Impacts of Connected Vehicles and Automated Vehicles
TRB’s Cooperative Research Program Efforts

The Transportation Research Board (TRB) manages four cooperative research programs [NCHRP, TCRP, ACRP, BTSCR] that all have projects related to connected vehicles, automated vehicles, shared mobility, and other disruptive technologies. Contact Ray Derr (rderr@nas.edu) for more information.

Reports Available

Low-Speed Automated Vehicles (LSAVs) in Public Transportation [TCRP Report 220] and Redesigning Transit Networks for the New Mobility Future [TCRP Report 221] present options.


NCHRP Project 20-113F produced nine topical white papers for the TRB Forum on Preparing for Automated Vehicles and Shared Mobility.


Connected Road Classification System (CRCS) Development [NCHRP Project 20-24(112)] has produced a final report and summary presentation.

Cybersecurity of Traffic Management Systems [NCHRP Project 03-127] has produced an evaluation tool hosted by the National Operations Center of Excellence.

Foreseeing the Impact of Transformational Technologies on Land Use and Transportation [NCHRP Report 924] helps agencies prepare for a broad range of disruptive technologies.

Updating Regional Transportation Planning and Modeling Tools to Address Impacts of Connected and Automated Vehicles [NCHRP Report 896] includes an Executive Summary.

Dedicating Lanes for Priority or Exclusive Use by Connected and Automated Vehicles [NCHRP Report 891] evaluates opportunities, constraints and guiding principles.

Implications of Connected and Automated Driving Systems [NCHRP Web-Only Document 253] helps states review their laws and regulations through six volumes and is supported by A Look at the Legal Environment for Driverless Vehicles [NCHRP Legal Research Digest 69].


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], and Partnerships Between Transit Agencies and Transportation Network Companies [TCRP Report 204] explore how transit agencies are adapting while airports are covered by Transportation Network Companies (TNCs): Impacts to Airport Revenues and Operations [ACRP Report 215].

Airports and Unmanned Aircraft Systems [ACRP Report 212] has three volumes and expands upon Unmanned Aerial Systems (UAS) at Airports: A Primer [ACRP Report 144].
Work Underway

**Institutional & Policy**
- Emerging Issues: Impacts of New Disruptive Technologies on the Performance of DOTs [NCHRP 08-127]
- Strategic Research in Support of the Cooperative Automated Transportation Coalition (CAT) Executive Committee [NCHRP 20-24(119)]
- Prioritization of Risks Related to Connected and Automated Vehicles and Emerging Technologies [NCHRP 23-15, includes 20-102(31)]

**Transportation Planning**
- Mobility-on-Demand and Automated Driving Systems: A Framework for Public-Sector Assessment [NCHRP 20-102(11)]
- Impact of Transformational Technologies on Underserved Populations [TCRP B-47, includes NCHRP 20-102(23) and 20-102(30)]
- Realistic Estimates of CAV Implementation Timing [NCHRP 20-102(27)]
- Incorporating New Mobility Operations into Transportation Demand Modeling [NCHRP 20-102(29)]
- Land Use Impacts of Shared and Private AVs [NCHRP 20-102(34)]

**Infrastructure Design & Operations**
- Road Markings for Machine Vision [NCHRP 20-102(06)]
- Impacts of Connected and Automated Vehicle Technologies on the Highway Infrastructure [NCHRP 20-102(15)]
- Determining the Impact of Connected and Automated Vehicle Technology on State DOT Maintenance Programs [NCHRP 14-42, includes 20-102(35)]
- Initiating the Systems Engineering Process for Rural Connected Vehicle Corridors [NCHRP 08-120]
- Connected and Automated Parking Feasibility/MDOT MTA Dorsey Run Pilot Project [TCRP IDEA 95]
- Preparing Traffic Incident Management (TIM) Responders for CVs and AVs [NCHRP 20-102(16)]
- Deployment Guidance for CV Applications in the Open Source Application Development Portal [NCHRP 20-102(17)]
- Assessing the Impacts of Automated Driving Systems on the Future of Transportation Safety [NCHRP 17-91, includes NCHRP 20-102(18), NCHRP 20-102(32), and BTSCRCP-07]
- Infrastructure Modifications to improve the Operational Domain of Automated Vehicles [NCHRP 20-102(21)]
- Infrastructure Enablers for Connected and Automated Vehicles and Shared Mobility—Near-Term and Mid-Term [NCHRP 20-102(24)]
- National Automation Readiness Framework: Coast-to-Coast Automated Mobility by 2025 [NCHRP 20-24(126)]
- Readiness and Effectiveness of Freeway-Based Corridor V2X Applications for Improving Congestion and Safety [NCHRP 20-102(25)]
- Dynamic Curbside Management: Keeping Pace with New and Emerging Mobility and Technology in the Public Right of Way [NCHRP 20-102(26)]
- Preparing Transportation Agencies for Connected and Automated Vehicles in Work Zones [NCHRP 20-102(28)]
- Utilizing Cooperative Automated Transportation (CAT) Data to Enhance the Use of Freeway Operational Strategies [NCHRP 08-145]
- Safety of Vulnerable Road Users in a C/AV Future [NCHRP 20-102(33)]

**IT Infrastructure & Data**
- Cybersecurity of Traffic Management Systems [NCHRP 03-127, includes 20-102(10)]
- Algorithms to Convert Basic Safety Messages into Traffic Measures [NCHRP 03-137]
- Evaluation and Synthesis of Connected Vehicle Communications Technologies [NCHRP 23-10]
- Data Integration, Sharing and Management for Transportation Planning and Traffic Operations [NCHRP 08-119, includes NCHRP 20-102(13) and 20-102(14)]

**Modal Applications**
- State and Local Impacts of Automated Freight Transportation Systems [NCHRP 20-102(22)]
- Best Practices in Coordination of Public Transit and Ride Sharing [NCHRP 08-130]
- Airside Automated Ground Vehicle Technology (AGVT) Demonstration to Support Airport Operations [ACRP 10-32]

**Other**
- Update AASHTO’s Connected Vehicle/Automated Vehicle Research Roadmap [NCHRP 20-102(19)]
- Updated Research Roadmap for NCHRP 20-102, [NCHRP 20-102(19)B]

The TRB Library has Snap Searches on Connected & Automated Vehicles, Shared Mobility, UAV, and Electric Vehicles.