

CAPITOL RESEARCH

TRANSPORTATION

Autonomous Vehicle Legislation

It sounds like science fiction: One day you'll be able to hop in the back seat of your self-driving car while it transports you safely to work as you catch up on paperwork in the back.

A recent report by the Eno Center for Transportation, a Washington, D.C.-based transportation policy think tank, described the benefits of this scenario thusly: "This new technology has the potential to reduce crashes, ease congestion, improve fuel economy, reduce parking needs, bring mobility to those unable to drive, and over time dramatically change the nature of U.S. travel. These impacts will have real and quantifiable benefits."¹

While they aren't on the market yet, and likely won't be for years, the promised safety and mobility benefits of autonomous vehicles, as they are known, already has prompted a burst of legislative activity in state capitols in recent years. Experts and policymakers say it is just the first pass at trying to anticipate and navigate a myriad of legal, administrative, logistical and technical questions the technology may present for all levels of government in the years ahead.

But even as some states seek to ensure they'll have a piece of the new industry, some say the legislative efforts may not be necessary or wise at this early stage in the development of autonomous vehicle technologies. Other analysts and researchers offer plenty of suggestions for how states might tread lightly as the technologies develop so the benefits they offer can be achieved in as short a time frame as possible.

Michigan Latest State with Legislation

In December 2013, Michigan became the fourth state, along with the District of Columbia, to enact legislation allowing automated vehicles to be tested on public roads.²

Lawmakers approved two companion bills. The first allows carmakers, auto suppliers and technology developers like Google to test automated or self-driving vehicles on Michigan roads. But the legislation requires a human to be in the driver's seat at all times to monitor performance and assume control of the vehicle if necessary.³ A separate bill protects manufacturers from civil liability for damages caused by modified autonomous vehicles, unless the defect from which the damages resulted was present in the vehicle when it was manufactured.⁴



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"It (the idea for the legislation) was a conversation that had taken place between Gov. (Rick) Snyder and myself back in late 2012," said Sen. Mike Kowall, who sponsored the bills. "He wanted to establish Michigan as a leader in the automated vehicle technology, mostly to attract jobs stemming from this developing industry."⁵

Kowall, who serves as chairman of the Senate Economic Development Committee and vice chair of the Transportation Committee, noted during debate on the legislation that Michigan is home to 330 companies that engage in automotive research and development to the tune of \$11 billion annually and he hoped the measure would help ensure research and development expenditures and taxes related to autonomous vehicles stay in the state.⁶ Kowall said at least one auto supplier considered moving some autonomous vehicle testing to Nevada—which already had such legislation—before the Michigan laws were passed.⁷

"It was (about) job retention, job creation," he said. "But Michigan is the home of the domestic automobile. Detroit's it. That's the epicenter for it. So we felt that being that we are the home base for the car, that we should be the leader in this new technology."

Snyder said much the same thing in signing the legislation in late 2013.

"Michigan is the automotive capital of the world," a statement from the governor said. "By allowing the testing of automated, driverless cars today, we will stay at the forefront in automotive technological advances that will make driving safer and more efficient in the future."⁸

But Kowall and others see Michigan's 2013 legislative effort on autonomous vehicles as just the first step in a longer process.



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“You have to crawl before you can walk,” Kowall said. “That’s why we started with a testing piece of legislation. ... We’re in the process right now of drafting legislation that’s going to be the enabling legislation for full functional autonomous vehicles and ... I hope sometime before the end of this year (2014), I will have that introduced.”

Is State Legislation on Autonomous Vehicles Necessary?

While California, Florida, Michigan, Nevada and the District of Columbia all have approved autonomous vehicle legislation and another 14 states have considered related measures,⁹ some question whether this legislative activity is really necessary, at least in this early stage in the development of the industry.

According to a 2012 white paper from the Center for Internet and Society at Stanford University Law School “(existing) state vehicle codes probably do not prohibit—but may complicate—automated driving.”¹⁰

The author of the white paper expanded on that statement in a February 2014 telephone interview.

“In the short term, any kind of testing that you’re going to see of cars that look like cars will be with safety drivers sitting at the wheel ready to take over, who regularly do take over and that are really no different than driving a normal car or driving a research vehicle, which happens already fairly frequently,” said Stanford Law’s Bryant Walker Smith. “It’s another means of driver assistance. That’s not to say it’s without issues or potential concerns, but in terms of how the motor vehicle code applies, there are really no big obstacles.”¹¹

Smith said it’s not clear that states like Michigan or California, which have a large industry presence and active testing taking place, need legislation, let alone states without those characteristics.

