

Autonomous Vehicles in the US: 50-State Roundup

US Road to Autonomy

2020 Recap

Passed Legislation

MARCH 2020

Washington

Washington passes House Bill 2676, that established minimum requirements for testing AVs, necessitating the reporting of planned local testing and any collision accidents.

SEPTEMBER 2020

Florida

House Bill 1303 created the Deering Park Stewardship District in Brevard and Volusia Counties. The bill calls upon local officials to provide a plan for integrating autonomous vehicles into the transit system.

Hawai'i

Governor David Ige signs House Bill 2590 into law, creating a pilot program within the Hawaii Department of Transportation to allow for autonomous vehicle (AV) testing on Hawaii public roads.

NOVEMBER 2020

Washington, DC

Mayor Bowser signs the Autonomous Vehicles Testing Program bill, approved by Congress just a few days later. The Act regulates the testing of autonomous vehicles on District roads through a testing program at the District Department of Transportation.

DECEMBER 2020

North Carolina

SB 739 goes into effect, signed by Governor Cooper, allowing autonomous delivery devices in pedestrian areas and on highways. Local governments can prohibit the operation of these devices within their jurisdictions as deemed necessary.

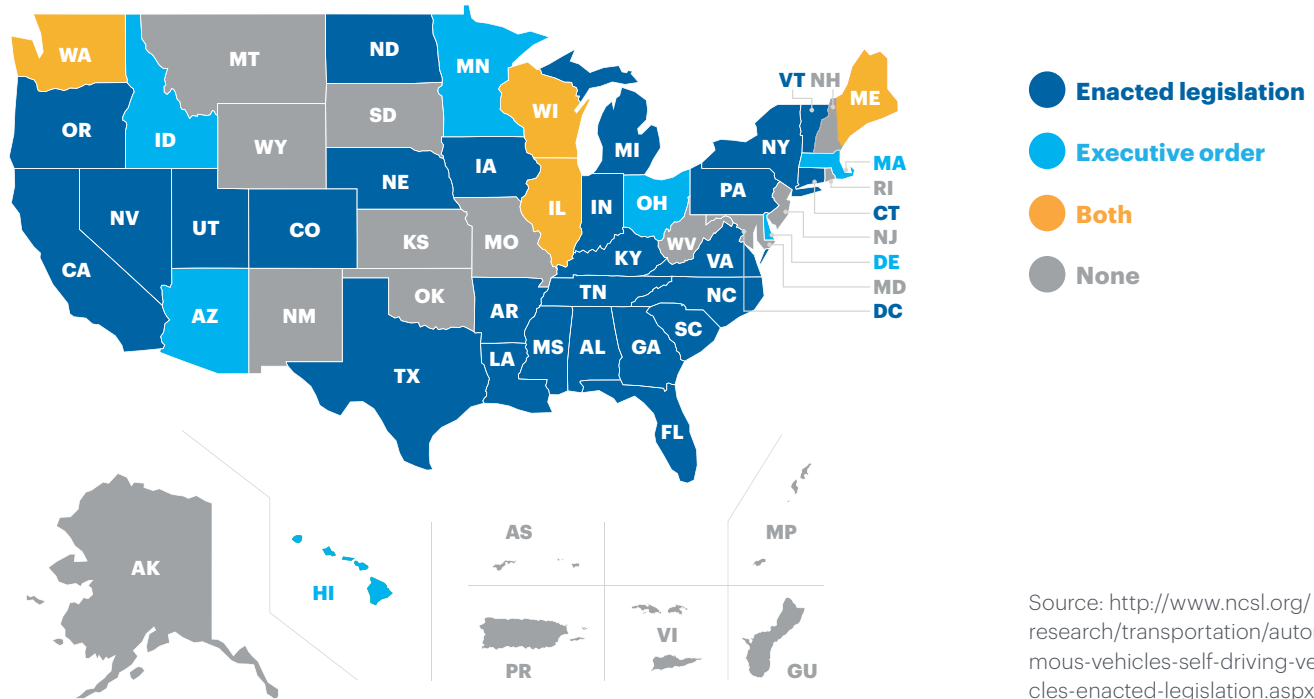
Introduced Legislation

The following states introduced legislation related to autonomous vehicles in 2020

Alabama • Arizona • California • Florida • Hawai'i • Illinois • Iowa • Maine • Utah • Washington

State roundup

States with autonomous vehicles enacted legislation and executive orders



Source: <http://www.ncsl.org/research/transportation/autonomous-vehicles-self-driving-vehicles-enacted-legislation.aspx>

Alabama

Alabama has passed regulations on commercial autonomous vehicles (AVs) to operate in the state. Vehicles can operate either with or without a physical driver as long as a remote driver is capable of operating the vehicle. The Department of Transportation (DOT) has sole and exclusive jurisdiction over automated driving systems, autonomous vehicles, and tele-operations systems. In 2017, the state senate created a Legislative Committee on Self-Driving Vehicles which was reauthorized in 2019.

In February of 2020, State Senator Gerald Allen introduced Bill 229 which would require any AV to be approved by the Alabama State Law Enforcement Agency and the DOT before they can operate in the

state. This bill would further require AVs to operate only on routes approved by the DOT. This bill is, as of this writing, pending in the Senate Transportation and Energy Committee.

Apart from the legal and regulatory movement, the University of Alabama at Birmingham School of Engineering launched a \$35 million research initiative for AVs, funded by the US Department of Defense and the US Army Combat Development Command Ground Vehicle Systems Center. The explicit goal of this effort is to fund the development of new combat vehicles to provide expertise for the US military and NATO nations; however, it is also expected to advance AV technology for the civilian sector by providing much needed testing facilities to trucking and construction companies.

Bills Passed in 2019: Senate Bill 47, Senate Joint Resolution 21

Bills Introduced in 2020: House Bill 229

Bills Passed in 2020: N/A

Arizona

Arizona has one of the most permissive AV frameworks in the country, thanks to a series of executive orders signed by Governor Doug Ducey. Automakers need only to notify the Arizona Department of Transportation before testing, as long as their vehicles comply with state and federal laws governing motor vehicles. The welcoming nature of Arizona's regulatory structure has solidified its standing as a hotbed of AV innovation. Waymo has been testing in the state for years and recently expanded the service through a partnership with ride-sharing company Lyft.

Several Arizona cities this year have already launched ride-sharing AV programs on public roads. In February, Beep introduced its fully electric driverless shuttle to Peoria. In October, Waymo publicly opened its fully driverless ride-hailing service in suburban Phoenix, introducing more than 300 autonomous minivans. Both of these AV programs are limited to specific service areas within their respective cities, though both Waymo and Beep seek to expand.

