

November 14, 2017

Mr. Nathaniel Beuse
Associate Administrator for Vehicle Safety Research
National Highway Traffic Safety Administration
US Department of Transportation
1200 New Jersey Avenue SE
Washington, DC 20590

Subject: “Automated Driving Systems 2.0: A Vision for Safety” (Docket No. NHTSA-2017-0082)

Dear Associate Administrator Beuse:

The American Association of State Highway and Transportation Officials (AASHTO) is pleased to provide comments on the National Traffic Highway Safety Administration’s (NHTSA) “Automated Driving Systems 2.0: A Vision for Safety” policy guidance (Docket Number NHTSA-2017-0082), published in the Federal Register on September 15, 2017. Representing all 50 states, the District of Columbia, and Puerto Rico, AASHTO serves as a liaison between state departments of transportation (state DOTs) and the federal government. AASHTO’s attached comments on the ADS 2.0 policy guidance are divided into two sections: general comments on the updated policy guidance and future changes and additions we would like to be made to subsequent updates to the policy guidance.

AASHTO and the state DOTs appreciate NHTSA’s leadership to help clear the way for the safe and timely adoption of automated vehicles and to work toward uniformity in state regulations, along with identifying the 12 areas where safety should be assessed. While there is tremendous potential in significantly improving transportation mobility and accessibility for people with automated vehicles, the top priority for AASHTO and the state DOTs is the safety associated with the implementation of automated vehicles. Safety has been, and will remain, at the forefront of AASHTO’s policy goals as state DOTs have the primary responsibility for the safe and efficient movement of people and goods on our nation’s highways and streets.

The transformative nature of both automated and connected vehicle technologies is just now coming into focus. There are still many questions to be asked from both a policy and technological perspective. AASHTO looks forward to continuing to work with NHTSA and the rest of the US Department of Transportation’s (USDOT) modal administrations in the implementation of both automated vehicles as well as connected vehicles. If you would like to discuss the issues raised in this letter, please contact Matthew Hardy, Ph.D., AASHTO’s Program Director for Planning and Performance Management at (202) 624-3625 or mhardy@ashto.org.

Sincerely,

A handwritten signature in black ink, appearing to read 'J. Schroer', with a long horizontal flourish extending to the right.

John Schroer
President, American Association of State Highway and Transportation Officials
Commissioner, Tennessee Department of Transportation

