Ground Transportation for People with Mobility Disabilities 2025: Challenges and Progress

National Council on Disability

July 23, 2025

National Council on Disability (NCD)
1331 F Street, NW, Suite 850
Washington, DC 20004

Ground Transportation for People with Mobility Disabilities 2025: Challenges and Progress

National Council on Disability, July 23, 2025
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National Council on Disability

An independent federal agency making recommendations to the President and Congress to enhance the quality of life for all Americans with disabilities and their families.

Letter of Transmittal

July 23, 2025

President Donald J. Trump
Speaker of the House Mike Johnson

On behalf of the National Council on Disability ("NCD"), I transmit our report, *Ground Transportation for People with Mobility Disabilities 2025: Challenges and Progress.* This report is the product of an examination of the current state of ground transportation in the U.S. for people with mobility disabilities, particularly wheelchair users who rely on and require accessible transportation and offers extensive research findings and policy recommendations.

Pursuant to our authorizing statute, NCD makes recommendations to the President, the Congress, and other officials of Federal agencies on ways to better promote equal opportunity for all people with disabilities, economic self-sufficiency, independent living, and inclusion and integration into all aspects of society; provide Congress advice and recommendations; and review and evaluate on a continuing basis new and emerging disability policy issues affecting individuals with disabilities at the Federal, State, and local levels, and in the private sector, including policies that operate as disincentives for the individuals to seek and retain employment.[1] In this report, we examine several such policies.

In addition to describing transportation disadvantage and its impacts on this population, the report details continued barriers, challenges, and some promising innovations in common transportation modes, including transportation network companies, taxi services, paratransit, shuttle services, and microtransit. It also includes a chapter on the rapidly developing mode of autonomous vehicles and the promise it holds for increasing the mobility of people with disabilities, if accessibility is addressed as companies design, test, and deploy these vehicles for public transportation rather than attempt retrofits later.

Overall, NCD found that, while some progress has been made, transportation barriers remain a major concern for people with mobility disabilities across the nation and contribute to a host of negative outcomes like unemployment, poverty, inability to access health care, isolation, and diminished social participation. Wheelchair users remain a population that is often "left at the curb" even as technology advances. In this report, NCD offers detailed findings and a robust set of recommendations to Congress, federal, state, and local entities, and private transportation companies to help improve current and future accessibility in ground transportation.

1 29 U.S.C. §§ 780–781.

NCD hopes the information in the report will be useful to you in the development and refinement of policy in this crucial area. We look forward to engaging leadership and their teams across your Administration to brief on and discuss follow-up on the report's findings and recommendations.

Respectfully,

David Shawn Kennemer
Vice Chair/Acting Chair

(The same letter of transmittal was sent to the President Pro Tempore of the U.S. Senate and the Speaker of the U.S. House of Representatives.)

National Council on Disability Members and Staff

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Acknowledgments

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This report stems from a policy proposal from former Chairman Andrés Gallegos to examine persistent barriers in transportation, and Council Member Theo Braddy to examine autonomous vehicles and disability.

Acronyms and Terms

ADA	Americans with Disabilities Act
ADS	Automated Driving System
AV	autonomous vehicle
CPUC	California Public Utilities Commission
DFHV	District of Columbia Division of For Hire Vehicles
DOJ	U.S. Department of Justice
DOJ/CRT	U.S. Department of Justice Civil Rights Division
DOT	U.S. Department of Transportation
FHWA	Federal Highway Administration
FTA	Federal Transit Administration
NCD	National Council on Disability
NHTS	National Household Travel Survey
NHTSA	National Highway Traffic Safety Administration
TNC	Transportation Network Company
WAV	wheelchair-accessible vehicle (equipped with a ramp and wheelchair securement device)
Demand–responsive transit	Transit that operates in response to calls or requests from riders. A rider calls or uses an app to make a request, and a vehicle is dispatched in response. Vehicles do not operate on a fixed route or fixed schedule, and in the case of micro transit, drivers pick up passengers at different locations, who are going in the same direction, before taking them to their destinations.
First-mile/last-mile service	Transportation that takes people to fixed-route transit stops or stations when it is not within convenient walking distance (first mile) or to complete the trip when the final destination is not within convenient walking distance (last mile).
Microtransit	A technology-enabled service that uses multi-passenger vehicles to provide on-demand services with routing software that helps efficient travel by picking up customers that are near each other and travelling in the same direction. Common uses are first-mile/last-mile connections to fixed-route services; hub-to-hub zone-based services; the commingling

	of ADA complementary paratransit services with general transit service; and point-to-point service within a specific zone or geography. Wheelchair users, in many models, can be picked up where they are, rather than rolling to a nearby, designated pick-up point.
On-demand transit	Transit service that responds quickly to rider demands. Rides are reserved in real time or in advance. Common providers are taxis, transportation network companies, and microtransit companies.
Paratransit	A type of demand-responsive transit service specifically designed for people with disabilities. Traditional paratransit requires advance reservations and has limited hours.
Private entity	Any entity other than a public entity.
Taxi medallion	A permit allowing an individual or company to operate a taxicab. Several major U.S. cities issue medallions as part of their taxicab licensing system and control the number of medallions available for sale.

Public Comment

A few weeks ago, I got a call from my personal assistant telling me that my wheelchair accessible van was not working due to a muffler problem, and I would need to find another way home from work.

My first call was to a local taxi company whose website advertised wheelchair accessible vans, known as WAVs. The taxi company said they had no WAVs available for that afternoon and did not refer me to any other taxi companies. My local paratransit system was not an option as they require at least one day prior notice and can leave you waiting for up to thirty minutes from the time you want to leave. They also do not operate in areas of Nassau County where the public bus system does not run. The wheelchair accessible regular bus was also not an option because it takes me ten minutes to wheel from the bus stop to my apartment and it was 25 degrees out that day and I am sensitive to cold. So, I downloaded the UBER app and searched for a WAV. The app listed WAVs, so I clicked on it only to find that there were WAVs available in Philadelphia and New York City, but no WAVs available in Nassau County, NY, a County of approximately 114,000 people with disabilities or 8% of Nassau County's population. My final call was to an ambulette company (vans for transporting disabled passengers in nonemergency circumstances) which was available and took me home but charged me $90 to go from my office to my apartment a distance of approximately four miles.

The need for taxi companies to have WAVs, for paratransit to be more readily available, for UBERs to have WAVs in all towns and cities and for ambulette companies to charge less is urgent so that people with disabilities can access ground transportation as easily as all other Americans and so that the promise of the Americans with Disabilities Act can be fulfilled.

Public Comment Submitted to NCD, February 8, 2024[1]

Executive Summary

Almost everything we do is dependent on transportation. We rely on it to go to work, to school, to civic and social events, to our doctors, to stores, to recreation, and to family events. In recognition of the barriers preventing people with disabilities from accessing common transportation modes, one of Congress' principal purposes for enacting the Americans with Disabilities Act (ADA) of 1990 was to eliminate transportation barriers that prevented people with disabilities from fully participating in society, costing the U.S. billions of dollars in unnecessary expenses resulting from dependency and nonproductivity. Thirty-five years later, however, millions of people with disabilities remain significantly transportation disadvantaged, and millions do not leave their homes due to insufficient and inaccessible transportation options.

[P]eople with disabilities continue to rely on public transportation, but millions continue to be "left at the curb" by the most effective door-to-door, on-demand options...

NCD has long understood the importance of public transportation for people with disabilities and published a comprehensive report describing the state of transportation for people with disabilities in 2015. During the past decade, the public transportation landscape has changed dramatically due to advances in technology driven by the emergence of transportation network companies (TNCs), which have changed the general public's use of public transportation and impacted taxi, paratransit, and other transit services commonly used by people with disabilities in both negative and positive ways. One thing that remains the same is that people with disabilities continue to rely on public transportation, but millions continue to be "left at the curb" by the most effective door-to-door, on-demand options, such as taxis and TNCs, that people without disabilities can commonly access in minutes. The option of fixed-route public transportation often requires multiple transfers that can extend what would be a short trip in a cab or TNC into multi-hour events, and the paratransit system does not offer the demand-responsiveness or hours necessary for many users.

This report updates and expands on NCD's 2015 transportation report, focusing on the current state of public transportation for a specific population of people with disabilities – motorized wheelchair and scooter users and manual wheelchair users who require wheelchair-accessible vehicles (WAVs), such as

vehicles with ramps and wheelchair securement devices, to travel. It describes a combination of physical and regulatory insufficiencies that have created a ground transportation ecosystem that restricts basic transportation options for millions of wheelchair users and some of the ways that improvements have been made to increase the availability of on-demand transportation for this significantly transportation-disadvantaged population.

The lack of WAVs contributes to social isolation, negative mental, and emotional impacts, and it impedes or prevents employment, schooling, health care, parenting duties, recreational opportunities, and to the independence that most individuals enjoy as a matter of course.

The research questions NCD sought to address included: What are the barriers to wheelchair users in accessing popular modes of transportation, including TNCs, taxis, paratransit, shuttles, car rentals, and autonomous vehicles (AVs)? What actions are government agencies, legislatures, and private transportation providers taking to address the need for WAVs? What localities have succeeded in ensuring WAVs through legislation and other actions? How is the AV industry addressing the needs of wheelchair users in its designs? How has the U.S. Department of Justice (DOJ) enforced the ADA in the transportation context, and where can enforcement or regulations be improved? What can the U.S. Department of Transportation, private vehicle manufacturers, and technology companies do to improve access to WAVs?

NCD informed this report by examining federal government transportation studies and survey data; looking at Census and health data; conducting an extensive review of academic research; examining federal, state, and local transportation laws, regulations, policy documents, ADA enforcement archives, blogs, YouTube and other popular online media sources, and newspaper and magazines. NCD also interviewed individuals working in government and private sector transportation and disability stakeholders. We also provided four opportunities for public comment on ground transportation between July 2023, and May of 2024 and hosted transportation panels at two NCD quarterly meetings in November 2023 and February 2024.

Key Findings

Although some bright spots exist for WAV public transportation, such as public–private partnerships and microtransit companies, many barriers prevent the progress needed to provide an adequate number of WAVs for wheelchair users who require them to travel. The lack of WAVs contributes to social isolation, negative mental, and emotional impacts, and it impedes or prevents employment, schooling, health care, parenting duties, recreational opportunities, and to the independence that most individuals enjoy as a matter of course.

TNCs, such as Uber and Lyft, have grown exponentially since NCD's 2015 report, causing a ground transportation revolution that has greatly increased the convenience and availability of on-demand rides, now having 80% or more of the ground transportation market, once held by taxis and providing multiple millions of trips each day in the U.S. But not all Americans benefit equally

from this progress; TNCs only provide WAV service in about 10 U.S. cities, leaving thousands of communities and millions of wheelchair users without WAV service.

The tremendous growth of TNCs was aided by years of minimal regulation and low entry costs for drivers compared with the highly regulated taxi industry with high up-front costs. As taxi drivers left to work for TNCs, the taxi drivers and taxi WAVs that were heavily relied on by WAV-users diminished, leaving few or no options for on-demand, door-to-door service in many communities.

TNCs [such as Uber and Lyft] only provide WAV service in about 10 U.S. cities, leaving thousands of communities and millions of wheelchair users without WAV service.

Where taxi WAVs are on the roads, it is largely because a city or county provides financial incentives to drivers to offset the extra expenses of owning a WAV (e.g., reimbursing funds expended to purchase or convert a van, fuel subsidies, insurance, and licensing fees), with mixed results.

At the federal level, the ADA and its implementing transportation regulations do not mandate taxi companies or TNCs to provide a percentage of WAVs. This has resulted in a lack of WAVs except in a few jurisdictions where state and local laws require them and in federal lawsuits by wheelchair users who struggle to find accessible TNCs and taxis across the nation.

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As AV technology has advanced, the needs of wheelchair users are not being addressed. Businesses that offer transportation to the public in fully autonomous robotaxis are using small vehicles and offer no autonomous WAV option. No AV business interviewed for this report had plans to design or manufacture an autonomous WAV. The imminent increase in robotaxis without models that are physically accessible to wheelchair users would repeat the same lack of access as the largely inaccessible TNC model.

Microtransit companies have emerged as source for increasing on-demand WAVs by supplementing or replacing fixed-route buses and traditional paratransit in rural, suburban, and urban settings. Two companies have made positive impacts using both electric WAVs and autonomous WAVs.

Key Recommendations

Congress

Congress should pass legislation that requires all TNCs, taxi companies, and AV companies that deploy fleets of robotaxis to provide and maintain an active percentage of WAVs in each community where they operate. The legislation should also ensure that the companies bring WAVs into the community, rather than using the communities' current supply to fulfill this requirement.

Federal Agencies

U.S. Department of Transportation (DOT)

DOT should incentivize partnerships between AV tech companies and vehicle manufacturers for the design and manufacture of fully autonomous WAVs and an autonomous universal system that safely secures wheelchairs and wheelchair users.

DOT Office for Civil Rights (OCR)

Due to the continued lack of WAVs provided by taxis and TNCs and autonomous taxis (robotaxis), DOT should amend its ADA regulation to require taxi services, TNCs, and autonomous taxi services to have a percentage of WAVs in service and available in each locality where they operate.

DOT Federal Transit Administration (FTA)

FTA should continue to support partnerships between public transit agencies and private transportation providers (e.g., taxis, TNCs, microtransit providers) to increase the availability of WAVs, on-demand transit for people with disabilities for first-mile/last-mile connections and door-to-door service and to extend limited fixed-route bus service.

[T]he ADA and its implementing transportation regulations do not mandate taxi companies or TNCs to provide a percentage of WAVs.

DOT Federal Highway Administration (FHWA)

The FHWA should improve the quality of disability data obtained by the National Household Travel Survey (NHTS) by adding questions to help determine the amount of people who need wheelchair-accessible transportation. (Suggested additions in full recommendations are provided at the end of the report.)

FHWA and Bureau of Transportation Statistics should administer the National Transportation Availability and Use Survey again in the near future to improve the amount and quality of transportation data on wheelchair users and others who use motorized mobility devices.

National Highway Traffic Safety Administration (NHTSA)

NHTSA should not grant exemptions to AV manufacturers unless the manufacturers include accessibility features, including wheelchair accessibility.

U.S. Department of Justice, Civil Rights Division

Due to the continued lack of WAVs, the Civil Rights Division should vigorously enforce the ADA transportation regulation's equivalent service requirement for taxis. Any complaint filed with DOJ alleging a lack of WAVs by a taxi company should be closely examined to determine whether the taxi company was obligated to provide equivalent service.

The Civil Rights Division should vigorously enforce the ADA when public accommodations, such as hotels, rental car companies, and transportation providers that provide shuttle services, including shuttles offered by TNCs, fail to provide wheelchair-accessible shuttles.

The Civil Right Division should include in its annual report to Congress the number of complaints that it receives alleging transportation

discrimination broken down by ADA Title, the type of discrimination alleged, and the entity that allegedly discriminated. This will assist in policy planning and interventions based on trends and persistent barriers indicated by the complaints. It should also include transportation as a main topic on its ADA complaint page.

State Legislatures

States should help increase the number of WAVs and keep them on the roads by:

Requiring TNCs to provide a percentage of WAVs wherever they do business within the state, either through purchase or lease or by a third-party contractor, or

Establishing a surcharge on TNC rides that are submitted to a state WAV fund to provide taxi driver incentives to purchase or convert vans and keep them actively providing rides.

Autonomous Vehicle Technology Companies and Autonomous Vehicle Manufacturers

To ensure that wheelchair users and those who use other motorized mobility devices are not left out of the rapidly growing AV transportation options offered to the general population (via, e.g., robotaxis), AV companies should partner with rehabilitation engineers, disability organizations representing wheelchair users, and vehicle manufacturers to develop a fully autonomous WAV that includes a universal securement device so riders can use the AVs independently or with a safety driver.

> [O]ne of Congress' principal purposes for enacting the Americans with Disabilities Act (ADA) of 1990 was to eliminate transportation barriers that prevented people with disabilities from fully participating in society, costing the U.S. billions of dollars in unnecessary expenses resulting from dependency and nonproductivity. Thirty-five years later, however, millions of people with disabilities remain significantly transportation disadvantaged, and millions do not leave their homes due to insufficient and inaccessible transportation options.

Introduction

The Americans with Disabilities Act (ADA) was enacted in 1990 "to provide a clear and comprehensive national mandate for the elimination of discrimination against individuals with disabilities."[2] Congress found that discrimination against individuals with disabilities persisted in the "critical area" of transportation determined that "the continuing existence of unfair and unnecessary discrimination and prejudice denies people with disabilities the opportunity to compete on an equal basis and to pursue those opportunities for which our free society is justifiably famous, and costs the U.S. billions of dollars in unnecessary expenses resulting from dependency and nonproductivity."[3] Despite the ADA's intent to remedy the historic inaccessibility of transportation in the U.S. and any gains made during the 35 years since its enactment, in 2025, people with disabilities who require a wheelchair-accessible vehicle (WAV) to travel remain largely locked out of the most common and convenient ground transportation options available to the general public, resulting in little to no options in most of the urban, suburban, and rural areas in the U.S.

[I]n 2025, people with disabilities who require a wheelchair-accessible vehicle (WAV) to travel remain largely locked out of the most common and convenient ground transportation options available to the general public.

Having access to a personal vehicle is a necessity for most Americans, and more than 90% of households in the U.S. have access to one or more personal vehicles.[4] The ability to grab one's keys and drive to work, to a grocery for a forgotten recipe ingredient, or to take one's child to school or to a park to enjoy a spring day are only a few examples of how much we need and rely on the availability of a personal vehicle to conduct the business of our lives. Similarly, most people know that they can easily and quickly access a taxi or a transportation network company (TNC), such as Uber or Lyft, for times when they are needed. This is not the experience of millions of people who use motorized wheelchairs or scooters who require WAVs to travel. For this population, the cost of private WAV ownership is exorbitant because of the extent of the modifications required—whether for a factory-made WAV or converting a van for wheelchair accessibility. Furthermore, because of the need for a WAV, the opportunity of getting a ride from family or friends is unlikely, making the availability of wheelchair-accessible public transportation options crucial for this population.

The ADA has limited power to ensure that the most convenient, effective ground transportation options, such as taxis, are accessible for those who require WAVs because it contains no explicit requirement for either to have a percentage of WAVs. It does not have WAV requirements for TNCs, such as Uber and Lyft, which are the most common way to quickly access transportation 24 hours a day, seven days per week for the general population. The U.S. is also experiencing a surge of research and development of automated driving technologies, and fully autonomous "robotaxis" are providing public rides today in select cities. No WAVs are in these fleets. These autonomous vehicles (AV) are on their way to becoming another convenient, on-demand option for the public, and unless something changes, the next inaccessible transportation mode for millions of wheelchair users.

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Ground transportation barriers go beyond taxis and TNCs. Paratransit, although an important part of the transportation system for people who require WAVs, does not work for or benefit many because of its inability to provide on-demand transportation and other barriers and inconveniences. Other systems that are relied on when traveling for business or pleasure can fail, upending plans and resulting in increased costs and lost opportunities and missed responsibilities.

Individuals' lives do not stop because they use a motorized wheelchair or scooter. It is critical that private industry, federal, state, and local governments; transportation planners; statisticians; and academics understand the needs and challenges of this specific population, which continues to struggle to meet its transportation needs. This report shines a light on some of the transportation barriers that are persistent, but it also highlights noteworthy solutions that have been implemented, and it provides recommendations aimed at a U.S. transportation system designed to serve everyone.

Chapter 1. Transportation Disadvantage of People with Mobility Disabilities

The number of people with mobility disabilities is substantial. Federal agencies collecting disability data differ in definitions and types of data collection, but they all indicate large numbers of people with ambulatory disabilities. For example, the Census Bureau estimated that in 2022, 42 million people with disabilities lived outside of institutional settings, and the most common disability was an ambulatory impairment, with 21 million people affected.[5] The Centers for Disease Control and Prevention estimated that in 2022, more than 73 million people older than 18 years of age had a disability, and mobility disabilities were the second largest category, comprising almost 35 million people, and people 65 years and older have a higher disability prevalence (43.9%) than other age groups.[6] The U.S.' 65-and-older population will nearly double in size in coming decades; specifically, the percentage of people aged 65 and older will grow from about 15% in 2016 to nearly 25% of the population in 2060.[7]

This chapter presents data and information on the transportation disadvantage of people with mobility disabilities, with a focus on wheelchair users, from federal surveys, research studies, and NCD public comments.

A. The National Household Travel Survey Data on People with Disabilities

Since NCD's 2015 transportation report, the U.S. Department of Transportation (DOT), Federal Highway Administration, administered two National Household Travel Surveys (NHTS). The NHTS is "the authoritative source on the travel behavior of the American public," and the "only source of national data that allows one to analyze trends in personal and household travel."[8] It is relied on to inform policymakers, state DOTs, metropolitan planning organizations, industry professionals, and academic researchers for innumerable policy and planning purposes.[9] The NHTS estimates the amount of people in the U.S. with

The [National Household Travel Survey]…is "the authoritative source on the travel behavior of the American public…" The NHTS estimates the amount of people in the U.S. with travel-limiting disabilities (TLDs) and gathers demographic information and details about their travel behavior.

travel-limiting disabilities (TLDs) and gathers demographic information and details about their travel behavior. A TLD is defined as "a temporary or permanent condition or handicap that makes it difficult to travel outside of the home."[10] The NHTS asks those responding to identify if anyone in the household has a travel-limiting disability and to respond to questions for each of the individuals identified. Like previous NHTS, both the 2017 and 2022 NHTS show that people with disabilities continue to be a significantly transportation disadvantaged population compared with those without disabilities.

The selected survey data presented next provides a comparison of people with disabilities and those without disabilities. Commentary is included when the data raise questions regarding wheelchair users. As a preface, we note that the 2022 NHTS surveyed only 27,290 households, the smallest sample size in its history.[11]

People Reporting a Travel-Limiting Disability

- 2017: 24.6 million[12]
- 2022: 17.7 million[13]

Wheelchair Use

- 2017: 20.4% of people with TLDs used: manual wheelchairs (11.6%), motorized scooters (4.4%), or motorized wheelchairs (3.9%).
- 2022: 18.4% of people with TLDs used: manual wheelchairs (9.4%), motorized scooters or wheelchairs (8.8%) (Figure 1).

The measurement of differences in trip-making patterns of different groups helps reveal what groups experience transportation disadvantage. The NHTS measures (a) the number of trips a person or a household makes on a survey day, (b) trip distance, and (c) trip duration.[16] In both the 2017 and 2022 NHTS,

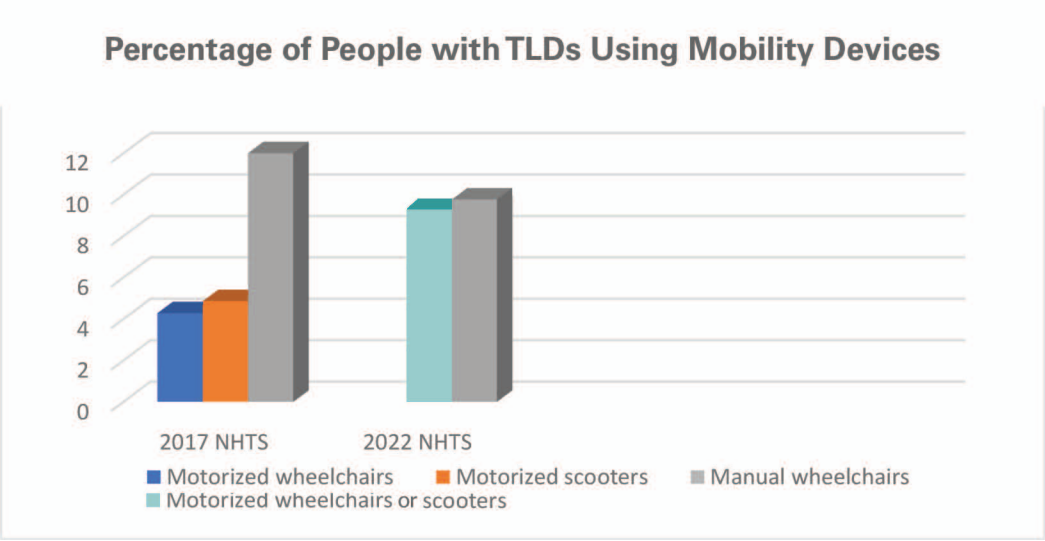

Figure 1: Use of motorized wheelchairs, motorized scooters, and manual wheelchairs in 2017 and 2022.[14]

Online Comment on Quora.com Social Q&A Website

A power chair is not going in a car. Nor is it going in an Uber or other rideshare service that doesn't offer wheelchair vans as an option. Wheelchair vans are few in the cab world, which makes for outrageously long wait times (here they often quote 2 hours for a wheelchair van, and they don't book in advance). Transit options for people with disabilities are usually very inefficient and slow, expecting users to wait for their rides and to ensure tons of extra time to get to your destination. They also have limited operating hours, which also reduces the usability of the service.[15]

people with TLDs made fewer trips per day and traveled shorter distances, and their trips took longer than people without disabilities.[17]

Taking a Trip versus Staying Home

- 2017: Almost three times as many people aged 18 to 64 years with disabilities reported making zero trips (34.1%) on the survey day than people without disabilities in this age group (13.4%). For rural residents with disabilities, the percentages were 37.3% of people with disabilities making zero trips in contrast to 16% of residents without disabilities. A total of 3.6 million Americans with TLDs reported that they did not leave their homes because they had disabilities or were housebound.
- 2022: About twice as many people aged 18 to 64 years with disabilities made zero trips (40.2%) on the survey day than people without disabilities in this age group (21.2%). 48.3% of rural residents aged 18 to 64 years with disabilities made zero trips on the survey day compared with 20% of those without disabilities (Figure 2).

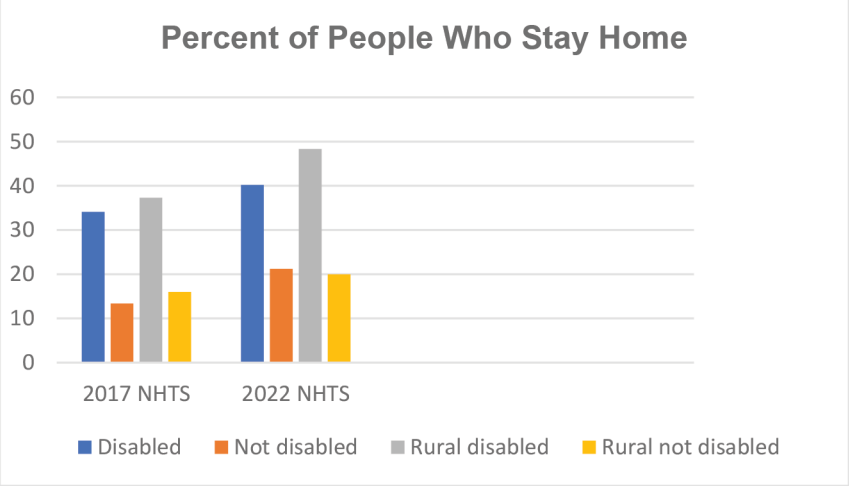

Figure 2: Comparison of percentage of people who stayed home on the survey day in 2017 and 2022 NHTS by disabled, not disabled, rural disabled, and rural not disabled.[18]

Employment, vehicle ownership, and household income are major determinants of travel behavior. In each of these three areas, the 2017 and 2022 NHTS showed that people with disabilities are significantly disadvantaged.

A total of 3.6 million Americans with TLDs reported that they did not leave their homes because they had disabilities or were housebound.

Employment

- 2017: Only 20.2% of respondents aged 18 to 64 years worked if they had a TLD compared with 76.6% of people in this age group without disabilities.
- 2022: Only 33.9% of respondents aged 18 to 64 years worked if they had a TLD compared with 80% of people in this age group without disabilities (Figure 3).

Poverty (Non-NHTS Data)

2017: 29.6% of people with disabilities aged 18 to 64 years living in the community were living in poverty, more than double the percent of people in the same age group without disabilities (13.2%).[19]

2022: 25% of people with disabilities aged 18 to 64 years living in the community were living in poverty, more than double the percent of people in the same age group without disabilities (10%). The percentage with ambulatory disabilities living in poverty was even higher at 29.6% (Figure 4).[20]

Having Access to a Personal Vehicle

- 2017: 34.7% of people aged 18 to 64 years with TLDs lived in zero-vehicle households compared with 13.4% of people without disabilities in this age group.[21] People with TLDs aged 18 to 64 years were also less likely to drive even if they had vehicles: 91.7% of respondents drove vehicles if they did not have a disability, but only 60.4% drove if they did.

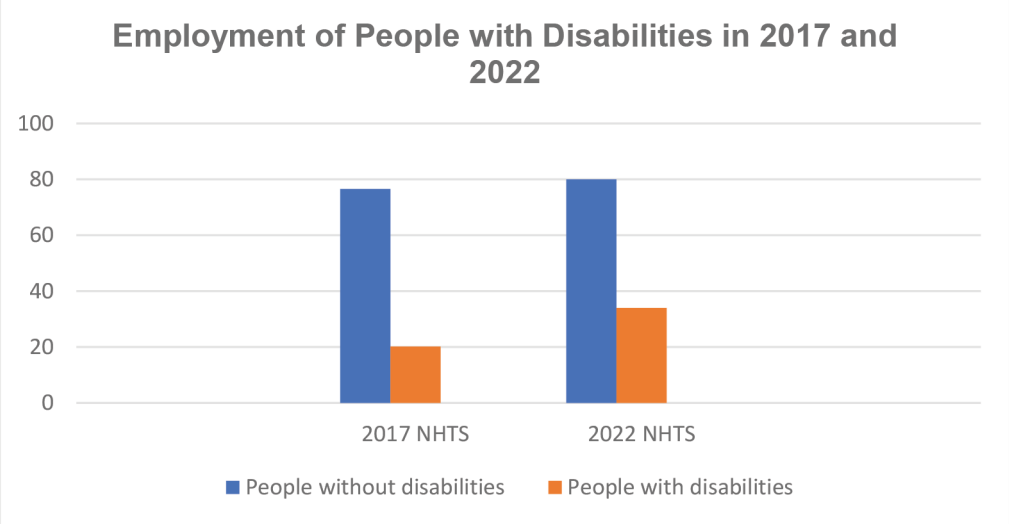

Figure 3: Comparison of the percentage of people with and without disabilities in the 2017 and 2022 NHTS.

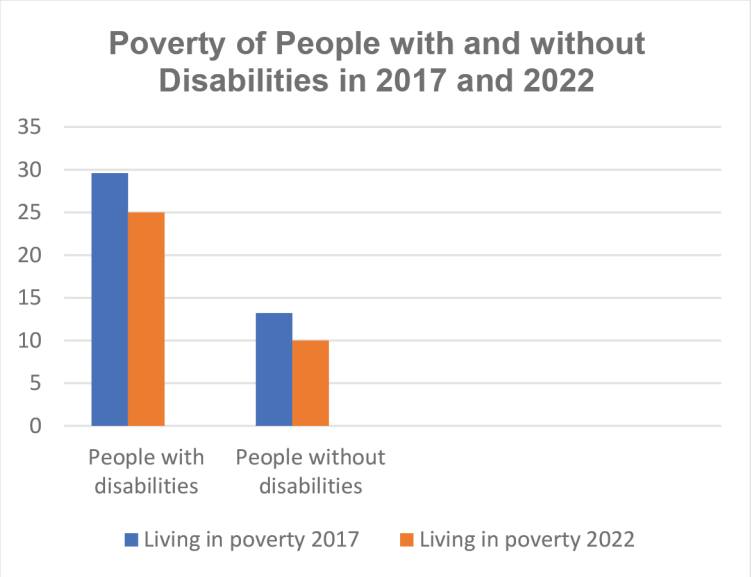

Figure 4: Comparison of poverty between people with and without disabilities in 2017 and 2022.

