ADVOCATES
FOR HIGHWAY
& AUTO SAFETY

May 21, 2025

The Honorable Gus Bilirakis, Chair
Committee on Energy and Commerce
Subcommittee on Commerce, Manufacturing, and Trade
U.S. House of Representatives
Washington, D.C. 20515

The Honorable Jan Schakowsky, Ranking Member
Committee on Energy and Commerce
Subcommittee on Commerce, Manufacturing, and Trade
U.S. House of Representatives
Washington, D.C. 20515

Dear Chair Bilirakis and Ranking Member Schakowsky:

Thank you for convening the hearing, "AI Regulation and the Future of US Leadership." Advocates for Highway and Auto Safety (Advocates) appreciates the opportunity to provide input on this important issue and underscore the need to ensure the safety of the American public while advancing developing technology, which can and should be done in unison. Conversely, hampering the ability of states to protect the public on roadways, especially in the absence of federal safety laws and regulations, does not serve this goal.

Motor Vehicle Deaths Remain Historically High

On average, 112 people were killed every day on roads in the U.S., totaling 40,901 fatalities in 2023, the most recent final annual data from the National Highway Traffic Safety Administration (NHTSA).[1] This is a 24 percent increase in deaths in just a decade.[2] An additional 2.44 million people were injured.[3] Early estimates for 2024 find a welcome, albeit slight, reduction in traffic fatalities to 39,345.[4] Yet, nearly 40,000 people killed on our roads is still reason to utilize verified solutions.

In 2023, 7,314 pedestrians and 1,166 pedalcyclists were killed in traffic crashes.[5] Motorcycles continue to be the most hazardous form of motor vehicle transportation;[6] 6,335 riders were killed in 2023.[7] Also that year, 5,472 people were killed and 153,452 were injured in large truck crashes.[8] Since 2009, the number of fatalities in large truck crashes has increased by 76 percent[9] and those injured rose by 117 percent.[10]

With regard to the leading contributing factors to motor vehicle crashes in 2023: alcohol impaired driving resulted in 12,429 people killed;[11] speeding resulted in 11,775 people killed;[12] 10,484 vehicle occupants killed in crashes were unrestrained;[13] and, crashes in which at least one driver was distracted resulted in 3,275 fatalities.[14] This deadly road epidemic is predicated on dangerous roadway design.[15] Additionally, in 2021, the most recent year for which data is available according to the Non-Traffic Surveillance (NTS) system, an estimated 3,990 people were killed in non-traffic motor vehicle crashes, an increase of 26 percent from 2020.[16] And, since 1990, at least 1,127 children have died in hot cars.[17]

In addition to the physical and emotional repercussions of motor vehicle crashes, the annual economic cost is approximately $340 billion (2019 dollars).[18] This figure equates to every person living in the U.S. essentially paying an annual "crash tax" of over $1,000. Moreover, the total value of societal harm from

motor vehicle crashes in 2019, which includes loss of life, pain and decreased quality of life, was nearly $1.4 trillion.[19] When adjusted solely for inflation, this figure amounts to over $1.77 trillion.[20] Research from the Network of Employers for Traffic Safety (NETS) finds motor vehicle crashes cost employers $72.2 billion in direct crash-related expenses in 2019.[21]

Proven Technology Saves Lives and Prevents Injuries

A comprehensive and effective approach to improve traffic safety is needed. Proven vehicle safety upgrades are one of the most effective strategies. Research from NHTSA has estimated that, "From 1968 through 2019, NHTSA's safety standards prevented more than 860,000 deaths on the nation's roads, 49 million nonfatal injuries, and damage to 65 million vehicles. In 2019 alone, these standards prevented about 40,000 deaths, 1.9 million nonfatal injuries, and damage to 3.8 million vehicles," and "[F]rom 1968 to 2019, the comprehensive societal benefits amounted to $17.3 trillion, using 2019 dollars. In contrast, the total costs for the 52 years combined are roughly $1 trillion."[22]

Past efforts include: tire pressure monitoring systems;[23] rear outboard 3-point safety belts;[24] electronic stability control;[25] rear safety belt reminder systems;[26] brake transmission interlocks;[27] safety belts on motorcoaches;[28] rear-view cameras;[29] safer power window switches;[30] advanced driver assistance systems (ADAS);[31] advanced impaired driving prevention technology;[32] rear designated seating position alert ("hot cars");[33] enhanced vehicle hood and bumpers to better protect vulnerable road users;[34] and, advanced head lamps.[35] To address the ongoing traffic safety crisis, Advocates urges the completion of overdue or unfulfilled performance standards for critical vehicle safety technology as directed by the bipartisan Infrastructure Investment and Jobs Act (IIJA)[36] and other laws.[37] Some of these systems use artificial intelligence (AI).

