

**TO: Majority and Minority Staff of Senate Commerce, Science, and Transportation Committee and House Energy and Commerce Committee**

**FROM: Advocates for Highway and Auto Safety, Consumer Federation of America, KidsAndCars.org, and Trauma Foundation**

**DATE: March 17, 2020**

**RE: Request for Input on Draft Autonomous Vehicle Legislative Language**

### **Introduction**

Thank you for the opportunity to provide feedback to the final seven sections of potential autonomous vehicle (AV) legislation. Please note that in the attached redlined draft legislative language, there may be additional recommendations not necessarily included in this memo. Similarly, in this memo we detail concerns which may not be directly attached to the redlined legislative language as well as provide justifications for changes we did redline.

As you have announced that you have completed the distribution of draft legislative sections, we would like to reiterate that stakeholder feedback should be shared publicly to provide transparency and the opportunity for collaboration as well as the identification of shared policy priorities in order to forge a path forward on the Nation's first AV law. Because this law will have long-lasting and wide-reaching impacts on safety for all road users, infrastructure, mobility, accessibility, the environment and land use, public transit, first responders and law enforcement, it must be done with robust discussion, debate and deliberation.

We would like to begin by reiterating our safety priorities and policy positions that are also included in more detail in our previous memos. They remain relevant and vital in developing any legislation on AVs. In sum, they are:

- Our Nation's first law on AVs must ensure the safe development and deployment of all AVs, including partially automated vehicles whether for sale or use as a pay-for mobility option. As the Insurance Institute for Highway Safety (IIHS) recently noted in its [March 2020 report](#) on Level 2 AVs, "All these systems can fail to follow the road when confronted with situations as common as a hill or curve." Moreover, IIHS determined that partially automated driving systems "need robust methods of monitoring driver engagement and more effective ways of regaining the driver's attention when it wanders." These dangerous and concerning shortcomings that have already contributed to fatal crashes must be addressed in federal legislation,
- The February 25, 2020 National Transportation Safety Board (NTSB) investigation of the March 23, 2018 Tesla crash is a clarion call for legislation that directs essential actions and oversight by the U.S. Department of Transportation (DOT). (See discussion below.)
- Some U.S. companies are working toward the goal of developing a fully autonomous vehicle that will not require exemptions from existing federal motor vehicle safety standards (FMVSS). As such, it will be of key importance that the U.S. DOT fulfill its statutory safety mission and establish regulations that set minimum safety performance standards and require industry accountability *before* driverless cars are made available in the marketplace and sold to the public.

- Some are urging a rush to pass legislation and set aside safety rules on the false premise that the U.S. is falling behind other nations in developing AVs. However, no country is selling fully automated vehicles to the public. For example, Germany requires a human to be behind the wheel of a driverless car in order to take back control and has other important elements including requirements for vehicle data recording. In the United Kingdom, testing has largely been limited to a handful of cities, and the government has proposed and published a detailed code of practice for testing AVs. In Canada, several provinces prohibit certain types of AVs from being sold to the public. In Asia, Japan has allowed on-road testing with a driver behind the wheel and is currently working on regulatory and legal schemes for controlling the commercial introduction of AVs, but even so has not begun to address the highest levels of automation. In China, all AV operations remain experimental and in fact it was just recently reported that they have delayed the goal of widespread self-driving deployment to 2025. In sum, fully automated vehicles are not being sold to the public anywhere and by many accounts, none will be for a significant amount of time. Moreover, numerous auto and tech industry executives have stated that fully autonomous vehicles ready for commercial deployment are potentially decades away. Where the U.S. is falling behind is in establishing comprehensive safeguards to ensure progress happens without jeopardizing or diminishing public safety.
- The general public is still deeply concerned and increasingly skeptical of driverless cars. Many public opinion polls, including one released in January 2020 by Advocates for Highway and Auto Safety (Advocates) (See Appendix A), revealed that 85% of respondents in all areas of the country and across generations, region and type of community have a high level of apprehension because of safety concerns. Furthermore, 71% overwhelmingly support minimum government safety requirements for new driverless car technologies. This poll also demonstrated that a large majority of the public (68%) would be reassured about the technology if minimum safety requirements were mandated. Minimum performance (not design) standards set the basement, not the ceiling, for innovation and safety. And, they will provide much needed security to a distrustful public in need of assurances to ride in these vehicles.

Lastly, we reiterate our serious concerns and objections to the process of requesting and submitting comments on piecemeal sections of draft AV legislation. Full analysis is nearly impossible given many components still remain in brackets or are left entirely blank. (See written testimony of Advocates for Highway and Auto Safety President Cathy Chase to the House Energy and Commerce Subcommittee on Consumer Protection and Commerce, February 11, 2020, “Autonomous Vehicles: Promises and Challenges of Evolving Automotive Technologies,” starting on p. 7 and all previous written responses to draft legislative sections.)

### **NTSB Investigation Shows Serious and Unacceptable Safety Lapses by DOT and Industry**

It is of tremendous importance to prioritize and spotlight actions by the NTSB during a public meeting, *Collision Between a Sport Utility Vehicle Operating With Partial Driving Automation and a Crash Attenuator*, on February 25, 2020, regarding their investigation into the probable cause for the [fatal crash](#) of a Tesla Model X in Mountain View, California, on March 23, 2018. The NTSB released an [abstract](#) (quoted below) of the meeting which includes initial findings and

recommendations and the reissuance of prior findings and recommendations applicable to AV development and safety. These findings and recommendations and the final report, which will be released in the coming weeks, should be incorporated as appropriate in any legislation proposed by the staff of the U.S. Senate Committee on Commerce, Science, and Technology and the U.S. House of Representatives Committee on Energy and Commerce. The initial issues, findings and recommendations of the NTSB and relevance to exigent safety concerns, including for partial AVs, consist of:

### **Absence of Vision Test Thwarts Proper Detection and Response to the Operating Environment:**

#### *Issue:*

“The Tesla’s collision avoidance assist systems were not designed to, and did not, detect the crash attenuator. Because this object was not detected, (a) Autopilot accelerated the SUV [sport utility vehicle] to a higher speed, which the driver had previously set by using adaptive cruise control, (b) the forward collision warning did not provide an alert, and (c) the automatic emergency braking did not activate”; and,  
“For partial driving automation systems to be safely deployed in a high-speed operating environment, collision avoidance systems must be able to effectively detect potential hazards and warn of potential hazards to drivers.”

#### *Findings:*

- “In order for driving automation systems to be safely deployed in a high-speed operating environment, collision avoidance systems must be able to effectively detect and respond to potential hazards, including roadside traffic safety hardware, and be able to execute forward collision avoidance at high speeds.”
- “The Tesla’s collision avoidance systems were not designed to, and did not, detect the crash attenuator at the end of the gore, nor did the National Highway Traffic Safety Administration [NHTSA] require such capability; consequently, the forward collision warning system did not provide an alert and the automatic emergency braking did not activate.”

#### *Recommendations:*

- To NHTSA: “Expansion of NHTSA’s New Car Assessment Program testing of forward collision avoidance system performance.”
- To NHTSA: “Evaluation of Tesla ‘Autopilot’- equipped vehicles to determine if the system’s operating limitations, foreseeability of misuse, and ability to operate vehicles outside the intended operational design domain pose an unreasonable risk to safety.”
- Prior Recommendation Reiterated to NHTSA: “Develop and apply testing protocols to assess the performance of forward collision avoidance systems in passenger vehicles at various velocities, including high speed and high velocity-differential. (H-15-4)”

### **Severe Lack of Driver Monitoring and Engagement:**

#### *Issue:*

“Requirements are needed for driver monitoring systems for advanced driver assistance systems that provide partial driving automation (SAE Level 2 systems)”.

#### *Findings:*

- “The Tesla Autopilot system did not provide an effective means of monitoring the driver’s level of engagement with the driving task.”

- “Because monitoring of driver-applied steering wheel torque is an ineffective surrogate measure of driver engagement, performance standards should be developed pertaining to an effective method of ensuring driver engagement in SAE Level 2 partial driving automation systems.”

*Recommendations to NHTSA:*

- “After developing the performance standards for driver monitoring systems recommended in Safety Recommendation H-20-X, require that all new passenger vehicles with Level 2 automation be equipped with a driver monitoring system that meets these standards.”

**Alarming Failure to Identify Operational Design Domain (ODD) and Restricting Use:**

*Findings:*

- “If Tesla Inc. does not incorporate system safeguards that limit the use of the Autopilot system to those conditions for which it was designed, continued use of the system beyond its operational design domain is foreseeable and the risk for future crashes will remain.”
- “The National Highway Traffic Safety Administration’s failure to ensure that vehicle manufacturers of SAE Level 2 driving automation systems are incorporating appropriate system safeguards to limit operation of these systems to the operational design domain compromises safety.”

*Recommendation:*

- Prior Recommendation Reiterated to NHTSA: “Develop a method to verify that manufacturers of vehicles equipped with Level 2 vehicle automation systems incorporate system safeguards that limit the use of automated vehicle control systems to those conditions for which they were designed. (H-17-38)”

**Urgent Need for Data Requirements and Event Data Recorders:**

*Findings:*

- “Vehicle performance data associated with activation and engagement of partial driving automation systems on vehicles involved in crashes are not required nor available on most event data recorders.”
- “A standardized set of retrievable data is needed to enable independent assessment of automated vehicle safety and to foster automation safety improvements.”

*Recommendations to DOT:*

- Prior Recommendation Reiterated to DOT: “Define the data parameters needed to understand the automated vehicle control systems involved in a crash. The parameters must reflect the vehicle’s control status and the frequency and duration of control actions to adequately characterize driver and vehicle performance before and during a crash. (H-17-37)”
- Prior Recommendation Reiterated to NHTSA: “Use the data parameters defined by the U.S. Department of Transportation in response to Safety Recommendation H-17-37 as a benchmark for new vehicles equipped with automated vehicle control systems so that they capture data that reflect the vehicle’s control status and the frequency and duration of control actions needed to adequately characterize driver and vehicle performance before and during a crash; the captured data should be readily available to, at a minimum, National Transportation Safety Board investigators and National Highway Traffic Safety Administration regulators. (H-17-39)”

- Prior Recommendation Reiterated to NHTSA: “Define a standard format for reporting automated vehicle control data and require manufacturers of vehicles equipped with automated vehicle control systems to report incidents, crashes, and vehicle miles operated with such systems enabled. (H-17-40)”

**Lax and Reactive Oversight:**

*Issue:*

- “The US Department of Transportation and the National Highway Traffic Safety Administration (NHTSA) have taken a nonregulatory approach to automated vehicle safety. NHTSA plans to address the safety of partial driving automation systems through enforcement and a surveillance program that identifies safety-related defect trends in design or performance. This strategy must address the risk of foreseeable misuse of automation and include a forward-looking risk analysis.”

