Impacts of Connected Vehicles and Automated Vehicles on State and Local Transportation Agencies
NCHRP Project 20-102 and Other Efforts

The National Cooperative Highway Research Program (NCHRP) is funded by the state departments of transportation and managed by the Transportation Research Board, part of the National Academies of Sciences, Engineering and Medicine. NCHRP Project 20-102 began in Dec. 2014 to tackle CV/AV issues and is being coordinated with the U.S. DOT, private sector, and other efforts. Contact Ray Derr (rderr@nas.edu) for more information.

Reports Available

**Updating Regional Transportation Planning and Modeling Tools to Address Impacts of Connected and Automated Vehicles** [NCHRP Report 896] addresses transportation supply, road capacity, and travel demand, with Executive Summary and Presentation.

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


**Advancing Automated and Connected Vehicles: Policy and Planning Actions for State and Local Transportation Agencies** [NCHRP Report 845] presents potential societal outcomes of these technologies and 18 policy and planning strategies that could advance public interests. The briefing document provides a good introduction.

**Impacts of Regulations and Policies on CV and AV Technology Introduction in Transit Operations** [NCHRP Web-Only Document 239] presents a roadmap of activities by industry, legislatures, federal government, and others to facilitate automated transit deployment.

**Challenges to CV and AV Application in Truck Freight Operations** [NCHRP Web-Only Document 231] describes freight environments and challenges for connected and highly automated technologies, identifies barriers to implementation, and proposes next steps.

**Unmanned Aerial Systems (UAS) at Airports: A Primer** [ACRP Report 144] describes potential uses of UAS and impacts on airports, including regulatory and community considerations.

**A Look at the Legal Environment for Driverless Vehicles** [NCHRP Legal Research Digest 69]

**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], and Private Transit: Existing Services and Emerging Directions [TCRP Report 196] explore how transit agencies are adapting to shared mobility services, microtransit, and other emerging modes.

**Transportation Network Companies: Challenges and Opportunities for Airport Operators** [ACRP Synthesis 84] compiles effective practices by airports in facilitating access by TNCs.

**State CEO Leadership Forum on Connected & Autonomous Vehicles and Transportation Infrastructure Readiness** [NCHRP 20-24(111) Final Report]
Work Underway

Institutional & Policy

- **Business Models to Facilitate Deployment of CV Infrastructure to Support AV Operations** [NCHRP 20-102(12)]
- **Strategic Research in Support of the Cooperative Automated Transportation Coalition (CAT) Executive Committee** [NCHRP 20-24(119)]
- **Guidance on Roles and Responsibilities in Operation of Automated Vehicles** [NCHRP 20-24(116)]
- **State-of-the-Art Review of Cooperative Automated Transportation (CAT) Systems** [NCHRP 20-24(128)]
- **Workforce Capability Strategies for State and Local Agencies** [NCHRP 20-102(20)]

Transportation Planning

- **Connected Road Classification System (CRCS) Development** [NCHRP 20-24(112)]
- **Impact of Transformational Technologies on Land Use and Transportation** [NCHRP 08-117]
- **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)]

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]
- **Initiating the Systems Engineering Process for Rural Connected Vehicle Corridors** [NCHRP 08-120]
- **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) 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)]

IT Infrastructure & Data

- **Cybersecurity of Traffic Management Systems** [NCHRP 03-127, includes 20-102(10)]
- **Framework for Managing Data from Emerging Transportation Technologies to Support Decision-Making** [NCHRP 08-116, includes 20-102(04)]
- **Algorithms to Convert Basic Safety Messages into Traffic Measures** [NCHRP 03-137]
- **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

- **Airports and Unmanned Aerial Systems** [ACRP 03-42]
- **Collaborations and Partnerships between Public Transportation and Transportation Network Companies** [TCRP J-11/Task 26]
- **Low-Speed Automated Vehicles (LSAV) in Public Transportation** [TCRP J-11/Task 27]
- **Transportation Network Companies: Impacts to Airport Revenues and Operations** [ACRP 01-35]
- **Advanced Ground Vehicle Technologies (AGVT) for Airside Operations** [ACRP 03-48]
- **Redesigning Public Transportation Networks for a New Mobility Future** [TCRP H-56]
- **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]

Other

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