Requirements for additional proven lifesaving technologies as standard equipment in all new vehicles should be advanced in future federal legislation and regulatory proposals. Again, some of these systems implement AI. These include driver support systems (also referred to as driver monitoring) to curb distraction and automation complacency, among other safety issues. The European New Car Assessment Program (Euro NCAP) already evaluates these systems and noted they can help "mitigate the very significant problems of driver distraction and impairment through alcohol, fatigue, etc." in its rating program.[38] Blind spot detection (BSD) with intervention, intelligent speed assistance (ISA), improvements to automatic emergency braking (AEB) to detect vulnerable road users including bicyclists and motorcycle riders and for rear braking and cross traffic alert, among other upgrades, should be pursued. These systems are already in certain vehicles and are preventing or mitigating crashes.[39]

Crash avoidance technologies, some of which use AI, are also foundational building blocks for a potentially automated driving future. An autonomous vehicle (AV) will need to detect and respond to all road users, vehicles and infrastructure in the roadway environment in all lighting conditions and speeds (AEB), to monitor blind spots and take appropriate action (BSD with intervention), to stay within its lane (lane keeping assistance), to follow speed limits (ISA), and to know if the vehicle is occupied (occupant detection and alert systems), especially if deployed as a shared system, among other responsibilities. For partial ADS, driver support systems will need to ensure that an alert and attentive driver is ready and able to take over at a moment's notice when the ADS is unable to continue the driving task.

Public Roadways Should Not Be Proving Grounds for AI and ADS

While Advocates supports the deployment of technology verified by independent research to prevent crashes and reduce the resulting deaths and injuries, we are concerned that the implementation of AI into our Nation's transportation system without proper safeguards, transparency, accountability and

regulations could needlessly jeopardize public safety. There are no minimum federal safety standards to ensure the performance of vehicles equipped with an ADS, including AVs, as they operate on public roads among the traveling public. As evidenced by several fatal crashes involving cars equipped with ADS and partial driving automation technology[40], federal regulations are essential to ensure developing technologies work as needed to prevent crashes, fatalities and injuries. They must also perform as the user expects and as necessary for systems that require an alert driver. They must not present an unreasonable risk to drivers and passengers as well as those outside of the vehicle including emergency responders.

States Must Retain the Right to Protect Families on Their Roadways

The Committee on Energy and Commerce has advanced legislation, the current draft of the budget reconciliation bill,[41] which includes a provision to preempt state actions on AI, which includes AVs, in the absence of federal rules. The provision states, "no state or political subdivision may enforce any law or regulation regulating artificial intelligence models, artificial intelligence systems, or automated decision systems during the 10-year period beginning on the date of the enactment of this Act."[42] Advocates adamantly opposes this provision which undercuts states' ability to protect road users and sets a dangerous precedent of state preemption in the absence of federal regulation.

States must retain the right to protect their residents and visitors. This critical safety authority is identified in the AV Tenets (see enclosure), a people-and safety-first proactive path to safe AV adoption on our roadways. They are supported by more than 65 groups from across the Nation representing safety, consumer, public health, biking, walking, disability rights, environmental, law enforcement and first responder interests, among others. In addition to retaining local control, the AV Tenets prioritize safety for all road users, preserve consumer and worker rights, guarantee accessibility for all people and ensure sustainable transportation.

Adequate safety data collection and transparency on ADS safety performance are important to evaluate its readiness as well as build consumer confidence. Recent actions by the U.S. Department of Transportation (DOT) to weaken reporting requirements established by Standing General Order (SGO) 2021-01 are disappointing.[43] Rather, comprehensive information should be collected and publicly shared to spur transparency, accountability and innovation.

