



# ISSUE BRIEF

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## Travel Patterns of American Adults with Disabilities

by Stephen Brumbaugh

### Key Findings

#### *Travel-Limiting Disabilities*

- 25.5 million Americans age 5 and older have self-reported travel-limiting disabilities. 13.4 million are age 18 to 64 and 11.2 million are age 65 and older.<sup>1</sup>
- 3.6 million Americans with travel-limiting disabilities do not leave their homes because they are disabled or housebound.

#### *Household Demographics and Vehicle Ownership*

- Only one-fifth of people age 18 to 64 work full- or part-time if they have travel-limiting disabilities. This percentage declined from previous years. In contrast, over three-quarters of people without disabilities age 18 to 64 work.
- Slightly over half of people age 18 to 64 with disabilities live in households with annual household incomes under \$25,000 versus 15 percent of people without disabilities.
- Over one-fifth of non-workers and 12 percent of workers age 18 to 64 with disabilities live in zero-vehicle households.

<sup>1</sup> Numbers in this report may not add up exactly to their totals due to rounding.

### *Trip Frequency*

- Regardless of age, people with disabilities make fewer trips per day on average than people without disabilities. The daily trip rates for people with disabilities and without disabilities has declined over time.
- Workers with disabilities age 18 to 64 make fewer trips compared for workers without disabilities. This pattern is consistent for non-workers with disabilities compared to non-workers without disabilities.
- 7 out of 10 respondents with disabilities reduce their day-to-day travel because of their disabilities.

### *Mode Share*

- Regardless of age, people with disabilities travel by personal vehicles—as drivers or as passengers—for a smaller share of trips than people without disabilities.
- People with disabilities age 18 to 64 travel as passengers for a greater share of personal vehicle trips.

### *Technology*

- Several groups of technologies might help people with disability-related transportation limitations, but people with disabilities use them less.

## Introduction

An estimated 25.5 million Americans have disabilities that make traveling outside the home difficult. They accounted for 8.5 percent of the population age 5 and older in 2017. An estimated 13.4 million of these Americans—more than half—are adults age 18 to 64, the age group with typically high labor force participation. How do disabilities affect their travel for work, errands, socializing, and other activities?

This report uses data from the 2017 National Household Travel Survey (NHTS) to examine the daily travel patterns of American adults with travel-limiting disabilities and data from the 2001 and 2009 NHTS to illustrate trends over time. The NHTS asks individuals to self-report if they have a travel-limiting disability. While the report focuses on adults age 18 to 64, it also includes analysis for workers and non-workers, rural- and non-rural residents, and people age 65 and older.

The statistics in this report are based on weighted percentages and means. The comparisons in this report are statistically significant at the  $p < 0.05$  level.

## What Is the National Household Travel Survey and How Does it Cover Disability?

The NHTS, conducted by the Federal Highway Administration (FHWA), is the primary source of data on household travel behavior in the United States. FHWA conducted the latest version in 2017 and earlier versions in 2001 and 2009.

The NHTS asks respondents if they have “a temporary or permanent condition or handicap that makes it difficult to travel outside of the home.” If they respond yes, the NHTS asks follow-up questions about the mobility devices they use, such as canes or wheelchairs. It also asks follow-up questions about how the condition affects their travel—for example, by limiting their driving to daytime.

Some respondents have disabilities that might not limit travel, but the NHTS asks only about “travel-limiting disabilities.” The estimates in this report will therefore differ from disability-related

estimates from other sources, such as the Current Population Survey or the National Health Interview Survey. For the rest of this report, “people with disabilities” refers to people who report having travel-limiting disabilities. The NHTS also does not include people living in nursing homes or other group quarters.