- 2022: People aged 18 to 64 years with TLDs remained less likely to own a vehicle and have access to a vehicle and were less likely to drive than people without disabilities. A total of 14.3% of people aged 18 to 64 years with TLDs lived in households that had zero vehicles compared with 4.9% of people without disabilities in the same age group. A total of 93.4% drove vehicles if they did not have a disability, but only 66% drove if they did (Figure 5).[22]

Note on personal vehicles and wheelchair users: Personal vehicle ownership for those who use a motorized wheelchair is very costly because of the need to convert vans to, for example, have a ramp, lowered floors, wheelchair securement, and hand controls. Neither the 2017 nor the 2022 NHTS ask about vehicle modifications needed by people with TLDs. In *Challenges Facing People with Disabilities in Private Vehicular Transportation in the United States of America*, researchers argue that there needs to be "more systematic research, at the quantitative scale of the 2017 NHTS, surveying drivers with disabilities to understand their needs, how many of them require vehicular modifications or restricted types of vehicles, how reliable those modifications are, and who pays for them."[23] The 2002 National Transportation Availability and Use Survey (NTAUS) administered by the Bureau of Transportation Statistics (BTS) in 2002 did ask questions about vehicle modifications, "including ramps, lifts, and seating modifications, raised roofs, lowered floors, modifications to the air bags, modifications, to the steering controls,

Neither the 2017 nor the 2022 NHTS ask about vehicle modifications needed by people with TLDs.

A Picture of the Travel Disadvantages of People with Mobility Disabilities, According to the NHTS and Other Transportation Studies

- Two to three times as many people with disabilities stayed at home on the NHTS survey days as did people without disabilities.
- Only a quarter to a third of surveyed people with TLD were employed compared to those without disabilities.
- The percentage of people with ambulatory disabilities living in poverty (29.6%) was nearly three times that of those without disabilities (10%).
- People with TLDs were far less likely to own a vehicle, have access to a vehicle, and to drive than people without disabilities.
- Due to the limited reach of public transit, transit-dependent people often did not apply for jobs that were not accessible by bus, even if those jobs offered better pay and opportunities, keeping them in a cycle of poverty.
- Transit-dependent people missed out on social activities and obligations, preventing formation and maintenance of social networks.
- Disadvantages were generational, with children of transit-dependent people starting life with a deficit in social capital compared to more mobile counterparts.
- About a third of people with disabilities reported always or usually had difficulty accessing transportation for spontaneous events.

modifications to the acceleration or braking mechanisms. . . ."[24] Results from the NTAUS would also respond to the need for improved data collection on people with mobility disabilities by helping to identify the population of wheelchair users in the U.S. who require modifications and WAVs and, in turn, inform policies.

Compensation Strategies used by People with Travel-Limiting Disabilities

- 2017: People aged 18 to 64 years with TLDs compensated for transportation barriers by asking others for rides (44.3%), limiting travel to the daytime (22.6%), using ADA paratransit or reduced-fare taxis (12.3%), and using ride hail (4.6%). In many cases, however, people with disabilities simply traveled less often, reducing day-to-day travel (70.6%), giving up driving (21.6%), or using public transit less often (14.4%).
- 2022: People aged 18 to 64 years with TLDs compensated by asking others for rides (34.7%), limiting travel to the daytime (17.6%), using ride hail services (10.1%), and using Dial-a-Ride or reduced-fare taxis (8.1%). Again, however, in many cases, people with TLDs traveled less often, reducing day-to-day travel (60.3%) or giving up driving (13.0%). The percent of people in each age group with disabilities who used public transit less often could not be reliably estimated in 2022 due to the survey size.

Note on compensation strategies for those who require a WAV: Because motorized wheelchair users require WAVs, asking others for rides—the number one compensation strategy identified for people with TLDs in both the 2017 and 2022 NHTS—cannot accurately reflect the strategy of this population of wheelchair users. Ambulatory people with

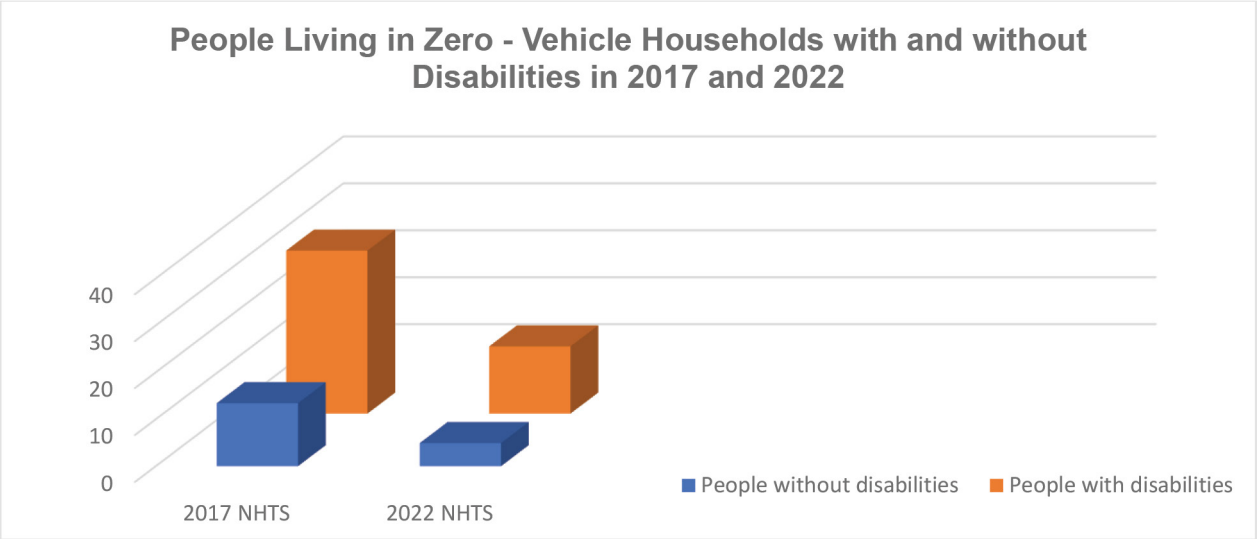

Figure 5: Comparison of people with and without disabilities living in zero-car households in 2017 and 2022.

disabilities and some folding wheelchair users can use this strategy because they can use non modified vehicles, but for users of motorized wheelchairs or electric scooters, the likelihood of knowing someone who has a WAV is low. They are dependent on WAV availability.

[F]or users of motorized wheelchairs or electric scooters, the likelihood of knowing someone who has a WAV is low. They are dependent on WAV availability.

Use of Rideshare (TNCs)

Similarly, the data showing increased use of rideshare services by people with TLDs cannot accurately reflect the use by motorized wheelchair users.

The 2022 NHTS shows that using rideshare was the third most common compensation strategy, increasing from 4.6% to 10.1%, for people with TLDs. In addition, a separate NHTS category measuring rideshare use showed that in 2022, people aged 18 to 64 years with TLDs used rideshare services at nearly the same frequency as people without disabilities.[25]

As described in this report, TNCs, Uber, and Lyft provide WAV service in about 10 U.S. cities, so access to those services is extremely limited. Given the limited WAV service available, the results must reflect the rideshare use of people with TLDs that use non-WAVs, such as ambulatory people with disabilities and those who use folding wheelchairs and can transfer into non-WAV vehicles. Details on the widespread unavailability of TNC WAVs has been a national conversation since the entry of TNCs into the U.S. ground transportation ecosystem and is detailed in this report. The statistic, without further breakdown, may lead federal policymakers, state and local governments, and other users of the NHTS to think that TNCs are serving all

people with TLDs. As a result, opportunities for legislative and policy interventions to increase WAVs by the TNC industry would be missed.

Summary Comparison of the 2017 and 2022 NHTS with the 2009 NHTS

The results of the 2009 NHTS are similar to the results of the 2017 and 2022 NHTS. It found that 70% of people without a medically limiting condition (MLC) (the term used at that time) were employed compared with only 21% of people with a medical condition. Thirty-one percent of people with an MLC were in poverty compared with 12% of people without an MLC. Adults with an MLC took significantly fewer trips per day than people without an MLC. In addition, people with an MLC had significantly lower mean numbers of household vehicles and lower percentages of household adults who were drivers. Trips by private motorized vehicle were significantly less likely to be taken by people with an MLC.[26]

B. Review of Selected Literature on Transportation Disadvantage

> *One of the ways the poorest and most marginalized in our society experience marginalization is through transport disadvantage.*[27]

Researchers are increasingly looking at how transportation disadvantage results in social exclusion and marginalization of poorer people and communities. Social exclusion impacts every aspect of a person's well-being.[28]

In *Transport and social exclusion: Where are we now?*[29] social exclusion is defined as:

> the lack or denial of resources, rights, goods and services, and the inability to participate in the normal relationships and activities, available to the majority of people in a society, whether in economic, social, cultural or political arenas.[30]

According to the researcher, social and transportation disadvantages interact to cause "transport poverty": no transportation option available that is suited to a person's physical condition and capabilities.[31] As illustrated in Figure 6, transport poverty results in the inability to access essential goods and services, life chances, social networks and social capital, and decision-making opportunities, leading to social exclusion. Essential goods and services include access to health care and food. Life chances can include employment, general community participation, social and recreational events, and education. "Social capital" and "social networks" refer to the social connections that people can build when they are able to move around in their communities, meet people, exchange information, and build relationships.

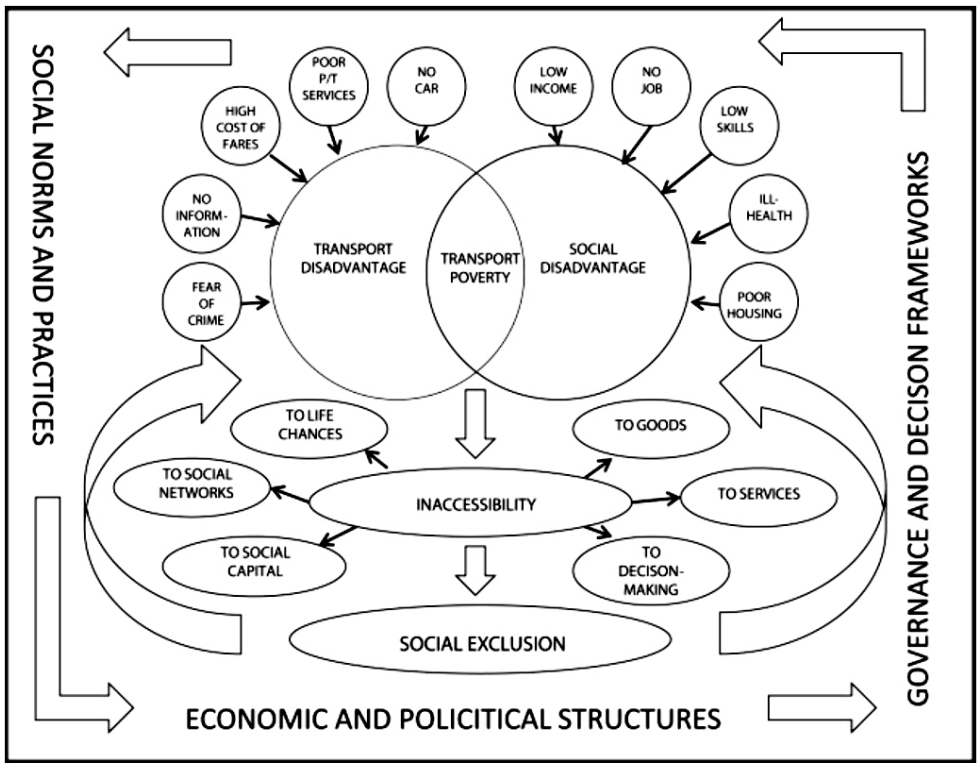

Figure 6: Diagram illustrating the relationship between transport disadvantage, social disadvantage, and social exclusion. Illustration by Karen Lucas, Giulio Mattioli, Ersilia Verlinghieri, Alvaro Guzman, Transport Poverty and Its Adverse Social Consequences, *Transport* 169, no. 6 (2016): 107.[32]

The study "*I just don't go nowhere": How transportation disadvantage reinforces social exclusion*, highlights how transportation disadvantage and social exclusion are interconnected, leading to compounded negative effects on the lives of low-income, transit-dependent individuals. The biggest challenges identified by the study participants were a mirror image of the NHTS findings about people with TLDs and the findings of other research described in this report.

Limited Mobility: Many participants did not have reliable personal vehicles and depended on public transportation, which was often inadequate. This resulted in their limiting their overall travel, only going out for essential errands, and often staying home.

Employment Constraints: Due to the limited reach of public transit, participants often did not apply for jobs that were not accessible by bus, even if those jobs offered better pay and opportunities. The inability to access better job opportunities due to transportation limitations kept participants in a cycle of poverty.

Social Isolation: Participants missed out on social activities and obligations, such as family events and gatherings with friends, due to transportation barriers. This prevented participants from forming and maintaining social networks, which are crucial for social mobility and support.

Recreational Limitations: The inability to easily access outdoor and recreational activities meant that participants and their children missed out on opportunities for physical and mental wellness, contributing to overall lower quality of life. A generational impact was also found. Children of participants started life with a deficit in social capital compared with their more mobile counterparts, potentially perpetuating the cycle of disadvantage.

> ***[T]ransport poverty results in the inability to access essential goods and services, life chances, social networks and social capital, and decision-making opportunities, leading to social exclusion.***

In *Community participation and public transportation barriers experienced by people with disabilities*,[33] researchers examined barriers in accessing public transportation by gathering details on the aspects of public transportation that most affected access and use (e.g., quality, affordability, accessibility, and how those barriers impacted daily community participation). The sample of 1745 respondents with disabilities were recruited through the National Network of ADA Centers and came from all 50 states and U.S. territories. Most respondents had a mobility disability (56%), followed by blindness or low vision (24.5%), then Deaf and Hard of Hearing (14.3%). Most respondents lived in urban areas (89.5%) compared with 10.5% living in rural areas. Seventy-two percent of participants who reported using public transportation in the previous 12 months were asked to identify all the modes of public transit they used in their community. Among this group, 61.3% reported using fixed-route public buses, 44.4% used ADA paratransit services, 26.3% used commuter

rail or light rail, 13.8% used subways, and 17.2% used other forms of public transit. Few respondents used taxis, hired drivers, or ridehail apps.

The respondents reported frequent problems with the availability of transportation to get where they needed to go in the community: 36.5% indicated they had problems "sometimes," and 26.8% reported they had these difficulties "usually," or "always." Additionally, 65.5% of these individuals noted issues that prevented them from using public transportation as much as needed. There was a significant effect for people with mobility disabilities regarding reduced access to public transportation compared with other disability groups. Notably, 37% always or usually had difficulty accessing transportation for spontaneous events, 33% always or usually had difficulty accessing transportation for recreation and socializing, 29% always or usually had difficulty accessing transportation for running errands, 28.5% always or usually had difficulty accessing transportation for healthcare, and 24% always or usually had difficulty accessing transportation for school or work.

In addition, rural residents with disabilities reported significantly more problems using public transportation compared with their urban counterparts. Despite using public transportation at less than half the rate of urban travelers, rural participants experienced more frequent barriers and issues across all public transportation modes. Poverty and the inability to drive because of disability compounded the limited public transportation options, making it difficult for rural residents to access necessary community activities such as healthcare, social and recreational activities.

In *"Patiently waiting": How do non-driving disabled adults get around in rural America?* Researchers explored how nondriving adults with disabilities in rural America navigate transportation challenges.[34] The research focused on the relationships between transportation, community participation, healthcare access, and social capital. Researchers conducted qualitative, semi-structured interviews with 33 non-driving adults with disabilities across 16 states, and they found that common barriers and issues existed in rural areas across all the states (see summary, page 36).

Poverty and the inability to drive because of disability compounded the limited public transportation options, making it difficult for rural residents to access necessary community activities such as healthcare, social and recreational activities.

Researchers in *Public transportation: An investigation of barriers for people with disabilities* investigated barriers faced by individuals with disabilities when using public transportation and complementary paratransit services.[35] A total of 4,161 individuals with disabilities who used public transportation took a web-based survey disseminated by the National Network of ADA Centers. The survey results showed that 36.7% of respondents relied on public transportation in the past year, with buses being the most common form (74%), followed by paratransit (35.6%) and taxis (28.9%). Light rail and subways were used less frequently.

Common Barriers for Non-driving Adults with Disabilities in Rural America

Lack of Transportation Options: Interviewees described a significant lack of public transportation options, making it difficult for them to travel independently and having the need to travel out-of-town for essential services.

Inaccessible Transportation: The physical inaccessibility of public transportation systems often did not accommodate the needs of wheelchair users and other people with other disabilities. Negative attitudes and behaviors of drivers were also major barriers.

High Transportation Costs: Transportation expenses were often prohibitive, limiting community participation and access to healthcare and other essential services.

Limited Transit Schedules and Routes: Sparse and inconvenient transit schedules and routes did not align with people's needs.

Dependence: The need to rely on friends and family for transportation introduced dependency and social pressures and limited independence.

Significant barriers were reported, including inadequate transit systems (47.9%), drivers not calling out stops (30.2%), inappropriate driver attitudes (26.7%), and inaccessible routes to stops or stations (26%). Wheelchair users reported higher rates of barriers such as problems with lifts (34%), inaccessible bus stops and stations (26.9%), gaps or steps to reach vehicles (28.8%), inability to secure wheelchairs (15.4%), and vehicles being full (23.1%). Wheelchair users also faced barriers in paratransit services, including scheduling problems (59.3%) and long wait times (51%). Inappropriate driver attitudes and lack of knowledge were significant barriers, particularly for those with visible disabilities like mobility impairments.

During 2020 to 2021, Disability Rights Washington, the designated Protection and Advocacy agency for Washington State interviewed 270 nondrivers with disabilities from each district in the state about transportation barriers and transportation needs.[36] A prevalent theme was how long it took to get to one's destination and return home when using either a fixed-route bus or traditional paratransit, even when a destination wasn't far away. According to one interviewee, "I had to attend a 90-minute meeting 20 minutes from where I live, and, using the local transportation [it] took seven and a half hours door to door." The report notes that infrequent transit service also requires riders with disabilities to arrive at their destinations very early to avoid the risk they might be late, and in some communities, missing a bus means a two-hour wait for the next one. The author explained:

> When infrequency, poor scheduling, and poor connections make using transit onerous, people put off or even skip necessary trips like doctor visits and [this] reduces the likelihood that people will take the kind of discretionary trips that people with easy access to transportation may take

Public Transportation Disability Survey

A web-based survey of the National Network of ADA Centers of 4,161 individuals with disabilities who use public transportation found participants experienced the following barriers:

- Inadequate transit systems (47.9%)
- Drivers not calling out stops (30.2%)
- Inappropriate driver attitudes (26.7%)
- Inaccessible routes to stops or stations (26%)

Barriers specific to wheelchair users included:

- Problems with lifts (34%)
- Inaccessible bus stops and stations (26.9%)
- Gaps or steps to reach vehicles (28.8%)
- Inability to secure wheelchairs (15.4%)
- Vehicles being full (23.1%)
- Scheduling problems with paratransit (59.3%)
- Long wait times with paratransit (51%)

for granted, like visiting friends or family, or having a night out. This is an incredibly common barrier among those we spoke with.

Interviewees, particularly in rural areas, also frequently cited the lack of weekend transit service as a significant barrier preventing them from running errands or taking weekend outings. Others gave up full-time work or could not find jobs that aligned with the limited transit schedules.[37] Additionally, the author notes, limited availability of reliable, accessible transit can take an emotional toll, as in the case of parents with disabilities who may not be able to fully offer their children the social, recreational, and educational opportunities they would like to. They may find themselves "substantially restricted from participating in their children's lives, developments, and achievements" when transit does not reach parks, beaches, or community hubs.

Problems experienced by wheelchair users were:

- Lack of wheelchair-accessible ridehail and taxis
- Sidewalks with cracks, bumps, and uneven surfaces that make navigation difficult and dangerous
- Bus stops with no shelters or seating and buses stopping on inclines or grass
- Absence or poor design of curb cuts, forcing wheelchair users into traffic
- Limited seating areas on buses, leading to long waits for the next bus
- Long wait times, advance reservations, and limited service areas in paratransit

In *Challenges facing people with disabilities in private vehicular transportation in the United States*,[38] the authors discuss the challenges facing people with disabilities who want to use private vehicles for transportation, including driving one's own vehicle, using carsharing[39] or rental car services, getting rides from family or friends in those people's vehicles, and using taxi

or ride hailing services. The authors discuss the high financial costs of vehicle ownership overall in the context of the correlation of disability with poverty and the high costs of modifying vehicles to accommodate drivers or passengers who use wheelchairs. For using carsharing or rental car services, the authors found much lower rates of use among people with disabilities compared with people without disabilities but little information about why, so the authors hypothesized that less availability of modified vehicles for people who use wheelchairs and the greater burden of traveling to and from the car rental or carsharing locations (in the absence of one's own vehicle) may explain this difference in usage.

Regarding getting rides from friends or family, the authors found that people who use wheelchairs are disproportionately excluded from spontaneous trips in friends' vehicles because those vehicles are not adapted to accommodate wheelchairs. For using ridehailing services (e.g., Uber, Lyft), the authors find challenges for people with vision disabilities, including drivers denying rides or mistreating customers with disabilities and with vehicles being ill-equipped to accommodate people who use wheelchairs. These two issues also commonly apply to taxi services. The authors recommended updates to the 2002 NTAUS, more data collection about the extent to which people with disabilities use carsharing or vehicle rental services or depend on others for rides and improved understanding of how the rise in ride hailing services affected taxi companies with wheelchair-accessible vehicles.

Two recent studies that relied on 2017 NHTS data and examined wheelchair users' use of ridehail (TNC) found that wheelchair users had lower rates of ridehail adoption. For example, a study that examined the adoption and frequency of ridehail use among people with disabilities and by use of different types of assistive devices found that having a disability of any type was associated with a lower likelihood of adopting ridehail, with the lowest likelihood of adoption by wheelchair users.[40]

The other study found that ridehail (TNC) use "may be higher among people who used white canes and crutches, and lower among people who used other mobility aids, including service animals and wheelchairs. In addition, motorized wheelchair and scooter users cannot ride in standard vehicles, and transferring to standard vehicles may be difficult for some people with disabilities."[41]

C. Public Comments Submitted to the National Council on Disability on Ground Transportation Accessibility

Public Comments Submitted to NCD on Ground Accessibility

To inform this report, NCD requested public comment on the challenges and barriers faced by people with disabilities in accessing ground transportation, particularly wheelchair users. The key problems shared on transportation accessibility were:

Limited Availability of Wheelchair-Accessible Taxis and Limited Operating Hours; Lack of Wheelchair-Accessible Taxicabs: Many cities do not have adequate WAV service. Wheelchair users often find it difficult to find WAVs. Taxi companies often do not keep ADA taxis in continuous service, and many taxi drivers refuse to operate WAVs. Where they exist, they may not operate 24/7 like non-WAV taxis.

Largely Inaccessible Rideshare Services: Companies such as Uber and Lyft only offer WAV service in a limited number of cities. Wheelchair users report long wait times and face discrimination from drivers who refuse to pick them up or cancel rides.

Paratransit is Not Demand Responsive and Takes Too Much Time: Paratransit services often require booking days in advance and provide large pick-up windows, leading to inefficiencies and delays. Shared rides can turn short trips into hours-long journeys, causing missed appointments and other inconveniences.

Inaccessible Hotel and Rental Car Shuttles: Hotel and car rental company shuttles are frequently inaccessible. Even when shuttles are accessible, ramps may be inoperable. These shuttles are typically free, but wheelchair-using customers have been told to find and pay for their own transportation when the entity does not have an accessible shuttle.

Inadequate Infrastructure: There is a lack of accessible sidewalks and bus stops, especially in suburban and rural areas.

Emotional Impacts

The public commenters' experiences with inaccessible transportation evoked a range of negative emotions:

Stress and Anxiety: The uncertainty and unreliability of accessible transportation caused significant stress and anxiety. Users worry about whether their rides will show up on time, if at all, and whether they will be able to make it to important appointments or events.

(continued)

Public Comments Submitted to NCD on Ground Accessibility: *continued*

Isolation and Exclusion: The lack of accessible transportation options leads to feelings of isolation and exclusion. Wheelchair users often find themselves unable to participate in social activities or travel freely, which can lead to a sense of being marginalized and excluded from society.

Fear and Vulnerability: Experiences such as being stranded can make wheelchair users feel vulnerable and fearful for their safety. The lack of reliable transportation options can leave them in precarious situations, especially late at night or in unfamiliar areas.

Hopelessness: The ongoing challenges and lack of progress in improving accessible transportation can lead to feelings of hopelessness. Users may believe that their needs are being ignored, and that meaningful change is not forthcoming.

Frustration: This is due to the unreliability and inaccessibility of transportation services.

Overall, the data, research findings and the public comments described in this chapter all highlight similar issues experienced by people with disabilities and support the need for immediate and future improvements in accessible transportation options in urban, suburban, and rural areas across the U.S.

Chapter 2. Accessibility Developments and Continuing Barriers in Transportation Network Company Services

A. Background on Transportation Network Companies and Wheelchair-Accessible Vehicles

The TNCs Uber and Lyft have revolutionized ground transportation in the U.S. and globally by increasing the on-demand availability of transportation for the general population. From small start-ups in 2010 and 2012, respectively, by 2017, Uber and Lyft accounted for 90% of for-hire trips in eight of the nine large, densely populated metro areas and in other census tracts with urban population densities in the U.S.[42] In 2016, Uber alone made 170,000 trips per day in San Francisco.[43] In 2024, Lyft provided 828 million rides and had revenue of $5.8 billion,[44] and Uber provided 33 million trips per day on average and had $44 billion in revenue.[45]

From small start-ups in 2010 and 2012, respectively, by 2017, Uber and Lyft accounted for 90% of for-hire trips in eight of the nine large, densely populated metro areas and in other census tracts with urban population densities in the U.S.

From early on, it was clear that the benefits of TNCs (e.g., such shorter wait times, cheaper fares, ease of payment) were not afforded equally to people with disabilities. Concerns described in NCD's 2015 transportation report included the lack of regulations governing TNCs; acts of discrimination by drivers, such as not picking up riders with service animals and wheelchair users; a lack of WAVs; and concerns that the increase in TNCs was diminishing the availability of taxis.[46]

As TNCs became more widespread and more people with disabilities attempted to use their services, complaints became more common. The barriers and discrimination revealed a mode of transportation that disenfranchised many people with disabilities.

Uber and Lyft have been criticized for their treatment of people with disabilities for several reasons, including charging wait fees to people with disabilities, refusing to pick up riders with service animals, lack of wheelchair-accessible vehicles (WAVs) for riders who need to remain in a wheelchair while traveling; unreliability of WAV service in the jurisdictions where provided; non-equivalent service e.g., longer wait times for WAV service than for nonWAV service, shorter service hours, and inadequate training of drivers.[47]

Although some people with disabilities, such as those who are blind or have low vision, experience increased mobility and independence using TNCs, that has been counterbalanced by drivers who refuse to pick up riders who have guide dogs. In 2024, eight years after a settlement with the National Federation of the Blind to resolve this problem, this problem persists and has resulted in renewed calls for nondiscriminatory treatment.[48]

Increased mobility and independence, however, has not been afforded to many wheelchair users, who have remained largely locked out of using Uber and Lyft even as the TNCs have become ubiquitous for the ambulatory public. Hopes that TNCs would change their model to better serve wheelchair users have not been widely realized even with the introduction of UberWAV and UberAssist in 2015.[49] UberAssist drivers are trained to assist riders with disabilities, including those who have folding wheelchairs or collapsible scooters, but UberAssist does not use WAVs (vans adapted with ramps or lifts). Users of nonfolding, motorized wheelchairs and scooters cannot use a regular automobile, and WAVs are not provided by Uber or Lyft in most of the places where they operate. UberWAV offers wheelchair-accessible vehicles, in certain cities, for riders who use nonfolding, motorized wheelchairs or scooters, as does Lyft. Lyft provides WAV service in nine U.S. cities,[50] and Uber provides WAV service in more than 10.[51] According to a 2022 report submitted to the court in a lawsuit against Lyft, in more than 96% of the regions where Lyft was operating, it does not offer WAV service.[52] Uber has a much larger footprint than Lyft in the U.S., so the percentage without WAV service is necessarily higher.

[I]n more than 96% of the regions where Lyft was operating, it does not offer WAV service. Uber has a much larger footprint than Lyft in the U.S., so the percentage without WAV service is necessarily higher.

B. Growth of State and Local Laws and their Role in Mandating Wheelchair-Accessible Vehicles

At the federal level, neither the ADA nor its regulations explicitly require TNCs to provide WAVs.

In the 2015 report, NCD highlighted the efforts of California; Washington, D.C.; Houston; and Seattle to pass laws governing TNCs.[53] Since then the state and local regulatory front has changed dramatically. Between 2014 and 2022, all states passed laws regulating TNCs in different ways, while TNCs lobbied state legislatures to include limits or prohibitions on localities' ability to regulate them.[54] A 2018 report by the National Academies found that:

> Common requirements concerning disability accommodation in state TNC statutes include prohibitions on charging more to individuals with disabilities, complying with applicable laws concerning accommodation of service animals, and providing riders an

At the federal level, neither the ADA nor its regulations explicitly require TNCs to provide WAVs.

opportunity to indicate whether they require a WAV. However, rather than requiring TNCs to make WAVs available, a common proviso is, "If a TNC cannot arrange wheelchair-accessible TNC service in any instance, it shall direct the rider to an alternate provider of wheelchair-accessible service, if available." A limited number of state TNC laws do contain more specific provisions regarding provision of service to individuals with disabilities.[55]

The majority, if not all, ordinances that require WAVs are in large or densely populated cities. Some state laws explicitly allow major cities within their boundaries to regulate WAVs. Provided next are examples of how some jurisdictions have worked to ensure that WAVs are provided by TNCs in the absence of a federal requirement, including challenges and successes. Each example shares lessons that can be used by other states and localities who wish to increase WAV transportation.

