

March 4, 2018

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

Re: Comments submitted concerning Removing Barriers to Transit Bus Automation  
Docket Number: FTA-2017-0025

Disability Rights Education and Defense Fund (DREDF) is pleased to submit comments in response to the Federal Transit Administration's (FTA) request for comments regarding removing barriers to transit bus automation.

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 policy in its drafting of the 2015 National Council on Disability report, [Self Driving Cars: Mapping Access to a Technology Revolution](#). 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.

Transit bus automation has the potential to dramatically improve the lives of people with disabilities and improve the safety of our streets. More than half a million people with disabilities never leave home and cite transportation difficulties.<sup>i</sup> 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.<sup>ii</sup> Many people with disabilities cannot drive or lack access to a personal vehicle. Only 45% of rental households with individuals who use wheeled mobility devices have access to a personal vehicle.<sup>iii</sup>

The promise and safety of automated transit buses will only be realized if they are truly accessible, and the regulations, laws and policies take into consideration the needs of disabled travelers. Transit service of all types: whether fixed route, shuttles, circulator or vehicles providing first mile/last mile service must be available to people with disabilities who are ambulatory and mobility impaired, to low income riders, and those of all races, colors and national origins. The Americans with Disabilities Act, Title VI of the Civil Rights Act, and Executive Order 12898 must be enforced and the civil rights of transit riders protected without exception.

Equivalent, integrated service must be the standard in transit versus tiered service that would lead to segregation and lower quality service for mobility device users and those who are the most transit dependent. Without equivalent service the gap between those who have access and those who do not will continue to grow. Those in the most 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. Compliance with the ADA and Title VI is necessary for a truly resilient transit system.

DREDF provides the following comments to the FTA's questions regarding barriers to automated transit.

***A. Existing FTA statutes, regulations, or policies that may present a challenge or barrier to the development, demonstration, deployment or evaluation of automated transit buses.***

Policies Clarified

Select FTA guidance may need to be clarified and new guidance drafted in order for automated transit bus use by people with disabilities to be developed, demonstrated and evaluated. In each case members and staff of the US Access Board, the National Council on Disability, and organizations representing the disability community should be involved.

- For Level 4 and Level 5 vehicles being used to provide paratransit service: new guidance may need to be drafted to clarify whether transit personnel would need to be present to assist with boarding and alighting, securement, and door-to-door service as needed.
- For Level 4 and Level 5 fixed route and shuttle service: new guidance may need to be drafted to clarify whether transit personnel would need to be present as a conductor, even if they are not driving to assist: with boarding and alighting, when a transit stop is not accessible, or with securement as needed. 49 CFR Part 37.165(f) requires assistance in securing riders and stowing lifts or ramps. Effective automatic universal securement and lifts or ramps would alleviate much of these needs.

Required assistance, which can be provided by vehicle operators, conductors, or station attendants, includes acts such as: deploying and stowing lifts and ramps, securing riders' wheelchairs, and assisting with seat belts and shoulder harnesses. The required assistance requires personnel to provide this assistance even if it is otherwise not customary for them to leave their seats.

- For Levels 3, 4 and 5, guidance could be written to clarify payment and service request options. Title VI compliance may require taking into the needs of riders who are bankless, or who do not have a smartphone. Concierge service may be an option, as well as providing ways for riders to load a transit card.

DREDF recommends drafting FAQs similar to the [Shared Mobility FAQs](#) posted on the FTA website, and taking into consideration and drafting similar guidance found in the [Dear Colleague letter](#) sent December 5, 2016.

Laws and Policies Upheld

As has been mentioned, the ADA and Title VI provide a roadmap and necessary protections to ensure access to people with disabilities, and people of all races, colors, and national origins. [Executive Order 12898](#) requires federal actions to address environmental justice for minority and low-income populations. Without compliance with these laws, an evaluation of the full benefits and challenges of automated transit cannot be undertaken. The [FTA ADA Circular](#) provides a user-friendly guide to the regulations.

All ADA regulations are necessary in transit provision. Select ADA regulations to guide fully accessible automated transit deployment include (but are not limited to):

- Prohibition of discrimination against an individual with a disability. (§37.5(a))
- Prohibition of refusal of service or requiring anything contrary because of insurance company conditions coverage or rates. (§ 37.5(g))

- Requirements to maintain in operative condition features needed to make vehicles and facilities accessible. Features of accessible vehicles and facilities include: lifts, securement devices, lighting, fare vending and collection equipment, elevators, platforms, signage and systems to facilitate communication with persons with impaired vision or hearing. (§ 37.161(a)).
- Requirements to repair accessibility features or accommodate individuals when the features are out of order. (§ 37.161(b))
- Requirements for agencies to ensure accessibility of features including accessible parking spaces, ramp to stations, and accessible routes.