## Who Reports Having Travel-Limiting Disabilities?

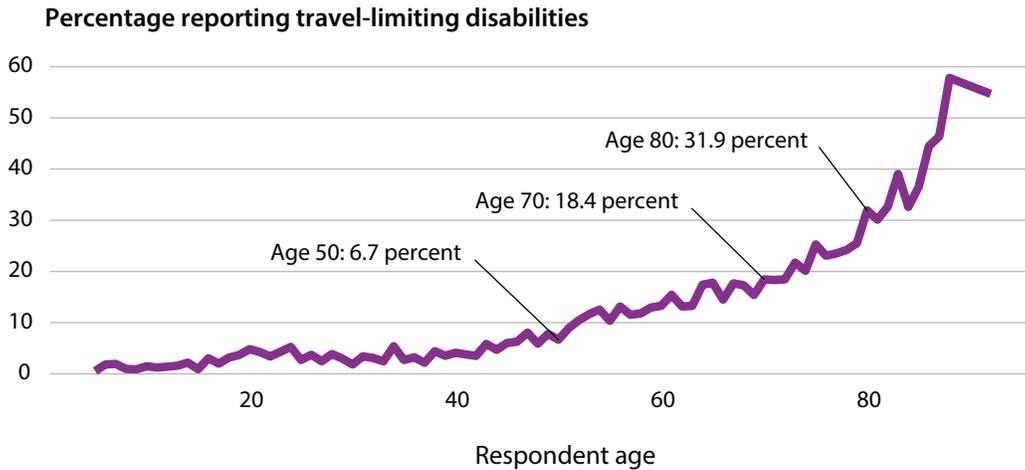
An estimated 25.5 million people have travel-limiting disabilities, accounting for 8.5 percent of the population age 5 and older in 2017. People with travel-limiting disabilities accounted for 8.5 percent of the population in 2001 and 10.2 percent in 2009. An estimated 13.4 million Americans age 18 to 64 have travel-limiting disabilities, accounting for slightly more than half of people with disabilities (52.7 percent) in 2017 and 6.7 percent of their age group. An estimated 11.2 million Americans age 65 and older also have travel-limiting disabilities; they accounted for 43.9 percent of people with disabilities in 2017 and 23.5 percent of their age group.

The percentage of people reporting travel-limiting disabilities increases with age (figure 1). Before age 50, the percentage is less than 10. It increases to 18.4 percent by age 70 and to more than 31.9 percent by age 80. Most of these disabilities are long-term: 79.1 percent report having a disability for more than 6 months and another 13.8 percent report having a life-long disability.

Over half (57.8 percent) of all respondents with disabilities use one or more medical devices:

- Walking canes (36.7 percent)
- Walkers (22.9 percent)
- Wheelchairs (11.6 percent)
- Motorized scooters (4.4 percent)
- Motorized wheelchairs (3.9 percent)
- Crutches (2.6 percent)
- White canes for visual impairments (1.3 percent)
- Seeing-eye dogs (1.1 percent)

**Figure 1 Disability Reporting Rate by Age (all ages), 2017**



SOURCE: U.S. Department of Transportation, Federal Highway Administration, 2017 National Household Travel Survey.

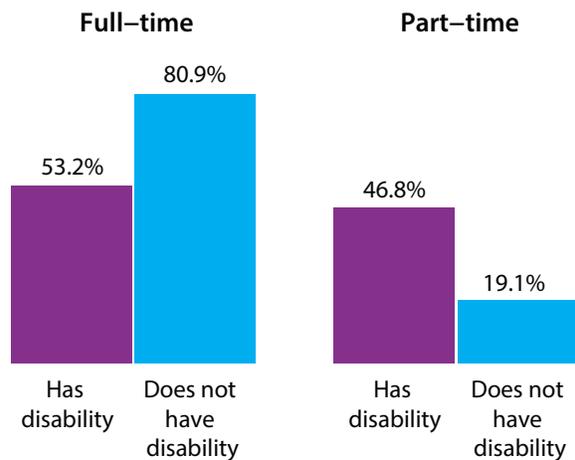
**How Do Employment and Household Income Differ for People with Disabilities?**

Travel is often essential to employment, and people with travel-limiting disabilities are less likely to have jobs. Only one-fifth (20.2 percent) of respondents age 18 to 64 work full- or part-time if they report having disabilities. In contrast, over three-quarters (76.6 percent) of people in this age group without disabilities work. A greater percentage of workers with disabilities work part-time—46.8 versus 19.1 percent of workers without disabilities (figure 2). A smaller percentage of workers with disabilities have jobs that allow them to work from home than do people without disabilities (7.5 v. 14.3 percent). The employment rate for people age 18 to 64 with disabilities (20.2 percent) was lower in 2017 than in earlier years surveyed (39.1 percent in 2001, 30.9 percent in 2009).

Household income is another major determinant of travel behavior. In 2017, over one fifth (22.2 percent) of people age 18 to 64 with travel-limiting disabilities live in households with annual household incomes under \$10,000 (figure 3). Slightly over half (51.4 percent) live in households with incomes under \$25,000. In contrast, only 5.1 percent of people without disabilities live in households with incomes

under \$10,000 and 15.7 percent live in households with incomes under \$25,000.