Bills Passed in 2019: N/A

Bills Introduced in 2020: House Bill 2060, House Bill 2340

Bills Passed in 2020: N/A

Arkansas

Arkansas permits the operation of autonomous vehicles and fully autonomous vehicles on public streets and highways through an autonomous vehicle pilot program overseen by the State Highway Commission. The state imposed certain requirements for the autonomous vehicles pilot program and has granted authority to the Commission to adopt rules necessary for its implementation. Notably, the law authorizes the operation of up to three vehicles void of certain standard safety equipment at any given time. The state already allowed Driver Assistive Truck Platooning (DATP) under legislation that took effect in 2017.

Bills Passed in 2019: House Bill 1822, House Bill 1561

Bills Introduced in 2020: N/A

Bills Passed in 2020: N/A

California

California has taken a comprehensive approach to regulating autonomous vehicles, enacting several laws that lay out procedures for the testing and deployment of driverless cars. The state expanded its program from requiring backup drivers in all test vehicles, to also allowing self-driving car tests without backup drivers. To qualify for a driverless testing permit, companies have to show proof of insurance or a bond equal to \$5 million, verify that the vehicles are capable of driverless operation, and meet Federal Motor Vehicles Safety Standards. As of now, over 60 companies currently hold permits to test in California.

In the last year, California initiated its first AV passenger service pilot program. Rather than just testing, passengers can now hail driverless rides from AVs rather than taxis or ride-sharing services. Additionally, California regulators approved a new permitting process that will allow companies to charge fees for autonomous vehicle rides, paving the way for AV commercialization in California. The decision, which was approved unanimously, requires applicants to first show proof of an active Department of Motor Vehicles permit before applying to the Public Utilities Commission for a commercial permit. All permit applications will be subject to a Commission Vote. Commissioner Genevieve Shiroma told Politico she expected firms to start applying soon. At present, seven companies have received permits under the current framework which allows them to offer autonomous rides but not to charge fares. Notably, the Commission imposed several reporting requirements to target specific policy concerns including safety, accessibility, equity and environmental justice.

A few bills of note were introduced in 2020 including Assembly Bill 1964 which expands the definition of the term autonomous vehicle to also include a remotely operated vehicle. The bill also specifies that a vehicle is not autonomous if it is only equipped with collision avoidance systems that are not capable of actually driving without the active supervision of a human operator in the vehicle. Additionally, Senate Bill 59 would create the

California Council on the Future of Transportation to advise the Governor and Legislature.

Bills Passed in 2019: N/A

Bills Introduced in 2020: Assembly Bill 3116, Senate Bill 59, Senate Bill 336, Assembly Bill 516, Assembly Bill 1964

Bills Passed in 2020: N/A

Colorado

Companies seeking to test and operate autonomous vehicles in Colorado are greeted by a welcoming regulatory environment. Legislation enacted in 2017 allows driverless vehicles to be operated in the state as long as they are capable of complying with existing state and federal law. In fact, Colorado has since its initial framework, relaxed regulation regarding driverless vehicles on state roads. Additionally, legislation passed in 2019 requires the State Department of Transportation to convene a working group to examine the impact of technology, including autonomy, on transportation business models. The group made their recommendation to the legislature in November 2019.

Colorado's Department of Transportation is partnering with Ford, Panasonic and Qualcomm to deploy Cellular Vehicle-to-Everything (C-V2X) technology along the heavily traveled Interstate 70 corridor, integrating vehicles into cellular networks to eventually provide collision avoidance capabilities and reduce congestion. In November of 2020, the FCC moved to authorize C-V2X access to the 5.9 GHz spectrum, allowing the technology

to transmit basic messages to vehicles without worry over cellular coverage. This authorization should immediately make C-V2X more useful in integrating vehicles into larger networks. Although the state does not currently have any large-scale robo-taxi fleets, tech company EasyMile began testing a 15-passenger autonomous shuttle near the Denver Airport last year, and last June pushed a two-week AV food delivery test in the city of Westminster.

Bills Passed in 2019: Senate Bill 239

Bills Introduced in 2020: N/A

Bills Passed in 2020: N/A

Connecticut

Of the states that have passed autonomous vehicle laws, Connecticut has one of the strictest regulatory structures. Operators must go through a multistage approval process, and testing is only allowed in select municipalities, to be designated by the commissioner of the State Department of Transportation. As many as four municipalities have begun working with manufacturers such as French company Navya, applying for spots in the Fully Autonomous Vehicle Testing Pilot Program. Connecticut did loosen the reigns last year, if only nominally, by removing the requirement that test drivers must be seated in the driver's seat while testing the vehicle. Instead, it states that the operator must be physically inside the AV in order to engage the system. The state has also established a task force to study fully autonomous vehicles.



Connecticut hoped to launch an automated electric bus program through CTfastrak in 2020, but the program has been instead rescheduled for deployment next year. This would be the first program to deploy automated heavy-duty transit buses for revenue service in North America.

Bills Passed in 2019: Senate Bill 924

Bills Introduced in 2020: N/A

Bills Passed in 2020: N/A

Delaware

Governor John Carney signed an executive order to establish an Advisory Council on Connected and Autonomous Vehicles. The Advisory Council was tasked with developing recommendations for innovative tools and strategies that can be used to prepare Delaware's transportation network for connected and autonomous vehicles. The Advisory Council's final report was submitted in September 2018. The report has not spurred any successful legislation to this point.

Bills Passed in 2019: N/A

Bills Introduced in 2020: N/A

Bills Passed in 2020: N/A

Florida

Florida was one of the first states to welcome the AV industry to test on its streets, and it has continued to be a leader in driverless technology adoption. Autonomous vehicle companies see Florida's growing and aging population as an ideal place to test commercialization.

In 2019, Florida relaxed its laws to allow for AV testing on public roads without a human operator in the vehicle. Within days, a Starsky Robotics 18-wheeler was on the highway with no one at the wheel in the midst of Sunday morning traffic. Notably, Florida has the third most truck drivers in the United States, behind Texas and California. Automating truck driving will be an important turning point for not just Florida's economy, but also for its labor force.

This year, in Jacksonville, autonomous shuttles were used to move COVID-19 tests between testing sites and a Mayo Clinic processing location. However, the shuttles were still isolated from pedestrians, traffic, and staff, and were each trailed by a human-driven SUV.

The State of Florida has also taken steps to incentivize and fund innovative research. The state appropriated \$2.5 million for the Tampa Bay Regional Transit Authority, with \$1 million dedicated to the study and development of innovative options for transit, as well as established the Multi-use Corridors of Regional Economic Significance Program within the department of transportation.

Finally, in 2020, House Bill 4713 was vetoed by Governor DeSantis. The legislation would have provided an appropriation for the Autonomous Transit AV Technology, Workforce and Economic Opportunity.