Examples of Jurisdictions Ensuring TNCs Provide WAVs

Each of the following examples shares lessons that can be used by other states and localities that wish to increase WAV transportation:

New York City, New York

The State of New York's TNC Act authorizes TNCs to operate within its boundaries without imposing a WAV requirement; however, it exempts New York City (NYC). TNCs cannot operate in NYC unless they are authorized by NYC's Taxi & Limousine Commission (TLC) and must follow its rules.[56] A 2018 TLC rule required that by mid-2023, a quarter of all TNC trips in the city would take place in WAVs to make WAVs available for passengers who need them.[57] TNCs operating in the city sued, arguing that the auto industry would not be able to fulfill the demand for WAVs and that the costs to comply could be more than $1 billion.[58] A settlement was reached that maintained the requirement but added an alternate option of a wait-time requirement. Under the wait-time requirement, by 2021, TNCs had to either service at least 80% of requests for WAVs in under 10 minutes and 90% in under 15 minutes or associate with a company that had the capacity to meet those requirements.[59] The TLC issued rules to reflect this option, and during the first five years after issuance of the rules, the number of WAVs increased dramatically—from 339 in 2019 to 5,700—and customers could get a WAV ride in less than 10 minutes 87% of the time, exceeding the wait-time standards.[60] The TLC also found that most companies chose to contract with WAV providers, and these companies did the best in wait time standards.[61]

(continued)

Examples of Jurisdictions Ensuring TNCs Provide WAVs: *continued*

Philadelphia, Pennsylvania

Pennsylvania Act 164 of 2016 ("the Act") regulates TNC service throughout the Commonwealth, gives the Philadelphia Parking Authority (PPA) sole authority to regulate TNCs in Philadelphia, and establishes WAV requirements for TNCs.[62] Under the law, TNCs had to make 70 WAVs available in Philadelphia by June 30, 2017; submit annual reports on practices they have implemented to improve accessibility to individuals with disabilities; and provide an additional 10 WAVs per year until 2022 if the TNCs operating in the city were not collectively having a positive impact on the availability of wheelchair-accessible transportation services.[63]

In a 2019 testimony, the PPA described limitations and barriers to WAV provision and oversight due to the vagueness of the TNC WAV requirements under the law.[64] Namely, although the law required TNCs to have an aggregate minimum of 70 WAVs, it did not define what "available" means (e.g., how many hours per day a TNC WAV be available to provide service). Because "TNC drivers create their own hours, a TNC WAV driver could work only 1 day out of a month."[65] Additionally, the Act did not provide a timeframe for WAV service to be provided after a request is made. The PPA repeatedly heard from the community of people with disabilities that TNC WAV service took too long if provided at all.[66] Furthermore, due to specific limitations in the Act, the PPA did not know the number of TNC WAV trips, average wait times for requesting TNC WAV service, the number of complaints the TNCs receive concerning WAV service, and the results of those complaints.[67]

Despite the weaknesses identified in the law, representatives from the PPA told NCD that it conducts yearly integrity checks to see if Uber and Lyft provide the minimum 70 WAVs legally required. It has seen these TNCs surpass that number every year since 2017. In fiscal year 24 there were 97 TNC WAVs in Philadelphia.[68] They attribute this success to the law's numerical requirement and a provision allowing the PPA to require 10 more WAVs to be added per year if the public's WAV needs were not being met. PPA reports that it has never had to enforce this requirement. Where Philadelphia's disability community had voiced complaints about WAV service in the past and instrumental in passage of the law, complaints are now rare. In 2024, zero complaints were made to the PPA about WAV service.

Portland, Oregon

The City of Portland Oregon's TNC ordinance has several WAV requirements. TNCs must maintain at all times mobile apps or online dispatch services available to customers who request a WAV. TNCs must provide WAV service within a reasonable time by maintaining a fleet of WAVs, and the ordinance makes it a rebuttable presumption that any time beyond

Examples of Jurisdictions Ensuring TNCs Provide WAVs: *continued*

30 minutes is unreasonable. Fare rates for WAVs cannot exceed fare rates for comparable non-WAV TNC vehicles and cannot be subject to dynamic pricing.[69] Portland issued two administrative rules on WAVs in 2018, one establishing an accessibility fee imposed on for-hire vehicles and an accessible transportation fund to provide an incentive for WAV service and mitigating the higher costs of providing WAV service compared with commensurate non-WAV service.[70] The other is for WAV service performance standards, which govern vehicle standards and WAV driver communication and nondiscrimination requirements.[71]

Chicago, Illinois

Chicago's regulation of TNCS (referred to as TNPs in Chicago) began in 2014 when it enacted an ordinance to regulate TNPs, which required them to enter into a service agreements with WAV providers.[72] In 2016, the City Council passed legislation requiring TNPs to submit plans to enhance service to passengers with disabilities, and in 2017, the city approved TNP plans to (1) use their company mobile applications to connect passengers to the City's existing available WAV taxicabs and (2) for TNPs to bring 50 WAVs online and available on TNP platforms.[73] A case study by a Chicago Center for Independent Living was critical of the Chicago effort to get TNCs to provide WAVs, however, was critical, stating that the 2017 plans that were accepted by the city from Uber and Lyft were that "Uber was to continue to operate the 40 WAV vehicles it claimed were already registered with its application and to expand that fleet to 53 vehicles over the next six months. No minimum number of hours per week of operation were promised. For its part, Lyft promised to coordinate with eighteen vehicles from the WAV taxi fleet. It is unclear how that exceeds the requirements in the original 2014 ordinance."[74]

To incentivize WAVs by TNPs, in 2019, Chicago introduced a $15 per WAV trip incentive to TNPs, such as Uber and Lyft, if they met certain requirements.[75] Currently, the incentive is $30 per WAV trip.[76] See Figure 7.

Year	Number of WAV Trips
2017	9,638
2018	29,035
2019	35,952
2020	25,368
2021 (through 8/30)	20,252

Figure 7: Number of TNP WAV trips in Chicago (2017–2021).

(continued)

Examples of Jurisdictions Ensuring TNCs Provide WAVs: *continued*

State of California

A state law that is unique because of its comprehensiveness is California's 2018 Access for All Act, which aims to improve TNC accessibility.[77] It requires the California Public Utilities Commission (CPUC) to establish a program to increase the availability of on-demand transportation for people with disabilities, including wheelchair users who need WAVs. The Access for All Program began in 2019 and collects a trip fee on all TNC trips in the state which are placed in a fund. The fund is used to reinvest in WAV service and broaden it in various geographic areas of California. TNCs may "offset" the fees due to the CPUC by the amounts they spend quarterly to improve their own WAV service in each county.[78]

As required by the Act, in 2023, CPUC issued a report to the California Legislature on the program's performance from the third quarter of 2019 through the second quarter of 2023.[79] The program achieved several notable successes since its inception:

- *Growth in On-Demand WAV Coverage:* The number of counties where TNC WAV service is available increased from 14 to 22. "The original 14 counties are home to 1.5 million Californians with ambulatory disabilities, and the 8 added counties are home to almost 190,000 more Californians with ambulatory disabilities."[80]
- *Improved WAV Response Times:* Response times in most counties became faster. For example, Lyft's service in both San Francisco and Los Angeles was eight minutes faster in the second quarter of 2023 than in the first quarter.
- *Completed WAV Trips Increased Significantly:* A total of 8,794 trips were completed in the third quarter of 2019 compared with 18,803 in the second quarter of 2023. Uber reported 70% more trips in the second quarter of 2023 than in any other quarter. Lyft's service increased from almost 1,000 quarterly trips in 2019 to about 5,800 trips in 2023.

The Access for All Program also identified several opportunities for improvement and expansion. For example, it found that due to the program's extensive reporting requirements, annual recompetition and funding volatility, many potential transportation providers are hesitant to apply. Modifying the requirement for an annual competitive to a biannual process could increase provider participation. Additionally, the current framework only requires TNCs to collect the access fee, but AV passenger services are growing in California and not required to collect these fees. CPUC suggests that as new transportation service technologies emerge and transportation options expand, it is important that accessible options expand as well. It recommends that lawmakers extend the WAV service

Examples of Jurisdictions Ensuring TNCs Provide WAVs: *continued*

requirements to new and emerging on-demand transportation services, such as AVs, to increase funding stability and sustainability to attract more providers.

Notably, the Access for All Program is set to sunset in 2026. In the 2023 report, CPUC recommended that lawmakers reauthorize the Act as,

> Without it, thousands of customers could lose access or suffer from more limited access. Either of these outcomes would drastically reduce the ability for these users to engage in the basic freedom of movement that able-bodied Californians enjoy . . . the additional barriers to mobility that would be created by the end of the Access for All Program could limit affordable access to jobs, healthcare, education, and recreation for wheelchair users and their families.[81]

In January 2022, the CPUC received comments from the public petitioning to maintain the Access for All Program in San Francisco, which reveal the positive impact of the program and the need for it to continue.[82]

Minnesota Proposed State Legislation to Increase Wheelchair-Accessible Vehicle Availability

A bill was introduced in the Minnesota Senate in March of 2024 on WAVs provided by TNCs and taxis. It would provide many civil rights protections for people with disabilities and would increase WAV availability throughout the entire state.[83] Similar to California's Access for All Act, SF 4921, Minnesota's would require TNCs, like Uber and Lyft, to pay a 15-cent surcharge for every ride they provide that is not wheelchair accessible anywhere they do business in Minnesota. The proceeds would be used to fund a WAV services account that would bring in a minimum of $850,000 per year and would be used to help TNC and taxi drivers purchase or maintain WAVs. TNCs would be required to submit annual equity reports on wheelchair-accessible service provided (i.e., estimated time of arrival [ETA] for WAVs, number of WAVs requested, number of rides fulfilled in WAVs, number of WAV rides that were denied, number of requested WAV rides referred to a third party). There are general nondiscrimination requirements and requirements for TNCs on providing WAVs, for example, TNCs would have to provide a way to request a WAV on the app and facilitate getting the WAV by either connecting the passenger to a driver of a WAV in the network or directing the passenger to an alternate provider.

C. Level of Performance Where Transportation Network Companies Offer Wheelchair-Accessible Vehicle Service

In addition to the description of complaints made by wheelchair users in the Equal Rights Center class action litigation regarding equivalent service described later, it has not been uncommon to hear complaints about TNC WAV performance on issues including timeliness, driver attitudes, availability, and cancelled rides, among other things.[84] There is no one place to obtain updated information on performance, but the following gives a snapshot of performance at different times and locations.

In *Left behind: New York's for-hire industry continues to exclude people with disabilities*, New York Lawyers for the Public Interest (NYLPI) assessed the reliability and response time of two WAV services: UberWAV and Lyft's "Access Mode."[85] NYLPI used the Uber and Lyft smartphone apps to request paired WAV rides and non-WAV rides using the same starting and ending points for the trip. For 98 requests, NYLPI recorded whether the app was able to locate an available vehicle and the estimated waiting time for the vehicle at various times of day and days of the week. Fifteen more paired requests for WAVs and inaccessible vehicles using Lyft Access Mode to further probe the app's inability to locate WAVs in the initial test. NYLPI found that "Uber located a WAV in 27 of 49 different attempts (a 55% 'success' rate). Lyft Access Mode located a WAV for only 3 of 65 attempts (a 5% 'success' rate) rendering the app non-functional for wheelchair users." Combined, the two apps located an available WAV in only 26% of attempts, but they located non-accessible Uber and Lyft vehicles 100% of the time. In addition, a significant disparity in estimated waiting times between the UberWAV service and requests for inaccessible Uber vehicles was found. For the attempts in which a WAV was located, the estimated wait time for a WAV was 17 minutes versus a 4-minute estimated wait for regular service. Significant differences in WAV availability were found at two major airports, too, where Uber and Lyft apps did not locate a single available WAV in 17 attempts but located inaccessible vehicles at the airports 100% of the time with an average wait time of about 4 minutes.

"Uber located a WAV in 27 of 49 different attempts (a 55% 'success' rate). Lyft Access Mode located a WAV for only 3 of 65 attempts (a 5% 'success' rate) rendering the app non-functional for wheelchair users."

In a study that investigated the equity performance of UberWAV by itself and in comparison with Uber's standard service (UberX) in the city of Portland, Oregon, researchers found substantial inequality in access for those requiring a WAV versus those requiring a conventional UberX in availability, ETA, equity, and consistency in service:

Availability – Whereas UberX was almost universally available with a 99.9% availability rate, UberWAV was significantly less available, with an average availability of 62%, dropping to 58% during high-demand periods.

ETA – Whereas UberX had a much shorter average ETA (4.1 minutes), UberWAV had a longer average ETA of 19 minutes, nearly five times higher than UberX.

Service gaps – Whereas UberX had consistent service across different times and locations, UberWAV had substantial fluctuations in availability and wait times, particularly during the middle of the day when demand was highest.

Equity – UberWAV was more accessible in areas with a higher percentage of people with ambulatory disabilities where WAV service was not needed.[86]

Under California's Access for All Program, TNCs seeking an offset of the funds they expend to provide WAV service are required to self-report the number of complaints they receive related to WAV drivers and services.[87] WAV customer complaints must be categorized by securement issue, driver training, vehicle safety and comfort, service animal, stranded passenger, and other. From the third quarter of 2019 to the second quarter of 2023, Uber and Lyft reported 997 customer complaints:

Securement issue: 12

Driver training: 72

Vehicle safety and comfort: 76

Service Animal: 2

Stranded passenger: not reported

Other: 832

Of interest, these categories do not include timeliness, so there is no data to be obtained on timeliness complaints. Also of note is that the highest number of complaints is under "other," which very likely captures timeliness and other important data that are obscured by this catch-all category.

The Access for All program has response time standards for TNC WAVs that must improve quarter over quarter.[88] During the three plus years of the program, however, CPUC found that wait times for WAV passengers were longer than for non-WAV passengers from 2019 through 2022.[89] In Los Angeles County, average non-WAV response times were 12 minutes faster than average WAV response times in 2019, 8 minutes faster in 2021, and 15 minutes faster in 2022. In San Francisco, non-WAV response times were 11 minutes faster in 2019, 10 minutes faster in 2021, and 8 minutes faster in 2022 than WAV response times. Most WAV response times were within the 20- to 25-minute range.[90]

D. Litigation Brought Against Uber and Lyft Regarding Wheelchair-Accessible Vehicle Access

Several class action lawsuits filed against Uber and Lyft during the past decade seek to settle the issue of TNCs' responsibilities to provide WAVs under the ADA and provide equivalent service for people with disabilities. Generally, they allege that TNCs are subject to the Title III of the ADA because they are a "place of public accommodation" or a private entity that is "primarily engaged in the business of transporting people,"[91] but Uber and Lyft contend that they are neither and that the ADA does not apply to them.

The following summaries are of notable cases that were initiated since our 2015 transportation report. Some are currently being litigated. In each case, wheelchair users who require WAVs to travel sued Uber and Lyft, alleging discrimination under the ADA. In each case, Uber and Lyft argue

that they are tech companies, not transportation providers and not public accommodations, because they do not own or lease vehicles and provide only a platform that connects riders with available drivers.

2017 – In *Crawford v. Uber Technologies*, two motorized wheelchair users (plaintiffs) from Jackson, Mississippi, sued Uber, alleging that Uber was violating the ADA by failing to allow customers to order a WAV ride through the Uber app.[92] They asked that Uber make a modification of its policy on WAVs including operating WAVs in their cities and allowing WAVs to be identified on the app. In 2021, the judge determined that the plaintiffs' modification request was not reasonable and therefore not required under the ADA. The case took five years to resolve, and the result did not improve access to WAV service in the plaintiffs' cities.[93] The plaintiffs appealed the decision. As of January 2025, the case was ongoing.[94]

2017 – In *Lowell v. Lyft*, another class action lawsuit regarding wheelchair access,[95] an individual from New York who uses a motorized scooter filed a lawsuit against Lyft, alleging that it fails to provide wheelchair-accessible service in violation of Title III of the ADA. In her complaint, the plaintiff alleged that Lyft was a public accommodation within the meaning of the ADA, that Lyft provided worse service to individuals with mobility disabilities than to individuals without disabilities and that Lyft failed to make reasonable modifications that would have made the service equally reliable for people with and without disabilities. She pointed out that that Lyft does not provide any WAV service in more than 96% of its service regions in the U.S. and that in the handful of areas where local regulators require Lyft to provide WAV service, it suppresses access to WAVs and the quality of service to people with disabilities. Lyft sought to dismiss the lawsuit, arguing, among other things, that the plaintiff failed to state a claim because Lyft was a technology company, not a "private entity primarily engaged in the business of transportation," and even if it was a transportation company, Lyft could not be required to purchase or lease WAVs because the ADA does not require transportation companies to purchase or lease WAVs.[96] The court allowed the suit to proceed stating that the plaintiffs were not asking Lyft to provide WAVs but asking the court to stop Lyft from further violations of the ADA, and that was enough to survive a motion to dismiss.[97]

Paralyzed Veterans of America (PVA), United Spinal Association, the National Council for Independent Living, the Association of Programs for Rural Independent Living, and the African-American Advocacy Center for Persons with Disabilities filed requests to submit brief supporting the plaintiff.[98]

In its brief submitted to the court, PVA stated that its nearly 16,000 members with a spinal cord injuries or disorders would benefit from WAVs for transportation.[99]

> As companies such as Lyft, Inc. ("Lyft"), become a staple means for the average American to travel, for them to exclude power wheelchair and scooters users, as well as those who are unable to transfer from manual wheelchairs, is to leave disabled veterans behind," and "As a nationwide group and that of veterans who almost exclusively rely on wheelchairs and other mobility devices for transportation, PVA has a unique perspective to inform the Court."[100]

PVA wrote that "Lyft refuses to allow wheelchair-accessible service in 96% of the regions in which it operates, and that these regions are home to hundreds of thousands, if not millions, of wheelchair and scooters users who require access to wheelchair-accessible transportation."[101]

A bench trial was conducted in July of 2024. On September 30, 2024, the judge ruled that although the lawsuit was filed for a laudable purpose, the plaintiffs did not meet their burden of proof under the ADA or New York law that the modifications they proposed would result in WAV transportation services in the regions that had no Lyft access.[102] The case was dismissed with judgement in favor of Lyft and cannot be retried.

TNCs arguments that they are neither public accommodations nor transportation companies under the ADA have not always worked, however. The District Court for the Northern District of California recently resolved two summary judgment motions in favor of imposing liability on Uber and Lyft as transportation companies under §12184 of the ADA.[103] One example, explains the basis for finding liability:

> Even taking the facts in the light most favorable to [Defendant], it is clear that Uber (1) requires drivers to comply with state and local laws, (2) maintains behavioral expectations and enforces its community standards against drivers, (3) selects the cities in which it operates and which products are available, (4) connects potential drivers to rental car agencies, (5) oversees personnel deployed to airports and other large events to help riders, and (6) sets, without input from drivers, the prices of rides. That it does not regulate exactly when and where rides take place does not undermine the general conclusion that it asserts extensive control over drivers and the transportation system it operates.[104]

2018 – In a case brought against Uber by the Equal Rights Center (ERC), ERC alleged that Uber discriminates against wheelchair users in the District of Columbia by providing deficient services, forcing them to pay more, and having them wait longer for service through its UberWAV and Taxi WAV options, in violation of Title III of the ADA.[105] ERC asked the Court to stop Uber "from denying people who use non-folding wheelchairs full and equal enjoyment of [its] services" and require Uber "to develop and implement policies, practices, and procedures that afford people who use non-folding wheelchairs full and equal enjoyment of [its] services[.]"[106]

With respect to rates, ERC found that TAXI WAV users were charged an average of $6.81 more per ride than UberX users, in part because TAXI WAV allegedly requires users to pay standard D.C. taxi fares instead of Uber fares, and there was a large difference in the rates of the two services. Uber also added a $2 booking fee for WAVs.[107] With respect to waiting times, ERC conducted tests and found that both TAXI WAV and UberWAV take longer to serve users than UberX. For example, a person who requested a TAXI WAV had to wait an average of 34.25 minutes longer than an UberX user; another had a ride cancelled after struggling to find it; another person was "unable to secure a ride in 45 minutes of trying." Similarly, when a tester attempted to book UberWAV later that month during morning rush hour and after work, it took him two tries to connect with a car, and

after he did, he had to wait 36 minutes for the car to arrive. Additionally, when the tester attempted to book an UberWAV that afternoon, he waited over two hours to be matched with a car, which then took 16 minutes to arrive after accepting the request.[108]

In addition to denying it is in the business of transporting people, Uber argued that even if the ADA applied, it does not cover the kind of discrimination that ERC alleged, and "requiring Uber to provide wheelchair accessible services would fall outside the realm of the reasonable modifications that the statute contemplates."[109]

In July 2024, ERC and Uber agreed on a plan through which Uber will undertake certain actions in an effort to facilitate enhanced availability and safety of rides for users of the Uber ridehail marketplace using WAVs in Washington, D.C.[110] The agreement represents a mutual attempt to resolve litigation over the availability and response times of WAV rides requested using the Uber ridehail marketplace in D.C. As part of this effort, for the next 18 months:

1. Uber will provide a monetary incentive per completed trip to drivers who provide a completed trip that is initiated or completed in Uber's D.C. market in a rented or personally owned WAV on Uber's WAV platform.

2. Uber will provide a one-time monetary incentive to each driver in D.C. who completes a first trip initiated or completed in Uber's D.C. market on the WAV platform.

3. For prospective drivers in D.C. who want to onboard rented or personally owned WAVs, Uber will direct the prospective drivers to resources for completing WAV passenger securement training (training on ensuring the safety of passengers in wheelchairs and the proper securing of wheelchairs in the vehicle).

4. Uber will require drivers in D.C. to provide proof of completion of WAV passenger securement training to complete onboarding as a WAV driver and accept WAV requests.

2020 – In another class action lawsuit, *Independent Living Resource Center San Francisco v. Lyft*,[111] four individuals who use motorized wheelchairs and two nonprofit organizations representing Bay Area resident wheelchair users alleged that Lyft was violating the ADA because its San Francisco WAV service was not comparable to its non-WAV service there and because WAV service was "nonexistent elsewhere in the Bay Area." The plaintiffs' requested remedy was for Lyft to provide WAV services comparable to non-WAV services in San Francisco County, Alameda County, and Contra Costa County. Before trial, Lyft's liability under the ADA was established in a summary judgment motion. In that motion, Lyft argued that being forced to provide WAV service would fundamentally alter its business model and therefore would be an unreasonable modification. The court disagreed with Lyft, stating that the company already provides WAV service in other regions and thus could not argue that something it is already doing would fundamentally alter its business. Although the court rejected Lyft's "fundamental alteration" defense, it decided that the question of whether Plaintiffs' proposed remedy was a reasonable modification could only be answered through further facts and evidence presented at trial. After a trial, the court found that the proposed modification was

unreasonable, because it believed the plaintiffs had requested a "performance standard" by Lyft rather than a "concrete proposal or modification." Even though the plaintiffs suggested several ways for Lyft to achieve the requested standard of accessibility, the court felt that the plaintiffs put too much responsibility on Lyft to decide which methods or combinations thereof would actually allow them to meet the standard.[112] This decision was appealed.

U.S. Department of Justice's Statement of Interest in National Federation of the Blind v. Uber

In 2014, DOJ submitted a "Letter of Interest" in *National Federation of the Blind v. Uber* to clarify how the ADA applies to TNCS and taxis.[113] In this case, in addition to state claims, the National Federation of the Blind alleged that Uber violated Title III of the ADA generally, as well violating section 12182 (prohibiting disability discrimination by public accommodations) and section 12184 (prohibiting disability discrimination by certain transportation service providers). Uber asked the court to dismiss each cause of action, including the ADA claim, "to the extent it is based on the allegation that Uber's app or website constitute a place of public accommodation or that Defendants own, lease or operate a place of public accommodation under the ADA." DOJ wrote:

> Defendants appear to imply that, if the Court determines that they are not a public accommodation, then the Court should dismiss Plaintiffs' ADA claim (and the Complaint) in full. Any such implication would reflect a misunderstanding about the scope of Title III's coverage. The success of Plaintiffs' ADA claim is not dependent on a finding that Defendants are a public accommodation, because § 12184 of Title III of the ADA applies to private entities that are primarily engaged in providing transportation services regardless of whether the private entity is a public accommodation.[114]

DOJ explained that section 12184 prohibits discrimination "on the basis of disability in the full and equal enjoyment of specified public transportation services provided by a private entity that is primarily engaged in the business of transporting people and whose operations affect commerce, and that "specified public transportation" is broadly defined as transportation by any "conveyance" (other than aircraft) "that provides the general public with general or special service (including charter service) on a regular and continuing basis."[115]

It went on to describe the DOT regulation as having a broad definition of the types of transportation services subject to Title III. The definition fits the TNC model:

> The regulation and guidance clarify that such services include any transportation services provided by private entities that involve calling for a vehicle and a driver to take one places, including taxi services. . . . The DOT regulation includes a specific provision for private entities providing taxi service and explains why they are covered by section 12184 of Title III: Because they are "private entities primarily engaged in the business of transporting people which provide demand responsive service." (citations omitted)

It concluded by explaining that section 12182 and 12184 of Title III are premised on separate requirements and impose distinct requirements. Coverage under one allows, but does not necessitate, coverage under the other:

> Within this statutory and regulatory framework, Plaintiffs can prevail on their ADA claim by demonstrating that (1) Plaintiffs have standing to sue under the ADA; (2) Defendants provide specified public transportation services and are primarily engaged in the business of transporting people, 42 U.S.C. § 12184; and (3) Defendants, directly or through a contractual or other relationship, discriminated on the basis of disability as proscribed by § 12184 and the applicable regulation. . . . Importantly, Plaintiffs do not need to show that Defendants are public accommodations or operate a place of public accommodation to succeed on their ADA claim under § 12184.[116]

E. Department of Justice Settlements with Transportation Network Companies Impacting Wheelchairs Users

Although no court has yet ruled that TNCs are responsible for providing WAV service under the ADA, DOJ has stated that the ADA applies to TNCs for other types of disability discrimination in two DOJ matters that resulted in settlements with Uber and Lyft.

In 2020 and 2022, DOJ reached two ADA settlements with TNCs Lyft and Uber, respectively—neither about the provision of WAVS—but to resolve allegations of other discriminatory acts taken against people with disabilities, including wheelchair users. The 2020 settlement with Lyft resolved complaints alleging that Lyft violated the ADA when some of its drivers refused to give rides to people with disabilities who used foldable wheelchairs or walkers, a violation of a specific provision of the ADA transportation regulation. The 2022 agreement with Uber resolved allegations that Uber was charging "wait-time" fees to passengers who, because of disability, take longer than two minutes to enter a vehicle, another violation of a specific provision of the regulation.[117]

Although no court has yet ruled that TNCs are responsible for providing WAV service under the ADA, DOJ has stated that the ADA applies to TNCs for other types of disability discrimination in two DOJ matters that resulted in settlements with Uber and Lyft.

Although these settlements did not address WAV service, they are important because they are the first DOJ settlements with TNCs that state DOJ's position that the nondiscrimination requirements applicable to private transportation providers offering "taxi services" apply to TNCs, at least regarding the prohibition on charging wait fees to people with disabilities that take longer to board due to their disability and not picking up riders with folding wheelchairs.[118]

In both settlements, DOJ asserts that Uber and Lyft are subject to Title III of the ADA and its implementing transportation regulation, describing them as "taxi services" and "public

transportation services provided by a private entity that is primarily engaged in the business of transporting people."[119] In both settlements, Uber and Lyft maintained their assertion that the ADA does not apply to them.[120]

Note on Data on Enforcement: To inform this report, NCD requested, from DOJ's Civil Rights Division, the number of complaints received by the Division from January 1, 2019, to January 1, 2024, alleging a violation of Title III of the Americans with Disabilities Act by TNCs, including any complaints that were rejected due to the lack of enforcement power. For example, complaints were filed against TNCs alleging discrimination due to a lack of WAVs. The Division responded that it receives thousands of citizen complaints through its online reporting portal, it does not track disability complaints in a way that would allow it to accurately or readily respond to the question, and the Division does not sort complaints as against transportation providers or by type of transportation provider.[121]

[DOJ's Civil Rights Division] does not sort complaints as against transportation providers, by type of transportation provider, or by the terms identified.

NCD also asked for the number of these complaints that reference the terms "wheelchair accessible van," "wheelchair accessible transportation," "wheelchair accessible," and "WAV" for the same time period. The Division responded that it does not track disability complaints in a way that would allow it to accurately or readily respond to this question. The Division does not sort complaints as against transportation providers, by type of transportation provider, or by the terms identified.

F. Transportation Network Company Partnerships with Transit Agencies and Wheelchair-Accessible Vehicle Provision

Transit agencies must comply with Title II of the ADA, and this obligation includes ensuring that any transit service provided by a contractor also complies with Title II. Private entities, such as taxi companies and TNCs, that partner with transit agencies to provide public transit must abide by the same ADA transportation regulations that a transit agency would have to comply with had it provided the service itself.[122] Under the regulation, contractors "stand in the shoes" of the public entities with which they have an arrangement or contract, the private entity must play by the public entity's rules with respect to vehicle acquisition and transportation service issues, and transit agencies must ensure that contractors comply with the DOT ADA regulations.[123] Agencies must also ensure that the percentage of accessible vehicles in their fixed-route or demand-responsive fleet is not diminished as a result of using a contractor. For example, if a public entity's demand-responsive bus fleet is 90% accessible, then at least 90% of the contractor's vehicles used for the contract must be accessible.[124] Contractors, such as taxi companies and TNCs, also have to provide equivalent service in response times, fares, geographic areas of service, and hours and days of service.[125]

Since our 2015 report, numerous transit agencies have been entering into relationships

with TNCs and other private transportation providers to supplement their public transportation services with on-demand rides. These relationships include TNCs providing the public with first-mile/last-mile connections, microtransit extensions to fixed-route service, paratransit, and combinations.[126] Regardless of whether the ADA requires TNCs to provide WAVs, any transit agency that contracts with a TNC to provide public transit must ensure that the TNCs abide by the same Title II obligations to provide WAVs that apply to transit agencies. This requirement, in fact, applies to any private transportation service in a contract with a public entity.

The obligation is described in a 2016 letter to transit agencies from the Secretary of the Department of Transportation, reminding them that the ADA applies to transit service partnerships with TNCs, whether or not federal funding is involved and whether the services they provide are provided under contract or other arrangement or relationship.[127] Importantly, it states: "Most TNCs currently lack accessible vehicles for with disabilities, including those who use wheelchairs. When your agency enters into a covered partnership with a TNC, however, you must ensure that your service is accessible to and usable by persons along the full spectrum of disabilities. . . ."

[A]ny transit agency that contracts with a TNC to provide public transit must ensure that the TNCs abide by the same Title II obligations to provide WAVs that apply to transit agencies.

The letter makes the following points:

- Most partnerships with TNCs involve demand-responsive service. Under the DOT ADA Title II regulations, public entities (state or local governments or any agency, department, or branch of a state or local government) operating demand-responsive service must either acquire WAVs or ensure equivalent service is provided to people with disabilities, including those who use wheelchairs.[128]
- "Equivalent service for people with disabilities" means the same response time, fares, geographic area of service, hours and days of service, restrictions or priorities based on trip purpose, availability of information and reservations capability, and any constraints on capacity or service availability.
- If TNCs are used for paratransit, TNCs must benefit all paratransit riders equally. "It would not be appropriate, for example, to offer real-time service to ambulatory paratransit riders, while leaving wheelchair users with next-day service."[129]
- WAVs can be provided by the TNC as a condition of an agreement with a transit agency, through a separate agreement with another entity that provides WAVs, or by using WAVs that are already part of the transit agencies' paratransit fleet.

Currently, transportation partnerships between public entities and TNCs are widespread, and some have received funding from the FTA's Mobility-on-Demand (MOD) Sandbox Demonstration Program, FTA's Integrated Mobility Innovation Program, and Section 5310 funding allocated for projects that improve

mobility service for seniors and individuals with disabilities.[130] In the partnerships reviewed for this report, most TNCs provided non-WAV service, while the public agencies provided WAV service.

A 2020 report conducted an initial review of twelve partnerships between transit agencies and TNCs (Uber and Lyft) and the microtransit company Via. The partnerships provided on-demand transit in three ways: (1) first-mile/last-mile service, (2) addressing reductions in fixed-route service or complement fixed-route service on low-frequency routes, and (3) to improving mobility for seniors and/or people with disabilities (Figure 8).[131]

The agencies reported that the 2016 DOT letter clarified some of their uncertainties regarding the ADA requirements for on-demand partnerships with TNCs. In examining these partnerships, TNCs rarely provided WAVs, leaving that to the agency, but Via, a shared ride microtransit company, provided WAVs as a matter of course, depending on the needs of the agency.

