

AFB American Foundation[®] for the Blind

Expanding possibilities for people with vision loss

Project VISITOR Phase Two

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ABSTRACT

This is the second phase of the project, "Visually Impaired Seniors' Independent Travel Opportunities and Resources" (Project VISITOR). In Phase Two, 81 older people with vision loss were interviewed by telephone to learn about their experiences using public or private transportation. Respondents were age 55 and over and blind or visually impaired (B/VI) from urban, urban cluster, and rural areas throughout the United States. They described their patterns of transportation use and the barriers they faced in using different modes of transportation. We found that respondents lacked transportation options, or faced significant barriers using available transportation. Over 40% of respondents reported they very often or often lacked transportation to do the things they needed or wanted to do. Most did not leave their house using transportation every day, although many said they would if they had access to transportation any time they wanted. Transportation in rural areas, where it existed, was much more limited in terms of the need to schedule in advance; limited times and days of operation; and jurisdictional coverage. Respondents were hopeful that transportation options will improve in the future, due to driverless¹ cars; the proliferation of rideshare services, which might be good options for some as they become more familiar with accessible smartphone technology to schedule rides; and the growing demand for transportation options as the population ages.

Introduction

A. Background

The ability to travel independently is necessary for employment; activities of daily living; preserving health; visiting family and friends; and participating in the community. Most people over age 65 say it will be extremely difficult to find alternative forms of transportation when they give up driving. Those who give up driving face major barriers and feel they can no longer do the things they need and want to do. According to a national survey by KRC Research (2018) of people over age 65 and those with disabilities, close to 9 in 10 of those who stopped driving said they have been negatively impacted. Many of the respondents reported feelings of isolation and dependence.

For people who do not drive, lack of access to transportation limits them from living their lives to the fullest. Without transportation, individuals face difficulties traveling to medical appointments, going grocery shopping, and socializing with family and friends. Mobility restrictions can adversely impact an individual's health status and quality of life if one cannot get to medical appointments, get to the store to buy food, or travel to visit family or friends. Older people who stop driving take 15% fewer trips to the doctor, 59% fewer shopping trips, and 65% fewer social, family, religious and other life enhancing trips than their urban counterparts. Half of older nondrivers do not leave their house on any one day (KRC Research, 2018).

The Bureau of Labor Statistics projects that the share of people aged 65 or over who are working or actively looking for jobs will rise from almost 20% in 2018 to over 23% in 2028, nearly double the 12% rate in 1998 (U.S. Department of Labor, 2019). The increased participation of nondrivers in the workforce will necessitate creative solutions to overcome their transportation barriers.

Older people in rural areas who do not drive more acutely experience problems as a result of not driving due to limited transportation options. Approximately 13% of older people in rural areas have no vehicle (Grantmakers in Aging, 2016). Medical transportation is often the highest priority for transit programs targeting older people within any community and these trips are generally about 9 miles longer in rural areas than in suburban or urban communities (Grantmakers in Aging, 2018). The rural transportation landscape has received comparatively less attention and funding for related research and development, primarily due to the perception

of a lack of economic feasibility as well as logistical challenges in rural communities. The net effect is that systemic change has been slow, and the challenges will become more acute with demographic changes in the coming decades (Grantmakers in Aging, 2018).

B. Transportation Challenges for People who are Blind or Visually Impaired

There are several definitions that are often used to describe individuals who do not have “typical” or “20/20” visual acuity. Visual impairment is the loss of functional ability to perform tasks that require vision, such as reading normal-size print or driving. The visual ability, or lack of ability, cannot be corrected with glasses, contact lenses, or other means. The term low vision generally refers to individuals who have a corrected visual acuity of 20/70 or less in the better eye. The term legal blindness means central visual acuity which does not exceed 20/200 in the better eye with correction or a limit to the field of vision in the better eye of no greater than 20 degrees. Individuals who are legally blind may have anywhere from a substantial amount of usable vision to no usable vision. Total blindness means complete or nearly complete vision loss. In this report, the term, “individuals with blindness or visual impairment (B/VI)” is used to encompass all these levels of vision loss (American Optometry Association, 2007).

Over 3.1 million non-institutionalized individuals age 65 or over in the United States have a visual impairment.¹ The proportion of Americans experiencing blindness or vision loss increases with age; among those 75 years of age and older, almost 1.9 million have a visual impairment. The increase in vision impairment with age is a consequence of age-related vision conditions including macular degeneration, diabetic retinopathy, and glaucoma. In general, the prevalence of vision loss is higher among women and correlates with poverty, which means that those with the fewest resources have difficulty managing their eye conditions, accessing resources, and preventing further vision loss (Kirtland et al., 2015).

Individuals who are B/VI experience lack of transportation as a major barrier to employment and community participation. Most of these individuals do not drive at all or restrict their driving to familiar places during the day. They need to access public or private transportation. Only a few studies have documented barriers individuals with B/VI face accessing transportation. In a survey of 559 legally blind adults, transportation was the highest ranked barrier to employment, and 79% said that transportation challenges had a negative impact on their employment at some

¹ See <http://www.disabilitystatistics.org/reports/acs.cfm?statistic=1>

point in their lives. Of those who said they were actively looking for jobs, 30% had to turn down an offer of employment or not apply for a job in the last three months because they lacked reliable transportation to get to the job (Silverman, Bell, & Mendez, 2019). Crudden, McDonnall, and Hierholzer (2015) conducted a survey of people with B/VI and found that 38% had turned down a job because of transportation concerns. Among respondents who were not employed, 29% believed transportation was the reason they were not working, among other factors.

In another study of people who were B/VI, respondents reported that they found navigating unfamiliar bus routes, walking in urban areas without sidewalks, and walking in unfamiliar places stressful. Individuals using guide dogs, those with a longer period of vision loss, and those who had received orientation and mobility (O&M) training reported less stress in using public transportation, but older people and those with additional physical limitations reported more stress. Respondents reported that they most avoided entertainment and leisure activities and visiting family or friends due to travel stress (Crudden, Cmar, & McDonnall, 2017). Although individuals who had received O&M training reported less stress in using public transportation, one study using a focus group approach reported that lack of transportation was a deterrent to seeking O&M services (Southhall & Wittich, 2012).

According to O&M instructors in another focus group, the largest challenge for people with B/VI living in rural areas was lack of transportation and the need to rely on family and friends to travel to places. In urban areas, challenges included limited public transportation services, unreliable service, and long wait times between buses. Travelers who rely on bus or paratransit service fear being late; these fears are more pronounced for riders living further from the city hub (Crudden, 2015). These concerns are also relevant for people without vision impairments, so improving the availability, reliability, and frequency of public transportation would encourage everyone to use it.

Barriers to travel appear to be more pronounced for older people with recent vision loss. In one study of 160 individuals age 60 years or older who had to stop driving due to visual impairment, 67% said they had changed their lifestyle as a result of not driving. Twenty-eight percent said they had changed their residence—moved in with relatives or to an assisted living facility or nursing home. One-third had stopped working, and over half had stopped doing volunteer work (Corn & Rosenblum, 2002; Rosenblum & Corn, 2002a, 2002b).

In another study of individuals 70 years of age or older who were B/VI, transportation emerged as a major barrier to participation in leisure activities. Most participants gave up driving several years earlier because of their decreasing vision, yet they all still missed driving and the freedom it provided. Some individuals could use public transportation or paratransit service but said it took so much effort and time they would never choose to use these transportation options for leisure activities. Participants also spoke of their struggles to find the correct office or shop once they were dropped off at a location. Some participants said they asked friends or family members for rides but only to necessary destinations such as doctors' appointments. Others expressed fear of getting hit by a car, being robbed, or getting bumped into if they went outside. Participants also said they didn't participate in leisure activities outside the home because of the energy required to prepare, get to, and engage in the activity. What they wanted and needed were rides to cultural and social events, but they felt uncomfortable asking others to help with these optional, non-essential activities (Berger, 2012).

Dual sensory loss, defined here as impairment to both vision and hearing, increases significantly as people age. The number of people who experience dual sensory loss is likely to increase with the aging of the baby boomer population. In a survey of 131 people age 55 and over with both vision and hearing loss, transportation, including being unable to drive, was identified as a challenge by almost 27% of the participants. Almost one-third of survey respondents said they needed, but did not have, transportation and almost 20% said they needed volunteers to help with daily activities or running errands (McDonnall, Crudden, & LeJeune, 2016).

C. Innovations in Transportation Services

Technology is beginning to transform the way transportation is provided, particularly in urban areas. Universal Mobility as a Service (MaaS) offers customers a single platform to efficiently identify all transportation options in an area including fixed route and demand response public transportation; ridesharing, carsharing and bikesharing options; compare costs; schedule a ride; and pay for a trip (Lynott, 2018). The Universal MaaS vision is to provide a single coordinated system to meet the needs of everyone in the community, including older people or those with disabilities. Funding for Universal MaaS comes from the Federal Transportation Administration, supplemented by funds from the Veterans' Administration, the Older Americans Act, and the Department of Labor. The predominant customers are older people, those with disabilities, veterans, and people with low incomes. Mobility managers arrange rides for many different

programs; but most are with paratransit, fixed route companies, and ridesharing services (Grantmakers in Aging, 2018). The AARP has introduced similar transportation programs that enable riders to use one app to learn more about ridesharing services, to schedule rides, and pay for rides from various services.²

Transit agencies have used taxis to supplement paratransit services for many years, but technology is changing the way these services are provided. Card readers inside the taxi vehicle and software in the office allow riders to pay with a swipe card. Trip data is processed for verification, oversight, monitoring, and payment. Public transportation agencies are realizing that taxis can be a cost-efficient resource for serving riders with disabilities as well as older people in an era of constrained paratransit budgets (National Academies of Sciences, Engineering, and Medicine, 2016).

Ridesharing services, such as Uber and Lyft, have become popular, however they are mostly deployed in urban areas and used by younger people. Ridesharing services are generally not available in rural areas due to a perceived lack of consistent demand because of low population density; inconsistent internet and cell phone service; and the reluctance of older people to use their smartphones to schedule and pay for rides (Grantmakers in Aging, 2018). According to a survey conducted by AARP, only 29% of those over age 50 had used ridesharing services and two thirds of these individuals said they were not likely to do so in the future (Binette & Kerri, 2018). A study that trained older people to use ridesharing apps found that many continued using ridesharing services once they became used to using the service (Saxon, Ebert, & Sobhani, 2019).

Ridesharing services are increasingly deployed to supplement paratransit services or to transport older and disabled people to medical appointments. Some senior residences, hospitals, and other medical facilities have initiated pilot programs with Lyft and Uber to transport older people and those with disabilities to medical appointments (Span, 2019). Uber has implemented a Community Impact Initiative, under which Uber provides 12-month grants to non-profit agencies that serve those in need, including uninsured people who need healthcare, families experiencing homelessness, or at-risk young people who need jobs. The San Francisco Lighthouse for the

² See <https://www.wistv.com/2019/10/15/aarp-introduce-transportation-programs-aimed-help-columbia-residents/> for an example of such a program in Columbia South Carolina.