Fear of Falling Behind Other Countries Should Not Degrade Safety

In sharp contrast to what is happening in the U.S., other countries are taking a more calculated, careful and cautious approach to the development of AVs.[44] Often-repeated claims about the U.S. "falling behind" other countries in the "race" for AVs are simply not true nor supported by research. For example:

- China continues to require permits or restricts operations of AVs on its roads to only those areas approved by the authorities.[45]
    - China has recently placed more restrictions on vehicle autonomy: prohibiting Beta-testing and remote parking / summoning features, requiring hands-on detection with intervention, restricting over the air updates, and restricting the use of misleading marketing terms.[46]
- In Japan, the introduction of Level 4 vehicles has been controlled and limited to specific, lightly populated areas.[47]
- The latest European Union (EU) General Safety Regulation (GSR) establishes a type approval process for driverless vehicles. The technical rules limit applications to restrict risks and oversee approval through testing and other requirements.[48]

In sum, no country is selling fully automated vehicles for unfettered use to the public and by many accounts, none will be for a significant amount of time.[49] According to the most recent KPMG analysis, the U.S. ranks fourth in the world for AV readiness, while China stands at number twenty. The U.S. is not lagging other countries in allowing AVs to go to market, but we are behind in establishing comprehensive regulations to ensure public safety will not be jeopardized or diminished.

Innovation and Safety are Mutually Attainable and Desirable

Roadway deaths and injuries are not only preventable, but they also result in long-lasting impacts which often are not accounted for in statistics alone. For every single death and serious injury, there is a horrific ripple effect forever changing the lives of children, parents, friends and communities. The public is aware and rightly worried about roadway safety. In December 2024, Advocates released a public opinion poll that found 9 of 10 adults surveyed are concerned about themselves or their loved ones getting into motor vehicle crashes.[50]

Surface transportation reauthorization legislation historically has prioritized safety for the public traveling on our Nation's roads.[51] The enduring historic highs of roadway fatalities and injuries compel the next reauthorization legislation to continue this legacy. The opportunity to advance proven solutions, including verified vehicle safety technologies and systems, in the next reauthorization must be seized to keep American families safe and whole on our public roads.

Thank you for your consideration of these issues. We look forward to continuing to work with you to improve safety on our Nation's roadways.

Sincerely,

Catherine Chase
President

cc: The Honorable Brett Guthrie, Chair, Committee on Energy and Commerce
The Honorable Frank Pallone, Ranking Member, Committee on Energy and Commerce
Members of the U.S. House of Representatives Committee on Energy and Commerce