**Figure 2 Full- and Part-Time Employment Status for Workers by Disability Status (age 18–64), 2017**



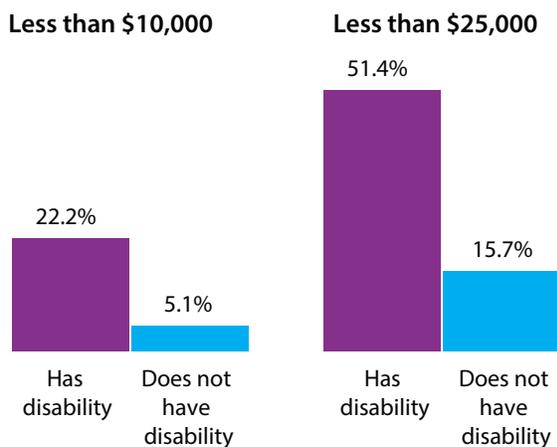
SOURCE: U.S. Department of Transportation, Federal Highway Administration, 2017 National Household Travel Survey.

**How Do Vehicle Ownership and Vehicle Access Differ for People with Disabilities?**

People age 18 to 64 with disabilities are less likely to own or have access to vehicles than people without disabilities (figure 4). Over one-fifth (22.5

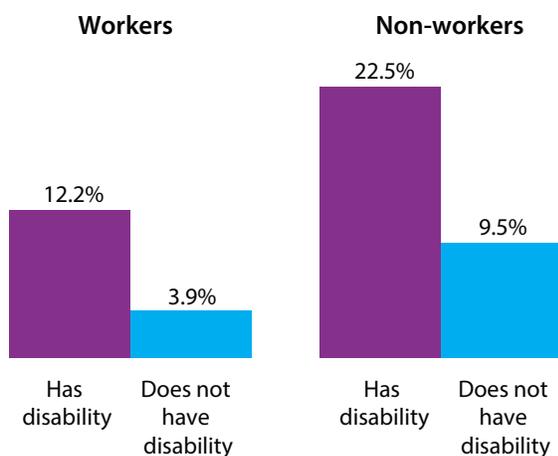
percent) of non-workers with disabilities and 12.2 percent of workers with disabilities live in zero-vehicle households. In comparison, 9.5 percent of non-workers without disabilities and 3.9 percent of workers without disabilities live in zero-vehicle households.

**Figure 3 Annual Household Income for Individuals by Disability Status (age 18–64), 2017**



SOURCE: U.S. Department of Transportation, Federal Highway Administration, 2017 National Household Travel Survey.

**Figure 4 People Living in Zero-Vehicle Households by Disability and Worker Status (age 18–64), 2017**



SOURCE: U.S. Department of Transportation, Federal Highway Administration, 2017 National Household Travel Survey.

People with disabilities, age 18 to 64, are also less likely to drive even if they have vehicles. Over nine-tenths (91.7 percent) of respondents drive vehicles if they do not have disabilities, but only 60.4 percent drive if they do.

### How Do People With Disabilities Travel Differently from People Without Disabilities?

Overall, people age 18 to 64 with disabilities make fewer trips per day on average than people without disabilities (2.6 v. 3.6 trips). Workers with disabilities make an average of 3.3 trips per day, while workers without disabilities make an average of 3.8 trips per day. The disparity is greater for non-workers: non-workers with disabilities make an average of 2.4 trips per day versus 3.2 trips per day for non-workers without disabilities.

People age 65 and older have different travel patterns from younger people, in part because they are more likely to be retired. At the same time, the Bureau of Labor Statistics projects that the number of people age 65 or older in the labor force will increase from 9.3 million in 2016 to 14.6 million in 2026. This increase reflects growth in the population age 65 and older as well as growth in labor force participation rates.<sup>2</sup> People age 65 and older with disabilities make an average of 2.1 trips per day versus 3.5 trips for people without disabilities.

### How has Daily Trip Making Changed Over Time?

People age 18 to 64 made fewer trips per day in 2017 than in 2001 or 2009 regardless of disability status. People age 18 to 64 with disabilities made an average of 2.6 trips per day in 2017, a lower amount than in 2001 (3.4 trips) or 2009 (3.2 trips). Those without disabilities made an average of 3.6 trips per day in 2017, a lower amount than in 2001 (4.5 trips) or 2009 (4.2 trips).

