



ADVOCATES
FOR HIGHWAY
& AUTO SAFETY

March 24, 2021

The Honorable Peter A. DeFazio, Chair
The Honorable Sam Graves, Ranking Member
Committee on Transportation and Infrastructure
United States House of Representatives
Washington, D.C. 20515

Dear Chairman DeFazio and Ranking Member Graves:

Thank you for holding tomorrow's hearing, "The Administration's Priorities for Transportation Infrastructure." Advocates for Highway and Auto Safety (Advocates) urges you to prioritize safety as you consider policies and legislation investing in infrastructure. We respectfully request this letter be included in the hearing record.

Advocates lauds the Committee on Transportation and Infrastructure for advancing numerous safety improvements in the Moving Forward Act as well as those Members who introduced stand-alone traffic safety bills last session.¹ We urge the Committee to once again take action on the overdue and needed safety solutions as well as additional upgrades to accomplish our shared goal of preventing motor vehicle crash deaths and injuries and achieving safety equity for all.

Every major surface transportation bill passed by Congress over the last three decades has included significant traffic safety improvements. These innovations have garnered bipartisan support and saved thousands of lives. In fact, the National Highway Traffic Safety Administration (NHTSA) estimated that between 1960 and 2012, over 600,000 lives have been saved by motor vehicle safety technologies.² The recent crash involving Tiger Woods is a prime example of the lifesaving benefits of regulations. Mr. Woods' life was saved, at least in part, by a seat belt, air bags and roof crush performance standards, all of which are required as standard equipment in cars. As *Auto Week* succinctly explained, "The details of Tiger Woods' crash are still being sorted out by investigators, but in general, the world's greatest golfer can thank more than 50 years of government-mandated safety advances that he is alive."³

Every year on average, over 36,000 people are killed and 2.74 million more are injured in motor vehicle crashes. Preliminary estimates from NHTSA indicate that the fatality rate and total for the first nine months of 2020 increased over the same time period in 2019. This is in line with troubling trends reported across the country, and confirmed by NHTSA, of drivers engaged in

¹ Moving Forward Act, H.R. 2, 116th Congress, 2nd Sess. (2020).

² Lives Saved by Vehicle Safety Technologies and Associated Federal Motor Vehicle Safety Standards, 1960 to 2012, DOT HS 812 069 (NHTSA, 2015); See also, NHTSA AV Policy, Executive Summary, p. 5 endnote 1.

³ Mark Vaughn, Tiger Woods Owes His Life to Decades of Government Safety Standards, *Auto Week* (Feb 26, 2021).

riskier driving behaviors including speeding, impairment, and lack of seat belt use during the COVID-19 pandemic. Media and analytics reports note distraction increased as well. Needless to say, the concurrent decline in vehicle miles traveled did not result in anticipated safer conditions on our roads.

In addition, the number of pedestrian and bicyclist deaths remain at or near the highest levels in three decades, with 6,205 and 846 fatalities respectively. Further, in 2018 and 2019, over 100 children were killed due to heatstroke as a result of being left unattended in a vehicle or gaining access independently into an unoccupied vehicle according to NHTSA. In 2019, more than 5,000 people were killed in crashes involving a large truck. Since 2009, the number of fatalities in large truck crashes has increased by 48 percent.⁴ An additional 159,000 people were injured in crashes involving a large truck, and the number of large truck occupants injured increased by 18 percent. In fatal crashes involving a truck and a passenger vehicle, 96 percent of the fatalities were passenger vehicle occupants, according to the Insurance Institute for Highway Safety (IIHS). The cost to society from crashes involving commercial motor vehicles (CMVs) was estimated to be \$143 billion in 2018, the latest year for which data is available.

The overall annual cost crashes impose on society exceeds \$800 billion, including \$242 billion in direct economic costs (NHTSA), based on 2010 data. When adjusted only for inflation, comprehensive crash costs now near one trillion dollars, with direct economic costs amounting to \$292 billion. This is equivalent to an \$885 “crash tax” on every American. Additionally, the total cost of crashes to employers was \$72.2 billion in 2018 according to the Network of Employers for Traffic Safety (NETS).⁵ Ending the physical, emotional and economic toll of motor vehicle crashes is achievable. As the Committee begins consideration of an infrastructure package, we urge you to address these serious safety challenges with the proven solutions detailed below, among others.

Require and expand the use of proven technologies which are demonstrated by data, research and experience to advance safer roadways, safer drivers and safer vehicles.⁶

Advanced vehicle safety technologies, also known as advanced driver assistance systems (ADAS), prevent and lessen the severity of crashes. Research performed by IIHS has clearly demonstrated the benefits of these technologies. For example, IIHS determined that automatic emergency braking (AEB) can decrease front-to-rear crashes with injuries in cars by 56 percent. In addition, IIHS has determined that equipping large trucks with AEB could eliminate more

⁴ Note, the 48 percent figure represents the overall change in the number of fatalities in large truck involved crashes from 2009 to 2019. However, between 2015 and 2016 there was a change in data collection at U.S. DOT that could affect this calculation. From 2009 to 2015 the number of fatalities in truck involved crashes increased by 21 percent and between 2016 to 2019, it increased by 7 percent.

⁵ NETS, *Cost of Motor Vehicle Crashes to Employers 2019*, March 2021.

