

Urban Transportation Data & Information Systems Committee (AED20)

Virtual: Please check TRB online program for meeting Zoom link
(see instructions on the next page)

Wednesday January 6, 2021 / 2:00 pm to 5:00 pm Eastern

- I. Welcome and Chair's Report – Mike Fontaine**
- II. Subcommittee Updates**
 - A. AED20(1) Subcommittee on Census Data– Clara Reschovsky and Kathy Yu
 - B. AED20(2) Big Urban Data Subcommittee – Vince Bernardin
 - C. AED20(3) Travel Time, Speed and Reliability Joint Subcommittee (with ACP70) – Mei Chen and Sam Granato
 - D. ACP70(2) Bike and Pedestrian Data Joint Subcommittee (with AED10, AEP25, ACH10, ACH20) –Sarah O'Brien
- III. General Reports**
 - A. FHWA Report – Tianjia Tang, Patrick Zhang, Daniel Jenkins
 - B. RITA/BTS Report – Patricia Hu, Clara Reschovsky, Rolf Schmitt
 - C. AASHTO Report – Penelope Weinberger
 - D. TRB Report – Tom Palmerlee
 - E. Section Chair Report – Coco Briseno
- IV. Committee Activities**
 - A. Annual Paper Review Process –Clotilde Minster/Charlotte Frei/Mara Kaminowitz
 - B. Communications Coordinator Update – JD Allen
 - C. Directory Update – Karen Faussett
- V. Committee Priorities and Opportunities**
 - A. TSP/CAP Updates – Jim Hubbell and Jinghua Xu
 - B. Research Council Updates and Needs Discussion – Camille Kamga
 - 1. Management, Integration, and Analysis Methods for Smart Cities Data (Charlotte Frei)
 - 2. Privacy in Big Transport Data (Zachary Patterson)
- VI. Presentations/Updates**
 - A. Preview of TRB Session 1053 (Traffic Counting and Volume Estimation During Extraordinary Conditions - Challenges at the State Level) Results from a Recent Survey of State DOT and MPO Traffic Managers - Anita Vandervalk-Ostrander
 - B. First mile/Last Mile – Collecting Traffic Volumes for Safety and Assessing Exposure at and around Transit Facilities - Liz Stolz
 - C. 2021 Vehicle Inventory and Use Survey (VIUS) – Janine McFadden
 - D. Development of an AI-based Micro Transit Demand Management System - Zachary Patterson
- VII. Other Announcements/Updates**

AED20 Activities at TRB 2021

Please check the TRB program for the appropriate links to attend each session

Date	Time (All Times Eastern)	Item
Weds, Jan. 6	2:00-5:00 PM	<i>[AED20] Urban Data and Information Systems Committee Meeting</i>
Thurs, Jan 7	2:00-3:30 PM	<i>[ACP70(2)] Bicycle and Pedestrian Data Subcommittee</i>
Fri, Jan. 8	2:00-3:30 PM	<i>[AED20(1)] Census for Transportation Planning Subcommittee</i>
Weds, Jan. 13	10:00-11:30 AM	<i>[AED20(2)] Urban Big Data Subcommittee</i>
Weds, Jan. 13	12:00-1:30 PM	<i>[AED20(3)] Travel Time, Speed, and Reliability Subcommittee</i>
Thurs, Jan. 21	2:00-5:00 PM	[Workshop 1467] Open Science in Transportation: Challenges and Opportunities in a COVID-19 Era
Mon, Jan 25	10:00-11:30 AM	[Session 1062] Advances in Traffic Monitoring Research and Practice
Mon, Jan. 25	2:30-4:00 PM	[Session 1111] Road Scholars: New Research in Travel Time, Speed, and Reliability Data
Tue, Jan. 26	11:30 AM -1:00 PM	[Session 1170] Mining Data Deeper to Understand Travel Behavior
Weds, Jan. 27	2:30-4:00 PM	[Session 1171] Travel Time, Speed, and Reliability Student Data Challenge: COVID-19 Impacts on Travel
Weds, Jan. 27	4:00-5:30 PM	[Session 1328] Understanding Users' Behaviors in the City: Pedestrians, Bicyclists, Transit, and TNCs
Thurs, Jan. 28	11:30 AM - 1:00 PM	[Session 1362] Applications and Innovations in Travel Data

How to Attend Committee Meetings

- You must [register for the TRB Annual Meeting](#), in order to attend (or to be a presenter at) committee meetings. Note, if you wish to attend only committee meetings and exhibits, and do not need access to sessions, workshops, or networking events, you have the option to register for “Exhibits and Committee Meetings Only” at no charge.
 - Committee Meetings are held over the dates of January 5-8, and January 11-15, 2021. The full schedule is listed in the [online program](#). You do not need to be registered for the TRB Annual Meeting to browse the program. But you must be registered and you must log into the online program, in order to view the instructions on how to join a meeting.
 - In the online program, locate the meeting you wish to attend, and click on “More Details” to see the full description. If you are registered for the meeting, and have logged into the online program, the Zoom instructions will be visible, beginning 48 hours prior to the meeting. All committee meetings will be held via the Zoom platform.
 - Follow the instructions to join the meeting on the scheduled day and time.
 - You have the option to select the computer audio or to call one of the telephone numbers listed to join the meeting. (If you use one of the telephone numbers, toll charges may apply.)
 - Once you have joined the meeting please make sure that you are muted.
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Research Needs Statements for Discussion

Management, Integration, and Analysis Methods for Smart Cities Data (Charlotte Frei)

Research is needed to explore the collection methods and systems for integrating urban data coming from various sensors. Many cities around the world have developed “Smart City” pilots where they have deployed sensors and services to improve air quality, stormwater, transportation, and general civil infrastructure improvements seeking to improve efficiency and public health. It is not clear if there is a standard framework that cities are using to collect, combine, transform, and analyze their big data using methodologies that can be replicated, or if the methods are bespoke for a given city’s systems and unique challenges. This research will involve a literature review and industry practice review of the data platforms developed for deployments like Smart Columbus to understand the transferability of various data management and analysis procedures.

Privacy in Big Transport Data (Zachary Patterson)

Privacy protection is an important domain in the computer science literature. In that domain, privacy is mostly quantified as the guarantee of indistinguishability of a data subject in a learning population. The spatio-temporal nature of travel behavior datasets introduces complexity in guaranteeing the indistinguishability of a subject when background spatial information is available. An important consideration in this light is the trade-off between privacy and utility, with the goal of obtaining the greatest privacy protection while ensuring a high utility of travel behavior data.

Emerging research in travel behavior is incorporating differential privacy, blockchain distributed systems, privacy-aware population synthesis techniques, federated learning and cybersecurity into mainstream transportation planning, operations, and decision-making. As such, this research would focus on exploring privacy protection while understanding the utility cost of anonymization techniques on transportation data, as well as the potential drawbacks for when they are best used. Areas of interest include, but are not necessarily limited to:

- Location anonymization techniques, deployments and frameworks developed for protecting travel behavior data.
- Generative model approaches used to generate synthetic representations while guaranteeing privacy protection.
- Quantitative metrics on location privacy for travel behavior modelling.
- Analysis of emerging tools and technologies that protect travel data and how they compare with traditional approaches.
- Case studies and real demonstrations of privacy preservation in large transport data.