Bills Passed in 2019: House Bill 311, Senate Bill 2500, Senate Bill 7068

Bills Introduced in 2020: House Bill 771, House Bill 4713

Bills Passed in 2020: House Bill 1303

Georgia

Georgia allows the operation of both autonomous vehicles and trucks under legislation passed in 2017. Driverless vehicles are free to operate in the state as long as they are fully insured and registered with the Department of Motor Vehicles. At present, no robo-taxi services are operating in the state, however, several autonomous shuttle projects are in their infancy, including an autonomous shuttle that traverses a 1.5 mile track in the Peachtree Corners Curiosity Lab.

In the beginning of 2020, Georgia deployed next-gen highway striping on a strip of highway that would accommodate AV technology. The strip, called "The Ray," is an 18-mile stretch of I-85 in southern Georgia that will help test highway technologies, including a network of six roadside units capable of communicating with AVs. The pilot uses "CIRRUS by Panasonic," and is described as a "vehicle to everything" (V2X) system, already in use in other locations in Utah and Colorado.

Bills Passed in 2019: N/A

Bills Introduced in 2020: N/A

Bills Passed in 2020: N/A

Hawaii

On September 15th, 2020, Governor David Ige signed House Bill 2590 into law, creating a pilot program within the Hawaii Department of Transportation to



allow for autonomous vehicle (AV) testing on Hawaii public roads. The law, which represents an important step for AVs in Hawaii, requires that a conventional human driver be physically present in the vehicle at all times to supervise the vehicle and prevent collision if necessary. Both Governor Ige and Ed Sniffen, the HDOT Deputy Director for Highways, are optimistic that Hawaii will become a leader in the AV industry. The passage of the law was due, in no small part, to the efforts of the Hawaii Autonomous Vehicle Legal Task Force which included Dentons Partner Bill Kaneko. The Task Force encouraged the Hawaii State Legislature to enact legislation to account for AVs.

In August 2020 the University of Hawaii began working with the Hawaii Department of Transportation to implement a “Vehicle-to-Everything” communication technology. The system will be testing connected autonomous vehicles (CAVs) in conjunction with traditional drivers, bikers, and pedestrians in order to improve vehicle data collection, intersection safety, and efficiency along the Nimitz Highway and Ala Moana Boulevard corridor. The research program received \$6 million in funding and aims to provide valuable data to expedite the integration of AVs into dynamic urban environments.

Hawaii, being an island state, is uniquely positioned to roll out cutting-edge, transformative AV projects. The combination of an insulated traffic environment, relatively short commuting routes, a comparatively small population, and a limited number of weather and road variables make Hawaii an attractive AV testing

environment. We expect the passage of the new law, paired with existing investments in connected transit technology, to increase interest in the state among autonomous vehicle manufacturers.

Previously, Governor Ige signed Executive Order 17-07, stating that Hawaii is “open for business for testing and deploying new driverless vehicles.”

Bills Passed in 2019: House Concurrent Resolution 220

Bills Introduced in 2020: Senate Bill 620, House Bill 1183, House Bill 1725, Senate Bill 3060

Bills Passed in 2020: House Bill 2590

Idaho

Idaho Governor C.L. “Butch” Otter signed Executive Order 2018-01 on January 2, 2018 to create the Autonomous and Connected Vehicle Testing and Deployment Committee to identify relevant state agencies to support the testing and deployment of autonomous and connected vehicles.

The Committee submitted its report in November 2018. The report has not yet spurred any successful legislation to this point.

Bills Passed in 2019: N/A

Bills Introduced in 2020: N/A

Bills Passed in 2020: N/A

Illinois

Both Illinois and Chicago officials have been slower than some other states to adopt AV technology. While Illinois has no legislation directly regulating autonomous vehicles, an executive order signed by former Governor Bruce Rauner allows their operation in the state. The order establishes the Autonomous Illinois Testing Program, overseen by the state Department of Transportation. Vehicles can only be operated with an employee of the manufacturer behind the wheel.

“We want testing to happen here in Illinois, but we want to do it safely,” said Illinois Transportation Secretary Randy Blakenhorn in 2018. Since then, Illinois has maintained its relative hesitance towards AVs.

In 2019, House Bill 2575 was introduced, which would allow fully autonomous vehicles to drive on state highways with or without a human operator. However, as of 2020, the bill remains pending.

Bills Passed in 2019: N/A

Bills Introduced in 2020: House Bill 2575, Senate Bill 3204, House Bill 4758

Bills Passed in 2020: N/A

Indiana

Indiana currently has no laws or regulations concerning autonomous passenger vehicles; however truck platooning is regulated under 2017 legislation. There have been efforts in the past to create an autonomous task force with the power to approve operation of fully driverless vehicles in the state, but all have failed to garner enough support to pass into law.

Bills Passed in 2019: N/A

Bills Introduced in 2020: N/A

Bills Passed in 2020: N/A

Iowa

Iowa allows driverless vehicles to operate on the public highways without a conventional human driver physically

in the vehicle if it meets a set of conditions, including that the vehicle is capable of achieving a minimal risk condition in the event of a malfunction and that the vehicle is capable of operating in compliance with the applicable traffic and motor vehicle safety laws and regulations. This year, Iowa passed Senate File 302 that establishes more regulation for AV vehicles, including terms for insurance and liability, and penalties. Iowa also authorizes on-demand driverless-capable vehicle networks, to facilitate the transportation of persons or goods, including transportation for hire.

The University of Iowa was awarded a portion of the \$60 million in federal grant funding allocated for automated driving systems research for its ADS for Rural America project. In 2021, this grant is slated to be used for a project for driving autonomous vehicles on rural roads in the midwest.

Bills Passed in 2019: Senate File 302

Bills Introduced in 2020: Senate Bill 1128, House Bill 122

Bills Passed in 2020: N/A

Kansas

In 2018, the Kansas Department of Transportation created the Statewide Connected and Autonomous Vehicle Task Force to increase awareness and educate state agencies on the process of deploying CAV systems in Kansas. Kansas seeks to develop policies and investments incrementally, likely beginning with agricultural vehicles, freight trucks, ride-hailing, and transit vehicles. However, Kansas has not yet legislatively defined how and when AVs can be tested, deployed, or operated. In the last year, Kansas still has not introduced any AV legislation.

Bills Passed in 2019: N/A

Bills Introduced in 2020: N/A

Bills Passed in 2020: N/A

Kentucky

Kentucky has set forth rules for commercial vehicle platooning including exempting any vehicles engaged in a platoon from “following too closely” laws. In 2018, Kentucky allowed commercial vehicles to operate in a platoon, but for each vehicle there must be a licensed driver behind the wheel and a marking designating that it’s part of a platoon. Former Governor Bevin, at the

urging of the Kentucky Aerospace Industry Consortium, verbally supported the launch of “Elevate Kentucky,” an initiative to establish Kentucky as an autonomous vehicle testing hotbed. That being said, no legislative efforts have come to pass on autonomous passenger vehicles.

