



ADVOCATES
FOR HIGHWAY
& AUTO SAFETY

July 18, 2022

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, "Implementing the Infrastructure Investment and Jobs Act." We respectfully request this letter be included in the hearing record.

The skyrocketing number of deaths and consistently high number of injuries on our nation's roads over the last several years has renewed national focus on the need for proven solutions to reduce these preventable tragedies. Hearing witness U.S. Department of Transportation (DOT) Secretary Pete Buttigieg has accurately stated, "This is a crisis."¹ The safety advances included in the Infrastructure Investment and Jobs Act (IIJA) and continued action on other Congressionally mandated safety countermeasures must be implemented by the U.S. DOT in a comprehensive and expeditious manner.²

Motor Vehicle Crashes are a Major Public Health Problem Which Demands Immediate Action

As this Committee is well aware, our nation's roads have become more dangerous and deadlier. According to the National Highway Traffic Safety Administration (NHTSA), 42,915 people were killed in motor vehicle crashes in 2021.³ This represents a 10.5 percent increase from 2020 and the highest number of deaths since 2005.⁴ In addition, fatalities across a number of categories rose from 2020 to 2021 including speeding (five percent), alcohol-involved crashes (five percent) and unrestrained occupants of passenger vehicles (3 percent).⁵ The NHTSA currently values each life lost in a crash at \$11.8 million.⁶ The crashes, injuries and fatalities impose a financial burden of over \$1 trillion in total costs to society -- \$313 billion of which are

¹ NHTSA, USDOT Releases New Data Showing That Road Fatalities Spiked in First Half of 2021 (Oct. 28, 2021).

² Pub. L. 117-58 (2021); Moving Ahead for Progress in the 21st Century (MAP-21) Act, Pub. L. 112-141 (2012); Fixing America's Surface Transportation (FAST) Act, Pub. L. 114-94 (2015).

³ Early Estimate of Motor Vehicle Traffic Fatalities in 2021, NHTSA, Apr. 2022, DOT HS 813 283.

⁴ *Id.*

⁵ Early Estimates of Motor Vehicle Traffic Fatalities And Fatality Rate by Sub-Categories in 2021, NHTSA, May 2022, DOT HS 813 298.

⁶ John Putnam, DOT Deputy General Counsel, Guidance on the Treatment of the Economic Value of a Statistical Life (VSL) in U.S. Department of Transportation Analyses – 2021 Update.

direct economic costs.⁷ This is equivalent to a “crash tax” of \$944 on every person living in the U.S.⁸ In 2019, crashes alone cost employers \$72.2 billion.⁹

In 2021, over 5,600 people were killed in crashes involving a large truck.¹⁰ Since 2009, the number of fatalities in large truck crashes has increased by 66 percent.¹¹ Additionally, nearly 147,000 people were injured in crashes involving a large truck in 2020.¹² The cost to society from crashes involving large trucks and buses was estimated to be \$163 billion in 2019, the latest year for which data is available.¹³ When adjusted solely for inflation, this figure amounts to over \$180 billion.¹⁴ According to the U.S. Department of Labor, truck driving is one of the most dangerous occupations in the United States.¹⁵

As the IJA is Implemented, It Should be a “Floor” and not a “Ceiling” for what Must be Achieved to Address the Motor Vehicle Crash Death and Injury Toll

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. Advocates commends this Committee for championing commonsense safety solutions, many of which were included, in some fashion, in the IJA enacted last November.¹⁶ These provisions include:

- Section 11111: Authorizes safety upgrades to the Highway Safety Improvement Program (HSIP) that will help to protect vulnerable road users (VRUs).
- Section 11119: Directs U.S. DOT to establish a Safe Routes to School Program.
- Section 11135: Mandates that initial update of the Manual on Uniform Traffic Control Devices for Streets and Highways (MUTCD) includes protection of VRUs.
- Section 11206: Requires states and local entities to spend a minimum amount of funding for complete streets standards and policies.
- Section 11504: Requires U.S. DOT to conduct a study on the existing and future impacts of autonomous vehicles (AVs) to transportation infrastructure, mobility, the environment, and safety.
- Section 23008: Mandates U.S. DOT further consider a rule requiring state inspection of passenger carrying commercial motor vehicles (CMVs).