The ADA also provides clear guidance on securement, and when securement is necessary; this is crucial guidance while the industry develops effective automatic universal securement options:

- Guidance clarifies how many securement areas are required based on the length of the vehicle. (See FTA ADA Circular Section 4.2.5.)
- Agencies may establish policies requiring securement, or may have a policy allowing riders to remain unsecured. (§ 37.165 (c)(d))
- An agency cannot limit the use of transit by wheelchair users based on whether the securement system is able to secure the wheelchair to the satisfaction of the agency. (§37.165(d))
- Bus and van securement areas must also have a passenger seat belt and shoulder harness. A transit agency is not permitted to mandate that individuals using wheelchairs use seat belts and shoulder harnesses, unless the agency mandates the use of these devices by all passengers on the vehicle, including those sitting in vehicle seats.

The ADA requires necessary guidance on how to ensure equivalent service for people with disabilities compared to service provided to those without disabilities.

- The seven service characteristics for determining equivalency for riders with disabilities, & including those who use wheelchairs (§37.77(c)), are: &
  - & Response time,
  - & Fares,
  - & Geographic area of service,
  - & Hours and days of service,
  - & Restrictions or priorities based on trip purpose the same for all riders,
  - & Availability of information and reservations capability in all formats (e.g., large print, braille, audio, or accessible electronic files for riders with vision disabilities), and
  - & Any constraints on capacity or service availability must be the same for all riders.

According to the FTA ADA Circular, regulations do not prohibit demand responsive service from having long wait times or limited availability, as long as that is true for all riders. The perfect need not be the enemy of the good, as long as the imperfect applies to all.

### Title VI of the Civil Rights Act

Title VI requires meaningful participation in transit decision-making without regard to race, color or national origin. Meaningful access must also be ensured to people with limited English proficiency. As persons with disabilities can be found in all races, colors, national origins, and speaking every language, access and decision-making must be ensured to allow for adequate deployment, demonstration and evaluation of accessible automated transit.

***B. Other federal statutes, regulations, or policies that may present a challenge or barrier to the development, demonstration, deployment or evaluation of automated transit buses.***

Federal Motor Carrier Vehicle Safety Standards<sup>iv</sup> (FMVSS) may need to be reviewed to ensure deployment and evaluation of fully accessible Level 4 and Level 5 vehicles. No changes should be made without consultation with the US Access Board and representatives of the disability community. In addition, the FTA should continue any work identified by transit operator stakeholders to address blind spots on buses.

FMVSS standards that may need reviewing include (but are not limited to):

- Minimum sound requirements for hybrid and electric vehicles (Standard 141),
- Platform lift systems and installations requirements (Standards 403 and 404),
- Door locks and door retentions (Standard 206), and
- Occupant protection in interior impact (Standard 201).

New FMVSS standards may need to be developed to ensure:

- Human Machine Interface full accessibility,
- Accessible emergency stop buttons or devices,
- Accessible communication options for notifying emergency services, and
- Cybersecurity protection requirements that take into account occupants' disability status, and locations visited.

***C. Challenges or barriers to small businesses for the development, demonstration, deployment or evaluation of automated transit buses.***

Costs to develop and install components on fully accessible vehicles may seem prohibitive to small businesses. DREDF recommends developing incentive programs and tax credits through the Accessible Transportation Technologies Research Initiative (ATTRI), USDOT research programs and demonstration programs, and legislation.

***D. Other regulatory, policy or legislative barriers that may impede development, deployment or evaluation of accessible automated transit.***

Current data on the riding habits and availability of transportation for people with disabilities is outdated, and presents a barrier to understanding the true needs and potential impact of automated transit on the disability community. The [Freedom to Travel BTS survey and report](#) published in 2003 could be updated.

***E. Regarding policies and legislation that would remove barriers for the deployment of fully accessible automated transit.***

Accessible Public Rights-of-Way

Regulators and policymakers must take into account the need for fully accessible pedestrian infrastructure if we are to reap the full benefits of automated transit. Installation of audible pedestrian signals, accessible sidewalks, crosswalks and bus stops are necessary. Legislation and policies could require participation of local jurisdictions, regional MPOs, and state DOTs in planning, deployment and evaluation moving forward. Current requirements for public rights-of-way maintenance could be reviewed and clarified to ensure accessibility as updated transit vehicles are deployed.

