Impacts of Connected Vehicles and Automated Vehicles on State and Local Transportation Agencies
NCHR 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. NCHR 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


Guidebook for Managing Data from Emerging Technologies for Transportation [NCHRP Report 952] describes modern approaches to data management.

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

Cybersecurity of Traffic Management Systems [NCHR 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 [NCHR Report 924] helps agencies prepare for a broad range of disruptive technologies.

Development of Transactional Data Specification for Demand-Responsive Transportation [TCRP Report 210] can facilitate interactions between new mobility options.


Updating Regional Transportation Planning and Modeling Tools to Address Impacts of Connected and Automated Vehicles [NCHR 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 [NCHR Report 891] evaluates opportunities, constraints and guiding principles.

Implications of Connected and Automated Driving Systems [NCHR 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 [NCHR Legal Research Digest 69].


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

- **State-of-the-Art Review of Cooperative Automated Transportation (CAT) Systems** [NCHRP 20-24(128)]
- **Strategic Research in Support of the Cooperative Automated Transportation Coalition (CAT) Executive Committee** [NCHRP 20-24(119)]
- **Workforce Capability Strategies for State and Local Agencies** [NCHRP 20-102(20)]
- **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 BTSCRPCP-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

- **Low-Speed Automated Vehicles (LSAV) in Public Transportation** [TCRP J-11/Task 27]
- **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]
- **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(19B)]

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