# Program at a Glance

## Thursday, November 5, 2020

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
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<tbody>
<tr>
<td>8:30 a.m.</td>
<td>Conference opens for log-on and technology checks</td>
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<tr>
<td>9:00–10:15 a.m.</td>
<td><strong>Welcome</strong></td>
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<tr>
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<td><em>Laurie McGinnis</em>, Director, Center for Transportation Studies, University of Minnesota</td>
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<td><strong>Keynote Panel Discussion: Addressing Minnesota’s Transportation Inequities and Disparities</strong></td>
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<td><em>Tawanna Black</em>, Founder and Chief Executive Officer, Center for Economic Inclusion</td>
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<td><em>Jason Hollinday</em>, Co-chair, Advocacy Council for Tribal Transportation and Director of Planning, Fond du Lac Reservation</td>
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<td><em>Charlie Zelle</em>, Chair, Metropolitan Council</td>
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<td>10:15–10:30 a.m.</td>
<td><strong>Transition to Breakout Sessions</strong></td>
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<td>10:30 a.m.–noon</td>
<td><strong>Concurrent Sessions</strong></td>
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<tr>
<td>1</td>
<td>Will Connected and Autonomous Vehicles Change Our Roadways for the Better?</td>
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<td>2</td>
<td>Traffic Safety and Vulnerable Users</td>
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<tr>
<td>3</td>
<td>Accessibility and Access: Transit Planning for Today’s User</td>
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<td>4</td>
<td>Hear from the Experts! Latest Results in Winter Maintenance Research</td>
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<td>noon–1:00 p.m.</td>
<td><strong>Lunch Break</strong></td>
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<td>1:00–2:15 p.m.</td>
<td><strong>Afternoon Plenary Session</strong></td>
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<td><strong>Opening Comments</strong> <em>Margaret Anderson Kelliher</em>, Commissioner, MnDOT</td>
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<td><strong>Keynote Presentation: Where Do We Go From Here?</strong></td>
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<td><em>Speaker Tim Papandreou</em>, Founder and CEO, Emerging Transport Advisors</td>
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<td>2:15–2:30 p.m.</td>
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<td>5</td>
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<td>Are CAVs Part of the Answer for Eliminating Inequities Experienced by Transportation Users?</td>
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<td>On Solid Ground: Recent Innovations in Pavement Material Research</td>
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<td>4:00–4:30 p.m.</td>
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# Program Schedule

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| 9:00−10:15 a.m. | Welcome  
Laurie McGinnis, Director, Center for Transportation Studies, University of Minnesota  
Keynote Panel Discussion: Addressing Minnesota’s Transportation Inequities and Disparities  
Moderators  
Gina Baas, Associate Director, Engagement and Education, Center for Transportation Studies, University of Minnesota  
Kathy Quick, Associate Professor, Humphrey School of Public Affairs, University of Minnesota  
Panelists  
Tawanna Black, Founder and Chief Executive Officer, Center for Economic Inclusion  
Yingling Fan, Professor, Humphrey School of Public Affairs, University of Minnesota  
Jason Holliday, Co-chair, Advocacy Council for Tribal Transportation and Director of Planning, Fond du Lac Reservation  
Theresa Thompson Nix, Field Manager, Move Minnesota  
Charlie Zelle, Chair, Metropolitan Council  
The COVID-19 pandemic and the death of George Floyd have brought new attention to racial inequities and disparities in many sectors of our society, including transportation. The transportation system helps provide connection (to family, friends, colleagues, faith) and access (to jobs, health care, education, food), but it does not meet these critical needs equally for all people.  
Before we discuss how transportation can and should transform to address these disparities, we must first acknowledge where we have been and where we are today. What are our values and hopes for what will change about the transportation system and what will stay the same? This panel discussion aims to bring those values and hopes to the forefront, so they may guide us as we strive to make Minnesota’s transportation system more equitable for all. |
| 10:15−10:30 a.m. | Transition to Breakout Sessions |
| 10:30 a.m.−noon | Concurrent Sessions |

**Will Connected and Autonomous Vehicles Change Our Roadways for the Better?**

- Impacts of Commercially Available Adaptive Cruise Control Vehicles on Highway Stability and Throughput  
  Raphael Stern, Department of Civil, Environmental, and Geo-Engineering, University of Minnesota  
  Co-author: Mingfeng Shang, Department of Civil, Environmental, and Geo-Engineering, University of Minnesota  

- Predicting the Impact of Induced Traffic by Empty Autonomous Vehicle Trips  
  Di Kang, Department of Civil, Environmental, and Geo-Engineering, University of Minnesota  
  Co-author: Michael Levin, Department of Civil, Environmental, and Geo-Engineering, University of Minnesota  