⁷ Economic costs include lost productivity, medical costs, legal and court costs, emergency service costs, insurance administration costs, congestion costs, property damage, and workplace losses.

⁸ “The Economic and Societal Impact of Motor Vehicle Crashes, 2010,” NHTSA (2015).

⁹ Cost of Motor Vehicle Crashes to Employers 2019, Network of Employers for Traffic Safety, March 2021.

¹⁰ Traffic Safety Facts: Crash Stats; Early Estimates of Motor Vehicle Traffic Fatalities and Fatality Rate by Sub-Categories in 2021, NHTSA, May 2022, DOT HS 813 298.

¹¹ *Id.* and Traffic Safety Facts 2019: A Compilations of Motor Vehicle Crash Data, NHTSA, Aug. 2021, DOT HS 813 141. Note, the 66 percent figure represents the overall change in the number of fatalities in large truck involved crashes from 2009 to 2021. 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 2021, it increased by 20 percent.

¹² Traffic Safety Facts, 2020 Data: Large Trucks, NHTSA, Apr. 2022, DOT HS 813 286.

¹³ 2021 Pocket Guide to Large Truck and Bus Statistics, FMCSA, Dec. 2021, RRA-21-004.

¹⁴ CPI Inflation Calculator, BLS, available at https://www.bls.gov/data/inflation_calculator.htm.

¹⁵ U.S. Department of Labor, Bureau of Labor Statistics, National Census of Fatal Occupational Injuries in 2020, USDL-21-2145 (Dec. 16, 2021).

¹⁶ Pub. L. 117-58 (2021).

- Section 24102: Permits the use of federal funding for automated enforcement in school and work zones.
- Section 24107: Requires states to have minimum penalties for repeat multi-substance offenders to avoid diversion of federal highway construction funds.

Additionally, Section 23010 of the IIJA requires automatic emergency braking (AEB) on large CMVs weighing over 26,000 pounds. However, it fails to mandate these systems on Class 3 – 6 trucks which are ubiquitous in many neighborhoods with the rise of delivery services and e-commerce. In addition, the provision fails to direct that the AEB system will detect and respond to VRUs such as pedestrians and bicyclists. Advocates and others including the National Transportation Safety Board (NTSB) have been strongly urging the U.S. DOT to address these issues as part of the rulemaking process, as it has the authority to do so.

This Committee should also be lauded for directing U.S. DOT in Section 23011 of the IIJA to finally complete a long overdue rulemaking updating the performance standards for truck trailer underride guards. This critical safety equipment can prevent a passenger vehicle from traveling underneath a trailer during a crash. Unfortunately, the rule released by NHTSA this month fails to meet the requirements included in the IIJA despite the fact that nine of the largest trailer manufacturers in the U.S. already meet the requirements in the legislation.¹⁷

Unfortunately, numerous provisions in the Investing in a New Vision for the Environment and Surface Transportation (INVEST) in America Act,¹⁸ passed by this Committee and the House of Representatives in July 2021, that would have significantly improved public safety were not included in the final IIJA. They include:

- Section 1602: Required U.S. DOT to revise the MUTCD to mandate states use a Safe System Approach to setting speed limits, consistent with NTSB recommendations.
- Section 4202: Required U.S. DOT to revise the methodology used to identify unsafe motor carriers under Compliance, Safety, Accountability (CSA) program and make safety data publicly available upon revision of the methodology.
- Section 4203: Mandated that U.S. DOT establish terms and conditions for carriers and drivers operating under an exemption from safety rules.
- Section 4306: Required U.S. DOT to conduct review of the impacts of current hours-of-service (HOS) rules.
- Section 4308: Established screening for Obstructive Sleep Apnea (OSA) for CMV drivers.
- Section 4311: Allowed data from Electronic Logging Devices (ELDs) to be used by U.S. DOT for transportation research.
- Section 4401: Required new school buses to be equipped with AEB and electronic stability control (ESC) systems.

