Disability Rights Education & Defense Fund DREDF

October 17, 2025
Via electronic mail

U.S. Department of Transportation
Docket Operations
1200 New Jersey Avenue SE
Washington, DC 20590
AVResearchRFI@dot.gov

Re: Comments submitted concerning Research Ideas to Support Nationwide Automated Vehicle (AV) Deployment. Docket Number: DOT-OST-2025-1029

The Disability Rights Education and Defense Fund (DREDF) writes to submit comments in response to the Office of the Assistant Secretary for Research and Technology's request for information regarding research ideas to support nationwide automated vehicle (AV) deployment.

DREDF is a leading national civil rights law and policy center directed by individuals with disabilities and parents who have children with disabilities. Our mission is to advance the civil and human rights of people with disabilities through legal advocacy, training, education, public policy and legislative development. DREDF demonstrated an early interest in the development of safe, accessible and inclusive autonomous vehicle policy in its drafting of the 2015 National Council on Disability report, Self Driving Cars: Mapping Access to a Technology Revolution.[1] The report examines the challenges and advances in autonomous vehicle (AV) technology, and proposes directions for research, development, and necessary infrastructure changes. The report also explores potential policies and legislation needed to ensure full access.

Nearly 1 in 4 people in the U.S. has a disability.[2] In 1990, Congress passed the bipartisan Americans with Disabilities Act (ADA). In enacting the ADA, Congress sought to "provide a clear and comprehensive national mandate for the elimination of discrimination against individuals with disabilities" in areas including transportation.[3] As a result, 99% of public buses are equipped with ramps, far more curb cuts benefit the public, and there is improved provision of accessible transit to people with sensory disabilities. Yet, children with disabilities are more than 5 times as likely to be hit by a motor vehicle as a bicyclist or pedestrian than children without disabilities, and many people with disabilities cannot drive or lack access to a personal vehicle.[4,5] Significant barriers to safe, accessible transportation remain across modes, including traveling as a pedestrian on public rights of way or securing one's wheelchair safely in a vehicle.

DREDF believes that the promise and safety of AVs will only be realized if the vehicles and the surrounding infrastructure are fully accessible, and the safety elements consider the needs of all people with disabilities.

DREDF provides the following comments to the OST-R's questions.

1. Data Standards and Integration: (d) What are the near-term infrastructure-related data needs for deployment of AVs, including roadway operations, maintenance, and planning? Which data needs require standardized information exchange, and how should this occur?

The introduction of autonomous shuttles, buses, and passenger vehicles requires improved accessibility of Public Rights-of-Way (PROW), such as sidewalks, accessible pedestrian signals, curb cuts, crosswalks, bus stops, and bike lanes, including protected bike lanes. Safe and accessible pick-up and drop-off locations must be prioritized to ensure people with disabilities and all travelers are able to benefit from AVs without being injured. Data collected before and during provision of AV services should include accessibility of infrastructure including sidewalks, curb cuts, and bus stops so that AVs are picking people up and dropping people in safe locations. Data should also include conditions of crosswalks and availability of an accessible pedestrian signal. Whether accessible curb ramps and bus stops are still available during inclement weather should also be collected. The vehicle should also be able to detect if the ramp cannot be deployed at a stop and move to another location.

Data collected could be shared with cities and states to assist with planning to address accessible infrastructure needs. ADA accessibility requirements must be adhered to and improved upon with meaningful input from the disability community in order for cities and states to work towards meeting goals of zero traffic deaths and serious injuries. Funding and PROW improvements should be directed towards the areas of greatest need, prioritizing high density areas and disadvantaged and underserved neighborhoods.

3. Supervision Dynamics and Human Interaction: (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?

USDOT-led and contracted human machine interface (HMI) research should consider the needs of disabled travelers, including people with physical, sensory (those that are blind or low vision, Deaf or hard of hearing, or DeafBlind) and intellectual and developmental disabilities. The vehicle's HMI is critical in any safety framework. People with all types of disabilities must be able to communicate with the vehicle as a passenger or pedestrian and when traveling alone, especially when trying to initially find the vehicle, during emergencies, or when a vehicle has stopped during the journey for any reason. HMI must be accessible to people with sensory and cognitive disabilities for AVs to reach their full potential.

4.* Evidence Based Evaluation: *(a) What research is needed to support safe, transparent, and equitable nationwide evidence-based evaluation of AV operational impacts on the transportation system?

The ADA requires transportation providers' personnel to assist with the use of securement systems, lifts and ramps.[6] We recommend research into a transit employees' role on a vehicle when not driving, which could include focusing on customer service, assistance with wayfinding, and emergency response.

In addition, we recommend research into impacts AV rideshare has had on transit ridership in cities where they have been active and any related cuts to service hours or bus stops. Research should also include ways AV rideshare and transit agencies could work together to ensure on demand service is complementing rather than replacing public transit. Studies have shown that when rideshare service enters a market and provides what some view as a more convenient alternative to public transit, transit ridership can decrease.[7] Transit agencies are already struggling.[8] Additional decreased ridership could lead to cuts in fixed bus routes and service hours, leading to cuts in required complementary paratransit service provided for people with disabilities.

6. Evaluation of Consistent and Robust Vehicle Behavior Interactions with Other Road Users and the Transportation System: (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?

DREDF recommends research necessary for development of a motor vehicle ramp and deployment standard for use in vehicles with and without a driver in all weather conditions.

DREDF also strongly encourages immediate research into how individuals with disabilities interact with AVs as pedestrians. Interactions may include approaching or crossing in front of the vehicle from the curb and across traffic, and entering a public right of way such as a crosswalk. Research should evaluate how pedestrians, including those with cognitive and sensory disabilities, know it is safe to cross in front of the AV if there is no traffic light or accessible pedestrian signal and whether and how AVs are able to detect people with disabilities, including people with service animals and wheelchair users.