Blind received a grant to pay for Uber rides for clients to attend Lighthouse classes under this initiative.³

A few transit agencies are partnering with Uber and Lyft to provide supplemental service where regular route service is infrequent or unavailable. For example, the Denton County Transportation Authority in Denton, Texas provides a \$2.00 discount on Uber or Lyft in portions of its service area where bus service is unavailable. The Regional Transit Authority in Miami Valley, Florida, for the same price as the fixed route service, uses Lyft or Uber to provide door-to-door service where fixed route service is unavailable. The Massachusetts Bay Transit Authority is supplementing its paratransit service with ridesharing services that can be scheduled the same day the trip is desired. Transportation experts see ridesharing as a way to improve mobility for older people who can no longer drive. It remains to be seen how well these services will work for B/VI travelers.

Fully automated vehicles (AV) offer the opportunity for people who do not drive to become more mobile and independent, thus enabling them to access employment, education, healthcare, and community activities. Spokespeople for the B/VI community hope that AV will transform travel and mobility for their constituents. At this time, it is not known whether a driver's license will be required, or whether the user must be responsible for any dynamic driving task that requires vision. For B/VI travelers to benefit from AV, the vehicle's human-machine interface must have an audio or other non-visual mode of communication and wayfinding to and from the vehicle (Bayless & Davidson, 2019).

Although fully autonomous vehicles may be decades away, the Volkswagen (VW) Group of America has launched an effort to ensure that people with disabilities can benefit from these innovations. VW representatives have joined with advocacy groups for people with disabilities to ensure that their needs are accommodated in AV design. In April 2019, VW hosted an initial meeting with its in-house design team and representatives of disability groups, including those representing B/VI individuals.⁴ These efforts to include disability groups in the planning and deployment of AVs are very positive.

³ See <https://www.uber.com/us/en/community/giving-back/community-impact/>.

⁴ <https://www.autonews.com/design/vws-goal-avs-usable-those-disabilities>

D. The Project VISITOR Study

The Visually Impaired Seniors' Independent Travel Opportunities and Resources (Project VISITOR) study is a joint venture of the Volkswagen Group of America, Inc. Mobility-as-a-Service Team, Engineering and Innovation Center California and the American Foundation for the Blind. The purpose of the study is to identify challenges, solutions, and current promising practices related to transportation for older people with vision loss. The study was conducted in two phases. Phase One, described below, consisted of an online survey disseminated to a purposive sample of agencies serving older people with vision loss in the United States. Phase Two, which is presented in the next chapters of this report, consisted of interviews with B/VI individuals age 55 and over residing in the United States.

During Phase One, agency representatives were asked what types of transportation services were available in their area, including subway or regular route bus service; paratransit service; taxis; ridesharing services; transportation provided by service agencies; senior residential transportation; and volunteer driver programs. Agency respondents were asked whether these services were affordable and convenient and what barriers older people with B/VI encountered using each type of service. They were also asked whether older people with B/VI had transportation that was sufficient to go where they needed or wanted to go and whether they believed transportation for their clients will improve in the future.

Thirty-two responses were collected during the Phase One survey from agency staff in urban/suburban and rural/frontier areas throughout the United States. Respondents said that many older people who were B/VI lacked transportation options. Even among urban/exurban respondents, which represent areas where transportation is more plentiful, less than one quarter of respondents agreed that affordable transportation services existed for the older B/VI population and less than half of them agreed that there were convenient transportation options in their communities. Respondents from urban areas said that their clients faced many challenges, including inflexible scheduling and non-dependable paratransit services; difficulty using fixed route bus service because the stops were not close enough to their home or were difficult to find; and limited availability and service hours of volunteer programs. Taxis were generally convenient for clients to schedule and use but could be costly. Ridesharing services were reported to be slightly less expensive by their clients but were unavailable for older people who were not conversant with the scheduling technology.

Respondents to the Phase One survey said that transportation in rural areas was very limited. Most respondents from rural areas said that almost none of their clients had transportation to access places they needed or wanted to go and almost one-third said that most older people who were B/VI had no access to local transportation. Where transportation services were available, they were restricted by jurisdiction; only operated during certain days and hours; and had a demand that exceeded the availability of service.

Surprisingly, respondents were somewhat uninformed as to whether a particular transportation service was available in their community. Several individuals did not know whether senior residences or service agencies provided transportation or whether volunteer driver programs were available. Efforts to educate agency staff and their clients about available transportation options may enable more seniors to use them (O'Day, Chanes-Mora, & Roth, 2019).

Phase Two of the VISITOR Study builds on the findings of Phase One. The Phase Two survey was designed to gather feedback, opinions, and experiences about transportation from the perspective of older people with B/VI. The methodology used to conduct the survey and analyze results is described in Chapter Two. Chapter Three presents the findings from urban, urban cluster, and rural respondents, and Chapter Four presents our conclusions.

II. Methodology

A. Designing and Pilot Testing the Survey Questions

While the questions in Phase One of the VISITOR Study were designed based upon a review of literature and feedback from experts, the questions for the Phase Two survey were refined and expanded based on the responses from the 32 organizational participants in the Phase One study. The first task for the research team was to define several terms that may not be familiar to older persons. Different modes of transportation were defined as follows:

- Subway or regular route bus service generally operates on a regular route and stops at subway or bus stops according to a fixed schedule.
- Paratransit service is specialized transportation service for people with disabilities.
- Rideshare services, like Uber or Lyft, are services that match passengers with drivers using an app on a smartphone.
- Taxi services differ from rideshare services in that the traveler may call a dispatcher to book a ride and the ride is not shared.
- Residential transportation is generally available to people who live in senior living communities, assisted living, or nursing homes.
- Service provider transportation is provided by a senior center, an agency for the blind, the Red Cross, or other nonprofit service organization.

The survey contained questions about each type of transportation option to gather data to understand respondents' experiences and challenges. Individuals were asked whether and how often they used each type of service. We included subway and regular route bus service in one category because very few people used subway service. The remainder of the survey questions focused on the three modes of transportation individuals used most often. Participants were asked about the destinations they traveled to using each type of service and whether the service was affordable and convenient to use. Next, a list of challenges and restrictions for each type of transportation was read and individuals were asked whether this barrier was a problem for them in using the specified transportation option. If someone used a particular mode of transportation once per month or less, follow-up questions about that mode of transportation were not asked. The next set of questions focused on the types of assistance the traveler required, such as identifying the vehicle when it arrived or finding the right office after arriving at the destination.

Participants were asked whether they used a smartphone and what type of scheduling and navigation apps they used. The final set of questions assessed travelers' expectations for transportation services—whether they would improve, worsen, or stay the same and why. Each section of the survey concluded with an open-ended question to elicit travelers' perceptions and experiences not covered in previous questions.

To determine clarity of questions and the time it would take to administer the survey, the research team pilot tested the survey with four B/VI individuals known to the researchers. Through piloting the survey, some questions were reworded for clarity and it was verified the survey took 30-45 minutes to administer. The survey was reviewed and approved by staff of the Volkswagen Group of America Future Center California and the American Foundation for the Blind's Institutional Review Board. A copy of the screening form is in Appendix A and the survey is in Appendix B.

B. Recruitment and Screening of Survey Respondents

Agency representatives who completed the Phase One survey were sent an email requesting that they contact their clients and other community members to inform them about the Phase Two survey. Additionally, consumer organizations whose members are B/VI, were contacted. Organizations included the National Federation of the Blind, the American Council of the Blind, and the Blinded Veterans' Association. These organizations were asked to send an informational email to their members that contained information about how to participate in the study. Information about the study was also posted on the American Foundation for the Blind's website and on their Facebook page. Other media outlets and email lists were used to recruit participants. Individuals interested in completing the survey were asked to call an 800-number or email an address established for the study.

When initially contacted by a potential respondent, a member of the research team conducted a brief telephone screening to ensure that the individual met the study criteria. If the individual met the criteria, a mutually convenient date and time was set to conduct the telephone survey. The research team used a spreadsheet to monitor the registrations and schedule for the phone surveys. To meet the study criteria, the respondent had to be:

- 55 years of age or older
- Unable to drive a car due to a visual impairment

When an individual agreed to participate in the study, the interviewer first collected demographic information including age, gender, ethnicity, and state of residence. After interviewing 70 people, the research team reviewed the demographic data and made additional efforts to reach out to agencies and organizations that primarily serve individuals who are over 70 years of age, rural residents, or individuals who are non-White.

C. Data Collection and Analysis

At the start of the interview, each interviewer began by reading the participant consent form (contained in Appendix C) and obtained consent from the participant. While most of the survey questions were closed (e.g., yes/no, multiple choice), interviewers used probes to elicit respondents' experiences and perceptions of different transportation modes. Open-ended questions gave participants a chance to describe their transportation usage, the barriers they faced, and their perceptions of how transportation might change in the future. Survey administration lasted between 30 and 45 minutes, depending upon how many types of transportation options the participant used. Individuals received a \$25 gift card for their participation.

The interviewer entered survey responses into Survey Monkey, an on-line survey tool, and another member of the research team checked the answers for completeness. Each respondent was asked whether they lived in a commuter town or exurb, defined as, "a community further away from an urban area than a suburb, from which people commute to an urban area to work." Many respondents did not know the answer to this question and because exurban areas are not defined by the U.S. Census Bureau, zip codes could not be used to document whether respondents lived in an exurb. Instead, U.S. Census Bureau definitions were used for urban, urban cluster, and rural communities to divide respondents into three community groups based upon their zip codes as follows:

- Urban: contains 50,000 or more people
- Urban Cluster: contains at least 2,500 and less than 50,000 people
- Rural: All areas not included in urban or urban cluster areas.

Data was analyzed using descriptive and inferential statistics and thematic, qualitative analyses. For each community group, key themes were identified. Representative quotes from the interviews were selected to illustrate the themes for each community group.

III. Findings

A. Characteristics and Locations of the Study Population

Table 1 provides demographic data for the 81 survey respondents. About 85% of respondents lived in urban or urban cluster areas, compared with about 81% of the United States population.⁵ About 46% of respondents were ages 65 to 74 and 15% were age 75 and over. Participants were well educated, with almost 70% having completed a college degree or post-graduate work. Over half of those interviewed had incomes below the national median income of \$55,300. About one-quarter of respondents said they had worked within the last 10 years and of those, about one-third said they stopped working due to transportation issues. Some respondents had to stop driving and couldn't get to work another way; some said their employer had moved and they couldn't get to the new location; and some said they stopped working due to the stress of getting to and from work.

⁵ https://www.census.gov/programs-surveys/geography/about/faq/2010-urban-area-faq.html#par_textimage.