“It’s also not clear that the legislation that has been passed does anything to address the more substantive questions that will arise as vehicles start reaching the public,” he said. “The best thing I think that a state can do if it has any sort of active automotive presence—that is, suppliers, (original equipment

manufacturers), the actual automakers—is to just ask and say ‘What do you need? What do you want? What would help?’ And what many companies are saying is, ‘We don’t want to go through 50 legislative efforts and 50 potential regulatory efforts and 50 different patchwork schemes for testing and ultimately for operations.’”

But, Smith said, as the technology and the types of vehicles develop, some issues will need to be addressed legislatively.

“The complication is when we start talking about consumer operations or alternate technologies that don’t look like cars,” he said. “The way that it interferes with consumer operation is that it’s ambiguous what a driver’s actual duties are in a vehicle. Today they obviously have to pay attention to some extent and watch the road and actively monitor because that’s what it takes to drive.

“In the future, as the technical capabilities of vehicles improve and humans, as a result, get lazy and get distracted, that might be technically OK. The vehicle will certainly have to be designed to anticipate that possibility. But then what the motor vehicle code actually requires of these drivers will be unclear. Do they have to monitor or do they not? ... What is distracted driving? What is reckless driving in a car that in many ways can drive itself? So that’s one way that states will ultimately have to provide some clarity.”

The issues, Smith said, become more challenging as the technology evolves toward cars that truly can drive themselves everywhere. Smith expects to see low-speed, geographically restricted, driverless shuttles that will circulate around places like colleges, business campuses or downtown areas much sooner than single-occupant, fully autonomous vehicles, and those shuttles may present more immediate policy concerns.

But Smith isn’t the only one who has questioned the necessity of state autonomous vehicle legislation activity. A guide for policymakers issued by the Rand Corporation in January 2014 found that such legislation “may create a patchwork of conflicting regulatory requirements. It is also unclear whether such measures are necessary, given the absence of commercially available vehicles with this technology and the absence of reported problems to date with the use of this technology on public roads.”¹²

The Rand report also voices concern that overregulation of the industry and a crazy quilt of incompatible requirements could make it difficult to operate vehicles using the new technology across state lines or in multiple states.

State Statutes Have Evolved

Between Nevada's passage of autonomous vehicle legislation in 2011 and Michigan's effort in 2013, the types of legislation states are considering in this area have evolved, at least to a certain degree, said Smith.

"Nevada did a two-part statute plus regulation," he said. "Nevada's regulation has been the rough model for all of the other bills that have been passed. (The other states) have codified in statutory language what Nevada did through regulation in terms of what the vehicle has to have in terms of safety equipment, real basic requirements for a driver for testing."

Nevada and California required agencies to develop specific rules for the registration and licensing of these systems, while Florida and the District of Columbia do not. All four jurisdictions, he said, contemplate the consumer operation of automated vehicles.

The National Highway Traffic Safety Administration recommended against just that in a preliminary statement of policy issued in May 2013.

"In general, we believe the states are well suited to address issues such as licensing, driver training, and conditions for operation related to specific types of vehicles," the statement said. "(The National Highway Traffic Safety Administration) has considerable concerns, however, about detailed state regulation on safety of self-driving vehicles for purposes other than testing."¹³

Michigan took the approach recommended in the administration's statement and only addressed research and development testing of autonomous vehicles in its 2013 legislation. The bill Kowall plans to introduce later

this year likely would move beyond testing.

Smith said the way state statutes are addressing liability issues has evolved. Those liability issues create a broad and potentially sticky area for states down the road that includes criminal and civil liabilities for drivers or vehicle owners, as well as civil and product liabilities for manufacturers, suppliers and other companies for defects in their products.

"All of those tend to get sort of conflated just into liability and no one really knows what they're talking about when they use that (term)," Smith said. "But a number of automakers have pushed for a real elementary provision that showed up in (the Florida and Michigan statutes) but failed in California that more or less codifies existing law that if a vehicle is modified and the modification is the reason for a crash, then the original manufacturer is not liable for that (crash)."

What States Can Expect

Michigan's Kowall said his state's 2013 autonomous vehicle legislation evolved quite a bit as it was debated in Lansing and provoked significant input from those involved in the industry.

"We would amend it one way and Google didn't like it," he said. "We would amend it another way and General Motors didn't like it. And Ford wanted something. Then Chrysler wanted something. Then we started hearing from all the suppliers and they wanted to have some things built into it too. So it was a real work in progress right up to the very end."

Smith said other states attempting to tackle autonomous vehicle legislation can expect to get feedback from a number of sectors on a wide variety of issues. Automakers and suppliers like to see liability provisions included in legislation, for instance, while trial lawyer groups typically do not. Automak-





ers seek to make sure the definitions of “automated” or “autonomous vehicles” in the statutes exclude any of the driver assistance systems they’re introducing or plan to introduce in the near term.

“Beyond that, there hasn’t been a real desire (on the part of automakers) to see (legislation) extended into consumer operations,” Smith said. “Google, on the other hand, opposed Michigan’s (2013) bill because it did not include a consumer operation piece. I don’t think they want to have to go through another round of legislation if that becomes a reality.”

