



MEETING HIGHLIGHTS:

Safe System Approach Focus Area: Safety is Proactive

June 23, 2022

1:00 PM – 3:00 PM

Presented Via Zoom; 88 attendees

All presentations and related meeting handouts are located on the RSTF Website:

www.dvrpc.org/Committees/RSTF

Welcome Remarks

The meeting was called to order at 1:00 PM by Marco Gorini, DVRPC. RSTF co-chair Sean Meehan, Alan M. Voorhees Transportation Center, and IREG coordinator Chris Pollard, DVRPC, introduced the RSTF and IREG goals for this joint meeting. The purpose of the RSTF is to reduce roadway crashes and eliminate serious injuries and fatalities from crashes in the Delaware Valley. The Information Resources Exchange Group (IREG) is dedicated to sharing innovation and development in information technology related in particular to GIS and geospatial technology, data visualization, data management practices and tools, cartography, and spatial analysis. Mr. Meehan then introduced the action items tracking list, a spreadsheet where volunteers can update themselves or claim unclaimed action items that were proposed in previous meetings. Karin Morris, Karen Alexander, and Morgan Hugo were all spotlighted for their completion of Safe Road Users action items related to designing for disability.

Before introducing the topic, Kevin Murphy, DVRPC, introduced a five-year overview of regional killed and serious injury (KSI) crash trends, noting that the problem has worsened since 2016. Mr. Murphy highlighted that decreases in 2021 fatalities haven't brought the crash fatality trend to pre-2020 totals, which were the highest since 2007. Mr. Murphy transitioned into showing DVRPC's Transportation and Safety Analysis & Plan (TSAP) [storymap](#), released in spring of 2022.

Next, Mr. Murphy introduced the topic of the day's meeting as Safety is Proactive, one of the six core principles of the Safe System approach. A proactive approach is the prevention of safety problems before they manifest as a crash pattern. Proactive tools should be used to identify and mitigate latent risks in the transportation system, rather than waiting for crashes to occur and reacting afterwards. In the case of micromobility data, however, gaps in information present barriers to proactive approaches.

To combat this, the RSTF is highlighting two innovative approaches to collecting and using micromobility data. Mr. Murphy then introduced the guest speakers Wenwen Zhang, Rutgers, and Sean Connelly, Noroc.

Presentation 1: Wenwen Zhang, Rutgers

Ms. Zhang opened her presentation with an overview of the project team and studio at Rutgers. She then identified the context and background of Asbury Park, where the pop-up bike lane that was featured in the ongoing study is located. The core research question revolves around the following: how do riders perceive the built environment, and how do those perceptions affect travel stress?

The study utilizes an array of data collection methods. Eye-tracking glasses capture eye movement, pupil dilation, head movements, front-facing video, and sound. Video has historically been analyzed manually, but the study has explored computer vision as an automated analysis for coding objects (such as the road, sidewalk, pedestrians, and vehicles) that the glasses captured as points of fixation. Galvanic skin response sensors measure sweat gland activity to determine stress experience. Though difficult to combine, it is important to join this data with eye-tracking data to make the results more robust and reliable.

Next steps for this study include: conducting in-depth gaze data analysis, developing models to explore the relationship between travel stress levels and perceived travel environment, and overall more data collection.

One audience question asked about the tendency for cyclists/scooter-riders to look behind themselves (as drivers do with rear-view mirrors) to examine the travel environment. Ms. Zhang confirmed that the eye-tracking glasses do capture “shoulder-checks” by tracking head movements. More data collection will be needed to further analyze.

Presentation 2: Sean Connelly, Noroc

Mr. Connelly first introduced himself as an avid cyclist who is known for being concerned about safety. He presented an overview of the dangers for cyclists and micromobility users and the need for new data collection. His company provides a data feed and messaging platform that combines spatial AI with privacy-first proximity services. Noroc’s goal is to make roads safer by using innovative data collection methods to assess, enforce, and educate all road users.