⁶ Past legislation which promotes these issues and should be advanced includes: Moving Forward Act (116th Congress, H.R. 2); Protecting Roadside First Responders Act (116th Congress, S. 2700/H.R. 4871); 21st Century Smart Cars Act (116th Congress, H.R. 6284); Reducing Impaired Driving for Everyone (RIDE) Act (116th Congress, S. 2604); HALT Drunk Driving Act (116th Congress, 4354); Safe Roads Act (116th Congress, H.R. 3773); Hot Cars Act (116th Congress, H.R. 3593); School Bus Safety Act (116th Congress, S. 2278/H.R. 3959); Stay Aware for Everyone Act (116th Congress, S. 4123); Five-Stars for Safe Cars Act (116th Congress, H.R. 6256); the SAFE Limos Act (116th Congress, S. 2606/H.R. 4708); Stop Underrides Act (S. 605/H.R. 1622); and, Cullum Owings Large Truck Safe Operating Speed Act (116th Congress, S. 2033), among others.

than two out of five crashes in which a large truck rear-ends another vehicle.⁷ The National Transportation Safety Board (NTSB) has included increasing implementation of collision avoidance technologies in its *Most Wanted List of Transportation Safety Improvements* since 2016. These technologies should be required in all new vehicles, including commercial motor vehicles (CMVs) as appropriate, subject to a minimum performance standard which sets a floor, not a ceiling, from which manufacturers can innovate. Congress should also direct NHTSA to update the New Car Assessment Program (NCAP) to include ADAS in vehicle ratings. The NTSB has recommended enhancing NCAP to include these safety improvements and Euro NCAP already evaluates a number of these systems.

Unfortunately, access to these lifesaving crash avoidance technologies currently is not equitable. They are often sold as part of an additional, expensive trim package coupled with other non-safety features or included as standard equipment in high end models or vehicles, which are unaffordable to many families. A report from Consumer Reports found an astounding upcharge of more than \$16,000 for AEB with pedestrian detection in the second most popular vehicle sold in the U.S. Requiring vehicle safety technology as standard equipment will reduce its base cost due to economies of scale, make safety equitable and expedite the benefits to all road users from broad market saturation.

Many individuals rely on walking or biking for economic reasons, rather than choice, to reach work or school. The inability to afford a car or the decision to walk or bike should not come with an elevated risk for injury or death. Mandating safety equipment in new vehicles would ensure the protection of vulnerable road users. Moreover, efforts to address climate change including domestic production of electric vehicles (EVs), which requires automakers to reconfigure their production lines, can efficiently and economically coincide with integrating ADAS technologies.

Facilitate the deployment of connected infrastructure technologies that can save lives, reduce injuries and prevent thousands of crashes each year. Connected vehicle technologies allow a vehicle to send and receive communications with other vehicles (vehicle-to-vehicle (V2V)), the infrastructure (vehicle-to-infrastructure (V2I)), and “everything” (vehicle-to-everything (V2X)). These messages can relay information ranging from the relative location and direction of motion of other vehicles (and the potential for all road users) to warning messages that traffic lights are about to change or weather conditions are soon to be encountered. Further, digital alert technologies could allow emergency and first response vehicles to communicate their location in an effort to prevent collisions with personnel on the roadside. The NHTSA estimated that two potential applications of V2V alone could yield a 50 percent reduction in crashes, injuries and fatalities, on average. NHTSA notes, “this could potentially prevent 400,000 to 600,000 crashes, 190,000 to 270,000 injuries, and save 780 to 1,080 lives each year.”⁸ We ask this Committee to direct NHTSA to update and complete the 2017 Notice of Proposed Rulemaking (NPRM) to require V2V technology and to partner with the Federal Highway

⁷ Teoh, E, Effectiveness of front crash prevention systems in reducing large truck crash rates, IIHS (Sep. 2020).

⁸ NHTSA, *Fact Sheet: Improving Safety and Mobility Through Vehicle-to-Vehicle Communication Technology*, available here: https://www.nhtsa.gov/sites/nhtsa.dot.gov/files/documents/v2v_fact_sheet_101414_v2a.pdf.

Administration (FHWA) to study the needs and benefits of V2I with the goal of V2X communications for safety.⁹

Implement commonsense infrastructure protections for vulnerable roads users. More than 70 percent of pedestrian fatalities occur at locations that are not intersections. Safe Systems incorporates safety infrastructure and upgrades to minimize interactions between VRUs and vehicles such as separated and protected bike lanes, pedestrian islands, leading intervals, roundabouts and changes to curb speed. This strategy offers pedestrians and bicyclists better protection to reduce the occurrence and severity of crashes. We encourage this Committee to direct U.S. Department of Transportation (DOT) to incentivize the incorporation of Safe Systems principles in state and local road infrastructure projects by offering specific grant opportunities and directing states to use a certain amount of federal highway funding for Safe Systems improvements and “complete streets” projects which incorporate Safe Systems principles.

In addition to the aforementioned need to require ADAS, swift and concerted action must be taken by Congress to reduce the human and financial toll resulting from crashes involving commercial motor vehicles (CMVs). According to the Federal Motor Carrier Safety Administration (FMCSA), 10,440 people were killed from 2004 to 2013 in crashes where the speed of the CMV likely contributed to the severity of the crash. This Committee should direct NHTSA and FMCSA to partner and issue a final rule requiring all new CMVs to be equipped with speed limiting devices and to compel their use in CMVs in which they already are installed.

Currently, truck drivers are permitted to drive up to 11 hours per day for a total of 77 hours per week. These grueling hours can lead to cumulative fatigue and devastating health and safety consequences. The NTSB has repeatedly cited fatigue as a major contributor to truck crashes and included reducing fatigue related crashes on its 2019-20 Most Wanted List of Transportation Safety Improvements. Efforts to weaken the hours-of-service rules as well as the electronic logging device (ELD) requirement under the guise of “flexibility” should be rejected.

