows users to plan trips from a variety of providers, pay for their trip, and track progress in real time. This session will present the different innovative approaches to MaaS being taken in the Metro area and in Greater Minnesota and how they will impact the way we travel in the future.

Innovation in a Time of Uncertainty: How CAV is Adapting to a Global Pandemic

*Michael Kronzer,* MnDOT; *Joseph Holmes,* Robert Brown, TuSimple

**Moderator:** *Kristin White,* MnDOT

Join us in this exciting session as we shine a spotlight on the challenges and opportunities faced by the connected and automated vehicle (CAV) industry in light of the COVID-19 pandemic. Presenters will provide perspectives from MnDOT and industry as they discuss how innovative and exciting CAV projects are adapting to funding, social, operational impacts, and more in Minnesota and around the world.

Get Collaborative! How Gender Equity in Transportation Can Advance Safety, Access, and Mobility for All

*Ania McDonnell,* State and Local Policy Program, Humphrey School of Public Affairs; *Kristin White,* Hally Turner, MnDOT; *Frank Douma,* University of Minnesota Humphrey School of Public Affairs; *Yingling Fan,* University of Minnesota

**Moderator:** *Nicole Westadt,* MnDOT

What is it like to be a woman in the transportation system? How can we amplify the voices of people identifying as female to listen to their lived experience? How does transportation policy advance social equity? World Economic Forum research shows that when we empower women, many communities see expanded freedoms and advancements. One oversight in our society is the significant gap in transportation that women and their families face. This session focuses on the many ways in which the transportation sector can help advance gender equity and, if we don’t, how our inaction will lead to further systemic barriers. Presenters include voices from the state’s new Gender Equity in Transportation Collaborative and include a public-private-academic perspective on how amplifying these often unheard voices can benefit all communities and stakeholders.
In the United States, bicycle users and pedestrians have increased over the last few decades, especially in metropolitan areas. It won’t be an exaggeration to call bike and ped travel, also known as active travel, the transportation mode for the future. Not only does active travel help in promoting environmental sustainability, health, and fitness, it also plays a key role in improving transit ridership, community livability, multimodal transportation planning efforts, and traffic congestion. Bike and ped infrastructure is increasingly becoming safer and well-connected. However, conduits like major bridges and tunnels—where multiple modes of transportation funnel to cross the bridge—are a safety and connectivity concern when protected bike-ped paths are nonexistent. Along the same lines, this presentation intends to tell the story behind the recent addition of a protected bike/ped path on the Richmond-San Rafael (R-SR) Bridge. The R-SR project, with an overall cost of approximately $20M, links over 360 miles of the existing Bay Trail. The R-SR Bridge bike-ped path connects a significant portion of the envisioned 500-mile trail running through all nine Bay Area counties, 47 cities, and 7 toll bridges in the Bay Area. The completion of this bike-ped path across the northernmost bridge in the Bay Area is credited to long-term advocacy by Bay Area Bicyclists, and BATA’s and Caltrans’ diligent efforts for project oversight and obtaining funding from the governor’s office. The presentation will focus on various aspects of the project, including but not limited to long-term advocacy efforts, multiple partnerships (both public and private), customer-oriented innovative solutions, funding hurdles, and fluctuating public support for bike-ped paths. This session helps planners and engineers (public or privately employed) with key real-world lessons on partnerships, the relevance of local projects for larger impact and power of advocacy efforts, and customer-centric innovations. The success story of this long-awaited R-SR bike-ped path will inspire the attendees by highlighting the importance of perseverance and determination to find a solution.
Concurrent Sessions 10:30-11:00 a.m.

**Highway 14 Expansion Design-Build: Improving Safety with Innovative Designs**

*Don Demers, SRF Consulting Group, Inc.; Troy Vrieze, Shafer Contracting Company, Inc.; Troy Thompson, MnDOT District 6*

*Moderator: Keith Farquhar, Mead & Hunt*

The Highway 14 Expansion Design-Build is a Corridor of Commerce-funded project to improve safety along US 14 between Owatonna and Dodge Center. The $108 million project will construct 13 miles of a new four-lane freeway from Steele County Road 43 (east of Owatonna) to Dodge Center Creek near Highway 56 North (west of Dodge Center). The project also includes two overpasses and two interchanges plus 10 miles of local roadways. Learn how corridor safety will be enhanced by incorporating innovative designs.