Bills Passed in 2019: N/A

Bills Introduced in 2020: N/A

Bills Passed in 2020: N/A

Louisiana

In 2019, Louisiana passed legislation governing the operation of autonomous freight carriers and other autonomous commercial vehicles. Louisiana law allows for the operation of both autonomous vehicles and autonomous truck platoons and specifically authorizes autonomous commercial motor vehicles to operate without a conventional driver physically present in the vehicle if the autonomous commercial motor vehicle meets a set of criteria including that the vehicle is capable of operating in compliance with applicable law and is capable of achieving a minimal risk condition in the event of an emergency.

The State of Louisiana recognizes the need to plan for AV integration, and is currently engaged with Arcadis and partners including California-based Iteris, Inc. and Texas-based Alliance Transportation Group Inc. to plan the integration of CAV technology into highway infrastructure.

Bills Passed in 2019: House Bill 455

Bills Introduced in 2020: N/A

Bills Passed in 2020: N/A

Maine

Maine does not currently have any laws or regulations pertaining to autonomous vehicles. However, 2018 legislation authorized the creation of a Commission on Autonomous Vehicles to coordinate efforts among state agencies and knowledgeable stakeholders to develop a process for testing automated driving systems on public roads. The law requires that the Commission issue a final report containing findings and recommendations, including suggested legislation.

In addition, Governor Paul LePage signed an executive order creating the Maine Highly Automated Vehicles (HAV) Advisory Committee to oversee the introduction

of highly automated vehicles. The committee is tasked with making recommendations regarding proposed HAV Pilot Projects and handling applications for permits to operate pilot vehicles on public roadways in Maine.

In 2020, House Bill 1222, the Automated Driving Safety Act also failed to pass Maine’s legislature—Maine still has no standards for the registration of AVs nor for the licensure of AV operators.

Bills Passed in 2019: House Bill 455

Bills Introduced in 2020: House Bill 1222 (LD 1710)

Bills Passed in 2020: N/A

Maryland

While Maryland doesn’t have any laws explicitly governing autonomous vehicles, the state Department of Transportation has adopted regulations for their operation, including an approval process requiring operator self-certification and insurance coverage of \$5 million. AV developers can apply for and receive permits to test on Maryland roads as well as on designated testing grounds. However, these testing facilities are all controlled, closed environments—parking lots, paved surfaces, and test courses isolated from the general public.

Bills Passed in 2019: House Bill 455

Bills Pending in 2020: House Bill 1464

Bills Passed in 2020: N/A

Massachusetts

A 2017 executive order issued by Governor Charlie Baker enumerated extensive requirements for the operation of autonomous vehicles in the state, including setting maximum speeds and confining them to geo-fenced areas determined during the application process. Boston-based nuTonomy and Optimus Ride have already had access to all of Boston’s roads for over a year, and over 15 municipalities have signed agreements with the state allowing for testing.

A previous executive order established a working group on AVs which is expected to work with experts on vehicle safety and automation and members of the legislature on proposed legislation, recommending that the Massachusetts DOT continue to facilitate testing with.

Bills Passed in 2019: N/A

Bills Pending in 2020: Senate Bill 2056, Senate Bill 2115, House Bill 3013, House Bill 3089, House Bill 3143, House Bill 3672, House Bill 3099, House Bill 5028, HB 5080

Bills Passed in 2020: N/A

Michigan

As the home of the nation's auto manufacturing industry, it's no surprise that Michigan is one of the nation's leading AV testing hubs. In 2016, the state approved legislation allowing for pilot testing. Waymo announced plans to resume self-driving tests and to locate the nation's first factory dedicated to the manufacture of autonomous vehicles in Detroit. The state is also home to several large testing facilities including the University of Michigan-owned Mcity, a 32-acre mock city and proving ground built for the testing of driverless cars that contains over four miles of roadway fitted with connected-vehicle infrastructure. These projects were funded in part by the \$60 million federal grant allocation for automated driving systems research for its Michigan Mobility Collaborative.

This year, Michigan has expanded plans for future AV infrastructure and integration. In August 2019, Michigan announced a plan to retrofit 40 miles of highway, including the I-94 and Michigan Avenue, connecting Detroit and Ann Arbor specifically for AVs. The details of how and what infrastructure changes will be made are still up in the air, so there will be incremental scaling tests conducted over the next two years to gauge the viability of the project. If the testing shows substantive improvements to congestion and transit efficiency, then the project is slated to proceed. Initial project partners include Ford Motor Company, the University of Michigan, and the American Center for Mobility.

Michigan has also passed several laws dealing with liability in relation to autonomous vehicles.

Bills Passed in 2019: N/A

Bills Pending in 2020: N/A

Bills Passed in 2020: N/A

Minnesota

Minnesota has no laws or regulations specifically addressing autonomous vehicles. According to the state's Department of Transportation, any automated vehicles

operating in the state must adhere to "current statute and laws." However in 2018, Governor Mark Dayton signed an executive order creating a Governor's Advisory Council on Connected and Automated Vehicles to recommend a path forward. Its resulting 66-page report delivered a rosy outlook on automated cars and included draft legislation setting up a permit system and giving the state DOT wide latitude to decide whether to allow a business to test based on its history with self-driving technology. Furthermore, the Minnesota Department of Transportation has expressed interest in connected autonomous vehicle technology, though there are no current CAV pilot projects being conducted. The Minnesota Legislature has yet to decide the issue, though they express safety concerns for public testing and deployment.

Minnesota has passed legislation regarding platooning on freeways and expressways. A platooning system may only be used if a plan has been approved by the Commissioner of Transportation, who must consult with the Commissioner of Public Safety prior to approving the plan.

Bills Passed in 2019: House Bill 6

Bills Pending in 2020: N/A

Bills Passed in 2020: N/A

Mississippi

Mississippi has yet to pass legislation concerning autonomous passenger vehicles. However, the state does permit platooning as long as the operator receives approval from the Department of Transportation and the Department of Public Safety.

Bills Passed in 2019: N/A

Bills Pending in 2020: N/A

Bills Passed in 2020: N/A

In August 2019, Michigan announced a plan to retrofit 40 miles of highway, including the I-94 and Michigan Avenue, connecting Detroit and Ann Arbor specifically for AVs.