*Findings:*

- “The National Highway Traffic Safety Administration’s approach to the oversight of automated vehicles is misguided, because it essentially relies on waiting for problems to occur rather than addressing safety issues proactively.”
- “It is essential that the National Highway Traffic Safety Administration’s surveillance and defect investigation program closely examine issues related to foreseeable misuse of automation and perform a forward-looking risk analysis to identify partial driving automation system defects that pose an unreasonable risk to safety.”
- “The National Highway Traffic Safety Administration’s Office of Defects Investigation has failed to thoroughly investigate the Tesla Autopilot design regarding the degree to which drivers are currently misusing the system, foreseeable consequences of continued use by drivers beyond the system’s operational design domain, and the effectiveness of the driver monitoring system in ensuring driver engagement.”

NTSB issues, findings and recommendations support our stated concerns and still remain ignored and unaddressed by NHTSA. The need for action to protect safety is bolstered by the consequences of real-world crashes and must be paramount in AV legislation.

**Analysis of Seven Draft Sections**

**Savings Provision (PAT20109):**

*Issue:* The emergence of experimental autonomous commercial motor vehicles (ACMVs) and their interactions with conventional motor vehicles, bicyclists and pedestrians, as well as infrastructure impacts pose numerous challenges and demand an enhanced level of federal and state oversight. While this provision excludes the legislation from covering ACMVs, it is imperative that they be regulated before being widely operated on public roads. This bill should provide robust regulations for passenger motor vehicles as it will likely be used as the basis for subsequent legislation regarding vehicles not covered in this bill. An 80,000-pound truck relying on unregulated and potentially inadequately tested technology on public roads may have catastrophic consequences if these vehicles are only subject to voluntary guidelines. In addition, automated passenger carrying commercial motor vehicles that may carry as many as 53 passengers demand vigorous and comprehensive safeguards unique to this mode of travel.

The advent of this technology must not be used as a pretext to eviscerate essential safety regulations administered by the Federal Motor Carrier Safety Administration (FMCSA) or abdicate pending regulatory action mandated by Congress. An autonomous driving system does not diminish or eliminate public safety protections provided by the Federal Motor Carrier Safety Regulations (FMCSRs) and therefore should not be used as the basis to apply for or be granted exemptions from FMCSRs.

Minimum performance requirements and protections must include, but are not limited to:

- A driver with a valid commercial driver's license (CDL) must be behind the wheel for the foreseeable future. Drivers operating an ACMV must have additional training (including hands-on experience) and an endorsement on their CDL.
- Minimum performance standards for automated driving systems (for commercial and passenger AVs, outlined in December 13, 2019 memo).
- Required submission and NHTSA analysis of comprehensive safety assessment reports that include detailed documentation regarding the safety performance of the automated driving system.
- Safety-relevant data collection and standardization, as outlined below in section on "Crash Data".
- Any safety defect involving an ACMV system must be remedied before the affected vehicles are permitted to return to operation.
- FMCSA must establish appropriate and stringent out-of-service (OOS) criteria for ACMVs.
- A U.S. DOT maintained database for ACMVs with information on limitations and capabilities, exemptions (if granted), and level of automation that includes changes following over the air (OTA) updates.
- Additional operating authority for motor carriers using ACMVs. Prior to being granted additional operating authority, an on-site inspection of the motor carriers' operations shall be conducted and carriers which have had operating authority suspended and/or revoked within the previous five years shall not be permitted to operate ACMVs.
- No exemptions should be granted from safety standards. Sales of CMVs in the U.S. are significantly less than passenger vehicle sales and exempting large numbers of CMVs from FMVSS is unnecessary and will result in a significant threat to public safety.

#### **Authorization of Appropriations (PAT20124):**

*Issue:* NHTSA must be provided with additional resources and enforcement authorities. Ensuring NHTSA has adequate funding, expertise, staff, and enforcement authority is essential for the Agency to successfully carry out its statutory mission and address the multiple challenges presented by the deployment of self-driving technologies. However, the Agency is chronically underfunded. NHTSA's Operations & Research (O&R) budget is meager (only about \$361 million on average annually in the past 2 years) compared to the enormous and growing responsibilities of the Agency, particularly in regard to autonomous driving technology and AVs.

Of extreme concern is the Administration's proposal to cut \$49 million in NHTSA's O&R budget for fiscal year 2021 -- a drastic 13% reduction. The Agency cannot effectively oversee a multi-billion-dollar industry and protect hundreds of millions of motorists without a significant increase in resources -- both financial and staff. Currently, 95 percent of transportation-related

fatalities and 99 percent of transportation injuries involve motor vehicles. Yet, NHTSA receives only one percent of the overall DOT budget. Furthermore, it is estimated that currently more than 70 million cars on the road have an open recall. (Please see comments in redline of draft legislation for additional justification for needed increases.)

*Problems Identified and Actions Needed:*

- The funding amount to be appropriated to the Secretary is blank and in brackets; the timeframe is also in brackets.
- The language should be updated to include the authorization of appropriations every year, starting with \$250,000,000 for fiscal year (FY) 2021 and then increasing by \$100 million every subsequent year through FY 2031 with a review undertaken by the Government Accountability Office (GAO) after FY 2025 to confirm the Agency has the proper funds and staff needed to oversee and regulate AVs. The Agency would receive an additional 5 percent increase each year if the deadlines for issuance of minimum performance requirements established in the legislation are met.
- To accomplish its mission, NHTSA must also be given imminent hazard authority and criminal penalty authority, and the cap on civil penalties must be removed.

**Dual Use Vehicle Safety (PAT20125):**

*Issue:* Manufacturers are currently prohibited by law from rendering safety devices inoperable in a vehicle available for sale without getting a specific government exemption. The staff draft text would allow manufacturers to unilaterally “turn off” safety systems related to the driving task, such as the steering wheel and brake pedals, during autonomous operation without any government oversight.

*Problems Identified and Action Needed:*

- This language is a drastic departure from current law that would imperil the lives of all road users. As such, it should be stricken in its entirety.

**Crash Data (PAT20126):**

*Issue:* Standardized relevant safety data, beyond simply crash data, for vehicles equipped with automated driving systems should be collected and made publicly available with appropriate privacy protections. Event data recorders (EDRs) should be mandatory in all new vehicles with sufficient parameters for capturing all necessary data. With the increasing number of vehicles of different automation levels being tested and some being sold to the public, standardized recording and access to automated driving system and AV safety relevant data are essential for the proper oversight and analysis of crashes.

The lack of standardization and collection of data is already compromising understanding and investigations of AVs. For example, as a result of the 2016 fatal Tesla crash in Florida, the NTSB has called for the U.S. DOT to act on data collection. The NTSB recommended that NHTSA implement data collection requirements for all new vehicles equipped with AV control systems and to define a standard format for reporting this data. The NTSB also called for this data to be readily available to, at a minimum, the NTSB and NHTSA. Furthermore, this data

should be made public as ultimately that is who is impacted. The NTSB reiterated this recommendation last month during the Board's hearing on the Tesla crash that occurred in Mountain View, California in March 2018.

While there is currently a NHTSA requirement for what data voluntarily-installed EDRs must capture, this information is insufficient to properly ascertain information about crashes involving AVs. A mandatory requirement for EDRs on every vehicle is long overdue by the Agency. IIHS also reiterated the need for EDRs in the August 7, 2018, Status Report: "IIHS has asked the Agency to require event data recorders to encode information on the performance of automated driving systems in the moments before, during and after a crash. This information would help determine whether the human driver or vehicle was in control and the actions each entity took prior to the event."

*Problems Identified and Actions Needed:*

- The time frame for revision of the crash data collection system should be changed from three years to two years.
- Manufacturers must be required to report all AV safety critical events to NHTSA including crashes and disengagements quarterly, and this information should be made public.
- All vehicles, particularly those equipped with an automated driving system, must be required to be equipped with an EDR to capture data regarding the performance of the system before, during and after crashes and safety critical events. Such data as collected by the EDR should be standardized and accessible to law enforcement, safety investigators, and the public, with appropriate privacy protections.
- NHTSA's crash databases should be updated to capture AV crashes. This includes a revision of Early Warning Data to require manufacturers provide more information about crashes and incidents that could indicate a safety defect and lead to a recall.
- NHTSA should establish a structure to facilitate mandatory sharing of AV failures and vulnerabilities by manufacturers in a timely manner, and the public should be informed of any failures that affect public safety.
- The Model Minimum Uniform Crash Criteria (MMUCC) has significant limitations regarding the collection of detailed data necessary to accurately assess the performance of AVs in crashes due to realities regarding on-scene information collection. Therefore, additional avenues for data collection must be established and existing practices revised and enhanced including the electronic capture of information by law enforcement at the crash scene.
- The Vehicle Identification Number (VIN) should be revised to indicate that the vehicle is equipped with an automated driving system.
- The Secretary should be required to conduct research on the benefits of automatic crash data notification systems that can assist emergency personnel in responding to incidents and provide essential crash data to NHTSA in a timely manner.

**Consumer Education (PAT20127):**

*Issue:* Consumers must be given sufficient and accurate information about AVs. Every manufacturer should be required to provide consumers with information about the capabilities,

limitations and exemptions from safety standards, if granted, for all vehicles sold in the U.S. During a September 2017 NTSB hearing on the 2016 fatal Tesla crash, the Board correctly criticized the lack of adequate and consistent consumer information about the capabilities, limitations, and any exemptions granted for AV systems.

*Problems Identified and Actions Needed:*

- NHTSA should immediately start a rulemaking to identify requirements to provide proper consumer education and information -- not be directed to undertake a study. As such, that section must be removed.
- 180 days after enactment, the Agency should issue a final rule to inform consumers at the point of sale and in the owner's manual, including publicly accessible electronic owner's manuals, of the capabilities and limitations, the ODD, the roles and responsibilities of the human while the system is engaged and when it departs the ODD, and the override procedures.
- Similar to the user-friendly safecar.gov website, NHTSA must establish a website accessible by VIN with basic safety information about the AV level, safety exemptions (if granted), and limitations and capabilities of the AV driving system, including any changes made to the software by OTA updates. The website will also allow NHTSA and other research groups to perform independent evaluations of the comparative safety performance of AV systems.
- NHTSA should issue a final rule stipulating that the AV may not operate outside of its defined ODD and require countermeasures and effective warnings to the operator through performance standards to address foreseeable misuse of the AV systems.

**Personnel and Staffing (PAT20128):**

*Issue:* NHTSA must be given the resources to hire qualified individuals required to properly regulate this complex technology especially given these specific skills and knowledge are in high demand. In addition, skilled staff is critical to ensuring a sound exemption determination process which should not be undercut or compromised by a lack of resources.

*Problems Identified and Actions Needed:*

- The personnel and staff recruited by NHTSA must significantly increase and have expertise in partially automated systems in addition to highly automated vehicles.
- Additional areas of expertise are needed and should include, but not be limited to, machine learning and artificial intelligence, functional safety, sensors, human-machine interface, data, disability and accessibility, as well as land use, transit and environmental impact.
- The required update, which requires a review of resources and staffing at DOT, should span the duration of the legislation rather than happen only once at the three-year mark.
- Require review by the GAO within five years of enactment to determine and confirm that DOT has suitable staff to regulate AVs. The report must be made available for public review and comment.
- The Highly Automated Systems Safety Center of Excellence was only recently established. Therefore, insufficient evidence exists to assess the appropriateness of this provision.

