

# CAPITOL RESEARCH

## ● ● ● TRANSPORTATION POLICY

### STATE LAWS ON AUTONOMOUS VEHICLES

**As of August 2016, seven states and the District of Columbia have enacted autonomous vehicle legislation. Another state has an executive order on the books.**

- Arizona Gov. Douglas Ducey issued an executive order in 2015 that requires the state Department of Transportation and other agencies to undertake steps necessary to support the testing and operation of autonomous vehicles on public roads. It allows selected university campuses to launch pilot programs in partnership with entities developing autonomous technologies. The pilot programs would allow an operator with a valid driver's license to direct a vehicle's movement, regardless of whether the operator is physically present in the vehicle. The measure establishes an oversight committee to advise state agencies on how best to advance the testing and operation of autonomous vehicles on public roads.<sup>1</sup>

- California's 2012 legislation, SB 1298, authorized the operation of an autonomous vehicle on public roads for testing purposes by a driver who possesses the proper license for doing so. The law requires the driver be seated in the driver's seat, monitoring the safe operation of the autonomous vehicle, and capable of taking over immediate manual control of the autonomous vehicle in the event of a technology failure or other emergency. It required the adoption of safety rules and regulations to ensure the safe testing and operation of autonomous vehicles. Federal regulations promulgated by the National Highway Traffic Safety Administration would supersede state law or regulation when found to be in conflict under the measure.<sup>2</sup> The California Department of Motor Vehicles approved regulations governing the testing of the vehicles in 2014, but when they issued draft regulations governing the eventual deployment of autonomous vehicles to the general public late last year, Google and others expressed disappointment that they required a licensed operator to be onboard.<sup>3</sup>

- The District of Columbia's "Autonomous Vehicle Act of 2012" allowed autonomous vehicles to operate on public roadways, provided the vehicles have a manual override feature that allows a driver to assume control at any time; have a driver seated in the control seat of the vehicle while in operation



who is prepared to take control; and are capable of operating in compliance with the District's applicable traffic laws and motor vehicle laws and traffic control devices. The law restricts the conversion of conventional vehicles into autonomous vehicles to recent models and addresses the liability of the original manufacturer of a converted vehicle.<sup>4</sup> The D.C. Department of Motor Vehicles subsequently established guidelines for the issuance of driver's licenses, motor vehicle titles and registration, and autonomous vehicle tags.<sup>5</sup> As a result, Washington, D.C., became the first jurisdiction to license self-driving car operators. Applicants for the new license designation are required to undergo training certification in autonomous vehicle operation from a self-driving car dealership or manufacturer.<sup>6</sup>

- Florida's initial legislation in 2012, HB 1207, declared legislative intent to encourage the safe development, testing and operation of autonomous vehicles on public roads and identified the person who causes the vehicle's autonomous technology to engage as the operator of the vehicle.<sup>7</sup> Subsequent legislation passed in 2016, HB 7027, eliminated a requirement that the vehicle operation must be solely for testing purposes and eliminated the requirement

that a driver be present in the vehicle.<sup>8</sup> Another law approved in 2016, HB 7061, sets up a study and pilot program to test driver-assistive truck platooning technology.<sup>9</sup>

- Michigan's 2013 autonomous vehicle legislation, S. 169 and S. 663, expressly permits testing of automated vehicles by certain parties under certain conditions and addresses the liability of the original manufacturer of a vehicle on which a third party has installed an automated system.<sup>10</sup>
- Nevada became the first state to authorize the operation of autonomous vehicles in 2011. AB 511 also authorizes a driver's license endorsement for operators of such vehicles and directs the state Department of Motor Vehicles to adopt rules for licensing and operation, including insurance, safety standards and testing.<sup>11</sup> A companion piece of legislation, SB 140, which prohibits the use of cell phones or other handheld wireless devices while driving, permits use of cell phones and other devices for individuals in a legally operating autonomous vehicle since these individuals are deemed not to be operating a motor vehicle under state law.<sup>12</sup> In 2013, Nevada lawmakers passed follow-up legislation, SB 313, that requires an autonomous vehicle being tested to meet certain conditions relating to a human operator. It requires the vehicles to have proof of insurance and prohibits the vehicles from being registered, tested or operated on a highway unless they meet certain conditions. It also establishes immunity from liability for manufacturers of a vehicle that has been converted to an autonomous vehicle by a third party.<sup>13</sup>
- North Dakota lawmakers in the 2015 House Bill 1065 authorized a study of autonomous vehicles, including research into the degree to which they could reduce traffic fatalities and crashes by reducing or eliminating driver error and the degree to which they could reduce congestion and improve fuel economy.<sup>14</sup>
- Tennessee's first enacted legislation related to autonomous vehicles was a 2015 bill, SB 598, that prohibited local governments from banning the use of motor vehicles equipped with autonomous technology.<sup>15</sup> A 2016 bill, SB 2333, allows a motor vehicle to be operated, or to be equipped with, an integrated electronic display visible to the operator while the motor vehicle's autonomous technology is engaged.<sup>16</sup> A second 2016 bill, SB 1561, establishes a certification program through the state Department of Safety required for manufacturers of autonomous vehicles before the vehicles can be tested, operated or sold. It also creates a per mile tax structure for autonomous vehicles.<sup>17</sup>
- Utah's 2016 legislation, HB 280, authorizes a study of autonomous vehicles, including evaluation of standards and best practices issued by the National Highway Traffic Safety Administration and the American Association of Motor Vehicle Administra-

