



## Gauging the Impacts: Self-Driving Vehicles

Technological innovations in transportation create new economic opportunities. They also raise challenges for policymakers, who need to keep informed of the changes, their potential impacts, and the policy and legal implications. One particular area—self-driving vehicles (SDVs)—is described as a potentially transformative and disruptive innovation.

TPEC researchers study the implications of changing transportation technology and recommend actions for policymakers. Their aim is to ensure that the full economic benefits from transportation innovation are realized—thus enhancing Minnesota's economic competitiveness.

### NATIONAL CONFERENCE, JOURNAL SPECIAL ISSUE

At a conference cosponsored by TPEC in 2014, state and national leaders explored the various legal, ethical, technical, and policy dimensions of self-driving vehicles. The conference—Automated Vehicles: The Legal and Policy Road Ahead—featured presentations and discussions of industry and design perspectives, civil liability and insurance, criminal liability, regional and city planning perspectives, and ethics, equity, and access.

Articles based on the conference were published in the spring 2015 issue of the *Minnesota Journal of Law, Science & Technology*, a multidisciplinary journal edited by University of Minnesota faculty and law students.

*“Although self-driving vehicles and other developments of the digital economy are already legal, it is becoming increasingly clear that there is a role for public policy to ensure that the benefits are enjoyed as widely as possible.”*

—Frank Douma, TPEC researcher

### Conference highlights:

- From state and national statutes to liability, privacy, and insurance rules, policymakers and rule makers will need to carefully consider and modify current law to accommodate contemporary issues.
- As vehicles assume more control, lawsuits are likely to shift from the driver to the manufacturer. Plaintiffs could also target vehicle owners for failing to maintain a vehicle adequately.
- Minnesota law may need attention. It explicitly defines the driver as having physical control and states that “any person driving a vehicle shall be liable.”
- SDVs will likely generate a great deal of data on operators’ travel habits, including information on GPS location, speed, traffic, weather conditions, and road conditions, as well as information about other road users around the operator. How to protect or use that data is an open question.

## ROUNDTABLES: TECHNOLOGIES AND TRANSPORTATION EQUITY

A series of roundtable discussions hosted by TPEC in 2016 investigated the policy impacts of new transportation technologies. The roundtables specifically explored the impacts of the digital infrastructure and self-driving vehicles.

Discussion topics included opportunities and obstacles for improved mobility and access for people who cannot drive, possible impacts of self-driving vehicles on urban form, and broader impacts of the digital infrastructure on the physical infrastructure. Participants included U of M faculty and research staff, key members of state and local governments, and interested citizens.

### *Discussion themes included:*

- **Equity.** New technologies could enhance equity. For example, they could allow aging rural residents to live in their homes longer, provide access to new economic opportunities for residents of low-income neighborhoods, and remove barriers for people with disabilities.
- **Economic impacts.** The expansion of private ridesharing organizations such as Uber and Lyft has implications for taxi drivers and other transportation providers and for lower-income neighborhoods. There may be a need to ensure continued transportation service to residents excluded from ridesharing services that require access to a smartphone and credit card.
- **Technology and job class.** New technologies can help individuals not only to improve their transportation options but also to work remotely. However, employees in the service sector and other positions that require a physical presence will benefit less from telework opportunities.
- **Rural communities.** Residents in rural areas may benefit less from new technologies than those in urban areas. Ridesharing and carsharing depend on higher-density neighborhoods to turn a profit, making lower-density rural communities less attractive markets. In addition, more limited broadband connectivity in rural areas means that residents have less access to telework, teleshopping, and telemedicine.

## WHAT'S NEXT

TPEC researchers have convened a task force to examine the potential impacts of self-driving vehicles on a wide variety of people who are "transportation disadvantaged." The task force will seek to identify strategies that ensure seniors, the disabled, and other disadvantaged communities fully enjoy the mobility offered by SDVs. It is made up of representatives from the Minnesota Department of Transportation, Metro Mobility, metro-area counties, nonprofits, and organizations from Greater Minnesota.

## FOR MORE INFORMATION AND ADDITIONAL ANALYSES

TPEC welcomes public engagement and encourages you to contact us with your questions, comments, and research needs.

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