

# The National Academies & TRB: Preparing for Automated Vehicles and Shared Mobility

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# Transportation Research Board

## Advise

Ad hoc consensus policy studies

- Since 1983
- Future of the Interstate Highway System

## Convene

- Annual Meeting (13,000+)
- Webinars (25,000+)
- Conferences
- 220 standing technical committees

## Research

- Cooperative Research Programs (highways, transit, airports)
- Strategic research programs

- Critical Issues: Transformational Technologies; Resilience, Public Health
- Dissemination: Bibliographic database; Peer reviewed journal, E-Newsletter
- Centennial Celebration: 2020

# Proceedings from Recent AVS



**AUTOMATED VEHICLES SYMPOSIUM 2016**



[www.trb.org/Publications/  
PubsTransportationResearchCirculars.aspx](http://www.trb.org/Publications/PubsTransportationResearchCirculars.aspx)

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SCIENCES • ENGINEERING • MEDICINE

FORUM MEETING #2: JULY 8-9, 2018; SAN FRANCISCO, CA

# Forum on Preparing for Automated Vehicles & Shared Mobility



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TRANSPORTATION RESEARCH BOARD



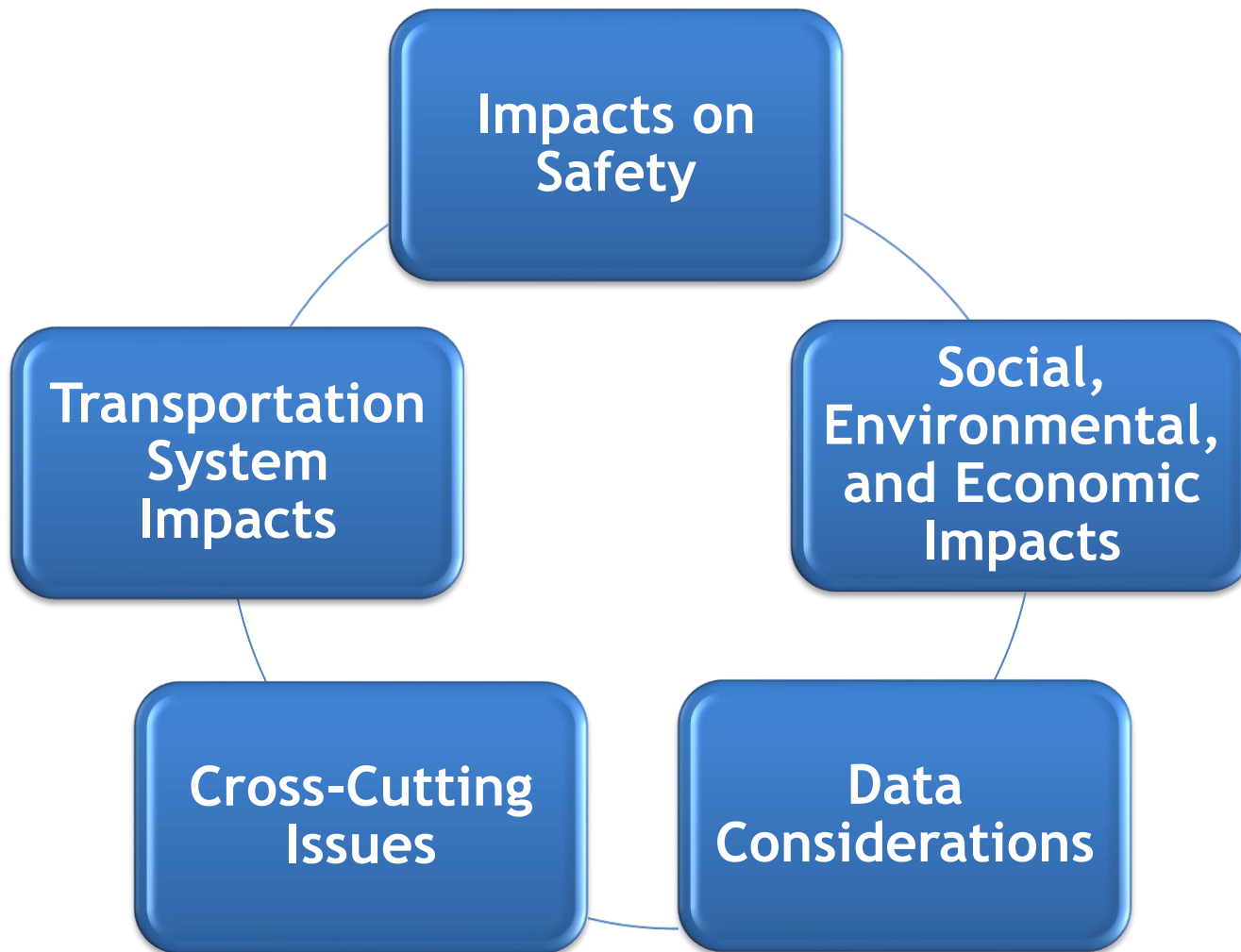
# Products of the Forum

- Research roadmap
  - NCHRP Project 20-102
- White papers
- Authored perspectives
- Workshops and sessions
- *TR News* articles
- Forum website
- Forum annual report
- Research partnerships
- Education of stakeholder community