Missouri

Missouri does not have any laws regarding the registration, testing, and deployment of autonomous vehicles. Currently, there is a pending bill, HB 2059, that would prohibit driverless truck operations from using roadways within the state. Specifically, it would forbid vehicles from being autonomously driven without a licensed operator in the vehicle at all times. In the past few years, several bills regarding Connected Vehicle Technology, AV Platooning, and driverless testing have been introduced; however, all of them failed.

Bills Passed in 2019: N/A

Bills Pending in 2020: HB 2059

Bills Passed in 2020: N/A

Montana

Montana currently has no laws or executive orders governing AVs. Since AVs have never been specifically addressed, they are not explicitly prohibited. In 2017, public officials expressed interest in bringing self-driving cars to major cities like Missoula, but nothing has come of this as of yet.

Bills Passed in 2019: N/A

Bills Pending in 2020: N/A

Bills Passed in 2020: N/A

Nebraska

In April 2018, Nebraska lawmakers cleared the way for companies to test self-driving vehicles as long as the vehicle is capable of operating in compliance with traffic and motor vehicle safety laws. The AV may or may not contain a human driver, but if a human driver is present, he or she must be a licensed driver and covered by insurance. The law also authorizes the operation of an on-demand AV network for the transport of persons or goods, including for-hire transportation or public transportation.

Bills Passed in 2019: N/A

Bills Pending in 2020: L 521, L 142

Bills Passed in 2020: N/A

Nevada

Ever since Nevada passed AV legislation in 2012, the state has been at the forefront of driverless vehicle innovation. In 2017, with the passage of Assembly Bill 69, Nevada permitted the testing and commercial public deployment of AVs—later that year, Las Vegas had its first completely autonomous electric shuttle deployed for public use. In 2019, the AV startup Zoox received permission from the Nevada Department of Motor Vehicles to deploy AVs on state roads. In 2017, the University of Nevada, Reno also installed a LiDAR sensor at one of its entrances to begin facilitating the development of smarter and safer transportation infrastructure. This October, that project was expanded by the Regional Transportation Commission of Washoe County and its Virginia Street redevelopment, adding eight new LiDAR sensors. These sensors will expand safety analyses to crashes and near-crashes, supplementing traditional methods of traffic data collection. In the future, these sensors will be crucial in establishing connected safety technology systems that will feed AVs real-time information about road and traffic conditions.

State law permits the operation of fully autonomous vehicles without a human operator in the vehicle and specifies that the original manufacturer is not liable for damages if a vehicle has been modified by an unauthorized third party. A publicly available robo-taxi network—a partnership between AV company Aptiv and ride-sharing company Lyft—is currently operating in the state.

Bills Passed in 2019: Assembly Bill 23

Bills Introduced in 2020: N/A

Bills Passed in 2020: N/A

New Hampshire

After previously vetoing a bill to permit autonomous vehicle testing in New Hampshire, in 2019 Governor Chris Sununu signed into law a bill that creates an automated vehicle testing pilot program in New Hampshire. The new law creates an autonomous vehicle advisory commission, a testing pilot program and sets requirements for vehicle deployment. The new pilot program permits testing on public roads.

Bills Passed in 2019: Senate Bill 216

Bills Introduced in 2020: N/A

Bills Passed in 2020: N/A

New Jersey

At the beginning of 2019, New Jersey established an 11-member tasked force called the New Jersey Advanced Autonomous Vehicle Task Force to study autonomous vehicles and recommend laws, rules and regulations that New Jersey may enact to integrate autonomous transportation into the state's transportation system. However, over a year later, New Jersey still has nothing permitting or specifically prohibiting autonomous vehicles. Companies have expressed interest in using AVs to ensure contactless delivery and proper social distancing during the COVID crisis, but nothing has come of this as of yet. Now, there is a series of pending bills concerning AV legislation, ranging from issues on the establishment of an AV pilot program (A 1189), the testing of AVs on state roadways (A 1607), to requiring the establishment of training programs to prepare law enforcement for interaction with AVs (A 2807).

Bills Passed in 2019: AJR 164

Bills Pending in 2020: A 1187, A 1189, A 1607, A 2807, S 2129

Bills Passed in 2020: N/A

New Mexico

In 2018, New Mexico requested the DOT create a committee to review the state of AVs to develop a proposal to allow their use in New Mexico; however, there is still no legislation or executive order governing AVs in New Mexico. Since there are no laws specifically prohibiting AVs, Waymo at the beginning of 2020 chose New Mexico interstate roadways, such as I-10, I-20, and I-45, to test self-driving minivans and long-haul trucks. During this testing phase, a human operator remained in the driver's seat at all times. In September, Daimler Trucks and allied vehicle software company Torc Robotics joined Waymo in expanding their testing of self-driving trucks on New Mexico public roads.

Bills Passed in 2019: N/A

Bills Pending in 2020: N/A

Bills Passed in 2020: N/A

New York

New York has highly restrictive regulations on AV testing. Under legislation approved in 2017, any testing must be approved by the commissioner of the Department of Motor Vehicles, supervised by the New York State Police, and levied with significant hourly and per mile rates. There have been self-driving shuttle programs in the city, like Optimus Ride, but they are small in scope—limited to the Brooklyn Navy Yard and away from public roads. Because of these restrictions and safety concerns over its dense urban environment, New York is not expected to see massive AV expansion any time soon.

While more relaxed requirements were proposed in previous legislative sessions, they failed to pass. New York lawmakers have insisted on ensuring public safety first and an open testing environment second. Additionally, the New York Bar Association established The Task Force on Autonomous Vehicles to investigate how the law should adapt to the rise in autonomous vehicles. There was a slate of bills introduced in 2019 regarding AV testing and relaxing the requirement for a driver to have their hand on the steering wheel for AVs, but they all remain pending. Dentons Senior Counsel Ronald Hedges is a member of the task force.



Bills Passed in 2019: N/A

Bills Pending in 2020: SB 65, A 301, SB 1159, A 1554, SB 1779, A 1808, A 2643, SB 6014, A 7980, A 8460

Bills Passed in 2020: N/A

North Carolina

Autonomous vehicles in North Carolina face few restrictions. A 2017 law established regulations for the operation of fully autonomous motor vehicles on public highways of the state, including the establishment of the Fully Autonomous Vehicle Committee to study the issue. Notably, the legislation specifies that AVs can be operated without a driver license. Notably, the North Carolina Turnpike Authority (NCTA) has touted Triangle Expressway near Raleigh as one of the most advanced roads in the country, with a fiber-optic network along its entire length to facilitate connected infrastructure. The NCTA has tested several driverless vehicles along the corridor. In February of 2020, the first fully autonomous vehicle arrived on North Carolina University's Centennial Campus—EasyMile's EZ10, a driverless electric shuttle. The vehicle is designed to address the first-mile/last-mile problem in public transit, and does not require any special road infrastructure to operate.