For people age 65 and older with disabilities, daily trip rates varied slightly from 2.0 trips in 2001

<sup>2</sup> Bureau of Labor Statistics Employment Projections, Labor Force Projections Tables 3.2, 3.3, and 3.4. <https://www.bls.gov/emp/data/labor-force.htm>

and 2009 to 2.1 trips in 2017. For people without disabilities, daily trip rates decreased from 3.9 trips in 2001 and 3.6 trips in 2009 to 3.5 trips in 2017.

### How Does Travel Vary by Trip Purpose?

People age 18 to 64 with disabilities take fewer trips than people without disabilities for work trips and social and recreational trips, but not for shopping and errand trips and medical and dental trips (figure 5). This is also true for people age 65 or older with disabilities (figure 6). Workers age 18 to 64 with disabilities, who are more likely to work part-time than workers without disabilities, take fewer work trips than workers without disabilities (0.9 v. 1.2 trips per day). Those workers also make slightly fewer social, recreational, and school trips (0.9 v. 1.1 trips per day).

The differences in trip rates for people with disabilities are larger for non-workers than for workers. Non-workers with disabilities make fewer

social, recreational, and school trips than non-workers without disabilities (0.8 v. 1.4 trips per day). They also make fewer shopping and errand trips (1.2 v. 1.6 trips per day). As described later, people with disabilities do not engage in more online activity as a potential substitute for trips.

### Who Does Not Travel and Why?

The NHTS asks people to record their travel for a single day. Over one-third (34.1 percent) of people age 18 to 64 with disabilities made zero trips on the survey day versus 13.4 percent of people without disabilities. The percentage increases to 37.3 percent for rural residents with disabilities versus 16.0 percent for rural residents without disabilities.

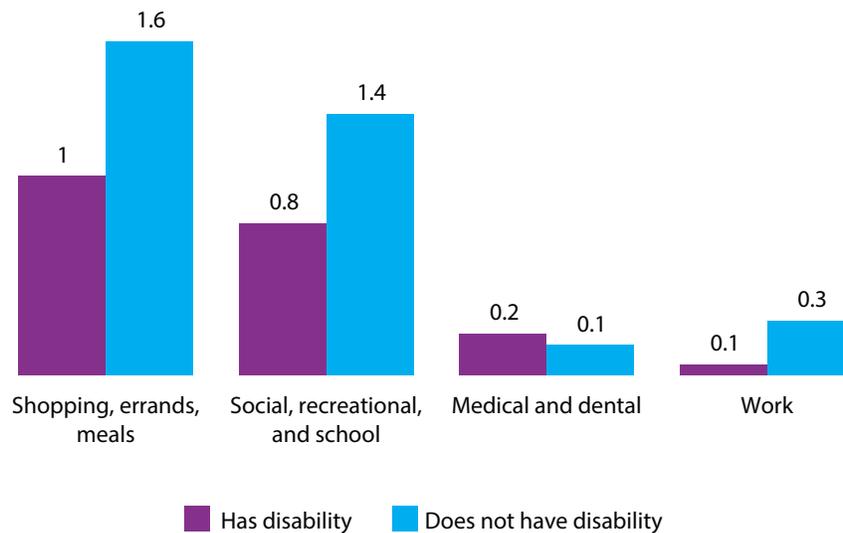
People may choose not to travel on a survey day for many reasons, but some stay home because they have no choice. Over one-third (36.5 percent) of people with disabilities who made

**Figure 5 Travel by Trip Purpose, Disability Status, and Worker Status (age 18–64), 2017**



SOURCE: U.S. Department of Transportation, Federal Highway Administration, 2017 National Household Travel Survey.

**Figure 6 Travel by Trip Purpose and Disability Status (age 65 and older), 2017**



SOURCE: U.S. Department of Transportation, Federal Highway Administration, 2017 National Household Travel Survey.

zero trips say that they stayed home because they have disabilities or are housebound.<sup>3</sup> That percentage translates to an estimated 1.7 million Americans age 18 to 64 with disabilities who do not leave their homes. They account for 46.1 percent of the 3.6 million Americans with disabilities who do not leave their homes.