Research shows that CMV drivers ages 19-20 are six times more likely to be involved in fatal crashes than those who are 21 years of age and older. According to the IIHS, “age is a strong risk factor for truck crash involvement.”¹⁰ As such, Congress should reject legislative attempts to lower the age of CMV drivers permitted to operate in interstate commerce including apprenticeship and pilot programs, known as the “teen trucker” lobbying campaign.

Overweight trucks disproportionately damage our Nation’s crumbling infrastructure and threaten public safety. The American Society of Civil Engineers (ASCE) recently released its [2021 Report Card for America’s Infrastructure](#), issuing a grade of “D” for U.S. roads and “C” for bridges. Federal limits on the weight and size of CMVs are intended to protect both the traveling public and our roads and bridges. Bigger, heavier trucks cause bigger safety problems. This Committee should oppose any legislative changes to federal truck size and weight limits, state

⁹ 82 FR 3854 (Jan. 12, 2017).

¹⁰ Insurance Institute for Highway Safety, Comments to the docket, FMCSA-2000-8410-0515; citing Christie, R. and Fabre, J. 1999. Potential for fast-tracking heavy vehicle drivers. Melbourne, Australia: National Road Transport Commission.

and industry specific exemptions, pilot programs to circumvent current law, and longer trailers and configurations.

Lastly, dangerous loopholes exist in the regulation of limousines that can result in a family's best day becoming their worst nightmare. On October 6, 2018, a limousine crash in Schoharie, NY resulted in 20 fatalities, the deadliest motor vehicle crash in recent history. The NTSB investigation found failures on multiple levels that should be corrected.¹¹ Congress should direct FMCSA to improve the design, enforcement and inspections of passenger carrying vehicles.

While the highway safety grant programs have helped to curb the number of traffic fatalities in the U.S., additional progress is urgently needed. Incentivizing specific actions and the use of sanctions has been successful in the past and should be employed again. Coupling this strategy with changes to the existing grant programs will improve public safety. Changes to the National Priority Safety Grant Program¹² that should be considered include: implementing sanctions on states that fail to enact ignition interlock device (IID) requirements for impaired drivers; incentivizing the elimination of loopholes in state seat belt laws such as absent or weak rear seat belt requirements and exceptions for use in taxis, transportation network company (TNC) vehicles, and limousines; and, encouraging states to ban distracting viewing of devices while driving such as video conferencing and watching videos, among other issues. Moreover, prohibitions on states using federal dollars for automated enforcement and to encourage the use of motorcycle helmets should be rescinded.

Requiring that autonomous vehicles (AVs) meet minimum standards and that operations are subject to adequate oversight throughout development and deployment will save lives as well as costs for both the consumer and the manufacturer. Sweeping promises have been made about AVs bringing meaningful and lasting reductions in motor vehicle crashes and resulting deaths and injuries, traffic congestion and vehicle emissions. Additionally, claims have been made that AVs will expand mobility and accessibility, improve efficiency, and create more equitable transportation options and opportunities. However, these potentials remain far from a near-term certainty or reality. Without commonsense safeguards to ensure these desirable outcomes, the potentials are imperiled at best and could be doomed at worst. The absence of protections could result in adverse impacts including safety risks for all people and vehicles on and around the roads, job displacement, degradation of current mobility options, infrastructure and environmental problems, marginalization of certain users, and others.

The public backs a prudent and thoughtful approach to AVs. According to a 2020 poll commissioned by Advocates, 71 percent of respondents support government-mandated minimum safety requirements for new driverless car technologies and 68 percent reported that they would be less concerned about driverless cars if they knew that companies had to meet minimum safety requirements before selling them to the public.¹³ Moreover, on the path to driverless cars, ADAS

¹¹ NTSB Accident Report, Stretch Limousine Run-Off-Road Crash Near Schoharie, New York, October 6, 2018, Report, NTSB/HAR-20/03 (Sep. 29, 2020).

¹² 23 U.S.C. 405.

¹³ Advocates for Highway and Auto Safety, Engine Insights CARAVAN Survey: Public Concern about Driverless Cars is Strong, and the Support for Performance Requirements is Clear, January 2020.

can prevent or lessen the exorbitant death and injury toll now while laying the foundation for AVs in the future.

In November 2020, Advocates led a group of 60 diverse organizations to release the “AV Tenets” which must be the foundation for any AV policy that is considered.¹⁴ The core principles of the AV Tenets are: 1) prioritize safety for all road users; 2) guarantee accessibility and equity; 3) preserve consumer and worker rights; and, 4) ensure sustainable transportation and retain local control. During this transformational time in surface transportation history, we should pay heed to Benjamin Franklin’s infamous quote from 1736, “An ounce of prevention is worth a pound of cure.”

As this Committee moves forward with an infrastructure package, a strong safety title must be at its core and provisions which would further degrade infrastructure and safety must be rejected. The variations in road use during the pandemic highlighted vulnerabilities inflicting our nation’s roads. Now is the time to advance effective solutions to save lives.

Thank you for again for holding this essential hearing and for your consideration of these issues. We look forward to working with you to improve safety on our nation’s roadways.

Sincerely,

A handwritten signature in black ink, appearing to read "Catherine Chase", with a long horizontal line extending to the right.