In 2020, Governor Cooper signed SB 739 into law, allowing autonomous delivery devices in pedestrian areas and on highways. Local governments can prohibit the operation of these devices within their jurisdictions as deemed necessary. The bill was not effective until December 1, 2020.

Bills Passed in 2019: N/A

Bills Pending in 2020: N/A

Bills Passed in 2020: SB 739

North Dakota

North Dakota permits autonomous vehicle operation as long as the vehicle is capable of operating in compliance with all applicable federal and state law. State law does not require a human driver to operate on the public highway if the autonomous vehicle is capable of achieving a minimal risk condition in case of a system failure. The law permits on-demand autonomous vehicle networks to provide transportation of persons or goods.

North Dakota also allows for truck platooning subject to the Department of Transportation, in coordination with the state highway patrol superintendent, developing an operational plan that provides guidelines for operation. The plan must include operational information that must be provided by a platoon technology provider or commercial motor vehicle operator.

At the beginning of 2020, the North Dakota Department of Transportation (NDDOT) received a federal grant to use AVs to improve work zone safety. In October, the NDDOT used this \$241,687 grant to convert a current NDDOT truck into an autonomous truck, a development in partnership with Kratos Defense and Royal Truck & Equipment. This vehicle is controlled and monitored by a human operated lead vehicle, and automatically follows behind construction equipment without putting a driver in danger.

Bills Passed in 2019: House Bill 199, House Bill 1418

Bills Pending in 2020: N/A

Bills Passed in 2020: N/A

Ohio

There are no laws in Ohio governing AVs, but there are relevant executive orders (EO) signed by former Governor John Kasich in 2018. The first EO created DriveOhio, a new division of the state DOT that allows any company to test AVs in the state so long as they register with DriveOhio and have a human operator behind the wheel. Four cities—Columbus, Dublin, Athens and Marysville—have already signed agreements with DriveOhio to test AVs on their streets, and the state has designated a 35-mile stretch of US Route 33 a "Smart Mobility Corridor" for the deployment of connected vehicle technologies. A \$45 million SMART Testing center opened in Logan County funded by a partnership between Ohio State University and the state of Ohio, will include an indoor highway track capable of simulating ice and snow year-round. The second EO created regulations for testing self-driving vehicles in the state.

The Ohio Department of Transportation was awarded a portion of the \$60 million in federal grant funding allocated for automated driving systems research for its D.A.T.A In Ohio: Deploying Automated Technology Anywhere project.

This year introduced a couple of new AV projects that seek to expand AV testing in Ohio. In February 2020, the first public residential autonomous shuttle fleet was launched in the suburbs of Columbus. Furthermore, Waymo announced in December 2020 that they would open a new mock-city testing ground that would simulate a dense urban environment. Moreover, Governor DeWine signed executive order 26D which among other things, directs the state departments of transportation, public safety and administrative services to develop plans to deploy smart communications technology in all state fleet vehicles within the next four years.

Bills Passed in 2019: EO26D

Bills Pending in 2020: N/A

Bills Passed in 2020: N/A

Oklahoma

Oklahoma hasn't passed legislation to establish specific autonomous vehicle regulations but has asserted in SB 365 that only the state may enact laws or regulations on autonomous driving systems, pre-empting the jurisdiction of local legislation. The state has also exempted platoons from certain traffic laws. In 2019, the legislature proposed the Self-Driving Vehicle Reform Act, House Bill 1866.

Bills Passed in 2019: SB 365

Bills Pending in 2020: N/A

Bills Passed in 2020: N/A

Oregon

Oregon has no current regulations in place concerning autonomous vehicles. However, House Bill 4063, signed by Governor Kate Brown on April 10, 2018, named the Oregon Department of Transportation (ODOT) the state's lead agency on automated vehicle policy and directed ODOT to facilitate a task force on automated vehicles. The Task Force submitted its first report to the legislature on September 10, 2018 and its second on September 9, 2019. The task force voted to continue meeting on an ad hoc basis in response to significant developments in automated vehicle technology and policy. The task force will dissolve on January 2, 2021. There was a piece of legislation introduced in 2019 that would permit the testing of AVs on highways, but it ultimately failed.

Bills Passed in 2019: N/A

Bills Pending in 2020: N/A

Bills Passed in 2020: N/A

Pennsylvania

Pennsylvania law does not explicitly regulate autonomous vehicle testing, but the state Department of Transportation has created a voluntary registration process. Additionally, Pennsylvania has established regulations on truck platooning and created the Highly Automated Vehicle Advisory Committee within the Pennsylvania Department of Transportation. The Committee is required to submit a report annually. The currently pending HB 1078 establishes general provisions for AVs and associated penalties.

Pittsburgh, thanks, in part, to local government incentives, has become a hotbed of AV testing. Currently companies including Aptiv, Argo AI and Aurora Innovation are testing in the city, and Argo recently announced a five-year, \$15 million research partnership with Carnegie Mellon University to conduct advanced research in autonomous vehicle technology.

The Pennsylvania Department of Transportation was awarded a portion of the \$60 million in federal grant funding allocated for automated driving systems research for its Safe Integration of Automated Vehicles (AV) in Work Zones project.

Bills Passed in 2019: N/A

Bills Pending in 2020: HB 1078

Bills Passed in 2020: N/A

Pittsburgh, thanks, in part, to local government incentives, has become a hotbed of AV testing.

South Carolina

South Carolina has yet to pass legislation on autonomous passenger vehicles, but it has exempted platoons from certain traffic laws.

Bills Passed in 2019: N/A

Bills Pending in 2020: HB 1078

Bills Passed in 2020: N/A



South Dakota

South Dakota has directed the Transportation Commission to promulgate rules to authorize the testing and operation of platooning at electronically coordinated speed and distance intervals that are closer than otherwise allowed under the “following too closely” laws in the state.

Bills Passed in 2019: House Bill 1068

Bills Introduced in 2020: N/A

Bills Passed in 2020: N/A

Tennessee

Legislation passed in 2017 allows certified autonomous vehicles to operate in the state, provided they contain automatic crash recording and notification technology. The law also preempts local regulation of ADS-operated vehicles and specifies that the ADS shall be considered a driver for liability purposes when it is fully engaged and operated properly. The TennSmart consortium, made up of government agencies, universities, and companies with ties to the state, hopes to encourage collaboration and innovation in the AV area.

Bills Passed in 2019: N/A

Bills Introduced in 2020: N/A

Bills Passed in 2020: N/A

Texas

Texas’ AV-friendly regulatory environment has made the state a magnet for autonomous vehicle testing. Companies like Ford Motor Co. have begun testing AVs in Texas cities like Austin, running vehicles in full-autonomous mode with two safety drivers in the front

on public city streets. In 2020, Waymo began testing its autonomous long-haul trucks on Texas interstates. Texas Department of Transportation officials have expressed clear commitments to building on the momentum of AV development and investment in Texas.

