Issue: In 2017, 12 states approved self-driving vehicle-related legislation including measures to allow truck platooning, identify an agency to oversee testing and preempt local regulation. As the year wound down, the National Highway Traffic Safety Administration released a streamlined version of policy guidance on automated driving systems and Congress was debating federal legislation that could preempt state authority in some areas. The growing use of drones in a variety of capacities also attracted the interest of states with 23 pieces of legislation enacted in 17 states. Federal drone legislation was also considered in conjunction with a reauthorization of the Federal Aviation Administration, but Congress ultimately approved just a six-month FAA extension that did not include drone language.

Autonomous Vehicles

2017 was a big year for autonomous vehicles—both in terms of state and federal policy and within the industry that is doing the research to bring self-driving cars to the nation’s roads. But if there is one metric that explains the urgency of the interest in this potentially game-changing technology it could be this one: In 2017, we learned that traffic deaths rose 5.6 percent in 2016 [2]. More than 37,400 people were killed. That was on top of an 8.4 percent increase in 2015, the single highest yearly jump in motor vehicle fatalities in 50 years.

Many within the industry and public policy communities have high hopes that self-driving cars can substantially reduce the 94 percent of traffic crashes caused by human error.

“The faster we can test and deploy these automated technologies, the more lives we’re going to save,” said Jonathan Weinberger, vice president of tech policy at the Alliance of Automobile Manufacturers, during the June 2017 CSG Autonomous and Connected Vehicle Policy Academy [3] in Detroit.

A variety of players made significant moves to test and deploy the technologies in 2017, including traditional automakers like General Motors and Ford, upstarts like Tesla, tech companies like the Google off-shoot Waymo, and ride-hailing innovators Uber and Lyft.

But the landscape of efforts to regulate all that testing and deployment also became more complicated in 2017. Twelve states (AR, CA, CO, CT, GA, IL, NV, NY, NC, SC, TN, TX) approved self-driving vehicle-related legislation including measures to allow truck platooning, identify an agency to oversee testing and preempt local regulation. Two other states—North Dakota and Vermont—approved measures to study autonomous vehicles and their potential impacts.

This may not have been quite the tsunami of legislation that some had feared as the year began, but the measures add up to a variety of different approaches to encouraging the development of the industry around the country.

Two federal efforts in the Fall sought to provide some clarity and uniformity to these efforts. Congress
debated the merits of legislation that would give federal law priority over state laws when it comes to regulating the safety and design of autonomous vehicles. And the National Highway Traffic Safety Administration released a revised version of a policy guidance document originally issued in 2016. It includes a section on “Best Practices for Legislatures Regarding Automated Driving System” in place of the previous version’s “Model State Policy” but remains largely unchanged in how it characterizes potential areas of state jurisdiction in this policy area, namely licensing and registration, traffic laws and regulations, safety inspections, and insurance and liability.

In addition to the policy concerns represented by autonomous vehicles, another hurdle for policymakers to overcome may be public acceptance.

Another presenter at the CSG policy academy in Detroit, Jennifer Ryan, director of state relations at AAA, said recent public opinion surveys of AAA members demonstrate the challenge that could lie ahead.

“Our survey found that despite the prospect that autonomous vehicles (can be) safer, more efficient and more convenient ... three quarters of drivers report feeling afraid to ride in a self-driving car,” Ryan said. “About half of drivers feel less safe at the prospect of sharing the road with a fully automated vehicle and one-third felt that it wouldn’t make a difference. Only 10 percent report they would actually feel safer sharing the road with a driverless car.”

Fortunately for autonomous vehicle advocates, a couple of public education campaigns also got underway in late 2017. Computer chip-making tech company Intel produced a broadcast and digital ad campaign featuring NBA basketball star LeBron James aimed at building trust in self-driving cars. And the National Safety Council partnered with Waymo, Mothers Against Drunk Driving, the Foundation for Blind Children and others on a website called “Let’s Talk Self-Driving,” which touts the benefits of autonomous vehicles to end drunk driving, provide independence to seniors and individuals with disabilities, make daily commutes more productive, and improve safety on the nation’s roads.

Two Other Revolutions: Electrification and Shared-Use Mobility

While autonomous vehicles may have the potential to produce numerous benefits, many are hoping that their introduction into the marketplace and proliferation can be managed in such a way that it happens in conjunction with two other transportation technologies: the electrification of the vehicle fleet and the transition away from vehicle ownership to shared-used mobility via smartphone-enabled ride-hailing services like Uber and Lyft.

“We think the most public benefits can be derived when we see these three revolutions happening concurrently,” said Mollie D’Agostino, outreach manager for a project called the 3 Revolutions Policy Initiative at the University of California-Davis, during the Detroit policy academy.

In 2017, the indicators for both electric vehicles and the ride-hailing industry were somewhat mixed. On electric vehicles:

- A study by AAA found that some 30 million people plan to make their next car an electric or hybrid vehicle.
- Ten states approved new fees for electric and/or hybrid vehicles to help pay for infrastructure in 2017. Many have also started to phase out the tax incentives and other measures enacted to entice drivers to purchase such vehicles.
- Volvo announced they would produce only electric or hybrid vehicles starting in 2019. General Motors said they too were envisioning an “all-electric future” although GM officials declined to
give a date when the company would cease production of gas and diesel vehicles.