That theme about not wanting to duplicate efforts or reinvent the wheel is one lawmakers are likely to hear frequently as well.

“What we tend to see from the traditional automakers—and actually from everybody at this point—is (a desire) to not have a patchwork of different rules and for there to be some sort of model language that prevails among the states,” Smith said. “Florida was for a while that model. I expect that Michigan would become it or California’s rulemaking process would produce it.”

California’s 2012 statute requires the state depart-

ment of motor vehicles to adopt regulations governing the testing and use of autonomous vehicles on public roadways no later than Jan. 1, 2015. Proposed regulations were issued in November 2013 and submitted for public comment.¹⁴

That’s a process many in the industry wouldn’t want to see duplicated in other states, Smith said.

“Generally these groups—if they want a bill at all—want it to conform to general language and then require nothing else,” he said. “Not an extensive agency rulemaking, no additional regulations or rules at this point.”

But as things progress in the years ahead, the Googles and GMs of the world aren’t the only ones state lawmakers are likely to hear from as they seek to craft autonomous vehicle legislation, Smith said.

“It’s not just about the big companies who want or don’t want these bills,” he said. “There are other constituencies and other concerns and other potential sources of innovation that could get ignored, shut out or (be) unaddressed in the legislation.”

So far, state statutes have had relatively little to say about the possibility of alternative mobility concepts like the aforementioned low-speed shuttles or automated truck platoons. Also mostly unaddressed—universities doing relevant research in the field and how new requirements might apply to them and policy considerations for suppliers and other companies that aren’t the automakers or Google. Those interests simply haven’t been at the table in legislative efforts to date, Smith said, but they certainly could be in the future.

Future legislative efforts also may address innovation on a smaller scale, something that could produce its own thorny set of questions and concerns.

“Right now, it’s really expensive to build and sell a car and so not many companies are doing it,” Smith said. “But there is enthusiasm for startups or individuals or entrepreneurs potentially even tinkering with their cars and increasing the automation on them. That could be a source of really exciting innovation. It’s also a pretty obvious source of potential danger if you have people doing that recklessly and then putting those systems on the road.

“So to what extent does the state want to restrict or limit that kind of smaller scale innovation as a public safety measure and to what extent do they want to accommodate it? You can imagine the bigger companies are very interested in not accommodating that for understandable reasons. But there are countervailing arguments as well.”

What Should States Do?

If a state wants to wade into the issues involved with autonomous vehicles, what kind of legislation should be considered? There are, understandably, a variety of opinions on the subject.

“(Autonomous vehicle) technology has considerable promise for improving social welfare, but will require careful policymaking at the state and federal level to maximize its promise,” the Rand Corporation said in its January 2014 report. “Policymaker intervention to align the private and public costs of

this technology may be justified once its costs and benefits are better known. Further research and experience can help us better understand these uncertainties. But at this point, aggressive policymaker intervention is premature and would probably do more harm than good.”¹⁵

The National Highway Traffic Safety Administration’s 2013 preliminary policy statement outlines a number of recommendations for addressing the training and licensing of drivers and suggested requirements for businesses conducting on-road testing. But as mentioned previously, the statement also says:

“(The National Highway Traffic Safety Administration) does not recommend that states authorize the operation of self-driving vehicles for purposes other than testing at this time. We believe there are a number of technological issues as well as human performance issues that must be addressed before self-driving vehicles can be made widely available. Self-driving vehicle technology is not yet at the stage of sophistication or demonstrated safety capability that it should be authorized for use by members of the public for general driving purposes.”

If a state chooses not to follow that guidance, the transportation safety administration says the state should require that a person licensed to operate self-driving vehicles must be seated in the driver’s seat and be available at all times to assume control in situations in which the automated technology is not able to safely control the vehicle.

“As innovation in this area continues and the maturity of self-driving technology increases, we will reconsider our present position on this issue,” the National Highway Traffic Safety Administration statement said.¹⁶

In his 2012 white paper, Smith offered draft bill language for autonomous vehicle legislation, which he said could provide guidance for states as they look to change laws to more clearly accommodate higher levels of vehicle automation. He presented the caveat that the draft language should, “provide at most a starting point for any jurisdiction’s analysis” and that simply adopting the language, “would be incomplete and possibly premature.”

The draft bill includes recommended language on vehicle registration and licensing, rules of the road and other areas.

Smith also writes in the white paper: “Consistency among states—and coordination with the federal government—may be highly desirable. At the same time ... state vehicle codes vary in both form and substance. A legislature may want or need to delegate more or less discretionary authority to its department of motor vehicles or other responsible agency. And new technologies or business cases may require or merit revision of certain provisions—or even the entire approach.”¹⁷

Governing magazine in August 2013 identified a list of six questions states may need to ask about self-driving cars as part of future legislative efforts. They include not only what to do about driver training and vehicle registration issues, but also whether speeding or distracted driving would be possible in these

vehicles of the future.