# Forum Research Needs Catalogue Focus Areas





## Forum Research Needs

1. Models for sharing of data
2. Potential safety scenarios during the transition to highly automated vehicles
3. State and local policies to ensure safety prior to deployment
4. Infrastructure enablers for AVs & shared mobility
5. Net positive (and opportunities to mitigate negative) social impacts of AV deployment and shared mobility



## Forum Research Needs

6. Addressing social inclusion and equity
7. Potential impacts of higher level automated vehicles and shared mobility on traveler behavior and freight movement
8. Impacts of shared mobility on transit, and vice-versa
9. Implications for transportation planning and planning models
10. Impacts on land use, and how land use impacts AVs and shared mobility



# Preparing for AVs & Shared Mobility: Broader Questions

- What can we do to build awareness across a broader spectrum of the potential transformational impacts on society?
- What options exist to generate and fund a significant strategic research effort or program to inform policy decisions?
- How can we best leverage existing research programs to help address these issues?

# TRB/EU/US Symposium

- 6<sup>th</sup> annual EU/US joint symposium, this one focused on socio-economic effects of shared/AV
- Held in Brussels on June 27-28, 2018
- Approximately 50 participants from EU and US
- 4 breakout groups spent two days in discussion
  - Freight
  - Places
  - Travel Behavior
  - Stakeholders
  - Economics and welfare
  - Equity
  - Data access/privacy
  - Safety and security

# TRB/EU/US Symposium

- Each breakout group developed 10-15 research problem statements
- Next steps:
  - Finalize report of the proceedings
  - Hold Sunday workshop at the 2019 TRB Annual Meeting to share results
  - Identify opportunities for joint research between EU and US via 2019 TRB workshop, other events, etc.
  - Undertake research on issues identified

# TRB Research Highlights

<http://bit.ly/2y8gEm4>

## Advancing Automated and Connected Vehicles: Policy and Planning Actions for State and Local Transportation Agencies [NCHRP Report 845 & Briefing Document]

- Explores potential impacts to traffic crashes, congestion, pollution, land development, and mobility for the underserved
- Describes 18 policy and planning strategies that could reduce negative impacts and increase positive ones by
  - Mitigating safety risks through testing, training, and public education
  - Encouraging shared AV use
  - Addressing liability issues that may impact market development
  - Enhancing safety, congestion, and air quality benefits by influencing market demand

# TRB Research Highlights

<http://bit.ly/2y8gEm4>

- Shared Mobility and the Transformation of Public Transit [TCRP Report 188]
- Broadening Understanding of the Interplay Between Public Transit, Shared Mobility, and Personal Automobiles [TCRP Report 195]
- Private Transit: Existing Services and Emerging Directions [TCRP Report 196]
  - These reports explore how transit agencies are adapting to shared mobility services, microtransit, and other emerging modes



# TRB Research Highlights

<http://bit.ly/2y8gEm4>

- Providing Support to the Introduction of CV/AV Impacts into Regional Transportation Planning and Modeling Tools
- Workplace Implications of Autonomous Vehicles on the Transit Workforce
- Cybersecurity of Traffic Management Systems
- Impact of Transformational Technologies on Land Use and Transportation
- Framework for Managing Data from Emerging Transportation Technologies to Support Decision-Making
- Impacts of Connected and Automated Vehicle Technologies on the Highway Infrastructure
- Assessing the Impacts of Connected, Automated, and Autonomous Vehicles on the Future of Transportation Safety

# TRB Research Summary

<http://bit.ly/2y8gEm4>

- Approximately \$10M has been invested in AV/CV research by the NCHRP, TCRP, ACRP, and BTSCR
- Results are available from the initial projects and more are coming
- New projects will be selected on Thursday, July 12 (~\$2M); look for an announcement later this month



# AM<sup>2019</sup> TRB ANNUAL MEETING

CONVENING THE TRANSPORTATION COMMUNITY FOR 98 YEARS

January 13–17, 2019 > Washington, D.C.