## **Cybersecurity (CYBER\_01):**

*Issue:* Issuing a cybersecurity standard is vital for safety and protection. The public also supports such a commonsense safeguard. According to a recent public opinion poll commissioned by Advocates, 74 percent of respondents support government-issued cybersecurity rules to protect against the hacking of AVs. There have been numerous high-profile cyber-attacks on a variety of industries and AVs will not be immune to this threat. In 2015, hackers demonstrated their ability to take over the controls of a SUV that was traveling 70 miles-per-hour on an Interstate outside of St. Louis, MO by accessing the vehicle's entertainment system using a laptop computer located miles away from the vehicle. Recently, researchers also demonstrated that a driving automation system can be vulnerable to attacks where a slight alteration to the appearance of a speed limit sign caused a Tesla operating with "Autopilot" to accelerate. Thus, the deficiencies in an automated system's programming can be easily exploited to cause the vehicle to engage in dangerous actions without ever having to gain access to the vehicle itself. Security for AVs should be of great concern as weaponizing traditional vehicles has been demonstrated in numerous deadly terrorist attacks including in New York City (2017), Toronto, Canada (2018), Berlin, Germany (2016) and Nice, France (2016).

### *Problems Identified and Actions Needed:*

- The Agency must be directed to issue a cybersecurity performance standard within two years.
- The cybersecurity requirements should not be limited to highly automated vehicles.
- It is essential that any standard assure that cyber risks be remedied expediently in addition to mitigated to the greatest possible extent when they occur and that a fail-safe mode is initiated when necessary.
- The timely sharing of information pertaining to cybersecurity, incidents, threats and vulnerabilities should be mandatory between the industry and NHTSA.
- The information required under the cybersecurity study will be ascertained during the rulemaking process and thus is not necessary.
- All cybersecurity reports should be made publicly available with confidential information redacted if necessary.
- The Secretary should investigate a manufacturer's cybersecurity processes and practices after an incident occurs and initiate enforcement as appropriate.

## **Conclusion**

Thank you again for the opportunity to provide comments to the draft legislative language. As our organizations and other groups representing a broad section of stakeholders have stated repeatedly in comments, letters and Congressional testimony, it is vital that Congress seriously and satisfactorily address the broad range of impacts on safety, mobility and infrastructure, among others, rather than rush enactment of a flawed and incomplete bill. In furtherance of that goal, we refer back to our November 6, 2019 and December 13, 2019 submissions which included proposed legislative language on necessary rulemakings, some of which are outside the scope of the current sections, yet must be an essential component of any AV legislation.

There are many lessons to be learned from the two Boeing MAX crashes that are directly relatable to the development of legislation on AVs. In fact, in a March 2020 report prepared by

the majority staff of the House Committee on Transportation and Infrastructure on preliminary investigation findings revealed that “both Boeing and the FAA gambled with the public’s safety” and “Boeing’s design and development of the 737 MAX was marred by technical design failures, lack of transparency with both regulators and customers, and efforts to obfuscate information about the operation of the aircraft.”

Intense competition to rush to market with new technology coupled with a laissez faire government regulator conceding, with political permission, critical decisions and oversight to industry is a demonstrated prescription for failure. As the NTSB stated during its February 25, 2020 meeting, “waiting for problems to occur rather than addressing safety issues proactively” is unacceptable. Absent legislation mandating regulatory standards, providing comprehensive and transparent consumer information, allowing stronger penalties to deter corporate misbehavior and funding appropriate agency staff, consumer acceptance will be jeopardized, needless deaths and injuries will occur, and the success of the U.S. AV industry will be threatened. It is easy to lose public confidence but difficult to regain it.

We are glad to answer any questions or provide any additional information as needed. We also look forward to seeing a draft bill in its entirety to submit comments including but not limited to how the different sections have been modified, interrelate and their impact on the legislation as a whole.

# Public Concern about Driverless Cars is Strong, and the Support for Performance Requirements is Clear

ENGINE'S CARAVAN SURVEY  
Public Opinion Poll  
January 2020



***Commissioned by Advocates for Highway and Auto Safety***

Founded in 1989, Advocates for Highway and Auto Safety (Advocates) is an alliance of public health, safety, and consumer organizations, insurers and insurance agents that promotes highway and auto safety through the adoption of safety laws, policies and regulations.

Advocates is a unique coalition dedicated to advancing safer vehicles, safer drivers and passengers, and safer roads.

# Introduction

Each year motor vehicle crashes kill tens of thousands of people and injure millions more at a cost to society of well over \$800 billion. According to the latest statistics from the National Highway Traffic Safety Administration (NHTSA), 36,560 people were killed on our Nation's roads in 2018.

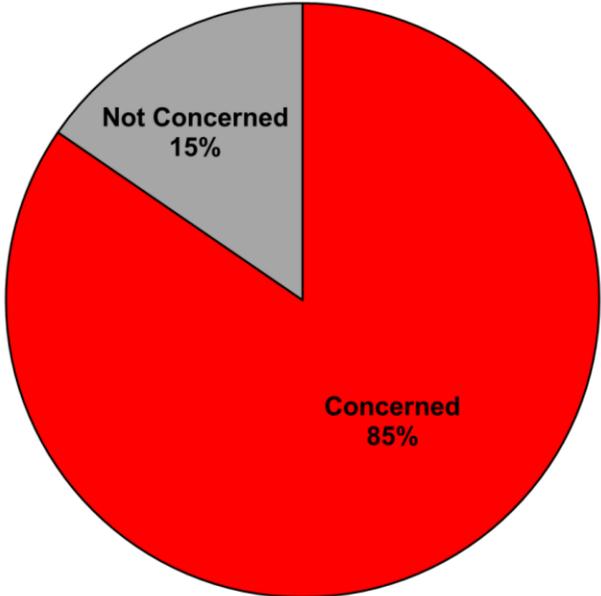
Advocates has always enthusiastically championed proven vehicle safety technology and for good reason -- it is one of the most effective strategies for preventing deaths and injuries. In 2015, NHTSA estimated that since 1960, over 600,000 lives have been saved by motor vehicle safety technologies. So too are we encouraged that autonomous vehicle (AV) technologies may hold tremendous promise to achieve additional safety advances and to decrease the number of motor vehicle crashes, fatalities and injuries. However, selling AVs to the public before they can be safely operated on public roads and without commonsense government oversight and industry accountability is not only reckless and ill-advised, but it will also substantially reduce public confidence in this new technology.

Moreover, a number of crashes involving vehicles equipped with automated driving technology have already occurred on public roads. Those subject to investigation by the National Transportation Safety Board (NTSB) are identified with file numbers.

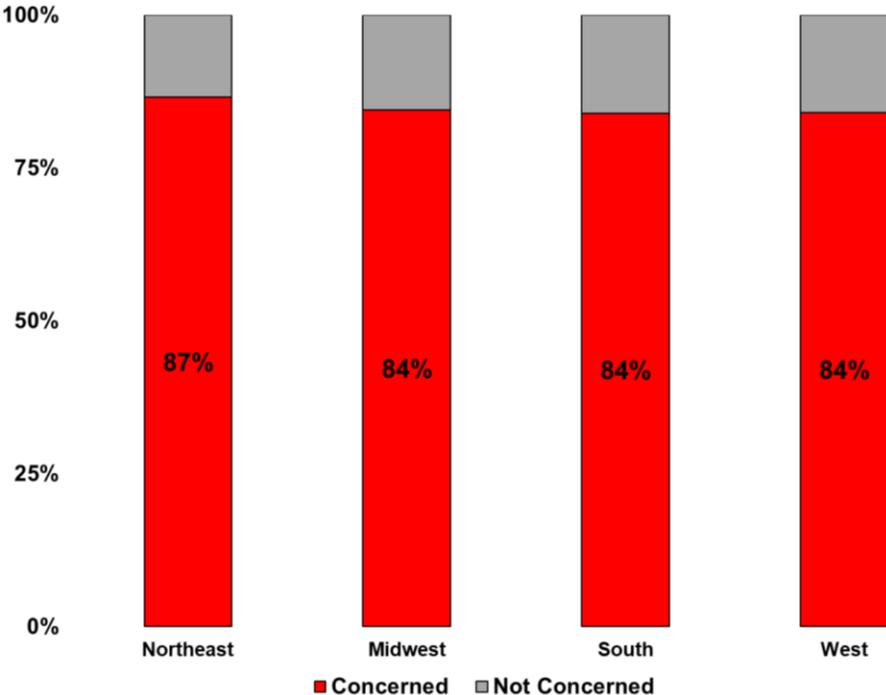
- December 29, 2019, Cloverdale, IN, Tesla Model 3: A Tesla collided with a fire truck killing the passenger in the Tesla. The use of Autopilot has not been determined.
- December 29, 2019, Gardena, CA, Tesla Model S: The Tesla ran a red light and struck another vehicle killing the two occupants in the other vehicle. The use of Autopilot has not been determined.
- December 7, 2019, Norwalk, CT, Tesla Model 3: The Tesla slammed into parked police cruiser and another vehicle. Media reports indicate that Autopilot was engaged at time of crash.
- May 29, 2018, Laguna Beach, CA, Tesla Model S: A Tesla reportedly in Autopilot crashed into a parked Laguna Beach Police Department Vehicle. The Tesla driver suffered minor injuries.
- March 23, 2018, Mountain View, CA, Tesla Model X: While in Autopilot, the vehicle struck a safety barrier, causing the death of the driver. (NTSB Investigation HWY18FH011)
- March 18, 2018, Tempe, AZ, Uber Self-Driving Test Vehicle: The Uber vehicle, which was operating on "self-driving mode," struck and killed a pedestrian walking a bicycle. (NTSB Investigation HWY18MH010)
- January 22, 2018, Culver City, CA, Tesla Model S: The Tesla, reportedly in Autopilot, was traveling at 65 mph when it crashed into the back of a parked fire truck that was responding to the scene of a separate crash. Neither the driver nor the first responders were injured. (NTSB Investigation HWY18FH004)
- November 8, 2017, Las Vegas, NV, Driverless Shuttle Bus: A driverless shuttle was involved in a crash during its first day of service. There were no deaths or injuries. (NTSB Investigation HWY18FH001)
- May 7, 2016, Williston, FL, Tesla Model S: Driver was killed when his vehicle, operating in Autopilot, crashed into the side of a truck tractor combination, traveling underneath the trailer. (NTSB Investigation HWY16FH018)

In 2019, Congressional staff put forth "staff draft" legislation which, if enacted, would set policy on AVs for decades to come. Any legislation considered for the development and deployment of AVs must have the safety of all road users as the top priority.

# The public is overwhelmingly concerned about sharing the road with driverless vehicles as motorists, bicyclists and pedestrians.

