

TPEC Advisory Board Update: January 2020



Thank you for your continued support of the TPEC program. We have made important strides in all three research areas since our September Advisory Board meeting. We want to share the progress we have made and what we have in store for the coming months. We are also happy to introduce new TPEC staff members and two additions to our TPEC Advisory Board.

A Warm Welcome to our Newest Advisory Board Members

The TPEC program has been fortunate to add two new members to our Advisory Board.

- [Meredith Vadis](#) is the Regional Administrator for the Metropolitan Council.
- [Kristi Schroedl](#) is the Chief Financial Officer for the Minnesota Department of Transportation.

Thank you for your commitment to the TPEC program. We look forward to meeting with you and the rest of the Advisory Board at our next board meeting. **We hope to schedule our next Advisory Board meeting for late January/early February 2020.** We will be sure to stay in touch in the coming weeks as we organize this event.

Key Event Highlights

- September 12, 2019: TPEC Advisory Board Meeting
- November 7, 2019: TPEC presentations at CTS Annual Conference
- November 8, 2019: Medical Industry Cluster Forum
- November 18, 2019: Transportation Financing in Changing Times Roundtable
- January 12-16, 2020: TPEC presentations at TRB Annual Meeting

Research Area Updates:

Industry Clusters and Freight



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Medical Industry Cluster Forum

On November 8, 2019, TPEC hosted a Medical Industry Cluster Forum at the Graduate Hotel in Minneapolis. The purpose of the Medical Industry Cluster Forum was to have a multi-sector discussion of the importance of the Medical Industry Cluster to Minnesota's economy and its implications for infrastructure use and economic development. The discussion was organized around the key dimensions identified in the University of Minnesota's recent study: economic competitiveness, economic development, transportation, and data/research. John Kasarda of the University of North Carolina, author of book *Aerotropolis*, was a special guest of the forum and was the lead participant for the discussion of the role of airports in our medical industry cluster. Kasarda noted that in an increasingly speed-driven economy, MSP delivers a competitive advantage to firms and businesses. The success and growth of industries like Minnesota's medical device industry cluster will depend on the optimization of connections to the airport. Overall, the forum led to rich discussion of the strengths of the medical device industry in Minnesota, the importance of maintaining a competitive transportation network to support industry growth, and the opportunities for strategic partnerships and data collection needs. CTS will have a summary of the event prepared in the coming weeks, which can be found on the [TPEC Publications webpage](#).

Recent Presentations

- In November, Joanne Cho presented on Minnesota's medical device industry cluster and transportation implications at the CTS annual conference.
- In December, Lee Munnich and Tom Horan presented at the Harvard Business School for the Microeconomics of Competitiveness (MOC) Faculty Workshop. This workshop was an opportunity to present TPEC research modeling value in Minnesota's evolving medical supply chain and the research paper "Minnesota Medical Device Industry Cluster: Spatial Linkages and Transportation Implications."

Upcoming Work

In January 2020, Joanne Cho, Lee Munnich, and Tom Horan are participating in a poster session at the 99th Annual TRB Meeting in Washington, D.C. This presentation highlights takeaways from the paper "Medical Device Industry Linkages and Transportation Implications for Minnesota."

TPEC is planning to expand on this medical device industry cluster research by exploring how Minnesota's medical device industry cluster has changed over time, and the various tiers and linkages among medical device-related companies in Minnesota. Future research will involve further geospatial analysis of medical device industry clusters and linked industries across Minnesota, with an emphasis on changes over time. Additionally, the research team plans to conduct interviews with different sized medical device-related companies in Minnesota to develop case studies on the medical device industry's impact on the state's economy.

Finance



Transportation Financing in Changing Times

On November 18, 2019, the State and Local Policy Program hosted an event at the University of Minnesota which was the first in a series of roundtables that focuses on

familiarizing state transportation and policy leaders with distance-based user fees (DBUF) and Minnesota's role in what is happening nationally. At this roundtable, we heard from three experts who have unique perspectives on keeping transportation finance in pace with a changing transportation landscape: Adrian Moore, The Reason Foundation, discussed the national perspective and the congressional interest in this issue, including the support at the federal level for DBUF. Anthony Buckley, Washington Department of Transportation, delved into what is happening at the state level with user fees, particularly in the western states. He shared experiences from Washington's ambitious DBUF initiative. Kenneth Buckeye, Minnesota Department of Transportation, offered Minnesota's perspective and history with DBUF. He discussed the unique approach Minnesota is taking to move DBUF forward in the state.

Minnesota Transportation Finance Database

The [Minnesota Transportation Finance Database](#) (MTFD) is updated with the most recent data available. We included five new datasets:

- Revenues from local option transportation sales taxes and excise taxes at the city level
- Revenues from municipal vehicle excise taxes at the county level
- Electric vehicles registered in Minnesota at the county level
- State highway and bridge quality at the state level
- Capitalized and maintenance costs at the state level.

We are continuing conversations with staff at the Minnesota Department of Transportation to have access to more detailed data and collaborate on future data needs.

Data Visualization for the MTFD:

We updated data visualization for the Minnesota Transportation Finance Database. Currently, we have graphs and maps for several variables from the MTFD, as well as graphs using ratios created with variables from the database (per capita, per driver, etc.).

Minnesota Motorization Trends

The research team issued a white paper that includes the trends on vehicle ownership, vehicle miles traveled (VMT), and fuel consumption in the state since 1980.

