March 25, 2020

Docket Management Facility
U.S. Department of Transportation
1200 New Jersey Avenue SE, West Building
Ground Floor, Room W12–140
Washington, DC 20590–0001

RE: Notice of Request for Comments: Ensuring American Leadership in Automated Vehicle Technologies: Automated Vehicles 4.0 (AV 4.0)

Dear Docket Officer:

Thank you for allowing the National Safety Council (NSC) to comment on the U.S. Department of Transportation (DOT) *Ensuring American Leadership in Automated Vehicle Technologies: Automated Vehicles 4.0* (AV 4.0) report.

NSC is a mission-based organization, focused on eliminating the leading causes of preventable death and injury. We focus our efforts and thought leadership on impacting safety through three strategic pillars: Workplace, Roadway and Impairment. Our more than 15,000 member companies represent employees at nearly 50,000 U.S. worksites.

NSC believes advanced vehicle technology, up to and including fully automated vehicles, can provide many benefits to society. Most importantly, advanced vehicle technology has the potential to significantly reduce the number of fatal crashes on our roadways. However, **federal leadership on motor vehicle safety is required to achieve these benefits and ensure a consistent level of safety across the United States. NSC does not believe the voluntary guidance offered in AV 4.0 goes far enough**. Consumers need confidence in the safety of their vehicles regardless of where they reside, and manufacturers need certainty in order to invest in design and production. AV 4.0 does not fill these gaps.

Federal Leadership Needed to Advance the Lifesaving Potential of Advanced Technology

The National Safety Council believes that AV 4.0, as "guidance" only, lacks requirements that could raise the bar on safety. The focus of DOT should be to ensure the highest level of safety, and to reach that goal, greater certainty is needed during this monumental shift in the way vehicles operate. There are clear limitations to the Operational Design Domain (ODD) of vehicles on our nation's roadways today. Federal leadership must require greater transparency by vehicle manufacturers on the abilities and limitations of advanced driver assistance systems (ADAS). NSC agrees with the National Transportation Safety Board (NTSB) recommendation that DOT needs to "define the data parameters needed to understand the automated vehicle control systems involved in a crash. The parameters must reflect the vehicle's control status and

the frequency and duration of control actions to adequately characterize driver and vehicle performance before and during a crash."[1] Without this leadership, more motor vehicle injuries and fatalities are certain.

The Council is concerned that AV 4.0 only commits the U.S. government to "prioritize participation in and advocate abroad for voluntary consensus standards." NSC is also concerned that a lack of strong federal standards that prioritize safety in the deployment of AV 4.0 will lead to a fragmented, state-by-state patchwork of regulations. The U.S. government, including DOT and Congress, should not rely on industry to voluntarily develop strong safety standards.

States do not possess the expertise or resources to replicate design, testing and reporting programs. Further, a patchwork of requirements will result in confusion for consumers and an increase in cost for manufacturers and operators. Finally, the absence of safe, workable standards will drive development, testing and deployment overseas, resulting in the flight of innovation and the jobs that accompany it to locations outside the U.S.

As DOT evaluates the potential of AV technology, transparency regarding the implementation of this technology is crucial. AV 4.0 does not indicate that DOT intends to mandate such reporting in the future. The National Safety Council asks DOT to require the following measures:

Mandatory reporting requirements. DOT should require AV developers to clearly report on the following safety metrics: crashworthiness, human-machine interface data, post-crash behavior, capabilities and limitations of the vehicle, ODD and consumer education efforts. More safety metrics should be added to this list as needed.

Data transparency. Data is constantly produced by AVs. Two important data collection devices include electronic logging devices (ELDs) and electronic data recorders (EDRs), which provide a window into the human-machine interface with advanced vehicles. The knowledge gained from these devices allows manufacturers to make adjustments in nearly real time to improve safety based on what is actually occurring in operation, rather than making changes based on assumptions and estimations that must be accommodated in a later model year. Collecting and sharing de-identified data with DOT about near misses and other relevant problems will also help to aggregate useful information for the motor vehicle industry. It will allow the industry to take proactive steps based on leading indicators, rather than waiting for a crash or a series of crashes to occur. Finally, the data will be useful to researchers and the safety community in analyzing the safety benefits and drawbacks of these technologies as they continue to mature.