Of the latter, the article noted: “Without clear legal language saying otherwise, the person using the autonomous vehicle is still considered the driver and would have the same legal obligations as any other driver in the state: no texting (if it’s prohibited) and certainly no drinking. But Nevada’s law has a twist and specifically says autonomous vehicle drivers can text (though drunken driving is still prohibited). That would seemingly suggest states have the ability to create narrowly tailored laws addressing specific types of distractions.”¹⁸

Timetable for Implementation

One other factor for states to ponder is how soon fully developed, autonomous vehicle technologies will be upon us. The jury is still out there as well. The year 2025 is the date often mentioned as to when we may finally see the self-driving car.

At the 2013 Los Angeles Auto Show, Jeff Kiel, president for North America at automotive supplier Continental, said by 2025 there will be vehicles so automated that “the driver can really disengage from the driving event and do some other things.”¹⁹

But Smith believes despite some promising signs, the date is hardly set in stone.

“If I could predict the time frame, I would be flying on a private plane right now rather than sitting in Newark Airport,” Smith said in February 2014.



“Self-driving (vehicles) have been 20 years away since the 1930s. ... Now people are saying another 10 years away. So ask me again in 2024 to see how close we are. There’s been a tremendous explosion of the enabling technologies and I expect that we will be surprised at so many things that happen in the next decade.”

Smith does believe we’ll see early iterations of these technologies very soon, however.

“Cars that can drive themselves under optimal freeway conditions possibly with the engagement of the human—those are imminent,” he said. “Automakers will be coming out with those in the next three years. The question is whether they fall under the definitions of these (pieces of) legislation and whether any legislation is necessary for them. And there I think the technology really needs to drive (the policy). The kind of vehicles that are truly driving everywhere or driving significant portions with a human who is completely disengaged (are) certainly more distant and it’s really difficult to come up with a regulatory regime right now that contemplates those when I don’t think you can even really speak to what their implementation will be like.”

But Smith said it shouldn’t be necessary for state legislators to keep up with the latest technological advancements to determine when new legislation may be needed to address them.

“What would be useful is (for lawmakers) to develop the relationships and the monitoring within the administrative apparatus so that a state agency can give notice when something is coming down the line and to say ‘Yes, this is actually necessary at this point and we’ve thought about it and here’s what needs to be done,’” he

said. “What I liked about (the) Florida and Michigan (bills) is that they do give that authority and obligation to a state agency to say ‘Hey, pay attention and give us a report in a couple of years and let us know what’s up.’”

Smith argues that by enacting legislation or regulations, and perhaps by investing in research, policymakers may be able to do their part to help speed along these technologies so the future can arrive even faster.

“I would say the trigger might not actually be time as much as what the federal government does and what states like Michigan and California do,” he said. “When California comes out with its (final rulemaking), I think that would be a really appropriate moment for other states to figure out their approach and the extent to which they want to incorporate California’s processes into their own.”

Others, however, see a number of potential obstacles on the horizon that could inhibit the deployment and adoption of autonomous vehicles. The Eno Center for Transportation’s 2013 policy paper cited potentially high vehicle costs, differing vehicle licensing requirements, insurance and liability issues, electronic security, privacy concerns and lagging and underfunded research as areas of concern.²⁰

The Rand report sees the “50-state problem” as a potential inhibitor for autonomous vehicles. Differences in state testing and certification processes for autonomous vehicles, distracted driving laws and state tort laws were sources of concern for deployment of the vehicles among those the Rand researchers interviewed.

Rand argues that policymakers should avoid premature regulation, consider updating distracted driving laws, clarify data ownership and address privacy issues, and put systems in place to compare autonomous



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vehicles to the performance of average human drivers.

The Rand report also warns that the path to autonomous vehicles achieving their full potential is by no means preordained and there may be unforeseen hiccups along the way. Policymakers will want to make the right moves to help ensure the benefits of the technologies involved can be realized as soon as possible.

“The history of technology in general—and transportation in particular—is littered with promising ideas that never achieved widespread adoption,” the report said. “And even if widespread adoption occurs, thousands may be injured or killed in crashes if that adoption is unnecessarily delayed. Conversely, a hastily enacted mandate for suboptimal technology could lead to enormous lost social welfare.”²¹

Michigan’s Kowall said states should aim for flexibility in the legislative actions they take now—flexibility that will allow for policies to shape a future that may be beyond even the imagination of science fiction.

“The technology is changing by the minute,” he said. “So it’s a matter of when we’re crafting (legislation) to do it in a way that’s going to be able to be evolutionary.”



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