

August 23, 2019
Via electronic mail

The Honorable Roger Wicker
United States Senate
555 Dirksen Senate Office Building
Washington, DC 20510

The Honorable Frank Pallone, Jr.
United States House of Representatives
2107 Rayburn House Office Building
Washington, DC 20515

The Honorable Maria Cantwell
United States Senate
511 Hart Senate Office Building
Washington, DC 20510

The Honorable Greg Walden
United States House of Representatives
2185 Rayburn House Office Building
Washington, DC 20515

Dear Chairmen Pallone and Wicker, Ranking Members Cantwell and Walden,

The Disability Rights Education and Defense Fund (DREDF) is pleased to submit comments in response to the request for feedback on issues addressed in a bicameral, bipartisan self-driving car bill. 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 equitable autonomous vehicle (AV) policy in its drafting of the 2015 National Council on Disability (NCD) report, *Self-Driving Cars: Mapping Access to a Technology Revolution*.ⁱ The report examines the challenges and advances in 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. DREDF maintains an ongoing interest and: is participating in a California Public Utilities Commission Accessible AV working group; has attended and provided comments at USDOT events; has provided a fully accessible vehicle working checklist on our website for discussion purposes; and is a signatory to the 2018 Consortium for Citizens with Disabilities Transportation Task force AV Principles.ⁱⁱ DREDF views this moment as an opportunity to reimagine mobility in line with principles of transportation and community inclusion as a civil right.

Background

Nearly 1 in 5 people in the U.S. has a disability (more than 57 million). 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.” As a result, 99% of public buses are equipped with ramps, far more curb ramps benefit the public, and there is improved provision of accessible transit to people with sensory disabilities. Yet, significant barriers to accessible, affordable transportation remain across modes.

Many people with disabilities are currently unable to obtain a driver’s license, and cannot afford to purchase an accessible vehicle. It’s critical that ride-share and on-demand services provide disability access, but many do not. A recent Bureau of Transportation Statistics (BTS) study of adults with disabilities found that roughly half of respondents 18 to 64 reported living in a household with income under \$25,000. An earlier BTS study found half a million homebound people with disabilities citing transportation difficulties. Only 45% of rental households with individuals who use wheeled mobility devices own a personal vehicle.ⁱⁱⁱ Ensuring access is easier, and cheaper in the long run, if it is

integrated at the outset, yet news accounts of AV testing and deployment timelines often fail to mention accessibility.^{iv,v,vi} The disability community knows well that if access is not baked into technology, history will likely be repeated. Accessible vehicles will be needed, and retrofitting will be more expensive for providers in the long run.^{vii}

Without affordable, accessible transportation people with disabilities are unable to travel to work, to school, to contribute to and participate in their communities, to support and spend time with family and friends, and live their lives to the fullest. According to a National Conference on State Legislatures report, in 2012, people with disabilities who were not working reported lack of transportation as one of their biggest barriers to employment. A National Organization on Disability survey found that Income remains a barrier to transportation.

Manufacturers and transportation providers are racing to develop, test and deploy autonomous shuttles and passenger vehicles. The present and future of mobility is changing. AVs have the potential to drastically improve access for people with disabilities, including members of the blind and low vision, Deaf and hard of hearing, intellectual, developmental and cognitive disability communities, people with physical disabilities, including wheelchair users, and people with neurological conditions including epilepsy and seizure disorders. However, 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.

Responses by Category

1. Disability Access

The ADA, Title VI of the Civil Rights Act, and Executive Order 12898 provide essential protections against discrimination, and provide a roadmap for ensuring access to public transit for passengers with disabilities. In addition, on-demand AV service must be accessible or those most in need will be left without transportation during emergencies, when traditional fixed route or rail breaks down or needs repair, or in times of inclement weather and disasters.

According to a 2019 NCD report, lack of accessible transportation is one factor that leads to costly and unnecessary institutionalization of people with disabilities during and after disasters. For example, during Hurricane Harvey, people who had been evacuated to a nursing home several hundred miles from their Texas residence were not provided any accessible transportation back to their undamaged homes. They were unable to leave the nursing home until funding for their transportation was secured. Accessible vehicle design must be required, incentivized and standards set for public use AVs to ensure adequate accessible transportation is available in the future.

Legislation should prohibit discrimination on the basis of disability by states, and any other governmental authorities, in licensing and insurance. We support the provision in the AV START Act's Section 3, Relationships to Other Laws, that prohibits discriminatory licensing laws nationwide.