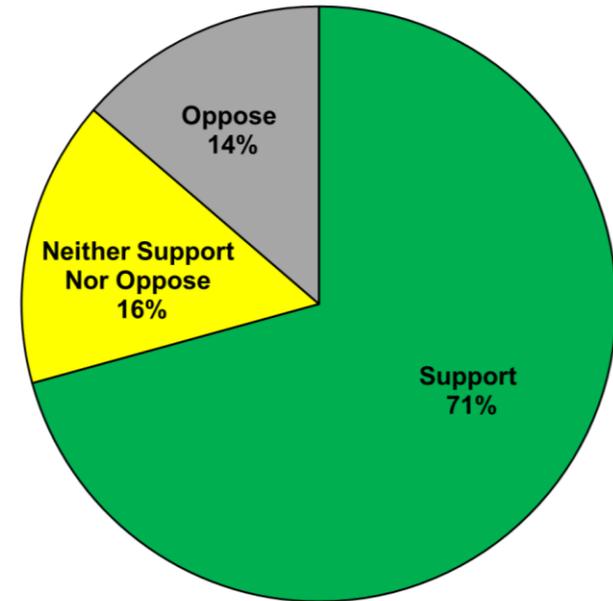
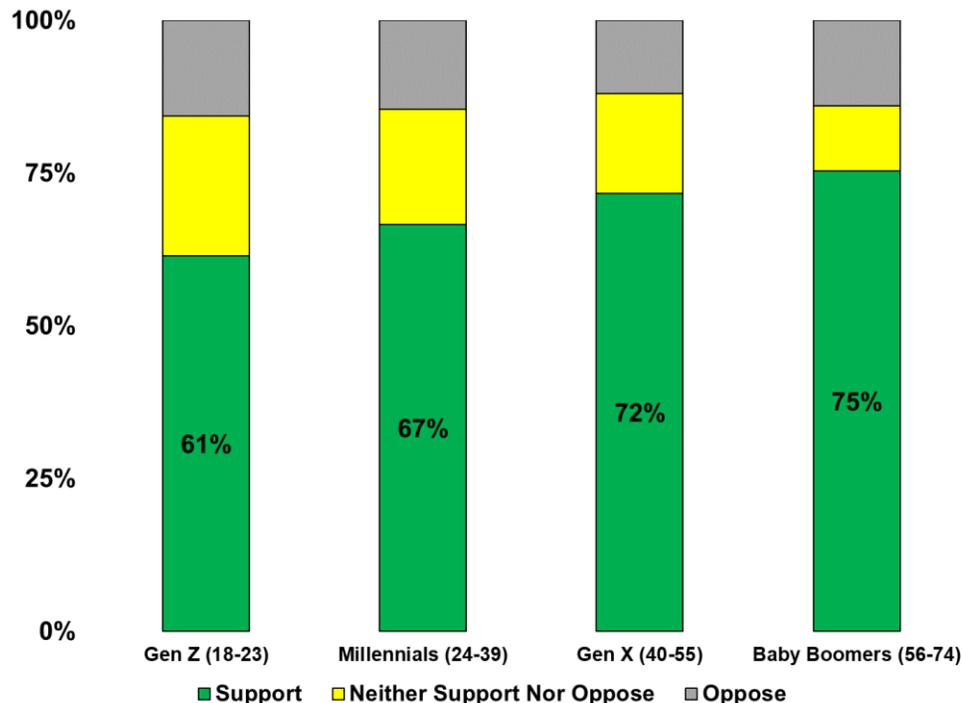


The public has said loud and clear – they are concerned about sharing the road with driverless cars. This apprehension is widespread across demographics including region, generation and type of community (suburban, urban, and rural). Notably, three-quarters of Generation Z (18 - 23) respondents expressed concern, and across the country the level of apprehension was nearly identical.

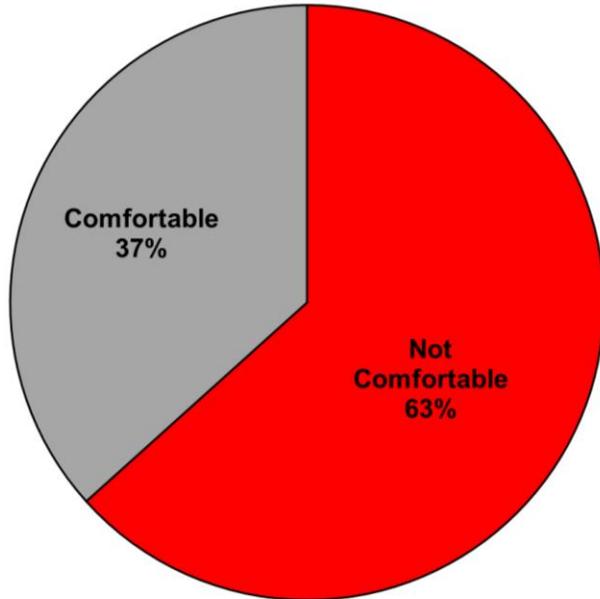


# Federal performance requirements are essential.

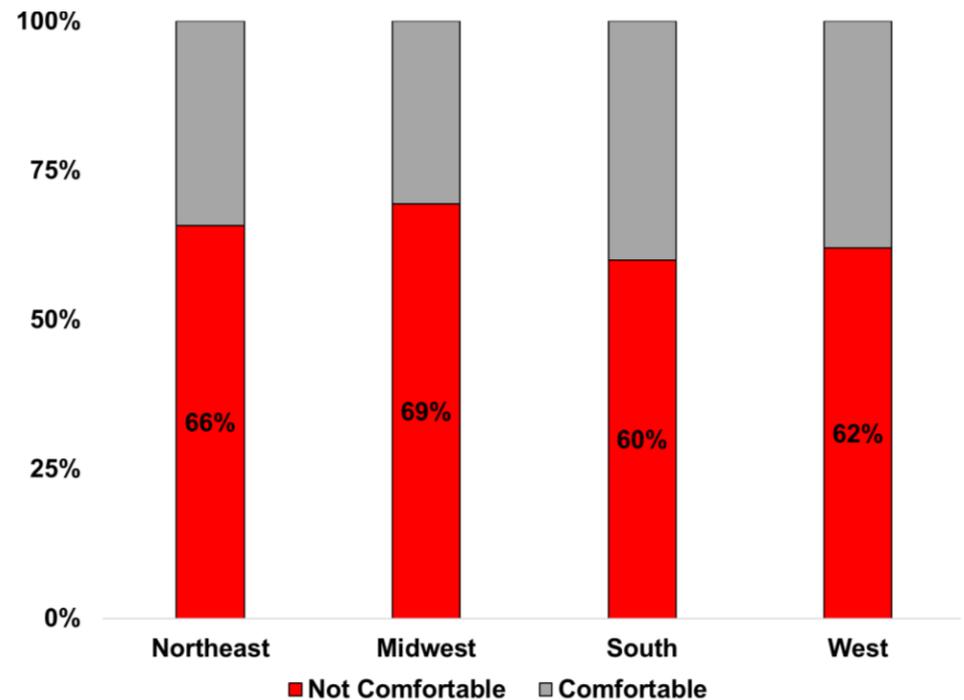
Respondents strongly support government officials developing minimum performance requirements for new technologies related to the operation of driverless cars. This support spans region, generation and type of community. In fact, opposition to performance requirements never exceeded 17 percent across any of the three demographic categories.



# Expanding exemptions to federal safety standards is unwarranted and unwanted.

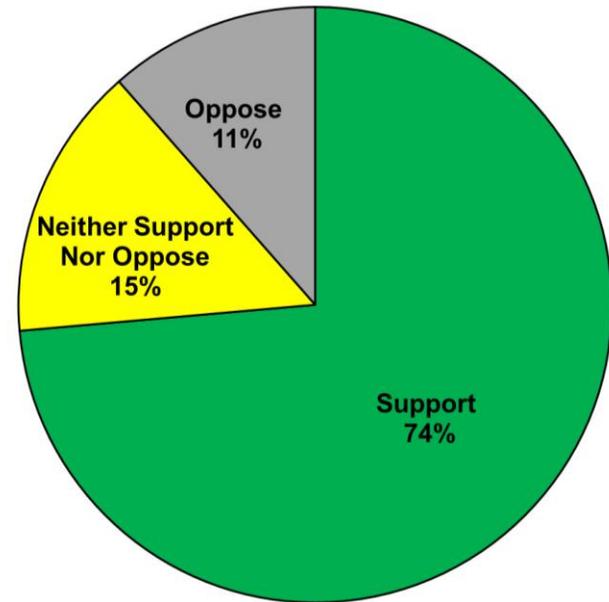
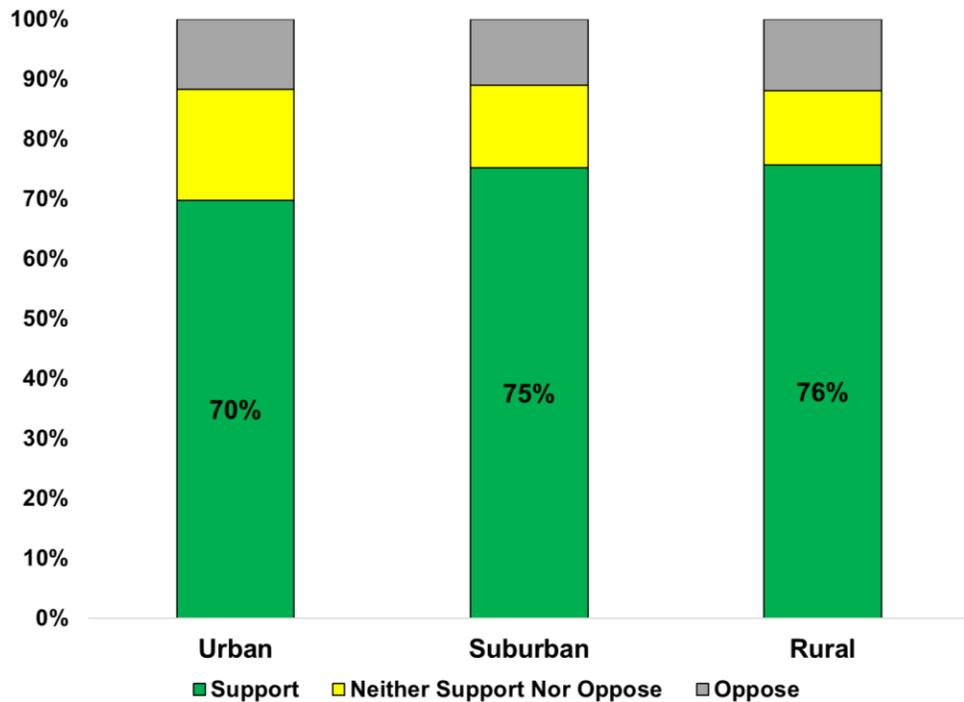


When asked how comfortable they feel with Congress increasing the number of vehicles auto and tech companies are allowed to sell that do not meet existing federal safety standards to as many as 100,000 cars, a strong majority were uncomfortable. This sentiment was reflected among demographics including generation, region and type of community.