- Max-Pressure Intersection Control with Routing Guidance in Traffic Networks  
  Rongshen Chen, Department of Civil, Environmental, and Geo-Engineering, University of Minnesota  
  Co-author: Michael Levin, Department of Civil, Environmental, and Geo-Engineering, University of Minnesota  

- Future Streets: The Impact of Autonomous Vehicles on Road Design and Infrastructure  
  Tom Fisher, Minnesota Design Center, College of Design, University of Minnesota  
  Co-author: Joseph Hang, Minnesota Design Center, University of Minnesota
**Concurrent Sessions**

### Traffic Safety and Vulnerable Users

**Field Operational Test of a Bicycle Collision Warning System**

*Nichole Morris*, HumanFIRST Laboratory, Department of Mechanical Engineering, University of Minnesota  
Co-authors: *Katelyn Schwieters*, HumanFIRST Laboratory, Department of Mechanical Engineering, University of Minnesota

**Vision Zero Traffic Safety Approach with Lessons from Minneapolis**

*Ethan Fawley*, City of Minneapolis

**Assessing the Relationship Between Complete Streets and Individual and Community Outcomes in Richfield, Minnesota**

*Robin Phinney*, Rise Research LLC  
Co-authors: *Camila Fonseca, Nathan Bean*, and *Jerry Zhirong Zhao*, Humphrey School of Public Affairs, University of Minnesota

**Using Demonstration Projects to Improve State Highways for Walking**

*Jacob Rueter*, MnDOT

### Accessibility and Access: Transit Planning for Today’s User

**Dedicated Bus Lanes Improve Travel Time and Reliability, But Could Be Better**

*Joseph Reid*, Metro Transit

**Transit Improvements and Land-Use Changes: Disentangling the Accessibility Impacts**

*Brendan Murphy*, Accessibility Observatory, Center for Transportation Studies, University of Minnesota  
Co-author: *Andrew Owen*, Accessibility Observatory, Center for Transportation Studies, University of Minnesota

**Impacts of Planned Transitways on Access to Non-Work Destinations**

*Kristin Carlson*, Accessibility Observatory, Center for Transportation Studies, University of Minnesota  
Co-author: *Andrew Owen*, Accessibility Observatory, Center for Transportation Studies, University of Minnesota

**Natural Language Processing of Feedback and Social Media for Real-Time Customer Satisfaction at Metro Transit**

*Brandon Whited*, Metro Transit

### Hear from the Experts! Latest Results in Winter Maintenance Research

**Winter Benefits of Permeable Pavement for Road Salt Reduction**

*Andy Erickson*, St. Anthony Falls Laboratory, University of Minnesota  
Co-authors: *John Gulliver*, St. Anthony Falls Laboratory, University of Minnesota, and *Peter Weiss*, College of Engineering, Valparaiso University

**Impacts of Pavement Ice Thickness on Its Spectral Signature: Automation in Pavement Black Ice Detection**

*Eshan Dave*, Department of Civil and Environmental Engineering, University of New Hampshire  
Co-author: *Adam Hunsaker*, Department of Civil and Environmental Engineering, University of New Hampshire

**Hot Shots for Cold Climes: Evaluating Treatment of The Hardest Icy Spots**

*Stephen Druschel*, Department of Mechanical and Civil Engineering, Minnesota State University, Mankato

**Reducing Winter Maintenance Equipment Fuel Consumption Using Advanced Vehicle Data Analytics**

*Will Northrop*, Department of Mechanical Engineering, University of Minnesota  
Co-authors: *Shashi Shekhar*, Department of Computer Science and Engineering, University of Minnesota, and *Peter Wiringa*, U-Spatial, University of Minnesota
Lunch Break

Afternoon Plenary Session

1:00–2:15 p.m.
Opening Comments
Margaret Anderson Kelliher, Commissioner, MnDOT

Keynote Presentation: Where Do We Go From Here?

Speaker Tim Papandreou, Founder and CEO, Emerging Transport Advisors

2020 started off like a nightmare of biblical proportions—droughts, fires, floods, and a pandemic virus that has gripped the planet. The response from governments, companies, and communities to the COVID-19 pandemic has impacted our way of life as well our local, regional, and global transportation systems with sudden and extraordinary speed. Transportation system providers have experienced free-fall declines in customers, revenues, and support. The resulting pressure to reduce service, delay repairs, or even shut down operations altogether has thrown these systems into worst-case scenarios and uncharted territory against a backdrop of rising social equity concerns.

In this session, Timothy Papandreou will discuss how these combined forces are compelling us to reexamine the status quo. Papandreou will also explore how current circumstances are offering us a once-in-a-lifetime window to reimagine the transportation system and use practical and proven innovation to move it towards a more resilient, equitable, and seamless experience.