State law allows an automated motor vehicle to operate in the state regardless of whether a human operator is present in the vehicle, as long as certain requirements are met. Texas also preempts local regulation of automated motor vehicles and automated driving systems. The Texas A&M Engineering Experiment Station was awarded a portion of the \$60 million in federal grant funding allocated for automated driving systems research for its Automated Vehicle for All project.

Bills Passed in 2019: N/A

Bills Introduced in 2020: N/A

Bills Passed in 2020: N/A

Utah

Driverless vehicles are now regulated on Utah roads under legislation approved in 2019. While any properly insured autonomous vehicles are allowed to operate, autonomous networks must be registered with the state. Vehicles must be operated in compliance with all applicable traffic and safety laws and must be able to achieve a minimal risk condition or make a request to intervene if a system failure occurs. Finally, Utah permits the Department of Transportation to obtain, collect and utilize anonymized location data of connected vehicles.

The Utah DOT in conjunction with the Utah Transit Authority launched Utah’s first autonomous shuttle pilot in April 2019. The project was an \$800,000 investment in a contract with the French startup EasyMile, who leased their shuttle model EZ10 for an estimated

\$250,000. However, in February 2020, after an accident that left one hurt passenger in Columbus Ohio, the UDOT cut the pilot program short.

Bills Passed in 2019: Senate Bill 72, House Bill 101

Bills Introduced in 2020: HB 414

Bills Passed in 2020: N/A

Vermont

Vermont has established an automated vehicle testing program and granted authority to the Agency of Transportation to adopt specific rules. State law requires that during a test an operator is seated in the driver's seat of the automated vehicle monitoring the operation of the vehicle and is capable of taking immediate control if necessary. The legislature has directed the Agency of Transportation to publish an Agency of Transportation's Automated Vehicle Testing Guide, by January 1, 2021, that includes a list of municipalities that have pre-approved testing of automated vehicles on certain highways within their geographic boundaries. As of yet, no towns have signed on to testing in Vermont.

Bills Passed in 2019: Senate Bill 149

Bills Introduced in 2020: N/A

Bills Passed in 2020: N/A

Virginia

In a state where AV testing is actively occurring, Virginia has no laws or regulations specifically pertaining to autonomous vehicles. However, the state has taken an active role in encouraging testing and deployment. Seventy miles of Virginia highways have been designated "automated corridors" and outfitted with high-definition mapping and data acquisition systems to support automated-vehicle testing.

Virginia is a prime example of the fact that autonomous vehicles can operate in any state, regardless of whether the state has a regulatory framework, as long as the operator adheres to state and federal law.

By the end of 2019, Daimler Trucks and tech firm Torc Robotics had already begun testing self-driving trucks on Virginia highways, though they were confined to one part

of the state. In 2020, Dominion Energy rolled out Virginia's first electric autonomous shuttle to be tested in the Mosaic District of Fairfax County—a one mile route that navigates through a traffic light intersection.

Virginia Tech Transportation Institute was awarded a portion of the \$60 million in federal grant funding allocated for automated driving systems research for both its Safely Operating ADS in Challenging Dynamic Scenarios: An Optimized Automated Driving Corridor Demonstration project and its Trucking Fleet CONOPS for Managing Mixed Fleets project.

Bills Passed in 2019: N/A

Bills Pending in 2020: N/A

Bills Passed in 2020: N/A

Washington, DC

In 2012 the District of Columbia became one of the first jurisdictions to pass legislation regarding the testing of autonomous vehicles. On November 2, 2020 Mayor Bowser signed the Autonomous Vehicles Testing Program bill which was approved by Congress just a few days later. The Act regulates the testing of autonomous vehicles on District roads through a testing program at the District Department of Transportation. To test an autonomous vehicle on public roads, an autonomous vehicle testing entity must submit certain information to DDOT for approval, including vehicle information for each vehicle tested; a safety and risk mitigation plan; and a description of the area and conditions under which an autonomous vehicle can function while being tested autonomously. Among other things, the bill requires crash and data reporting, including any crash of its vehicles while under autonomous operation that results in property damage, bodily injury, or death.

An Autonomous Vehicle Working Group, established by Mayor Bowser in February 2018, (Mayor's Order 2018-018), has been exploring the implications of autonomous vehicles, including workforce and employment, urban planning, parking, and a range of other issues. In a study of AV report released earlier in 2020, the District Department of Transportation in D.C. found that current projections of AV integration on highways will lead to more congestion and a loss of traffic violation revenue for the city.

Bills Passed in 2019: N/A

Bills Pending in 2020: B 248

Bills Passed in 2020: Bill 23-232 (Autonomous Vehicles Testing Program Bill)

Washington

Washington state is considered on the lighter end of the AV regulatory spectrum. Governor Jay Inslee signed an executive order in June 2017 to require that state agencies with pertinent regulatory jurisdiction “support the safe testing and operation of autonomous vehicles on Washington’s public roads.” The executive order establishes an interagency workgroup and enables pilot programs throughout the state. The order specifies certain requirements for vehicles operated with human operators present in the vehicle and for vehicles operated without human operators in the vehicle.

However, the state Department of Licensing says it did not know how many AVs have been on Washington roads. In response to the state’s apparent inability to mandate testing information disclosure, in 2020, Washington passed House Bill 2676, that established minimum requirements for testing AVs, necessitating the reporting of planned local testing and any collision accidents. Currently, NVIDIA and Waymo are publicly testing in Seattle.

Bills Passed in 2019: N/A

Bills Introduced in 2020: SB 6659, HB 2470

Bills Passed in 2020: HB 2676

West Virginia

There are no laws currently governing autonomous transportation in West Virginia. In 2017, there was an attempt to pass legislation in the state legislature but that effort failed. Finally, researchers at the University of West Virginia have been working on autonomous technology and even held a forum in 2017.

Bills Passed in 2019: N/A

Bills Introduced in 2020: N/A

Bills Passed in 2020: N/A

Wisconsin

Former Governor Scott Walker signed an executive order in May 2017 creating the Governor’s Steering Committee on Autonomous and Connected Vehicle Testing and Deployment within the state Department of Transportation. The committee was tasked with advising the governor “on how best to advance the testing and operation of autonomous and connected vehicles in the State of Wisconsin.” The Committee submitted their report in 2018 and made several recommendations, including requiring municipal oversight, an application process and backup drivers. While these have yet to be enacted, the committee also noted that it believes current state law “does not prohibit the operation of autonomous vehicles.”