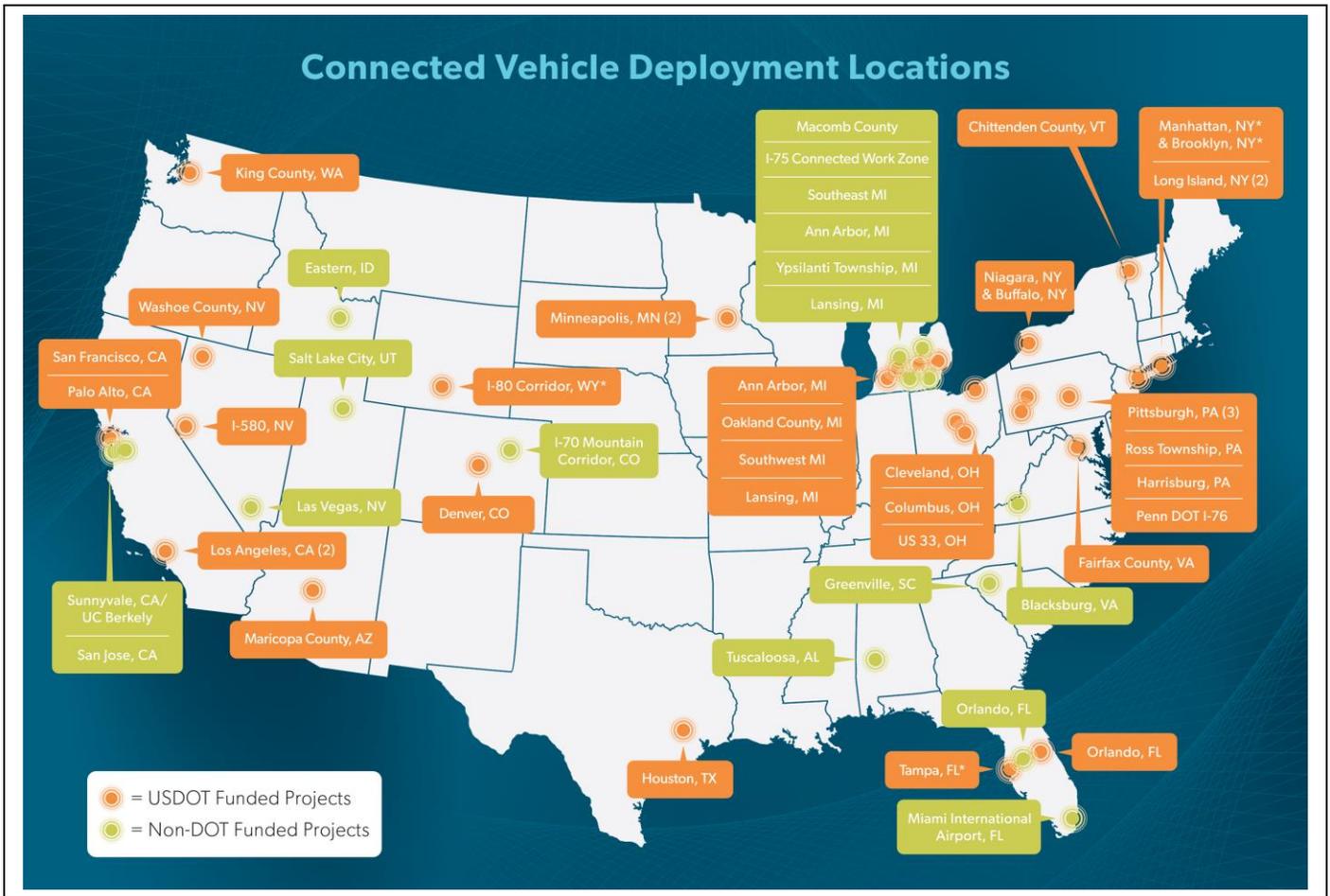
Enclosure

Section 1: General Comments

- 1. Focus on the Collaborative Process of Developing Necessary Laws, Regulations, and Guidance**—Ultimately, it is in the best interest of society that vehicles equipped with ADS be introduced as quickly as possible to realize the saving of lives and improving the quality of life, and a collaborative approach on the challenges will help avoid pitfalls on a much-needed deployment pathway. The traditional division of responsibilities for vehicle safety, under purview of the federal government, and safe operation of vehicles through licensing and registration under purview of the state government has worked well and needs to be maintained in the future. However, the advent of automated vehicles is blurring the role of the vehicle and the operator subject to traditional jurisdictional lines and requires a new collaborative approach to what lies ahead. Just as states have worked hard to assure reciprocity of drivers' licenses through alignment and uniformity of education and testing requirements, they will do the same when it comes to uniformity nationwide for autonomous vehicles (AVs) and working with the federal government to ensure a common understanding of AV behavior and expectations of the infrastructure.
- 2. Ensure Flexibility into the Future**—AASHTO is pleased to see that NHTSA has updated the original Automated Driving System policy guidance published in September 2016. The flexible nature of this policy guidance, with recognition that change is rapid and change is inevitable, is commendable. For example, the name and terminology used in reference to automated vehicles has changed and is reflected in the new policy guidance. The references to automated driving systems are now based on SAE's automation levels which define a continuum of automation from none (level 0) to full automation (level 5). The reference to highly automated vehicles has been removed and AASHTO supports that change.

While a fairly simplistic change, using the same vocabulary and definitions is important to ensure consistency. This is also an important example of how the policy guidance will need to change and adapt given the rapidly changing field of connected and automated vehicles, coupled with the pace of technology development. AASHTO believes it is critical that any type of policy guidance focused on automated driving systems be flexible into the future and AASHTO is encouraged by NHTSA's desire to continually update the guidance on a regular basis.

- 3. A Future with Both Connected and Automated and Vehicles**—As infrastructure owners and operators, AASHTO's member DOTs believe that establishing a strong foundation for ADS requires ensuring robust connectedness for vehicle-to-vehicle (V2V) and vehicle-to-infrastructure (V2I) communication. The overwhelming support for the development and deployment of connected vehicle technologies is evident in the significant commitment that the states and local agencies have made to leading, supporting, and fostering the deployment and testing of connected and automated vehicle (CAV) systems. To date, 33 locations in the US are deploying connected vehicle (CV) technologies under sponsorship of USDOT and seventeen locations are deploying the technologies without sponsorship from USDOT. Combined, this represents 72,000 vehicles on the road and 65,000 devices installed on the infrastructure.



Many of these CV deployments involve state transportation agencies and AASHTO is working and supporting the states in many different ways. For example, AASHTO is supporting a national traffic signal phasing and timing (SPaT) program that heavily leverages V2V and similar technologies to improve traffic flow and reduce crashes. Through the SPaT Challenge, AASHTO is hoping to achieve the deployment of V2I infrastructure with SPaT broadcasts at roadway intersections in at least one corridor or network in each of the 50 states and Washington, DC by January 2020.

AASHTO believes the transportation industry must use every tool we can—including Dedicated Short Range Communication (DSRC) to connect vehicles with each other and the infrastructure—to make our vehicles, highways and roads safer. The potential of CV technologies to save lives, enhance mobility, and serve as the platform of a new generation of transportation management systems is vast. As such, AASHTO urges USDOT to ensure that its effort to establish a nationwide standard for V2V safety communications continues unimpeded. Any slowdown in this policy implementation will result in a substantial setback in our nation’s efforts to reduce the number of traffic crashes that result in death or injury.

- 4. Continue To Engage States and the DOTs**—AASHTO is pleased to see that the NHTSA recognizes the importance of collaboration between Federal, State and local governments and the private sector. On page 15 of the ADS 2.0 policy guidance, NHTSA specifically states that “Collaboration is essential as our Nation embraces the many technological developments affecting our public roadways.” AASHTO agrees with this statement and looks forward to working collaboratively with NHTSA, local governments, and the private sector on the testing and deployment of connected and automated vehicles.