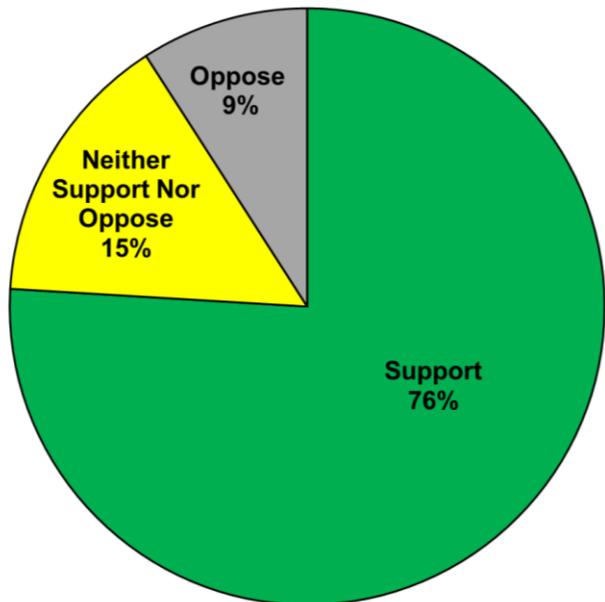


# Cybersecurity rules are vital to prevent hacking of driverless cars.

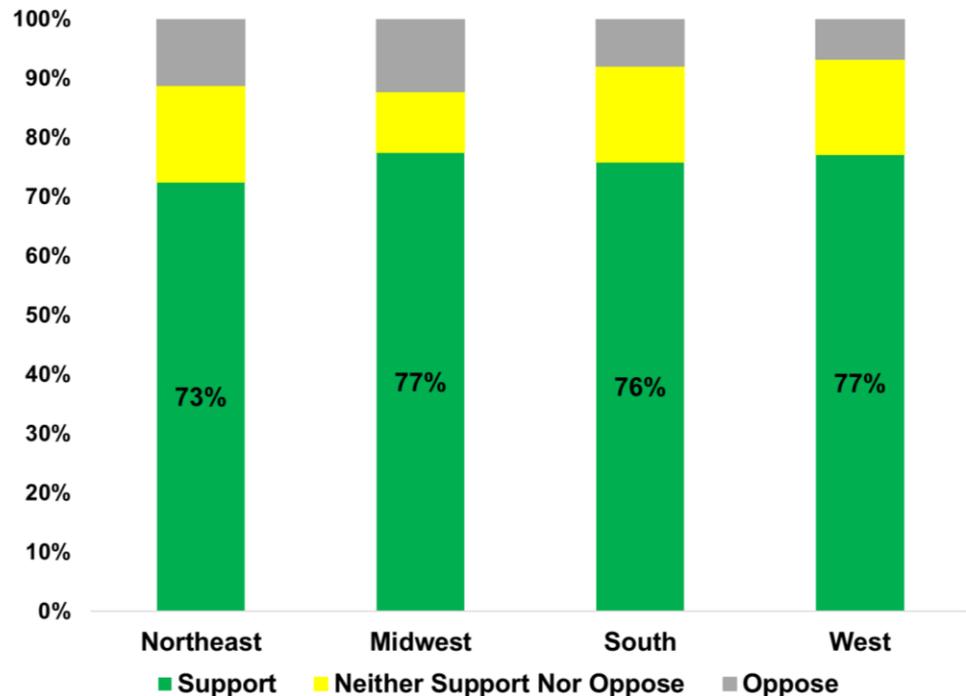
Research and testing have demonstrated the ability of hackers to remotely gain access to computers operating a car. A large majority of respondents support government officials issuing cybersecurity rules to protect against the hacking of AVs. This was consistent among demographics including generation, region and type of community. In fact, support was 70 percent or greater across all three demographic categories.



# Driverless cars should be required to pass a “vision test” to assure they can see and respond to the operating environment.

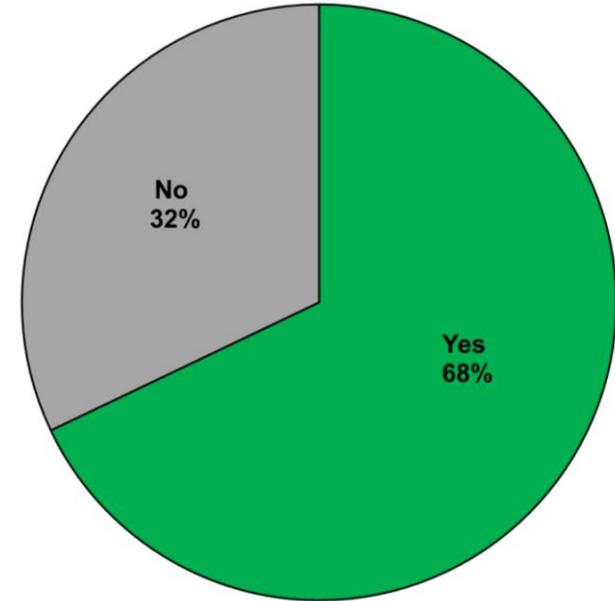
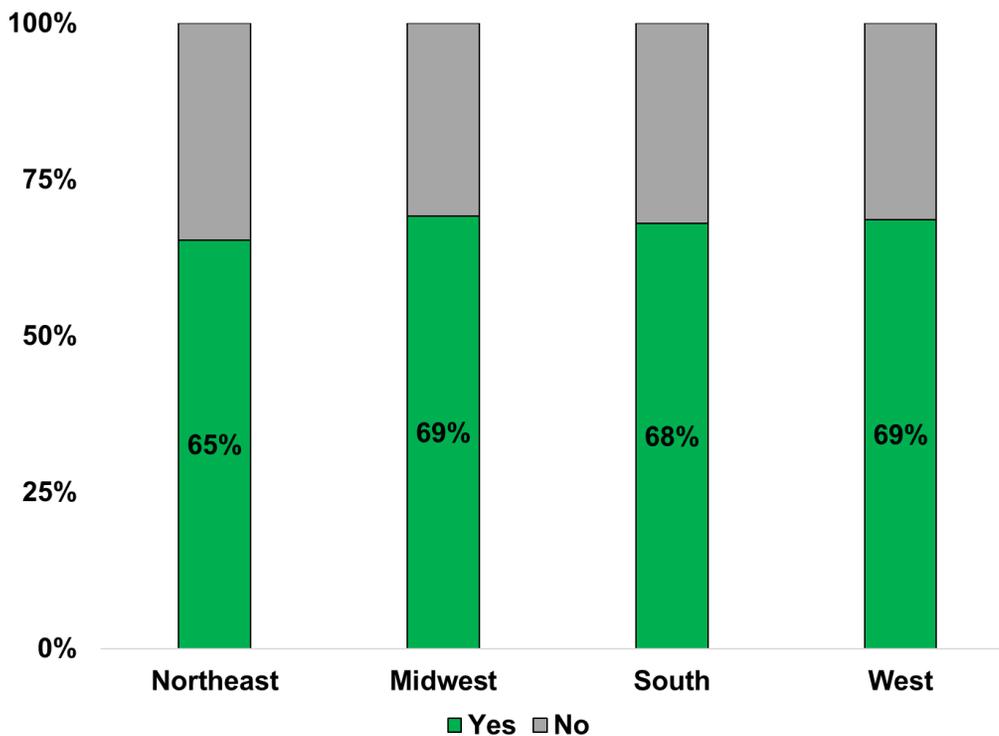


As driverless cars will operate at all times of the day and night, in all kinds of weather conditions, on all types of roads, and with other road users, broad support exists for requiring them to pass a “vision test” so they can correctly identify or “see” objects on the road. This support was shared across demographics including generation, region and type of community.



# Safety standards could tamper apprehension.

Knowing that companies had to meet minimum safety requirements for their driverless cars before selling them to the public would address a large number of respondents' concerns or apprehension about the technology, regardless of generation, region or type of community. Greater than 60% of respondents agreed with this sentiment across all three demographic categories.



**1 SEC. III. SAVINGS PROVISION.**

**2** Nothing in this Act alters any existing authority

**3** under subtitle VI of title 49, United States Code, relating

**4** to motor vehicles with a gross vehicle weight of 10,001

**5** pounds or more.

**Commented [Advocates1]:** By identifying deficiencies in each section, we are not agreeing with, endorsing or assenting to the inclusion of such sections in a final AV bill. Please see memo for our complete response on this section.

**Commented [Advocates2]:** Autonomous technology must be subject to federal regulations regardless of the type of vehicle. However, the Federal Motor Carrier Safety Regulations (FMCRS) must require the presence of an engaged human driver with a valid Commercial Driver's License (CDL) for the foreseeable future.

**SEC. III. AUTHORIZATION OF APPROPRIATIONS.**

(a) 2 There is authorized to be appropriated to the Secretary

~~3~~ ~~4~~ ~~5~~ ~~6~~ ~~7~~ ~~8~~ ~~9~~ ~~10~~ ~~11~~

for each of the following fiscal years

~~4~~ ~~2021~~ through ~~2031~~ ~~1~~ ~~2~~ ~~3~~ ~~4~~ ~~5~~ ~~6~~ ~~7~~ ~~8~~ ~~9~~ ~~10~~ ~~11~~ ~~12~~ ~~13~~ ~~14~~ ~~15~~ ~~16~~ ~~17~~ ~~18~~ ~~19~~ ~~20~~ ~~21~~ ~~22~~ ~~23~~ ~~24~~ ~~25~~ ~~26~~ ~~27~~ ~~28~~ ~~29~~ ~~30~~ ~~31~~ ~~32~~ ~~33~~ ~~34~~ ~~35~~ ~~36~~ ~~37~~ ~~38~~ ~~39~~ ~~40~~ ~~41~~ ~~42~~ ~~43~~ ~~44~~ ~~45~~ ~~46~~ ~~47~~ ~~48~~ ~~49~~ ~~50~~ ~~51~~ ~~52~~ ~~53~~ ~~54~~ ~~55~~ ~~56~~ ~~57~~ ~~58~~ ~~59~~ ~~60~~ ~~61~~ ~~62~~ ~~63~~ ~~64~~ ~~65~~ ~~66~~ ~~67~~ ~~68~~ ~~69~~ ~~70~~ ~~71~~ ~~72~~ ~~73~~ ~~74~~ ~~75~~ ~~76~~ ~~77~~ ~~78~~ ~~79~~ ~~80~~ ~~81~~ ~~82~~ ~~83~~ ~~84~~ ~~85~~ ~~86~~ ~~87~~ ~~88~~ ~~89~~ ~~90~~ ~~91~~ ~~92~~ ~~93~~ ~~94~~ ~~95~~ ~~96~~ ~~97~~ ~~98~~ ~~99~~ ~~100~~ ~~101~~ ~~102~~ ~~103~~ ~~104~~ ~~105~~ ~~106~~ ~~107~~ ~~108~~ ~~109~~ ~~110~~ ~~111~~ ~~112~~ ~~113~~ ~~114~~ ~~115~~ ~~116~~ ~~117~~ ~~118~~ ~~119~~ ~~120~~ ~~121~~ ~~122~~ ~~123~~ ~~124~~ ~~125~~ ~~126~~ ~~127~~ ~~128~~ ~~129~~ ~~130~~ ~~131~~ ~~132~~ ~~133~~ ~~134~~ 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(11) \$62,500,000 for fiscal year 2031

(b)(c) The Government Accountability Office shall conduct a review after fiscal year 2025 to

A. determine if:

- i. the funding authorization provided under subsection (a) is adequate to determine the compliance of highly automated vehicles with the requirements of chapter 301 of title 49, United States Code and
- ii. NHTSA has appropriate and significant staff to oversee the development and deployment of autonomous vehicles.