NCD conducted a status check on a random partnership from each of the three categories in Figure 8 to their current status and found mixed results on continuing WAV provision:

- The on-demand partnership "Via to Transit" in King County in Washington, provided first-mile/last-mile service and gave more than 400 WAV rides in WAVs with 14-minute average wait times for WAVs.[133] This partnership continues to exist today with a fleet of 31 vans, including WAVs, for any type of trip. The Via app allows riders to indicate the need for a WAV when booking a

	Type of On-Demand Program	
Principal Purpose	Transportation-as-a-Service Programs	Software-as-a-Service Programs
First/Last Mile Service	• Pierce Transit (Lyft), Tacoma, WA* • Charlotte Area Transit Authority (Lyft), Charlotte, NC* • City of Arlington, TX (Via)* • King County Metro, in partnership with Sound Transit and the City of Seattle (Via), Seattle & Tukwila, WA*	
Service in Response to Fixed Route Reductions and/or Low Frequency	• Greater Dayton Regional Transit Authority (Lyft/Uber), Dayton, OH* • Detroit Department of Transit (Lyft), Detroit, MI* • Pinellas Suncoast Transit Authority (Uber), St. Petersburg, FL*[1]	• Capital Metro (Via), Austin, TX* • Norwalk Transit District (TransLoc, Via), Norwalk, CT
Service for Seniors and/or People with Disabilities	• Massachusetts Bay Transit Authority (Uber/Lyft), Boston, MA • City of Newton, MA (Via)*	• Marin Transit (Via), San Rafael, CA *

Figure 8: Chart showing the three types of on-demand programs created between transit agencies, TNCs, and microtransit providers and their principal purpose. Private transportation providers are indicated in parentheses. Chart credit, Shurna and Schweiterman, 2020.[132]

ride, and riders can save the vehicle type in their profile to make booking faster. People without smartphones can call to book rides. The service provides on-demand WAV rides in seven counties around Seattle.[134]

- Greater Dayton Regional Transit Authority (RTA) "Connect On-Demand' is still an active partnership. Rides are open to the public 24/7 for any type of trip within certain areas of the Miami Valley where fixed-route service is either unavailable or limited using the Lyft app and special codes. Trips can be scheduled the same day or up to seven days in advance. Lyft does not offer accessible vehicles. Customers who need a WAV have to contact RTA by phone. It is not clear whether WAV riders can contact RTA 24/7 at the number provided.[135]
- NewMo, the City of Newton partnership with Via that provided on-demand transportation to seniors and people with disabilities, including wheelchair users, operated from 2019 to 2024. In July 2024, the city began a new partnership with transportation provider GoGo to serve people with low incomes, seniors, and people with disabilities.[136] GoGo provides rides through Uber and Lyft drivers, 24/7, 365 days a year. Although GoGo's hours of operation and holiday schedule are better than NewMo's,[137] it does not provide equivalent service to wheelchair users who need a WAV; people who require WAVs must book 48 hours in advance to get a ride, and those that can use a nonaccessible car wait about 20 minutes.[138] This difference in treatment is explicitly disallowed as stated in the 2016 DOT letter. The alternative to GoGo is paratransit through the Massachusetts Bay Transportation Authority (MBTA) called The RIDE, which requires at least 24 hours advance booking, or The Ride Flex, a partnership with Uber and Lyft to provide on-demand paratransit service, but only those who do not need a WAV are able to book on-demand service. Wheelchair users requiring a WAV must reserve a day in advance.[139] The GoGo on-demand partnership is even less responsive than paratransit and flexible paratransit, and the only riders with disabilities able to get on-demand service are those who do not require a WAV. These are examples of public entities partnering with TNCs that do not provide WAVs or have too few to provide equivalent service required by the ADA.

A 2023 report that described the evaluation of eleven MOD Sandbox Demonstration projects made findings on TNCs and microtransit company partnerships with transit agencies regarding improving accessible transportation for wheelchair users and challenges.[140] There is not much discussion of how WAVs were provided; however, it found that microtransit improved access to transit for customers with disabilities in Dallas.[141] All of the vehicles used in this partnership were WAVs provided by Dallas Area Rapid Transit (DART). "GoLink" passengers with disabilities experienced improved access to transit and reduced travel times. All survey respondents with disabilities considered their access to DART as average or above average, and the average in-vehicle travel time of all GoLink WAV trips was consistently faster than the analogous fixed-route travel times. Also, a comparison of travel times and wait times for

WAV passengers and non-WAV passengers suggested a relatively common range of experiences.

Examples of U.S. Department of Justice Enforcement of the Americans with Disabilities Act's "Standing in the Shoes" Requirement in Public-Private Transit Partnerships

In an example of a city's partnership with Lyft that resulted in a settlement agreement with DOJ for alleged ADA violations, in 2018, the City of Monrovia launched the GoMonrovia program to restructure its dial-a-ride service, which previously provided rides only to seniors and to individuals with disabilities. GoMonrovia provided reduced-fare Lyft rides to people in the service area, but people with disabilities who needed WAVs could not use Lyft because the ridesharing company did not provide such vehicles. Instead, people who required WAVs had to use a separate company, Empire Transportation Services. Individuals using reduced-fare Lyft rides could travel 24 hours a day, seven days a week, but individuals with disabilities using Empire Transportation could not travel on nights and certain holidays such as Independence Day and Thanksgiving. Accessible vehicles could not be reserved through a website or by telephone. Individuals needing this service were required to complete paper applications, but those who used the Lyft service were not. Under the settlement, Monrovia agreed to ensure that people with disabilities had equivalent access to the GoMonrovia program, including the ability to travel at the same time as others.[142] NCD called the GoMonrovia office to inquire about how a wheelchair user would go about accessing a WAV and was told that a person could indicate on the Lyft app that a WAV was needed. Lyft was 24 hours a day, but wait times could be long, and WAVs were dependent on Lyft driver availability, unlike ambulatory users, who could quickly get a ride. The other option described was to fill out an application for accessible rides from Monrovia's transit vehicles, which were less expensive than a Lyft WAV. In addition to an application on which proof of disability was required, transit vehicles had more limited hours than Lyft but during operating hours offered faster pick-up times.[143]

Another example is a 2020 settlement between DOJ and the City of San Clemente.[144] San Clemente partners with Lyft to provide demand-responsive reduced-fare Lyft vehicle rides for people along two discontinued bus routes. Residents and visitors receive a reduced-fare ride through Lyft's app and inputting a promotional code. DOJ found that from 2016 to 2018, the program did not provide a method for people with mobility disabilities to request a WAV. The city subsequently entered into an agreement, in 2018, to provide demand-responsive reduced-fare WAVs under the program.[145] Some of the actions the city is required to take under the settlement include requiring vendors or third-party drivers providing WAV service in the program be trained to operate vehicles and equipment safely, assist and treat individuals with disabilities in a respectful and courteous way, and ensure that it provides the equivalent geographic area of service and the equivalent hours and days of service for program participants, including participants who use wheelchairs. It also requires the program to keep records on response times, fares, and ability to make WAV reservations.

Yet another example is a 2022 settlement between DOJ and the City of Kyle, Texas. The "Uber Kyle $3.14 Program" allows Kyle residents

and visitors to travel in an UberX vehicle to anywhere within Kyle's city limits for as little as $3.14.[146] After a rider pays the first $3.14 of an UberX fare for a qualifying trip, the city subsidizes the next $10. People can request a WAV through the UberWAV platform. A DOJ investigation to determine whether the program complied with Title II of the ADA found significant disparities in the availability of UberX vehicles and UberWAV vehicles in Kyle.[147] UberWAV vehicles were not available more than 40% of the time. Even when an UberWAV vehicle was available, the average wait time was substantially longer than the average wait time for an UberX vehicle. As a result of DOJ's findings, the city contracted with a vendor to supplement the program with additional WAVs. The settlement also requires the city to maintain its contract or a similar contract or program that will increase the availability of WAVs and track response times for WAV request compared with non-WAV requests, among other things.[148]

Chapter 3. Ongoing Barriers and Wheelchair-Accessible Vehicle Improvements in Taxi Services

There should be 24-hour, 7-days a week access to a wheelchair taxi in every city in the United States of America. Individuals with disabilities should not be left out in the cold or at night without transportation.[149]

A. The Federal Requirements for Wheelchair-Accessible Taxis

NCD's transportation report discussed the importance of taxis as a significant form of transportation, "heavily used and urgently needed by people with disabilities."[150] Some of the same issues discussed in that report remain challenges today, including limited responsibility under the ADA for WAVs, the need for driver incentives, keeping WAVs in service, and the need to increase the number of WAVs.

At the federal level, there has been no change in the ADA regulation governing taxi services. Under the regulation, providers of taxi service are not required to purchase or lease accessible automobiles. When a provider of taxi service purchases or leases a vehicle other than an automobile, the vehicle is required to be accessible unless the provider shows that equivalent service is provided to people with disabilities, including wheelchair users, in the most integrated setting appropriate to the needs of the person and is equivalent to the service provided other people in response time, fares, geographic area of service, hours and days of service, availability of information, reservations capability, and any constraints on capacity or service availability.[151] Providers of taxi service can provide equivalent service by contracting with a business that supplies WAVs.

The Preamble of the ADA transportation regulation puts it simply:

> Under the ADA, private entities primarily engaged in the business of transporting people and providing demand responsive service are not required to buy accessible automobiles. Such entities are required to purchase accessible vans, unless the entity can demonstrate that it provides equivalent service. But nothing in the statute requires an entity to acquire a van; if a taxi company acquires only automobiles, it need never obtain an accessible vehicle.[152]

As described in Chapter 1, motorized wheelchair and scooter users and those who use folding wheelchairs who have difficulty transferring into a vehicle continue to report that finding a WAV is difficult or impossible. Where WAVs exist, there are frequently too few in

operation, and the amount of time it takes to be picked up is typically significantly longer than for a sedan taxi. This is a completely different experience from that of ambulatory people, who can hail any cab that is passing by on a city street or call for a cab and have one arrive in a relatively short time.

When No WAV Taxis are Available

In some areas where no taxi WAVs exist or are not available, specialty wheelchair transportation businesses, sometimes called ambulettes, can provide rides, but the cost per ride is commonly exorbitant. For example, to go approximately 10 miles in Baltimore by Uber or a taxicab, in nonsurge hours, an ambulatory consumer can pay between $17 and $20 dollars. On a visit to Baltimore in the spring of 2023, NCD's former chairman, who used a motorized wheelchair, was told at the taxi stand at the airport that there was no wheelchair-accessible taxi service in the area anymore because the accessible vans had been sold. He was referred to a business specializing in WAV service that quoted him between $135 and $175 for the same distance.[153]

NCD has heard similar stories from other motorized wheelchair users who have been in similar situations while travelling for business and pleasure. The financial burden added to the disruption in one's plans is an experience that discourages travel and causes frustration and stress.

B. The Growth of Transportation Network Companies Has Contributed to the Unavailability of Taxi Wheelchair-Accessible Vehicles

A major contributor to the lack of WAVs offered by taxi companies (taxi WAVs, ramp taxis) is the rapid expansion of TNC services, which upended the taxi industry and access to on-demand transportation for people who require WAVs. Taxi services were profoundly impacted by the growth of TNCs, which took a major part of traditional taxi customers. About 20% of the 2.61 billion TNC ridership in 2017 represents a loss of taxi ridership, which declined by about 50% from 2012 to 2017 (Figure 9).[154]

A major contributor to the lack of WAVs offered by taxi companies… is the rapid expansion of TNC services, which upended the taxi industry and access to on-demand transportation for people who require WAVs.

In 2023, more than 90% of for-hire trips in the District of Columbia were made by ridehailing companies such as Uber and Lyft, according to the City's Department of For-Hire Vehicles, which oversees taxi and for-hire operations.[156] Between 2018 and 2023, the number of active taxi drivers in D.C. has dropped from about 5,000 to 1,500. The taxis that remain rely heavily on government-subsidized fares because street hails have nearly disappeared.[157] In NYC, TNC services completed 219 and 248 million revenue trips in 2018 and 2019, respectively, compared with 103 and 85 million trips completed by traditional yellow taxis

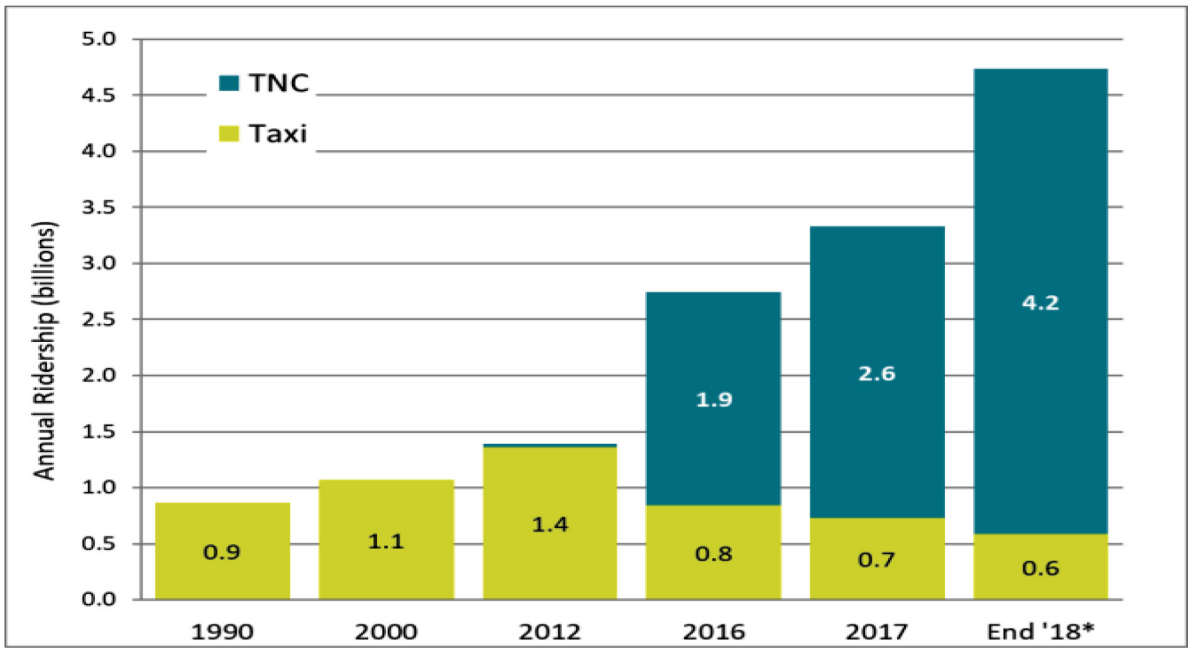

Figure 9: Chart showing impact of TNCs on taxi ridership 2012 through 2018.[155]

in the respective years.[158] In Chicago, in 2013, the Chicago taxicab fleet had 6,899 vehicles. In 2014, each vehicle was providing an average of 20 trips per day, with taxis providing about 4 million rides a month. But by early 2017, the Chicago taxi fleet had shrunk to about 3,600 vehicles providing only about 13 rides per taxi per day. Ride volume dropped from to about 1.4 million per month.[159] The negative impact that TNCs have had on the size of taxi industry also contributed to the unavailability of taxi WAVs.

A widely cited reason for TNCs' ability to take such a large share of taxi business at its outset was the imbalance in regulations that applied to TNCs and taxis, which hampered the ability of taxis to compete.

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Traditional taxis are highly regulated in most American cities, with local regulators determining everything from how many taxis can be licensed to the types of services they can provide to the fares they can charge to where they can pick up customers. Ridesharing apps like Uber and Lyft, meanwhile, operate with comparatively few regulatory constraints.[160]

TNCs were also largely free for years from state and local requirements governing taxis on standards of vehicle maintenance, requirements for accessible vehicles, specific licensing for drivers, and the use of taxi medallions (permits to drive taxis) to control the number of taxi drivers.[161]

A 2016 article was highly critical of taxi regulations, arguing that they limit competition, causing higher prices and lower quality and perpetuate antiquated technologies and practices. Unlike TNCs, common requirements for taxi drivers included providing medical histories, letters of recommendation, criminal background checks, and proof of a good driving record. They also had to pay hundreds of dollars in fees and comply with costly vehicle requirements, such as the installation of a taximeter, a dome light for the car roof, and a paint job to comply with coloring and marking regulations; submit to annual inspections; comply with vehicle retirement rules; and pay licensing fees. Other rules required collecting and remitting surcharges, carrying sufficient cash, maintaining a record of all trips, carrying insurance, and following requirements regarding where and how passengers can be picked up.[162]

A 2018 study reviewed taxi regulations and market characteristics in 44 major U.S. cities and the findings suggested that

> [T]axi regulations may limit competition within the traditional taxi industry and may result in worse outcomes for consumers—less choice among taxi companies and fewer taxis on the streets. To the extent cities continue to heavily regulate traditional taxis, ridesharing services will likely further erode the economic viability and market share of traditional taxis. To increase competition and choice, cities should eliminate taxi regulations that serve only to thwart competition.[163]

Today, although TNCs are regulated to some degree in every state, the requirements are less stringent and costly as they are for taxis.

C. Jurisdiction Case Studies: Efforts and Challenges in Providing Taxi Wheelchair-Accessible Vehicle Service

In 2015, we reported that since the 2005 NCD transportation report, wheelchair-accessible taxis have become more available in larger communities around the country, including Chicago, Boston, San Francisco, Miami, Las Vegas, D.C., NYC, and Portland, Oregon. We attributed this to regulatory mandates, incentives, or some combination of the two and we pointed out that mandates for WAVs may not be successful on their own, so they should address considerations, such as costs to drivers, which can make or break a WAV program. This holds true today. It costs more to purchase, operate, and maintain a WAV than a sedan taxi. As more jurisdictions have implemented WAV requirements or initiatives, they typically include surcharges, offsets, and financial incentives to encourage drivers to participate. However, incentives must aim to level the playing field between driving a WAV and driving a sedan, that is, the incentives must be enough to defray the extra expenses incurred by taxi owners and drivers who lease WAVs. The ease of applying for these incentives also matters, and there must also be an enforcement mechanism so that WAV drivers who receive incentives keep their WAVs active and provide rides to wheelchair users. Chicago, Seattle, Minneapolis, NYC, Portland, San Francisco, and Montgomery County, MD, are examples of jurisdictions that collect either a per-ride or lump-sum surcharge from TNCs and/or taxis that are distributed to taxi operators to offset the costs of providing wheelchair-accessible taxi service.

[I]ncentives must be enough to defray the extra expenses incurred by taxi owners and drivers who lease WAVs.

The following are case studies of select jurisdictions that have implemented WAV ordinances and additional actions to address the need for WAVs and the challenges involved. The jurisdictions that are most successful in providing taxi WAV service are those with accessibility funds that provide financial incentives to taxi drivers to convert, buy, and maintain WAVs and for other WAV-related expenses. Several common themes exist across jurisdictions, including the impact of TNCs, and challenges keeping WAV drivers and WAVs on the roads.

The jurisdictions that are most successful in providing taxi WAV service are those with accessibility funds that provide financial incentives to taxi drivers to convert, buy, and maintain WAVs and for other WAV-related expenses.

Montgomery County, Maryland

Montgomery County, Maryland, which borders Washington, D.C., is authorized by the state to regulate its taxi services. County law requires that the overall number of accessible taxicab licenses must not be less than 5% of

the total available in the county and that each fleet and association must provide an adequate number of accessible taxicabs to meet service demand 24 hours per day, 7 days a week.[164] In 2015, in response to the state's decision to allow TNCs to operate within its boundaries without providing any WAVs, the County Council unanimously approved two bills to assist the county's taxi industry and people with disabilities. Bill 33-15 created a Transportation Services Improvement Fund and a per-trip surcharge on TNCs, funds appropriated to it by the County Council, and funds received from any other public or private entity. The funds are used to offset the higher operational costs of WAVs, including costs associated with purchasing and retrofitting an accessible vehicle, costs associated with receiving training in providing accessible transportation services, and additional time involved in providing accessible taxicab services.[165] Bill 53-14 authorized the issuance of 100 new accessible vehicle licenses, 50 of them for a driver-owned cooperative to help individual drivers and spur innovation in the expansion of accessible transportation. It also created a centralized dispatch system for all county cabs and required the County's Department of Transportation to develop a plan to increase the numbers of wheelchair-accessible cabs (vans) that have lifts or ramps, with a goal of having 100% accessible taxicabs in the county by 2025.[166]

Further legislation was passed in 2017 to help get more WAVs operating in the county because many of the licenses created in 2015, though approved for issuance, were never issued because WAVs were not placed in service as required in the timeframe in the ordinance. As a result, the number of accessible taxicabs operating in the county did not increase since the enactment of the.[167] The bill aimed to extend the time period for the licenses to be issued so that WAVs could enter service as planned. It allowed any qualified applicant to remain eligible to get a WAV license by notifying the county of its intention to place a WAV in service by January 31, 2019. The memorandum to the County Council describing the background and need for the Bill states:

> The fact that TNCs are taking a growing share of the on-demand transportation market from taxicabs and are not subject to the same requirements for providing accessible transportation was a factor in the Council deciding to mandate the issuance of a substantial number of new licenses for accessible taxicabs as part of that law. If the County is going to achieve the goal, embodied in §53-506(e), of having 100% accessible taxicabs in the County by 2025, it is going to have to play an active role in expanding the number of accessible taxicabs in service. Both this Bill and the implementation of Executive Regulation 1-17 (also on the agenda for this work session) should have that effect.[168]

The County Council also passed Executive Regulation 1-17, which provides guidance for distributing money from the Transportation Improvement Fund to taxicab owners and operators to offset the increased costs of owning and operating accessible vehicles.[169] The most recent version of the ordinance breaks down reimbursements and distributions into (a) accessible taxicab ownership, (b) accessible taxicab operating/driver expenses, and (c)

taxicab service incentives. It states that the cost to purchase, convert, and maintain a WAV is significantly higher than for a standard sedan and that "in 2022, it was estimated that the costs to convert a vehicle was between $21,000 and $40,000 depending on the type of vehicle and extent of the modifications."[170]

The county has an impressive scheme to incentivize WAV ownership and keep WAVs on the road rather than sitting unused. The county reimburses taxi owners up to $45,000 for the purchase of an accessible taxicab or for conversion of a vehicle less than three model years old. Among other requirements for this reimbursement, an owner must demonstrate that the WAV has been in operation for a minimum of 40 hours per week for at least 48 weeks (or equivalent thereof) each year for five years immediately following payment. To offset expenses, WAV owners who successfully transport passengers requiring wheelchair service at a rate of $25 per completed trip, and WAV drivers are eligible for $0.40 per mile for every mile that the WAV travels while in service, whether or not a passenger is in the WAV and regardless of passenger type. In addition, owners who show that the WAV has operated for a minimum of 48 weeks per year and 40 hours per week may be approved for a $1,000 reimbursement per year for the actual costs spent on purchasing auto insurance and licensing fees. The ordinance contains enforcement mechanisms, such as reporting data to the DOT and consequences for fraud, including the having to return funds, legal action, and being barred from the program.

The county reimburses taxi owners up to $45,000 for the purchase of an accessible taxicab or for conversion of a vehicle less than three model years old. …[A]n owner must demonstrate that the WAV has been in operation for a minimum of 40 hours per week for at least 48 weeks (or equivalent thereof) each year for five years immediately following payment.

In an interview with NCD, the staff of the Montgomery County Department of Transportation, Division of Transit Services, which regulates the county's taxi industry, explained that the County realized that its goal of 100% WAVs by 2025 was not achievable for many reasons, including that some individuals may not be able to climb the height required to board a WAV. Like other jurisdictions, the entry of TNCs impacted the county's taxi industry greatly: in 2013, the county had five cab companies and approximately 850 cabs, and in January 2025, it had fewer than 200. However, in 2013, when there were 850 cabs, there were only about 26 taxi WAVs, and by January 2025, 40% of the county's taxi fleet was WAVs. Samuel Oji, director of the Division of Transit Services, attributed this success to the county's incentive programs, saying they play a huge role in

The source of the incentive funding is the state law, which imposes a small surcharge on each TNC ride and then distributes the monies received to the jurisdiction where the TNC rides occurred.

achieving this increase in WAVs. The source of the incentive funding is the state law, which imposes a small surcharge on each TNC ride and then distributes the monies received to the jurisdiction where the TNC rides occurred.

Managing the public's expectations regarding the provision of WAVs by taxi companies was identified as a challenge. Because the taxi drivers are independent contractors, meaning that they can come and go as they please, they can choose to stop driving at 5:00, for example, and people experience a hard time getting a taxi whether they are ambulatory or a wheelchair user, and the county cannot control this. TNCs can be available 24/7, but the county does not regulate TNCs and cannot require them to provide WAVs. The compromise at the state level was that the TNCs would pay a surcharge that would go to the county to increase the amount of taxi WAVs.

Staff recommended a national law or regulation that would require TNCs to provide WAVs to level the playing field and the fairness of treatment between TNCs and taxis and to better serve wheelchair users.[171]

Chicago, Illinois

Chicago regulates taxi WAVs and has examined its services, tracking progress over the years and commissioned a recent comprehensive report on its progress between 2011 and 2021, and has web pages devoted to its services and subsidies as described in this section.

To start, Chicago established requirements for a centralized dispatch system to connect WAV drivers to customers. Its ordinance requires:

1. Any company that owns or controls 20 or more taxis must have 5% WAVs in its fleet.[172]
2. Any company that owns or controls 10 or more taxis must have at least 10% WAVs in its fleet, and when a taxi is replaced, the replacement must be a WAV until the 10% requirement is met.
3. Any company that owns or controls five or more taxis must have at least 25% of its fleet in service as WAVs. If it replaces any taxi, the replacement has to be a WAV until the 25% requirement is met.

Each taxi that is not a WAV is required to pay $22 per month to the fund.

The centralized WAV Taxicab Dispatch Service allows the public to contact one phone number or use a single smartphone app to request and connect with an available WAV taxicab.[173] Every licensed taxi WAV in Chicago is required to participate in the service.[174] Among other requirements, the service must dispatch WAVs that can pick up riders within 20 minutes, have an app that displays estimated wait time, provide free training to WAV drivers on wheelchair securement, [175] and offer an airport "fast/short-trip" lane voucher incentive to WAV drivers.[176]

Accessibility Fund

The city's Accessibility Fund's purpose is to improve WAV taxi and TNC services for people with disabilities, and both the taxi and TNC industries pay fees into the fund to support expansion of WAVs.[177] Each taxi that is not a WAV is required to pay $22 per month to the fund.[178]

Monies in the fund are used to fund the WAV Centralized Dispatch service and for various WAV incentives, such as:

- Wav Taxi Driver Lease Subsidy: This subsidy is for taxi drivers who lease WAVs. Among other requirements, the driver has to complete a minimum of 40 Centralized WAV Taxi Dispatch Trips per month. Each 12-hour daily lease can qualify for a $25 subsidy, and each 24-hour lease can qualify for a $50 subsidy.[179]
- WAV Taxi Maintenance Subsidy: This is an annual subsidy for holders of WAV taxi licenses for vehicle maintenance. Among the requirements of eligibility, the holder must complete a minimum of 20 Centralized WAV Taxi Dispatch trips each month. The maximum reimbursement is $9,000 per WAV.[180]
- WAV Taxi "Owner-Operator" Subsidy for WAV taxi medallion license holders who are "owner-operators." Eligibility includes a requirement to complete a minimum of 40 Centralized WAV Taxi Dispatch trips per month. The subsidy is $25 per day that the WAV taxi is performing passenger trips.[181]
- WAV Taxi Voucher Program: To increase and support WAV taxis, the city provides $35,000 toward the purchase of a factory-built WAV or $25,000 for van conversion to a WAV.[182]

Chicago also awards taxi medallion licenses to drivers who demonstrate the greatest dedication to providing WAV service. Awardees must place these licenses on taxi WAVs.

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The Accessibility Fund has helped to significantly increase the number of WAVs in Chicago, as seen in Figure 10 showing more

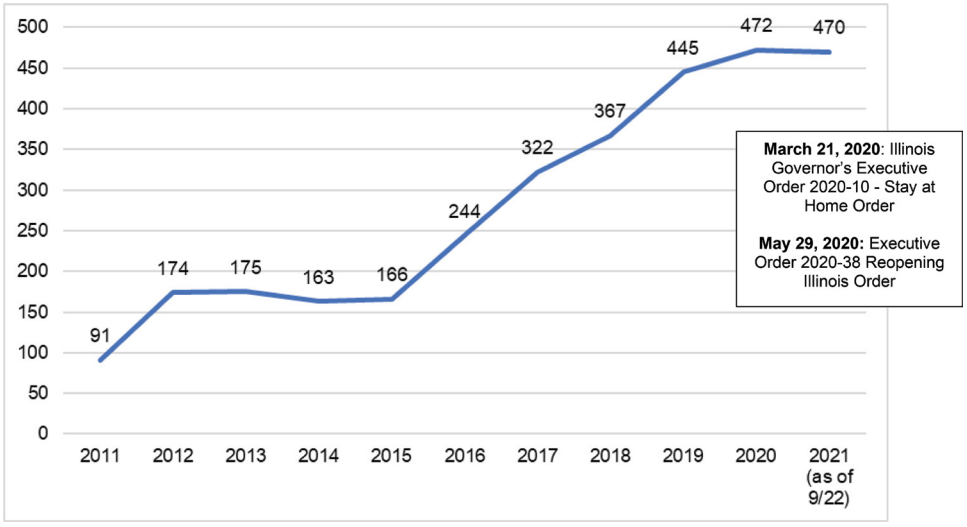

Figure 10: Growth of WAVs in Chicago, Illinois, between 2011 and 2021.[184]

John Robert McPherson

than a fivefold increase in WAVs between 2011 and 2021.

From May 2023 to May 2024 Chicago taxi WAVs provided 113,793 rides (Figure 11).

Chicago issued public chauffer rules in 2016 requiring all taxi drivers to complete and pass a city-approved accessibility course on servicing passengers with disabilities before leasing or operating a WAV for the first time.[186]

Washington, D.C.

In the 2015 report, NCD briefly described the Washington, D.C., ordinance governing the wheelchair accessibility of taxis. The Taxicab Service Improvement Amendment Act of 2012 set specific benchmarks for the percentage of WAVs in company fleets.[187] Under the ordinance, all taxicab companies that own 20 or more vehicles in their fleets on July 1, 2012, or after and each sedan service company with 20 or more vehicles in its fleet as of January 1, 2013, or after must ensure that

- At least 6% of each fleet is wheelchair accessible by December 31, 2014.
- At least 12% of each fleet is wheelchair accessible by December 31, 2016.
- At least 20% of each fleet is wheelchair accessible by December 31, 2018.