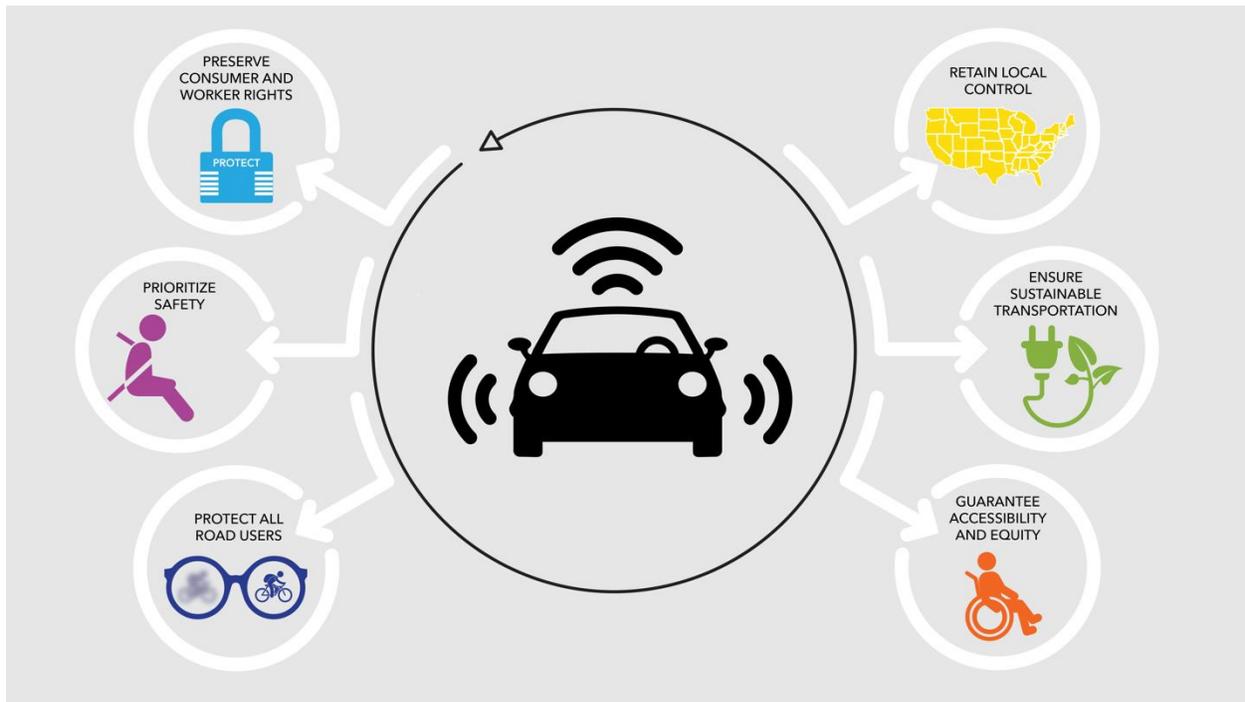
Catherine Chase, President

cc: Members of the U.S. House of Representatives Committee on Transportation and Infrastructure

¹⁴ The complete AV tenets are attached to this letter.

Autonomous Vehicle (AV) Tenets¹

March 2021



Prioritizing Safety of All Road Users

Safety Rulemakings: All levels of automated vehicles² must be subject to comprehensive and strong federal standards ensuring they are safe and save lives. While the U.S. Department of Transportation (DOT) has the authority to issue motor vehicle safety standards for all levels of automated vehicles, for the last four years, it has abrogated this responsibility by focusing its efforts on inadequate voluntary initiatives. When Congress considers legislation on AVs, it is imperative that the protection of all road users is the guiding principle and that legislation requires the DOT to commence rulemakings on safety standards and issue final rules by a prompt date certain with a reasonable compliance date. The rulemakings must address known and foreseeable safety issues, many of which have been identified by the National Transportation Safety Board (NTSB) and other research institutions, including:

- **Revising Federal Motor Vehicle Safety Standards:** Any actions by the National Highway Traffic Safety Administration (NHTSA, Agency) to revise or repeal existing Federal Motor Vehicle Safety Standards (FMVSS) in order to facilitate the introduction of AVs must be preceded by and conducted in a public rulemaking process and cannot be undertaken by internal Agency actions. Any revision must meet the safety need provided by current standards.
- **Collision Avoidance Systems:** Certain advanced safety technologies, which may be foundational technologies for AVs, already have proven to be effective at preventing and mitigating crashes

¹ These tenets are limited to vehicles with a gross vehicle weight rating (GVWR) of 10,000 pounds or less unless otherwise noted; however, it is imperative that automated delivery vehicles (including those used on sidewalks and other non-roadways) and commercial motor vehicles be subject to comprehensive regulations, including rules regarding the presence of a licensed, qualified driver behind the wheel.

² Partially automated vehicles (SAE International Level 2) and conditional / highly automated vehicles (SAE International Levels 3, 4, 5).

across all on-road modes of transportation and must be standard equipment with federal minimum performance requirements. These include automatic emergency braking with pedestrian and cyclist detection, lane departure warning, and blind spot warning, among others. A lack of performance standards has contributed to instances of dangerous malfunctions of this technology, highlighting the need for rulemakings for collision avoidance systems and other fundamental AV technologies. As collision avoidance technology continues to improve and evolve, it should also be required to detect and prevent collisions with all vulnerable road users and objects in the operating environment.