tors and appropriate safety features and regulatory strategies. The study would develop recommendations for future state policy.<sup>18</sup>

## **Many states are hosting a variety of autonomous technology testing activities whether or not they have related legislation in place.**

- Pennsylvania's Carnegie Mellon University has been researching and testing autonomous vehicle technology for more than 30 years. Researchers have created more than 140 technologies related to autonomous vehicles during that time.<sup>19</sup> In 2015, Uber announced plans to open an autonomous vehicle research center with Carnegie Mellon.<sup>20</sup> And in August 2016, the transportation network company announced plans to deploy a fleet of customized self-driving Volvos in Pittsburgh that will be supervised by human drivers.<sup>21</sup>
- Michigan could soon be home to not one but two testing facilities for autonomous vehicles. The University of Michigan's Transportation Research Institute in 2015 opened Mcity, a fake city in Ann Arbor, Michigan, where Ford and other automakers have begun testing autonomous vehicles.<sup>22</sup> Also in the works on a 335-acre site in Ypsilanti, Michigan—where B-24 bombers were made during World War II—is the American Center for Mobility, which will conduct advanced automotive testing and product development. The center is a joint initiative of the Michigan Department of Transportation, Michigan Economic Development Corporation, the University of Michigan and others.<sup>23</sup>
- Autonomous vehicles are being tested at a repurposed Navy base in Concord, California. The Contra Costa County Transportation Authority's GoMentum testing facility has attracted a partnership with Honda and the attention of companies like Uber, Lyft and EasyMile.<sup>24</sup> California's Stanford University is home to the Automotive Innovation Facility and a research collaborative with Volkswagen. The university also received \$25 million from Toyota in 2015 to study the potential for artificial intelligence to assist in automated driving.<sup>25</sup>
- Massachusetts does not have a law on the books to authorize autonomous vehicle testing or driving but that hasn't held the commonwealth back. The Massachusetts Institute of Technology's Computer Science and Artificial Intelligence Laboratory in 2015 announced a new \$25 million autonomous vehicle technology research center funded by Toyota.<sup>26</sup> A start-up called nuTonomy in Cambridge, Massachusetts, founded by MIT professors has \$3.6 million in venture capital funding to develop decision-making software for autonomous vehicles. A former professor at Olin College of Engineering in Needham is leading a \$1 billion research effort. Two professors at UMass Amherst are collaborating on a project

funded by the National Science Foundation and General Motors to develop ways to transfer control from an automated driving system to a human driver in a semi-autonomous car. The state is also home to the U.S. Department of Transportation's Volpe National Transportation Systems Center in Cambridge, which is working to coordinate private and public efforts on self-driving cars nationally and internationally.<sup>27</sup>

- Virginia Gov. Terry McAuliffe in 2015 announced the designation of 70 miles of interstates and arterial roads in the Northern Virginia region as the "Virginia Automated Corridors," which will allow developers of autonomous vehicles the opportunity to test their technologies. The project is a joint effort of the Virginia departments of Transportation and Motor Vehicles in partnership with the Virginia Tech Transportation Institute, toll road developer Transurban, and the navigation and mapping company HERE.<sup>28</sup>