Much like Virginia, Wisconsin is another example of a state that has no autonomous-specific regulations but still plays host to autonomous testing.

Bills Passed in 2019: N/A

Bills Introduced in 2020: N/A

Bills Passed in 2020: N/A

Wyoming

In 2018, the Wyoming DOT director argued for the need to prepare for driverless vehicles. Wyoming is one of three states that received a grant from the USDOT in 2015 to participate in a connected vehicle pilot program tested along I-80. Yet, still there are no laws or executive orders governing AV use in Wyoming, though self-driving vehicles are not specifically prohibited by law. Next year, in 2021, Beep Inc. plans to roll out two autonomous shuttles in Yellowstone National Park.

Bills Passed in 2019: N/A

Bills Introduced in 2020: N/A

Bills Passed in 2020: N/A

Dentons' Global Autonomous Vehicles Group

Dentons' global Autonomous Vehicles (AV) team can help you navigate the labyrinth of national, regional and local laws, regulations and guidance relating to the development and deployment of AVs. Whether you are a startup, emerging company or multinational vehicle manufacturer, automotive OEM, vehicle or parts retailer or driverless-technology firm; a bus, taxi, transit or truck fleet operator; an auto liability insurer or finance company; or outside the sector preparing for implementation of AV technology or considering its implications for your business, we offer a full array of tech, regulatory, transactional and litigation support. We are able to deliver on all fronts because our AV team draws from multiple practice areas within Dentons, including Transportation, Infrastructure, Energy, Public Policy and Advocacy, Corporate Transactions, Capital Markets, Insurance, Real Estate, Intellectual Property and Venture Technology, among others. Also, our members hail from offices around the globe, including in the US, Canada, the UK, France, Germany, Russia, China, Singapore and Australia. Finally, because we have extensive experience serving both the Automotive and Technology sectors, we have a deep understanding of the business issues impacting both of these industries.

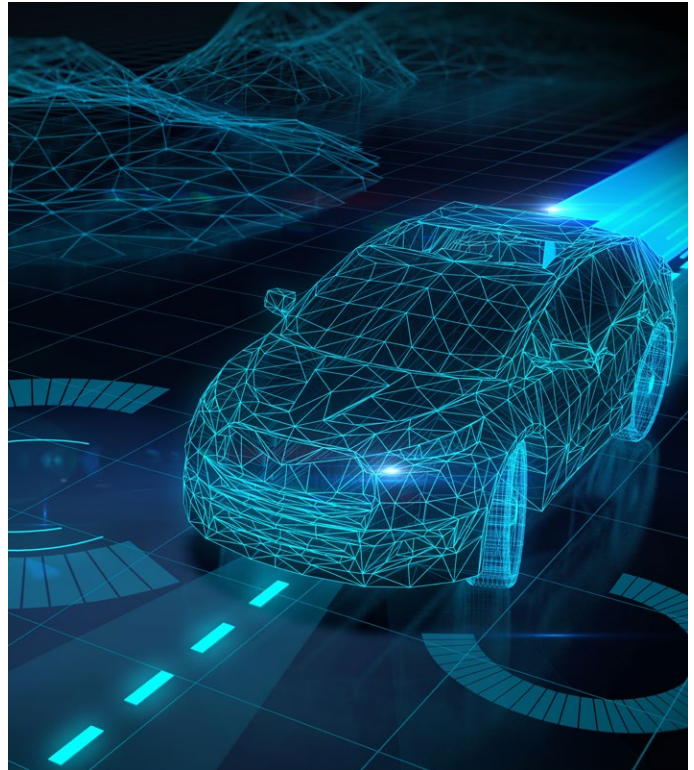
Related Resources

Global Guide to Autonomous Vehicles 2021

We hope you have enjoyed our report on the US legal and regulatory landscape for autonomous vehicles. [Click here](#) to subscribe and receive Dentons' 2021 Global Guide to Autonomous Vehicles, scheduled for release in January 2021, as well as updates from our autonomous vehicles blog, [The Driverless Commute](#), directly to your inbox.

About The Driverless Commute

Geared to autonomous vehicles and clocking the most important technical, legal and regulatory developments shaping the path to full autonomy, The Driverless Commute blog provides the latest info on pilot programs and the rapidly evolving regulatory environment, tracks changes in public perception of AV technology, and



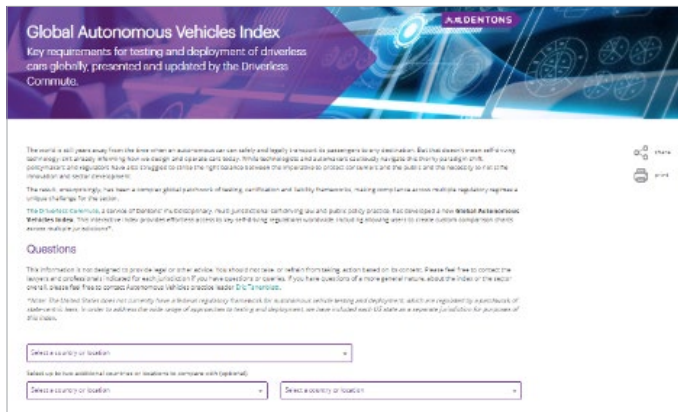
covers the global race to market, including alliances between top automakers and deep-pocketed tech giants, and cross-border partnerships.

<http://www.thedriverlesscommute.com/>

Global Autonomous Vehicles Index

Key requirements for testing and deployment of driverless cars globally, presented and updated by the Driverless Commute.

The world is still years away from the time when an autonomous car can safely and legally transport its passengers to any destination. But that doesn't mean self-driving technology isn't already informing how we design and operate cars today. While technologists and automakers cautiously navigate this thorny paradigm shift, policymakers and regulators have also struggled to strike the right balance between the imperative to protect consumers and the public and the necessity to not stifle innovation and sector development.



The result, unsurprisingly, has been a complex global patchwork of testing, certification and liability frameworks, making compliance across multiple regulatory regimes a unique challenge for the sector.

Dentons' Global Autonomous Vehicles Index provides effortless access to key self-driving regulations worldwide, including allowing users to create custom comparison charts across multiple jurisdictions including all 50 US states and 17 countries.

[Click here to view the index](#)

2021 Global Briefing: Mobility + Autonomous Vehicle Trends

Dentons Global Venture Technology group hosted a virtual global summit focused on the mobility and autonomous vehicle sector and the opportunities and challenges facing this next-gen technology and its strategic adoption worldwide, including questions about innovation, regulation and capital-raising. The event brought together a world-class group of global thought leaders from GV (Google), NASA, BMWi Ventures, Stanford, Khosla Ventures, Bessemer Ventures and Canaan Partners and others.

[Click here to view the webinar recording.](#)

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