Table 1

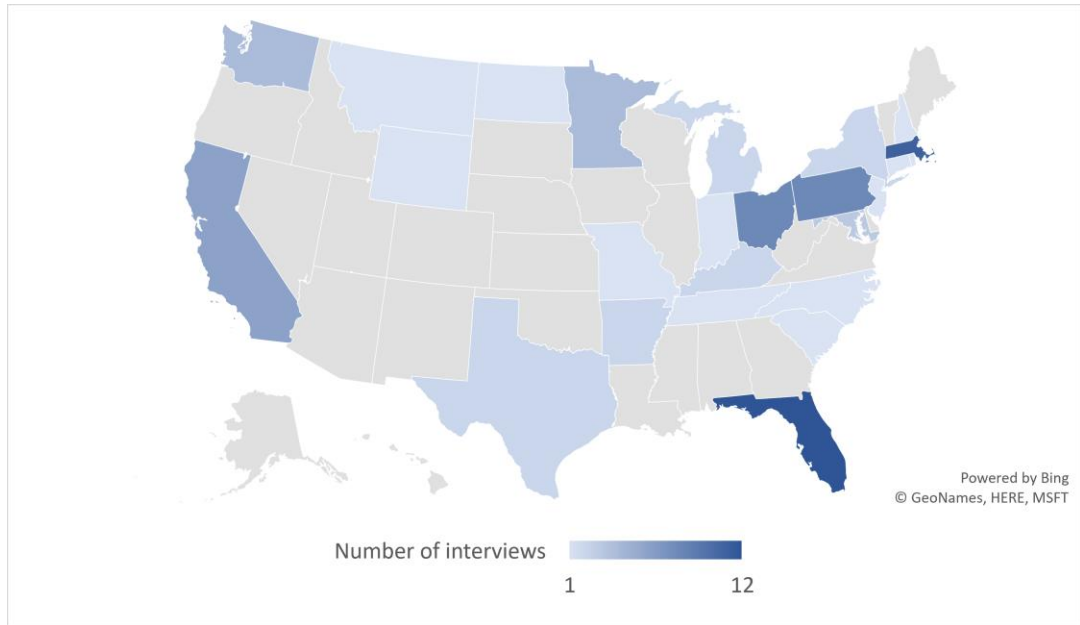
Characteristics of Survey Respondents

| Characteristic | n=81 | % |
|--|------|-----|
| Location | | |
| Urban | 52 | 64% |
| Urban Cluster | 17 | 21% |
| Rural | 12 | 15% |
| Gender | | |
| Male | 36 | 44% |
| Female | 45 | 56% |
| Age (Mean = 67, Med = 66, Min = 55, Max = 97) | | |
| 55-64 | 31 | 38% |
| 65-74 | 37 | 46% |
| 75-84 | 9 | 11% |
| 85 + | 3 | 4% |
| Refused | 1 | 1% |
| Ethnicity | | |
| White Non-Hispanic | 69 | 85% |
| African American | 5 | 6% |
| Hispanic | 3 | 4% |
| Refused | 2 | 2% |
| Other (Asian=1; Jewish=1) | 2 | 2% |
| Education | | |
| < High School | 0 | 0% |
| High School Graduate or GED | 4 | 5% |
| Some College | 21 | 26% |
| College Graduate | 22 | 27% |
| Post-Graduate | 34 | 42% |
| Employment Status | | |
| Currently Employed | 21 | 26% |
| Worked within Last Ten Years | 39 | 48% |
| Left Employment due to Transportation Issues | 8 | 10% |
| Living Situation | | |
| Alone | 33 | 41% |
| With Spouse or Partner | 36 | 44% |
| With Other Family Members | 5 | 6% |
| With Friends or Others | 7 | 9% |
| Has Physical Disability or Health Condition Other Than Vision Loss | 31 | 38% |
| Plans to Move in Next 5-10 Years | 20 | 25% |
| Total Family Income | | |
| < \$35,000 | 33 | 41% |
| \$35,000 - \$50,000 | 21 | 26% |
| \$51,000 - \$75,000 | 12 | 15% |
| > \$75,000 | 12 | 15% |
| Refused | 3 | 4% |

Survey respondents represented 26 states and came from all four regions of the country, as defined by the U.S. Census Bureau (Figure 1).⁶ Twenty-five respondents lived in the Northeast, 25 in the South, 17 in the Midwest, and 14 in the West.

Figure 1
Participant Location by State

| State | n |
|-------|----|
| AR | 2 |
| CA | 6 |
| CT | 1 |
| DC | 3 |
| FL | 12 |
| IN | 1 |
| KY | 2 |
| MA | 11 |
| MD | 3 |
| MI | 2 |
| MN | 4 |
| MO | 1 |
| MT | 1 |
| NC | 1 |
| ND | 1 |
| NH | 1 |
| NJ | 1 |
| NY | 2 |
| OH | 8 |
| PA | 8 |
| RI | 1 |
| SC | 1 |
| TN | 1 |
| TX | 2 |
| WA | 4 |
| WY | 1 |



Other participant characteristics shown in Table 1 might have an impact on whether they could access public or private transportation. About 40% of respondents lived alone, meaning they lacked a sighted partner to drive or a nondriving partner with whom to share frustrations about transportation issues. Almost as many participants said they had physical or health conditions in addition to vision loss, which may impact their mobility. About 41% of the participants lived in

⁶ https://www2.census.gov/geo/pdfs/maps-data/maps/reference/us_regdiv.pdf.

households with incomes under \$35,000, which might make some transportation options unaffordable.

Almost one-quarter of respondents said they planned to move in the next 5 to 10 years to be closer to family, to live in a more supportive environment, or to live in areas with better transportation options. Among the 21% of urban respondents who said they wanted to move,⁷ reasons included:

- architectural issues such as the need for sidewalks or to be on one level
- financial issues such as affordability of their current dwelling
- need for more services or for housing for elderly people
- the desire to live closer to family

Among the 35% of urban cluster residents who planned to move, reasons included:

- a desire for better public transportation and walkable neighborhoods
- the desire to live close to family
- wanting to move to subsidized or senior housing

Some of the same reasons emerged among the 25% of rural residents who wanted to move, such as the need for more sidewalks, a wish to be in a one-level home, and a desire to be near family.

B. Transportation Patterns of Respondents

1. Actual versus Desired Frequency of Travel

Respondents were asked how often they traveled using any form of transportation and how much they would travel if they had ready access to transportation, such as their own car or driver.

Table 2 shows that rural respondents traveled less frequently than urban and urban cluster respondents. About 29% of urban and urban cluster respondents traveled daily, as compared to only one of the 12 rural respondents. Data in Table 2 shows there is latent demand for transportation services, particularly among rural respondents. Thirty-eight percent of urban respondents would travel daily if they had access to a car any time they wanted as compared to the 29% who actually traveled that often. Three of the 12 rural respondents said they would

⁷ Data not shown.

travel daily if they could. Almost 60% of rural respondents said not driving very often or often prevented them from doing things they needed or wanted to do, as compared with 42% of urban and urban cluster respondents.

Table 2
Actual versus Desired Frequency of Travel

| | Urban (n=52) | | Urban Cluster (n=17) | | Rural (n=12) | |
|--|--------------|-----|----------------------|-----|--------------|-----|
| | n | % | n | % | n | % |
| Average Number of Trips Taken | | | | | | |
| I travel daily | 14 | 27% | 5 | 29% | 1 | 8% |
| Several times a week | 33 | 63% | 9 | 53% | 9 | 75% |
| Once a Week/Several Times a Month | 5 | 10% | 3 | 18% | 2 | 17% |
| Once a Month or Less | 0 | 0% | 0 | 0% | 0 | 0% |
| How Many Trips You Would Take if Access to a Car/Driver | | | | | | |
| Daily | 20 | 38% | 7 | 41% | 3 | 25% |
| Several times a week | 21 | 40% | 7 | 41% | 6 | 50% |
| Once a Week/Several Times a Month | 8 | 15% | 1 | 6% | 3 | 25% |
| Once a Month or Less | 3 | 6% | 2 | 12% | 0 | 0% |
| How Often Does Not Driving Prevent You From activities | | | | | | |
| Very Often | 13 | 25% | 3 | 18% | 1 | 8% |
| Often | 9 | 17% | 4 | 24% | 6 | 50% |
| Sometimes | 18 | 35% | 5 | 29% | 3 | 25% |
| Rarely | 10 | 19% | 4 | 24% | 2 | 17% |
| Never | 2 | 4% | 1 | 6% | 0 | 0% |

2. Available Modes of Transportation and Their Use

Respondents were asked what forms of transportation were available where they lived and which types of transportation they used. Table 3 shows that more modes of transportation were available to urban and urban cluster respondents than rural ones. Most urban and urban cluster respondents had access to subway/bus, paratransit, rideshare services, and taxi services. These options were available to a lower percentage of urban cluster and rural respondents compared to urban respondents. Of note, 7 of the 12 rural respondents said that transportation provided by service agencies was available in their communities and 5 individuals used this service.

Table 3
*Available Transportation in Urban, Urban Cluster, and Rural Communities**

| | Urban (n=52) | | | | Urban Cluster (n=17) | | | | Rural (n=12) | | | |
|--------------------|------------------|-----|-------------|-----|----------------------|------|-------------|-----|------------------|-----|-------------|------|
| | <u>Available</u> | | <u>Used</u> | | <u>Available</u> | | <u>Used</u> | | <u>Available</u> | | <u>Used</u> | |
| | n | % | n | % | n | % | n | % | n | % | n | % |
| Subway/Bus | 44 | 85% | 27 | 61% | 13 | 76% | 6 | 46% | 4 | 33% | 1 | 25% |
| Paratransit | 51 | 98% | 40 | 78% | 17 | 100% | 14 | 82% | 6 | 50% | 6 | 100% |
| Rideshare | 48 | 92% | 28 | 58% | 16 | 94% | 5 | 31% | 8 | 67% | 1 | 13% |
| Taxi | 47 | 90% | 9 | 19% | 16 | 94% | 4 | 25% | 6 | 50% | 2 | 33% |
| Residential Senior | 6 | 12% | 0 | 0% | 2 | 12% | 0 | 0% | 3 | 25% | 1 | 33% |
| Service Provider | 17 | 33% | 3 | 18% | 6 | 35% | 3 | 50% | 7 | 58% | 5 | 71% |

* To calculate the percentage under “used” we utilized each corresponding “available” “n” as the denominator.

Table 4 shows that, among urban and urban cluster respondents who used subway/bus or paratransit services, well over half reported using these services daily or several times a week. Very few rural travelers used any mode of transportation that often. For example, of the six rural travelers who used paratransit service, only one used it several times a week; the rest used it less often. Of the five rural residents who used service provider transportation, three used it once a month or less.