- **“Vision Test” for AVs:** Driverless cars must be subject to a “vision test” to guarantee an AV will operate on all roads and in all weather conditions and properly detect and respond to other vehicles, all people and objects in the operating environment including but not limited to Black and Brown people, pedestrians, bicyclists, wheelchair users and people with assistive technology, children and strollers, motorcycles, roadway infrastructure, construction zones and roadside personnel, and interactions with law enforcement and first responders. Any algorithm that will inform the technology must be free of bias. Risk assessments for AVs must ensure adequate training data which is representative of all users of the transportation system. Manufacturers and developers must be required to meet basic principles in the development and use of algorithms including: the use of algorithms should be transparent to the end users; algorithmic decision-making should be testable for errors and bias while still preserving intellectual property rights; algorithms should be designed with fairness and accuracy in mind; the data set used for algorithmic decision-making should avoid the use of proxies; and, algorithmic decision-making processes that could have significant consumer consequences should be explainable. The DOT must review algorithms and risk assessment procedures for potential issues, and any identified problems must be then corrected by the developer or manufacturer and verified by the DOT. Coordination and oversight should be led by the Office of the NHTSA Civil Rights Director in partnership with the Office of the Assistant Secretary for Research and Technology, NHTSA Office of Vehicle Safety Research, and NHTSA Chief Counsel's office. The Office of the NHTSA Civil Rights Director should be given adequate resources, expertise and authority to accomplish this role.
- **Human-Machine Interface (HMI) for Driver Engagement:** Research demonstrates that even for a driver who is alert and performing the dynamic driving task, a delay in reaction time occurs between observing a safety problem, reacting and taking needed action. For a driver who is disengaged from the driving task during autonomous operation of a vehicle (i.e., sleeping, texting, watching a movie), that delay will be longer because the driver must first be alerted to re-engage, understand and process the situation, and then take control of the vehicle before taking appropriate action. Therefore, an AV must provide adequate alerts to capture the attention of the human driver with sufficient time to respond and assume the dynamic driving task for any level of vehicle automation that may require human intervention. This mechanism must be accessible to all occupants, including people with disabilities and vulnerable populations.
- **Cybersecurity Standard:** Vehicles must be subject to cybersecurity requirements to prevent hacking and to ensure mitigation and remediation of cybersecurity events. The Federal Aviation Administration (FAA) has a process for the certification and oversight of all U.S. commercial airplanes, including avionics cybersecurity, although improvement is needed according to a recent Government Accountability Office (GAO) study.³ The DOT should be directed, in cooperation with the National Institute of Standards and Technology (NIST), to develop a cybersecurity standard for automated driving systems. The DOT should then require the cybersecurity standard be applied to all new vehicles. The DOT must be engaged in all relevant discussions on artificial intelligence.

³ United States Government Accountability Office, Aviation Cybersecurity, FAA Should Fully Implement Key Practices to Strengthen Its Oversight of Avionics Risks, GAO-21-86 (Oct. 2020).

- ***Electronics and Software Safety Standard:*** Vehicles must be subject to minimum performance requirements for the vehicle electronics and software that power and operate vehicle safety and driving automation systems individually and as interdependent components.
- ***Operational Design Domain (ODD):*** The NHTSA must issue federal standards to ensure safeguards for driving automation systems to limit their operation to the ODD in which they are capable of functioning safely. An ODD includes elements such as: the type of roadway, geographical area, speed range, vehicle operating status, and environmental and temporal conditions in which the vehicle is capable of operating safely; any roadway or infrastructure asset required for the operation of the vehicle, such as roadside equipment, pavement markings, signage, and traffic signals; and, the means by which the vehicle will respond if the defined ODD changes or any circumstance which causes vehicle to operate outside of its defined ODD. The rule shall also: specify requirements for how the vehicle will safely transition to a minimal risk condition as a result of a malfunction or when operating outside of the ODD, including the necessity for human intervention that is accessible to all occupants including people with disabilities and vulnerable populations; and, the ability of the vehicle to comply with local laws as part of whether the vehicle is operating inside the ODD.
- ***Functional Safety Standard:*** Requires a manufacturer to ensure the design, development, verification and validation of safety-related electronics or software demonstrates to NHTSA that an AV will perform reliably and safely under the conditions the vehicle is designed to encounter. Additionally, NHTSA must validate that the manufacturer's certifications of functional safety are accurate and reliable by conducting their own testing as needed.
- ***Safe Fallback:*** Every driving automation system must be able to detect a malfunction, a degraded state, or operation outside of ODD and safely transition to a condition which reduces the risk of a crash or physical injury. In the event of a failure, it is essential that the occupants of a driverless car have the ability to assume manual control to complete or command a safe transition to reach a safe location and safely exit the vehicle. This mechanism must be accessible to all occupants, including people with disabilities and vulnerable populations. Commercial vehicles, including those used for public transportation or freight, present distinct challenges, such as the need to identify qualifications necessary to operate, that will need to be addressed separately.
- ***Crash Procedures Standard:*** Requires manufacturers to have procedures in place, including proper shutdown protocols, for when an AV is involved in a crash to ensure the safety of all occupants of the AV, other road users and emergency responders.
- ***Standard for Over-the-Air (OTA) Updates:*** Requires consumers be given timely and appropriate information on the details of the OTA update and ensures any needed training or tutorials are provided. Limits the circumstances in which manufacturers can update a vehicle OTA and provides requirements for OTA updates that necessitate a recall or an additional demonstration of safety. OTA updates that enhance the safety of a vehicle should not be optional or require the consumer to incur any additional expense. During the update process cybersecurity must be maintained. In developing the OTA standard, NHTSA should develop rigorous testing around the most effective way to push out OTA updates to owners and operators of vehicles. Updates must be accessible for all users, including people with disabilities. In addition, information on OTA updates should be available in multiple languages, similar to compliance with Section 508 of the Rehabilitation Act of 1973 (Pub. L. 93-112), and via video with closed captioning as appropriate, as well as other means of communication to promote access. In a commercial setting, it will be especially critical for there to be clear protocols for how and when OTA updates are carried out.