It established the Public Vehicles-for-Hire Consumer Service Fund, which would consist of funds from a variety of sources, including a passenger surcharge on taxi rides, and funds collected by the city for issuing and renewing

Centralized WAV Taxi Dispatch Service: May 2023 to May 2024 Chicago				
Month-Year	**Completed WAV Taxi Requests***	**Average Response/Passenger Pick-Up Time in Minutes**	**Total Incentive Airport Fast Lane Vouchers Issued**	**New WAV Taxi Drivers Trained**
May-2023	5,883	18	23,683	12
June-2023	5,290	20	22,231	13
July-2023	6,097	18	28,901	17
August-2023	8,240	17	34,266	20
September-2023	8,579	15	35,634	18
October-2023	9,168	18	36,824	9
November-2023	9,064	14	34,855	14
December-2023	9,299	12	26,007	22
January-2024	8,883	12	29,595	13
February-2024	9,438	13	26,201	13
March-2024	11,007	14	30,118	11
April-2024	10,947	13	29,464	9
May-2024	11,897	14	32,859	21

**Note: "Completed WAV Taxi Requests" refers to the number of passenger requests fulfilled under the Centralized WAV Taxi Dispatch Service contract.*

Figure 11: One-year data (May 20/23–May 2024) on completed WAV rides, average WAV response time, airport incentives issued, and WAV drivers trained.[185]

for-hire licenses. The funds could be, but were not required to be, used to provide loans, grants, and financial incentives to offset the costs of owning, maintaining, and operating WAVs.[188] This fund was established and is used exclusively to support Transport DC, the city's alternative paratransit service,[189] Currently there isn't such a fund in D.C.; however, D.C. is considering a surcharge on for-hire vehicles to help increase WAV access.[190]

The law established an accessibility advisory committee to advise the city on how to make taxi service more accessible and provide annual reports on the accessibility of taxicab service in D.C. and how it could be improved.[191] In its initial report in 2014, the District of Columbia Taxicab Commission Disability Advisory Committee wrote:

> There are currently 20 wheelchair accessible taxis out of the approximately 6,500 taxis in the D.C. that are running on a regular basis. The limited numbers of wheelchair accessible taxis remain a concrete barrier to taxi service for many people with disabilities who use motorized mobility devices or have difficulty transferring.[192]

Its recommendations included ways to make the WAVs more affordable to own, including allowing WAVs to remain in service as long as they pass inspection rather than retiring them at a set age, expanding their geographic area to Virginia and Maryland, providing owners and lessors with a tax credit, waiving license fees, charging a fee for owners of non-accessible taxis, and using WAVs to provide paratransit. The Division of For-Hire Vehicles (DFHV) recently increased the mileage and age limits for all taxis. D.C. taxis are allowed to provide trips with Maryland and Virginia destinations, and WAV taxis provide paratransit service as part of Metro Access and Transport DC[193]

A 2023 report by the American University Legal Clinic based on its representation of a motorized wheelchair user, is critical of D.C.'s DFHV efforts to increase WAVs since the ordinance was passed in 2012, including critiques about the type of incentives offered to drivers. It found that because D.C. did not enforce its WAV percentage requirements, in 2022, WAVs represented 4% of the city's roughly 5,300 total for-hire vehicles.[194] The authors make several recommendations to DFHV, including reinstate the 20% fleet requirement in the 2012 ordinance[195]; conducting a comprehensive study of other similarly situated cities to determine practicable solutions; and offsetting the costs of WAV drivers with targeted grants, tax credits, and fuel subsidies.[196] DFHV also recommends implementing a medallion system to control the effects of open enrollment, which floods the market with drivers, decreasing available fares, resulting in taxi companies "struggling to cover the cost of their leased vehicles–which, in turn, pass the cost onto the drivers who, opting for a cheaper or more fuel-efficient vehicle, steer clear of WAVs."[197] Regarding this recommendation, DFHV informed NCD that the number of taxi drivers is at an all-time low; therefore, a cap on private rideshare drivers would be much more effective at avoiding oversaturation. The private rideshare industry has no legal mandate to meaningfully provide WAV service.[198]

Another study that quantified the demand and usage of WAVs in D.C. using D.C.'s taxi data, data from the Washington Metro Area Transit Authority (WMATA), and a user survey, found that a minimum of 218 taxi WAVs and 1,427 private for-hire WAVs were needed to adequately serve D.C.[199] Private for-hire vehicles include limousines, taxis, TNCs, and car services originating outside of the district.

In June 2023, DFHV reported a total of 5,322 for-hire vehicles in D.C.; 210 were WAVs, 81 of the WAVS provided rides that month, splitting rides between Transport DC, the city's alternative paratransit program, and the general public. A total of 129 WAVs were not taking trips.[200] The June 2024 for-hire total was not published; however, DFHV reported a total of 3,569 taxis in D.C., 203 were WAVs, 70 gave rides that month (split between Transport DC and the general public), and 133 were not being used.[201] In 2024, taxi WAVs provided 11,000 trips, and Transport DC provided 12,000. The number of WAVs or WAV rides provided by TNCs, like Uber or Lyft, or other private services could not be obtained for comparison.

In July 2023, the DFHV reported that taxi companies still could not find drivers who were willing to take on the expense of a WAV, and this was why so many WAVs were sitting on lots not being used.

In 2022, D.C. taxi companies reported that they struggled to recruit or keep WAV drivers because these vehicles are expensive for drivers to operate and because the drivers are independent contractors, and they can't be required to drive a particular vehicle. They have WAVs but no drivers for them.[202] In July 2023, the DFHV reported that taxi companies still could not find drivers who were willing to take on the expense of a WAV, and this was why so many WAVs were sitting on lots not being used.[203]

A 2024 article, using DFHV data, also describes how wheelchair users can be stranded in D.C. because D.C. has not enforced its law requiring 20% of all taxi fleets to be wheelchair accessible.[204] It found that of 18 taxi companies in D.C. large enough to be overseen by the law, just 2 are fulfilling the requirement. The author states, "Beyond the lack of enforcement of the 20% rule, the number of wheelchair-accessible taxis actually on dispatch is even lower. The law requires taxi companies to have wheelchair accessible taxis within their fleet, it doesn't require them to actually be in use, meaning many sit empty in garages."

In a conversation with NCD, DFHV's staff, and, Jonathan Rogers, its director, described D.C.'s transportation system as one of the best in the nation, with a wheelchair-accessible Metro system (subway), buses, paratransit, taxis, and TNCs.[205] DFHV described D.C.'s taxi industry as hard hit by the entrance of Uber: in 2010, D.C. had 11,000 taxis. Private for-hire services, such as Uber, started doing business in D.C. in 2012, and by 2014, there were only about 6,000 taxis left. In 2020, due to the pandemic, the 6,000 taxis dropped to 507. Year after year, the public's growing adoption of TNCs has continued to diminish the taxi industry in D.C. Currently, taxi service accounts for 5% of D.C.'s for-hire transportation market, and TNCs account for 95%. DFHV pointed out that unlike TNCs, the taxi industry is heavily regulated, which makes it more expensive to enter the taxi industry and remain a taxi driver, and the lack of comparable regulations for TNCs should be remedied given that taxi and TNC drivers are doing the same job, and they are independent contractors.

DFHV pointed out that the D.C. ordinance's requirement of 20% WAVs did not consider the challenges in getting existing WAVs to those who need them, such as obtaining drivers who are trained and willing to be dispatched to pick up fares. DFHV does not control all aspects of taxi companies; some on-duty taxi drivers with WAVs prefer to take rides they consider more profitable, such as waiting at a taxi stand or picking up street hails, and some choose to drive during the day only. According to DFHV, it is also a balancing act to require taxis to meet the WAV percentage and not put them out of business.[206] According to a recent article, a DFHV spokesperson stated that enforcing the 20% WAV requirement more strictly would likely force many taxi companies out of business and added that this is worsened because there is no comparable rule for Uber and Lyft.[207]

"The law requires taxi companies to have wheelchair accessible taxis within their fleet, it doesn't require them to actually be in use, meaning many sit empty in garages."

Impacting the availability of taxi WAVs further is D.C.'s supplementary, on-demand, paratransit program, Transport DC, which currently contracts with three taxi companies that are required to respond to calls for WAVs by people who are paratransit eligible before other riders (general public) requesting WAVs. Paradoxically, they explained, this enhanced type of paratransit results in less availability of WAVs for use by the general public because one must apply and be accepted to participate in paratransit.[208]

DFHV has offered a variety of incentives over the years and two recent WAV pilots to improve WAV service in the D.C. In 2017, DFHV offered an eight-week incentive program to all

for-hire drivers and companies that complete WAV trips.[209] Funded with $31,000, $12,500 was earmarked for companies and $18,500 for drivers and independent owners. Drivers earned $5 for each completed trip in a WAV to a maximum of $500 per driver. The five companies with the highest WAV utilization were given $2,500 each, and the top five drivers with the highest number of evening trips received an additional $200 each. The program was extended for another eight weeks with a budget of $28,500 and limited to taxi companies who own, rent, or lease WAVs.[210]

In 2023, D.C. conducted an eight-week WAV pilot that offered taxi companies incentives to offer WAV service at night and maintenance incentives. DFHV conducted another pilot in the summer of 2024 with two purposes—to increase WAVs on the road and to collect data on where in D.C. WAV requests were originating. Two WAV providers were contracted to provide on-demand rides and received an incentives of a $35 hourly rate. Rides were booked through a hotline that uses the caller's location and real-time vehicle tracking to connect them with the closest available WAV. During the pilot, 435 WAV trips were provided with an average wait of 16 to 20 minutes from time of dispatch. The pilot ended in December 2024.[211] Another pilot (2.0) is planned for spring 2025. WAV driver incentives planned are $25 an hour to stay on dispatch from 6 p.m. to midnight, a $10 per WAV trip incentive, a $1000 recruitment incentive per driver, a dispatch subsidy, and a WAV maintenance reimbursement.[212]

New York City, New York

A long battle between disability advocates and NYC over the accessibility of its taxis had seemingly been settled in 2015 when NCD released its 2015 transportation report. At that time, NYC's TLC voted to make 50% of the city's taxi fleet wheelchair accessible by 2020, settling a lawsuit and "making a big, historic leap into the future."[213] The settlement required 7,500 accessible taxis in the city's fleet by December 21, 2020. Funding for the WAVs would come from a 30-cent surcharge on all taxi rides.[214]

From January 2016 to late 2019, TLC provided quarterly reports on its progress to reach the 50% accessibility requirement and advocates applauded its efforts.[215] Due to the COVID-19 pandemic, the settlement was amended to extend the 50% requirement deadline to June 30, 2023, but in July 2023, TLC informed the plaintiffs that only 32% of the fleet was wheelchair accessible. In January 2024, TLC informed the plaintiffs that it was going to ask the court to relieve the city of the 50% accessibility requirement in the settlement. On February 21, 2024, the plaintiffs asked the court to enforce the terms of the settlement.[216]

During a hearing on May 7, 2024, TLC argued that it should not be required to fulfill the settlement—that about 4,400 of the city's 13,587 taxis were wheelchair accessible, and about 3,700 of those 4,400 were currently in service.[217] At the end of the hearing, the judge ordered TLC to produce a letter detailing the procedures necessary for it to reach a 50% accessibility rate.[218] According to an advocate from United Spinal who attended the hearing, TLC claimed it was too expensive to purchase and maintain accessible taxis despite a city subsidy, that they would go out of business if they fulfilled the 50% requirement, and that the court asked for data to back that claim.[219]

An additional issue discussed at the hearing was concerns about retiring taxis. TLC required taxis to be retired after seven years, and although owners of sedans must replace them with a WAV, WAV drivers are allowed to switch to a sedan when they retire their WAV. The judge told the city that this practice was making it harder to meet the 50% requirement. Advocates also wanted TLC to get rid of this rule because it was taking accessible taxis off the streets.[220]

In August 2024, the judge ruled that the TLC's efforts weren't close to substantial performance with the agreement and ordered all new taxicabs to accommodate wheelchairs until the 50% mark was met.[221] To implement the court's order to immediately take all necessary steps to implement a rule to ensure that 50% of all active medallions are being operated with a WAV by March 31, 2025, and 50% of all authorized medallions are attached to a WAV by the end of 2028, TLC promulgated rules that require that all taxi hack-ups be WAVs; permit "re-hacks" for WAVs only and limit the ability of taxicab owners of aging non-WAV taxis to keep them on the road beyond their scheduled retirement.[222] The rule was adopted by TLC on October 16, 2024, after public notice and comment.[223] The result was a significant event in achieving greater wheelchair-accessible transportation in NYC. In February 2025, about 45% of the active medallions were accessible.[224]

It is important to note that NYC's taxis are unique. As explained by the DOJ's Statement of Interest in the case, NYC's significant control over the taxicab fleet, evidenced in a number of ways, and incorporating the taxi system into the NYC Charter demonstrates that NYC's taxi services are operated by the TLC within the meaning of Title II of the ADA.[225] Title II provides that any public entity that operates a demand-responsive public transportation system, such as the NYC taxicab fleet, discriminates against individuals with disabilities. In the absence of equivalent alternative service, new vehicles purchased for use on the system are not "readily accessible to and usable by individuals with disabilities, including individuals who use wheelchairs."[226]

For the majority, if not all other jurisdictions in the U.S., taxi services fall under Title III, where WAVs are not required except under limited circumstances. States and localities can choose to impose stricter standards by enacting laws that require WAVs, but achieving the mandates involves creating framework to help address the challenges of getting WAVS on the road and keeping them active.

Philadelphia, Pennsylvania

Since 2012, Philadelphia has had the authority to issue 15 taxi medallions each year for WAV taxis until 1,750 are issued.[227] In 2014, the PPA issued regulations on WAV service requirements and procedures for medallion sales and began selling WAV taxicab medallions in 2015.[228] According to the director of the PPA, when it promulgated regulations for WAV taxi service standards, it strove to provide high-quality, safe and reliable WAV service, and some of the WAV requirements were stricter than the ADA guidelines (e.g., safety training for WAV drivers and a 32-inch wide entrance ramp for WAV taxicabs versus 28–30 inches required by the ADA to accommodate wider motorized wheelchairs).[229] A more recent law (PA Act 164) lowered certain WAV standards.

Under the PPA regulations, to obtain a taxi WAV driver certificate, an individual must be a certified taxicab driver, attend WAV instruction, and

pass a test administered by the PPA that covers all aspects of WAV taxicab service. This training must be completed every 2 years. WAV taxicab drivers are also required to give preference to a person seated in a wheelchair who requests taxicab service over a potential customer who is not using a wheelchair.[230] WAV dispatchers are required to have at least 10% of the authorized WAV taxicabs in its association at all times to ensure that WAV taxi service is available 7 days a week, 24 hours a day. In the event a dispatcher cannot provide a WAV taxicab to a customer within 20 minutes, the request for service must be forwarded to all other dispatchers.

Christine Trzaska of the PPA told NCD that the COVID-19 pandemic hit the Philadelphia taxi industry hard and that it still has not recovered.[231] After reaching the high point of about 40 taxi WAVs just before the COVID-19 pandemic, when they provided more than 1,900 trips per year, in March of 2025, only three taxi WAVs are operating in Philadelphia.[232] According to Ms. Trzaska, the overall number of taxis has drastically dropped from 1600 taxis and 40 taxi WAVs operating in the city to the current total of 564 taxis and 3 taxi WAVs that are operating.

Philadelphia does not have a fund to help taxi WAV drivers convert, purchase, or maintain WAVs.

Philadelphia does not have a fund to help taxi WAV drivers convert, purchase, or maintain WAVs.[233] The drafts of the wheelchair-accessible taxi regulations included various incentives to help facilitate a large number of taxi WAVs but were not included in the final version. Philadelphia currently provides a stipend for drivers who go through WAV training and a waiver of driver certificate fees to help incentivize more taxi WAV drivers.[234]

D. The U.S. Department of Justice's Enforcement of the Americans with Disabilities Act Requirements for Equivalent Service for Wheelchair Users

I have not filed any complaints to DOJ or DOT as I did not realize that was possible.[235]

Although taxi companies only have to provide WAVs if they purchase or lease a vehicle other than an automobile, those that do are responsible for either providing WAVs or providing equivalent service, but the equivalent service requirement is challenging to enforce without a method of knowing what vehicles are being purchased by individual taxi companies. It is equally difficult for a customer who tries to reserve a WAV and is told that the taxi company does not have any. How does that person find out if the taxi company has purchased a van or other vehicle that is not an automobile, which triggers the equivalent service requirement? It is unlikely that a person with a disability in this situation can successfully inquire about the company's purchase of vehicles other than automobiles to determine if the company is required to provide equivalent service. Others may not know that equivalent service is required by the ADA and enforceable by DOJ.

To inform this report, NCD sought data from DOJ's Civil Rights Division about complaints it has received against taxi companies regarding WAVs from 2019 to 2024 under Title III of the ADA. DOJ responded that the Civil Rights Division receives thousands of citizen complaints through its online reporting portal, it does not track disability complaints in a way that would allow it to accurately or readily respond to the question, and the division does not sort complaints as against transportation providers or by type of transportation provider.[236]

There isn't any available information on complaints against taxi companies that have been submitted to DOJ's Civil Rights Division against taxi companies for lack of WAVs, so there is no way to know how the Division processes these complaints (e.g., whether such complaints are simply rejected because taxi companies are not required to provide WAVs under Title III of the ADA or whether the Division looks further to determine whether the company is failing to provide equivalent service). Without amending the ADA to require taxis companies to purchase or lease WAVs, strong enforcement of the equivalent service requirement is necessary to help ensure the availability of WAVs by taxi companies.

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Americans with Disabilities Act Enforcement Spotlight: Transportation Should be Included on the U.S. Department of Justice's Online Americans with Disabilities Act Complaint Page

Although DOJ is responsible for enforcing the Titles II and III ADA transportation regulations, its webpage where ADA complaints may be submitted does not contain any information recognizing a person's right to complain about disability discrimination by transportation providers. The page contains the following:

Who You Can File a Complaint Against

If you believe that you or someone else was discriminated against based on a disability, you can file an Americans with Disabilities Act (ADA) complaint against:

- a state government or local government, such as a:
  - public hospital
  - public school
  - other state or local government program
- a private business that serves the public, such as a:
  - restaurant
  - doctor's office
  - shop
  - hotel[237]

This omission may lead the public to believe that these are the only entities against which DOJ will accept a complaint, discouraging the public from seeking relief from discrimination by inaccessible taxis, public transit, or shuttle services or by discrimination by rental car companies and TNCs. It is logical to deduce that a person who is not familiar with the ADA Titles II and title transportation protections would decide not to file a transportation discrimination complaint.

A further concern is whether DOJ staff, receiving a call or a written complaint regarding a lack of WAVs by a taxi company, would accept the complaint under the ADA requirement that taxis to provide "equivalent service" to wheelchair users rather than turning it away as nonjurisdictional. The "equivalent service" obligation is the only avenue under the ADA for provision of WAVs by taxi companies, and DOJ should ensure that the public understands this requirement, especially people with disabilities and taxi companies.

Americans with Disabilities Act Enforcement Spotlight: Transportation Should be Included on the U.S. Department of Justice's Online Americans with Disabilities Act Complaint Page: *continued*

The online complaint form does not include transportation as a basis for an ADA complaint either. The choices offered are employment, education, housing, mistreatment by police/inmates/corrections staff, and voting. It includes public accommodation, but the examples of accommodations do not include transportation services. It also omits government services as an option, under which paratransit and public transit complaints would fall. The final choice is "something else happened," which has no examples.

The complaint form asks the complainant to provide the name of the business, to describe what happened, and to provide their protected characteristic (e.g., disability), although DOJ maintains it cannot provide information on the businesses that allegedly discriminated and cannot break them down by search terms such as "wheelchair" or "wheelchair accessible" or the subject (e.g., transportation). Because of the importance of adequately tracking disability discrimination complaints for policy and regulatory planning and to make transparent DOJs enforcement of the ADA, the complaint form and the database that receives complaints should be updated and modernized.

Chapter 4. Paratransit: Continued Issues with Traditional Service and New On-Demand Models

Paratransit is comparable transportation service required by the Title II of the ADA for people with disabilities who are unable to use fixed-route transportation systems.[238]

Paratransit must comply with Title II of the ADA and the regulations implementing Title II.[239] Title II requires public entities that operate fixed-route transportation systems, such as local bus services, to provide paratransit for people with disabilities who can't use the fixed-route service because of, for example, the person's inability to access the vehicles or the transit stops or to independently navigate the transportation system. The service must be comparable to the level of public transportation services provided to people without disabilities and must be available throughout the same hours and days as the entity's fixed-route service. Failure to provide comparable paratransit services is discriminatory.[240] Locations that do not have fixed-route transportation do not have to provide paratransit.

In 2024, complaints about paratransit continue to center on paratransit not being comparable to public transit services provided to individuals without disabilities. Paratransit services are wheelchair accessible, but they are plagued with issues that make this form of transportation a necessary evil for many wheelchair users because of their rigid scheduling requirements (e.g.,24-hour advance scheduling and other issues such as incredibly early or late pick-up times, a lack of communication with dispatch, drivers who are unfamiliar with the area, or drivers that are unfamiliar with disabilities),[241] and the requirement to schedule at least a day ahead disadvantages users of paratransit. Users cannot obtain a ride if they make a spontaneous decision to go out or to go to work early or come home late. The nature of the service, which often entails sharing a ride with other customers, results in unpredictable drop-off times. This is a concern to anyone trying to get to an airport to catch a flight, getting to work on time, honoring a dinner reservation, arriving on time for an event, or going to a scheduled appointment. The same unpredictable timing applies to return trips.[242]

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A. Case Exemplifying Common Issues in Traditional Paratransit

Common experiences such as these are exemplified in the 2024 case *Paulino-Santos v. Metropolitan Transit Authority*, in which people with disabilities who relied on NYC's paratransit system, Access-A-Ride (AAR), sued the city, claiming that it did not provide access to public transit for individuals with disabilities that was comparable to the services provides to those without disabilities.[243] Plaintiffs challenged four AAR policies and practices:

1. The requirement that users reserve trips "by 5 p.m. the day before you wish to travel" and cancel reservations two hours in advance or face penalties (the "Next-Day Policies")
2. The requirement that users accept a pickup time "up to an hour earlier or later than the time requested" (the "one-hour policy")
3. Paratransit users must wait an additional 30 minutes beyond the scheduled pickup time before the ride is considered late enough for a taxi authorization (the "30-minute policy")
4. Untimely pickups and drop-offs as well as trips of excessive length[244]

According to the plaintiffs, the challenged policies risk leaving individuals with disabilities waiting on the street for hours in unsafe conditions. They also create trips that are excessively long and geographically senseless, including often going past or in the opposite direction from the rider's destination. As a result

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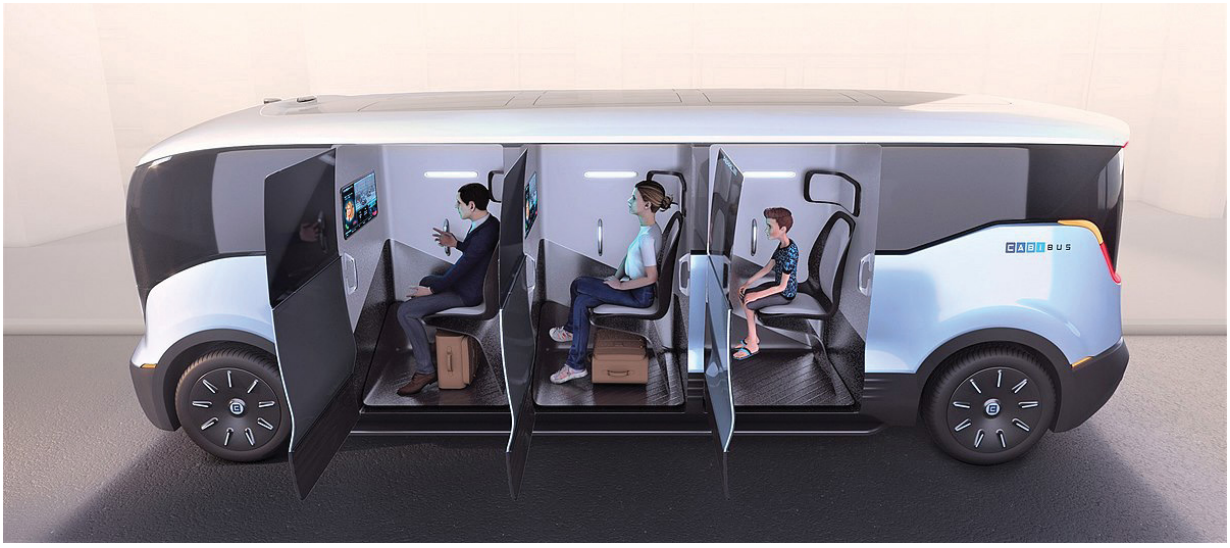
of the limitations created by these policies, many eligible paratransit users, including the individual plaintiffs, have to give up errands, work meetings, social engagements, worship, civic participation, medical visits, or other trips. Paratransit users are unable to count on arriving at work, school, religious services, or doctors' appointments on time and must factor into their day several more hours of wait, travel, and potential delays. They are also unable to accommodate spontaneous trips, gatherings, or changes of plans that are characteristic of daily life.[245]

The lead plaintiff's story is a graphic example of what it is like to use the traditional paratransit model: she has to be the first employee in the office, and to arrive by 9 a.m., she must schedule a pick up by 6:30 a.m. from her residence in Inwood, Manhattan, in order to make it to work in midtown Manhattan by 9 a.m. The same trip on an Metropolitan Transportation Authority (MTA) by bus would take 1 hour and 47 minutes and 1 hour and 55 minutes, including approximately 27 minutes of required walking time. The shortest trip on public transit, according to the MTA Trip Planner, is a subway trip that would take approximately 1 hour and 20 minutes, including approximately 20 minutes of walking time. She often spends 45 to 90 minutes beyond the scheduled pickup time waiting for her AAR ride to arrive and has suffered from waits as long as two and a half hours, including waiting on hold for more than an hour on the phone before being picked up. On several occasions, she has boarded an AAR ride at her home in Inwood, Manhattan, only to be first taken into the Bronx, in the opposite direction of her destination, turning her commute into a two-hour ride.[246] Another plaintiff had similar problems and as a result was unable to schedule more than one appointment or errand in a day and would often avoid leisure or social activities because he did not want to have to travel on AAR.

These and similar complaints about paratransit are longstanding and widely documented by people with disabilities using paratransit systems across the U.S. Indeed, NCD has heard these complaints for decades.

Paratransit users are unable to count on arriving at work, school, religious services, or doctors' appointments on time and must factor into their day several more hours of wait, travel, and potential delays. They are also unable to accommodate spontaneous trips, gatherings, or changes of plans that are characteristic of daily life.

This case is not only an example of the common complaints about the traditional paratransit model, but it also highlights a pilot paratransit model that appears to be working well for people with disabilities. In November 2017, the NYC MTA launched an "E hail app pilot, "[to] allow Paratransit customers to electronically hail yellow or green taxicabs on-demand, similar to popular on-demand ride services such as Uber, Lyft and others." Approximately 1,200 AAR users were included in the E-Hail Pilot Program. In June 2023, the MTA expanded the Pilot Program to an additional 2,400 riders, from February to August 2024, subject to possible extension, and implementing new rules capping the number of monthly rides. A plaintiff in the case described was part of the E hail app pilot and reported



Kenneth Palmestål

that he is "able to travel much more frequently and can now take multiple trips per day when needed, affording him greater flexibility and spontaneity." To schedule a ride, using E hail, he uses an application that dispatches the requested ride to one of many rideshare services such as Uber or Lyft; it usually takes no more than 20 minutes for a driver to accept the ride. In February 2025, the NYC Council announced that the E hail program is now permanent.[247]

[A]lternative services meet more spontaneous travel needs than ADA paratransit; riders liked the direct trips, no shared ride trips, ability to schedule trips the same day, and service reliability.

B. Alternate Paratransit Models that Aim to Address Weaknesses in Traditional Paratransit Are Effective and Growing in Popularity

Since NCD's 2015 report, transit agencies have increasingly partnered with offering an alternative service for paratransit riders.[248] This service is typically an on-demand or same-day transportation option subsidized by a transit agency and is an alternative to the next-day service of ADA paratransit. The general concept is to use existing on-demand providers in the community, such as taxis, TNCs, or microtransit, to supplement or replace paratransit.

A 2023 study funded by the U.S. DOT examined how transit agencies were using taxis, ridehailing services, and other nondedicated service providers to provide alternative models of transportation for individuals with disabilities.[249] The researchers examined the mobility benefits and challenges for riders, the impacts on rider travel patterns, and the costs of both on-demand and traditional paratransit services to the transit agencies and riders, and they documented best-practice design models for alternative services that resulted in service equivalency and cost reduction while increasing mobility.[250] They found that subsidized

WAV service provided by these providers increased transportation equity in a cost-efficient manner while also complying with the ADA (Figure 12).[251]

The researchers also wanted to know the "extent to which alternative services, particularly those using new ride sourcing providers, met the travel needs of paratransit riders and particularly those who use wheelchairs." They found that alternative services meet more spontaneous travel needs than ADA paratransit; riders liked the direct trips, no shared ride trips, ability to schedule trips the same day, and service reliability. The data suggested that riders who use wheelchairs used the alternative services at a lower rate than for ADA paratransit in most cases, but the research did not answer why.[253]

In another study, researchers examined 15 alternative paratransit models in locations across the U.S. and also found cost reduction. For example, the City of Galveston in Texas was able to reduce its ADA paratransit per-trip cost by 70% by switching from transit agency–operated dedicated vehicles to programs using taxis operating WAVs.[254] Other examples of public-private partnerships to implement on-demand access to paratransit are found in Chapter 3 of this report and in reports issued by the FTA.[255]

[T]he City of Galveston in Texas was able to reduce its ADA paratransit per-trip cost by 70% by switching from transit agency–operated dedicated vehicles to programs using taxis operating WAVs.

C. U.S. Department of Justice Enforcement of Paratransit Complaints

To inform this report, NCD requested, from DOJ's Civil Rights Division the number of complaints received by the Division from January 1, 2019, to January 1, 2024, alleging a violation of Title II of the ADA by paratransit providers, including any documents showing how many were rejected and accepted. The Civil Rights Division responded that it does not track disability complaints in a way that would allow it to accurately or readily respond to the question, it does not sort complaints as against paratransit providers, and paratransit providers include a large number of public and private entities with a variety of naming conventions.[256] Based on this reply, NCD could not examine ADA enforcement data or use it help inform our recommendations. The settlements discussed next were either found on the ADA archive or provided by the Civil Rights Division in response to our information request.