B. Upon conclusion of the review required under this section, the Government Accountability Office shall transmit a report to the Committee on Commerce, Science, and Transportation of the Senate and the Committee on Energy and Commerce of the House of Representatives. The report shall also be made available for public review and comment.

c. IMMEDIATE HAZARD AUTHORITY

(1) Section 30118 of title 49, United States Code, is amended—

(i) in subsection (b)—

(A) in paragraph (1), by striking “(1) The Secretary may” and inserting “(1) IN GENERAL.—Except as provided under paragraph (3), the Secretary may”;

(B) in paragraph (2), by inserting “ORDERS.—” before “If the Secretary”; and

(C) by adding after paragraph (2) the following:

“(3) IMMEDIATE HAZARDS.—

“(A) DETERMINATIONS AND ORDERS.—If the Secretary determines that a defect or noncompliance, or combination of both, under subsection (a) presents an imminent hazard, the Secretary—

“(i) shall notify the manufacturer of the motor vehicle or replacement equipment immediately under subsection (a);

“(ii) shall order the manufacturer of the motor vehicle or replacement equipment to immediately—

“(I) give notification under section 30119 of this title to the owners, purchasers, and dealers of the vehicle or equipment of the imminent hazard; and

“(II) remedy the defect or noncompliance under section 30120 of this title;

“(iii) notwithstanding section 30119 or 30120, may order the time for notification, means of providing notification, earliest remedy date, and time the owner or purchaser has to present the motor vehicle or equipment, including a tire, for remedy; and

“(iv) may include in an order under this subparagraph any other terms or conditions that the Secretary determines necessary to abate the imminent hazard.

“(B) OPPORTUNITY FOR ADMINISTRATIVE REVIEW.—Subsequent to the issuance of an order under subparagraph (A), opportunity for administrative review shall be provided in accordance with section 554 of title 5, except that such review shall occur not later than 10 days after issuance of such order.

“(C) DEFINITION OF IMMINENT HAZARD.—In this paragraph, the term ‘imminent hazard’ means any condition which substantially increases the likelihood of serious injury or death if not remedied immediately.”; and

(ii) in subsection (c), by inserting “or electronic mail” after “certified mail”.

(d) CRIMINAL PENALTIES

(1) person who knowingly introduces into interstate commerce a motor vehicle or motor vehicle equipment that contains a serious danger that has an imminent risk of causing death or serious bodily injury to an individual (as defined in section 1365(g)(3) of title 18), shall be subject to criminal penalties of a fine under title 18, or imprisoned for not more than 15 years, or both,

(2) the Attorney General may bring an action, or initiate grand jury proceedings, for a violation of this subsection only at the request of the Secretary of Transportation.

(e) Civil Penalties

(1) Section 30165(a) of title 49, United States Code, is amended—

(a) in paragraph (1)—

(i) in the first sentence by striking “of not more than \$21,000 for each violation” and

(ii) by striking the third sentence; and

(b) in paragraph (3)—

(i) by striking the second and third sentence.

~~1 SEC. III. DUAL USE VEHICLE SAFETY.~~

~~2 (a) IN GENERAL.—Section 30122(b) of title 49,~~

~~3 United States Code, is amended—~~

~~4 (1) by striking “A manufacturer” and insert~~  
~~5 ing the following:—~~

~~6 “(1) IN GENERAL.—Except as provided in~~

~~7 paragraph (2), a manufacturer”; and~~

~~8 (2) by adding at the end the following:—~~

~~9 (2) EXCEPTION.—Paragraph (1) shall not~~

~~10 apply in cases in which a manufacturer intentionally~~

~~11 causes a steering wheel, brake pedal, accelerator~~

~~12 pedal, gear shift, or any other device or element of~~

~~13 design relating to the performance of the dynamic~~

~~14 driving task by a human driver to be temporarily~~

~~15 disabled during the time that an automated driving~~

~~16 system is performing the entire dynamic driving task~~

~~17 if the applicable motor vehicle is otherwise in compli~~

~~18 ance with applicable motor vehicle safety stand~~

~~19 ards—~~

~~20 (A) when a Level 4 or Level 5 auto~~

~~21 mated driving system is engaged; and~~

~~22 (B) when that system is not engaged.”—~~

~~23 (b) RULEMAKING.—If the Secretary prescribes a~~

~~24 regulation in accordance with section 30122(c) of title 49,~~

~~2~~

~~PAT20125 Discussion Draft S.L.C.~~

~~1 United States Code, to exempt a manufacturer (as defined~~

~~2 in section 30102 of that title) from the prohibition under~~

~~3 paragraph (1) of section 30122(b) of that title with re~~

~~4 spect to highly automated vehicles, effective on the date~~

~~5 on which that regulation is prescribed—~~

~~6 (1) the amendments to section 30122(b) of~~

~~7 that title made by subsection (a) shall terminate;~~

~~8 and~~

~~9 (2) section 30122(b) of that title shall be in~~

~~10 effect as if those amendments had not been en~~

~~11 acted.~~

**Commented [Advocates1]:** By identifying deficiencies in each section, we are not agreeing with, endorsing or assenting to the inclusion of such sections in a final AV bill. Please see memo for our complete response on this section.

**Commented [Advocates2]:** This provision drastically alters federal law which prohibits manufacturers from rendering safety systems, such as the brakes and brake pedal, inoperable. This provision is a dangerous change in settled law because it would allow automakers to turn off safety systems while the AV is being driven by the computer. This could unnecessarily dilute safety at the discretion of the manufacturer and sets a precedent of Congress allowing manufacturers to circumvent many of the existing safety standards. There is already a process for exemptions from FMVSS which must be retained.

**SEC. III. SAFETY PERFORMANCE CRASH DATA.**

**(a) SAFETY PERFORMANCE DATA**

(a) IN GENERAL.—The Secretary shall initiate a rulemaking proceeding to require that all vehicles equipped with an automated driving system, including partially automated driving systems, capture and retain data regarding the performance of the automated driving system and the vehicle’s safety systems during any and all crashes and additional safety critical events including but not limited to malfunctions, disengagements, degradations, and failures. Such a rule shall specify a standard format for all such data and that such data must be easily understood and accessible to law enforcement, safety investigators including the National Transportation Safety Board, the National Highway Traffic Safety Administration and the public.

(b) FINAL RULE.—The Secretary shall complete the rulemaking required under subsection (a) by issuing a final rule within 2 years after the date of enactment of this Act.

(c) LEAD TIME.—The standard prescribed under subsection (a) shall provide not more than 2 model years of lead-time.

(d) REPORT —Not later than 1 year after the date of enactment of this section the Secretary shall issue a report to Congress evaluating the benefits of automatic crash data notification systems that:

(i) notify emergency responders that a crash has occurred and provide the geographical location of the vehicle and crash data in a manner that allows for assessment of potential injuries and emergency response; and

(ii) transfer to the Secretary anonymized automatic crash data for the purposes of safety research and statistical analysis.

**(b) VEHICLE IDENTIFICATION NUMBER**

(a) IN GENERAL.— The Secretary shall initiate a rulemaking proceeding to amend 49 CFR Part 565 to require that a vehicle identification number indicate if a vehicle is equipped with an automated driving system, including a partially automated driving system.

(b) FINAL RULE.—The Secretary shall complete the rulemaking required under subsection (a) by issuing a final rule within 2 years after the date of enactment of this Act.

(c) LEAD TIME.—The standard prescribed under subsection (a) shall provide not more than 2 model years of lead-time.

2 (c) CRASH DATA.—

3 (1) IN GENERAL.—Not later than 2-3 years after

4 the date of enactment of this Act, the Secretary

5 shall revise the crash data collection system to in

**Commented [Advocates1]:** By identifying deficiencies in each section, we are not agreeing with, endorsing or assenting to the inclusion of such sections in a final AV bill. Please see memo for our complete response on this section.

clude the collection of crash report data elements

7 that identify whether any vehicle involved in a crash

8 is a highly automated vehicle or a vehicle performing

9 partial driving automation, including—

10 (A) the level of automation; and

11 (B) ~~whether the automated driving fea~~

~~tures were engaged at the time of the crash.~~ the information collected by the event data recorder, as required by Sec. a

13 (2) COORDINATION.—In carrying out para

14 graph (1), the Secretary ~~shall~~may coordinate with States

15 to update the Model Minimum Uniform Crash Cri

16 ~~teria~~ to provide guidance to States on the collection

17 of information.

(d) SAFETY PERFORMANCE REPORTING – Manufacturers shall provide information in a standardized format to the U.S. Department of Transportation about all crashes and disengagements of the automated driving system of which it has actual knowledge involving a vehicle equipped with an automated driving system, partially automated driving system, dedicated highly automated vehicle or highly automated vehicle regardless of whether a claim is submitted to the manufacturer, in accordance with part 579 of title 49, Code of Federal Regulations. These reports shall be made available to the public and be filed every calendar quarter of a year.

(e) DATA SHARING – The Secretary shall establish within 180 days of enactment of this Act a mandatory process for manufacturers to promptly share lessons learned across industry about failures and vulnerabilities involving a highly automated vehicle, vehicle that performs partial driving automation, or automated driving system. These lessons shall also be shared with the National Highway Traffic Safety Administration.

18 ~~(fb)~~ EARLY WARNING REPORTING.—Not later than

19 ~~2~~3 years after the date of enactment of this Act, the Sec

20 retary shall revise section 579.21 of title 49, Code of Fed

21 eral Regulations, to update system or component cat

22 egories to include systems or components of automated

23 driving systems.↵

**Commented [Advocates2]:** The MMUCC has significant limitations regarding the collection of detailed data necessary to accurately assess the performance of AVs in crashes due to real world realities regarding on-scene information collection.

(d) ADDITIONAL EARLY WARNING REPORTING REQUIREMENTS.

(a) IN GENERAL.—Section 30166(m) of title 49, United States Code, is amended—

(1) in paragraph (3)—

(A) in subparagraph (C)—

(i) by striking “The manufacturer” and all that follows through “shall report” and inserting the following:

“(i) IN GENERAL.—The manufacturer of a motor vehicle or motor vehicle equipment, including the manufacturer of an autonomous vehicle or an autonomous vehicle driving system, shall report”; and

(ii) by adding at the end the following:

“(ii) INCIDENTS WITH INJURIES OR FATALITIES.—If an incident described in clause (i) involves a serious injury or fatality, the Secretary shall require the manufacturer to submit, as part of the incident report under clause (i)—

“(I) each initial claim or notice document that notified the manufacturer of the incident;

“(II) any police reports or other documents describing or reconstructing the incident;

“(III) any amendments or supplements to the documents described in subclause (I), except—

“(aa) medical documents and bills; and

“(bb) property damage invoices or estimates; and

“(IV) the assessment of the manufacturer of the circumstances that led to the incident, including the analysis of the manufacturer with respect to the claims or notices with respect to allegations of a defect.