Safety and Performance Data: With the increasing number of vehicles with different automated technologies being tested and some being sold to the public, standardized data elements, recording, and access to safety event data are necessary for the proper oversight and analysis of the performance of the driving automation systems. Vehicles on the road today are already producing enormous amounts of data,

and the amount and type of data will only increase as driving automation evolves. There are many stakeholders who need that data for numerous and varied reasons, most importantly safety. The DOT must issue a FMVSS requiring all vehicles to be equipped with technology that captures all necessary data to understand and evaluate the safety performance of AVs on the road. Moreover, following best practices, data on disengagements and near-misses would help to identify flaws in the technology and may allow cities and states to proactively invest in infrastructure improvements or update the design of dangerous intersections and corridors to ensure safety for all street users. Real-time data on vehicle speeds, travel times, and volumes enables states, cities, and communities to manage congestion and speed, uncover patterns of excessive speeds, evaluate the success of street design projects, and ultimately improve productivity and quality of life. It could also facilitate emergency response by summoning and providing important information to emergency personnel, assist in the safe extraction of occupants, and provide a way for first responders to safely disable and secure the vehicle. Safety and performance data should be made available to relevant stakeholders such as state and local governments, federal agencies, operators or dispatchers of the vehicle itself, independent research bodies, law enforcement, first responders, insurers, and the public, with appropriate privacy protections.

Manufacturer Submissions to NHTSA: Any submission to NHTSA by AV manufacturers or developers must be mandatory, publicly available and include thorough and adequate data and documentation. Additionally, NHTSA must be directed to review and evaluate all submissions to assess whether an approach to automated driving system (ADS) development and testing includes appropriate safeguards for operation on public roads. Moreover, submissions should be substantive and include, but not be limited to the following issues: ADS control capabilities; ODD; other limitations and constraints; methods and timing of driver engagement (if applicable); data definitions; recording; and, accessibility. Miles accumulated by simulation, as opposed to on-road testing, cannot substitute for on-road testing or serve as the sole basis for the data included in the submission. (See section below on Proper Oversight of Testing.) If NHTSA finds information indicating further operation of these vehicles on public streets poses a danger, the Agency must be able to intervene and enforce the law⁴ effectively, which will require not just the greater use of its existing authority but also new, stronger enforcement authorities that should be enacted by Congress (See section below on Additional Resources and Enforcement Authorities for NHTSA). If the Agency determines that a submission is deficient, manufacturers must be required to submit any additional information requested. The legislation should clarify that the Agency has civil and criminal penalty authority for false, fictitious or fraudulent submissions under 18 United States Code (USC) 1001. This submission process cannot be a substitute for NHTSA promptly issuing minimum performance standards through a public rulemaking process.

Proper Oversight of Testing: AV testing is already underway in many states and localities. Fundamental and commonsense safeguards must be instituted for testing on public roads including the establishment of independent institutional review boards (IRBs) to certify the safety of the protocols and procedures for testing of AVs on public roads. The IRB requirements established by the Department of Health and Human Services (HHS) in 45 Code of Federal Regulations (CFR) 46 should serve as a basis for the requirements for IRBs overseeing AV road testing and be modified as needed for this particular use. Test vehicles should be prohibited from providing a service for compensation. In Section 24404 of the Fixing America's Surface Transportation Act (FAST) Act (Pub. L. 114-94), Congress excluded test vehicles from having to comply with federal standards as long as those vehicles are not sold to the public.

⁴ Motor Vehicle Safety Act, Pub. L. 89-563 (1966).

NHTSA actions required:

- Develop empirical data reporting standards and metrics for such data;
- Mandate developer reporting of the metrics to the public to enable comparison of AV safety performance among developers;
- Require manufacturers to provide data on the safety and performance of test vehicles and systems and to report safety-critical events including crashes and incidents that occur during testing that result in death, injuries or property damage;
- Verify developer compliance with all applicable laws;
- Make safety-critical event information publicly available with the rebuttable presumption in favor of disclosure, unless it is deemed proprietary or confidential in accordance with federal law;
- Determine which safety-critical events must result in the suspension of testing until a thorough review is completed and additional safeguards are implemented and verified by the Agency, as necessary; and,
- Prior to the introduction of the AV into commerce, review and analyze testing for oversight and research purposes, including but not limited to rulemaking.

Additional Resources and Enforcement Authorities for NHTSA: Ensuring NHTSA has adequate resources, funds, staff, and enforcement authority is essential for the Agency to successfully carry out its statutory mission and address the multiple challenges presented by the testing and deployment of self-driving technologies. The Agency also should be given additional enforcement powers including imminent hazard authority, and enhanced authority to pursue criminal penalties and levy larger civil penalties to ensure industry accountability and thwart misconduct.⁵

Guaranteeing Accessibility for All

Access for Individuals with Disabilities and Older Adults: Nearly one in five people in the U.S. has a disability (more than 57 million), and 16 percent of the U.S. population is over the age of 65. Yet, significant barriers to accessible, affordable and reliable transportation remain across all modes, and many people with disabilities are unable to obtain a driver's license and cannot afford to purchase an accessible vehicle. Autonomous driving technology has the potential to increase access and mobility for older adults and individuals with disabilities, including those with sensory, cognitive, and physical disabilities, wheelchair users, and people with neurological conditions, who have varying needs as well as traditionally underserved communities. This goal can be realized by Congressional directive ensuring access for everyone, including accessible HMI, and ramps and securement for wheelchair users. Discrimination on the basis of disability in licensing for SAE International level 4 and 5 AVs must also be prohibited. In addition, the diverse needs of all members of the disability community and older adults must be accommodated for systems that require human engagement as well as when developing a safe fallback.

