CONSORTIUM FOR CONSTITUENTS WITH DISABILITIES

October 17, 2025

Submitted Electronically

Secretary Sean Duffy
Department of Transportation
1200 New Jersey Ave SE
Washington, DC 20590

RE: Research Ideas to Support Nationwide Automated Vehicle (AV) Deployment, [Docket No. DOT-OST-2025-1029

Dear Secretary Duffy:

The undersigned co-chairs of the Consortium for Constituents with Disabilities (CCD) Transportation Task Force submit these comments on the proposed questions regarding research ideas to support nationwide automated vehicle deployment in response to the request for information. The CCD Transportation Task Force advocates for fully accessible, affordable, and reliable transportation across all modes. People with disabilities should be able to travel on their own or with support, and they should also be able to choose how they live in the community. Additional information about our priorities for accessible autonomous vehicles can be found in the Task Force's 2022 AV Principles.[1]

Autonomous vehicles promise greater independent mobility for millions of people with disabilities, many of whom are nondrivers. However, this promise depends on AVs that are built to be accessible to people with various disabilities, services that are affordable and go where people want, safety for both passengers and pedestrians with disabilities, and operational policies that consider the unique ways in which people with disabilities travel in their communities. Any safety or deployment research framework must consider the needs of disabled travelers, including people with physical, sensory, and intellectual and developmental disabilities.

[1] CCD Transportation Task Force (2022). Autonomous Vehicle Principles. https://www.c-c-d.org/fichiers/CCD-Transpo-TF-AV-Principles-May-2022.pdf

3.(c) What research is needed to optimize human-machine interfaces for diverse user groups, including emergency responders, pedestrians, cyclists, other human drivers and passengers, to enhance safety, accessibility, and trust in mixed traffic environments?

Standards must be developed to ensure that the entire AV experience is accessible to people with disabilities. This is not only necessary to ensure that people with disabilities have equal opportunities to use AVs but also to ensure passenger safety. Numerous reports have laid out the basic framework on which these standards could be based, identifying accessible wayfinding, entry/exit, communication/navigation, mobility device access and securement, human machine interface, and emergency response as some of the key components requiring further research and development. NHTSA should play a key role in researching and developing standards to ensure that AVs are accessible and safe for people with disabilities.

To develop these standards, further research is especially needed on developing independent, automated wheelchair and mobility device securement and activation of ramps or lifts. One area of research entails expanding the use of universal docking systems, such as a deployable anchor that automatically attaches to a user's wheelchair or mobility device. Such restraint and securement standards could be expanded to personal vehicles for wheelchair users who drive, as well as to paratransit and rideshare service vans. This research ultimately could influence the development of independent securement standards across a wide range of transportation modes, including rail, air travel, or shuttles, in which people who use mobility devices currently have less access and safety than people without disabilities.

Furthermore, transforming the accessibility of curb use and AV parking is a key consideration for accessible and fair deployment of AVs as a service or as private vehicles. People with disabilities will rely on safe, findable, and usable drop off and pick up zones. People who are blind may not be able to find a vehicle parked across the street and down the block, especially if the in-app wayfinding does not provide high-quality walking directions. Safety dictates that AVs should pull all the way to the curb whenever possible. Moreover, in many instances, existing accessible parking spaces have been converted into electric vehicle spaces, limiting the availability of accessible parking, especially for wheelchair users. Curb use and parking policy must ensure that there is ample space for AVs to park or pick up passengers that is accessible to and usable by disabled travelers.

5(c) What areas and resolution of nationwide mapping is required or would be used for roadways, intersections, bridges, tunnels, interchanges, right of ways, and/or parking areas, be they public, private, paved, unpaved or otherwise? What data standards, formats and APIs are required for the nationwide mapping? If the road surface is mapped in 3 dimensions,

what are the height resolution requirements above a surface reference datum or similar base point? What datum reference would be required? Would your company use the map data if it was at no cost? If there was a charge for the map data, what is the reasonable estimated charge for the map data, and would your company be willing to pay this reasonable estimated charge? How would you propose downloading and subsequently updating the map data in company servers or in road vehicles?