“(iii) REPORTING REQUIREMENTS.—Notwithstanding section 579.21 of title 49, Code of Federal Regulations (or a successor regulation), no report under this subsection shall be limited by model year.”; and

(B) by adding at the end the following:

“(D) SETTLEMENTS.—Notwithstanding any order entered in a civil action restricting the disclosure of information, a manufacturer of a motor vehicle or motor vehicle equipment shall

comply with the requirements of this subsection and any regulation promulgated under this subsection.”;

(2) in paragraph (4), by striking subparagraph (C) and inserting the following:

“(C) DISCLOSURE.—

“(i) IN GENERAL.—The information provided to the Secretary pursuant to this subsection—

“(I) shall be disclosed publicly unless—

“(aa) exempt from disclosure under section 552(b) of title 5, subject to clause (ii); or

“(bb) the information is subject to an order entered in a civil action restricting the disclosure of information and the court of jurisdiction has refused to modify such order at the request of the Secretary; and

“(II) shall be entered into a public early warning reporting database established by the Secretary in a manner that is searchable by manufacturer name, vehicle or equipment make and model name, model year, and type of potential defect.

“(ii) INAPPLICABILITY OF CONFIDENTIALITY PROVISIONS.—In administering clause (i)(I), the Secretary shall not consider section 552(b)(4) of title 5 to prevent the public disclosure of—

“(I) production information regarding passenger motor vehicles;

“(II) information on incidents involving death or serious injury;

“(III) numbers of property damage claims; or

“(IV) aggregated numbers of consumer complaints.”; and

(3) by adding at the end the following:

“(6) USE OF EARLY WARNING REPORTS.—The Secretary shall consider information gathered under this section in proceedings described in sections 30118 and 30162.”.

(b) REGULATIONS.—To promote the public availability of information provided to the Secretary under subsection (m) of section 30166 of title 49, United States Code, and the utility of that information to inspection and investigation activities conducted by the Secretary under that section, not later than 2 years after the date of enactment of this Act, the Secretary of Transportation shall promulgate regulations to carry out this section and the amendments made by this section.

(c) NULLIFICATION OF EARLY WARNING REPORTING CLASS DETERMINATION REGULATIONS.—On the effective date of the regulations promulgated under subsection (b), the regulations with respect to early warning reporting class determinations contained in appendix C of part 512 of title 49, Code of Federal Regulations (as in effect on that date), shall have no force or effect.

**SEC. III. CONSUMER EDUCATION.**

**2 (a) RESEARCH.—**

~~(1) IN GENERAL.—Not later than~~  $\emptyset$

~~||~~

~~3~~  $\frac{3}{2}$  years

~~4 after the date of enactment of this Act, the Sec5  
retary shall conduct research to determine the most  
6 effective method and terminology for informing con7  
sumers about the capabilities and limitations of  
8 automated vehicle technology, including advanced  
9 driver assistance technology.~~

~~10 (2) REQUIREMENT.—In conducting the re11  
search described in paragraph (1), the Secretary  
12 shall determine whether the method and terminology  
13 described in that paragraph—~~

~~14 (A) should be based on or include the ter15  
minology defined in the SAE International Rec16  
ommended Practice report numbered J3016  
17 and dated June 15, 2018; or~~

~~18 (B) should include alternative terminology.~~

~~(1)(1) RULEMAKING.—Not later than 180 days~~  $\emptyset$

~~||~~

~~19~~  $\frac{3}{2}$  years

~~20 after the date of enactment of this Act, the Secretary shall  
21 ~~issue a final rule / initiate a rulemaking proceeding~~  $\frac{3}{2}$  to require  
22 manufacturers to inform consumers at the point of sale and in the owner's  
manual, including publicly accessible electronic owner's manuals, of the  
capabilities and  
23 all limitations of the driving automation systems including the operational  
design domain, the roles and responsibilities of expectations of the human while  
the system is engaged and when it departs the ODD, and the override procedures  
or features~~

~~24 of any highly automated vehicle or partially automated vehicle, including any  
changes ~~to those capabilities and limitations~~ due to / resulting from / that may  
result from software updates~~

(1) RULEMAKING ON AUTOMATED VEHICLE DATABASE.—

**Commented [Advocates1]:** By identifying deficiencies in each section, we are not agreeing with, endorsing or assenting to the inclusion of such sections in a final AV bill. Please see memo for our complete response on this section.

(1) IN GENERAL.—Not later than 1 year after the date of enactment of this Act, the Secretary shall require that information on autonomous vehicles and autonomous driving systems—

- (A) be available to the public on the Internet;
- (B) be searchable by vehicle make, model, model year, trim and full vehicle identification number (VIN);
- (C) be in a format that preserves consumer privacy; and
- (D) includes information as required in subsection (3).

(2) RULEMAKING.—The Secretary shall issue a final rule within one year of enactment of this Act to require each automobile manufacturer to provide the information described in subsection (3) with respect to that automobile manufacturer’s motor vehicles equipped with a partial, conditional, high, or full automated driving system or systems (SAE Levels 2 - 5), on a publicly accessible Internet website.

(3) CONTENTS.—The data made available to the public shall include, for each automated driving system with which a vehicle is equipped—

- (A) the level of automation of each vehicle’s automated driving system;
- (B) the operational design domain (ODD) of each vehicle’s automated driving system; and
- (C) the exemption or exemptions from the federal motor vehicle safety standards, if any, that apply to each vehicle equipped with an automated driving system.

(4) SUBMITTAL OF DATA.—The Secretary shall ensure that automobile manufacturers make available such data as may be necessary to carry out this subsection.

#### OPERATIONAL DESIGN DOMAIN PERFORMANCE STANDARD

(a) IN GENERAL.—The Secretary shall initiate a rulemaking proceeding to require automated vehicles and automated driving systems remain within their defined operational design domain. Such a rule shall specify requirements for when the automated vehicle or automated driving system malfunctions and fails to remain within its operational design domain.

(b) FINAL RULE.—The Secretary shall issue a final rule under subsection (a) within 1 year after the date of enactment of this Act.

(c) LEAD-TIME.—The standard prescribed under subsection (a) shall provide not more than 2 model years of regulatory lead-time.

**1 SEC. \_\_ . PERSONNEL AND STAFFING.**

2 (a) PERSONNEL.—~~Subject to the availability of~~ Pursuant to the appropriations  
authorized under section [ ], not later than [ ] years after the date of enactment of this

5 Act, the Secretary shall hire to carry out this Act and to

6 determine the compliance of partially and highly automated vehicles

7 with the requirements of chapter 301 of title 49, United

States Code, ~~not fewer than necessary~~ [ ] personnel with

9 knowledge, skills, ~~or~~/and] expertise specific to the areas relevant to the development of -partially and  
highly automated vehicles including but not limited to —

10 (1) cybersecurity;

11 (2) electrical and mechanical engineering;

12 (3) software application, machine learning and artificial intelligence in the automotive context  
[and/~~or~~];

(4) functional safety;

(5) sensors including -but not limited to radar, lidar and machine vision;

(6) human-machine interface;

(7) data;

(8) disability and accessibility;

(9) land use, transit and environmental impact; and,

13 ~~(6410)~~ any other area, as determined by the Secretary.

16 (b) RESOURCE AND STAFFING REPORT.—

(1) IN GENERAL.—Not later than [ ] months after the date of enactment of this Act, the

19 Secretary shall submit to the Committee on Commerce, Science, and Transportation of the Senate

21 and the Committee on Energy and Commerce of the

22 House of Representatives a resource and staffing report describing—

23 (A) how the Secretary shall carry out subsection (a); and

24 (B) any additional personnel or resources that the Secretary expects will be needed during

25 the [10]year period following the date of submission of the report—

**Commented [Advocates1]:** By identifying deficiencies in each section, we are not agreeing with, endorsing or assenting to the inclusion of such sections in a final AV bill. Please see memo for our complete response on this section.

**Commented [Advocates2]:** NHTSA must be given the resources to hire qualified individuals required to properly regulate this complex technology especially in light of the fact that many of these individuals with specialized skills and knowledge are in high demand. Adequate skill staff is also critical to ensuring a sound exemption determination process which should not be undercut by a lack of resources.

7 (i) to carry out this Act; and  
8 (ii) to determine the compliance of  
9 highly automated vehicles and partially  
10 automated vehicles with the requirements  
11 of chapter 301 of title 49, United States Code.

13 (2) UPDATE.—Not later than 3 years, [and subsequently every 3 years after \[for the duration of this Act\]](#) after the

14 date on which the staffing report under paragraph  
15 (1) is submitted to the committees described in that  
16 paragraph, the Secretary shall—

17 (A) update the report; and

18 (B) submit the updated report to those  
19 committees.

20 (c) **CONSIDERATIONS.**—In carrying out subsections

21 (a) and (b), the Secretary shall—

22 (1) consider the staffing of the Highly Automated Systems Safety Center of Excellence  
23 established under section 105 of title I of division H of the Further Consolidated Appropriations  
Act, 2020 (Public Law 116–94); and

(2) coordinate with the Highly Automated Systems Safety Center of Excellence, as appropriate,  
To ensure that resources are being allocated appropriately to carry out this Act.

[\(c\) REVIEW: The Government Accountability Office shall conduct a review within 5 years of enactment of this ACT to assess if there is adequate staff at the Department of Transportation to determine the compliance of highly automated vehicles with the requirements of chapter 301 of title 49, United States Code. Upon conclusion of the review required under this section, the Government Accountability Office shall transmit a report to the Committee on Commerce, Science, and Transportation of the Senate and the Committee on Energy and Commerce of the House of Representatives. The report shall also be made available for public review and comment.](#)

**Commented [Advocates3]:** This Highly Automated Systems Safety Center of Excellence was only recently established and there is insufficient evidence to comment on the appropriateness of this provision.

**SEC. II. CYBERSECURITY RISKS TO MOTOR VEHICLE SAFETY.**

3 Subchapter I of chapter 301 of title 49, United States  
4 Code, is amended by adding at the end the following:

5 **“§ 30107. Cybersecurity risks to motor vehicle safety**

6 “(a) CYBERSECURITY REPORTS.—Not later than 180

7 days after the date of enactment of this section, a manufacturer may not sell,  
8 offer for sale, introduce or deliver

9 for introduction into commerce, or import into the United  
10 States, any ~~motor vehicle,~~ ~~or~~ ~~highly automated vehicle,~~  
11 vehicle that performs partial driving automation, or auto  
12 mated driving system ~~unless such manufacturer has de~~  
13 veloped, maintains, and executes cybersecurity practices  
14 and processes to minimize cybersecurity risks to motor ve  
15 hicle safety.