One of the biggest data gaps on cyclists is the lack of near-miss crash data. Noroc collects this data by using smart-feed camera devices mounted to the front and rear of the bike. They measure depth, which captures data on both passing distance and speed. After an audience question, Mr. Connelly clarified that near-misses would be classified as anything less than a four foot safe passing distance. Additionally, the cameras can also collect vehicle license plates to help with automated enforcement. Similar to the New York City program where bus-mounted cameras act as automated bus lane enforcement, the Noroc program provides an opportunity to be proactive in addressing drivers who violate the safe-passing distance law or illegally occupy bike lanes.

Lastly, Mr. Connelly highlights the ability for this method of data collection to easily scale. He hopes to eventually capture data from both privately owned bikes as well as shared micromobility systems. Noroc will initially be focusing on turn-key safety projects in order to collect timely data assessments.

Special Strategies Breakout Rooms

Each of the four breakout groups discussed potential “action items,” with a focus on the Safe Systems Approach, that each person could take on to support the RSTF goal of eliminating KSI in the region.

These action items were recorded and are being tracked by DVRPC, which will check in on progress before future meetings. Discussion lasted approximately 30 minutes and each began by discussing reactions to the presentations, following with discussion on potential action items.

In reaction to the presentations, breakout groups reiterated the importance of the following points:

- Participants were amazed at what is possible with new tech, but there was some consideration as to the final products of such studies and collection—including the data's ability to tangibly affect design decisions and make an actual difference in traffic safety.
- Noroc's potential to serve as automated enforcement was a point of interest. Cameras mounted on micromobility devices could be a useful enforcement tool for safe passing laws, for example, and could also be a proactive way to address future behaviors affecting safety. Privacy concerns were named as a potential concern.
- New technology and data collection, such as showing the difference in stress levels for cyclists and pedestrians before and after a safety improvement and understanding sources of stress for new inexperienced cyclists, can help create the argument for providing bike infrastructure and other safety improvements. Research can also quantify the perception of safety of certain improvements, like upgrading from a sharrow to a buffered bike lane.
- Groups also discussed the dark side of tech and the bias of AI, which needs a lot of labor and training to detect objects or people. Additionally, relying on tech can reduce the vigilance and awareness of road users who may grow dependent on that technology.

Some of the proposed action items included:

- Create a reference list of when demos, pop-ups, and new permanent infrastructure changes occur so that before/after data can be collected. This will facilitate conversations on solutions to implementation challenges and data collection opportunities for traffic safety improvements throughout the region.
- Wenwen Zhang and Sean Connelly to collaborate on micromobility data collection.
- Argue for the inclusion of micromobility data in the New Jersey Safety and Health Outcomes Resource Center and Data Dashboard steering committee.

After the breakout sessions finished, RSTF members left their groups and returned to the main session. One person from each group reported back on their discussion.

Closing Remarks

RSTF co-chair Sharang Malaviya, PennDOT, concluded the meeting with gratitude to the attendees for participating in the program and asked attendees to complete the meeting survey.

Mr. Malaviya then invited Mr. Murphy to give an overview of the Safe Streets for All (SS4A) program, which funds both action plan and implementation grants. It is important to note that only projects from a qualifying Vision Zero Action Plan would be eligible for funding. To ensure that the entire Greater Philadelphia region is eligible for these once-in-a-generation grant opportunities, DVRPC is pursuing a Regional Vision Zero Action Program. This program will have three primary components: a regional High Injury Network (HIN) with actionable safety projects and initiatives, a web platform of Action Program

components (HIN, supporting safety data, maps, and project progress), and an integrated regional pipeline for local safety planning and project development.