¹⁷ NHTSA Biden-Harris Administration, U.S. Department of Transportation Announce Comprehensive Actions to Increase Underride Protection on Truck Trailers and Prevent Deadly Crashes (Jun. 30, 2022); Insurance Institute for Highway Safety, Truck underride guard ratings, available at: <https://www.iihs.org/topics/large-trucks/truck-underride>

¹⁸ H.R. 3684, 117th Cong., 1st Sess. (2021).

We urge the Committee to advance these issues at the earliest opportunity.

Safety Setbacks in the IIJA Require Oversight and Mitigation of Damage

“Teen Truckers” Pose a Major Safety Threat

Section 23022 of the IIJA established a three-year pilot program to permit drivers ages 18-20 to operate CMVs in interstate commerce. Some segments of the trucking industry have been pushing to allow teenagers to operate CMVs in interstate commerce for at least 20 years, and safety organizations, among others, have been opposing this proposal at every step.

The trucking industry is facing a driver retention crisis, not a driver shortage. In fact, a March 2019 U.S. Bureau of Labor Statistics (BLS) analysis found that “the labor market for truck drivers works about as well as the labor markets for other blue-collar occupations” and “a deeper look [at the truck industry labor market] does not find evidence of a secular shortage.”¹⁹ As Secretary Buttigieg recently noted, such a high rate of turnover is indicative that there are some real issues with the quality of the job of driving a truck.²⁰ In addition, states issue more than 450,000 new commercial driver licenses (CDLs) each year demonstrating that there are candidates to fill vacancies.²¹

Younger drivers are demonstrated to be less safe. Relatedly, as Secretary Buttigieg noted in discussing raising the mandatory retirement age for airline pilots, proposals regarding individuals in safety sensitive positions that “jeopardize safety” should be rejected.²² The Insurance Institute for Highway Safety (IIHS), citing numerous studies, has stated that “age is a strong risk factor for truck crash involvement.”²³ In fact, age is the most important factor in the high rate of involvement of younger CMV drivers in fatal crashes. The general pattern of over-involvement in fatal crashes for younger CMV drivers dominates all other factors. Studies of young CMV drivers show that as the age of the driver decreases, large truck fatal crash involvement rates increase.²⁴ CMV drivers under the age of 19 are four times more likely to be involved in fatal crashes, as compared to CMV drivers who are 21 years of age and older, and CMV drivers ages 19-20 are six times more likely to be involved in fatal crashes (compared to CMV drivers 21 years and older).²⁵ Because of the significant public safety concerns associated with teen truck drivers, we urge this Committee to exercise vigilant oversight of U.S. DOT’s implementation of the pilot program established in the IIJA. Moreover, we continue to urge the Committee to reject efforts to advance the misnamed

¹⁹ United States Department of Labor, Bureau of Labor Statistics, *Is the U.S. labor market for truck drivers broken?* (Mar. 2019).

²⁰ See: <https://www.msnbc.com/morning-joe/watch/transportation-secretary-buttigieg-on-supply-chain-issues-worker-shortage-125851717987> (Nov. 10, 2021).

²¹ Greg Rosalsky, *Is There Really A Truck Driver Shortage?*, National Public Radio (May 25, 2021).

²² Fox News, Pete Buttigieg: Answer to troubled skies is cultivating ‘new generation of qualified pilots’ (Jul. 10, 2022).

²³ 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; Blower, D. 1996. The accident experience of younger truck drivers. Ann Arbor, MI: University of Michigan Transportation Research Institute; Frith, W.J. 1994. A case-control study of heavy vehicle drivers’ working time and safety. *Proceedings of the 17th Australian Road Research Board Conference*, 17-30. Queensland, Australia: Australian Road Research Board; Stein, H.S. and Jones, I.S. (1988).

²⁴ Campbell, K. L., *Fatal Accident Involvement Rates By Driver Age For Large Trucks*, *Accid. Anal. & Prev.* Vol 23, No. 4, pp. 287-295 (1991).

²⁵ Campbell, K. L., *Fatal Accident Involvement Rates By Driver Age For Large Trucks*, *Accid. Anal. & Prev.* Vol 23, No. 4, pp. 287-295 (1991).