Existing law, including Section 504 of the Rehabilitation Act and the ADA, should be recognized as requiring accessible AVs, including the development of any additional needed standards by the US Access Board and regulation by the US Department of Justice without repeal of additional guidance.

Legislation should require full accessibility for all types of common and public use AVs. All human machine interface (HMI) systems on AVs must be fully accessible to people with disabilities. Lifts, ramps and wheelchair securement must be available on common use and public transit AVs. Fully accessible

HMI and vehicle design will ensure access to people with sensory, cognitive, and physical disabilities, including wheelchair users.

Exemptions should not be granted for development and testing of any AVs meant for transit, paratransit, microtransit, first mile/last mile or circulator service that are not safe for passengers and pedestrians, equitable, and fully accessible.

2. *Advisory Committees*

Self-driving car legislation must include disability representation on any US DOT autonomous vehicle advisory council. There is no substitute for the lived-experience and authentic voices of people with disabilities. A working group or sub-committee focused on the establishment of accessibility standards, disability community education, and technical issues should also be established. The sub-committee should report back to the larger advisory council on the multitude of accessibility issues and standards that must be identified, addressed and established going forward. The sub-committee must include cross-disability representation, representatives of standard setting organizations, industry stakeholders and interested agencies.

In addition, an interagency coordinating council should be established to identify and eliminate barriers to access to AVs, including, but not limited to, use of federal funds for transit and AV-ready wheelchairs, and accessible AV trips. The work group could work together to ensure accessible AV's meet fundamental needs of people with disabilities going forward. The council could be modeled on, or further the work of, the Interagency Coordinating Council on Access and Mobility (CCAM). CCAM was established by Executive Order 13330 by President Bush in 2004, and released a report with action plans and recommendations.

3. *Rulemakings, including updating existing standards and setting new standards*

AV standards should ensure adequate safety and crashworthiness for all passengers and pedestrians. Updated standards and testing requirements should ensure the safety of wheelchair users who remain in their wheelchairs in a high-level AV, and all pedestrians and mobility device users outside the vehicle. Standard setting for crashworthiness of the vehicle could incorporate the work of the University of Michigan Transportation Research Institute on wheelchair-seated occupant safety.

In addition, vehicles should be physically accessible whenever possible, and must provide multiple modes of communication in the human machine interface including audible and visual communications to report emergencies, and ensure timely response and safe extraction from the vehicle.

4. *Exemptions*

If additional NHTSA exemptions are granted, they should be used for testing and deployment of fully accessible AVs that are inclusively designed. Any exemptions must also require the safety of pedestrians and passengers before deployment.

5. *Privacy*

Passenger privacy should be protected by ensuring passengers' health and disability status and locations visited is not shared, or used for commercial or tracking purposes, without permission of the individual.

6. *Safety Evaluation Reports*

Safety evaluation reports should include the accessibility features of the vehicle, and whether people with disabilities were consulted as part of the design and testing in order to ensure safety, accessibility and usability. Consumers and public transportation users will benefit greatly from knowledge of accessibility features ahead of time and could make the difference between being left at the curb because the vehicle is inaccessible to a wheelchair user, or unidentifiable to a low-vision, blind, or cognitively disabled passenger; or limited usability in case of an emergency.

Accessibility features provided could include, but are not limited to:

- Human Machine Interface Features
 - Usability of accessible apps to hail a car. The apps must be Section 508 compliant.
 - Use of multiple forms of communication (eg, print, audio, plain English and symbols) with the vehicle, when requesting a ride, identifying the correct vehicle, and inside the vehicle to change the route, unlock doors, etc.
 - Minimally complex directions and control identifiers
 - Compatibility with portable devices (phones, tablets, 'smart-glasses') with customized assistive technology
 - Accessible operating surfaces that are within reach and have tactile cues
 - Software to ensure accessible drop off points for access (eg, near curb ramps)
 - Information provided about the environment surrounding the vehicle
 - Identifying how the car will communicate in an emergency
- Vehicle Hardware Features
 - Space to stow wheelchairs for those transferring to a seat
 - Lower floors to accommodate manual and power wheelchairs
 - Lifts or ramp and a securement system, or support for aftermarket modification
 - Accessible door handles, storage spaces, seat-belts (opening and closing the trunk or hood)
 - Door height and available turning radius

Please note, any specific requirements provided in legislation should be identified in consultation with disability representatives.

7. *Crash Data, including reporting requirements*

Anonymized disabled passenger and disabled pedestrian AV crash data should be collected. Data could be analyzed by industry stakeholders and NHTSA to identify needed vehicle design and pedestrian identification, as well as any necessary infrastructure improvements to ensure safety.