**Bus Rapid Transit: The Rush Line Edition**

*James Gersema, SRF Consulting Group, Inc.; Andrew J. Gitzlaff, Ramsey County; Thomas R. Harrington, Kimley-Horn and Associates*

*Moderator: Jessica Laabs, Kimley-Horn*

The Rush Line Bus Rapid Transit (BRT) Project is a proposed 15-mile transit route with stops between Union Depot in Lowertown Saint Paul and downtown White Bear Lake. The purpose of the project is to provide transit service that satisfies the long-term regional mobility and accessibility needs for businesses and the traveling public and support sustainable development within the study area. Proposed stations are located in Saint Paul, Maplewood, Vadnais Heights, Gem Lake, and White Bear Lake. The Rush Line BRT Project will serve a diverse area, reflected in the unique character of each of the station locations. To maximize accessibility, safety, and opportunity for development or redevelopment, the project team worked collaboratively with Metro Transit, MnDOT, and each of the corridor cities throughout the design and preparation of the environmental document. Through this collaboration, which included geographically focused issue resolution teams, design advanced that reflected a range of treatments to provide transit advantages while maintaining traffic flows and multimodal connections. This project is currently in the environmental review process and will advance into final design in 2021, with construction anticipated to begin in 2024. This presentation will share the project’s solutions for integrating dedicated transit use within various transportation corridors and co-location with the Bruce Vento Regional Trail.

**Automated Weather Alerts on Roadside Dynamic Message Signs**

*Gordon Parikh, SRF Consulting Group, Inc.; Garrett Schreiner, MnDOT*

*Moderator: Mike Leegard, MnDOT*

Weather events are significant safety and mobility challenges in Minnesota. MnDOT’s Regional Traffic Management Center (RTMC) warns travelers of hazardous conditions by posting warning messages on roadside Dynamic Message Signs (DMS). However, the process of selecting signs on which to post an alert, crafting the text of the alert message, and monitoring weather information for updates was a time-consuming, manual process. To streamline this process, MnDOT and Minnesota IT Services contracted with software developers at SRF Consulting Group to develop an extension to MnDOT’s open-source DMS control software that automates the process of creating and posting weather warning messages. By leveraging FEMA’s Integrated Public Alert and Warning System (IPAWS), operator workload at the RTMC is substantially reduced during critical weather event response times. This presentation will review the system and describe the experiences encountered during the operational evaluation conducted throughout the winter of 2020–21.

**Prototyping Street Crossing Configurations to Improve Pedestrian Safety**

*Jake Rueter, MnDOT Pedestrian and Bicycle Planner; Mike Weber, Tim Schoonhoven, City of Alexandria*

*Moderator: Sasann Karnowski, MnDOT*

Learn how Widseth and the City of Alexandria, in partnership with MnDOT’s District 4 and the Office of Transit and Active Transportation, conducted a phased, low-cost demonstration project to test various pedestrian crossing configurations. By utilizing an existing in-place pedestrian refuge island, the team reconfigured reflective delineator posts and temporarily installed a Rectangular Rapid Flashing Beacon (RRFB) to measure the effectiveness for the safety of pedestrian crossing designs.
Changing the Narrative: Fostering Local Ownership in Regional Planning

Mary Karlsson, Lydia Statz, Kimley-Horn and Associates
Moderator: Shiloh Wahl, MnDOT

In 2020, the Sioux Falls MPO adopted an update to their long-range transportation plan. The region, which includes two counties and five smaller communities, did not have a history of effectively engaging all planning partners in this process. Historically, most community partners have felt that their needs were not included in the plan and that they had no reason to participate. However, the COVID-19 pandemic presented a unique opportunity to change past practice. Four months into the planning process, engagement emphasis shifted away from public events to refocus on MPO partners. The next few months saw many productive virtual conversations with community planners, virtual work sessions, and an increased reliance on trusted local partners to facilitate conversations. By the end of the process, one community partner praised the 2045 LRTP process as the most inclusive he has seen in the region. This presentation will summarize lessons learned from a unique engagement experience and potential applications in other regions with similar challenges.

Networking Time 11:00 a.m.–12:30 p.m.

Concurrent Sessions 12:30–1:00 p.m.

The Route Less Traveled: Engineering and Design Process Improvements for Successful Safe Routes to School Project Implementation

Girma Feyissa, MnDOT State Aid; Renae Kuehl, SRF Consulting Group
Moderator: Sandra Martinez, MnDOT

Safe Routes to School (SRTS) project funding in Minnesota is an incredibly competitive process for cities, counties, and school districts. How can that process be improved for those agencies to set them up for success? This session will highlight a new SRTS Engineering Study, funded by MnDOT State Aid, to conduct traffic studies, review effective safety strategies, plan, conceptually design, and estimate the cost of infrastructure projects in a simplistic and easy-to-understand format. The planning and engineering guidance provided to 16 partner agencies across Minnesota in 2020–2021 sets the stage for vetted projects to be successfully funded and implemented, while producing an effective process that future agencies can replicate and improve upon. Learn how collaboration early in the process with a diverse set of partners (e.g., various MnDOT divisions, railroads, tribal governments) coupled with planning and engineering concepts can enhance the implementation process for SRTS projects in Minnesota.