Encl.: AV Tenets

[1] Traffic Safety Facts: Overview of Motor Vehicle Traffic Crashes In 2023, April 2025, DOT HS 813 705.
[2] Traffic Safety Facts 2022: A Compilation of Motor Vehicle Traffic Crash Data, NHTSA, DOT HS 813 656, Dec. 2024 [Annual Report 2022]; and Traffic Safety Facts: Overview of Motor Vehicle Traffic Crashes In 2023, April 2025, DOT HS 813 705 [Overview 2023]; [comparing 2013 to 2023].
[3] Traffic Safety Facts: Overview of Motor Vehicle Traffic Crashes In 2023, April 2025, DOT HS 813 705 [Overview 2023].
[4] Early Estimate of Motor Vehicle Traffic Fatalities in 2024, DOT HS 813 710, April 2025.
[5] Traffic Safety Facts: Overview of Motor Vehicle Traffic Crashes In 2023, April 2025, DOT HS 813 705 [Overview 2023].
[6] The Economic and Societal Impact of Motor Vehicle Crashes, 2019 (Revised), NHTSA, Feb. 2023, DOT HS 813 403, available at https://crashstats.nhtsa.dot.gov/Api/Public/ViewPublication/813403.
[7] Traffic Safety Facts: Overview of Motor Vehicle Traffic Crashes In 2023, April 2025, DOT HS 813 705 [Overview 2023].
[8] Traffic Safety Facts: Overview of Motor Vehicle Traffic Crashes In 2023, April 2025, DOT HS 813 705 [Overview 2023].
[9] Traffic Safety Facts 2022: A Compilation of Motor Vehicle Traffic Crash Data, NHTSA, DOT HS 813 656, Dec. 2024 [Annual Report 2022]; and Traffic Safety Facts: Overview of Motor Vehicle Traffic Crashes In 2023, April 2025, DOT HS 813 705 [Overview 2023]. Note, the 62 percent figure represents the overall change in the number of fatalities in large truck involved crashes from 2009 to 2023. 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 2023, it increased by 17 percent, and between 2015 and 2016, it increased by 14 percent.
[10] Traffic Safety Facts 2022: A Compilation of Motor Vehicle Traffic Crash Data, NHTSA, DOT HS 813 656, Dec. 2024 [Annual Report 2022]; and Traffic Safety Facts: Overview of Motor Vehicle Traffic Crashes In 2023, April 2025, DOT HS 813 705 [Overview 2023]. Note, the 107 percent figure represents the overall change in the number of people injured in large truck involved crashes from 2009 to 2023. 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 people injured in truck-involved crashes increased by 59 percent, and between 2016 to 2022, it increased by 14 percent, and between 2015 and 2015, it increased by 14 percent.
[11] Traffic Safety Facts: Overview of Motor Vehicle Traffic Crashes In 2023, April 2025, DOT HS 813 705
[12] Traffic Safety Facts: Overview of Motor Vehicle Traffic Crashes In 2023, April 2025, DOT HS 813 705
[13] Traffic Safety Facts: Overview of Motor Vehicle Traffic Crashes In 2023, April 2025, DOT HS 813 705
[14] Traffic Safety Facts: Overview of Motor Vehicle Traffic Crashes In 2023, April 2025, DOT HS 813 705 These crashes are known to be underreported and undercounted.
[15] 2024 Dangerous by Design report. Available here: https://smartgrowthamerica.org/dangerous-by-design/
[16] National Center for Statistics and Analysis. (2024, April). NonTraffic Surveillance: Fatality and injury statistics in non-traffic crashes in 2021 (Report No. DOT HS 813 539). National Highway Traffic Safety Administration.
[17] Child Hot Car Dangers Fact Sheet, Kids and Car Safety, available here: https://www.kidsandcars.org/document_center/download/hot-cars/Heatstroke-fact-sheet.pdf
[18] The Economic and Societal Impact of Motor Vehicle Crashes, 2019, NHTSA, Dec. 2022, DOT HS 813 403. (Economic and Societal Impact 2019).
[19] Economic and Societal Impact 2019.
[20] CPI Inflation Calculator, BLS, available at https://www.bls.gov/data/inflation_calculator.htm, calculation Jan. 2019 – Jan. 2025.
[21] Cost of Motor Vehicle Crashes to Employers – 2019, Network of Employers for Traffic Safety, March 2021.
[22] NHTSA: 50 Years of Vehicle Safety Standards Saved Hundreds of Thousands of Lives, Prevented Millions of Injuries: Agency releases new studies measuring societal impacts of FMVSSs from 1968-2019, Dec. 17, 2024 available at https://www.nhtsa.gov/press-releases/50-years-vehicle-safety-standards, referencing Fatalities, Injuries, and Crashes Prevented by Vehicle Safety Technologies and Associated FMVSS, 1968 to 2019 – Passenger Cars and LTVs, DOT HS 813 611, Dec. 2024, and Historical Analysis of Costs and Benefits of FMVSS for Passenger Cars and LTVs on a Calendar-Year Basis, DOT HS 813 647, Dec. 2024.
[23] Transportation Recall Enhancement, Accountability, and Documentation (TREAD) Act, Pub. L. 106-414 (Nov. 1, 2000).
[24] Anton's Law, Pub. L. 107-318 (Dec. 4, 2002).
[25] Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU), Pub. L. 109-59 (Aug. 10, 2005).
[26] Id.
[27] Id.
[28] Moving Ahead for Progress in the 21st Century (MAP-21) Act, Pub. L. 112-141 (Jan. 3, 2012).
[29] Cameron Gulbransen Kids Transportation Safety Act of 2007, Pub. L. 110-189 (Feb. 28, 2008).
[30] *Id.*
[31] Infrastructure Investment and Jobs Act, Pub. L. 117-58 (Nov. 15, 2021).
[32] Id.
[33] Id.
[34] Id.
[35] Id.

[36] Pub. L. 117-58.

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

[38] Euro NCAP 2025 Roadmap: In Pursuit of Vision Zero, Euro NCAP; https://cdn.euroncap.com/media/30700/euroncap-roadmap-2025-v4.pdf.