16 “(b) CYBERSECURITY REQUIREMENTS.—The cyber

17 security practices and processes required under subsection  
18 (a) shall include—

19 “(1) the risk-based prioritized identification, as  
20 sessment, and protection of safety-critical vehicle  
21 control systems and the broader transportation eco-  
1 system, as appropriate, through the product develop  
2 ment process and entire life-cycle of the vehicle;

3 “(2) a process for taking preventative and corrective actions to mitigate against  
4 [and remedy](#) vulnerabilities, including cybersecurity incident response plans;

5 “(3) the timely detection, assessment, and response to potential vehicle  
6 cybersecurity incidents in

7 the field, including false and spurious messages and  
8 malicious vehicle control commands;

9 “(4) facilitating recovery from cybersecurity incidents as they occur [including](#)  
10 [initiating a fail-safe mode](#);

11 “(5) [the timely sharing of](#) lessons learned across industry [and the National](#)  
12 [Highway Traffic Safety Administration](#)

13 through ~~voluntary~~ exchange of information per  
14 taining to cybersecurity incidents, threats, and  
15 vulnerabilities;

16 “(6) coordinated cybersecurity vulnerability dis  
17 closure policy or other related practices for collabo  
18 ration with third-party [and independent](#) cybersecurity researchers;

**Commented [Advocates1]:** By identifying deficiencies in each section, we are not agreeing with, endorsing or assenting to the inclusion of such sections in a final AV bill. Please see memo for our complete response on this section.

19 “(7) the identification of an officer or other individual of the manufacturer as the point of contact

21 with responsibility for the management of cybersecurity;

23 “(8) the evaluation of elements of the supply  
24 chain to identify and [remedy address](#) cybersecurity  
25 vulnerabilities;

1 “(9) the use of segmentation and isolation techniques in vehicle architecture design, as appropriate;

3 “(10) employee training and supervision for implementation and maintenance of the policies and

5 procedures required by this section; and

6 “(11) considering consistency and alignment  
7 with the cybersecurity risk management approach  
8 described in section 2(e) of the National Institute of  
9 Standards and Technology Act (15 U.S.C. 272(e))  
10 or international consensus cybersecurity standards.

~~11 “(c) CYBERSECURITY STUDY.—~~

~~12 “(1) No later than 12 years after the date of en  
13 actment of this Act, the Secretary of Transpor  
14 tation, in coordination with any other appropriate  
15 Federal agency, shall conduct a study on the state  
16 of cybersecurity regarding ~~motor vehicles, or~~  
17 ~~highly automated vehicles, vehicles that perform~~  
18 ~~partial driving automation, or automated driving~~  
19 ~~systems.~~~~

~~20 “(2) In conducting such study, the Secretary  
21 shall—~~

~~22 “(A) develop a comprehensive list of Fed  
23 eral agencies with jurisdiction over cybersecu  
24 rity and a brief description of such jurisdiction  
25 or expertise of such agencies;~~

~~“(B) identify all interagency activities taking place among Federal agencies related to cybersecurity regarding ~~motor vehicles, or~~  
4 ~~highly automated vehicles, vehicles that per5~~  
form partial driving automation, or automated  
6 driving systems, including working groups or  
7 any other relevant coordinated effort;~~

8“(C) develop a comprehensive list of pub  
9lic-private partnerships focused on cybersecurity  
10 regarding motor vehicles, or highly auto  
11 mated vehicles, vehicles that perform partial  
12 driving automation, or automated driving sys  
13 tems, as well as any industry-based bodies, in  
14 cluding international bodies, which have devel  
15 oped, or are developing, mandatory or voluntary  
16 standards for cybersecurity and that status of  
17 such standards;

18“(D) identify all regulations, guidelines,  
19 mandatory standards, voluntary standards, and  
20 other policies implemented by each Federal  
21 agency identified under this section, as well as  
22 all guidelines, mandatory standards, voluntary  
23 standards, and other policies implemented by  
24 industry-based bodies;

1“(E) review the current equipment, meas  
2 ures, guidelines, or practices used across the in  
3 dustry to identify, protect, detect, respond to,  
4 or recover from cybersecurity incidents affecting  
5 the safety of a passenger motor vehicle; and

6“(F) identify existing cybersecurity re  
7 sources to assist individuals in maintaining  
8 awareness of cybersecurity risks due to motor  
9 vehicle safety and mechanisms for alerting a  
10 human driver or operator regarding cybersecu  
11 rity vulnerabilities.

12“(3) The Secretary shall submit to the Com  
13 mittee on Energy and Commerce of the House of  
14 Representatives and the Committee on Commerce,  
15 Science, and Transportation of the Senate a report on the findings of the study,  
16 that contains—

17“(A) the results of the study conducted  
18 under paragraph (1);

19“(B) recommendations to enable the ex  
20 change of information and lessons learned

21 across the industry regarding cybersecurity inci22  
dents, threats, and potential vulnerabilities; and  
23 “(C) recommendations for legislation or  
24 rulemakings needed to address any cybersecu25  
rity issue to motor vehicle safety related to  
1 ~~motor vehicles,~~ ~~or~~ ~~highly automated vehi2~~  
cles, vehicles that perform partial driving auto3  
mation, or automated driving systems;.

4 “(d) CYBERSECURITY RULEMAKING.—If the Sec5  
retary makes a determination under subsection (c) that  
6 rulemakings are needed to address any cybersecurity issue  
7 to motor vehicle safety ~~related to~~ ~~motor vehicles,~~ ~~or~~  
8 ~~highly automated vehicles,~~ vehicles that perform partial  
9 driving automation, or automated driving systems; ~~the~~  
10 secretary shall complete such rulemakings not later than  
~~11~~  
↓

11 ~~1~~ years after the study is completed.

(d) CYBERSECURITY PERFORMANCE STANDARD

(a) IN GENERAL.—The Secretary shall initiate a rulemaking proceeding that shall prescribe cybersecurity standards for automated vehicles, partially automated vehicles, automated driving systems and over-the-air updates. In developing the rule the Secretary may consult with other federal agencies including the National Institute of Standards and Technology, the Director of National Intelligence, the Department of Defense and the Department of Homeland Security.

(b) FINAL RULE.—The Secretary shall issue a final rule under subsection (a) within 2 years after the date of enactment of this Act.

(c) LEAD-TIME.—The standard prescribed under subsection (a) shall provide not more than 2 model years of regulatory lead-time.

12 “(e) REPORTING REQUIREMENT.—

(1) On an annual basis, a manufacturer of a ~~motor vehicle,~~ ~~or~~ ~~highly~~  
14 automated vehicle, vehicle that perform partial driving au  
tomation, or automated driving system ~~shall~~ provide the  
16 Secretary a detailed description of the practices and proc17  
esses maintained by the manufacturer to minimize cyber18

security risks to motor vehicle safety [beyond what is require by the standard promulgated pursuant to subsection \(d\)](#). Such reports shall  
19 be considered privileged and confidential for the purposes  
20 of section 552(b)(4)of title 5, United States Code. [A version of the report that does not include safety sensitive information shall be made available to the public.](#)

[\(2\) a manufacturer of a motor vehicle, highly automated vehicle, vehicle that performs partial driving automation, or automated driving system shall report to the National Highway Traffic Safety Administration any and all cybersecurity incidents as defined by subsection \(h\). The Secretary shall maintain a publicly accessible list of all such reports including any and all responses from the manufacturer.](#)

[\(3\) The Secretary shall establish procedures for the public to report cybersecurity incidents as defined by subsection \(h\) to the Department of Transportation.](#)

21 ~~ø~~“(f) INSPECTION.—The Secretary ~~shall~~[may](#) investigate  
22 any cybersecurity processes and practice developed, main23  
tained, and executed by a manufacturer under this section  
24 to determine whether a manufacturer has complied, or is  
1 complying, with this section, chapter, or a regulation pre2  
scribed or order issued pursuant to this chapter [upon a cybersecurity incident as defined by subsection \(h\)](#). ~~↔~~

3 ~~ø~~“(g) CIVIL PENALTY.—Section 30165(a)(1) of title  
4 49, United States Code is amended by inserting ‘30107,’  
5 after ‘section’.

6 “(h) DEFINITION.—The term ‘cybersecurity incident’  
7 has the meaning given the term ‘significant cyber incident’  
8 in Presidential Policy Directive 41 (PPD–41), issued July  
9 26, 2016.

10 “(i) CLERICAL AMENDMENT.—The analysis for chap11  
ter 301 of title 49, United States Code, is amended by  
12 inserting after the item relating to section 30107, as  
13 added by section 9(b), the following:

“ ‘30107. Cybersecurity Risk to Motor Vehicle Safety.’ ”.

#### [\(e\) IMMEDIATE HAZARD AUTHORITY](#)

[\(1\) Section 30118 of title 49, United States Code, is amended—](#)

(i) in subsection (b)—

(A) in paragraph (1), by striking “(1) The Secretary may” and inserting “(1) IN GENERAL.—Except as provided under paragraph (3), the Secretary may”;

(B) in paragraph (2), by inserting “ORDERS.—” before “If the Secretary”; and

(C) by adding after paragraph (2) the following:

“(3) IMMINENT HAZARDS.—

“(A) DETERMINATIONS AND ORDERS.—If the Secretary determines that a defect or noncompliance, or combination of both, under subsection (a) presents an imminent hazard, the Secretary—

“(i) shall notify the manufacturer of the motor vehicle or replacement equipment immediately under subsection (a);

“(ii) shall order the manufacturer of the motor vehicle or replacement equipment to immediately—

“(I) give notification under section 30119 of this title to the owners, purchasers, and dealers of the vehicle or equipment of the imminent hazard; and

“(II) remedy the defect or noncompliance under section 30120 of this title;

“(iii) notwithstanding section 30119 or 30120, may order the time for notification, means of providing notification, earliest remedy date, and time the owner or purchaser has to present the motor vehicle or equipment, including a tire, for remedy; and

“(iv) may include in an order under this subparagraph any other terms or conditions that the Secretary determines necessary to abate the imminent hazard.

“(B) OPPORTUNITY FOR ADMINISTRATIVE REVIEW.—Subsequent to the issuance of an order under subparagraph (A), opportunity for administrative review shall be provided in accordance with section 554 of

title 5, except that such review shall occur not later than 10 days after issuance of such order.

“(C) DEFINITION OF IMMINENT HAZARD.—In this paragraph, the term ‘imminent hazard’ means any condition which substantially increases the likelihood of serious injury or death if not remedied immediately.”; and

(ii) in subsection (c), by inserting “or electronic mail” after “certified mail”.

#### (f) CRIMINAL PENALTIES

(1) person who knowingly introduces into interstate commerce a motor vehicle or motor vehicle equipment that contains a serious danger that has an imminent risk of causing death or serious bodily injury to an individual (as defined in section 1365(g)(3) of title 18), shall be subject to criminal penalties of a fine under title 18, or imprisoned for not more than 15 years, or both,

(2) the Attorney General may bring an action, or initiate grand jury proceedings, for a violation of this subsection only at the request of the Secretary of Transportation.

#### (g) Civil Penalties

(1) Section 30165(a) of title 49, United States Code, is amended—

(a) in paragraph (1)—

(i) in the first sentence by striking “of not more than \$21,000 for each violation” and

(ii) by striking the third sentence; and

(b) in paragraph (3)—

(i) by striking the second and third sentence.