On August 24, 2021, the U.S. entered into a Settlement Agreement to resolve a Title II investigation regarding allegations that the County of Hawai'i and its Mass Transit Agency failed to provide accessible transportation for individuals with disabilities, including those who use wheelchairs and those with vision-related disabilities. The Settlement Agreement requires the County and MTA to make their transportation services accessible, to include maintaining and promptly repairing bus lifts, training drivers and mechanics on the proper use and maintenance of lifts, announcing stops on all fixed-route bus routes, increasing the availability of paratransit service, providing next-day service for paratransit users, and conducting a survey of bus stops to assess accessibility.[257]

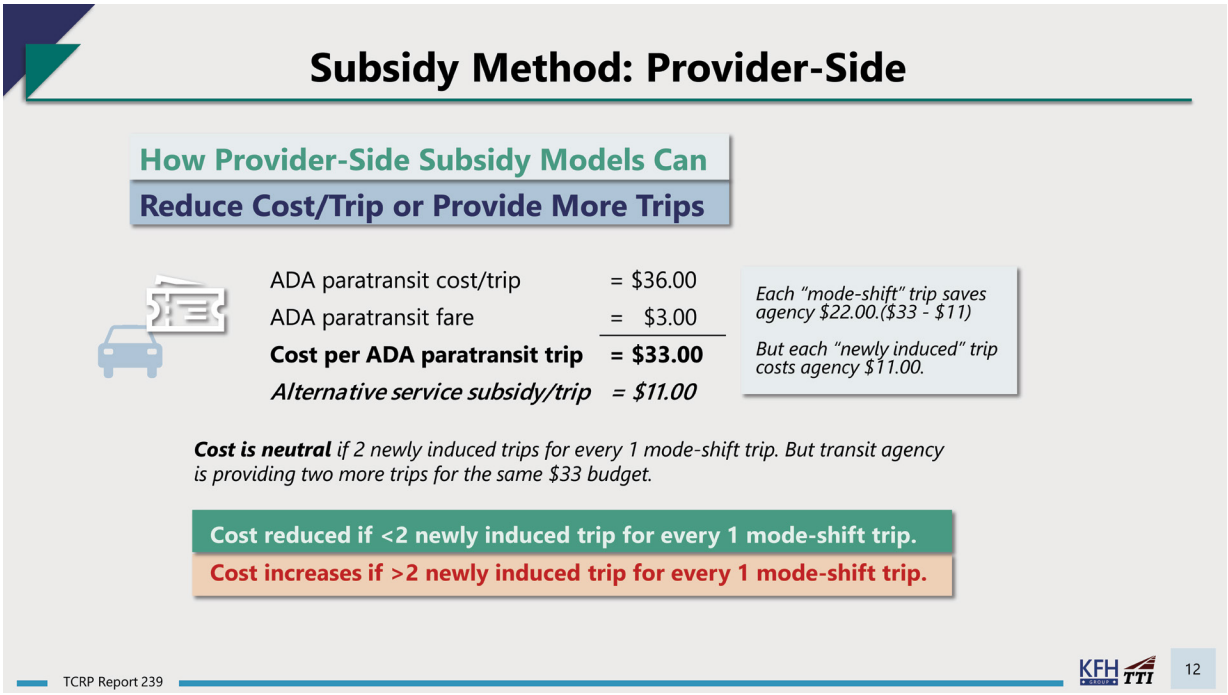


Figure 12: Slide showing how transit provider subsidy models, using taxis and TNCs, can reduce cost per trip or provide more trips. Slide credit, Transportation Research Board Webinar, Nov. 2023.[252]

In 2022, DOJ notified the New York City Transit Authority (NYCTA) that its Access-A-Ride paratransit program was violating Title II of the ADA by engaging in patterns or practices that significantly limit the availability of service to ADA paratransit-eligible people, including significant untimely drop-offs and excessive travel times.[258] D0J required NYCTA to take corrective actions, including establishing performance standards for on-time drop-offs and trip length, collecting and maintaining data on requested drop-off times, and conducting analysis of on-time drop-off and travel time performance.

NJ Transit agreed to make improvements to its paratransit "Access Link" as part of a 2022 settlement with the U.S. Attorney's Office for the District of New Jersey resolving allegations that NJ Transit's paratransit service, Access Link, has capacity constraints that limit service.[259] The lawsuit was sparked after an person with a disability alleged that he dealt with poor telephone performance, plus untimely pickups and drop-offs.Court documents said:

> NJ Transit Access Link has capacity constraints that significantly limit the availability of service to ADA paratransit eligible persons, including a substantial number of trips with late pickups, a significant number of trips with late drop-offs, a significant number of trips that were excessively long, and excessive telephone call wait times.

The agreement requires, among other things, that NJ Transit meet specific performance

standards within 6 months, 12 months, and 24 months for paratransit telephone hold times, timeliness of paratransit trip pickups and drop-offs, paratransit trip length, paratransit trip denials, and paratransit missed trips.[260]

On June 29, 2023, DOJ notified the Maryland Transit Administration (MTA) that its MobilityLink paratransit service violates Title II of the ADA by failing to provide paratransit services at a level of service comparable to the level of service provided to individuals who use the fixed-route system.[261] DOJ found that MTA illegally subjected customers to untimely pickups and drop-offs, as well as lengthy waits for telephone reservation service. To remedy the violations, MTA was required to ensure sustained on-time performance, accurately identify and remedy service issues before they rise to the level of discriminatory capacity constraints, and plan for and provide paratransit service that is free from capacity constraints.

A 2023 settlement was reached with the City and County of Honolulu, Hawaii resolving allegations that its paratransit provider, TheHandi-Van, discriminated against people with disabilities because paratransit eligible riders were frequently unable to reach a telephone reservation agent to schedule, check on, or cancel paratransit rides in a timely fashion because their calls were met with busy signals or long wait times.[262] The DOJ's investigation substantiated that individuals often experienced busy signals and unreasonably long hold times in violation of the ADA. The city and county agreed to comply with its transportation-related obligations under the ADA and the ADA's implementing regulations, including by ensuring that that TheHandi-Van makes reservation services available during at least all normal business hours of Oahu Transit Services administrative offices and that TheHandi-Van telephone system meets certain performance standards to ensure prompt access by paratransit users.

DOJ also reached a settlement agreement with the County of Muskegon, Michigan. It resolved multiple violations of ADA Title II in the county's provision of paratransit services, including not making its application publicly available on its website; not sharing the application externally; restricting local independent living organizations' reproduction and distribution of the application, which significantly limited the availability of service to ADA paratransit eligible people; not making its reservation service available during normal business hours, capacity constraints resulting in trip denials, and failure to provide service that was reserved the previous day.[263]

Special Topic: Microtransit: Filling a Need for On-Demand Wheelchair-Accessible Transportation in Public Transit

Microtransit, is an on-demand, technology-enabled transit system that routes vehicles based on real-time passenger demand, and unlike a fixed-route bus, it has no set schedule and does not require advance reservations.[264] Microtransit is technology driven; riders typically book trips through a phone app, which allows on-demand booking and pre-booking. Frequently, passengers must go a short distance to meet a vehicle to reduce detours and maximize the efficiency of the service unless they cannot reach this point; for example, if a wheelchair user cannot physically reach the closest pick-up point, the service can pick them up. Routes are based on when and where riders want to travel. Microtransit is implemented using small buses or vans, and rides are shared as they are with traditional bus service.[265]

Unlike paratransit and dial-a-ride services that limit trips to seniors or people with disabilities or limit destinations, microtransit is typically open to anyone to use for any trip purpose.[266] Importantly, WAVs ensure the service is accessible for people with disabilities. Microtransit can often complement an existing paratransit service by offering an alternative that has fewer restrictions such as advanced booking requirements, therefore reducing the demand for paratransit services. Microtransit often is used to expand public transit access; expand the reach of public transit systems; or in some cases, replace fixed routes where bus routes do not have many riders or do not reach employment or important commerce areas. It is also used for first-mile/last-mile connections with fixed-route bus or rail services, ADA paratransit, non-emergency medical transportation, and nighttime and weekend services where fixed-route bus service is not economical as described in the previous section.[267]

Microtransit has been proven effective in many localities, which have used it to address public transit shortcomings and provide same-day service to those who require WAVs. Some localities use federal financing to pilot microtransit programs. Whereas policymakers have focused on improvements to paratransit services when planning transportation for wheelchair users, microtransit can improve mobility for wheelchair users by expanding accessible on-demand public transit rather than the traditional reserve-a-day-in-advance paratransit model that restricts mobility.

On-demand microtransit has become widely accepted by the hundreds of cities and agencies to fill different needs, including in rural areas where fixed-route transit has less riders and smaller vehicles that are dispatched on demand can be more economical.[268] Microtransit is used in several ways (e.g., first-mile/last-mile connections, and supplementing or replacing fixed-route buses). Importantly, microtransit services such as Via and May Mobility are wheelchair accessible with accessible mobile applications. Riders who do

Special Topic: Microtransit: Filling a Need for On-Demand Wheelchair-Accessible Transportation in Public Transit: *continued*

not have a smartphone are able to call to book a ride, and those who are unbanked or underbanked can pay by cash or use an alternative payment method.

There are several benefits on-demand microtransit, including booking flexibility, not just for ambulatory riders but also for riders who need a WAV. It is increasing the reach of public transit as well. This is important because fixed-route buses cannot get riders every place they need to go, but microtransit can fill these gaps and extend to neighborhoods that buses do not reach. According to Aparna Paladugu of Via, rather than wait at a bus stop, riders can summon vehicles with a smartphone (or by a quick phone call) and go to any location within the zone of service without having to worry about transfers or long walks. Although riders are typically asked to walk one or two blocks to meet their vehicles, those with disabilities receive door-to-door service. She says microtransit has been transformative for many people with disabilities, who make up a significant portion of the ridership in many areas. For example, in Sarasota, FL, 30% of riders have a disability (and 40% of riders are aged 65 years and older), and this rings true across the nation. For many riders with disabilities across the country, microtransit services may be their only means of transportation.

Microtransit Examples

Arlington, Texas

Arlington was the first city in the nation to offer on-demand ridesharing as its sole public transportation solution.[269] In 2017, the City of Arlington partnered with Via to provide affordable, on-demand, shared rides as an alternative to a fixed-route bus line, connecting riders to entertainment centers, shopping, dining options, work, school, medical appointments, and so on.[270] In this project, Via provides vehicles, drivers, technology, and routing and the budget. The operation was funded by Arlington and the FTA during the first year. The change resulted in a 100% increase in public transit ridership and a 97% customer satisfaction rate.[271] Arlington expanded the service area several times and added more vehicles to meet demand.

Rides are booked using an app-based cashless service, and rides are subsidized. Riders are charged by the length of the trip, ranging from $3 to $5, except for trips that originate at Arlington's transit center, which are a $3 flat rate.[272] Riders get matched with other riders who are going their way. Riders who require a WAV book rides by tapping their profile picture or image at the top of the app menu and tapping the Wheelchair Accessibility toggle to turn it on, which unlocks door-to-door service.[273] Riders who do not use a smartphone can request a ride by calling a live support phone line that is prominently posted on the website.

(continued)

Special Topic: Microtransit: Filling a Need for On-Demand Wheelchair-Accessible Transportation in Public Transit: *continued*

Wilson, North Carolina

Wilson replaced its fixed-route bus system with on-demand minivans called "RIDE" about four years ago, and it's been popular with residents, who can now call or use an app to order a ride anywhere in the city limits.[274] The city used to have five fixed-route buses that only ran once an hour, so the timing and the places a rider could go were restricted. The city partnered with Via, which provided software, vehicles, and drivers in exchange for city funding.[275] The vehicles include WAVs. RIDE saw a tremendous impact on how it serves Wilson residents by reaching locations the previous fixed-route service did not.[276] Going into the pandemic, the city's fixed-route bus system averaged a ridership of about 1,450 rides per week, and in 2023, RIDE hit a weekly record of about 4,700 rides, more than tripling the use of fixed-route public transit across Wilson. RIDE had a goal wait time of up to 15 minutes after someone requests a pickup; however, due to demand, wait times have exceeded this at times, and the service has adjusted its hours and vehicles to respond.[277] The service also has WAVs in its fleet. This model is unique because rather than supplementing an existing fixed-route transit system, it replaced it. It is financially and logistically feasible because of the small size of the town.[278]

See the section on AVs for information on May Mobility, a microtransit provider that uses autonomous WAVs with safety drivers to provide accessible transportation in partnerships with transit authorities and others.

Aparna Paladugu of Via told NCD that a lack of funding is currently the primary obstacle to the further expansion of microtransit. There have been some funding programs for innovative mobility through the U.S. DOT, such as the ATTAIN program, which provides competitive grants to deploy, install, and operate advanced transportation technologies. The Bipartisan Infrastructure Law funds ATTAIN through fiscal year 2026. A new benefit of the program is a 20% set-aside for projects serving rural areas.[279] DOT's Rural Autonomous Vehicle Research Program (RAV) is another potential funding source for microtransit providers. In 2023, $25 million was released for research on applications of automated vehicle technologies for rural communities. RAV funded projects span six years and address unique challenges faced by rural and tribal communities related to mobility and economic development, including isolation, transportation cost burden, and traffic safety. [280]

Chapter 5. Accessibility Barriers in Shuttle Services and Rental Cars for Wheelchair Users

A. Accessing Shuttle Services

Title III of the ADA governs shuttle services provided by public accommodations (private entities), including, but not limited to, "shuttle services operated between the public accommodation and transportation terminals; shuttle bus services for customers that are operated by private companies and shopping centers; student transportation systems; and transportation provided within recreational facilities such as stadiums, zoos, amusement parks, and ski resorts."[281]

Public accommodations operate both fixed-route and demand-responsive shuttle services. A fixed-route service travels on a set route on a fixed schedule. It operates whether or not a particular passenger is present, and no action by the individual is needed to initiate the service.[282] The ADA defines a demand-responsive service as "any system of providing transportation by a vehicle that is not a fixed-route system."[283] In everyday terms, a demand-responsive shuttle service provides transportation after an individual requests a ride.

The ADA imposes different requirements on entities providing shuttle services based on whether they are primarily engaged in the business of transporting people or they are not and whether the service is fixed route (on a schedule) or demand responsive (riders initiate a pick-up).

For private entities that are not primarily engaged in transporting people, such as hotels or universities, amusement parks, and rental car businesses, the following apply:

- The private entity providing fixed-route shuttle service must ensure that any vehicle purchased or leased that seats more than 16 people is wheelchair accessible.[284] If the vehicles seats 16 people or fewer, it must be wheelchair accessible, unless equivalent service is provided.[285] Equivalent service means that the service is available to people with disabilities, including wheelchair users, in an integrated setting and is equivalent to the service provided to people without disabilities in (a) schedules and headways, (b) fares, (c) geographic area of service, (d) hours and days of service, (e) availability of information, and (g) any constraints on capacity or service availability.[286] Equivalent service can be accomplished by contracting with a business that supplies WAVs and adheres to the six additional requirements on scheduling, fares, and so on.
- A private entity providing demand-responsive shuttle service must ensure that vehicles purchased or leased that seat more than 16 people are wheelchair accessible (have a lift) unless they provide equivalent service as described earlier.[287] There is

no wheelchair accessibility requirement for demand-responsive shuttle providers that use vehicles that seat 16 or fewer people; instead, the ADA requires that "when viewed in its entirety," the system provides service to wheelchair users that is equivalent to the level of service provided to individuals without disabilities.[288]

Based on information gathered by NCD through public comments, wheelchair users continue to encounter inaccessible shuttle services that violate the ADA, disrupt travel, and result in degrading and experiences in shuttle services provided by hotels

This public comment submitted to NCD in July 2023 describes the experience of wheelchair users who travelled to D.C. for a conference:

Our flight was smooth, and we ordered an accessible shuttle from the hotel. Myself and another one of my co-workers both use wheelchairs and another one of our co-workers uses a walker. And they shared the transportation was accessible and we get there, and it was a giant Mercedes shuttle van with four steps to get in. So, we asked if they could send something more accessible, which they were all flustered and didn't seem like it was going to happen. So, we sat around in hot sun, exhaust smog of the parking lot for 20, 30 minutes trying to figure out what we're going to do and eventually we got sick of it, and my co-worker and I had to crawl on the van on the floor and transfer in the seat that was three

> and a half feet in the air. In the process of which, I hurt my shoulder, because it was an awkward maneuver. And anybody who uses the wheelchair does transfers knows your shoulders are very, very important. And it's unfortunate we did everything right. We ordered the accessible ride. And we didn't get it. And we, you know, felt like the 70s all over again. We're crawling on the ground to do what we need to do. It was horrible.[289]

In a post on wheelchairtravel.org, a travel website for wheelchair users, John Morris, the owner of the site who is a motorized wheelchair user who takes hundreds of flights each year, describes five personal experiences with inaccessible hotel shuttles:

> Here, I would like to share five personal experiences that reflect the ways in which travelers with disabilities experience shuttle-related ADA violations. Each of the hotels mentioned below offers a complimentary shuttle service to guests, which I planned to make use of. I faced a different issue (or response to ADA noncompliance) at each hotel . . ..
>
> ATLANTA – Accessible, but not equivalent.
>
> The Courtyard Marriott Atlanta Airport North offers an accessible shuttle, but only one of the two shuttle buses are accessible. After arriving at the airport, I waited nearly 45 minutes for the shuttle to pick me up. Able-bodied guests were able to board the standard shuttle within about 20 minutes. The next day, I requested a ride back to the airport at 3:00 p.m. Nearly an hour later, I was told that the keys to the accessible shuttle bus had been "misplaced." The non-ADA shuttle made several trips between the hotel and airport before I could be accommodated using another hotel's shuttle (thank you, Hilton Atlanta Airport!). In total, I was delayed by more than an hour – it's a good thing I was leaving early for my flight. Although I was ultimately accommodated, I didn't receive the same service as able-bodied customers. According to the ADA, this was a violation of my right to equal access.
>
> ALBUQUERQUE – Rolling to/from the airport.
>
> On my very first trip to Albuquerque, New Mexico, I split time between two hotels. One was downtown, the other by the airport. The Hyatt Place Albuquerque Airport offers complimentary shuttle service to/from the airport and restaurants/businesses near the hotel. The shuttle is not accessible, and no equivalent service is available. The hotel is about 1.5 miles drive/walk/roll from the airport (or "sunport," as they call it). A city bus departs hourly from the Albuquerque Airport but will only shave half a mile off the total walking distance.
>
> As such, I chose to roll the entire distance in my wheelchair. If I were a manual wheelchair user, this would not have been possible due to significant elevation changes along the route. A portion of that final mile between the city bus stop and hotel does not have a sidewalk, so I had to roll in the street for a short distance. With no other hotels having a wheelchair accessible shuttle and no wheelchair taxis

being available in the city, there was no solution available in the time that I was there. . . .

DALLAS – "Advanced notice [24 hours] is required."

After just coming off a flight from Madrid, Spain, I learned that I would not be able to make it to Florida (my final destination) without waiting nearly 5 hours at DFW airport. Exhausted and sore from the 10-hour flight, I decided to book a hotel and relax in bed. I chose the Four Points by Sheraton Dallas Fort Worth Airport North.

After making it to the curb, I called the hotel to request shuttle pick-up. I notified the agent that I am a wheelchair user who needs an accessible shuttle with a ramp or lift. After putting me on hold to verify the shuttle's accessibility, she returned with good news. The wheelchair accessible shuttle would arrive within 20 minutes. Unfortunately, the shuttle was not accessible. The driver, a very friendly guy, offered to lift my wheelchair into the shuttle van. Considering it weighs 400-lbs., that was not a feasible solution. I called the hotel back and asked for the accessible service they would have been required to contract. "Get a taxi" from the airport, she said. Well, what wheelchair taxis in Dallas? With no other choice, I gave up, canceled the reservation and searched for another hotel.

What really frustrated me were the contents of an e-mail from the hotel's General Manager, followed by a subsequent phone call some weeks later. "Our hotel is in compliance with all ADA laws however we are not required to have a shuttle van with ADA lifts." OK, that's true, but only if you can provide an equivalent service through a contractor. "There are private shuttles that do have lifts, however advanced notice is required for us to make the necessary arrangements and to my knowledge no advanced request or notice had been communicated to us." I replied back, asking what amount of advance notice he considered reasonable for an on-demand airport (and local area) shuttle service. The answer? 24 hours.

MIAMI – An alternate arrangement that failed.

Due to a weather diversion and delayed arrival to the Miami Airport, I missed my connecting flight to Quito, Ecuador and was stuck. After booking a room at the Hyatt Place Miami Airport East using the Hyatt mobile app, I called the hotel to request the shuttle. I was informed that hotel's own shuttle was not accessible, but the Embassy Suites (located next door) would give me a lift. An hour later, it hadn't arrived. It being late in the evening, I decided to hail an accessible taxi – another feat altogether. I didn't get to the Hyatt Place until more than two hours after I first called for the shuttle. To add insult to injury, I was out $20 for a taxi . . . to go 1.5 miles. The next day, I needed a ride back to the airport, so I asked my hotel to arrange the Embassy Suites shuttle. Embassy Suites refused, saying they were not allowed to pick up guests from another hotel. Weird, I thought.

I spent the next half hour rolling to the airport on my own – all to save $20 on a return taxi. The hotel didn't have an accessible shuttle, and it clearly had no plan to accommodate me otherwise. Because I wasn't accommodated, the hotel violated its requirement to provide equivalent services to guests with disabilities.[290]

The following information was provided to NCD by PVA in 2024.

We want to highlight all the things people go through when their transportation needs aren't met. Ground transportation is one of the biggest challenges we have. We're also talking also about the anxiety that comes with transportation insecurity. Wheelchair users say that the anxiety that it causes them every time they travel makes it no fun anymore. With all of the uncertainty, you just don't know what you can count on at any step of the trip. You never know when you're going to fall through a crack. It's an emotional toll. Hotels say "We don't have an accessible shuttle," or "We can't get you one," or "Yes, we have an accessible shuttle," but when you arrive, it isn't working. We have even heard of drivers being unwilling to do what is necessary to assist the wheelchair user when there is an accessible shuttle.

Ground transportation is one of the biggest challenges we have. We're also talking also about the anxiety that comes with transportation insecurity. Wheelchair users say that the anxiety that it causes them every time they travel makes it no fun anymore.

Two PVA employees traveled to San Francisco. They went outside and were told there was an accessible hotel shuttle. They were one mile from the hotel. They waited and waited, and the hotel kept telling them the accessible shuttle is the next one. They waited for about an hour and this shuttle kept coming to pick people up, but it was not accessible. They called the hotel again and the hotel said the accessible shuttle was broken, so it's not coming around. Then they went to ground transportation to try to find a taxi that he could transfer into but most of the taxis were SUVs, so it took them almost 2 1/2 hours just to go one mile to the hotel. When they got to the hotel, they asked how to get downtown and were told the shuttle could take them – after we'd been through all this. It was so frustrating that everywhere we turned we couldn't figure out how to get there. We have actually at least two or three complaints.

We were looking at a trip to Phoenix and we called the hotels ahead of time but none of them had accessible shuttles to the airport, so we filed complaints with the FAA against the airport because the airport allows those shuttles to come onto its property and they are not accessible. So, the airport told the hotels they need to have accessible shuttles if they come onto the airport property. PVA has had to do that multiple times.

National Harbor, near D.C., has a shuttle that will take you over to where the shops are and they are supposed to have an equivalent service for people with disabilities because their shuttles not accessible, at least it wasn't when we looked into this a few years ago. Then we had to find out whether it would come within the same amount of time, how long the wait was, and who to contact for alternative service. So, whether it's going to or from the airport or convenience shuttles getting you around amenities, we often find that they either don't have accessible shuttles, and their alternate plan is iffy, so all of that compounds the uncertainty and people saying forget it - I don't want to deal with all of this.

The actions described in these personal stories are violations of the ADA shuttle provisions and likely experienced by many other wheelchair users. DOJ has exclusive authority to enforce the ADA shuttle provisions set forth and has a duty to investigate alleged ADA violations[291]; however, it was impossible to obtain any data on complaints filed about inaccessible shuttles or the result of these complaints because DOJ does not have a manner by which it can identify transportation complaints filed against public accommodations. The inability to obtain this data prevented its inclusion in this report, but a search of published settlements revealed no recent enforcement activity in this area.

[I]t was impossible to obtain any data on complaints filed about inaccessible shuttles or the result of these complaints because DOJ does not have a manner by which it can identify transportation complaints filed against public accommodations.

Shuttle Service Provided by Businesses Primarily Engaged in Providing Transportation

Unlike public accommodations, such as hotels, schools, and amusement parks that offer shuttle services as a courtesy to their customers, students, and so on, private entities that *are* primarily engaged in providing transportation have different rules under the ADA:

- When a private entity that is primarily engaged in the business of transporting people and that operates a fixed-route transportation services, purchases or leases a new vehicle (other than an automobile, a van with a seating capacity of less than eight passengers, including the driver, or an over-the-road bus), that vehicle must be readily accessible to and usable by individuals with disabilities, including individuals who use wheelchairs.[292]
- If the entity operates a demand-responsive system and purchases or leases a new vehicle other than an automobile, a van with a seating capacity of less than eight people (including the driver), it shall ensure that the vehicle is readily accessible to and usable by individuals with disabilities, including individuals who use wheelchairs, unless the system, when viewed in its entirety, meets the standard for equivalent service. A fixed-route system or demand-responsive system, when viewed in its entirety, provides

equivalent service if the service available to individuals with disabilities, including individuals who use wheelchairs, is provided in the most integrated setting appropriate to the needs of the individual and is equivalent to the service provided other individuals with respect to (a) schedules or headways (if the system is fixed route) and response time (if the system is demand responsive), (b) fares, (c) geographic area of service, (d) hours and days of service, (e) availability of information, (f) reservations capability (if the system is demand responsive), (g) any constraints on capacity or service availability and (h) restrictions priorities based on trip purpose (if the system is demand responsive).[293]

B. U.S. Department of Justice Settlements with Private Entities Providing Shuttle Services

In 2017, DOJ entered into a settlement with Chariot Transit, Inc., to resolve allegations that the company violated Title III of the ADA. As part of the settlement, Chariot was required to take numerous steps to ensure that it provides equivalent service to individuals with disabilities.[294] Chariot provided private commuter transportation services in several U.S. cities. Customers requested rides through a smartphone application, and the Chariot commuter vehicle stopped at preset locations if customers requested a vehicle to stop there. DOJ found that from July 2015 to November 2016, Chariot may have violated the ADA by leasing at least 161 new 14-passenger vehicles for use in its services in the San Francisco Bay Area and Austin, none of which were readily accessible to and usable by individuals with disabilities, including individuals who use wheelchairs. During this time, Chariot's website and individual responses to customer inquiries indicated that Chariot only provided service to individuals who use wheelchairs if they could transfer to a seat and if there was space for their wheelchair that did not take the seat of another passenger; those who required an accessible vehicle would only be provided "accessible resources in the region."[295] Under the settlement, Chariot was required to, among other things, operate sufficient readily accessible vehicles in each market to ensure individuals with disabilities receive equivalent service, not require passengers with disabilities to book a trip differently from other passengers, and ensure the smartphone app requested all relevant information from passengers such that a separate phone call or message with Chariot staff would not be required for passengers with disabilities.[296]

In 2018, DOJ reached a settlement with Monterey Airbus, a private operator of a fixed-route and on-demand transportation airport shuttle service, to resolve a complaint from a wheelchair user who attempted to make a reservation but was informed by a Monterey Airbus employee that the company did not provide wheelchair-accessible service. The company agreed to retrofit or acquire one additional vehicle that would be readily accessible to and useable by individuals who use wheelchairs and also ensure that the next three vehicles it purchased or retrofitted would be readily accessible. [297]

In 2019, DOJ issued a Letter of Resolution with the University of Michigan related to its

driverless shuttle program.[298] DOJ initiated a compliance review in response to media reports that the autonomous transportation system featured vehicles that were not accessible to wheelchair users which confirmed that the University purchased two new vehicles for its autonomous transportation system. Neither vehicle was equipped with accessible features. The university operates both vehicles on a fixed-route during business hours. Title II requires that all new vehicles operating on a fixed-route system be accessible. The university agreed that all future purchased or leased automated vehicles would be accessible and, until all AVs in the Driverless Shuttle Program are accessible, the university would provide equivalent services to individuals with disabilities, including individuals who use wheelchairs.

In 2022, DOJ entered into a settlement agreement with Canopy Airport Parking and Propark, Inc. regarding the inaccessibility of its airport shuttle service to resolve a complaint that Canopy did not have wheelchair-accessible shuttle service between its off-airport parking facility and Denver International Airport.[299] Canopy had assured the complainants that it would be able to accommodate a wheelchair in the shuttle to the airport, but when they arrived, they were informed that the only wheelchair-accessible shuttle was inoperable, and the complainants could not park at Canopy because there was no means to transport them to the airport.[300] As part of the settlement, Canopy agreed to provide equivalent service for individuals with disabilities and make all reasonable efforts to either (1) retrofit two of its current shuttle vehicles such that they are accessible to individuals who use wheelchairs or (2) acquire two additional shuttle vehicles that are wheelchair accessible.[301]

C. Barriers to Accessing Rental Cars

Wheelchair users continue to experience difficulties reserving rental cars with hand controls. Barriers exist throughout the process even though most of the continuing problems were the topics of DOJ settlements with car rental companies soon after enactment of the ADA.

Members of PVA report limitations in the variety of car options when reserving hand controls, such as being told only certain cars can be outfitted with hand controls and repeated experiences with reserved controls not being installed at the pick-up time, and report that that this has been going on for decades.[302] According to PVA staff, PVA's CEO, who is a manual wheelchair user and travels extensively, reported that, in his experience, you can't get the full variety of cars available and that when he's arrived to pick up his rental car, he's been told that his vehicle with hand controls was given away, that the person who knows how to install them doesn't work on the weekend, and that they don't have his reservation and can't help him.[303] When he shows up and they actually have the his reserved vehicle with the hand controls, he's usually surprised because it happens so infrequently. PVA receives the same reports from nonmember wheelchair users.

PVA looked into three rental car company websites to see what vehicles could be reserved and what the reservation process is and found inequities in these all three of the major car rental companies, including two to three days' advance reservation requirements for hand controls and

no guarantee that you will receive the vehicle type or model that you reserved.[304] Although it is necessary to have some amount of lead time to install the hand controls, PVA believes that two to three days seems excessive given its research, which indicates it takes less than an hour to install the hand controls.[305] Indeed, in the *Dahlberg* case, Avis informed a court that one hour was the time required to install hand controls.[306]

Although it is necessary to have some amount of lead time to install the hand controls, PVA believes that two to three days seems excessive given its research, which indicates it takes less than an hour to install the hand controls.

PVA points out that advanced notice requirements can be problematic in any short-notice travel (e.g., after a car accident when one needs quick access to alternative vehicles).[307] Regarding the inability to know what type or model of vehicle one will receive, PVA points out that this is a problem when a customer receives a vehicle that can't suit their needs. Due to the ongoing concerns it was hearing from wheelchair users, PVA created a frequently asked questions document specifically on customer rights when renting a car.[308]

In February 2024, Disability Rights Advocates (DRA) filed a class action lawsuit in the Northern District of California against car rental company Hertz, alleging systemic ADA violations against people with disabilities who need hand controls to operate a car.[309] The plaintiffs are both wheelchair users who sought to rent vehicles with hand controls from Hertz. According to the complaint, plaintiffs found that although there are many models of hand controls on the market, and they can be installed in virtually any car, Hertz reduced the models that may be reserved with hand controls and adopted a new policy or practice of not placing hand controls in certain categories of vehicles at all. The policy excludes people who need hand controls from renting electric vehicles, convertibles, luxury sedans, and a variety of other vehicle categories that are available to the company's nondisabled customers.

The [Hertz] policy excludes people who need hand controls from renting electric vehicles, convertibles, luxury sedans, and a variety of other vehicle categories that are available to the company's nondisabled customers.

DRA found that in practice, the options for people with disabilities are even more limited than the company's policy: "When attempting to make a reservation, there is often no option to reserve a minivan, truck, or sedan with hand controls, meaning that the only vehicle actually available to Plaintiffs and other people with disabilities is some type of SUV. "This is particularly ironic because the height of most SUVs makes them difficult or impossible for people who use wheelchairs to get into without help, meaning that they are not a realistic option for many people who need hand controls."