### How Does Mode Choice Differ?

People use personal vehicles—as drivers or as passengers—for most trips regardless of disability status, but people without disabilities use them more often. People age 18 to 64 with disabilities use personal vehicles for 74.8 percent of trips; people without disabilities use them for 83.9 percent. People with disabilities travel as passengers for a greater share of personal vehicle trips than people without disabilities (38.9 v. 16.1 percent).

Figure 7 shows how mode share varies by worker status and disability status for people age 18 to 64. Workers without disabilities drive for more of their trips (73.6 percent) than workers with disabilities (54.5 percent). Similarly, non-workers

without disabilities drive for more of their trips (58.3 percent) than non-workers without disabilities (42.6 percent).

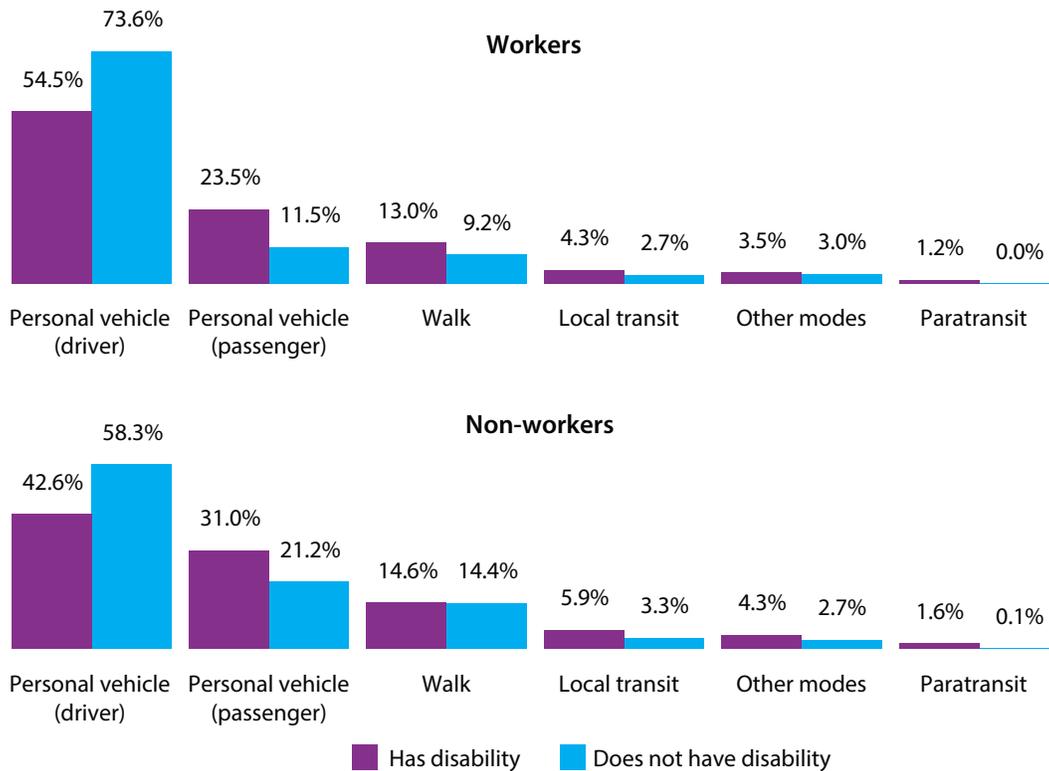
Walking is the second most common mode after personal vehicles. Workers age 18 to 64 with disabilities walk for a slightly greater share of trips than workers without disabilities (14.6 v. 13.0 percent). This finding may seem counterintuitive. One possible explanation is that workers with disabilities are more likely to live in zero-vehicle households than workers without disabilities (12.2 v. 3.9 percent).

People age 18 to 64 with disabilities use local transit (buses, subways, and commuter rail) for a higher share of trips than people without disabilities—4.3 versus 2.7 percent for workers and 5.9 versus 3.3 percent for non-workers. Transit agencies in the United States have been adapting vehicles and stations to make it easier for people with disabilities to use public transportation, as required by the 1990 Americans with Disabilities Act (ADA). Progress varies by mode. Overall, while most transit vehicles are ADA-compliant, a smaller percentage of stations are ADA-compliant.<sup>4</sup>

<sup>3</sup> A small percentage (1.2 percent) of people without travel-limiting disabilities who made zero trips also report having disabilities or being housebound. This finding seems contradictory, but respondents may have been unsure if their disabilities are “travel-limiting.”