“DRIVE Safe” Act (H.R. 1745/S. 659) which would establish a similar pilot program permitting teen truckers to operate in interstate commerce.

Fatigue is a Well-Known and Well-Documented Lethal Threat to the Safety of CMV Drivers and the Public

Studies consistently show that long working hours per day and per week are related to adverse health effects.²⁶ The National Academies of Sciences, Engineering, and Medicine (NASEM) has concluded that “the cumulative long-term effects of sleep loss and sleep disorders have been associated with a wide range of deleterious health consequences including an increased risk of hypertension, diabetes, obesity, depression, heart attack, and stroke.”²⁷ Moreover, the American Academy of Sleep Medicine warns that drowsy driving can have the same consequences as driving while under the influence of drugs and alcohol.²⁸ Despite the NTSB repeatedly citing fatigue as a major contributor to truck crashes, Section 23018 of IJA included a provision further weakening the HOS rules to the detriment of public safety.²⁹ We urge Congress to reject further attempts to degrade HOS rules, including weakening or exempting the requirement for ELDs which have been demonstrated to be effective at ensuring compliance.

In response to the COVID-19 pandemic, the Federal Motor Carrier Safety Administration (FMCSA) has provided exemptions from certain federal regulations including HOS rules for motor carriers and drivers. Any exemption from federal regulations must be narrowly tailored in time and scope with appropriate safeguards to protect truck drivers and the public. Additionally, Congress must not enshrine temporary exemptions into statute, and there must be transparency about their use by making any related data available to the public.

Overweight Trucks Disproportionately Damage America’s Crumbling Infrastructure and Threaten Public Safety

According to the 2021 Infrastructure Report Card from the American Society of Civil Engineers, America’s roads receive a grade of “D,” and our bridges were given a “C.”³⁰ Nearly 40 percent of our 615,000 bridges in the National Bridge Inventory are 50 years or older, and one out of 11 is structurally deficient.³¹

²⁶ Karl SW, Robinson CF, Birdsey J, Chen GX, Hitchcock EM, Lincoln JE, Nakata A, Sweeney MH. "Obesity and Other Risk Factors: The National Survey of U.S. Long-Haul Truck Driver Health and Injury." *Am. J. Ind. Med. American Journal of Industrial Medicine* 57.6 (2014): 615-26. Print; Orris, Peter. *Literature Review on Health and Fatigue Issues Associated with Commercial Motor Vehicle Driver Hours of Work*. Washington, D.C.: Transportation Research Board, 2005. Print.

²⁷ Commercial Motor Vehicle Driver Fatigue, Long-Term Health, and Highway Safety: Research Needs, National Academy of Sciences, Mar. 10, 2016.

²⁸ Watson NF, Morgenthaler T, Chervin R, Carden K, Kirsch D, Kristo D, Malhotra R, Martin J, Ramar K, Rosen I, Weaver T, Wise M. *Confronting drowsy driving: The American Academy of Sleep Medicine Perspective*. *J Clin Sleep Med* 2015; 11(11): 1335-1336; citing Dawson A, Reid K. Fatigue, alcohol, and performance impairment. *Nature* 1997; 388:235. Accessed at <http://www.aasmnet.org/resources/pdf/pressroom/Drowsy-driving-position.pdf>.

²⁹ Section 23018; National Transportation Safety Board, 2019-20 Most Wanted list, available at: <https://www.nts.gov/safety/mwl/Pages/default.aspx>

³⁰ 2021 Infrastructure Report Card – Bridges, American Society of Civil Engineers (ASCE); 2021 Infrastructure Report Card – Roads, ASCE.

³¹ 2021 Infrastructure Report Card – Bridges (ASCE).

Unfortunately, Section 11515 in the IIA included exemptions to federal truck size and weight limits. Raising truck weight or size limits could result in an increased prevalence and severity of crashes. Unsurprisingly, trucks heavier than 80,000 pounds have a greater number of brake violations, which are a major reason for out-of-service violations.³² According to a North Carolina study by IIHS, trucks with out-of-service violations are 362 percent more likely to be involved in a crash.³³ This is also troubling considering that tractor-trailers moving at 60 miles per hour are required to stop in 310 feet – the length of a football field – once the brakes are applied.³⁴ Actual stopping distances are often much longer due to driver response time before braking and the common problem that truck brakes are often not in adequate working condition.