The plaintiffs allege that by depriving them of the opportunity to rent whole categories of

vehicles, Hertz is denying people with disabilities the full and equal enjoyment of its goods and services that is their legal right under the ADA. They also allege that this policy and practice effectively imposes an impermissible surcharge on customers with disabilities, who are forced to pay the difference in daily rate between the car they wanted to rent and the car that Hertz would provide with hand controls. "It is not uncommon for the cheapest car that Hertz will provide hand controls on to cost much more (over $100 more) than the cheapest car nondisabled customers can reserve for the same dates." They also allege that the online reservation system often only offers hand controls on higher priced vehicles, excluding people who need hand controls from renting a variety of vehicle categories that are available to the company's nondisabled customers. In addition, they complain that Hertz's reservation processes has barriers for people attempting to rent vehicles with hand controls that customers without disabilities do not face. For example, the Hertz website does not clearly indicate which vehicles can be reserved with hand controls, "meaning that customers who require such controls must engage in a lengthy and frustrating process of trial and error in order to figure out which (if any) Hertz vehicles have this as an option."[310]

The complaint states that Hertz has refused to modify these policies and practices to ensure that people with disabilities have full and equal access to Hertz' car rental services, even after repeated requests that it do so from customers and potential customers who need hand controls.[311]

> *If you continue to encounter problems, it is important that you file a DOJ complaint. Without a record of multiple complaints, DOJ cannot assume that these violations are a pattern or practice within the industry.* (Problems With Rental Car Hand Controls, New Mobility, April 2, 2018)

D. U.S. Department of Justice Enforcement of Rental Car Complaints

The most recent DOJ action on hand controls in rental cars that is posted on its website is 30 years old. In 1994, Avis and DOJ entered into a settlement agreement resolving allegations that Avis had violated the ADA by failing to provide disabled renters with hand-controlled vehicles for the full range of vehicles that Avis made available to the general public.[312] The agreement requires Avis to use its "best efforts" to provide hand-controlled vehicles in five classes of vehicles. Avis agreed to provide hand controls with advance notice of (1) eight hours at major airport locations; (2) 24 hours at other rental locations that are open 24hours per day; (3) 24 hours at rental locations open until 11:00 o'clock p.m., seven days a week; and (4) 48 hours at all other rental locations. The agreement also urges all existing licensees to adopt the same policy; requires all new franchisees and those

The most recent DOJ action on hand controls in rental cars that is posted on its website is 30 years old.

renewing their contracts to adopt the policy; and requires it to train its staff at its corporate-owned rental locations. Avis also agreed to permit those who do not drive, such as people with visual impairments or seizure disorders, to be financially responsible under the rental agreement if they are accompanied by licensed drivers.

Based on the public comments and class action lawsuit describing the experiences of people with disabilities, NCD requested information from DOJ's Civil Rights Division on the number and types of ADA complaints it had received about rental car companies during the past several years. DOJ responded that the DOJ receives thousands of citizen complaints through its online reporting portal, it does not track disability complaints in a way that would allow it to accurately or readily respond to the question, it does not sort complaints as against transportation providers or by type of transportation provider, and it does not keep track of the types of complaints it receives or the specific types of entities that are the subject of complaints.[313]

In *Dahlberg v. Avis Rent a Car System*, an older private lawsuit, a customer sued for disability discrimination under the ADA for failing to have vehicles with hand controls ready after they were reserved on four different occasions, among other acts, including not providing hand controls on certain vehicles.[314] The plaintiff alleged (1) violation of the ADA through its conduct toward him, (2) violation of ADA by breaching the 1994 DOJ settlement agreement and 1996 amendment, and (3) breach of contract with Dahlberg as an intended third-party beneficiary to the DOJ settlement agreement and the 1996 amendment. For relief, he asked the court to direct Avis to comply with the settlement agreement and the 1996 amendment, but the court refused, finding that the language of the settlement "clearly suggest that the parties intended for the Justice Department to retain for itself the duty of ongoing supervision and enforcement of the Settlement Agreement and the 1996 Amendment, and did not intend for the beneficiaries of the Settlement Agreement and the 1996 Amendment to have that ability."[315] This decision would require the plaintiff to file a complaint with DOJ to enforce Avis' responsibilities. The Eastern Paralyzed Veteran Association and the National Spinal Cord Injury Association both filed motions to file briefs in support of the plaintiff.

E. Recent Federal Regulatory Action on Hand Controls in Rental Cars

As more automobile manufacturers began installing air bags underneath the steering wheel to protect the knees and legs during a collision, car rental agencies were unable to install hand controls without disabling these airbags because of a provision in the National Traffic and Motor Vehicle Safety Act that prohibits a rental company (and other entities) from knowingly make inoperative any part of a safety feature of a vehicle unless it has an exemption from NHTSA.[316] To help make rental cars available to people who require hand controls, in March of 2022, the U.S. Department of Transportation, National Highway Traffic Safety Administration (NHTSA) issued a federal rule that permits rental car companies to disable a knee bolster air bag, on a temporary basis to permit the temporary installation of hand controls.[317]

Chapter 6. Developments and Barriers in the Accessibility of Autonomous Vehicles

Automated vehicles have the revolutionary potential to help seniors and people with disabilities get around more easily—but we must ensure that accessibility is part of the conversation from the very beginning.[318]

A. Introduction to Autonomous Vehicles and the Disability Connection

The rapid growth of AV technology has widespread implications for the nation's ground transportation systems. In addition to having the potential to decrease the thousands of deaths caused each year due to human choices and behavior, AVs have long been recognized as a mode of transportation that could solve the transportation challenges millions of people with disabilities who either cannot drive or do not drive and as a result experience daily barriers to societal participation. Wheelchair users who require WAVs to travel have unique challenges in ground transportation given the lack of WAVs in most communities and the high cost to purchase a converted personal van converted for wheelchair access.

The most recent NHTA, discussed in Chapter 1 of this report, found that in 2022, 14.3% of people aged 18 to 64 years with TLDs lived in zero-vehicle households, 9.4% more than those without disabilities in the same age group.[319] Like people aged 18 to 64 years with disabilities, the share of people aged 65 years and older with disabilities living in zero-vehicle households was significantly larger (by 9.2 percentage points) than the share of people without disabilities in the same age group.[320] People with disabilities are also less likely to drive even if they have vehicles. Ninety-seven percent of people drive vehicles if they do not have disabilities, but only 60.4% drive if they do.[321]

...AVs are not automatically accessible to people with disabilities; they must be purposefully designed to be so.

Although it is common to see the statement that AVs can increase the mobility and quality of life of people with disabilities, it is crucial to point out that AVs are not automatically accessible to people with disabilities; they must be purposefully designed to be so. It is up to AV technology companies, automobile manufacturers, federal policymakers, and possibly Congress to ensure this result. National NHTSA recognized this in a recent proposed rule, stating that "ADS [Automated Driving Systems] technologies have the potential to . . . provide accessible transportation for people with disabilities. . . . However, positive

outcomes are not inevitable. The impact ADS may have . . . will ultimately be the result of future engineering, deployment, policy, and other choices."[322]

NCD stressed the importance of accessible AVs in its 2015 report, *Self-Driving Cars: Mapping Access to a Technology Revolution,* pointing out that accessible AVs could alleviate transportation challenges faced by people with disabilities. NCD recommended that Congress pass legislation requiring full accessibility for all types of common and public use AVs and that it define a process that includes meetings with manufacturers, disability groups, and NHTSA; creation of a disability advisory committee for automation; delegation of the Access Board to develop accessibility standards; and that Section 504 of the Rehabilitation Act and the ADA be interpreted to require accessible AVs, with additional regulation by DOJ, if needed.[323] In 2018, the Consortium on Constituents with Disabilities (CCD), a coalition of national organizations advocating for federal public policy that ensures the self-determination, independence, empowerment, integration, and inclusion of people with disabilities, issued *Autonomous Vehicle Principles*, recognizing the potential of AVs to improve transportation access for people with disabilities if the vehicles and the surrounding infrastructure are fully accessible.[324] CCD recommended that all human-machine interface systems on AVs

be fully accessible to people with disabilities, including people with sensory, cognitive, and physical disabilities, and that lifts, ramps, and wheelchair securements must be available on common use and public transit AVs, including those operated by TNCs.

In addition to helping address longstanding barriers to transportation access for people with disabilities, a recent study by the National Disability Institute (NDI) found that accessible AVs would also create enormous economic benefits for the U.S.[325] NDI conducted a macroeconomic analysis in 2022 to see what the adoption of fully accessible AVs would mean for people with disabilities and for the country as a whole. The analysis revealed that in a "moderate scenario," adoption of fully accessible AV's could lead to 4.4 million jobs for people with disabilities, 9.2 million jobs to support those new jobs, $416 billion in income, an increase in the gross domestic product of $867 billion, an increase in economic output of $1.6 trillion, and $92 billion in federal tax revenue (Figure 13).

[A] recent study by the National Disability Institute (NDI) found that accessible AVs would also create enormous economic benefits for the U.S.

Although the societal benefit of AVs that are accessible to all is clear, currently, there is no federal requirement for accessible AVs, and limited attention is being given to including accessibility features in AVs by technology companies and vehicle manufacturers, raising the possibility that the next revolution in transportation will not be inclusive of millions of people with disabilities, widening longstanding transportation disparities and compounding transportation disadvantage.

B. U.S. Department of Transportation Policy on Autonomous Vehicles Accessibility for People with Disabilities

The U.S. DOT has been actively engaged in making AV policy during the past 10 years, focusing on issuing guidance over regulation. It has consistently held the position that AVs have the potential to revolutionize transportation for people with disabilities and has encouraged inclusive design, including for wheelchair users. This was evidenced most recently in the Notice of Proposed Rulemaking on AV STEP, which would require an entity that requests an AV STEP exemption to summarize vehicle features or modifications that are intended to promote the safe accommodation of passengers

Figure 13: Image of an AV with results of NDI's analysis of economic impact and job creation resulting from AVs accessible to people with disabilities.[326]

with physical, sensory, and cognitive disabilities, including passengers who use wheelchairs and other mobility equipment."[327] It also encourages entities to include accessibility features for passengers with disabilities and states:

> The availability of ADS-equipped vehicles with effective accessibility features would enable greater choice, independence, and access to needed transportation for people with physical, sensory, and cognitive disabilities, as well as others whose current transportation options are limited, such as older adults. However, these benefits cannot be realized without intentional inclusive design choices that consider the needs of such individuals.[328]

The U.S. DOT has been actively engaged in making AV policy during the past 10 years, focusing on issuing guidance over regulation.

Between 2016 and 2021, DOT issued five policy and guidance documents establishing an AV framework and best practices while providing flexibility to the AV industry in the development of AV technologies.[329] Each one of the documents states the potential of AVs to transform personal mobility and open doors to people with disabilities and aging populations that today have limited or impractical options. DOT encourages manufacturers and other AV entities to consider the full array of users and their specific needs through the development process.[330]

For example, in *Ensuring American Leadership in Automated Vehicle Technologies Automated Vehicles 4.0.*, DOT adopted 10 principles to protect users and communities, promote efficient markets, and facilitate coordinated efforts. In it, DOT states:

> AVs hold enormous potential to promote the independence, economic opportunities, and social well-being of older Americans and persons with disabilities by offering independent mobility for daily activities. Reducing transportation related obstacles would enable new employment opportunities for individuals with disabilities and could save billions annually in healthcare expenditures from missed medical appointments. Ensuring that AVs will meet the needs of Americans of all abilities will require carefully thought-out inclusive design to ensure widespread usability and market potential for persons with all types of disabilities—visual, auditory, cognitive, mobility, and others.[331]

In 2021, DOT issued the *Automated Vehicles Comprehensive Plan*, defining goals to achieve its vision for ADS. One of its principles is to enhance mobility and accessibility by supporting AV technologies that expand access to safe, affordable, accessible, and independent mobility options to all people, including those with disabilities and older Americans."[332]

C. Current Status of Testing and Deployment of Vehicles Equipped with Automated Driving Systems (Autonomous Vehicles)

The AV industry in the U.S. has grown rapidly during the past decade with every major automobile manufacturer and many technology companies currently developing, testing, and

deploying automated driving systems.[333] There is currently no specific place to find comprehensive information on AV activities, but to draw a picture of the AV industry's activity, a few websites are helpful. As of March 4, 2025, California's Department of Motor Vehicles alone reported issuing 30 testing permits for AVs (with a safety driver [334]); issuing 7 testing permits for AVs (without a safety driver) as of July 24, 2024; and authorized three companies to deploy driverless AVs.[335] NHTSA's AV Test Initiative webpage allows the public to view information voluntarily submitted by companies that shows AV testing in multiple states by multiple companies.[336] In addition, NHTSA has a webpage of reported AV crashes, showed approximately 56 companies road testing AVs or that had deployed them for commercial use in November 2024. The vehicles had varying levels of automation with uses such as robotaxis, shuttles, privately owned vehicles, and commercial trucks.[337]

D. Legal Frameworks for Autonomous Vehicles

Federal Laws and Regulation Impacting Autonomous Vehicles

The National Traffic and Motor Vehicle Safety Act (Safety Act) requires vehicles to meet the Federal Motor Vehicle Safety Standards (FMVSS) but allows NHTSA to grant exemptions from this requirement.[338] In 2015 the Fixing America's Surface Transportation (FAST) Act provided that:

> Certain prohibitions on manufacturing, selling, and importing noncomplying motor vehicles and equipment shall not apply to the introduction of a motor vehicle in interstate commerce solely for purposes of testing or evaluation by a manufacturer that agrees not to sell or offer it for sale at the conclusion of the testing or evaluation, and that before the enactment of this declaration: has manufactured and distributed motor vehicles into the United States that are certified to comply with all applicable federal motor vehicle safety standards; has submitted to DOT appropriate manufacturer identification information meeting specified criteria; and if applicable, has identified an agent for service of process.[339]

AV development has been facilitated by the FAST Act because many traditional automobile manufacturers have used the FAST Act exemption; however, NHTSA requires manufacturers and operators to report whenever certain vehicles are involved in a crash.[340]

Another option allows manufacturers to petition NHTSA for a temporary exemption from an FMVSS if the vehicles in which their ADS is housed are noncompliant with one or more FMVSS. This exemption temporarily allows manufacturers to produce nonconforming vehicles for sale or other commercial deployment, under one of four bases.[341] This option has been used by AV manufacturers that design and build vehicles that do not meet certain FMVSS requirements, (e.g., vehicles without steering wheels, wipers, visors, or other safety features that manufacturers believe are not necessary for AV operation but are required by the FMVSS for human-driven vehicles).

Most recently, NHTSA published a notice of proposed rulemaking that would establish a national program for ADS-equipped vehicles that operate or may operate on public roads in the

U.S. under NHTSA's oversight, referred to as "AV STEP."[342] For vehicles requiring an exemption from the FMVSS, NHTSA proposes a more efficient exemption process tailored to ADS-equipped vehicles. The proposed rule encourages eligible entities to include accessibility features for passengers in their vehicle designs. As proposed, AV STEP applications would have to include a summary of vehicle features or design modifications for vehicles intended to promote the safe accommodation of passengers with disabilities. In addition, NHTSA requests public comments on unique considerations related to vehicle attributes or classes, such as those relating to accessibility for people with disabilities, that should be incorporated into AV STEP, and on any safety data specific to the experience of passengers with disabilities that should be collected as part of the program.

The proposed [NHTSA] rule encourages eligible entities to include accessibility features for passengers in their vehicle designs.

Federal and State Law Impact on Autonomous Vehicle Wheelchair Accessibility

As described in the taxi and TNC sections of this report, the ADA does not require companies providing taxi service to provide WAVs except in certain circumstances.[343] AVs used for taxi services, such as the robotaxis currently in public use by Waymo, are governed by the ADA taxi requirements. For AVs used for shuttle services, the ADA's accessibility requirements for shuttles apply.[344]

In January of 2024, H. R. 7126, the "Autonomous Vehicle Accessibility Act," was introduced in the U.S. House of Representatives by Arizona Representative Greg Stanton. If enacted, it would prohibit a state from issuing a motor vehicle operator's license for the operation or use of an ADS-equipped vehicle operating at Level 4 or 5 (fully autonomous) in a manner that discriminates on the basis of disability. The wording of the bill does not describe what would be considered discrimination or provide information on what the state should ask prospective licensees before making a determination.

State governments play an important role in facilitating AVs by retaining their traditional responsibilities for vehicle licensing and registration, traffic laws and enforcement, and motor vehicle insurance and liability regimes. States may impose requirements for AV companies operating within their boundaries.[345] By 2024, 42 states had enacted laws that place various requirements on fully autonomous AVs to operate on public roads.[346] A review of these laws in November 2024 revealed that none of 42 state AV laws enacted as of November 2024 required TNCs to provide wheelchair-accessible AVs in their fleets.

[N]one of 42 state AV laws enacted as of November 2024 required TNCs to provide wheelchair-accessible AVs in their fleets.

Nevada was the only state identified with both a general nondiscrimination provision and a provision requiring autonomous TNCs to allow

passengers to request a fully autonomous WAV and refer them to an alternate provider if they cannot provide one if one is available.

> An autonomous vehicle network company shall provide to each passenger an opportunity to indicate whether the passenger requires transportation in a fully autonomous vehicle that is wheelchair accessible. If the company cannot provide the passenger with transportation services in a fully autonomous vehicle that is wheelchair accessible, the company must direct the passenger to an alternative provider or means of transportation that is wheelchair accessible, if available.[347]

Although this is an important provision for any state law governing autonomous TNCs, it does not ensure that these TNCs do their part to provide their own accessible transportation options in the communities where they deploy vehicles. The referral requirement is the same model used by nonautonomous TNCs described elsewhere in this report that has been broadly criticized by those trying to obtain a WAV through TNCs, such as Uber and Lyft. There are not enough companies that provide WAVs and very few with the on-demand option that is available through a TNC app. The hope was that AV providers would add WAVs to the communities where they deploy AV taxi fleets to help improve transportation options for this population, not refer them to the same limited options or leave them with no options.

Such laws, although seeming to ensure nondiscrimination and equity, allow AV fleet owners to avoid any responsibility to provide their own WAVs offered by specialty transportation businesses or local cab companies, if any exist. If there is no such business in the area, the rider must seek a fixed-route bus and have the added challenges of getting to a bus stop and getting to their final destination if the bus does not stop there. This seriously disadvantages wheelchair users or simply leaves them without a transportation option again.

Nevada was the only state identified with both a general nondiscrimination provision and a provision requiring autonomous TNCs to allow passengers to request a fully autonomous WAV and refer them to an alternate provider if they cannot provide one if one is available.

In 2018, D.C. passed the Autonomous Vehicles Study Amendment Act, which called for a study that "evaluates and makes recommendations regarding the effects of autonomous vehicles on the District."[348] One of the required areas of study was the impact on D.C.'s disability community; however, the report has nothing describing an examination of the impacts on the disability community and no recommendations about the disability community. This required section is absent.[349]

E. Wheelchair-Accessible Autonomous Vehicle Development

The term "accessible" means different things and different contexts. For the purposes of this section, it means a vehicle, such as a minivan, that is converted or manufactured to include a ramp and a wheelchair securement device and

outfitted with AV technology. It also includes vehicles that are "purpose built" to be WAVs. Both types are referenced here as autonomous WAVS.

U.S. Department of Transportation's 2020 Inclusive Design Challenge: Advancing Accessible Autonomous Vehicle Design

In April 2020, DOT opened its Inclusive Design Challenge, a national prize competition seeking design solutions to make future AVs more accessible to people with disabilities.[350] The competition sought innovative design solutions that enabled people with physical, sensory, and cognitive disabilities to use AVs to access jobs, healthcare, and other critical destinations. Eligible entrants were academic and research institutions, the business sector, and technology companies, and their entries could be hardware or software ideas intended to enable independent use of AVs by people with disabilities. As part of the Challenge, DOT encouraged teams to seek input from the disability community, industry, and research community to understand user needs and industry dynamics. "By ensuring that AVs are designed to be inclusive, DOT expects that the Challenge will help to enhance future access to critical services, including medical care, for people with disabilities."[351]

In April 2020, DOT opened its Inclusive Design Challenge, a national prize competition seeking design solutions to make future AVs more accessible to people with disabilities.

The winner, announced in 2022, was a team from Purdue University, with partners BraunAbility, Schaeffler, and Prehensile Technologies, who created a prototype of a wheelchair-accessible fully AV called EASI RIDER.[352] The vehicle contained an in-floor ADS-DV ramp design, an automatically deploying "Smart Ramp," an automated wheelchair securement system, and an on-board user interface that will provide accessibility features that cater to people with a wide range of disabilities (Figure 14).[353]

Brad Duerstock, a professor of practice in industrial engineering and biomedical engineering at Purdue University who led the EASI RIDER team, described watching smartphones and other types of technology developed but not usable for people with disabilities until years after it was available to the general public and wanting to change that for AV technology, so that when AVs are put in use, they will accommodate everyone.[355] "It's really the wrong way to go to figure out how to adapt technology for a wheelchair user after already developing the technology," he said.[356] He suggested identifying minimum accessibility requirements and creating standards based on the requirements for AV design.

Since winning the Inclusive Design Challenge, some of the Purdue University team have been working on a grant-funded project with a Rehabilitation Engineering Research Center to create an assessment tool on the essential accessibility design features that need to be incorporated into AVs to make vehicles inclusive or inclusive ready (how vehicles produced by manufacturers can be easily modified for wheelchair accessibility post production).[357] His top suggestions for federal regulators regarding AVs for public transit and personal use vehicles were (a) manufacturing requirement of floor to

Figure 14: Photo of the EASI RIDER wheelchair-accessible autonomous vehicle with open sliding doors and a deployed side-entry ramp. Photo credit, Purdue University Engineering website.[354]

ceiling height of at least 59 inches from floor to ceiling; (b) an autonomous universal docking station that recognizes different wheelchair sizes; and (c) a universal tool to interact with the vehicle, such as an phone app that allows a user to plug in a destination, open the door, deploy the ramp, and a video feed showing the outside of the vehicle so the passenger can make sure the vehicle is parked in a way that the ramp can safely be deployed.

General Motors: Cruise – The First Company to Build a Wheelchair-Accessible Autonomous Vehicle for Public Transit

In 2016, General Motors (GM) bought a majority stake in the AV company Cruise. Since then, GM invested billions of dollars in Cruise to further develop, test, and deploy its AVs. In 2020, GM introduced a concept for a fully driverless vehicle design for Cruise, called the Cruise Origin, which would not have a steering wheel or other driving features meant for human drivers. Therefore, GM needed to seek an exemption from the FMVSS to allow Cruise Origin vehicles to be tested and deployed for passenger service on public roads. Cruise also developed the Origin WAV as the wheelchair-accessible version of Cruise's Origin. Cruise unveiled a fully built and operational Origin WAV prototype at an event in San Francisco in 2023 (Figure 15).[358] This model was "purpose built," that is, built from the ground up with wheelchair access as the goal. It was modified to include a retractable ramp, as well as added space inside

Cruise also developed the Origin WAV as the wheelchair-accessible version of Cruise's Origin. Cruise unveiled a fully built and operational Origin WAV prototype at an event in San Francisco in 2023.

Figure 15: Image of Cruise Origin autonomous wheelchair accessible vehicle. Image credit, United Spinal Association website.[361]

and floor clamps for wheelchair users. The vehicle was the product of three years of development and testing between Cruise, GM, and its partners in accessible vehicle design at BraunAbility and Q'Straint.[359] The company also created an advisory council on accessibility, which includes dozens of advocates to provide input into the vehicle design.[360] Cruise aimed to launch the vehicle in 2024, starting with a pilot program for a handful of users.

In 2022, GM formally submitted a request to NHTSA to exempt the Cruise Origin from parts of the FMVSS.[362] Later that year, NHTSA responded to GM's request for exemption by issuing a notice soliciting public comment. In 2023, after the public comment period closed, NHTSA sent a letter to GM asking for more information about specific technical points related to the exemption.[363] Soon afterward, GM responded to NHTSA's questions, including an explanation of its procedures for developing the Cruise Origin in partnership with advocates for people with disabilities, emphasizing aspects of the design of the Cruise Origin made to accommodate people with various disabilities.[364] Regarding disability accessibility in particular, GM responded:

> To ensure compatibility with the specific needs of wheelchair users, our teams have been engaged in engineering analyses and targeted user research in close collaboration with experts and stakeholders across the accessibility community such as the United Spinal Association and the We Will Ride coalition. Initial prototypes have been reviewed in-person with wheelchair users, among others, to understand, evaluate and improve upon certain elements of the vehicle's interior design to afford maximum cabin maneuverability and to ensure the vehicle can accommodate a range of wheelchairs (both motorized and manual.[365]

Coincidentally, in the fall of 2023, an accident involving a Cruise AV dragging a pedestrian in San Francisco (not a Cruise Origin vehicle) led to the California Department of Motor Vehicles to suspend Cruise's permit to operate in California, which in turn led to Cruise significantly curtailing its overall operations. NHTSA opened an investigation of Cruise.

In June 2024, GM announced that it was halting its plans to produce the Origin vehicle due to uncertainty of federal approval after a two-year wait to receive a decision from NHTSA on its petition for an exemption and the statutory limit on the amount of vehicles that it could sell each year under DOTs current regulations.[366] Given the importance of this potential AV for the mobility of wheelchair users, this news was disappointing for the community of people with disabilities and was viewed as a missed opportunity for a landmark in wheelchair-accessible transportation.

In June 2024, GM announced that it was halting its plans to produce the Origin vehicle due to uncertainty of federal approval after a two-year wait to receive a decision from NHTSA on its petition...

In September of 2024, NHTSA announced a consent order with GM's Cruise to address incomplete reports by the company regarding crashes involving its AVs.[367] The announcement stated that two of the reports "failed to disclose the post-crash details of an Oct. 2, 2023, crash in which a Cruise vehicle equipped with an ADS and operating without a driver dragged a pedestrian approximately 20 feet before coming to a complete stop." GM withdrew its petition for an exemption in December 2024.[368]

Special Topic: An Autonomous, Universal Docking System Station for Wheelchairs is Needed for the Development of an Autonomous Vehicle Wheelchair-Accessible Vehicle

What's the purpose of a wheelchair-accessible AV if I need someone to be present to help me with that transportation? What is needed is universal docking station.[369]

In an interview with NCD, Mr. Duerstock discussed one of the challenges in producing a fully autonomous WAV—the need for a universal wheelchair securement system that can autonomously secure wheelchairs of different sizes and shapes without the need for human assistance. This was a challenge identified by all of the AV experts and stakeholders that NCD spoke with.

[O]ne of the challenges in producing a fully autonomous WAV [is] the need for a universal wheelchair securement system that can autonomously secure wheelchairs of different sizes and shapes without the need for human assistance.

He explained that the four-point tie-down is the standard method to securing a wheelchair in a motor vehicle: four straps attached to the chair and attached to the vehicle at four points. This is not independent for wheelchair users. Although docking stations have been around for decades, they are used in personal van

conversions and are customized to the owner's wheelchair. There are two parts—the station that is mounted to the floor and the shoe or pin that is mounted to the wheelchair that locks the chair into the station and releases from the station. He shared that because autonomous WAVs will be used for public use first, what is needed is a device that can independently secure wheelchairs chairs of different sizes.

Braun produced a system for the EASI RIDER prototype that automatically adjusted height; to attach to any wheelchair and then the docking system was automatically adjustable to the height of the wheelchair's mounting pin. The system would fit any chair that had a mounting pin designed for compatibility but no one is manufacturing these. He believes that any wheelchair that has a receiving pin could be secured in an AV that had a universally designed, automatic lock down to accept it. He ended by saying, "We need to move beyond the 'we can't do it' to 'we need to do it,' because if we don't develop wheelchair-accessible AVs, we're cutting out an important part of our population from being able to travel using this technology."

To tackle the issue of a universal securement device, SecureRide, a coalition of stakeholders is working on travel securement standards for wheelchair users that can be applied to personal vehicles, rideshares, and public transit, as well as planes, buses, rail and low-speed shuttles.[370] SecureRide will leverage a wide range of organizations with specific working knowledge of products, securement systems and requirements to fully develop, test and publish standards, and advocate for policies that support them. The organizations plan on expand to include a broad ecosystem of support with additional disability and veteran's advocacy groups and networks, research universities, certifying bodies and standards groups, federal agencies, and the U.S. Congress.[371]

SecureRide will engage in three stages:

Stage 1: Concept development with cross-industry groups responsible for developing and delivering solution.

Stage 2: Engage broad ecosystem of organizations required to fully develop, test, and publish standards, as well as advocate for the policies that support them.

Stage 3: Deploy plan and engage with federal agencies and the U.S. Congress.

May Mobility – Leading the Autonomous Vehicle Industry in Providing Autonomous Wheelchair-Accessible Vehicle Microtransit

May Mobility, an autonomous microtransit company, was recognized as one of 2024's most innovative companies.[372] According to Nicole DuPuis, the company's policy and advocacy lead, the company is committed to creating accessible microtransit solutions and includes accessible vehicles at every site where it deploys.[373] It has standard vehicles and accessible vehicles; both types include auditory and visual cues and its accessible vehicles include an ADA compliant wheelchair ramp (Figure 16). Accessible design is incorporated into its processes from the very beginning; the company partners with wheelchair-accessible van company BraunAbility to modify Toyota Sienna Autono-MaaS (S-AM) vehicles to ADA-compliant autonomous vans.[374] The AVs have a rear entry for wheelchairs and space for two nonwheelchair riders and uses a safety driver to assist wheelchair users to enter, secure and release passenger's wheelchairs, and deboard the vehicles.[375] Ms. Dupuis

describes May Mobility as a company that is always seeking to learn and improve its designs and user experiences by working with leaders in accessibility, including BraunAbility and the University of Michigan Transportation Research Institute, which have done a lot of work in accessibility design, and these collaborations have helped it make strides in leading the AV industry toward greater inclusion and accessibility.[376] The company recently launched an advisory group called AV accessibility advocates with the goal of an ongoing conversation to ensure that its AV technology continues to be developed and applied to maximize the independence and safety of people with disabilities.[377]

In September 2022, the company launched a public transit project using these wheelchair-accessible AVs in rural Grand Rapids, Minnesota, to demonstrate how AVs can successfully be used for public transportation in rural, wintry settings using its fleet of five AVs, including three wheelchair-accessible, ADA-compliant vehicles.[378] The service has expanded mobility access for the Grand Rapids community by complementing the town's existing fixed-route bus lines and providing rides on weekday nights and weekends when other options weren't available.[379] The company's AVs are working in Detroit, Michigan; Miami, Florida; Arlington, Texas; Grand Rapids, Michigan; Peachtree Corners, Georgia; and Martinez, California. It previously augmented public transit in Sun City, Arizona; Ann Arbor, Michigan; Grand Rapids, Michigan; Indianapolis, Indiana; and Fishers, Indiana.[380]

Starting in Atlanta in 2025, May Mobility and Lyft are beginning a multi-year partnership to bring AVs to the Lyft platform.

Starting in Atlanta in 2025, May Mobility and Lyft are beginning a multi-year partnership to bring AVs to the Lyft platform.[381]

Other Autonomous Vehicle Companies' Efforts Toward Autonomous Wheelchair-Accessible Vehicle Provision

Waymo

In 2024, Waymo announced that it was "open to everyone" in San Francisco and Los Angeles.[383] Waymo offers rides in Phoenix, Arizona, and Austin, Texas, as well.[384] However, Waymo does not have any WAVs in its fleet and none in development. Waymo's AV, the Waymo One, is a Jaguar I-PACE, a small car (Figure 17). Some users of folding wheelchairs may be able to transfer into the vehicle, but the opening to the back door is small. Stowing a chair would require pulling it over one's body into the seat or traveling with a companion who can stow the wheelchair.

In 2024, Waymo announced that it was "open to everyone"… [h]owever, Waymo does not have any WAVs in its fleet and none in development.

Waymo offers riders a WAV option on its app that connects the rider to a third-party provider of WAV service.