<sup>4</sup> *Transportation Statistics Annual Report 2017*, published by BTS at [www.bts.gov/TSAR](http://www.bts.gov/TSAR), has detailed statistics on ADA compliance for transit vehicles and stations.

**Figure 7 Mode Share by Worker and Disability Status (age 18–64), 2017**



NOTE: “Other modes” includes bicycles, golf carts, recreational vehicles, school buses, private or charter buses, city-to-city buses, taxis and limos (including Uber and Lyft), rental cars, airplanes, boats, and ferries.

SOURCE: U.S. Department of Transportation, Federal Highway Administration, 2017 National Household Travel Survey.

Finally, paratransit and ride-hailing are two examples of *demand-responsive transportation services*. These services offer flexible routes and schedules and can fill gaps in regular transit service. Workers age 18 to 64 with disabilities use paratransit for 1.2 percent of their trips; non-workers with disabilities use it for 1.6 percent.

People age 65 and older use personal vehicles for 84.0 percent of their trips if they have disabilities (versus 74.8 percent for people age 18 to 64 with disabilities) and 86.1 percent if they do not (figure 8). Compared to people age 18 to 64, people age 65 and older are less likely to walk or take public transit regardless of disability status.

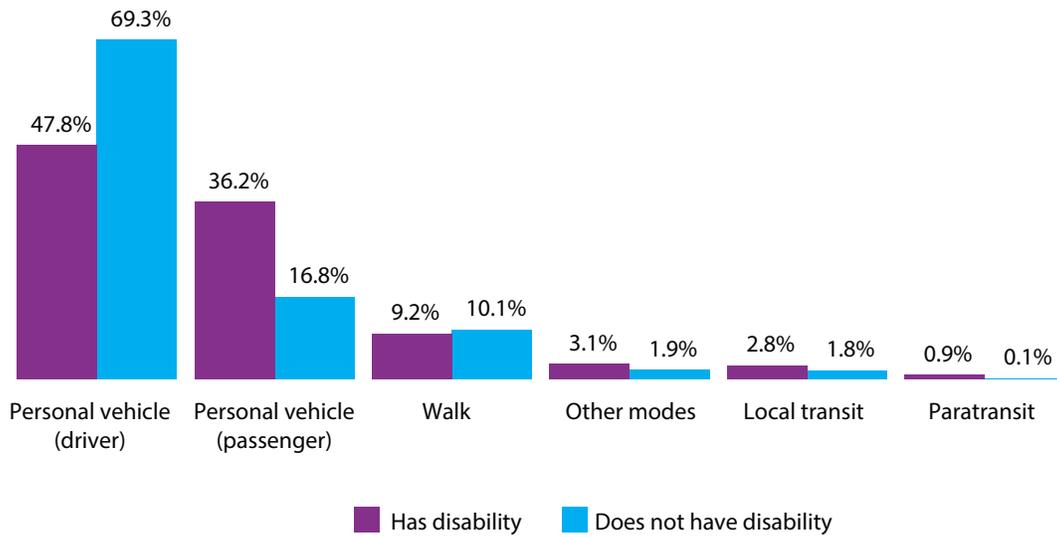
**How Do Trip Distance and Travel Times Differ?**

People age 18 to 64 with disabilities take shorter trips on average than people without disabilities (figure 9). Workers with disabilities travel an

average of 9.4 versus 12.0 miles for workers without disabilities. Non-workers with disabilities travel an average of 7.5 versus 9.5 miles for non-workers without disabilities. Despite taking shorter trips, non-workers with disabilities have slightly longer travel times, traveling an average of 23.3 minutes per trip versus 21.0 minutes per trip for non-workers without disabilities.

An estimated 2.5 million rural residents age 18 to 64 have travel-limiting disabilities, accounting for 7.2 percent of rural residents in that age group. Rural residents with disabilities travel shorter distances than rural residents without disabilities (10.9 v. 14.7 miles), as do urban residents with disabilities also travel shorter distances (7.4 v. 10.9 miles). The variation between these two differences is not statistically significant. Similarly, the differences in travel times between people with and without disabilities are not statistically significant for rural or urban residents.