Access for Underbanked Populations: Access to on-demand transport services is often predicated on the ability to make digital payments. Twenty-five percent of U.S. households are unbanked or underbanked, with higher incidence in working-age disabled households, lower-income households, less-educated households, younger households, Black and Hispanic households, and households with volatile income. AV-based transport services must consider a variety of ways in which payment for service can be made in order to ensure that this technology supports equitable access and the inclusion of all.

⁵ If NHTSA is not to have authority over the commercial operation of an AV, these same oversight powers must be conveyed to the respective modal agency responsible for overseeing the deployment of commercial AVs.

Equity: Transportation is an imperative part of life. It is the connector for people’s work, medical care, worship, recreation, essentials for life and all other tasks. As new modes of transportation continue to grow and evolve, investment and development must include a process where all people can safely participate.

Accessibility, Passenger Safety, and Transportation Services: The safety of passengers is not a monolith, and the measurement and descriptions of safety differ for all people in particular for those who are part of marginalized communities. The use of public transportation safely is currently partially in control of the operators of the modes and vehicles. Human interaction remains essential even when there is an AV and no operators. There must be clear plans that coordinate the safe transportation for all people including the need for delivery of medical care as well as laws that embrace social equity to protect those who are marginalized (Black and Brown people, Indigenous people, lesbian, gay, bisexual, transgender, queer, + (LGBTQ+) people, people with disabilities, women, older adults, and all other groups) in the implementation of these transportation services.

Preserving Consumer and Worker Rights

Consumer Information: Consumer information regarding AVs should be available at the point of sale, in the owner’s manual, including publicly accessible electronic owner’s manuals, and in any OTA updates. The vehicle identification number (VIN) should be updated to reflect whether certain features were built into the vehicle, either as standard or optional equipment. Additionally, similar to the user-friendly [safercar.gov](https://www.safercar.gov) website, NHTSA must establish a website accessible by VIN with basic safety information about the AV level, safety exemptions, and limitations and capabilities of the AV driving system including those resulting from OTA updates. The U.S. New Car Assessment Program (NCAP) was the first government program to provide the public with comprehensive auto safety ratings, including crash test results. It is vital that Congress require NHTSA to act upon consumer and stakeholder recommendations to modernize U.S. NCAP ([See Claybrook/Advocates for Highway and Auto Safety paper](#)) and include ratings on how vehicles perform in crashes with motorcyclists, pedestrians and bicyclists. This enhancement of NCAP will be especially crucial as AVs are introduced into the marketplace. Consumer information should be available in multiple languages, similar to compliance with Section 508 of the Rehabilitation Act of 1973 (Pub. L. 93-112), and via video with closed captioning as appropriate, as well as other means of communication to promote access.

Privacy: Passenger vehicles have the potential to collect significant amounts of data that could interfere with personal privacy rights. Therefore, all manufacturers of passenger motor vehicles, including AVs, should be required to comply with robust data privacy safeguards and policies. Any personally identifiable information (PII) should only be collected or shared for purposes of delivering the services a consumer has requested or affirmatively opted-in to, with appropriately tailored exceptions for essential public purposes, safety, data security, compliance with regulatory requirements, and analytics/performance monitoring, among other purposes. Companies should be required to be transparent with consumers and workers operating a vehicle about the collection and sharing of information, protect information associated with the vehicle and the vehicle itself from data breaches, obtain consumers' express permission to sell or disclose their PII to third parties, and provide consumers the ability to access and delete PII that is not needed to support essential public purposes, safety, data security, compliance with regulatory requirements, and analytics/performance monitoring. The ability of NHTSA, the NTSB, and local law enforcement to access critical safety performance data, while preserving the integrity of personal, private or identifying data, in a timely manner for research, crash investigation and other governmental purposes must be preserved. In addition, radio spectrum needed for traffic safety purposes including vehicle-to-everything communications must be limited to non-commercial use.

Workforce Protections: The deployment of AV technology will have a significant impact on our Nation's workforce. While these technologies will create new business and employment opportunities, they will also lead to displacement and major shifts in jobs and job functions that will not necessarily be linked to those new opportunities, especially for those same individuals who are being displaced. Policymakers have a major role to play in determining whether AV deployment will help or harm working people and whether the benefits from these technologies will be broadly shared. Absent strong leadership, AV technology risks worsening severe inequalities already inherent in our society, predominantly for blue collar workers. Existing and foreseeable issues which stand to be greatly exacerbated by this technology must be addressed before this technology is broadly deployed on our roads. Similarly, unforeseeable issues throughout deployment will need to be resolved with input from affected stakeholders. Congress must ensure that workers and unions are partners in the development and implementation of AV technology and policy. It must recognize the projected negative effects of a transition to AVs, including but not limited to ensuring strong worker protections in federal funding and procurements, and providing worker support programs for current and future workers including training and re-skilling to ensure that displaced and otherwise affected workers are able to move into middle class jobs created by technological change. In order to achieve these goals, Congress must also take action to require companies and government agencies that plan to transition to AV fleets to be transparent and honest with their workers regarding budgets, plans - including training programs - and timelines for the implementation of new technology. In workplaces where the employees are unionized and thus bargain collectively, these issues should be negotiated.