- In Ohio, the executive director of the Ohio Turnpike told the Associated Press in August 2016 that autonomous vehicle testing is likely to begin on the heavily traveled toll road within 12 months and possibly before the end of 2016. The road is suited for testing because it is relatively straight and flat with three lanes in each direction; the road also has wider lane markings, space for maintenance and support crews, less congestion and a fiber optic network along the entire roadway. Ohio Gov. John Kasich has encouraged state agencies to take a leading role in the development of the autonomous vehicle industry. The state's highway department is working on creating another potential testing area along a divided highway northeast of Columbus. The city of Columbus won the U.S. Department of Transportation's Smart City Challenge in summer 2016, which gives them \$40 million to put autonomous and connected vehicles and other technologies into use.<sup>29</sup>

- Washington State's Puget Sound region is also making a bid to be a big player in the autonomous vehicle agenda, analysts say. The area has been a leader in transportation technology and wireless communication expertise for decades. It is also home to connected car data company Inrix and the car-sharing companies Car2Go—owned by Daimler—and BMW-owned ReachNow. In addition, Google is testing autonomous vehicles in Kirkland, Washington.<sup>30</sup>

- The Las Vegas City Council passed a resolution in February 2016 declaring downtown Las Vegas—including the famous strip—an "innovation district," which allows city leaders to use the highly trafficked area to test emerging technologies. The city also has a circuit of intersections near its convention center with traffic lights outfitted with technology that allows them to communicate signal timing to smart cars. An autonomous vehicle testing campus is planned in the northwest part of the city as well.<sup>31</sup>

## **A number of other states appear poised to move forward with autonomous vehicle legislation soon.**

- The National Highway Traffic Safety Administration, or NHTSA, is expected to issue model state policy for autonomous vehicles in September 2016. The policy is expected to include: guidance on vehicle performance standards for automakers, policy guidelines for states to encourage consistency in statutes, and an explanation of new tools and authority NHTSA might use to govern autonomous vehicles.<sup>32</sup> Analysts believe the guidelines for states could produce a flood of related legislation during 2017 legislative sessions.<sup>33</sup>

- California, Michigan and Tennessee considered additional autonomous vehicle-related legislation in 2016. Thirteen states without legislation have also considered or are still considering bills. Eleven states considered legislation in 2015.<sup>34</sup>

- In Pennsylvania, a new state task force that includes General Motors, Uber and AAA as well as state and federal officials has been meeting to devise guidelines for testing autonomous vehicles on Pennsylvania roads. The task force is expected to issue policy recommendations by the end of November 2016. Bills have been introduced in the state legislature, H 2203 and S 1268, that would permit on-road testing.<sup>35</sup>

- In Michigan, lawmakers are considering a package of bills, S 995-998, favored by the auto industry that would allow manufacturers to produce and sell autonomous vehicles and allow for their operation on Michigan roads without a driver behind the wheel. In addition, the legislation would streamline the timeline for testing semi-truck platoons in which a lead truck controls braking and acceleration for other trucks behind it. S. 995 would create a council on future mobility that would recommend changes in state policy to the governor, legislature, state Department of Transportation and others to "ensure that (the) state continues to be a world leader in autonomous, driverless and connected vehicle technology." The panel would include experts in future mobility from the business, policy, research and technology communities.<sup>36</sup> The bills would also allow auto manufacturers to run networks of on-demand self-driving vehicles.<sup>37</sup>

## **Some states have faced challenges in trying to push the envelope on autonomous vehicles.**

- Missouri Gov. Jay Nixon in 2016 vetoed legislation approved overwhelmingly by both chambers of the legislature that would have allowed the testing of driver assistive truck platooning in the state by eliminating the provision prohibiting trucks from following within 300 feet of another vehicle. Platooning

employs a wireless electronic communication system that allows two tractor-trailer trucks to travel closely together and brake at the same time, producing fuel and congestion efficiencies. But in his veto message, Nixon cited his concerns about a fatal accident in May involving a Tesla vehicle in autopilot mode. Florida and Utah are among the states that currently allow platoon testing.<sup>38</sup> A 2012 report found that state laws that include language about “following too closely” may prohibit many automated vehicle platooning applications.<sup>39</sup> A July 2016 Competitive

Enterprise Institute report recommends how each of the 50 states could modify their existing laws to accommodate platooning.<sup>40</sup>

- Some lawmakers in New York are trying to advance legislation to pave the way for autonomous vehicles in that state but they face an obstacle in a 1971 law that requires drivers to keep at least one hand on the steering wheel while the vehicle is in motion. They also worry the law could impact drivers who use parking assist features now offered in some current car models.<sup>41</sup>



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