- **A Dutch bank predicted** [11] that all new cars sold in Europe will be electric by 2035, driven by government support, falling battery costs and economies of scale. **France and the United Kingdom** [12] both said they would ban sales of diesel and gasoline-fueled cars by 2040. Closer to home, a state lawmaker in California **has suggested** [13] phasing out gas car sales in the Golden State by 2040.

- With demand for the rechargeable lithium-ion batteries that go into electric cars soaring, **some are concerned** [14] the demand could exceed the supply of raw materials that make up the batteries, including lithium and cobalt.

- To much fanfare, Tesla introduced the Model 3, its first mass-market electric car that comes equipped with the company’s autopilot feature. But in October, the company **fired hundreds of workers** [15] after production delays.

- The governors of Colorado, Idaho, Montana, Nevada, New Mexico, Utah and Wyoming **signed a memorandum of understanding** [16] to create a network of recharging stations that would allow electric vehicles to travel easily along the region’s 5,000 miles of freeway.

- **A report from Morgan Stanley** [17] said $2.7 trillion in investment in electric vehicle infrastructure is needed in order to facilitate a fleet of 526 million vehicles expected to be on the nation’s roads in 2040.

The ride-hailing industry was also the subject of numerous stories in 2017. Among them:

- **A University of Colorado study** [18] found that ride-hailing companies like Uber and Lyft add tons of traffic to Denver and Boulder streets. **A study of seven major metropolitan areas from the UC Davis Institute of Transportation Studies** [19] found that while ride-hailing has caused a slight decrease in car ownership, it has also reduced the use of public transit, biking and walking and thus likely produced an increase in both traffic and the number of miles traveled in a vehicle.

- **MIT’s Computer Science and Artificial Intelligence Laboratory said** [20] carpool services such as UberPool and Lyft Line could reduce the number of vehicles on the road by 75 percent.

- **A Reuters/Ipsos poll** [21] of American adults who sold or traded in a vehicle over a recent 12-month period found that while most ended up getting another car, 9 percent of the group turned to ride-hailing services as their main way of getting around.

- Uber had a rough year marked by public relations crises, a sexual harassment scandal and the departure of founder and CEO Travis Kalanick. Competitor Lyft meanwhile **reportedly** [22] expanded its service, grew its ridership and welcomed new investors.

- States like Florida, New York and Texas **passed legislation** [23] to pre-empt local regulation of ride-hailing companies that included mandated driver background checks, insurance requirements and other measures which in some cases had prompted the companies to shut down operations in some cities.

The myriad policy issues involved in these three transformative transportation technologies appear likely to continue to be a focus for states in 2018 and beyond. Ensuring their convergence will challenge policymakers even more in the years ahead.

**CSG Resources**


- **“State, Federal Roles on Autonomous Vehicles Could Come into Sharper Focus This Fall,”** [27] CSG


Further Reading: Autonomous Vehicles—State & Local Policies & Activities

- “California clears the way for testing of fully driverless cars. Local, federal interests have concerns,” [42] Los Angeles Times, November 14, 2017.
- “(New York City) mayor will fight ‘vigorously’ against Cuomo-approved autonomous vehicle tests,” [47] Politico, October 19, 2017.
- “Self-driving cars are on a collision course with our crappy cities,” [50] The Verge, October 13, 2017.
- “California will soon allow self-driving cars to operate without a driver,” [54] Business Insider, October 11, 2017.
- “Driverless vehicles could bring out the best—or worst—in our cities by transforming land use,” [57] The Conversation, October 3, 2017.

Further Reading: Autonomous Vehicles—Federal Policy

“Let’s Talk Self-Driving” public education campaign [7], National Safety Council.
October 6, 2017.


Further Reading: Autonomous Vehicles—Industry


“Lidar costs $75,000 per car. If the price doesn’t drop to a few hundred bucks, driverless cars won’t go mass market,” [111] Los Angeles Times, December 11, 2017.


“Waymo has a big lead in driverless cars—but here’s how it could lose it.” [121] Ars Technica, October 31, 2017.


“Are those 80,000 pound trucks tailgating each other? Soon it may be perfectly normal—and safe.” [125] The Washington Post, October 22, 2017.


“Tesla could have millions of cars on the road by 2023—taking a huge lead in the self-driving car race.” [136] Business Insider, September 26, 2016.


“Audi’s new A8 will have Level 3 autonomy via ‘traffic jam pilot.’” [145] Tech Crunch, July 11, 2017.


**Further Reading: Drones**

- “In the future, drones will charge your electric car while you’re driving,” [151] Quartz, October 17, 2017.

**Further Reading: Electric Vehicles**

- “2018 will be the year of the electric car,” [159] CNN, December 21, 2017.
- “The growing list of countries vowing to ban the sale of gas-powered cars,” [166] Quartz, October 17, 2017.
- “National Plug-In Electric Vehicle Infrastructure Analysis,” [171] U.S. Department of Energy,
September 2017.


Further Reading: Ride-Hailing

- “If You Drive Less Than 10,000 Miles a Year, You Probably Shouldn’t Own a Car.” [192] City Lab, October 16, 2017.


Further Reading: Transportation & Technology


“Columbus Bus Drivers Take Public Stand on Driverless Transit.” [213] Next City, December 18, 2017.


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