Table 4
Usage Frequency of Transportation in Urban, Urban Cluster and Rural Communities

| | Urban | | Urban Cluster | | Rural | |
|-----------------------------------|--------|-----|---------------|-----|-------|------|
| | (n=27) | % | (n=6) | % | (n=1) | % |
| Bus/Subway | | | | | | |
| Daily | 1 | 4% | 2 | 33% | 0 | 0% |
| Several times a week | 15 | 56% | 3 | 50% | 0 | 0% |
| Once a week/Several times a month | 8 | 30% | 1 | 17% | 1 | 100% |
| Once a month or less | 3 | 11% | 0 | 0% | 0 | 0% |
| Paratransit | (n=40) | | (n=14) | | (n=6) | |
| Daily | 4 | 10% | 3 | 21% | 0 | 0% |
| Several times a week | 16 | 40% | 5 | 36% | 1 | 17% |
| Once a week/Several times a month | 14 | 35% | 3 | 21% | 3 | 50% |
| Once a month or less | 6 | 15% | 3 | 21% | 2 | 33% |
| Rideshare | (n=28) | | (n=5) | | (n=1) | |
| Daily | 2 | 7% | 0 | 0% | 0 | 0% |
| Several times a week | 3 | 11% | 1 | 20% | 0 | 0% |
| Once a week/Several times a month | 14 | 50% | 2 | 40% | 0 | 0% |
| Once a month or less | 9 | 32% | 2 | 40% | 1 | 100% |
| Taxi | (n=9) | | (n=4) | | (n=2) | |
| Daily | 0 | 0% | 0 | 0% | 0 | 0% |
| Several times a week | 1 | 11% | 1 | 25% | 0 | 0% |
| Once a week/Several times a month | 4 | 44% | 1 | 25% | 1 | 50% |
| Once a month or less | 4 | 44% | 2 | 50% | 1 | 50% |
| Residential | (n=0) | | (n=0) | | (n=1) | |
| Daily | 0 | 0% | 0 | 0% | 0 | 0% |
| Several times a week | 0 | 0% | 0 | 0% | 1 | 100% |
| Once a week/Several times a month | 0 | 0% | 0 | 0% | 0 | 0% |
| Once a month or less | 0 | 0% | 0 | 0% | 0 | 0% |
| Service Provider | (n=3) | | (n=3) | | (n=5) | |
| Daily | 0 | 0% | 0 | 0% | 0 | 0% |
| Several times a week | 0 | 0% | 0 | 0% | 1 | 20% |
| Once a week/Several times a month | 2 | 67% | 1 | 33% | 1 | 20% |
| Once a month or less | 1 | 33% | 2 | 67% | 3 | 60% |

Respondents who used each mode of transportation were asked where they went using that transportation. These data are shown in Table 5. Urban respondents reported that they used subway or bus, paratransit, or rideshare services for various purposes, such as socialization; exercise and leisure; non-emergency medical care; and shopping. Urban cluster respondents relied heavily on subway or bus service for socialization and exercise and leisure and on paratransit service for non-emergency medical appointments. Rural respondents who used paratransit service used it most often to get to medical appointments and most appeared to have few options for travel for other purposes.

Table 5

Destination and Mode of Transportation in Urban, Urban Cluster, and Rural Communities

| <u>Urban</u> | <u>Subway/Bus (n=20)</u> | | <u>Paratransit (n=32)</u> | | <u>Rideshare (n=23)</u> | | <u>Taxi (n=5)</u> | | <u>Residential (n=1)</u> | | <u>Service Provider (n=1)</u> | |
|----------------------------|--------------------------|------|---------------------------|------|-------------------------|------|-------------------|------|--------------------------|------|-------------------------------|------|
| Destination | n | % | n | % | n | % | n | % | n | % | n | % |
| Non-Emergency Medical Care | 19 | 95% | 32 | 100% | 19 | 83% | 5 | 100% | 0 | 0% | 1 | 100% |
| Shopping | 15 | 75% | 20 | 63% | 13 | 57% | 3 | 60% | 1 | 100% | 0 | 0% |
| Exercise and Leisure | 20 | 100% | 27 | 84% | 15 | 65% | 1 | 20% | 1 | 100% | 0 | 0% |
| Socialization | 20 | 100% | 30 | 94% | 23 | 100% | 4 | 80% | 0 | 0% | 0 | 0% |
| Work/Job Training | 9 | 45% | 16 | 50% | 3 | 13% | 3 | 60% | 0 | 0% | 0 | 0% |
| Professional Appointments | 13 | 65% | 22 | 69% | 15 | 65% | 4 | 80% | 0 | 0% | 1 | 100% |
| Church | 6 | 30% | 12 | 38% | 5 | 22% | 2 | 40% | 0 | 0% | 0 | 0% |
| <u>Urban Cluster</u> | <u>Subway/Bus (n=7)</u> | | <u>Paratransit (n=11)</u> | | <u>Rideshare (n=5)</u> | | <u>Taxi (n=2)</u> | | <u>Residential (n=1)</u> | | <u>Service Provider (n=0)</u> | |
| Destination | n | % | n | % | n | % | n | % | n | % | n | % |
| Non-Emergency Medical Care | 4 | 57% | 11 | 100% | 4 | 80% | 2 | 100% | 0 | 0% | 0 | 0% |
| Shopping | 5 | 71% | 5 | 45% | 2 | 40% | 2 | 100% | 0 | 0% | 0 | 0% |
| Exercise and Leisure | 6 | 86% | 9 | 82% | 2 | 40% | 0 | 0% | 1 | 100% | 0 | 0% |
| Socialization | 7 | 100% | 10 | 91% | 5 | 100% | 0 | 0% | 1 | 100% | 0 | 0% |
| Work/Job Training | 4 | 57% | 6 | 55% | 3 | 60% | 0 | 0% | 0 | 0% | 0 | 0% |
| Professional Appointments | 5 | 71% | 8 | 73% | 2 | 40% | 1 | 50% | 0 | 0% | 0 | 0% |
| Church | 0 | 0% | 2 | 18% | 2 | 40% | 1 | 50% | 0 | 0% | 0 | 0% |
| <u>Rural</u> | <u>Subway/Bus (n=1)</u> | | <u>Paratransit (n=6)</u> | | <u>Rideshare (n=1)</u> | | <u>Taxi (n=0)</u> | | <u>Residential (n=3)</u> | | <u>Service Provider (n=2)</u> | |
| Destination | n | % | n | % | n | % | n | % | n | % | n | % |
| Non-Emergency Medical Care | 1 | 100% | 6 | 100% | 1 | 100% | 0 | 0% | 3 | 100% | 2 | 100% |
| Shopping | 1 | 100% | 4 | 67% | 0 | 0% | 0 | 0% | 3 | 100% | 1 | 50% |
| Exercise and Leisure | 0 | 0% | 1 | 17% | 0 | 0% | 0 | 0% | 1 | 33% | 0 | 0% |
| Socialization | 1 | 100% | 2 | 33% | 0 | 0% | 0 | 0% | 2 | 67% | 0 | 0% |
| Work/Job Training | 0 | 0% | 0 | 0% | 0 | 0% | 0 | 0% | 0 | 0% | 0 | 0% |
| Professional Appointments | 1 | 100% | 1 | 17% | 0 | 0% | 0 | 0% | 0 | 0% | 1 | 50% |
| Church | 0 | 0% | 0 | 0% | 0 | 0% | 0 | 0% | 0 | 0% | 0 | 0% |

As a follow up question, respondents were asked what other destinations they traveled to beyond those listed in Table 5. Urban and urban cluster respondents said they used the subway/bus or paratransit service to travel to recreational events including the state fair, a park, a movie, a play, or a baseball game; restaurants; meetings of blindness organizations or other volunteer activities; and for personal care or non-essential shopping. Urban and urban cluster respondents also used the subway or bus to get to another mode of transportation such as the commuter train. They used paratransit service to travel to unfamiliar places, in areas without subway or bus service, or at times the bus didn't run. Urban and urban cluster respondents used rideshare services to travel to blindness organization or other meetings; pick up prescriptions; or to get to the bus stop if it was too far away or not walkable. They used paratransit service or rideshare services to travel to the airport and used rideshare services to get to places outside the paratransit or subway/bus service area. Rural travelers used paratransit service or senior residential transportation to get to appointments; do non-essential shopping; to see friends or family; and to get to meetings of blindness organizations. They appeared to travel to fewer recreational and social locations than their urban and urban cluster counterparts.

In a second follow up question, respondents were asked where they would go if they had access to transportation any time they wanted. Their responses were as varied as the activities available in their community. Destinations included shopping malls, the park, to visit friends, community events, fraternal organizations, club meetings, religious activities, and museums. They expressed the desire to take unplanned trips and resented the need to always plan their transportation in advance. Others wished for destinations that were too far away to pay a rideshare service for transportation or that were located outside the paratransit or subway/bus service area. Some participants expressed a desire to go hiking, to the beach, or travel out-of-state to visit family. Survey respondents shared the following:

- “All the places I go now, but on my schedule not someone else's.”
- “Anywhere--that would be awesome. I would do things my wife doesn't want to do, like go to a bar or see a friend or go to a club. I'd be less dependent upon others.”
- “To the grocery store to pick up a few things, rather than shopping for several weeks at a time.”
- “I would go for a drive in the mountains, go to eat somewhere, go to a play.”

- “I love long road trips so I would take those. I would go to the lake, to the woods, or other outdoor places.”
- “I would go anywhere I wanted.”
- “Just for a drive—going nowhere!”

3. Affordability and Convenience

As Table 6 shows, transportation costs more for urban cluster and rural respondents than for urban respondents. All urban respondents who answered this question said the cost of a one-way subway or bus trip was free or \$3.00 or less, but 29% of urban cluster respondents said the cost was \$4.00 to \$6.00. About two-thirds of urban and urban cluster respondents said the cost of a one-way rideshare trip was more than \$9.00, as compared with the rural respondents who used rideshare services and reported one-way trips were more than \$9.00. The vast majority of respondents in all locations agreed that the transportation they used was affordable, with rideshare services and taxi service being less affordable than other modes of transportation. Not surprisingly, participants said that services that were more affordable were less convenient. For example, while over 80% of all respondents said that paratransit service was affordable, half or more said that paratransit service was only somewhat convenient to use.

