COMMONWEALTH of VIRGINIA

DEPARTMENT OF TRANSPORTATION
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Stephen C. Brich, P.E.
COMMISSIONER

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

RE: National Highway Traffic Safety Administration; Advanced Notice of Proposed Rulemaking; Removing Regulatory Barriers for Vehicles With Automated Driving Systems [Docket No.
NHTSA–2019–0036]

To Whom It May Concern:

The Virginia Department of Transportation (VDOT) appreciates the opportunity to provide comments on the National Highway Traffic Safety Administration (NHTSA) Advanced Notice of Proposed Rulemaking (ANPRM) concerning "Removing Regulatory Barriers for Vehicles With Automated Driving Systems." VDOT recognizes that the main focus of this ANPRM is to continue a conversation with industry, public safety advocates, and government concerning how to update the Federal Motor Vehicle Safety Standards (FMVSS) and how to test compliance with these updates. When it came to testing, this ANPRM focused on the technical and functional aspects of the operation of an Automated Driving System (ADS) equipped vehicle (examples, light braking and electronic stability control). VDOT staff took note, however, that the wording of some of the questions touched on broader issues and that the testing should expand beyond the technical and functional aspects of the safety feature itself and include the operational environment in which that feature is used.

First, VDOT believes that ADS equipped vehicles' ability to interact with the driving environment, including other drivers and transportation infrastructure, is key to their impact on safety. These systems will be taking over the actions of the driver, such as reading a sign and acknowledging it says "Stop" or slowing/braking upon input received from a work zone. Additionally, many ADS equipped vehicles will need to receive digital communications from infrastructure in order to have sufficient information to make driving decisions. The safe

operation of the ADS itself is essential to determining the safety of an ADS equipped vehicle and should not be added to other equipment tests as an afterthought. Instead, VDOT supports the creation of integrated tests specific to the safe function of an ADS, including the system's ability to conduct the driving task, receive and communicate data, and interact with the other roadway users.

Second, VDOT recognizes that it is unclear at this juncture how this technology will be advanced, and as such it is uncertain what types of testing are necessary. For example, due to the mapping features utilized by many in this industry, it is possible that ADS equipped vehicles will only be fully deployable in sufficiently mapped locations. As such, any FMVSS compliance testing would reflect this and involve a suitably mapped testing location. The ADS equipped vehicle could presumably be relying on both the map and the physical infrastructure for operation in this situation and require both to successfully operate.

Further, if ADS equipped vehicles will be available in both mapped and unmapped locations, FMVSS compliance testing would need to involve testing at both types of locations. The quality of the infrastructure used for testing becomes more important as the quality of digital mapping diminishes. For example, in the event of a temporary detour, road closure, or work zone, the ADS equipped vehicle would need to resolve the conflict between the digital map and the physical infrastructure markings and signs. In the case of an ADS equipped vehicle, NHTSA may have to outfit its testing locations with specific traffic markings, diverse signage, data relays etc. to ensure that ADS equipped vehicles are responding correctly. For physical infrastructure, this means NHTSA, when selecting or building a testing location, will be making a choice as to an acceptable level of quality for both mapping and physical infrastructure. For instance, if NHTSA chooses a test track with new, high quality lane markings, one outcome of the test could be that the ADS equipped vehicles are only deemed safe for roadways of equivalent quality.

Another issue that will need to be considered is the extent to which state and local governments will bear responsibility for updating mapped data for ADS equipped vehicles when changes to infrastructure such as changes to lanes or signalization on a roadway are made and whether it will be feasible for such updates to be made in real time. Further, if such changes are not updated accurately, or in what may be perceived or determined to be a timely manner, the question will be the extent to which the local or state government will bear liability, particularly given the current limitations on liability afforded governments under the concept of sovereign immunity.

As for digital infrastructure, NHTSA's choices may have an even broader impact, in that there are far fewer national standards that apply to digital infrastructure. It would not be surprising if manufacturers responded to these choices by designing their ADSs to work best when interacting with the type of infrastructure NHTSA uses for its testing. This leaves state DOTs in the unusual position of knowing, and potentially needing to conform to, infrastructure needs for a subset of all vehicles based on federal government testing choices.

ADS equipped vehicles are not yet developed to the point where it is easy to say what type of testing is best or practical. As NHTSA gathers information concerning updating the FMVSS and

designing corresponding testing requirements (including the creation of the test cases themselves), VDOT recommends that NHTSA discuss with state DOTs any potential physical and digital infrastructure impacts and needs.

VDOT appreciates the opportunity to provide comments on NHTSA's ANPRM. If you have any questions concerning these comments, please contact Amanda Hamm, Connected and Automated Vehicle Program Manager in VDOT's Office of Strategic Innovations, at (804) 823-6075.

Sincerely,

Stephen C. Brich, P.E.
Commissioner of Highways
Virginia Department of Transportation