



NORTH CENTRAL SECTION

INSTITUTE OF TRANSPORTATION ENGINEERS

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## SIMULATION AND CAPACITY COMMITTEE

### Meeting Summary

September 2023 Committee Meeting  
Tuesday, September 26, 2023  
3:00-4:30 PM Meeting  
Virtual (Teams)

#### Attendees:

- Kelsey Larsen - Bolton & Menk (Chair)
- Sharijad Hasan- UGPTI (Co-Chair)
- Melika Ansarinejad – NDSU Student
- Austin Lovaas – KLJ
- Kelsey Lindberg – SRF
- Taehyoung Kim – Ramsey County
- Naveen Mallipaddi- HR Green
- Mark Powers – KLJ
- Michael Kondziolka- Alliant Engineering

#### Presentation and Q & A

- Melika Ansarinejad, a second year Civil Engineering master's student at North Dakota State University presented on her thesis research in Vissim of driver behavior under various environmental conditions to analyze fuel consumption and emissions in a mixed traffic flow of human driven and autonomous vehicles.
  - Three factors that have direct or indirect effects on the environmental impacts of road transport include: driver behavior, vehicle characteristics, network characteristics.
  - An aggressive driver can increase emissions by up to 40% compared to a calm driver
  - Analyzed 4 AV scenarios (0%, 30%, 60%, and 90% AVs)
  - Compared fuel consumption and emissions (NOx and CO)
    - Fog was found to have the worst impact on emissions then rain and snow

#### Round Robin (4:00 – 4:30 PM)

#### Next Meeting: November 2023 – Topic TBD