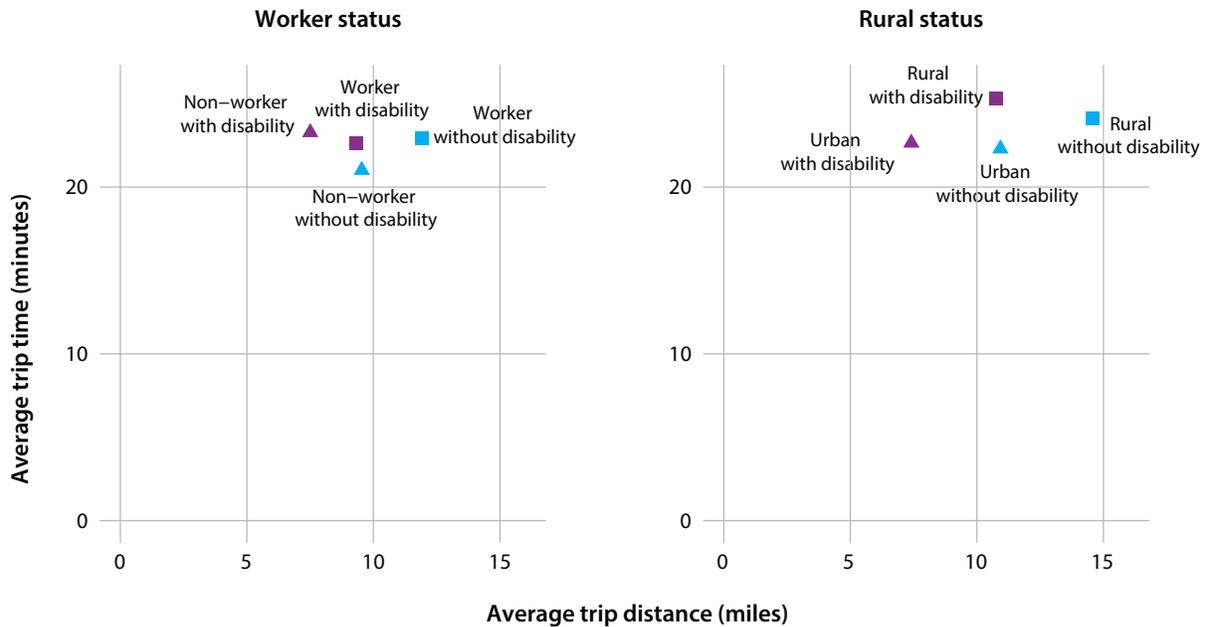
**Figure 8 Mode Share by Disability Status (age 65 and older), 2017**



**NOTE:** "Other modes" includes bicycles, golf carts, recreational vehicles, school buses, private or charter buses, city-to-city buses, taxis and limos (including Uber and Lyft), rental cars, airplanes, boats, and ferries. "Walking" includes travel by wheelchairs and scooters.

**SOURCE:** U.S. Department of Transportation, Federal Highway Administration, 2017 National Household Travel Survey.

**Figure 9 Average Trip Distance and Trip Time by Disability, Worker, and Rural Status (age 18–64), 2017**



**SOURCE:** U.S. Department of Transportation, Federal Highway Administration, 2017 National Household Travel Survey.

## How Do People with Disabilities Compensate for Transportation Limitations?

People age 18 to 64 with disabilities report using a range of strategies to compensate—at least in part—for transportation limitations (figure 10). These strategies include:

- Asking others for rides (44.3 percent)
- Limiting travel to daytime (22.6 percent)
- Using special transportation services such as Dial-a-Ride or reduced-fare taxis (12.3 percent)

In many cases, however, people with disabilities simply travel less often:

- Reducing day-to-day travel (70.6 percent)
- Giving up driving (21.6 percent)
- Using public transit less often (14.4 percent)

## In What Ways Might Technology Help People with Disability-Related Transportation Limitations?

Technology may help people with disability-related transportation limitations in three ways:

1. Technology can offer substitutes for trips—for example, by allowing people to work remotely or shop online.
2. Technology can connect people to paratransit and ride-hailing services.
3. Autonomous vehicle (AV) and other assistive technologies may someday help people travel who previously could not drive.