8. *Resources for NHTSA*

Funding should be increased and expert staff retained and hired to support the work of the USDOT's Accessible Transportation Technologies Research Initiative (ATTRI) program, NHTSA and the US Access Board. Research and development of accessible AVs and standards should be promoted, including vehicle safety and crashworthiness standards. In addition, resources should be provided for NHTSA to provide technical assistance to OEMs, transit agencies, or state and local governments working to ensure provision of fully accessible AVs and compliance with the ADA.

9. *Consumer Education*

Any consumer education efforts should include cross-disability representatives to ensure accessibility of messaging. Representatives from sensory and cognitive disability communities must be involved to ensure communication methods are accessible for all people. Cross-disability representatives must be consulted to ensure education materials are addressing issues of concern to the disability community.

Additional Categories

10. *Studies Examining Potential Impacts*

We encourage inclusion of studies examining AVs potential impacts on transportation and land-use patterns, congestion, pollution, road safety and public transit, members of low-income, indigenous, and disability communities, and communities of color.

11. *Infrastructure*

Should infrastructure be addressed in any self-driving car bill, accessibility must be a priority. The introduction of autonomous shuttles, buses and passenger vehicles requires improved accessibility of Public Rights-of-Way, including sidewalks, audible pedestrian signals, curb cuts, roadway configurations, drop-off/pickup points and cross walks. As roads and facilities are planned and developed, ADA accessibility requirements must be strictly adhered to in order for cities and states to work towards meeting goals of zero traffic deaths and serious injuries. The US Access Board's 2011 Public-Rights-of-Way Accessibility Guidelines should be adopted and requirements of Executive Order 13771 to repeal 2 regulations should be waived.

Additional Legislation

Any infrastructure-related direct communication mode, such as 5G network communication, should be developed and deployed to maximize the safety and accessibility of AV passengers, including people with disabilities. 5G should greatly enhance safe and seamless transportation between different modes of transportation as well as wayfinding for door to door travel.

Finally, Congress should pass legislation requiring that, as a matter of civil rights, all new technology incorporate the needs of people with disabilities at the earliest possible point. Many new technologies are inaccessible to people with vision, hearing, and/or physical and other disabilities because accessibility was not considered during research and development.

DREDF thanks you for the opportunity to provide recommendations regarding priorities and issues addressed in a self-driving car bill. Please do not hesitate to contact Carol Tyson, Government Affairs Liaison, at ctyson@dredf.org, or (202) 878-9186, with any questions. We look forward to continuing to work with the Committee as legislation is developed.

Sincerely yours,



Susan Henderson
Executive Director

ⁱ National Council on Disability (November 2015). Self-Driving Cars: Mapping Access to a Technological Revolution. Retrieved from <https://ncd.gov/publications/2015/self-driving-cars-mapping-access-technology-revolution>

ⁱⁱ Consortium for Citizens with Disabilities Transportation Task Force Autonomous Vehicles Principles. Found at: <http://www.c-c-d.org/fichiers/CCD-Transp-TF-AV-Principles-120318.pdf>

ⁱⁱⁱ University of Kansas Research & Training Center on Independent Living [Infographic] (2014). Housing for People with Disabilities: The On-ramp to Community Participation. Retrieved from <http://rtcil.org/cl/projects/r1/infographic>

^{iv} Hawkins, Andrew (September 2018). Self-driving pods are slow, boring, and weird looking – and that’s a good thing, *The Verge*. Available at <https://www.theverge.com/2018/9/17/17859112/self-driving-cars-shuttle-pods-delivery-services>

^v Laris, Michael (October 2018). From Model T to driverless: Ford to launch fleet of robot cars in Washington, DC, *Washington Post*. Retrieved from https://www.washingtonpost.com/local/trafficandcommuting/from-model-t-to-driverless-ford-to-launch-fleet-of-robot-cars-in-washington/2018/10/21/6d98119e-d2f6-11e8-b2d2-f397227b43f0_story.html

^{vi} Sage, Alexandria and Paul Lienert (November 2017). GM plans large-scale launch of self-driving cars in US Cities in 2019. Retrieved from https://www.washingtonpost.com/local/trafficandcommuting/from-model-t-to-driverless-ford-to-launch-fleet-of-robot-cars-in-washington/2018/10/21/6d98119e-d2f6-11e8-b2d2-f397227b43f0_story.html

^{vii} Johnson, Mary and Barrett Shaw [Eds] (2001). *To Ride the Public’s Buses: The Fight that Built a Movement*. The Advocado Press.