[39] New York City Intelligent Speed Assistance Pilot Evaluation, Oct. 2024, DOT-VNTSC-NYC-24-02, Available here: https://www.nyc.gov/assets/dcas/downloads/pdf/fleet/nyc-intelligent-speed-assistance-pilot-evaluation-2024-oct.pdf. Blind spot warning technology contributes to a 23 percent reduction in lane change injury crashes, July 27, 2019, US DOT 2019-B01384. Available here: https://www.itskrs.its.dot.gov/2019-b01384. Jessica B. Cicchino & David G. Kidd (2024) Are front crash prevention systems less effective at preventing rear-end crashes where trucks and motorcycles are struck?, Traffic Injury Prevention, 25:3, 440-444, DOI: 10.1080/15389588.2024.2321910. Morgan E. Dean, Samantha H. Haus, Rini Sherony, Hampton C. Gabler, Potential Crash Benefits of Motorcycle-Detecting Automatic Emergency Braking Systems, IRCOBI conference 2021, IRC-21-15, here: https://www.ircobi.org/wordpress/downloads/irc21/pdf-files/2115.pdf. David G. Kidd, The crash reduction potential of automatic emergency braking systems that respond to bicyclists, May 6, 2025, Traffic Injury Prevention, https://doi.org/10.1080/15389588.2025.2491583.

[40] Ian Duncan and Aaron Gregg, *Crashes involving Tesla's Full Self-Driving prompt new federal probe*, WaPo (Oct. 18, 2024), and according to data collected by NHTSA's Standing General Order (SGO) 2021-1 requiring manufacturers to report certain crashes involving vehicles equipped with ADS or SAE Level 2 ADAS.

[41] Part 2, Section 43201, Subsection 3, pursuant to H. Con. Res. 14.

[42] Id.

[43] See Advocates' statement: https://saferoads.org/2025-nhtsa-av-framework-statement/

[44] Autonomous vehicles: cross jurisdictional regulatory perspectives update, Oct. 7, 2022.

[45] China drafts rules on use of self-driving vehicles for public transport; Aug. 8, 2022, Reuters; and Baidue bags China's first fully driverless robotaxi licenses, Aug. 7, Reuters. Real driverless cars are now legal in Shenzhen, China's tech hub, Jul. 25, 2022, TechCrunch+; Shifting gears: Regulatory readiness for autonomous vehicles in Asia, May 8, 2025, Lexology, available at https://www.lexology.com/library/detail.aspx?g=50c223eb-179a-46c6-9633-1bd98d87fe2f.

[46] China's MIIT tightens regulations on autonomous driving features, banning key fuinctions, Apr. 17, 2025, available at https://carnewschina.com/2025/04/17/chinas-miit-tightens-regulations-on-autonomous-driving-features-banning-key-functions/

[47] Japan to open roads to autonomous vehicles in 2023, Nov. 28, 2022, Wessling, B., The Robot Report. Japan's Nissan tests driverless vehicles in city streets filled with cars and people, Mar. 10, 2025, AP News, available at https://apnews.com/article/driverless-japan-nissan-autonomous-technology-5c12444c3931d1c7a0280789d2b0cba9

[48] New EU Regulation on the Type Approval of Automated Driving Systems Published, Oct. 2022, InterRegs, available at https://www.interregs.com/articles/news/222/new-eu-regulation-on-the-type-approval-of-automated-driving-systems-published ; and New rules to improve road safety and enable fully driverless vehicles in the EU, Jul. 6, 2022, UNECE, available at https://ec.europa.eu/commission/presscorner/detail/en/ip_22_4312.