## Ensuring Accessible AVs & US Access Board Accessibility Advisory Committee

DREDF recommends legislation mandating full accessibility for all vehicle types, as well as US Access Board standard setting. From the [NCD Self-Driving Cars](#) report:

*Congress should pass legislation requiring full accessibility for all types of common and public use AVs. Legislation should define a process that includes meetings with manufacturers, disability groups, and NHTSA. Relatedly, a disability advisory committee for automation should be created. The US Access Board should be delegated the responsibility of developing standards. Existing rules, including Section 504 of the Rehab Act and the ADA, should be interpreted to require accessible AVs, including additional regulation by the US Department of Justice, if needed. (p. 9)*

### **F. Regarding the National Highway Cooperative Research Program (NCHRP) Report cited in the Federal Register Notice**

The study, [Impacts of Laws and Regulations on CV and AV Technology Introduction in Transit Operations](#), poses four key questions related to the ADA and compliance on page 75. DREDF's responses are provided below.

1. &Will AV transit vehicles be viable for public service with ramps or lifts that are automatically deployed to board a passenger in a wheelchair, and, if so, what new safety hazards might be induced?
  - Response: Yes, automatic deployment is viable and accessible platforms and stops will need to be a priority.
2. &If AV technology supplier designs for unmanned vehicle operations do not provide equivalent ADA compliance as do conventional human-operated transit vehicles, can regulatory changes be made to accommodate this through exceptions or otherwise?
  - Response: AV technology supplier designs for unmanned vehicle operations must provide equivalent ADA compliance to ensure the full impact and benefits of automated transit, and equal access for all transit riders (including those temporarily disabled, parents with strollers, etc.). Exceptions or changes to the ADA or other civil rights laws or regulations are not acceptable and must not be considered. In addition to widening the transportation gap, this will increase reliance on required ADA paratransit service, which is often costly for both riders and operators.
3. &Will wheelchair securement be required in AV transit vehicles, and how will that be safely automated if no operator is onboard?
  - Response: Securement must be available. Additional research and development could lead to universal, functional, reliable, and safe automated securement systems that would not require an on-board operator for power and manual wheelchairs with and without brakes. Developers must address the issues of whether wheelchair users can reach and operate seat and shoulder belts, and any controls needed to deploy automatic securement. Q'straint has developed Quantum, an automatic wheelchair securement station. This system, and all future systems, should be reviewed in consultation with the US Access Board and the Rehabilitation Engineering and Assistive Technology Society of North America (RESNA). Standards should be set and factors such as cost, maintenance requirements, quality, the need for mobility device standards, and

whether the systems would provide adequate safety for all wheelchair users should be determined.

4. &Should AV technology suppliers be changing their vehicle designs to ensure highly reliable maneuvering capabilities for precise docking at stations that complies with the existing ADA regulations for level platform boarding?
  - o Response: Yes. Transit agencies and facility operations should be involved in planning and discussions at an early stage.

In addition, the NCHRP report states on page 75 that *“the most challenging requirements for AV technologies that are written into existing law for conventional rubber-tired transit vehicles are those that address vehicle floor height above the boarding surface where the passengers stand, creating conditions where a step up typically required to board a vehicle.”* DREDF’s reading of the regulations does not require vertical changes that would require a step. Rather, the regulations provide guidance on how to deal with the barrier of vertical level changes that are already present in vehicles.

Thank you for the opportunity to provide comment. Please contact Carol Tyson, Government Affairs Liaison, at (202) 878-9186 or [ctyson@dredf.org](mailto:ctyson@dredf.org) with any questions. DREDF looks forward to continuing to work with the FTA and the automated transit community to ensure access, safety, and equity are realized.

Sincerely yours,



Susan Henderson  
Executive Director

---

<sup>i</sup> USDOT Bureau of Labor Statistics [Issue Brief No. 3] (2003). [Transportation Difficulties Keep Over Half a Million Disabled at Home.](#)

<sup>ii</sup> Xiang, Huiyun. (2008). [Secondary Injuries Among Individuals with Disabilities. Center for Injury Research and Policy.](#)

<sup>iii</sup> University of Kansas Research & Training Center on Independent Living [Infographic] (2014). [Housing for People with Disabilities: The On-ramp to Community Participation.](#)

<sup>iv</sup> [49 CFR Part 571](#)