There is overwhelming opposition to any increases to truck size and weight limits. The public, local government officials, safety, consumer and public health groups, law enforcement, first responders, truck drivers and labor representatives, families of truck crash victims and survivors, and Congress on a bipartisan level have all rejected attempts to increase truck size and weight limits. Also, the technical reports released in June 2015 from the U.S. DOT Comprehensive Truck Size and Weight Study concluded there is a “profound” lack of data from which to quantify the safety impact of larger or heavier trucks and consequently recommended that no changes in the relevant truck size and weight laws and regulations be considered until data limitations are overcome.³⁵

Although IIA invested billions of dollars to improve and make our nation’s roads and bridges safer, it also included exemptions to federal truck size and weight laws.³⁶ Any further weakening of these critical safety regulations will undermine this objective, worsen safety problems and divert rail traffic from privately owned freight railroads, which are safer than public roadways, to our already overburdened highways exacerbating road wear, congestion and safety issues.

Experimental Autonomous Driving Technology Remains Unproven

Several serious crashes involving cars equipped with autonomous driving technology, which is unregulated, have already occurred. Many have been subject to investigation by the NTSB and NHTSA which have and will continue to identify safety deficiencies, determine contributing causes, and recommend government and industry actions to prevent future deadly incidents.

In June 2021, NHTSA issued Standing General Order 2021-01 (SGO) requiring manufacturers to report certain crashes involving vehicles equipped with automated driving systems (ADS) or Level 2 advanced driver assistance systems (ADAS). Last month, NHTSA released the first set of data obtained through the SGO and the information is deeply troubling.³⁷ The data showed

³² Roadside Inspections, Vehicle Violations: All Trucks Roadside Inspections, Vehicle Violations (2019 – Calendar), FMCSA.

³³ Teoh E, Carter D, Smith S and McCart A, Crash risk factors for interstate large trucks in North Carolina, Journal of Safety Research (2017).

³⁴ Code of Federal Regulations (CFR) Title 49 Part 571 Section 121: Standard No. 121 Air brake systems (FMVSS 121).

³⁵ Comprehensive Truck Size and Weight Limits Study, Federal Highway Administration (June 2015).

³⁶ Section 11515.

³⁷ NHTSA, NHTSA Releases Initial Data on Safety Performance of Advanced Vehicle Technologies (Jun. 15, 2022).

that of the 108 entities sent the SGO, only 12 reported on ADAS, revealing nearly 400 crashes. Six crashes were fatal, five resulted in serious injuries, and another 41 resulted in minor or moderate injuries. Four involved a VRU such as a bicyclist or a pedestrian. Twenty-five entities reported on ADS, revealing 130 crashes. Sixteen crashes reportedly resulted in injuries. Eleven crashes involved a VRU including seven cyclists. Additionally, recent testing mishaps with vehicles equipped with ADS include a fleet of test taxis stopping in the middle of street and requiring human intervention to move the “cluster” and a test vehicle operating without its headlights while failing to follow police instructions.³⁸ Our nation’s roads should not be an unregulated beta testing ground for this experimental technology, threatening the safety of the traveling public.

In January, Advocates released the results of a new public opinion poll that showed 80 percent of respondents are concerned about sharing the road with driverless cars as a motorist, bicyclist or a pedestrian. Eighty-five (85) percent of respondents are similarly concerned about sharing the road with driverless tractor-trailers and delivery trucks. Of note, 60 percent of respondents feel that if the companies had to meet minimum government safety requirements for their driverless cars and trucks, it would address their concerns.