Acquiring an understanding of what happens when systems perform as intended, fail as expected, or fail in unexpected ways yields valuable information for manufacturers – some of whom have common suppliers. Further, in-service data, near miss and post-crash information

[1] NTSB Safety Recommendation H-17-037: https://www.ntsb.gov/investigations/AccidentReports/_layouts/ntsb.recsearch/Recommendation.aspx?Rec=H-17-037

sharing can help civil engineers and planners design better and safer roadways. It will also help safety and health professionals design better interventions to discourage risky driving or affect the behaviors of roadway users.

The National Safety Council is hopeful the Partnership for Analytics Research in Traffic Safety (PARTS) program will help, and NSC encourages DOT to require participation in the program to ensure the aggregation of the most accurate data.

Consumer education. The potential safety benefits of automated vehicles could be incredible. However, it will be decades before there is meaningful AV fleet penetration on U.S. roadways. In the meantime, vehicles with differing abilities will be on our roadways, exposing consumers to different technologies. Today, 93% of new vehicles offer at least one ADAS, and the terminology used by manufacturers often seems to prioritize marketing over clarity.[2] In 2019, in order to help clear up some of this confusion, NSC, AAA, Consumer Reports, and J.D. Power released "Clearing the Confusion: Recommended Common Naming for Advanced Driver Assistance Technologies."[3] The four organizations agreed on standardized naming that is simple, specific and based on system functionality in an effort to reduce consumer confusion. Safety features may change over time as software and hardware updates in turn modify the operational parameters for vehicle systems. DOT recently took a bold step to endorse these recommendations, and we urge other safety organizations, automakers, journalists, researchers, and policymakers to join us in adopting these terms.[4] Given the support from DOT, the Council urges DOT to use these terms in AV documents moving forward.

To help alleviate consumer confusion, DOT should require that, at the very least, systems that are not fully automated (level five[5]) should not be described as such. All vehicles on the road today – including those with ADAS – require the driver to remain fully engaged in the driving task. That fact is often lost in marketing, media reports and consumer expectations. Labeling a motor vehicle as "automated" or "autonomous" today, or even using terms such as "autopilot" or "self-driving," only confuses consumers and can contribute to loss of situational awareness around the driving task. Marketing is not education. It will take a commitment to standard nomenclature and clear performance outcomes to ensure that consumers better understand how to engage with and what to expect from these technologies.

Finally, the New Car Assessment Program (NCAP) has operated for nearly 40 years with a goal of testing vehicle safety systems and educating consumers about them. NCAP has created a mechanism to allow consumers to evaluate vehicles on safety systems. NSC supports NCAP

[2] https://www.aaa.com/AAA/common/AAR/files/ADAS-Technology-Names-Research-Report.pdf
[3] https://www.nsc.org/Portals/0/Documents/NewsDocuments/2019/ADAS%20Common%20Naming%20One-pager.pdf?ver=2019-11-20-094231-643
[4] https://www.transportation.gov/briefing-room/us-transportation-secretary-elaine-l-chao-announces-new-initiatives-improve-safety
[5] For more information on levels of driving automation see: https://www.sae.org/news/press-room/2018/12/sae-international-releases-updated-visual-chart-for-its-%E2%80%9Clevels-of-driving-automation%E2%80%9D-standard-for-self-driving-vehicles

and its expanded role into ADAS safety, believing it is an important program to improve the safety of the motor vehicle fleet.

Connected vehicles. Connected vehicles are an important part of safely implementing AVs, but a proposal under consideration by the Federal Communications Commission (FCC) undermines the ability for these technologies to work together. The FCC is currently proposing to reallocate the 5.9GHz "safety band" away from its intended use for transportation safety to unlicensed use, such as Wi-Fi. The National Safety Council strongly considers adopting this proposal to be a grave mistake. DOT should use the 4.0 guidance to underscore the benefits of connected vehicles to effective and safe operations of automated vehicles.

