

## 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](#), [BTSCRP](#)] that all have projects related to connected vehicles, automated vehicles, shared mobility, and other disruptive technologies. Contact Ray Derr ([rderr@nas.edu](mailto: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.

[Advanced Ground Vehicle Technologies for Airside Operations](#) [ACRP Report 219] identifies potential applications.

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

[Business Models to Facilitate Deployment of Connected Vehicle Infrastructure to Support Automated Vehicle Operations](#) [NCHRP Web-Only Document 289] helps identify infrastructure investments and applicable business models.

[Guidebook for Managing Data from Emerging Technologies for Transportation](#) [NCHRP Report 952] and [Development of Transactional Data Specification for Demand-Responsive Transportation](#) [TCRP Report 210] address vital data issues.

[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].

[Advancing Automated and Connected Vehicles: Policy and Planning Actions for State and Local Transportation Agencies](#) [NCHRP Report 845] presents potential societal effects and strategies to advance public interests, including a [briefing document](#).

[Impacts of Regulations and Policies on CV and AV Technology Introduction in Transit Operations](#) [NCHRP Web-Only Document 239] and [Challenges to CV and AV Application in Truck Freight Operations](#) [NCHRP Web-Only Document 231] identify next steps for deployment.

[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

- [State-of-the-Art Review of Cooperative Automated Transportation \(CAT\) Systems](#) [NCHRP 20-24(128)]
- [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 BTSCR-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](#), [UAS/UAV](#), and [Electric Vehicles](#).