We once again commend this Committee and the Subcommittee on Highways and Transit for holding the February hearing, “The Road Ahead for Automated Vehicles.” Many promises have been touted about autonomous vehicles (AVs) bringing reductions in motor vehicle crashes and resultant deaths and injuries, lowering traffic congestion and vehicle emissions, expanding mobility and accessibility, improving efficiency, and creating more equitable transportation options and opportunities. However, as Secretary Buttigieg has acknowledged, these outcomes are far from certain.³⁹ Similarly, an article published in *The Washington Post* by David Zipper in February entitled, “Companies are racing to make self-driving cars. But why?” examined this further and called into question many of the oft-touted benefits AV proponents have claimed.⁴⁰ Zipper notes Secretary Buttigieg has said “that self-driving cars have ‘raised complicated, even philosophical, questions about safety, equity and our workforce.’” Zipper adds, “With so much at stake in the future of self-driving cars, government officials should be keeping a watchful eye on new developments, ready to intervene to defend the public interest.”

Advocates has consistently sought action by the U.S. DOT to ensure the safety of the public driving, riding, walking and rolling on our roads and in contact with the still developing technology. In 2020, Advocates spearheaded the compilation of the “AV Tenets,” policy positions which should be a foundational part of any AV policy. This comprehensive approach is based on expert analysis, real world experience and public opinion. It is supported by 60 stakeholders representing safety, consumer, public health, labor, bicyclists, pedestrians, individuals with disabilities, smart growth, and others.⁴¹ It has four main, commonsense categories including: 1) prioritizing safety of all road users; 2) guaranteeing accessibility and equity for all individuals including those with disabilities; 3) preserving consumer and worker

³⁸ Aarian Marshall, Cruise’s Robot Car Outages Are Jamming Up San Francisco, *Wired* (Jul. 8, 2022);

³⁹ Nilay Patel and Andrew J. Hawkins, Pete Buttigieg is Racing to Keep Up with Self Driving Cars. *The Verge* (Jan. 6, 2022).

⁴⁰ David Zipper, *Companies are racing to make self-driving cars. But why?* *Washington Post* (Feb. 4, 2022).

⁴¹ The AV Tenets and list of supporters is attached to this letter.

rights; and, 4) ensuring local control and sustainable transportation. We urge Congress to use this document as a foundation for any future AV legislation.

Conclusion

We laud the Committee for holding this hearing to make certain that the U.S. DOT meets its mission to ensure the safest transportation system in the world. Oversight of implementation of the IIJA is a critical component to this end. We look forward to continuing to work with you to improve safety on our nation's roadways.

Sincerely,

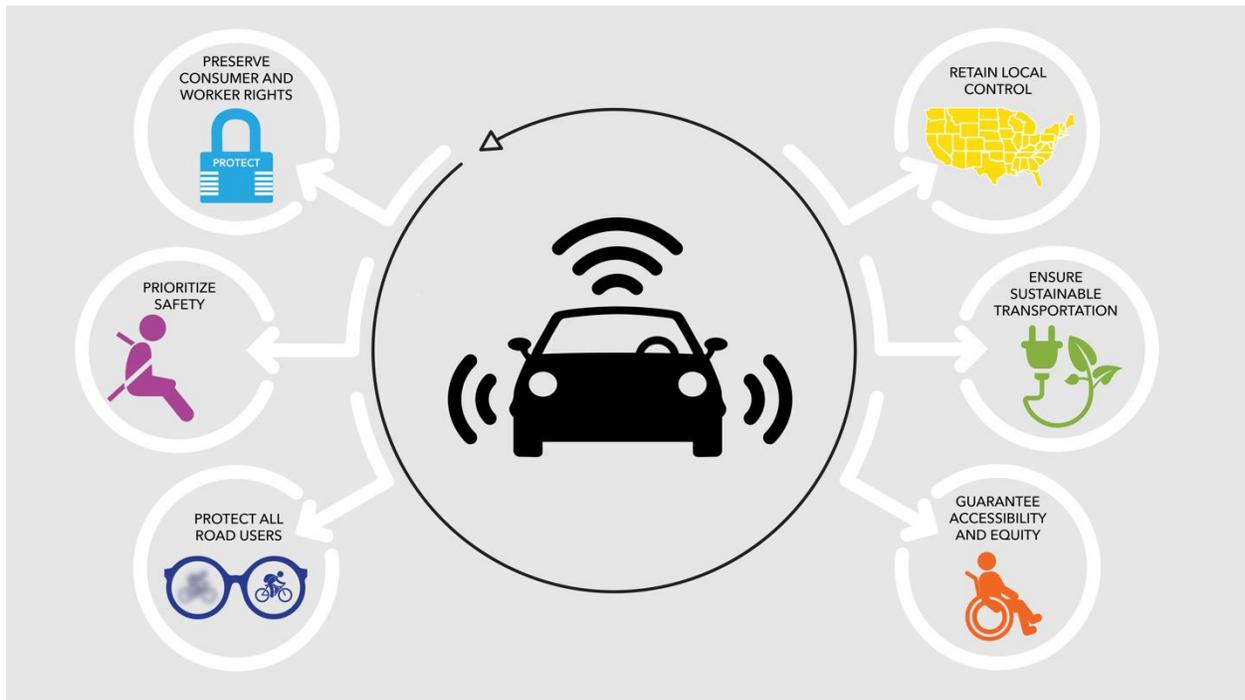
A handwritten signature in black ink, appearing to read "Catherine Chase", with a long horizontal flourish extending to the right.