Although not investing in autonomous WAV technology, Waymo launched an Accessibility Network to partner with and seek input from disability-related

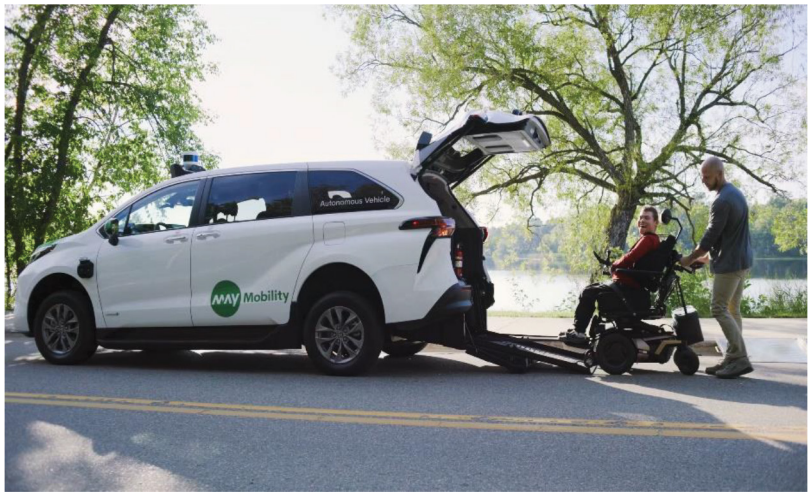


Figure 16: Photo of a driver and wheelchair user boarding May Mobility's wheelchair-accessible AV. Photo credit, May Mobility website.[382]

organizations advocating for people with physical, visual, cognitive, and sensory disabilities.[386] Waymo works with member organizations to conduct user experience research, test product prototypes, and receive insights and feedback about existing and future accessibility features.[387]

Waymo has developed a suite of accessibility features:

- Minimize walking time: Riders have the option to turn on an accessibility feature called minimized walking time, which Waymo reports was specifically built for users with disabilities in mind. Passengers may turn on the "minimized walking time" feature to ensure that the Waymo vehicle takes extra time to circle the block, so they do not need to cross the street to access the car.
- Inclusive wayfinding: Turn-by-turn walking directions are available when trying to locate either the vehicle at the beginning of the ride or a user's destination after they have been dropped off. Member organizations, National Federation of the Blind and Lighthouse for the Blind and Visually Impaired of San Francisco, helped recruit people to participate in product testing.
- Purpose-built car sounds: Waymo developed the ability for a user to press a button in the app to honk the car horn or play an enjoyable melody to help a user orient themselves in relation to the vehicle and partnered with organizations representing people who are blind in the development of the feature.
- Rider Support chat feature for passengers who are Deaf and Hard of Hearing: Riders who are Deaf and Hard of Hearing are able to contact our Rider Support team with a chat feature instead of a voice call. The National Association of the Deaf provided input during the development of this feature.
- Rider Support training for riders with epilepsy: The Epilepsy Foundation of

Figure 17: Photo of the Waymo One Robotaxi. Photo credit Waymo website.[385]

America provided feedback and input for Waymo's Rider Support team on how riders who have epilepsy may have unique needs and support requests.

Waymo representatives informed NCD that the Waymo One has a trunk, unlike other AVs to allow for wheelchair storage, and that the company wants to make sure that it is constantly collecting feedback and using that feedback to constantly improve its service for all riders.[388]

Zoox

Zoox, an AV company, joined forces with Amazon in 2020. It has manufactured a robotaxi from the ground up (purpose built). In an interview with NCD, Zoox representatives explained that the robotaxis, after being deployed, will not be for individual purchase but will operate similar to a ridehail service, like Uber and Lyft.[389] The company uses Toyota Highlanders outfitted with AV technology to map the cities where the purpose-built robotaxis will eventually operate: Seattle, Washington; Las Vegas, Nevada; Miami, Florida; and Austin, Texas.[390] After the mapping of those cities is complete, the information is transferred to the purpose built robotaxis that will be providing fully driverless rides in these cities. The robotaxi has no steering wheel, no brake pedal, and no accelerator. It has four seats that face each other and sliding doors that open on the curbside (Figure 18).[391]

The vehicle is not wheelchair accessible; however, Zoox representatives told NCD that it recognizes the importance of offering a service that serves everybody. The company has ideas about adding a ramp, enough space wheelchairs to turn around, and a universal docking system. When the robotaxi is in service, Zoox plans to initially partner with a third party to provide WAV service for its riders as it continues to build new Zoox vehicles with that option.[393] Zoox further relayed that it is dedicated to ensuring that Zoox is accessible for everyone through future generations of vehicles, "including tackling the tough challenge of self-securement with all the different types of wheelchairs and wheelchair users."[394] Zoox plans to use third parties to provide WAV service through its app with similar pricing and wait times.[395]

[Zoox] has ideas about adding a ramp, enough space wheelchairs to turn around, and a universal docking system.

Figure 18: Picture of the Zoox, purpose-built, fully autonomous robotaxi. Photo credit, Zoox website.[392]

Aurora

Aurora was established in 2017 as an AV company, conducting its first demo in 2019. Aurora has been primarily a trucking company, but in 2020, it purchased Uber's AV business.[396] As part of the deal, Aurora's self-driving cars will eventually operate on Uber's ridehailing platform. Uber will invest $400 million in Aurora. Aurora is currently using Toyota Siennas, one of the most commonly retrofitted vans for wheelchair users, to test its "Aurora Driver" AV technology (Figure 19).[397] Its website states that it is providing a much-needed transportation service for those who cannot drive, and that "For so many of us, our roads and the vehicles we drive on them embody the promise of independence. . . . But for millions of people, that promise is out of reach. We are building the Aurora Driver to offer rides through ride-hailing networks, making getting around easier and more enjoyable for everyone."[398] And the section "Accessibility for All," promises that through its "reliable supply of autonomous ride-hailing vehicles, everyone will be able to more easily get where they need to go, including those who aren't able to drive."[399]

Aurora explained to NCD in 2024 that currently, Aurora has no plans to include WAVs in its fleets of Sienna AVs when they are deployed for public use.

However, there is nothing on the website about inclusive design or accessibility. Although people with disabilities fit the profile of Aurora's target users well, transportation-disadvantaged individuals who often do not drive. A representative from Aurora explained to NCD in 2024 that currently, Aurora has no plans to include WAVs in its fleets of Sienna AVs when they are deployed for public use.[400]

In summary, today, a fully wheelchair-accessible autonomous taxi (robotaxi)—one that is purpose built for driverless ridehail service, which picks up a wheelchair user, secures the chair, and drives them to their destination, with no human interaction—does not exist. Cruise's Origin WAV came closest and was unique to this industry. The AV companies that we researched, other than May Mobility microtransit, are not developing AVs for public use that are wheelchair accessible.

Although efforts have been ongoing for decades to keep developers of AV technologies aware of the transportation needs of people with disabilities, in 2024, inaccessible fleets of robotaxis entered the ground transportation market, and plans for wheelchair-accessible AVs are non-existent for these companies.

AV companies offering WAVs through a third party is not a long-term solution. This conclusion

Figure 19: Aurora autonomous Toyota Sienna van. Photo credit, Aurora website.[401]

is based on years of experience with TNCs' use of this model in the jurisdictions that require TNCs to provide WAVs. It has not met the needs of wheelchair users largely because in most areas, there is a lack of WAVs. Unless AV companies manufacture autonomous WAVs, wheelchair users will be prevented from using this emerging transportation mode that is easily accessed by the general population without disabilities. Using third-party providers means wheelchair users will be relegated, as they are now, to the frustrating process of requesting a WAV that are in short supply across the U.S., causing long waits or no shows. This is not a solution for the ongoing shortage of wheelchair-accessible transportation for another important reason—as more nonaccessible AV robotaxis become increasingly available, adding to the large supply of inaccessible TNCs, the supply of WAVs necessary for wheelchair users will diminish even further than they have with the rise of TNCs, worsening the transportation situation for wheelchair users, who already have limited options.

[T]oday, a fully wheelchair-accessible autonomous taxi (robotaxi)—one that is purpose built for driverless ridehail service, which picks up a wheelchair user, secures the chair, and drives them to their destination, with no human interaction—does not exist.

Full Findings and Recommendations

Findings

Although some bright spots exist for WAV public transportation, such as public private partnerships, and microtransit companies, many barriers prevent the progress needed to provide an adequate number of WAVs for wheelchair users who require them to travel. The lack of accessible ground transportation options for people with mobility disabilities has harmful impacts, which intersect across all areas of life, resulting in social exclusion; low workforce participation; lower educational achievement; poverty; health disparities; and impeded ability to parent, to participate in recreation, and to enjoy the independence that most individuals enjoy as a matter of course.

People with disabilities are much more likely not to drive, own a vehicle, or have transportation options available to them that meet their needs. The 2017 and 2022 NHTS found that millions of people with TLDs stay at home and are far more likely than people without disabilities to be unemployed and live in poverty.

TNCs, such as Uber and Lyft, have grown exponentially since NCD's 2015 report, causing a ground transportation revolution that has greatly increased the convenience and availability of on-demand rides, now having 80% or more of the ground transportation market, once held by taxis, providing multiple millions of trips each day in the U.S. But not all Americans benefit equally from this progress—TNCs only provide WAV service in about 10 U.S. cities, leaving thousands of communities and millions of wheelchair users without WAV service.

The tremendous growth of TNCs was aided by years of minimal regulation and low entry costs for drivers compared with the highly regulated taxi industry with high up-front costs. As taxi drivers left to work for TNCs, the taxi drivers and taxi WAVs that were heavily relied on by WAV users diminished, leaving few or no options for on-demand, door-to-door service in many communities.

Where taxi WAVs exist, they often sit unused unless adequate incentives are provided to level the playing field with sedans. This is an ongoing issue that jurisdictions attempt to remedy by imposing surcharges on TNC and taxi rides to fund incentives to offset the extra

(continued)

Findings: *continued*

expenses of owning a WAV (e.g., reimbursing funds expended to purchase or convert a van, fuel subsidies, insurance, and licensing fees), with mixed results.

The ADA and its implementing transportation regulations do not provide protections that adequately address the needs of people who require WAVs to travel by taxis or TNCs. There is no minimum requirement for WAVs by taxis or TNCs. This has resulted in a lack of WAVs except in a few cities where state and local laws require them and in federal lawsuits against TNCs by wheelchair users, which have not resulted in increasing WAVs.

Microtransit companies have emerged as source for increasing on-demand WAVs by supplementing or replacing fixed-route buses and traditional paratransit in rural, suburban, and urban settings. Two companies discussed in this report have made positive impacts using both electric WAVs and autonomous WAVs that use safety drivers to assist wheelchair users in boarding and wheelchair securement.

NCD found barriers to obtaining federal data on wheelchair users in the DOT's NHTS. For example, some of the questions asked about people with disabilities on surveys resulted in information that was overgeneralized and did not match the reality of travel barriers for wheelchair users that are well established through other means. The gap in disability data was most pronounced at the DOJ, which was unable to provide basic data on transportation discrimination complaints filed with its Civil Rights Division, such as the number of complaints, the type of transportation provider that allegedly discriminated, the discriminatory act alleged, or complaint status, leaving a void of enforcement data on discrimination by taxis, TNCs, paratransit providers, hotels, and rental car companies regarding wheelchair access.

TNCs have expanded their role by partnering with transit agencies to supplement or fixed-route public transportation and paratransit. These arrangements trigger the ADA requirement to provide WAVs, but Uber and Lyft typically provide rides for ambulatory passengers in these partnerships, leaving transit agencies to provide WAVs.

The ADA transportation regulations require taxis to provide WAVs if they purchase or lease a vehicle other than an automobile unless the provide equivalent service, but the requirement for equivalent service appears nearly impossible to enforce without a manner to identify the purchases or leases made by individual taxi operators across the nation and therefore which taxi services are discriminating.

Findings: *continued*

Wheelchair users continue to encounter inaccessible airport, hotel, and rental car shuttles, experience barriers in obtaining hand controls in rental cars, and are provided limited vehicle model choices for rentals.

As AV technology has advanced, the needs of wheelchair users are not being addressed. The businesses that currently provide transportation to the public in fully autonomous robotaxis are using small vehicles and offer no autonomous WAV option. No AV business that we interviewed for this report has plans in place to design or manufacture an autonomous WAV. The imminent increase in robotaxis without models that are physically accessible to wheelchair users will result in the same lack of access as the largely inaccessible TNC model.

The FTA has been instrumental in funding pilots of partnerships between transit agencies and microtransit companies, taxis, and TNCs to provide on-demand paratransit and public transit. Successful pilots provided cost-savings on paratransit rides and increased customer satisfaction due to the removal of 24-hour reservation minimums and low-cost, same-day service.

Full Recommendations

Congress

Congress should pass legislation that requires all TNCs, taxi companies, and AV companies that deploy fleets of robotaxis to provide and maintain an active percentage of WAVs in each community where they operate. The legislation should also ensure that the companies bring WAVs into the community rather than using the communities' current supply to fulfill this requirement.

Federal Agencies

U.S. Department of Transportation (DOT)

DOT should incentivize the development of wheelchair-accessible AVs and an autonomous universal wheelchair securement system through competitions, like the 2020 Inclusive Design competition, or other funding mechanisms.

(continued)

Full Recommendations: *continued*

DOT should incentivize partnerships between AV tech companies and vehicle manufacturers for the design and manufacture of fully autonomous WAVs, and an autonomous universal securement system for wheelchairs and wheelchair users.

DOT Office for Civil Rights (OCR)

Due to the continued lack of WAVs provided by taxis and TNCs and autonomous taxis (robotaxis), DOT should amend its ADA regulation or issue a new regulation to require taxi services, TNCs, and autonomous taxi services to have a percentage of WAVs in service and available in each locality where they operate.

OCR should issue a rule requiring companies that provide autonomous taxis (robotaxis) to provide a percentage that are both autonomous and wheelchair accessible. This could be accomplished by manufacturing their own purpose-built autonomous WAVs, by lease or purchase of autonomous WAVs, or by contracting third-party autonomous WAV companies.

DOT Federal Transit Administration (FTA)

The FTA should:

Continue to fund innovative transit models inclusive of wheelchair users and other people with disabilities, including microtransit, a demand-responsive model that provides wheelchair-accessible public transportation and has proven to be a successful method for increasing transportation access for people with disabilities, even in rural areas.

Continue to support partnerships between public transit agencies and private transportation providers (e.g., taxis, TNCs and microtransit providers) to increase the availability of wheelchair-accessible, on-demand transit for people with disabilities, for first-mile/last-mile connections, door-to-door service, and to extend limited fixed-route bus service.

Allow more flexibility in transit agencies use of federal transit funding so that they may pursue operationally focused projects, like microtransit, which can increase wheelchair-accessible transportation, instead of limiting transit agencies' funding to capital expenditures. Rural areas, which frequently lack accessible transportation options, would benefit by greater flexibility to allow agencies to use on-demand microtransit to reach people with disabilities where bus routes do not exist or are not easy to access.

Incentivize or encourage transit agencies to improve paratransit by using technology such as dynamic routing software that uses algorithms and data to calculate the most efficient route

Full Recommendations: *continued*

for a vehicle to take between multiple points and reduces mileage, bringing down the cost of paratransit while improving the rider experience through more accurate ETAs and increased on-time performance.

DOT Federal Highway Administration (FHWA)

The FHWA should:

Improve the quality of disability data obtained by the NHTS by adding questions to help determine the amount of people who need wheelchair-accessible transportation. Much needed data could be obtained by the addition of the following questions:

- "Does this person require a WAV to travel?" (placed after the existing question, "Does this person have a condition or disability that makes it difficult to travel outside of the home?")
- For those who respond that they stay home because they have a disability or are homebound, adding the follow-up question, "Does the lack of wheelchair-accessible transportation prevent or contribute to staying home?"
- To obtain data on wheelchair users' use of ridehail and taxi services, the NHTS should ask those who indicate using ridehail or taxis whether they require wheelchair-accessible ridehail or taxi services.
- The FHWA should also explicitly add paratransit to the options people with disabilities use as a compensation strategy. Currently, the survey only has Dial-a-Ride as an example.[402] Paratransit is far more directly related to wheelchair users.
- Address potential language barriers by ensuring that households with limited English proficiency (LEP) are informed of the availability of DOT LEP resources to complete the survey.

The FHWA and the BTS should maintain a larger sample size for the NHTS to reach more households, reduce sampling errors, and obtain more precise and reliable data on people with mobility disabilities.

Although the NHTS offers useful data for examining the travel patterns of people with disabilities, it does not cover some important topics that would help them to understand their needs. For example, it does not ask respondents about trips they are unable to take, difficulties they experience while traveling, or vehicles modified with adaptive devices or equipment. The NTAUS, last conducted in 2002, asked about vehicular modifications,

(continued)

Full Recommendations: *continued*

including ramps, lifts, and seating modifications; raised roofs; lowered floors, modifications to the air bags; modifications to the steering controls; modifications to the acceleration or braking mechanisms; and more.

FHWA and BTS should administer the NTAUS again in the near future to improve the amount and quality of transportation data on wheelchair users and others who use motorized mobility devices.

National Highway Traffic Safety Administration (NHTSA)

NHTSA should:

- Prioritize the development of wheelchair-accessible AVs by streamlining paths to deployment and removing current regulatory barriers that impede the development of AVs.
- Process requests for exemption from the FMVSS by AV manufacturers in an expedited manner so that purpose-built AVs can be tested and refined for use in public transit without lengthy delay.
- Issue exemptions to manufacturers only after receiving manufacturer plans for disability accessibility in their AVs, including wheelchair accessibility.

U.S. Department of Justice, Civil Rights Division

Due to the continued lack of WAVs, the Civil Rights Division should vigorously enforce the ADA transportation regulation's equivalent service requirement for taxis. Any complaint filed with DOJ alleging a lack of WAVs by a taxi company should be closely examined to determine whether the taxi company was obligated to provide equivalent service.

The Civil Rights Division should educate the public on the right to equivalent service from taxi services under the ADA by posting information on its website and through other means.

The Civil Rights Division should:

Vigorously enforce the ADA against public accommodations, such as hotels, rental car companies, and transportation providers that provide shuttle services, including shuttles offered by TNCs, when they fail to provide wheelchair-accessible shuttles.

Issue joint guidance with DOT for on TNCs obligation to provide wheelchair-accessible shuttle services under the ADA.

Full Recommendations: *continued*

Publish an easy to understand document on the duty of taxis and shuttles to provide WAVs or equivalent service and how to file complaints.

Improve its online ADA complaint page to add transportation as one of the topics for which a complaint can be submitted. Currently, transportation is not mentioned on the page, although DOJ is charged with enforcing both Titles II and III of the ADA transportation regulations. People who do not know the scope of DOJ's enforcement authority may think that transportation complaints are not accepted due to this omission.

Improve its ADA complaint intake system so that it can search and track civil rights complaints by (a) ADA title, (b) type of accommodation or entity that allegedly discriminated, and (c) discriminatory act alleged. It should also be able to track complaint status, such as accepted, dismissed (with ground for dismissal), or mediated. This is necessary to enable DOJ to provide transparent, improved data to Congress, federal agencies, and the public on the implementation of its ADA enforcement authority and to track the types of allegations received, inform enforcement strategies, and help determine regulatory and guidance needs.

Publish, in its annual report, the number of complaints filed under Titles II and II, including transportation provider type and type of discrimination alleged.

State Legislatures

States should help increase the number of WAVs and keep them on the roads by:

Requiring TNCs to provide a percentage of WAV wherever they do business within the state, either through purchase or lease or by a third-party contractor, or

Establishing a surcharge on TNC rides that are submitted to a state WAV fund to provide taxi driver incentives to purchase or convert vans and keep them actively providing rides.

Transportation Network Companies

To ensure that wheelchair users have equal opportunity to this important transportation source, TNCs should provide WAVs in every area where they provide service.

TNCs that launch autonomous fleets should ensure that a percentage of its AVs are WAVs, even if the vehicles are only partially autonomous and use a safety driver.

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Full Recommendations: *continued*

Autonomous Vehicle Technology Companies and Autonomous Vehicle Manufacturers

To ensure that wheelchair users and those who use other motorized mobility devices are not left out of the rapidly growing AV transportation options offered to the general population (via, e.g., robotaxis), AV companies should partner with rehabilitation engineers, disability organizations representing wheelchair users, and vehicle manufacturers to develop a fully autonomous WAV that includes a universal securement device so riders can use AVs independently.

Until fully autonomous WAVs are available for public use, AV technology companies and vehicle manufacturers should ensure that autonomous WAVs using safety drivers are available for wheelchair users through lease or purchase or via contract with third-party autonomous WAV companies. This increases the number of electric, autonomous WAVs rather than relying on providing service through contracts with gas-powered WAV providers, which are in short supply across the country.

State Legislatures

States should help increase the number of WAVs and keep them on the roads by:

Requiring TNCs to provide a percentage of wheelchair-accessible vehicles wherever they do business within the state, either through purchase or lease, or by a third-party contractor, or impose a surcharge on TNC rides that are submitted to a state WAV fund to provide taxi driver incentives to purchase, convert, and maintain WAVs and keep them actively providing rides.

Cities and Counties

Cities and counties should pass ordinances requiring TNCs to provide WAVs as a condition of doing business in the jurisdiction or paying a surcharge per ride to the jurisdiction that funds incentives for taxi drivers to purchase, convert, and maintain WAVs and actively keep them providing rides.

Appendix A: Report Informants

Kelly Buckland, U.S. Department of Transportation
David J. Newburger, Office on the Disabled, City of St. Louis
Christina Curry, Mayor's Office for People with Disabilities, New York City
Stephen Brumbaugh, U.S. Department of Transportation
Stacey Bricka, U.S. Department of Transportation
Daniel Jenkins, U.S. Department of Transportation
Theresa Firestine, U.S. Department of Transportation
Stephanie Lawrence, U.S. Department of Transportation
Andrew Magaletti, U.S. Department of Transportation
David Knight, U.S. Department of Justice
Carol Tyson, Disability Rights Education and Defense Fund
John Morris, wheelchairtravel.org
Danica Gonzalves, Heather Ansley, Paralyzed Veterans of America
Alex Elegudin, Wheeling Forward
Jose Hernandez, Alexandra Bennewith, Kent Keyser, United Spinal Association
Brad Duerstock, Purdue University
Aparna Paladugu, Via
Heather Aijian, Stefania Yanachkov, Allison Drutchas, Waymo
Michelle Lee, Henry Greenidge, William Nixon, Lauren Smith, General Motors, Cruise
Ron Thaniel, Phil Pierce, Amazon Zoox
Sam Oji, Denise Isreal, Walton Harris, Kofi Bempah, Faisal Khan, Division of Transit Services, Montgomery County, MD, Department of Transportation
Jonathan Rogers, Faye Dastgheib, District of Colombia Division of For Hire Vehicles
Nicole Dupuis, Shylan Ghoujeghi, May Mobility
Jeff Farrah, Autonomous Vehicle Industry of America
Melissa Wade, Aurora
John Shutko, Westat, SAE

Transportation Panelists

NCD quarterly meeting, November 16, 2023: Peter Johnke, Vermont Center for Independent Living; Tina Guenette, RAMP (Real Access Motivates Progress); Katarina Torres Radisic, Boston Center for Independent Living

NCD quarterly meeting, February 8, 2024: Kelly Buckland, U.S. Department of Transportation; Juliet Shoultz, U.S. Access Board; Matthew Faiella, U.S. Department of Justice

Endnotes

1 NCD public comment received February 8, 2024.
2 42 U.S.C. § 12101(b)(1).
3 Id. § 12101(a)(3), (a)(8).
4 U.S. Census Bureau, *American Community Survey, Physical Housing Characteristics for Occupied Housing Units,* https://data.census.gov/table?q=car%20ownership. Accessed May 5, 2024.
5 U.S. Census Bureau, American Community Survey, *Disability Characteristics,* https://data.census.gov/table/ACSST1Y2019.S1810?t=Disability; https://www.cdc.gov/dhds/datasets/index.html; https://perma.cc/KX82-VMYD. The Census uses the same six disability questions as the Centers for Disease Control and Prevention. https://www.census.gov/topics/health/disability/guidance/data-collection-acs.html. Referenced links accessed May 5, 2022–2025.
6 Centers for Disease Control and Prevention, Disability *and Health Data System, Disability Estimates 2022*, https://dhds.cdc.gov/SP?LocationId=59&CategoryId=DISEST&ShowFootnotes=true&showMode=&IndicatorIds=STATTYPE,AGEIND,SEXIND,RACEIND,VETIND&pnl0=Table,false,YR7,CAT1,BO1,,,,AGEADJPREV&pnl1=Chart,false,YR6,DISSTAT,,,,,PREV&pnl2=Chart,false,YR6,DISSTAT,,,,,AGEADJPREV&pnl3=Chart,false,YR6,DISSTAT,,,,,AGEADJPREV&pnl4=Chart,false,YR6,DISSTAT,,,,,AGEADJPREV&t=1721771720786

The results were obtained by asking the following:

Are you deaf or do you have serious difficulty hearing?, Are you blind or do you have serious difficulty seeing, even when wearing glasses?, Because of a physical, mental, or emotional condition, do you have serious difficulty concentrating, remembering, or making decisions?, Do you have serious difficulty walking or climbing stairs?, Do you have difficulty dressing or bathing?, Because of a physical, mental, or emotional condition, do you have difficulty doing errands alone such as visiting a doctor's office or shopping? Respondents are defined as having any disability if they answered "Yes" to one or more of these questions. https://www.cdc.gov/ncbddd/disabilityandhealth/dhds/data-guide/status-and-types.html. Accessed April 13, 2024.
7 U.S. Census Bureau, *Demographic Turning Points for the United States: Population Projections for 2020 to 2060,* P25-1144, 2018, 3, February 2020, https://www.census.gov/content/dam/Census/library/publications/2020/demo/p25-1144.pdf. Accessed April 13, 2024.
8 U.S. Department of Transportation, Federal Highway Administration, Policy and Governmental Affairs, Office of Highway Policy Information, *National Household Travel Survey*, https://www.fhwa.dot.gov/policyinformation/nhts.cfm. Accessed April 15, 2024.
9 U.S. Department of Transportation, Federal Transit Administration, *Summary of Travel Trends 2009 National Household Travel Survey,* June 2011, p.1, https://nhts.ornl.gov/2009/pub/stt.pdf. Accessed April 15, 2024.
10 Bureau of Transportation Statistics, *Travel Patterns of Adults with Travel-Limiting Disabilities*, April 2024, https://www.bts.gov/sites/bts.dot.gov/files/2024-04/Travel%20Patterns%20of%20Adults%20with%20Travel-Limiting%20Disabilities_4_18_24.pdf. Accessed May 1, 2024.
11 NCD communication with the Federal Highway Administration on June 21, 2024, and May 28, 2024.
12 2017 NHTS data comes from Stephen Brumbaugh, U.S. Department of Transportation, Bureau of Transportation Statistics, *Travel Patterns of American Adults with Disabilities [Issue Brief]*, September 1, 2018, https://doi.org/10.21949/1524180; *Explore NHTS Data - Data Explorer (DE) Tool for 2017* at https://nhts.ornl.gov/. Referenced links accessed during May–August, 2024.

13 2022 NHTS data come from Bureau of Transportation Statistics, *Travel Patterns of Adults with Travel-Limiting Disabilities*, April 2024, https://www.bts.gov/sites/bts.dot.gov/files/2024-04/Travel%20Patterns%20of%20Adults%20with%20Travel-Limiting%20Disabilities_4_18_24.pdf. Accessed May 1, 2024, Large changes were seen in the disability data between the 2017 and 2022 NHTS results, including a drop of 8 million people indicating that they had a travel limiting disability in 2022. In addition, the 2022 survey could not reliably estimate the results of several disability-related questions that it reliably estimated in prior versions. FHWA explained that the responses to the 2022 survey, which was conducted during the COVID-19 health emergency, impacted responses to the survey because many people were staying home, and many more people chose not to respond to the question of whether they had a TLD as well. Some may have been in homes where a car was now present because a household member was working from home, many no longer needed transportation to see their healthcare providers because of telehealth, and delivery services for food removed the need to travel for this staple.

14 DOT informed NCD that respondents could select more than one mobility device, so the overall totals for 2017 and 2022 are 17.2 and 17.3, respectively. DOT email to NCD of March 24, 2025.

15 Comment on Quora by a power wheelchair user responding to "What are the problems that wheelchair users may face when using public transport?," https://www.quora.com/What-are-the-problems-that-wheelchair-users-may-face-when-using-public-transport.

16 Karen Lucas, Giulio Mattioli, Ersilia Verlinghieri, Alvaro Guzman, *Transport Poverty and Its Adverse Social Consequences*, Transport 169, no. 6 (2016): 353–365, https://doi.org/10.1680/jtran.15.00073. Accessed Dec. 2, 2024.

17 Id. NHTS 2022, Brumbaugh 2018.

18 Additional information is needed to determine if a lack of accessible transportation is the cause of people with disabilities staying home. The NHTS offers survey takers the following options for the reason a person stays home: sick, personal day, caretaking, worked at home for pay or not, out of country, bad weather, something else, and disabled or homebound. For those who respond that they stay home because they are disabled or homebound, it would be helpful to add a follow-up question on whether the need for wheelchair-accessible transportation prevents or contributes to the person's staying home or being homebound. This is needed because having a disability does not result, per se, in a person needing to stay home or being homebound. Motorized wheelchair users, motorized scooter users, and those who cannot transfer from their manual wheelchair into a vehicle require WAVs to travel. Similarly, the response that one stays at home because they are housebound begs the question of what makes them home bound. Being homebound is often a result of not having wheelchair accessible transportation for a wheelchair user.

19 The Rehabilitation Research and Training Center on Disability Statistics and Demographics, *2018 Annual Report on People with Disabilities in America*, https://transitionca.org/wp-content/uploads/2021/07/2018-Annual-Report-on-People-with-Disabilities-in-America.pdf. Also see, KFF, *Working-Age Adults with Disabilities Living in the Community,* January 4, 2024, https://www.kff.org/medicaid/issue-brief/working-age-adults-with-disabilities-living-in-the-community/#:~:text=Working%2Dage%20adults%20with%20disabilities%20are%20almost%20twice%20as%20likely,than%20other%20working%2Dage%20adults; Also see National Council on Disability, *National Disability Policy: A Progress Report,* 2017, https://www.ncd.gov/assets/uploads/reports/2017/ncd-2017-progress-report.pdf which describes the longstanding issue of poverty experienced by people with disabilities and its causes. All referenced links accessed on Jan. 9, 2025.

20 Center for Research on Disability, *Statistics Compendium*, Section 6: Poverty, 2022, https://www.researchondisability.org/ADSC/compendium-table-contents/section-6-poverty. Accessed Sept. 1, 2024.

21 Id. Brumbaugh 2018 at 3-4. A DOT staff person informed NCD that these two numbers were 20.5 and 5.2, unlike the 2018 report figures.

22 Statistic provided to NCD in email from DOT staff on March 24, 2025.

23 Prashanth S. Venkataram, Justin A. Flynn, Giovanni Circella, Daniel Sperling, *Challenges Facing People with Disabilities in Private Vehicular Transportation in the United States*, Institute of Transportation Studies, University of California, March 1, 2023, p. 7, https://escholarship.org/uc/item/1d00w31s. Accessed Aug. 29, 2024.

24 Id at 6.
25 NHTS 2022, p. 22.
26 Debra L. Brucker, Nicholas G. Rollins, *Trips to Medical Care Among Persons with Disabilities: Evidence from the 2009 National Household Travel Survey*, Disability and Health Journal 9, no. 3 (2016): 539–543, 541, https://www.sciencedirect.com/science/article/abs/pii/S1936657416000030?via%3Dihub. Accessed Sept. 5, 2024.
27 Karen Lucas, *Transport and Social Exclusion: Where Are We Now?* Transport *Policy* 20 (2012): 105–113, https://doi.org/10.1016/j.tranpol.2012.01.013. Accessed Sept. 5, 2025.
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National Council on Disability
1331 F Street, NW, Suite 850
Washington, DC 20004