Whistleblower Protections: Employees or contractors of any manufacturer, supplier, or operator of software or hardware for AVs who want to report safety defects to NHTSA should not be prevented from doing so as the result of a non-disclosure agreement (NDA). The type of protections afforded whistleblowers in Section 31307 of the Moving Ahead for Progress in the 21st Century (MAP-21) Act (Pub. L. 112-141) as well as Section 24352 in the FAST Act (Pub. L. 114-94) must be extended in any AV bill. In addition, the Department of Labor prohibits a NDA that prevents an individual from providing information to the federal government. However, only a limited number of cases have been filed with the Occupational Safety and Health Administration. Therefore, more must be done to inform employees as to their rights and responsibilities when such a situation arises.

Consumer and Worker Rights⁶: The well-established rights of consumers to seek accountability in a court of law for injuries suffered as a result of AVs must be preserved. Nothing in this bill shall exempt a person from liability at common law or under a state law, or permit a consumer to be required to forgo their rights by a manufacturer or provider of AVs. Moreover, exploitative independent contractor relationships that shield AV companies from liability and deny workers basic workplace rights should be explicitly prevented.

Ensuring Local Control and Sustainable Transportation

Local, State and Federal Regulatory Roles: The statutory mission of the DOT established by Congress in 1966 is to regulate the performance of motor vehicles to ensure public safety, which now includes AVs. In keeping with existing law and practice, the federal government should prescribe regulations for the performance of these vehicles, leaving regulation of the operation of these vehicles to the states. Even after federal regulations are in place regarding AVs, existing federalism practices demand that states retain a legal right and a duty to their residents to develop proposals and implement solutions to ensure public safety. In addition, state and local governments have the authority to manage the operation of vehicles on their streets to address concerns such as safety, noise, local air quality, and congestion. Any action on the

⁶ Advocates for Highway and Auto Safety does not take a position on this issue.

regulation of AVs shall not preempt states and localities from regulating the operation of these vehicles just as they do for traditional motor vehicles.

In-Depth Study of AV Impacts on Transportation Systems and Environment: AVs could have direct and indirect negative impacts on safety, congestion, pollution, land use, accessibility, transportation infrastructure capacity and needs, energy consumption, public transit, jobs and job functions, mobility and equity. DOT must be directed to undertake a comprehensive study to inform policymakers and the public about how these vehicles will impact our existing transportation systems and ensure effective mitigation of problems identified. Implementation of infrastructure to support the safe operations of AVs, such as placement of electric vehicle charging stations, visible lane striping, and uniform and unobstructed signage, must be equitable for all communities to ensure equal opportunity for people of all racial and socioeconomic backgrounds.

NOTE: The AV Tenets outlined in this document do not constitute the entirety of each supporting organization's policy priorities related to AVs.

Supporters of Autonomous Vehicle (AV) Tenets

Active Transportation Alliance (Metro Chicago)
Advocates for Highway and Auto Safety
American Association for Justice
American Motorcyclist Association
American Public Health Association
American Trauma Society
Association of Pedestrian and Bicycle Professionals
Bicycle Coalition of New Mexico
BikeNWA
BikeOklahoma
Bike Pittsburgh
BikeSD
BikeWalkKC
Brain Injury Association of America
California Association of Bicycling Organizations
Cascade Bicycle Club
Center for Auto Safety

Center for Disability Rights, Inc.
Citizens for Reliable and Safe Highways
Consumer Action
Consumer Federation of America
Consumers for Auto Reliability and Safety
Consumer Reports
Disability Rights Education and Defense Fund
Emergency Nurses Association
Environmental Law & Policy Center
Families for Safe Streets
Federal Law Enforcement Officers Association
GorgePedal.com
Health by Design
Idaho Walk Bike Alliance
International Brotherhood of Teamsters
Joan Claybrook, President Emeritus, Public Citizen, Former Administrator, National Highway Traffic
Safety Administration
KidsAndCars.org
LA Walks
League of American Bicyclists
Missouri Bicycle and Pedestrian Federation
National Association of City Transportation Officials (NACTO)
National Coalition for Safer Roads
National Consumers League
New Urban Mobility Alliance
Parents Against Tired Truckers
Public Citizen
Owner-Operator Independent Drivers Association
Rails-to-Trails Conservancy
Ride Illinois

San Francisco Families for Safer Streets
Shenandoah Valley Bicycle Coalition
SoCal Families for Safe Streets
The Daniel Initiative
Transport Workers Union
Transportation Alternatives
Transportation for America
Transportation Trades Department, AFL-CIO
Trauma Foundation
Truck Safety Coalition
Walk SF
Washington Bikes
Whirlwind Wheelchair International
Wyoming Pathways

Glossary of Acronyms

ADS – Automated Driving System

AV – Autonomous Vehicle

CFR – Code of Federal Regulations

DOT – Department of Transportation

FAA – Federal Aviation Administration

FAST – Fixing America’s Surface Transportation Act, Pub. L. 114-94

FMVSS – Federal Motor Vehicle Safety Standard

GAO – Government Accountability Office

GVWR – Gross Vehicle Weight Rating

HHS – Health and Human Services

HMI – Human-Machine Interface

IRB – Institutional Review Board

LGBTQ+ -- Lesbian, Gay, Bisexual, Transgender, Queer, +

MAP-21 – Moving Ahead for Progress in the 21st Century Act, Pub. L. 112-141

NCAP – New Car Assessment Program

NDA – Non-Disclosure Agreement

NHTSA – National Highway Traffic Safety Administration

NIST – National Institute of Standards and Technology

NTSB – National Transportation Safety Board

ODD – Operational Design Domain

OTA – Over-the-Air

PII – Personally Identifiable Information

SAE – Society of Automotive Engineers

USC – United States Code

VIN – Vehicle Identification Number