Next, Mr. Malaviya invited RSTF members to share any announcements they may have. Mr. Gorini demonstrated DVRPC's Crash Data Viewer, recently updated with 2020 data for the entire region, and its potential use for safety analysis. Mr. Meehan provided information about New Jersey Bike and Walk Coalition's Safe Passing Law toolkit. Mr. Pollard announced that the Mid-Atlantic Chapter of the Urban and Regional Information Systems Association Conference is being held in-person in Atlantic City October 12 through October 14.

Mr. Malaviya concluded the meeting by reminding attendees that the next RSTF and IREG meetings are scheduled for September 2022.

Meeting Attendee List

Adam Smith, City of Philadelphia
Alex Sankaran, CCPC
Allison Curry, CHOP
Amy Bernknopf, DVRPC
Andrew Thompson, Kittelson & Associates
Anne Mitchell, Jefferson
Bill Houpt, FHWA
Carrie Long, Gannett Fleming
Cheryl Kastrenakes, Greater Mercer TMA
Chris Pollard, DVRPC
Christian Regosch, BCPC
Dan Whaland, Philadelphia OIT/L&I
Dan Krause, Hopeworks
Dan Powers, PCPC
Daniel McGlone, Azavea
Darrell Merritt, PennDOT
David Heller, SJTPO
Derek Lombardi, DVRPC
Elise Bremer-Nei, NJDOT
Emily Gates, Avenues in Motion
Eric Quinn, CCPC
Gene Huller, CCPC
Gina Myers, DVRPC
Glenn McNichol, DVRPC
Greg Krykewycz, DVRPC
Hailey Graf, NJ Transit
Hanna Jacobs, CCCTMA
Hannah Younes, Rutgers
Ian Schwarzenberg, DVRPC
Jean Burock, Narberth Cycling Club
Jeffrey Young, DVRPC
Joe Rapp, NJDOT
Jon Dugan, Rutgers VTC
Jon Ewald, TMACC
Karin Morris, DVRPC
Kasim Ali, PE, City of Philadelphia
Katrina Budischak, McCormick Taylor
Kayla Bancone, DVRPC
Kaylen Phillips, DVRPC
Keith Skilton, FHWA
Keith Swavely, Esri
Kelly Meehan, DVRPC
Kenneth Wedeen, Somerset County Planning
Kevin Murphy, DVRPC
Kristen Scudder, DVRPC
Krys Johnson, PennDOT

Lalithanjali Kesava Pillai, Mercer County
Laura Fredricks, Families for Safe Streets
Laureen Sendel-Grant, MCPC
Leah Lombardi, CHOP
Lily Reynolds, City of Philadelphia
Linda Wong, BCBC
Liz Janczewski, Temple
Loresa Daniel, NJ DHTS
Maridaryl Gonzalez, DVRPC
MaryAnn Sandone, DCTMA
Michael Clemmons, PPTF
Michael Nappi, Independent Consultant
Michael Mastaglio, Urban Engineers
Mohammad Islam, NJDOT
Morgan Hugo, Liberty Resources
Nick Zuwiala-Rogers, Clean Air Council
Patricia Ott, MBO Engineering
Paul Flanagan, DVRPC
Peter Barnard, City of Philadelphia
Ross Buchan, Kittelson & Associates
Saba Bajwa, Mercer County Planning
Samantha Bryant, Borough of Narberth
Sean Connelly, Noroc
Sean Meehan, Rutgers VTC
Sharang Malaviya, PennDOT
Skye Horbrook, UPenn
Steve Baron, Temple
Suzanne O'Hearn, NJ DHTS
Tamra Dann, SEPTA
Tom Shaffer, Delaware County Planning
Tom Stanuikynas, BCBC
Tom Edinger, DVRPC
Tracy Nerney, Jersey Shore Regional Trauma Center
Valerie Brown, Camden County
Warren E Strumpfer, Camden County HTSTF
Wenwen Zhang, Rutgers
William Riviere, NJDOT
William Spaeth, Sellersville Fire Department
William Yarzab, NJTPA