Improving Roadway Safety through Collaboration

Jacob Bongard, Bolton & Menk, Inc.
Moderator: Will Stein, FHWA Minnesota

Residents along the Cliff Road (CSAH 32) corridor in the City of Eagan voiced their concerns for safety improvements to alleviate a range of issues affecting drivers, pedestrians, bicyclists, and wildlife. Dakota County, in collaboration with the city, identified enhancements to improve conditions for corridor users while being sensitive to the constraints imposed by nearby wetlands and challenges associated with paralleling the county’s largest park, Lebanon Hills. Through a detailed corridor analysis and active collaboration with the public and interested agencies, a range of safety improvements were identified: roundabout, raised median, urban median U-turn, dedicated turn lanes, access restrictions, separated trail facilities, and even turtle tunnels/critter crossings. These improvements led to the acceptance of a recommended alternative that all parties could support—even the turtles.

Digitizing the Physical World: An Examination of Precision Maps for CAV

Phil Magney, VSI Labs
Moderator: Michael Kronzer, MnDOT

In this session you will learn the importance of precision maps and technical reasons why they improve the safety and performance of connected and automated vehicles. We will examine elements of precision maps such as virtual lane lines and localization assets. We will also explore other use cases for precision maps whereby the data can be used to evaluate the AV readiness of a given roadway.
3D Models for Subsurface Utility Engineering Investigations

Michael Picha, T2 Utility Engineers

Moderator: DJ Sosa, WSB

Advances in technology regarding Utility Engineering and Survey are continuing to change the way utilities and other underground structures are investigated, discovered, and mapped for the utility, pipeline, and surveying industries. Innovations in mobile geophysical equipment, processing software, and survey tools allow for generation of 3D modeling of underground utilities, providing highly detailed information to permit designers and constructors to manage or avoid costly utility conflicts. This presentation will focus on the growing importance of developing Subsurface Utility investigation models in three dimensions. There is a lot of detail involved in developing these models, and we’ll take a close look at these elements. Included will be a case study of our 3D model delivery for the MnDOT, 3rd Avenue Bridge in downtown Minneapolis. This deliverable incorporation was not only a 3D Utility model with pipe, structures and duct work but also included interactive LiDAR 3D chamber scans and above-ground LiDAR. The application of this technology is ever-evolving and is certainly the next step in providing enhanced 3D delivery in future utility, pipeline, and survey projects.

Mini-Roundabouts: Designing Without A Script

Mike Scarmon, Matt Regnier, KL Engineering

Moderator: Peter Harff, MnDOT

The presentation will focus on the designing of mini- and compact-sized roundabouts, describing several specific locations across the state of Wisconsin. The experience will be shared from the perspective of accomplished designers with decades of practice designing complex intersections and conventional roundabouts. Having faced a wide range of the “typical” challenges to account for freight movements, pedestrians, heavy traffic volumes, and limited right of way, the presenters will describe surprising new challenges unique to designing mini-roundabouts, and the creative solutions that were implemented. To begin, a summary of key elements pulled from a comprehensive review of published research and studies about mini-roundabouts across the United States will be presented. This research also includes an exhibition of mini-roundabout examples from the United States and other countries, highlighting the wide range of mini-roundabout applications and design features. The presentation will demonstrate how mini-roundabouts can take shape in many different forms depending on the application and to emphasize the lack of clear geometric design standards. Further, analysis methodologies for mini-roundabouts are not comprehensively developed and require a blend of conventional tools and engineering judgment to estimate capacity and traffic operations. The presentation will be completed with a description of several case studies of example mini-roundabouts by providing background details, challenges and solutions, and lessons learned from the design process. Seeking to engage the audience as we review our experience with the growing practice of mini-roundabout design, we will highlight key features with each example, using pictures and videos captured through use of a drone, specifically with footage showing the unique traffic flow patterns of mini-roundabouts from a bird’s eye view.


