

# Washington

## WATCH

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## The Cart Before the Horse: Autonomous Vehicle Testing and Technology Speeds Ahead of Policy

Sitting in traffic staring at the bumper of the car in front of you frequently leads to daydreams about better ways to spend one's time. If you weren't stuck in traffic, you could be doing something productive – or fun. While improving traffic jams would be one way to cut your driving time, you might not need to worry about traffic – or spending your time more effectively – if the car could drive itself, rendering you, the driver, dispensable. And how to accomplish that is no longer confined to the Hollywood imaginings in *Back to the Future* or *Star Trek*; it is a real issue being worked on by technology companies in the United States and across the globe. We are talking, of course, about autonomous vehicles, or AVs, which could (and likely will) transform the transportation industry, including how we commute. Whether serving or providing a revolutionary form of “transportation access” for underserved populations, such as the disabled, or reducing the number of accidents and deaths on America's highways, proponents are quick to point to AVs as panaceas for many societal ills and frustrations and thus are pushing for expedited implementation and adoption of AV technology. Before these anticipated benefits can be fully realized, however, the technology must be further developed, the regulatory regime must be developed and clarified, the physical infrastructure must be improved, and peoples' fears about handing over control of their cars to machines must be overcome.

Today, AVs are managed by a patchwork of regulations. According to the National Conference of State Legislatures,

twenty-two states and the District of Columbia have enacted some type of AV legislation, and an additional ten states regulate AVs by executive order. Moreover, the National Highway Traffic and Safety Administration (NHTSA) traditionally regulates automobiles—including design, construction, performance, and safety standards—while the states regulate the drivers. But, without a driver, AVs have turned the regulatory system on its head. What happens when a vehicle is controlled by a machine and may or may not require the presence of a human driver? Does it need a license? Who regulates it and looks into its mistakes? These and many more questions must be considered. Further, many of the Federal Motor Vehicle Safety Standards (FMVSS), including those that require vehicles to contain a steering wheel and foot pedals, could be obsolete once AVs fully penetrate the market—so shouldn't there be different standards for an AV test model? In the meantime, however, AV testing and deployment is not only constrained by the existing standards and laws, but also the varying state laws that are, quite literally, putting the brakes on interstate AV travel.

Congress could bring some clarity to this area, but, as with many legislative initiatives in the 115th Congress, AV legislation has stalled in the Senate. On September 6, 2017, the House passed H.R. 3388, the SELF DRIVE Act, which would clarify the regulatory role between the federal and state governments and allow NHTSA, which at this point has only issued voluntary guidance, to take the lead in the AV space and issue regulations. The Senate introduced a similar bill, S.1885, or the AV START

<sup>1</sup> Alabama, Arkansas, California, Colorado, Connecticut, Florida, Georgia, Illinois, Indiana, Louisiana, Michigan, New York, Nevada, North Carolina, North Dakota, Pennsylvania, South Carolina, Tennessee, Texas, Utah, Virginia, and Vermont.

<sup>2</sup> Arizona, Delaware, Hawaii, Idaho, Maine, Massachusetts, Minnesota, Ohio, Washington, and Wisconsin.



Act, as a companion to the House bill. Both H.R. 3388 and S.1885 would keep the existing regulatory model between the federal and state governments while making changes to safety standards that would accommodate and in theory promote the development of AV technology. They would also grant NHTSA the authority to issue an increasing number of “exemptions” from existing FMVSS to facilitate the continued testing of AVs by automakers and developers of automated driving systems.

Despite passing out of the Senate Commerce, Science, and Transportation Committee on October 4, 2017, the Senate has not yet scheduled a floor vote on S.1885. While the bill’s sponsors had hoped to pass the legislation by unanimous consent (a process by which a bill can proceed on the Senate floor without needing to overcome certain procedural hurdles, and thus move more quickly), Senators Edward Markey (D-MA), Dianne Feinstein (D-CA), and Richard Blumenthal (D-CT) have all placed procedural holds on the bill, citing safety concerns with the technology. And, after recent fatal AV accidents in Arizona and California, they may be joined by other Senators with similar concerns about the technology. States and localities have responded to these AV crashes: Arizona Governor Doug Ducey (R) has suspended the company whose self-driving car was involved in the accident from conducting further testing in the state and shortly thereafter, the city of Boston, Massachusetts reached out to AV companies operating within city limits asking them to cease operations while safety protocols were reviewed.

Presuming federal legislation would make it through Congress, however, that does not mean that AVs will take over the road. It will require years of studies, rulemakings, and regulatory proceedings for the federal government to establish a coherent regulatory framework for this technology. When that finally happens, it will fall to car companies to decide whether that regulatory structure will facilitate their planned moves to AV technology.

And, there will be similar questions about whether and where the infrastructure will be in place to allow the different AV technologies to work. Most of the major automakers have announced plans to have autonomous vehicles at some point in the 2020s, but those plans will depend upon how the legal and physical infrastructure to handle them evolves. Physical infrastructure limitations can cause real problems for AVs. Some technologies, for example, won’t work on roads that do not have lane lines. That could limit the usefulness of AVs not

only in many rural areas but also in many inner cities. Similar problems can crop up when snow covers lane lines or other road markings.

In February, the Trump Administration released its Legislative Outline for Rebuilding Infrastructure in America, which essentially calls upon Congress to craft legislation that would generate a \$1.5 trillion investment in infrastructure. President Trump’s plan, however, only includes \$200 billion in direct federal spending—with much of the funding stemming from regulatory permit reform, public-private partnerships, state and local government contributions, and other incentives to leverage overall investment in infrastructure. Although there is widespread bipartisan agreement among Capitol Hill lawmakers that we need to fix the nation’s crumbling infrastructure, there is far less agreement on how to pay for the investment. The president’s plan, for example, does not include a sustainable funding mechanism for the Highway Trust Fund—and many Members of Congress balk at the idea of raising the federal gas tax, which they believe would be politically unpopular. Moreover, there is substantial disagreement over the efficacy and efficiency of “public-private partnerships” (as well as other options) in raising necessary funding.

Lawmakers, unable to agree on a way to fund repairs to the country’s rundown bridges and highways, have barely begun to discuss what infrastructure investments would be necessary to accommodate AV technology. Many of these technologies rely on communications not only between different AVs on the roads but also between the vehicles and infrastructure. For example, the vehicles could work more efficiently if road warnings (including railroad crossings, bridge icing risks, and the like) were upgraded with communication technologies so they could send signals to AVs and ensure that the vehicles recognize and handle different hazards. But those types of upgrades will require years of planning, concerted effort and, of course, funding.

If the United States wants to be a leader in the AV technology space, Congress and regulators must encourage its development: both by investing in and supporting necessary infrastructure and establishing a stable regulatory environment that facilitates testing and adoption of the technology while giving the public assurances about safety. Otherwise, the technology will move offshore, along with the potential economic, safety, and other benefits that AVs may offer. ★