- 5. Begin to Focus on Implementation**—Many state DOTs are tracking closely the deployment of connected and automated vehicle technologies since these vehicles will eventually operate on roads that are owned and maintained by state and local DOTs. While the guidance provided in the ADS 2.0 policy is generally acceptable for the testing phase of automated vehicles, substantial discussion and revisions will be needed when addressing the deployment of automated vehicles. For example, NHTSA dropped three important safety areas in the updated policy guidance that are critical to how automated vehicles operate safely: privacy, registration and certification, and ethical considerations. AASHTO would recommend that these aspects be discussed in future versions.

Furthermore, AASHTO recommends that NHTSA begins to work with industry to revisit the Federal Motor Vehicle Safety Standards (FMVSS). The ADS 2.0 policy guidance might or might not be good for the preliminary testing phase of vehicles equipped with ADS, but it is wholly inadequate for the deployment phase of automated vehicles because minimum standards will be needed, like that provided for mechanical safety under FMVSS. AASHTO agrees the regulation of the design, construction and performance (in the traditional, mechanical manner as defined in Title 49 Section 30102) of a motor vehicle is a federal obligation. However, we believe the application of the term “performance” to the autonomous context is now more complex due to the increasing merger of the vehicle and the operator. Reexamining the definition of “performance” in the context of ADS will enable focus on the operational safety laws regulating motor vehicles and their operators after such vehicles have been constructed and introduced to public roadways.

Section 2: Future Changes and Additions

1. **Operational Design Domain**—It remains the responsibility of the state DOTs to regulate what, how and when vehicles operate on their roadway assets. This responsibility is not explicitly acknowledged on the table on page 20 under States' Responsibilities nor under the section discussing the operational design domain (ODD) of the ADS. AASHTO would ask that future versions of the ADS include specific language about ADS technology manufacturers and developers working with the asset owners to better define when and how ADS-equipped vehicles may be operated such as minimum speeds, school zones, work zones, pedestrian zones, etc.

In addition, the ODD includes a discussion on roadway types as part of the manufacturers in their ODD documents. AASHTO encourages NHTSA to require the manufacturers to coordinate with AASHTO and the Federal Highway Administration on the definitions of these "roadway types" so there is consistency among the states and federal agencies on a set of definitions that are compatible with definitions commonly used by the state infrastructure agencies. For example, the Highway Performance Monitoring System (HPMS) includes a comprehensive set of roadway type definitions.

Finally, there will be significant variability in ADS features available on production model vehicles. This is already seen in current production models of cars when it comes to current in-vehicle driver assist system. As we move to ADS vehicles, this variability could cause disastrous confusion among operators/users of the technology and other drivers in a mixed fleet environment. Therefore, in order to ensure the safety of the public, a minimum definition of ODD will be needed in the deployment phase for ADS vehicles.

2. **Availability of Data**—AASHTO continues to have a number of concerns regarding Data Recording. These concerns are reflected in questions that include:
 - Who is this information intended to be shared with?
 - Is it limited to NHTSA, or will state and local law enforcement agencies, state DOTs, and insurance companies have access?
 - Will data sharing be the prerogative of the individual manufacturers, or will there be regulation about which entities have access?
 - Who owns and controls this data: the vehicle owner, the manufacturer, or a government agency?

State and local agencies would be able to make productive use of this data to evaluate hazardous road conditions and other things, and will be interested in this data. However, most state agencies are subject to government records requests, which can become very burdensome if the data can be tied to specific instances. Data sharing should be evaluated carefully to determine which data is able to be shared with entities outside of NHTSA.

AASHTO believes that because the industry is in the preliminary testing phase of ADS vehicles operating on public roadways, it would be preferable for NHTSA to strongly recommend the broad sharing of information associated with crashes and near-misses occur

so that collective learning can happen while still protecting proprietary information. AASHTO continues to recommend that the data for which events are shared includes non-crash data such as since “near miss” and disengagement events which can be as important as crash scenarios when assessing road conditions. Currently, the data recording is suggested to be limited to fatal crashes, personal injury crashes, and crashes involving towed vehicles.

3. **Acknowledging All Roadway Users**—It is clear that this initial policy is targeting a very specific class of vehicles: automobiles. However, these vehicles equipped with automated driving systems will be operating on roadways that include many types of users: trucks (freight and freight delivery), transit vehicles, motorcyclists, bicyclists, and pedestrians. While the ADS2.0 does mention in parts these users, AASHTO would suggest additional, stronger language and clarification in the policy from NHTSA acknowledging all roadway users.
4. **Consumer Education**—The Consumer Education and Training section, states that there should be a component of training on the use of ADS that could be made available to, and used in, driver’s training programs. The Guidance is silent on this level of training. Drivers training is the responsibility of the individual states and typically fall under the purview of the state motor vehicle administration which is either under the umbrella of a state DOT or a separate sister agency to the state DOT. Regardless, to ensure they are uniform, the basic information should be provided by NHTSA, a joint effort of automakers, or an organization like the American Association of Motor Vehicle Administrators, in collaboration with each other.