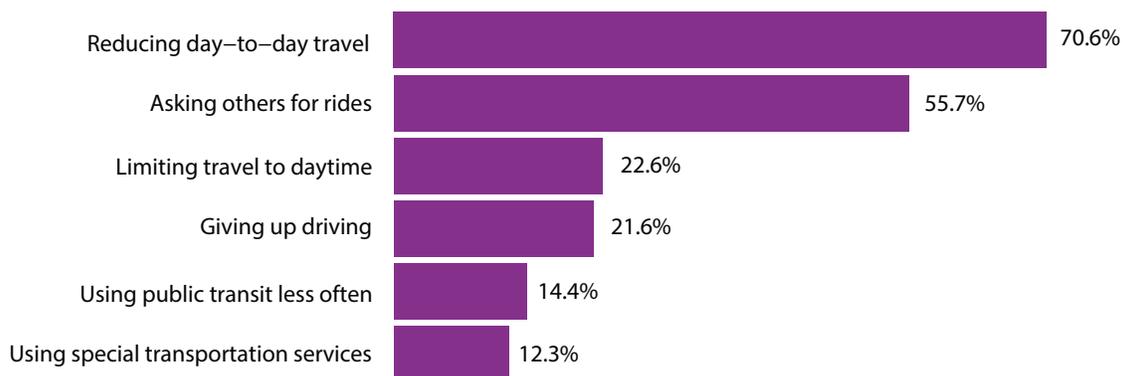
The NHTS does not ask about using technology to compensate for transportation issues. It does, however, have data showing that people with disabilities use related technologies less often than people without disabilities.

### Trip Substitutes

Some people may use the internet as a substitute for daily travel, including people without travel-limiting disabilities. For example, they may buy goods online instead of traveling to a store or may work online instead of commuting to an office.

People with disabilities use the internet for these purposes less often, however, than people without disabilities. People with disabilities made an average of 1.9 online purchases in the last month, while people without disabilities made an average of 2.9 purchases. In addition, a smaller percentage of workers with disabilities have jobs that allow them to work from home—7.5 versus

**Figure 10 Compensating Strategies for People with Travel-Limiting Disabilities (age 18–64)**



SOURCE: U.S. Department of Transportation, Federal Highway Administration, 2017 National Household Travel Survey.

14.3 percent. Finally, 82.1 percent of persons, age 18 to 64, with a medical condition live in a household where the internet is used daily versus 95.2 percent of persons in the same age range without disabilities.

### ***Ride-Hailing Services***

People age 18 to 64 with disabilities are less likely to use ride-hailing services than people without disabilities, despite using paratransit and taxis for a greater share of travel. While 12.4 percent of people age 18 to 64 without disabilities report using ride-hailing services at least once in the last 30 days, only 4.6 percent of people with disabilities report doing so. Some organizations, including transit agencies and healthcare providers, have begun subsidizing ride-hailing services for people with disabilities.

Most ride-hailing services use applications on smartphones or tablets. People with disabilities use these devices less often than people without disabilities. Over four-fifths (86.5) of people, age 18 to 64, without disabilities live in a household where a smartphone is used daily versus 66.5 percent for people in the same age range with disabilities. The gap narrows for tablets: 37.2 percent of people, age 18 to 64, without disabilities live in a household where one is used daily versus 30.2 percent of people in the same age range with disabilities.

### ***Autonomous Vehicle Technologies***

Existing vehicle technologies like wheelchair lifts or hand controls make driving possible for some people with disabilities; emerging AV technologies may make traveling possible for others as well. Two examples of existing AV technologies that help people with disabilities—and all drivers—are blind spot detection and rearview video systems.

At the same time, advanced technologies can also increase the cost of vehicles. In 2017 slightly over half (51.4 percent) of people age 18 to 64 with travel-limiting disabilities live in households with annual household incomes under \$25,000. In contrast, 15.4 percent of people without disabilities live in households with incomes under \$25,000.

### **Conclusion**

American adults with disabilities, like most Americans, use private vehicles for most of their daily travel, albeit to a lesser extent. They face additional mobility challenges because they have lower levels of vehicle ownership and vehicle access and live in low-income households. They often travel as passengers and thus rely on others for mobility. These challenges translate to lower levels of trip-making and shorter trip distances.

Technology might help address some of these transportation limitations, and emerging AV technologies might increase mobility for people with disabilities by making on-demand transportation and door-to-door service even more available. At the same time, people with disabilities use existing technologies less often.

The NHTS is a general travel behavior survey, and therefore focuses on the trips that people take. While the NHTS offers useful data for examining the travel patterns of people with disabilities, it does not cover some important topics. 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 2002 National Transportation Availability and Use Survey conducted by BTS, which focused on transportation-related issues for people with disabilities, asked these questions. Additional data collections and analysis will likely yield further insights into the travel behavior of people with disabilities.

### **About This Report**

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