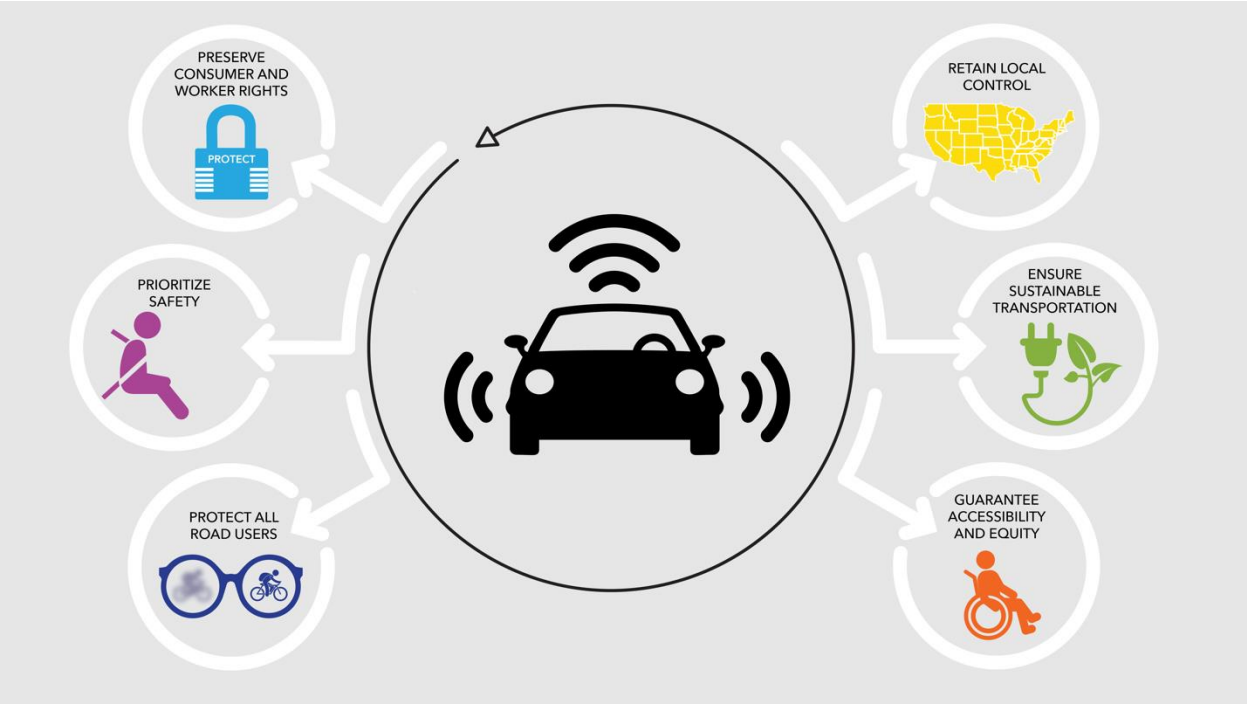
[49] Lawrence Ulrich, Driverless Still a Long Way From Humanless, N.Y. Times (Jun. 20, 2019); Level 5 possible but "way in the future", says VW-Ford AV boss, Motoring (Jun. 29, 2019).

[50] Online CARAVAN SURVEY, The Public is Very Concerned About Traffic Safety Even Though They Are Not Aware of the Enormity of the Deadly Toll on our Roadways (Dec. 2024). Available at: https://saferoads.org/wp-content/uploads/2024/12/Advocates-December-2024-Poll-Report-12-4-24.pdf

[51] Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU), Pub.L. 109-59 (Aug. 10, 2005); Moving Ahead for Progress in the 21st Century (MAP-21) Act, Pub. L. 112-141 (Jan. 3, 2012); Fixing America's Surface Transportation Act (FAST Act), Pub. L. 114-94 (Dec. 4, 2015); Infrastructure Investment and Jobs Act, Pub. L. 117-58 (Nov. 15, 2021).

Autonomous Vehicle (AV) Tenets[i]

November 2020 – Data Update August 2024



Prioritizing Safety of All Road Users

Safety Rulemakings: All levels of automated vehicles[ii] 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, 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 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 across all on-road modes of transportation and must be standard equipment with federal minimum performance requirements. These include automatic emergency braking (AEB) 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 (VRUs) 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, NHTSA Office of Automation Safety, 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.[iii] 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.

- ***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 driving systems (ADS) 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 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 law[iv] 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.

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.[v]

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 18 percent of the U.S. population is over the age of 65 in 2024.[vi] [vii] 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. Nearly twenty percent of U.S. households were unbanked (4.5 percent) or underbanked (14 percent) in 2021, 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.[viii] 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.

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 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 Rights[ix]: 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 under 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 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.[x] 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

[i] 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.
[ii] Partially automated vehicles (SAE International Level 2) and conditional / highly automated vehicles (SAE International Levels 3, 4, 5).
[iii] 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).
[iv] Motor Vehicle Safety Act, Pub. L. 89-563 (1966).
[v] 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.
[vi] Disability Justice. Available here: https://disabilityjustice.org/justice-denied/disability-demographics/#:~:text=Definition%20of%20Disability,with%20one%20or%20more%20disabilities.
[vii] Pew Research Center, Available here: https://www.pewresearch.org/short-reads/2024/01/09/us-centenarian-population-is-projected-to-quadruple-over-the-next-30-years/#:~:text=There%20are%20currently%20roughly%2062,estimated%2023%25%20of%20the%20population.
[viii] Federal Deposit Insurance Corporation (FDIC), 2021 FDIC National Survey of Unbanked and Underbanked Households (October 2022).
[ix] Advocates for Highway and Auto Safety does not take a position on this issue.
[x] IIJA P.L. 117-58, Section 11504, Study of Impacts on Roads From Self-Driving Vehicles.