A DREDF brief on ableism in AV AI and algorithms recommends research be conducted to ensure AVs can detect all people with disabilities and other members of marginalized communities outside the vehicle.[9] AVs rely on a number of different types of sensors in order to navigate their environment and perceive obstacles within it. These sensors incorporate a range of technologies, such as LiDAR, RADAR, and cameras, and may or may not incorporate algorithms as part of their operation. Current research and anecdotes suggest that not all AVs are being taught to detect people seated in their wheelchairs, or people with darker skin tones, among others. This is an enormous problem.

Anecdotal evidence suggests similar issues with an algorithm’s ability to detect disabled people in or around roadways, particularly if those individuals do not present or move as the algorithm has been trained to expect them to. For example, when a researcher tested a model with visual captures of a friend who propels herself backward in her wheelchair using her feet and legs, the system not only failed to recognize her as a person, but indicated that the vehicle should proceed through the intersection, colliding with her. More recently an advocate in the Bay Area who uses a service animal walked in front of a Waymo. The Waymo sped up instead of stopping. The advocate's daughter was, thankfully, able to intervene.

Research should be conducted in how to ensure inclusivity of datasets that train the AV software used to detect people outside the vehicle. A lack of disability representation within datasets creates significant risk for disabled people as AVs become a reality. Examples of disabled people must demonstrate a variety of disability types, and must include people of color and from a diverse array of ethnic backgrounds, people with a variety of gender identities and presentations, and people of a wide range of ages and body types.

In addition to research, DREDF supports the immediate adoption of an automatic emergency braking standard that detects vulnerable road users. A vulnerable road user is defined as a non-motorist in section 148(a) of title 23, United States Code. VRUs can include bicyclists, motorcyclists, wheeled mobility device users and pedestrians with service animals or other assistive aids. Increased safety for disabled pedestrians and wheeled mobility device users is essential. Wheeled mobility device users often have to share the road with vehicles when sidewalks or other public rights of way are inaccessible. Failure to detect wheeled mobility device users by drivers or autonomous vehicle systems can lead to loss of life or serious injury.[10]

Additional Research

DREDF recommends research be continued to test and develop a deployable anchor to safely secure wheelchairs within a motor vehicle utilizing an automated wheelchair securement system within a universal docking interface geometry standard. To date, testing and development of the Universal Docking Interface Geometry (UDIG) wheelchair securement standard has generally been limited to wheelchair users backing into a fixed anchor in order to automatically and safely secure their wheelchairs in a motor vehicle. To expand the use of UDIG in vehicles in which a wheelchair user would need to secure their wheelchairs by moving forward, the anchor would need to be deployed from the vehicle floor or from a side (lateral) position. This would provide safer automated securement in side and rear-entry wheelchair accessible vans and would enable wheelchair users to employ UDIG in driving their personal wheelchair accessible vehicles.

Finally, we encourage any research include and be led by disabled people themselves, and that any accessibility-related research includes the US Access Board's guidance and participation.

Thank you for the opportunity to provide research recommendations. Please follow up with any questions to Carol Tyson, Government Affairs Liaison, ctyson@dredf.org.

Sincerely,

Michelle Uzeta
Interim Executive Director

[1] National Council on Disability (2015). Self Driving Cars: Mapping Access to a Technology Revolution https://ncd.gov/publications/2015/self-driving-cars-mapping-access-technology-revolution.

[2] Centers for Disease Control and Prevention (CDC). "Disability and Health Data Now." CDC, April 8, 2025.

[3] Huiyun Xiang, Motao Zhu, Sara A. Sinclair, Lorann Stallones, J.R. Wilkins, Gary A. Smith, Risk of vehicle–pedestrian and vehicle–bicyclist collisions among children with disabilities, Accident Analysis & Prevention, Volume 38, Issue 6, 2006, Pages 1064-1070,

[4] Xiang, Huiyun. (2008). Secondary Injuries Among Individuals with Disabilities. Center for Injury Research and Policy.

[5] United States Department of Transportation, Bureau of Transportation Statistics. Travel Patterns of Adults with Travel-Limiting Disabilities. Washington, DC: 2024. https://www.bts.gov/sites/bts.dot.gov/files/2024-04/Travel%20Patterns%20of%20Adults%20with%20Travel-Limiting%20Disabilities_4_18_24.pdf

[6] 49 C.F.R. Section 37.165(f),

[7] Gregory D. Erhardt, Jawad Mahmud Hoque, Vedant Goyal, Simon Berrebi, Candace Brakewood, Kari E. Watkins, Why has public transit ridership declined in the United States?, Transportation Research Part A: Policy and Practice, Volume 161, 2022, Pages 68-87.

[8] Congressional Research Service (November 2022). Public Transportation Ridership: Implications of Recent Trends for Federal Policy. Available at https://crsreports.congress.gov/product/pdf/R/R47302.

[9] Ian Moura for the Disability Rights Education and Defense Fund (November 2022). Addressing Disability & Ableist Bias in Autonomous Vehicles: Ensuring Safety, Equity & Accessibility in Detection, Collision Algorithms & Data Collection. Available at https://dredf.org/wp-content/uploads/2023/03/DREDF-Moura-AV-AI-Brief-Nov-2022-UPDATE.pdf.

[10] The fatality rate for pedestrians using wheelchairs is 36 percent higher than for the general pedestrian
population. See John D. Kraemer and Connor S. Benton, Disparities in Road Crash Mortality Among Pedestrians Using Wheelchairs in the USA: Results of a Capture–Recapture Analysis, BMJ Open (2015), https://bmjopen.bmj.com/content/bmjopen/5/11/e008396.full.pdf