Table 6
 Cost, Affordability and Convenience and Mode of Transportation in Urban, Urban Cluster, and Rural Communities

| | <u>Subway/Bus (n=29)</u> | | <u>Paratransit (n=39)</u> | | <u>Rideshare (n=28)</u> | | <u>Taxi (n=5)</u> | | <u>Residential (n=1)</u> | | <u>Service Provider (n=1)</u> | |
|-----------------------------|--------------------------|------|---------------------------|-----|-------------------------|-----|-------------------|------|--------------------------|------|-------------------------------|------|
| | n | % | n | % | n | % | n | % | n | % | n | % |
| <u>Urban</u> | | | | | | | | | | | | |
| Cost of One-Way Trip | | | | | | | | | | | | |
| Free | 11 | 38% | 0 | 0% | 0 | 0% | 0 | 0% | 1 | 100% | 0 | 0% |
| \$3 or Less | 18 | 62% | 21 | 54% | 0 | 0% | 0 | 0% | 0 | 0% | 1 | 100% |
| \$4 - \$6 | 0 | 0% | 16 | 41% | 2 | 7% | 1 | 20% | 0 | 0% | 0 | 0% |
| \$7 - \$9 | 0 | 0% | 1 | 3% | 7 | 25% | 0 | 0% | 0 | 0% | 0 | 0% |
| More than \$9 | 0 | 0% | 1 | 3% | 19 | 68% | 4 | 80% | 0 | 0% | 0 | 0% |
| Affordability | | | | | | | | | | | | |
| Yes | 28 | 97% | 33 | 85% | 19 | 68% | 3 | 60% | 1 | 100% | 1 | 100% |
| No | 1 | 3% | 6 | 15% | 9 | 32% | 2 | 40% | 0 | 0% | 0 | 0% |
| Convenience | | | | | | | | 0% | | | | |
| Very | 9 | 31% | 16 | 41% | 18 | 64% | 4 | 80% | 1 | 100% | 1 | 100% |
| Somewhat | 20 | 69% | 21 | 54% | 10 | 36% | 1 | 20% | 0 | 0% | 0 | 0% |
| Not at All | 0 | 0% | 2 | 5% | 0 | 0% | 0 | 0% | 0 | 0% | 0 | 0% |
| | | | | | | | | | | | | |
| | <u>Subway/Bus (n=7)</u> | | <u>Paratransit (n=13)</u> | | <u>Rideshare (n=6)</u> | | <u>Taxi (n=2)</u> | | <u>Residential (n=1)</u> | | <u>Service Provider (n=0)</u> | |
| <u>Urban Cluster</u> | n | % | n | % | n | % | n | % | n | % | n | % |
| Cost of One-Way Trip | | | | | | | | | | | | |
| Free | 2 | 29% | 1 | 8% | 0 | 0% | 0 | 0% | 1 | 100% | 0 | 0% |
| \$3 or Less | 3 | 43% | 7 | 54% | 0 | 0% | 0 | 0% | 0 | 0% | 0 | 0% |
| \$4 - \$6 | 2 | 29% | 5 | 38% | 0 | 0% | 1 | 50% | 0 | 0% | 0 | 0% |
| \$7 - \$9 | 0 | 0% | 0 | 0% | 2 | 33% | 0 | 0% | 0 | 0% | 0 | 0% |
| More than \$9 | 0 | 0% | 0 | 0% | 4 | 67% | 1 | 50% | 0 | 0% | 0 | 0% |
| Affordability | | | | | | | | | | | | 0% |
| Yes | 7 | 100% | 12 | 92% | 4 | 67% | 1 | 50% | 1 | 100% | 0 | 0% |
| No | 0 | 0% | 1 | 8% | 2 | 33% | 1 | 50% | 0 | 0% | 0 | 0% |
| Convenience | | | | | | | | | | | | 0% |
| Very | 4 | 57% | 6 | 46% | 4 | 67% | 0 | 0% | 0 | 0% | 0 | 0% |
| Somewhat | 3 | 43% | 7 | 54% | 2 | 33% | 2 | 100% | 1 | 100% | 0 | 0% |
| Not at All | 0 | 0% | 0 | 0% | 0 | 0% | 0 | 0% | 0 | 0% | 0 | 0% |

| <u>Rural</u> | <u>Subway/Bus (n=1)</u> | | <u>Paratransit (n=6)</u> | | <u>Rideshare (n=3)</u> | | <u>Taxi (n=0)</u> | | <u>Residential (n=5)</u> | | <u>Service Provider (n=2)</u> | |
|-----------------------------|-------------------------|------|--------------------------|-----|------------------------|------|-------------------|----|--------------------------|------|-------------------------------|------|
| | n | % | n | % | n | % | n | % | n | % | n | % |
| Cost of One-Way Trip | | | | | | | | | | | | |
| Free | 0 | 0% | 0 | 0% | 0 | 0% | 0 | 0% | 2 | 40% | 1 | 50% |
| \$3 or Less | 1 | 100% | 4 | 67% | 0 | 0% | 0 | 0% | 2 | 40% | 0 | 0% |
| \$4 - \$6 | 0 | 0% | 2 | 33% | 0 | 0% | 0 | 0% | 0 | 0% | 1 | 50% |
| \$7 - \$9 | 0 | 0% | 0 | 0% | 0 | 0% | 0 | 0% | 1 | 20% | 0 | 0% |
| More than \$9 | 0 | 0% | 0 | 0% | 3 | 100% | 0 | 0% | 0 | 0% | 0 | 0% |
| Affordability | | | | | | | | | | | | |
| Yes | 1 | 100% | 5 | 83% | 3 | 100% | 0 | 0% | 5 | 100% | 2 | 100% |
| No | 0 | 0% | 1 | 17% | 0 | 0% | 0 | 0% | 0 | 0% | 0 | 0% |
| Convenience | | | | | | | | | | | | |
| Very | 0 | 0% | 3 | 50% | 2 | 67% | 0 | 0% | 2 | 40% | 1 | 50% |
| Somewhat | 1 | 100% | 3 | 50% | 1 | 33% | 0 | 0% | 2 | 40% | 1 | 50% |
| Not at All | 0 | 0% | 0 | 0% | 0 | 0% | 0 | 0% | 1 | 20% | 0 | 0% |

4. Barriers to Transportation Use

Respondents in all three community groups experienced multiple barriers in their use of all modes of transportation as reported in Table 7. The 24 respondents who used the subway or bus reported that service operated only during certain times or days of the week. Most said there were jurisdictional and distance restrictions; the scheduling was not flexible; and the demand exceeded available service. The 54 paratransit riders identified barriers including that trips had to be scheduled in advance. Most respondents said the demand exceeded available service; the scheduling was not flexible; and there were distance, jurisdictional, time or day of the week restrictions. Additionally, most participants reported they spent too much time in the paratransit vehicle while other passengers were picked up and dropped off. The greatest barrier respondents experienced using rideshare services was lack of assistance from drivers. All four rural respondents who used residential transportation said scheduling must be done in advance and that riders could only go a certain distance. Three of the rural users noted that the demand exceeded the available service; there were jurisdictional and time or day restrictions; and passengers spent too much time in the vehicle. The two rural riders who used transportation provided by service agencies said that demand exceeded available service, scheduling was not flexible, passengers must schedule in advance, and there were time or day restrictions.

Table 7

Barriers and Mode of Transportation in Urban, Urban Cluster, and Rural Communities

| <u>Urban</u> | <u>Subway/Bus (n=17)</u> | | <u>Paratransit (n=36)</u> | | <u>Rideshare (n=8)</u> | | <u>Taxi (n=1)</u> | | <u>Residential (n=1)</u> | | <u>Service Provider (n=1)</u> | |
|----------------------------------|--------------------------|------|---------------------------|------|------------------------|------|-------------------|------|--------------------------|------|-------------------------------|------|
| Barrier | n | % | n | % | n | % | n | % | n | % | n | % |
| Demand Exceeds Available Service | 12 | 71% | 28 | 78% | 6 | 75% | 0 | 0% | 1 | 100% | 0 | 0% |
| Scheduling Not Flexible | 15 | 88% | 27 | 75% | 1 | 13% | 0 | 0% | 0 | 0% | 1 | 100% |
| Must schedule in Advance | 4 | 24% | 36 | 100% | 0 | 0% | 0 | 0% | 1 | 100% | 0 | 0% |
| Service Not Dependable | 6 | 35% | 17 | 47% | 3 | 38% | 1 | 100% | 0 | 0% | 0 | 0% |
| Scheduling not Accessible | 3 | 18% | 6 | 17% | 4 | 50% | 0 | 0% | 0 | 0% | 0 | 0% |
| Distance Restrictions | 12 | 71% | 27 | 75% | 2 | 25% | 0 | 0% | 1 | 100% | 1 | 100% |
| Jurisdictional Restrictions | 16 | 94% | 27 | 75% | 2 | 25% | 0 | 0% | 0 | 0% | 0 | 0% |
| Destination Restrictions | 3 | 18% | 3 | 8% | 0 | 0% | 0 | 0% | 0 | 0% | 1 | 100% |
| Time or Day Restrictions | 17 | 100% | 24 | 67% | 0 | 0% | 0 | 0% | 1 | 100% | 1 | 100% |
| Drivers Lack of Assistance | 5 | 29% | 3 | 8% | 8 | 100% | 0 | 0% | 0 | 0% | 0 | 0% |
| Cannot Travel with Friend | 0 | 0% | 3 | 8% | 2 | 25% | 0 | 0% | 0 | 0% | 0 | 0% |
| Too much Time Spent in Vehicle | 6 | 35% | 18 | 50% | 0 | 0% | 0 | 0% | 0 | 0% | 1 | 100% |

| <u>Urban Cluster</u> | <u>Subway/Bus (n=6)</u> | | <u>Paratransit (n=12)</u> | | <u>Rideshare (n=2)</u> | | <u>Taxi (n=2)</u> | | <u>Residential (n=1)</u> | | <u>Service Provider (n=0)</u> | |
|----------------------------------|-------------------------|------|---------------------------|------|------------------------|------|-------------------|------|--------------------------|------|-------------------------------|----|
| Barrier | n | % | n | % | n | % | n | % | n | % | n | % |
| Demand Exceeds Available Service | 1 | 17% | 7 | 58% | 1 | 50% | 2 | 100% | 0 | 0% | 0 | 0% |
| Scheduling Not Flexible | 4 | 67% | 6 | 50% | 0 | 0% | 0 | 0% | 1 | 100% | 0 | 0% |
| Must schedule in Advance | 1 | 17% | 12 | 100% | 1 | 50% | 1 | 50% | 0 | 0% | 0 | 0% |
| Service Not Dependable | 1 | 17% | 5 | 42% | 0 | 0% | 0 | 0% | 0 | 0% | 0 | 0% |
| Scheduling not Accessible | 1 | 17% | 1 | 8% | 1 | 50% | 0 | 0% | 0 | 0% | 0 | 0% |
| Distance Restrictions | 5 | 83% | 11 | 92% | 0 | 0% | 1 | 50% | 0 | 0% | 0 | 0% |
| Jurisdictional Restrictions | 3 | 50% | 8 | 67% | 0 | 0% | 1 | 50% | 0 | 0% | 0 | 0% |
| Destination Restrictions | 1 | 17% | 1 | 8% | 0 | 0% | 0 | 0% | 0 | 0% | 0 | 0% |
| Time or Day Restrictions | 6 | 100% | 7 | 58% | 1 | 50% | 0 | 0% | 0 | 0% | 0 | 0% |
| Drivers Lack of Assistance | 2 | 33% | 4 | 33% | 2 | 100% | 1 | 50% | 0 | 0% | 0 | 0% |
| Cannot Travel with Friend | 0 | 0% | 2 | 17% | 1 | 50% | 0 | 0% | 0 | 0% | 0 | 0% |
| Too much Time Spent in Vehicle | 0 | 0% | 8 | 67% | 1 | 50% | 0 | 0% | 0 | 0% | 0 | 0% |