Catherine Chase
President

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

Autonomous Vehicle (AV) Tenets¹

November 30, 2020



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 safecar.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.

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

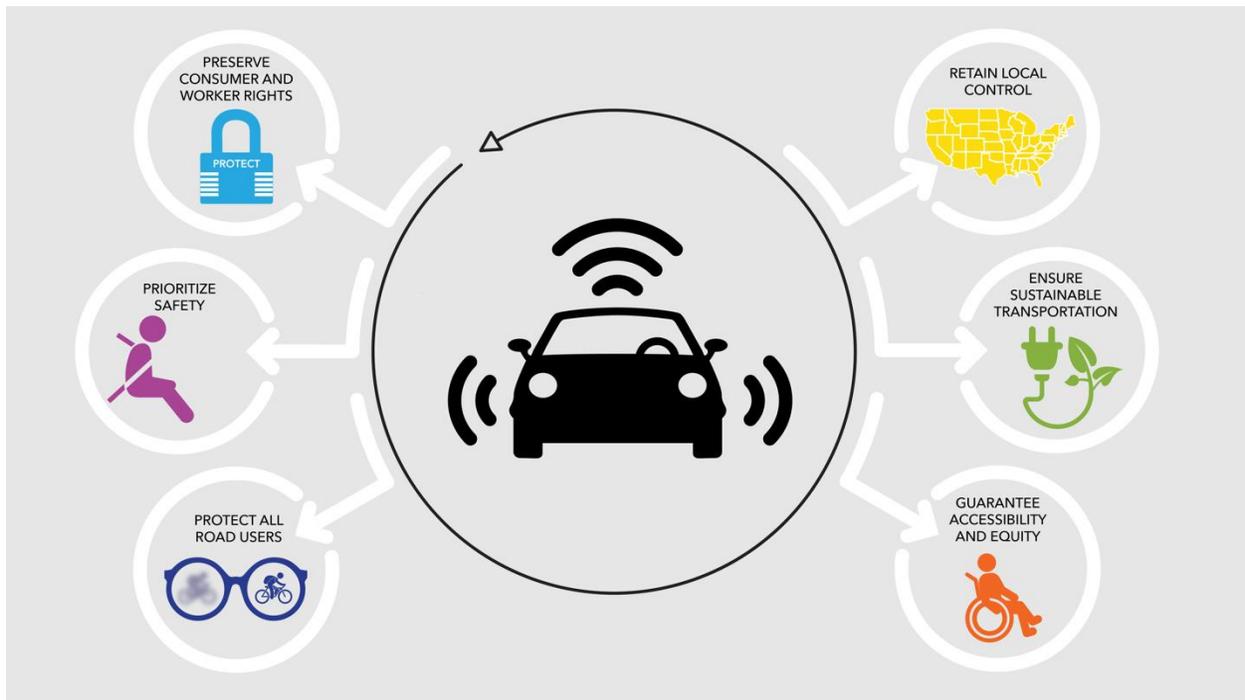
PII – Personally Identifiable Information

SAE – Society of Automotive Engineers

USC – United States Code

VIN – Vehicle Identification Number

Supporters of Autonomous Vehicle (AV) Tenets As of December 2, 2020



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