- Total VMT has increased. VMT per driver and per capita reached the maximum in 2005, and since then it has been declining. In 2015, we observed a small increase but it remains below the 2005 levels.
- Gallons of gasoline consumed in Minnesota reached the maximum in 2005. Since then, the number of gallons consumed has decreased. The gallons of gasoline consumed per

driver reached the maximum in 2001-2002 (850 gallons per driver). Since then we see a decreasing trend and by 2014, the gallons of gasoline consumed per driver decreased to less than 700 gallons.

- We are working on the trends on transportation expenditures, and funding from the federal, state, and local governments.

Research on Taxing Ride-Hailing Services

The research team issued a white paper on taxing ride-hailing services. The document is currently under review by TRB. We have identified several states and cities that have implemented this fee and we are looking at the rationale of the fee/tax, the revenue usage, the taxing scheme, and the changes that have occurred. We also analyzed the perceptions around the fee/tax. We found the government and the taxi industry among those stakeholders that support the fee; and transportation network companies among those stakeholders that are against the fee. However, once implemented, there is potential for TNC companies to change their perceptions.

Recent Presentations

- In November, we presented research on taxing ride-hailing services at the CTS Annual Conference.

Upcoming from the Finance Research Area

Research on Taxing Ride-hailing Services:

We are presenting our research on taxes and fees for Transportation Network Companies (TNCs) at the 99th Annual TRB Meeting in Washington, D.C. in January 2020.

Blockchain Research:

Bitcoin and other Cryptocurrency have been grabbing headlines for several years but there is less awareness about the underlying technology that supports this application called Blockchain. Blockchain technology has the potential to disrupt many industries including transportation and the ways in which governments conduct business.

We at SLPP believe that it is important to understand how this technology may impact the ways we conduct business and how Blockchain technology can be used and implemented. We are starting an effort to study Blockchain and we want to hear your thoughts about this research. We would appreciate your input regarding the direction of this important endeavor.

Technology



Autonomous Vehicles in the East Metro

TPEC is conducting research on CAV implications in urban contexts with a specific eye toward equity. Building on previous research and community discussions surrounding CAV opportunities in Greater Minnesota, this project seeks to understand the needs of transportation disadvantaged communities on Saint Paul's East Side, and whether CAV could be an appropriate solution. The research team plans to conduct structured interviews or a roundtable with public, private, and nonprofit human service providers in Saint Paul, specifically program staff that have an understanding of the transportation needs of program clients. Additionally, the TPEC team would like to interview key government stakeholders in the Twin Cities region that have collected data or done work relating to CAV technology.

Freight and Automated Transportation Technology

Frank Douma prepared a white paper for the Minnesota Freight Advisory Council (MFAC) entitled [Trends for First- and Last-Mile Freight in Minnesota](#). This paper explores emerging transportation technologies and their capacity to solve first- and last-mile freight supply chain issues. The paper also discusses specific implications for Minnesota, and the logistical challenges and opportunities presented to companies such as Schwan's or Digi-Key.

Recent Presentations

- In September, Heidi Corcoran traveled to California to present research on CAV and gender at the TRB Women's Issues in Transportation Conference. The presentation included an interactive element to collect data from conference attendees.

- In November, at the CTS Annual Conference, Frank Douma presented findings from previous research on CAVs in Greater Minnesota, and Heidi Corcoran presented research on gender and CAV planning and development.

Upcoming Work

Frank Douma will continue working with the [Governor's Council on Connected and Automated Vehicles](#). The Governor's Council will continue to meet to further the research and discussion of the opportunities and challenges associated with the widespread adoption of connected and automated vehicles (CAV) and other transportation technologies in Minnesota.

CTS Updates

The Center for Transportation Studies has a new Executive Committee chair, George Schember, who is the vice president of Cargill Transportation & Logistics. Schember is an advocate for transportation's role in economic competitiveness. [In an interview with CTS](#), Schember offers his insights on how transportation performance can improve Minnesota's competitiveness, as well as comments on the importance of partnerships between U of M researchers and the private sector in finding innovative transportation solutions.

CTS is preparing the latest TPEC Progress Report (2017-2019), which will be made available in the coming weeks on the [TPEC Publications webpage](#). The December 2019 CTS Catalyst newsletter can be found at the following [link](#).

Changes to the TPEC Team

The TPEC team welcomes a new member, **Nathan Bean**. Nathan is a research associate at the Institute for Urban & Regional Infrastructure Finance. In TPEC, Nathan's work focuses on visualizing data for the Minnesota Transportation Finance Database and developing reports on transportation finance and motorization trends in Minnesota.

Graduate Research Assistants Kim Napoline and Erika Shepard will carry on the work that Dan McNiel and Joanne Cho started on the equity implications of connected and automated vehicle and medical device supply chains in Minnesota, respectively.

Kim Napoline:

Kim is a master student in the Public Policy program with a focus on transportation. Before graduate school, Kim worked for Tesla, Inc and admissions in a local college.

Erika Shepard:

Erika is a master student in the Urban and Regional Planning program. Erika's background prior to graduate school has been in transit planning, GIS/mapping, and researching how cities have planned for refugee resettlement and immigration.

Joanne Cho and Dan McNiel have finished their time with the TPEC program. Joanne is now working at WSB as a transportation planner. Dan is now working at SRF as a public engagement coordinator. We are grateful for Joanne and Dan's excellent work and dedication to the TPEC program.

Thank You and Stay in Touch!

**Transportation Policy and Economic Competitiveness Program**

State and Local Policy Program
Humphrey School of Public Affairs
301 19th Avenue South, Suite 295
Minneapolis, MN 55455
Phone: 612-626-0564
Email: slpp@umn.edu
Twitter: [@TPEC_UMN](https://twitter.com/TPEC_UMN)