2:15–2:30 p.m.
Transition to Breakout Sessions

2:30–4:00 p.m.
Concurrent Sessions

Understanding the Intersection of COVID-19 and Transportation

Travel Impacts of the COVID-19 Outbreak in Minnesota: Evidence from Continuous Count Traffic Volume Data
Michael Iacono, MnDOT

Using Data to Understand the Effects of Transportation on the Spread of COVID-19
Raphael Stern, Department of Civil, Environmental, and Geo-Engineering, University of Minnesota
Co-authors: Michael Levin and Mingfeng Shang, Department of Civil, Environmental, and Geo-Engineering, University of Minnesota; Philip Paré, Department of Electrical and Computer Engineering, Purdue University; and Damir Vrabac, KTH Royal Technical University

Mobility Impacts of COVID-19 Policy Interventions
Yan Li, Department of Computer Science and Engineering, University of Minnesota
Co-authors: Arun Sharma and Shashi Shekhar, Department of Computer Science and Engineering, University of Minnesota

Telecommuting and COVID-19 Stay-at-Home Order: Benefits and Equity Concerns
Adeel Lari, Humphrey School of Public Affairs, University of Minnesota
**Concurrent Sessions**

### Analyzing Crash Elements on Minnesota Roadways

**Crash Modification Factors in Minnesota**  
Derek Leuer, MnDOT

**Evaluation and Refinement of the Minnesota Queue Warning System**  
John Hourdos, Minnesota Traffic Observatory, Department of Civil, Environmental, and Geo-Engineering, University of Minnesota  
Co-author: Melissa Duhn, Minnesota Traffic Observatory, Department of Civil, Environmental, and Geo-Engineering, University of Minnesota

**Estimating of Drivers’ Gap Selections and Reaction Times in Intersection Crashes Using Event Data Recorder Pre-Crash Data**  
Jingru Gao, Department of Civil, Environmental, and Geo-Engineering, University of Minnesota  
Co-author: Gary Davis, Department of Civil, Environmental, and Geo-Engineering, University of Minnesota

**Extraction of Accurate Road Reference from Past Trajectories for Accurate Lane-Departure Detection**  
Shahnewaz Chowdhury, Department of Mechanical Engineering, University of Minnesota Duluth  
Co-authors: Md Touhid Hossain and Imran Hayee, Department of Electrical Engineering, University of Minnesota Duluth

### Are CAVs Part of the Answer for Eliminating Inequities Experienced by Transportation Users?

**Potential Implications of Connected and Automated Vehicles in Transportation-Disadvantaged Urban Areas**  
Kim Napoline, Humphrey School of Public Affairs, University of Minnesota  
Co-authors: Erika Shepard, Adeel Lari, and Frank Douma, Humphrey School of Public Affairs, University of Minnesota

**Impacts of Vehicle Automation on Transport-Disadvantaged People**  
Frank Douma, Humphrey School of Public Affairs, University of Minnesota  
Co-authors: Xinyi Wu and Jason Cao, Humphrey School of Public Affairs, University of Minnesota

**Shared Autonomous Vehicles in the Twin Cities: Understanding Feasibility and Equity Considerations**  
Noah Wexler, Humphrey School of Public Affairs, University of Minnesota  
Co-authors: Yingling Fan, Frank Douma, Thalya Reyes, and Galen Ryan, Humphrey School of Public Affairs, University of Minnesota

**Transportation Equity: Are CAVs the Answer or Just a Fairy Tale?**  
Tara Olds, MnDOT

### On Solid Ground: Recent Innovations in Pavement Material Research

**The National Road Research Alliance: Successful Cooperative Research**  
Glenn Engstrom, MnDOT  
Co-authors: George Chang, Transtec; Dan Schellhammer, Midstate Reclamation; Mike Riel, WSB; Amy Beise, North Dakota DOT; Susan Listenberger, Cargill; and Buzz Powell, NCAT

**Innovative Pavement Repair with Taconite and Microwave Technology**  
Larry Zanko, Natural Resources Research Institute, University of Minnesota Duluth  
Co-author: Sara Post, Natural Resources Research Institute, University of Minnesota Duluth

**Contribution of Structural Fibers in Reducing Faulting in Thin Concrete Pavements and Overlays**  
Manik Barman, Department of Civil Engineering, University of Minnesota Duluth  
Co-authors: Souvik Roy and Amarjeet Tiwari, Department of Civil Engineering, University of Minnesota Duluth, and Tom Burnham, Minnesota Department of Transportation

**Influence of Creep of Structural Synthetic Fibers on the Joint Performance Behavior of Concrete Pavements**  
Corey Crick, Lake Superior Consulting  
Co-author: Manik Barman, Department of Civil Engineering, University of Minnesota Duluth