| <u>Rural</u> Barrier | <u>Subway/Bus (n=1)</u> | | <u>Paratransit (n=6)</u> | | <u>Rideshare (n=1)</u> | | <u>Taxi (n=0)</u> | | <u>Residential (n=4)</u> | | <u>Service Provider (n=2)</u> | |
|----------------------------------|-------------------------|------|--------------------------|------|------------------------|------|-------------------|----|--------------------------|------|-------------------------------|------|
| | n | % | n | % | n | % | n | % | n | % | n | % |
| Demand Exceeds Available Service | 0 | 0% | 4 | 67% | 0 | 0% | 0 | 0% | 3 | 75% | 2 | 100% |
| Scheduling Not Flexible | 1 | 100% | 4 | 67% | 0 | 0% | 0 | 0% | 2 | 50% | 2 | 100% |
| Must schedule in Advance | 0 | 0% | 6 | 100% | 0 | 0% | 0 | 0% | 4 | 100% | 2 | 100% |
| Service Not Dependable | 0 | 0% | 0 | 0% | 0 | 0% | 0 | 0% | 0 | 0% | 1 | 50% |
| Scheduling not Accessible | 0 | 0% | 1 | 17% | 0 | 0% | 0 | 0% | 0 | 0% | 0 | 0% |
| Distance Restrictions | 0 | 0% | 5 | 83% | 0 | 0% | 0 | 0% | 4 | 100% | 1 | 50% |
| Jurisdictional Restrictions | 0 | 0% | 2 | 33% | 0 | 0% | 0 | 0% | 3 | 75% | 0 | 0% |
| Destination Restrictions | 0 | 0% | 0 | 0% | 0 | 0% | 0 | 0% | 2 | 50% | 1 | 50% |
| Time or Day Restrictions | 1 | 100% | 5 | 83% | 1 | 100% | 0 | 0% | 3 | 75% | 2 | 100% |
| Drivers Lack of Assistance | 0 | 0% | 0 | 0% | 0 | 0% | 0 | 0% | 0 | 0% | 0 | 0% |
| Cannot Travel with Friend | 0 | 0% | 2 | 33% | 0 | 0% | 0 | 0% | 1 | 25% | 0 | 0% |
| Too much Time Spent in Vehicle | 0 | 0% | 3 | 50% | 0 | 0% | 0 | 0% | 3 | 75% | 0 | 0% |

5. Distance Traveled

Respondents were asked how far they traveled, on average, using any of the identified transportation modes. These data are reported in Table 8. Surprisingly, rural respondents said they traveled shorter distances than urban or urban cluster respondents. About 60% of urban and urban cluster respondents reported the average length of their trips was generally 6 to 10 miles, but only 42% of rural respondents said they traveled that far, likely due to jurisdictional and distance restrictions of transportation providers and the cost of using shared ride or taxi services. Participants were asked if they took trips longer than one hour and how often they took these trips. About three quarters of rural respondents said they did take trips longer than an hour, as compared with two-thirds of urban and urban cluster respondents. Two-thirds of all respondents took trips longer than one hour once a month or less frequently.

Table 8

Distance Traveled Using Any Transportation in Urban, Urban Cluster, and Rural Areas

| | Urban (n=52) | | Urban Cluster (n=17) | | Rural n=12) | |
|---|--------------|-----|----------------------|-----|-------------|-----|
| | n | % | n | % | n | % |
| Distance Traveled | | | | | | |
| < 1 Mile | 0 | 0% | 0 | 0% | 0 | 0% |
| 1-5 Miles | 15 | 29% | 3 | 18% | 5 | 42% |
| 6-10 Miles | 31 | 60% | 10 | 59% | 5 | 42% |
| > 10 Miles | 6 | 12% | 4 | 24% | 2 | 17% |
| | | | | | | |
| | Urban (n=35) | | Urban Cluster (n=11) | | Rural (n=9) | |
| | n | % | n | % | n | % |
| Trips Longer than One Hour Frequency | | | | | | |
| Daily | 0 | 0% | 0 | 0% | 0 | 0% |
| Several times a week | 3 | 9% | 2 | 18% | 0 | 0% |
| Once a Week/Several Times a Month | 10 | 29% | 2 | 18% | 3 | 33% |
| Once a Month or Less | 22 | 63% | 7 | 64% | 6 | 67% |

Urban and urban cluster travelers used several different options to take longer trips. Respondents from urban areas said they took Amtrak for these long trips or took a subway or bus to a commuter train or to some other form of transportation. They took rideshare services, Greyhound, or a shared ride van to the airport. Urban and urban cluster respondents using paratransit or regular route bus service said these trips often took more than an hour, even though the distance was not that far. They shared:

- “The paratransit service often takes more than an hour to get where I’m going, if they pick other people up and drop them off.”
- “When I take the city bus home from work it can take 1.5 hours.”

Rural travelers said to travel more than an hour they rode with friends and family, used the Greyhound bus, or used a bus operated by a local senior center. One respondent explained that friends were paid by the senior center 36 cents per mile for driving and another said that she took the senior bus and transferred to another bus, which took more than an hour.

Table 9 shows that 94% of urban and urban cluster respondents and 83% of rural ones had a friend or family member who drove them where they needed or wanted to go. Between 30% and 40% of respondents said someone drove them several times a week and another 40% to 50% said someone drove them once a week to several times a month.

| | Urban (n=52) | | Urban Cluster (n=17) | | Rural (n=12) | |
|-----------------------------------|--------------|-----|----------------------|-----|--------------|-----|
| | n | % | n | % | n | % |
| Yes | 49 | 94% | 16 | 94% | 10 | 83% |
| Frequency | | | | | | |
| Daily | 4 | 8% | 2 | 13% | 1 | 10% |
| Several times a week | 18 | 37% | 5 | 31% | 4 | 40% |
| Once a Week/Several Times a Month | 20 | 41% | 8 | 50% | 4 | 40% |
| Once a Month or Less | 7 | 14% | 1 | 6% | 1 | 10% |

C. Assistance and Tools Needed when Traveling

1. Assistance Needed when Traveling

Respondents needed various types of assistance when using transportation. Although less than one-third of respondents needed help getting to and from the door of their home or the building they were traveling to, Table 10 shows that most respondents needed assistance finding the right office within the building once they arrived at their destination. They also needed help with shopping, including finding groceries at the grocery store, or selecting clothing and other personal items. Almost two-thirds of urban and urban cluster respondents and half of rural

respondents said they needed help knowing when the vehicle had arrived. Only a few respondents needed no assistance.

Table 10
Assistance Needed When Traveling

| <u>Type of Assistance</u> | <u>Urban (n=52)</u> | | <u>Urban Cluster (n=17)</u> | | <u>Rural (n=12)</u> | |
|--|---------------------|-----|-----------------------------|-----|---------------------|-----|
| | n | % | n | % | n | % |
| Help into or out of your home or business | 4 | 8% | 2 | 12% | 0 | 0% |
| Help to and from the vehicle to front door | 13 | 25% | 5 | 29% | 1 | 8% |
| Getting into or out of the vehicle | 7 | 13% | 2 | 12% | 1 | 8% |
| Knowing when the vehicle has arrived | 34 | 65% | 11 | 65% | 6 | 50% |
| Finding the right office once you arrive | 33 | 63% | 11 | 65% | 9 | 75% |
| Help with shopping | 34 | 65% | 11 | 65% | 10 | 83% |
| No Assistance | 1 | 2% | 2 | 12% | 1 | 8% |

When asked what other types of assistance they needed during travel, participants shared the following:

- Bus riders said they needed the driver to call out the bus stops so they would know when to disembark; assistance knowing where the bus stop was, particularly when it was a mid-block stop; help getting on the right bus when multiple buses stopped in one place; assistance finding the right destination after departing the bus; and help crossing a busy street if there was no audible pedestrian signal.
- Some paratransit or rideshare service passengers said they needed help knowing when the vehicle had arrived and what type of vehicle was picking them up.
- Some respondents said regardless of the type of transportation used, they needed help with other shopping, such as buying clothes, gifts, or greeting cards.

2. Strategies to Receive Assistance

Respondents said they had developed various strategies to get some of their assistance needs met. Those who had difficulty shopping said they asked a friend or family member to take them. Others said they went to the customer service desk and asked for assistance or asked a store employee to help them. A few participants reported they called the store in advance to request

assistance or shopped during non-peak hours when staff would be less busy. One respondent paid someone to take her shopping.

Those participants who said they had difficulty finding the right store or office once they reached their destination said they used paratransit service for the trip and asked the driver to help them find the right office. Others said they asked a passer-by for help.

Respondents used various strategies to determine when the paratransit or rideshare service vehicle had arrived to pick them up. Those who used paratransit service said the driver would generally let the passenger know the vehicle had arrived, walk them to the vehicle, and upon arrival at their destination take them to the door. Those who used rideshare services reported they called or texted the driver and explained that they used a white cane and the driver would need to look for them. A couple of respondents used Go-Go Grandparent with Lyft. Another respondent said, “I come out early, and wait in my carport. I can hear when they come up.” One woman who used Uber said, “I call the driver and tell them that I am at a certain location and that I have a white cane. The driver will pull up and tell me their name.”

Most respondents said the arrangements they made for assistance worked well, but a few expressed challenges. One respondent said, “Sometimes language barriers can be a problem because the drivers do not speak English well.” Another individual shared that rideshare service drivers do not generally take him to the door; they just drop him off and he needs to find the door himself.

3. Unmet Needs for Assistance

Participants were asked what type of assistance they needed and were not receiving. Respondents shared the following:

- A few individuals said they needed a companion with whom to travel because they could not go anywhere alone.
- One participant said that more orientation and mobility training was needed in her area.

- An individual said, “Sometimes I feel it is harder to get assistance these days due to people with ear buds in, so they do not hear me. I used to be able to get sighted assistance more easily.”
- A respondent shared that clerks to help with shopping were not always available
- A participant wished she could talk to a rideshare service representative directly rather than via the app. She said, “There are problems that arise that you do need to be able to talk to someone.”
- A few individuals said they were frustrated by the need to ask friends or family to drive them to places they wanted to go. For example, one woman said, “Regarding having friends drive me, there's the pride factor. I hate to ask. I have a list of people I call and sometimes I have to go on their schedule, so if I have an appointment and need to get there early because of their schedule, I have to bring something to do to kill time.”
- A respondent noted, “My husband is willing to drive me but sometimes he has something scheduled. I'd like to be able to go places my husband doesn't want to go and get there independently. I hate being so dependent on him.”