Federal Motor Vehicle Safety Standards. AV 4.0 states the National Highway Traffic Safety Administration (NHTSA) is "researching unintended regulatory barriers. Historically, the Federal Motor Vehicle Safety Standards (FMVSS) have been based on the concept of a human operating the vehicle. With the introduction of advanced driving systems (ADS), driving tasks are increasingly shifted to the vehicle. The absence of a human driver creates opportunities for vehicle manufacturers to design new vehicle architectures that may remove driving controls, change seating configurations and establishing new interfaces for occupants."

The Council believes shifting focus from tried-and-true vehicle standards is the wrong approach and evaluating the removal of those standards is premature at this time. Even as new level two safety features are developed and implemented, the national fleet will be slow to turn over, and it may be decades before the majority of vehicles on the road will have ADAS beyond level two. During the development and rollout period for more advanced technologies, tens of millions of existing vehicles will still lack many of the promised capabilities of automated vehicles. As the selling of legacy vehicles will likely continue for many years, and without the adoption of new, more advanced occupant-protection standards, we do not see any merit in wholesale changes to the existing post-crash protections established in the FMVSS. In the near term, critical features that save lives in crashes will continue to be seat belts, air bags, energy-absorbing design and materials not related to the vehicle's automation level. These important safety technologies may need to be adjusted, but they should not be removed from vehicles, especially as experts predict a mixed fleet of vehicles for decades to come.

Rather, NHTSA should examine the impact of FMVSS in saving lives on our roadways in order to prioritize inclusion of those technologies in advanced vehicles, and consider additional requirements in newer vehicles that have the greatest life-saving potential. For example, we know seat belts have saved tens of thousands of lives, but Americans do not buckle up at the same rate in back seats as they do in front seats. Rear seat belt reminders have been required in cars sold in the European Union, and vehicle occupants in EU countries buckle up at a higher rate than the U.S. EU fatality rates are consistently lower than the U.S. The U.S. could reduce fatalities involving unbelted passengers if rear seat belt reminders were installed in all cars sold in the U.S. NHTSA has a pending rulemaking regarding this technology.

The National Safety Council encourages NHTSA to consider what new FMVSS are required to ensure that the Automated Driving System-Dedicated Vehicle (ADS-DV) "driver" has been programmed and outfitted to ensure full control and a safe trip, for occupants and all other road users, from departure to arrival in the intended ODD. Once this basic operational understanding has been developed and demonstrated successfully, NHTSA could consider reducing the need for human control and interaction in these vehicles. Until that time, ADS-DV developers and manufactures can meet their testing and limited deployment objectives by applying for exemptions or exceptions to existing FMVSS requirements. During this process, they can demonstrate to NHTSA an ability to perform safely on a case-by-case basis.

The FMVSS ensure minimum levels of protection and safety for drivers, vehicle occupants and other roadway users. As such, NHTSA and DOT should not degrade the crash avoidance, crashworthiness, survivability and post-crash survivability of motor vehicles in an effort to encourage deployment of automated vehicles. The gains achieved through new technology could be lost if the basic standards and protections NHTSA has provided to the driving public, states, vehicle developers and manufacturers for the past 50 years are turned back. To ensure safe deployment of automated vehicles, NHTSA should ask vehicle manufacturers to provide the equivalent or greater evidence-based crash protection and survivable space as current requirements, because seating configurations and cabin configurations change.

Conclusion

Today, we have millions of drivers behind the wheel and spend millions of dollars on education and enforcement campaigns. Yet, we still suffer billions in economic losses as a result of motor vehicle crashes. The integration of AV technologies will likely be messy as we deal with a complex and ever-changing human-machine interface. That is why federal leadership is needed.

The National Safety Council believes there is more that DOT can do to ensure the safe deployment of AV technologies. We look forward to working collaboratively on the road to zero roadway deaths.

Sincerely,

Lorraine M. Martin
President and CEO