To ensure that people with disabilities, including people who are blind or wheelchair users, can consistently use AVs, improvements to the mapping of accessible pedestrian infrastructure and pick-up/drop-off locations must be developed. It is not enough that a fully accessible AV allow a disabled passenger to use the vehicle, but people with disabilities will also need to be able to find and enter or exit the vehicle at a location that is accessible to them. For that reason, data specifying the accessibility of the pick-up and drop off locations as well as surrounding pedestrian paths should be available to the ADS and the AV operator. The Bureau of Transportation Statistics should be lauded for convening the National Collaborative on Bicycle, Pedestrian, and Accessible Infrastructure Data to develop an initial draft and framework for an accessible infrastructure data scheme. Such work demonstrates that collecting and compiling accessibility data is feasible. However, additional work is needed to validate the data and ensure that the data is eventually collected by and shared with appropriate entities. We encourage the Department of Transportation, in conjunction with public and private entities at the local level, to facilitate the development and sharing of rigorous, usable, and valid datasets for accessible infrastructure within the domains that AVs operate. Once these datasets are widely available and usable by ADS operators, further research and development will be required to maximize the utility of the data and understand tradeoffs for ADS decision making based on user behavior and preferences.

6(a) What research is needed to develop new or improved standardized methods to evaluate vehicle behavior consistency (*e.g.,* car following, lane changing, pedestrian/cyclist detection) across diverse environments (*e.g.,* rain, fog, snow, work zones, potholes), interactions (*e.g.,* unpredictable human drivers, emergency vehicles), and situations (*e.g.,* sensor failure, loss of cellular network, mechanical failures) when ADS-equipped vehicles are involved?

ADS identification of and response to people with diverse disabilities, using different types of mobility aids, and with diverse appearances is an important factor in ensuring that AVs will be safe for all pedestrians. We encourage the development of additional testing procedures, analytical tools, and simulated testing frameworks to ensure that ADS can appropriately identify and respond to pedestrians with disabilities, including wheelchair users, in a variety of environments. People with disabilities may travel along the paved roadway instead of a shoulder or inaccessible sidewalk, including in weather that reduces visibility, such as snowfall

(when crosswalks are often impassable). They may also move in unpredictable ways, even when traveling in crosswalks or other pedestrian areas. For example, simulated testing showed that early ADS models could not accurately predict the direction of travel of a wheelchair user who propelled herself backwards with her feet. We have also heard anecdotal reports that some AVs currently on the roadways may speed up when a wheelchair user enters the roadway, rather than stopping as expected. In addition, it is unclear whether autonomous vehicle developers have models that accurately respond to the diversity of disability experiences. If ADS developers rely solely on encountering diverse pedestrian profiles in the course of their on-road testing, they may miss people with disabilities who rarely travel due to limited accessible transportation options. It is imperative that ADS testing, both on the road and in simulation, be rigorously developed to respond to the many ways in which individuals travel, and to the degree necessary, oversample in their testing people who may have less common disabilities. Furthermore, ADS behavior around people with disabilities should be tested in a wide range of ODDs and in variable weather conditions because pedestrian travel behavior may vary based on location, weather, and infrastructure accessibility.

In general, we encourage DOT to prioritize accessibility as a core safety element. There are components of the vehicle, such as the human machine interface, that must be accessible for the ADS to function properly and safely. As an example, any sort of emergency or failure communication produced by the ADS as well as any user input that impacts the planning and control functions must be accessible to all riders. Considerations for emergency communications include redundant audible, visual, and, where appropriate, tactile means of communication (e.g. flashing warnings, accessible kiosks, and braille on buttons). Standards should be developed around physical access to emergency equipment as well, allowing for short reach distances for buttons or levers or reducing the force required to operate emergency features, such as manual releases for door locks or emergency call buttons. In addition, the ability to immediately contact a human safety and customer service operator through text and audio is very important in responding to emergency situations.

Additionally, AV operational systems ought to be able to communicate information about safety concerns to the passenger. Notably, passengers with some disabilities may not be able to readily identify an unexpected event outside the vehicle, requiring the ADS to trigger communications between the passenger and customer assistance when certain unexpected operational or emergency situations occur. To accomplish this, the ADS needs to be able to identify issues within its immediate proximity, and standards of communicating road closures should be developed that allow easy integration of local government alerts into ADS routing systems and that provide two-way information exchange. For example, AVs should have access to information about road closures that can inform safe travel route decisions. This information is

also important to the passenger who may need to avoid a certain area if a closure is due to an emergency like a fire rather than a general road closure like a parade or block party.

To the extent that safety is dependent on a user's interaction with the ADS or with the vehicle itself, the ADS, vehicle, and operations must all be fully accessible to the full range of potential users. Because there are only limited existing standards for the accessibility of vehicles, the opportunity to reimagine the safety components also offers the opportunity to establish a set of accessibility measures, standards, and designs that contribute to vehicle safety. If ADS are truly to benefit people with disabilities, the safety framework must also include people with disabilities.

Thank you for the opportunity to provide feedback on some of the accessibility, safety, and data related topics that still need to be researched, developed and implemented to ensure AV success for riders and pedestrians with disabilities. Please reach out if you have any questions about our responses.

Sincerely,

The undersigned co-chairs of the CCD Transportation Task Force

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