4. Preparing to Travel to Unfamiliar Situations

Respondents were asked how they prepared to travel in unfamiliar situations. They reported they always made sure to have the correct address and telephone number of their destination. Those who used a fixed route bus called the transit information center or checked a transit app on their smartphone in advance to find out what bus to take and obtain the time schedule. Other participants said they called the office where they were going ahead of time to ask about the nearest cross streets or find out where the office was located within the building or shopping center. They would ask for details such as whether there were steps, an elevator, or which way to turn when leaving the elevator. Other respondents said they searched for the destination online to obtain as much information as possible ahead of time. Some respondents said they would use paratransit service rather than the bus to get to an unfamiliar destination. A couple of individuals said they used AIRA⁸ to help them find the destination. Those with a high level of usable vision

⁸ Aira connects the B/VI person with a sighted assistant using a camera on a mobile device. The assistant can view the surroundings and offer verbal directions through the device. See www.aira.io/.

who did not use a white cane in familiar situations, carried and used one in places that were unfamiliar to them. A couple of respondents said they waited for a friend or family member to take them.

5. Scheduling Transportation and Use of Technology

The data in Table 11 shows that over three quarters of respondents had a smartphone and almost half of urban respondents and about one-quarter of urban cluster and rural respondents used their smartphone to schedule some of their transportation. Most of those respondents who did not use a smartphone to schedule their transportation used a landline to call a dispatcher; more rural respondents used this method than urban or urban cluster respondents.

| | Urban (n=52) | | Urban Cluster (n=17) | | Rural (n=12) | |
|--|--------------|-----|----------------------|-----|--------------|-----|
| | n | % | n | % | n | % |
| Use of Smart Phone | 40 | 77% | 13 | 76% | 10 | 83% |
| Use of Apps to Schedule Transportation | 24 | 46% | 5 | 29% | 3 | 25% |
| Use of Apps for Navigation | 26 | 50% | 5 | 29% | 5 | 42% |
| How Transportation is Scheduled | | | | | | |
| Use Landline/Dispatcher | 23 | 44% | 9 | 53% | 8 | 67% |
| Friend/family | 2 | 4% | 0 | 0% | 0 | 0% |
| Go Go Grandparent | 1 | 2% | 0 | 0% | 1 | 8% |

Respondents were asked if they used apps for navigation on their computer or smartphone and if so, which ones they used and which they liked best. One-half of urban respondents said they used apps for navigation but fewer urban cluster and rural respondents reported they used these apps. Those who used transportation related apps reported they used a number of different apps, including those developed for the mainstream user and those developed specifically for travelers who are B/VI. The most popular apps used by participants by far were Google Maps⁹ and BlindSquare,¹⁰ with 15 and 14 people using them, respectively. Five people used Nearby

⁹ <https://www.google.com/maps/@38.8199215,-77.0909803,15z>.

¹⁰ <https://www.blindsquare.com/>.

Explorer¹¹ and four used AIRA, Apple Maps,¹² and the Seeing Eye app.¹³ Several people used Google Maps in combination with a blindness specific app such as BlindSquare.

D. Perceptions of Future Transportation Options

Respondents were asked if they thought the availability of transportation in the future would improve, get worse, or stay the same. The data in Table 12 shows that urban respondents were more optimistic than urban cluster or rural respondents about the future of transportation. Forty percent of urban respondents said transportation would get better as compared with about one-quarter of urban cluster and rural respondents. Those who believed future transportation would get better cited reasons including population growth in their locale; recognition of the needs of an aging society; development of driverless cars and other options, including rideshare services; and advocacy by the B/VI community and others for more mass transit. One urban respondent shared:

“Professionals in the transportation field understand that mobility is changing, and they are beginning to explore other options. They understand that transportation should be individually customized such that people have a variety of choices to meet different needs. I might take a bus to one place, Uber to the next and occasionally paratransit. Everyone should have these choices and be able to access transportation on their own schedule, not someone else's. We want a multi-modal system that allows everyone to live and travel where they want. These more advanced service options are being developed.”

A rural respondent noted:

“The city is doing some long-range planning to determine what will best meet people's needs. They understand that people are getting older and can't drive. I think it will get better.”

¹¹ <https://apps.apple.com/us/app/nearby-explorer/id1095698497>.

¹² <https://www.apple.com/ios/maps/>.

¹³ <http://www.senderogroup.com/products/seeingeyegps/index.html>

Table 12

Perceptions of Future Transportation

| How Will Availability of Transportation Change? | Urban (n=52) | | Urban Cluster (n=17) | | Rural (n=12) | |
|---|--------------|-----|----------------------|-----|--------------|-----|
| | n | % | n | % | n | % |
| Better | 21 | 40% | 5 | 29% | 3 | 25% |
| Worse | 6 | 12% | 3 | 18% | 3 | 25% |
| Stay the Same | 25 | 48% | 9 | 53% | 6 | 50% |

Nonetheless, participants who anticipated improvements in transportation had concerns about the future of transportation options, particularly related to the low-income of many people who are B/VI. A rural respondent shared:

“Self-driving cars will be here in my lifetime and I could afford to use one. However, there are a lot of low-income blind people and the bus service is being cut back. Fewer people are using the bus service because of all the other options now--scooters, Uber, cars you can borrow for a fee for occasional trips. As more students come to the area these options will grow. But for people who can't afford to use them or who can't use them because they are blind, it will get worse.”

An urban respondent reflected:

“Since I was a child transportation has gotten better, particularly in recent years. But people need to change their mindset and get out of their cars. For that to happen, transportation needs to be more frequent and convenient, as it is in San Francisco or New York.”

One quarter of rural respondents said that the availability of transportation would get worse, as compared to 12% of urbans and 18% of urban cluster respondents. Much of rural transportation is funded privately and several respondents were concerned that funding would dry up or that other options such as rideshare services were too expensive. One respondent explained:

“Most of these programs use volunteers and funding could be restricted or limited in the future. I really wish there were a bus service in town that could take you to places like the library, parks, seminars on health, or other places. I can't go to any of these things in the

community. Uber might help but still would be too expensive for me as I am on a fixed income.”

Other participants were concerned that public funding would stay the same or decrease and still others mentioned that an increase in the population would place too much demand on transit services. One respondent from an urban cluster community explained:

“[My city] is growing so much that I have noticed that the paratransit has already changed. There is such an influx of people moving into the area that the service is overwhelmed. I see those who operate the service wanting to improve it but financially it is a hardship.”

About half of all respondents said they expected transportation options to stay about the same. Some respondents said the current service was acceptable and would probably stay the same. Others said that since most people drive and funding for public transportation was a low priority as compared to funding for highways and roads, transportation options would stay the same. One urban cluster respondent said, “Some counties do not want to spend more money on mass transit. All three counties in our area must agree and some don't want to spend money on it.” Another respondent said, in reference to public transportation, “It might get better if more people used it.”

In the next chapter, we summarize our findings and draw conclusions from the Phase Two Project VISITOR Study.

IV. Conclusions

Eighty-one individuals who were B/VI residing in three community groups: urban, urban cluster, and rural, were surveyed using telephone interviews lasting 30-45 minutes. The purpose of the interviews was to learn about participants' experiences with transportation as nondrivers. Key findings from the study are described below.

Participants who were B/VI in urban and urban cluster areas used several modes of transportation in their daily lives. Almost all urban and urban cluster participants said they used different modes of transportation, including subway/bus, paratransit, and rideshare services, to meet their needs. Transportation options were much more limited for rural participants. All respondents reported they lacked transportation options or faced significant barriers in using what options were available in their communities.

Less frequent travel: This study provides evidence that older people with B/VI are impacted by lack of transportation more acutely than other groups who do not drive. According to KRC Research (2018), half of older nondrivers do not leave their house on any one day. In this study, less than 30% of urban and urban cluster respondents and even fewer rural respondents traveled daily, although many said they would do so if they had access to a car and driver any time they wanted (See Table 2). The respondents in this study were primarily recruited through advocacy and service organizations and a high percentage of them was well-educated. They would be more likely to know about and use available transportation options than those less informed in their B/VI knowledge.

Serious consequences: Lack of transportation can have serious consequences for people who are B/VI and other non-drivers. About one-quarter of respondents in the study planned to move in the next 5 to 10 years; many cited the need for better transportation options or to live closer to family, presumably to obtain more assistance with transportation and other supports. The other 75% planned to age in place, even though they may lack transportation options to seek medical care, socialize, shop, or participate in community activities. Although the study sample was 55 years of age and over and 15% were 75 years of age and over, about one-quarter of respondents had worked in the last 10 years. One-third of these respondents stopped working due to transportation issues (See Table 1). People may face serious ramifications when they stop

working in terms of reduced income, social contacts, and sense of well-being. They may need to seek Social Security Disability Income or other benefits, resulting in an increased financial burden for taxpayers and decreased income tax revenue for states and localities. Thus, improving transportation options will enable non-drivers to maintain their employment and to age in place, rather than moving to more specialized and costly care alternatives. Investment in maintaining and upgrading public transportation systems will benefit everyone, not just those who cannot drive.

Affordability versus convenience: In communities where they were available subway/bus and paratransit services had higher rates of usage by participants compared to other methods of travel (See Table 4). Most participants who used these methods ranked them very affordable but less convenient than more expensive options such as rideshare or taxi services (See Table 6). Urban and urban cluster participants used rideshare services to supplement their use of subway/bus and paratransit service. Only one rural respondent used rideshare services, even though rideshare services were available to two-thirds of rural respondents. Few respondents used rideshare services, presumably due to low availability of drivers and higher trip cost.

Latent demand: Although participants reported transportation was more plentiful in urban and urban cluster areas, there was still latent demand for transportation among respondents in these community groups. About 40% of urban and urban cluster respondents wished to travel daily, as opposed to less than 30% who did so. Over 40% of urban and urban cluster respondents said that not driving very often or often prevented them from doing things they needed or wanted to do (See Table 2).

Fewer options in rural areas: Rural respondents had fewer transportation options, faced more barriers, and traveled less often than their urban or urban cluster counterparts. Only one of the 12 rural respondents in the study traveled daily as compared to almost one-third of urban and urban cluster participants. Rural respondents shared they would travel more frequently if they could and almost two-thirds said not driving very often or often prevented them from doing things they needed or wanted to do, including grocery shopping, visiting friends, and participating in cultural activities (See Table 2). Rural respondents predominantly used paratransit and service provider transportation, which were reported to be the least flexible modes of transportation in terms of

advance scheduling requirements, limited jurisdiction, and days and hours of operation (See Table 4 and Table 7).