Mary Karlson, Kimley-Horn and Associates; Dave Burns, Metropolitan Council

Moderator: Paul Czech, MnDOT

In 2019, the Metropolitan Council partnered with Kimley-Horn to develop its first stand-alone Congestion Management Process (CMP) plan. While satisfying federal requirements, the CMP plan went further, introducing an innovative approach to CMP planning that emphasizes practicality, comprehensiveness, and effectiveness. This presentation will summarize the Council’s CMP, exploring the systems and methods used by the MPO to monitor and evaluate congestion and work toward continuous improvement of the regional transportation system. The presentation will also present key performance trends reported in the 2019 CMP plan, which will be addressed in future updates of the CMP plan. Finally, the presentation will highlight the innovative aspects of the Council’s approach to CMP planning, as established in the 2019 CMP plan.
Concurrent Sessions 1:00-1:30 p.m.

What KPI Tells Your Data Story? Ramifications of Big Data-driven Transportation Analytics to Sustainable Infrastructure

Richard Lovel, SRF Consulting Group
Moderator: Cory Johnson, MnDOT

Advanced analytics transformed banking, retail, insurance, and health care and is now reshaping other industries including transportation. Historically piles of “big-data” have been generated by transportation processes, yet predominantly traditional methods have been used to try to manage, interpret, and extract value from it. Presenter will discuss potential best practices and mitigation ideas to help generate the conversation, so that together we are prepared for the future.

Innovative Engagement with Artists, Ambassadors, and Community Organizations

Jessica Oh, Jim Skoog, MnDOT
Moderator: Renee Raduenz, MnDOT

MnDOT is partnering with artists, ambassadors, and community organizations to deliver responsive engagement in multiple areas of the organization. One example is the art installation at the Franklin-Hiawatha encampment created by a Native American artist in partnership with MnDOT. MnDOT is also advancing projects that allow for direct contracting with community-based organizations for engagement and the piloting of a community ambassadors program. We will present on our most recent innovative efforts to deliver equitable engagement.

Accommodating OSOW Loads in Roundabouts: Techniques & Lessons Learned

Ben Wilkinson, MSA Professional Services, Inc.
Moderator: Dan Mattison, Sambatek, Inc.

With the increasing frequency of roundabouts on our highway network, the cross-section of traffic they must handle is becoming more and more diverse. Early roundabouts typically were only concerned with buses, large fire apparatus, and basic semis. As roundabouts are placed on freight networks and corridors, accommodations must be considered for vehicles nearing 200 feet in length, carrying loads upwards of twelve feet in width. This presentation will showcase the latest methods for accommodating OSOW vehicles while still maintaining the primary roundabout design controls. Both vertical and horizontal design practices will be discussed, as well as a case study.

Center Village Traffic Study

Brandon Bourdon, Kimley-Horn and Associates; Jen Desrude, City of Burnsville
Moderator: Jessa Trbojevich, Hennepin County

There have been significant changes regarding how consumers shop, and that has impacted existing malls and retail centers across the United States. If local agencies want to influence and properly guide how these retail areas redevelop, proactive planning is required. Learn about one of the key steps that the City of Burnsville has taken to plan and ultimately guide the potential redevelopment of the area surrounding and including the Burnsville Center Mall.

Minnesota, We Are Not Getting Any Younger! Age-Friendly Transportation Framework

Kirsten Cruikshank, Georgia Lane, Arrowhead Area Agency on Aging
Moderator: Katie Westphal, CBS Squared

In 2020, the number of older adults 65+ in Minnesota exceeded the number of children under 18. In December 2019, Governor Walz enacted a statewide policy to promote healthy aging that requires engaging with older adults as contributors to the social, economic, and civic fabric of our communities, encouraging physical and psychological health and well-being. Learn about
the concept of Age Friendly Communities and the vital role that transportation plays in building stronger communities, not just for older adults, but for everyone.

**I-35W Stormwater Storage Facility Project**

*Steven Barrett, MnDOT*

The storm water storage facility on I-35W was designed to eliminate flooding based on capacity challenges from the existing storm drainage system. The solution is to install six independent shafts that will pump 4.5 million gallons of storm water back into the storm water system over a 72-hour period. Learn about how the system was designed and how the iterative process of CMGC provided the opportunity to build in different work packages for the contractor to get started on different elements of the project.

**Ethics: Operating in the Gray 1:45 p.m.**

*Joshua Root, MnDOT*

**Moderator: Jason Staebell, Hennepin County**

This presentation will help real-world professionals working in a variety of capacities within the transportation industry identify their licensure requirements, their professional organization’s requirements, and the consequences of not adhering to an ethical culture. Using interactive prompts and real-life case studies, participants will get a rapid-paced hour of ethics 101.

**Conference Adjourn 3:00 p.m.**