Barriers in using all modes of transportation: Respondents reported multiple barriers in their use of all modes of transportation. Bus and paratransit users said services operated only during certain times or days of the week and only within certain jurisdictions. They reported inflexible scheduling and demand that exceeded available service. All paratransit riders said barriers included that trips must be scheduled in advance and most paratransit riders said they spent too much time in the vehicle while other passengers were picked up and dropped off (See Table 7). Since about three-quarters of respondents had smartphones (Table 11), paratransit providers could address some of these barriers with use of rideshare services for some customers, particularly those who need little or no assistance. It would be important for companies to provide training on using the app and when necessary subsidize the cost of the service.

Desire to travel to a variety of destinations: Respondents went to a variety of places using transportation services (Table 5), but they made poignant comments about where they would go if they had access to transportation any time they wanted. Their destinations were as varied as the activities in their locale. Some participants expressed the desire to go to outdoor activities, such as hiking, to the beach or to the mountains. These locations are difficult to reach using conventional modes of transportation other than driving. Participants expressed the desire to take spontaneous trips and wished they did not have to always plan or ask others for assistance. As one respondent put it, “I’d travel on my schedule, not someone else’s!” Most respondents took trips longer than an hour, but they did so infrequently (See Table 8). A few individuals said their longer trips were due to inefficiencies of paratransit services going out of the way or making several stops to pick up and drop off passengers.

Assistance needed: Respondents needed various types of assistance when traveling and had developed their own unique ways of obtaining assistance (See Table 10). Although some waited for a friend or family member to assist them, others used apps available on smartphones, store personnel, or asked the general public to provide the assistance they needed. They had developed various strategies to cope with going to unfamiliar locations. Still, a few participants expressed

unmet needs; some were afraid to travel alone, and others said assistance from store personnel, or the general public was less available than in the past.

Hopes for the future: Respondents were hopeful that transportation options would improve in the future, although urban respondents were more optimistic than urban cluster or rural ones. (See Table 12). Those who thought transportation would improve cited reasons including recognition of the needs of an aging society, development of autonomous vehicle technology, and an emphasis on infrastructure development to promote healthy lifestyles and walkable communities. Other respondents said the availability of rideshare services could alleviate transportation problems, but only if they were more affordable, given the limited incomes of many B/VI travelers. Rideshare service drivers would also need training on how to assist B/VI travelers, for example knowing how to inform passengers they have arrived and where they are parked; ensuring the passenger is dropped off at their desired location; and offering the passenger assistance to the door when needed.

Limitations of this study: This study has several limitations. The research team recruited respondents through organizations and agencies that provide services and advocacy for B/VI individuals. Most of this recruitment took place through email and over the Internet. Therefore, individuals who were Caucasian, more educated, and conversant with technology than the general population of B/VI individuals potentially participated in the study. Most respondents came from urban and urban cluster communities and have more access to transportation than rural residents. It is probable those who participated in the study were more aware of and used more transportation options than other B/VI individuals. Additionally, we do not know how accurately the perceptions of participants and their opinions represent transportation services in their communities. The respondents completed the survey voluntarily. The sample was non-representative and may not reflect the views of all B/VI individuals. The sample of urban cluster and rural respondents was small (17 and 12 respectively). Respondents were asked questions about the three transportation modes they used most frequently. Thus, a small number of respondents answered some of the questions. Since the total number of responses differed by each survey item, making comparisons across urban, urban cluster, and rural communities and across transportation modes is difficult.

Summary: Taken together, the Project VISITOR Phase 1 and Phase 2 studies provide some insight into the transportation patterns of B/VI travelers and the barriers they face in using each mode of transportation. The studies showed a serious lack of transportation options for older B/VI individuals in urban, urban cluster, and rural communities. Representatives of 32 agencies that serve older B/VI individuals stated that affordable and convenient transportation is lacking, particularly in rural areas and that many of these citizens lacked transportation to get where they needed or wanted to go. These results were confirmed in 81 telephone interviews with older B/VI individuals themselves. Survey respondents in urban or urban cluster areas described many challenges in using the transportation options that currently exist in their communities, including lack of flexible scheduling, excessive wait times in paratransit vehicles, limited days and hours of operation, and restricted jurisdictional coverage. Data from both of the Phase 1 and Phase 2 studies showed that rural residents had fewer transportation options, faced more barriers, and traveled less frequently than their counterparts in urban or urban cluster areas. Respondents in both phases said that demand exceeded available levels of service for shared ride, volunteer driver, and senior residential transportation programs; these programs also are limited by jurisdiction and often by hours of operation. Taxis are generally convenient to schedule and use but can be costly. Uber and Lyft are a bit cheaper but are not available for those who have difficulty accessing the scheduling technology or who need assistance finding the vehicle or locating the door to the destination once they arrive. Participants interviewed in the Phase Two Study said they needed various types of assistance when traveling, including knowing when the vehicle had arrived, finding their destination within the building, or help with shopping. Policy makers and advocates should be mindful of these issues as new modes of transportation are developed and changes are considered and implemented into current policies and transportation options.

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Appendix A: Screening Questions

Screening questions

1. To make sure I have it right, your name is [Check name and spelling]
2. If you would like to receive a \$25 gift card, please provide your address, including your zip code.
3. Record phone number:
4. What is your email address, if you have one?
5. Organization that recruited participant, or how did you hear about this study?

Before we get started, I'd like to ask just a few questions about you to make sure we are talking to the people we wish to interview.

6. What is your age? (Should be over 55)
7. With what racial or ethnic group do you identify? (White non-Hispanic, African American, Hispanic, Other) What is your highest level of education? [less than high school, high school graduate or GED, some college, college graduate, or post-graduate work]
8. Note the person's gender
9. Are you able to drive a car now? (Should be no)

If yes, explain that we want to interview people who cannot drive due to vision loss and terminate the interview.

10. If no, is the reason you cannot drive due to poor vision? (Should be yes) If no, terminate the interview. If yes, continue
11. Do you live alone, with a spouse, with other family members, with a friend, or with someone else?
12. Do you live in a commuter town or exurb? By that I mean a community further away from an urban area than a suburb from which people commute to an urban area to work?
13. Do you have a physical disability or health condition other than your vision loss that limits your daily activities? (Yes, no)

14. Do you plan to stay in this home or move in next 5-10 years? If yes, why do you plan to move?
15. What is your total family income? (under \$35,000, \$35,000 - \$50,000, \$51,000-\$75,000, more than \$75,000, refused)
16. Are you currently employed? (yes, no) If no, have you worked within the last ten years? (no---end) If yes, were difficulties with transportation a factor in deciding to leave your job? (yes, no)

End of screening questions.

Appendix B: Survey

Now I'm going to ask you about different kinds of transportation services that might be available in your area and whether you use them.

1. Is subway or regular route bus service available in your area? Regular route bus service is generally a bus that operates on a regular route and stops at regular bus stops according to a fixed schedule. (Yes, no, don't know)
 - a. Do you use it? (Yes, no, don't know)
 - b. How often? (Would you say daily, several times a week, once a week, several times a month, once a month, less than once a month)
2. Is paratransit service available in your area? Paratransit service is specialized transportation service for people with disabilities. (Yes, no, don't know)
 - a. Do you use it? (Yes, no, don't know)
 - b. How often? (Would you say daily, several times a week, once a week, several times a month, once a month, less than once a month)
3. Is Uber, Lyft, or other transportation network company service available in your area? Uber or Lyft match passengers with drivers using an app on your phone. (Yes, no, don't know)
 - a. Do you use it? (Yes, no, don't know)
 - b. How often? (Would you say daily, several times a week, once a week, several times a month, once a month, less than once a month)
 - c. Do you use Uber or Lyft with GoGo Grandparent or another scheduling service? This service will enable you to request a ride using a regular dial phone. (yes, no, don't know)
4. Is taxi service available in your area? Taxi service differs from Lyft or Uber in that you may call a dispatcher to book a ride and the ride is not shared. (Yes, no, don't know)
 - a. Do you use it? (Yes, no, don't know)
 - b. How often? (Would you say daily, several times a week, once a week, several times a month, once a month, less than once a month)

5. Is residential senior transportation available to you? Residential transportation is generally available to people who live in senior living communities, assisted living, or nursing homes. (Yes, no, don't know)
 - a. Do you use it? (Yes, no, don't know)
 - b. How often? (Would you say daily, several times a week, once a week, several times a month, once a month, less than once a month)
6. Is service provider transportation available in your area? This is transportation provided by a senior center, an agency for the blind, the Red Cross or other nonprofit service organization.
 - a. Do you use it? (Yes, no, don't know)
 - b. How often? (Would you say daily, several times a week, once a week, several times a month, once a month, less than once a month)

OK, great. You said you used X, Y, and Z. I'm going to ask you a few questions about each type of service you use. [If more than three services are used, ask the following questions about the ones they use most often but no more than three.]

7. Which of the following do you go to using this service? (Check all that apply)
 - a. Non-emergency medical care
 - b. Shopping for essentials like groceries
 - c. Exercise and leisure
 - d. Socialization, like visiting friends
 - e. Work or job training
 - f. Professional appointments, such as with a lawyer, counselor or for low vision rehabilitation
 - g. Church
8. Are there any other places you go using this transportation? If so, where?
9. Please estimate how much you would pay for a typical one-way trip using this service.
[\$3.00 or less, \$4-\$6, \$7-\$10, More than \$10]
10. Do you consider this service affordable? In other words, can you afford to use the service as often as you need it? Yes/No,

11. How convenient (easy to access and use) is this service to use? (Very, somewhat, not at all)
12. Thinking about using this transportation service, what are the challenges or restrictions?
I'll read you a list and you can tell me if these are problems.
 - a. More demand than there is available service
 - b. Scheduling is not flexible
 - c. Must schedule in advance
 - d. Service is not dependable
 - e. The system for scheduling a ride is not accessible or easy for me to use
 - f. Distance, for example you can only go a certain distance
 - g. Jurisdictional, for example you can't go across city or county lines
 - h. Destination, for example, you can only use it to go certain places like the doctor's office
 - i. Time or day, for example it only operates during certain hours of the day or certain days of the week
 - j. Drivers do not provide the assistance you need
 - k. You cannot travel with a friend or companion
 - l. Any other restrictions or challenges that come to mind?
13. Are there any other transportation services you use? (Yes/no)
 - a. Can you say what this service is, how often you use this service?
14. How well it works for you? (Very, somewhat, not at all)
15. Do you have any family or friends that drive you places you need or want to go? (Yes/no)
 - a. How often do they drive you? (Would you say daily, several times a week, once a week, several times a month, once a month, less than once a month)
 - b. How is that working for you? (Yes/no)
16. How far do you generally travel on average using any of the transportation types we've talked about? [less than a mile, 1-5 miles, 6-10 miles, more than 10 miles]
17. Do you ever take trips longer than 1 hour one way?
 - a. How often do you take these trips? (Would you say daily, several times a week, once a week, several times a month, once a month, less than once a month)
 - b. How do you get there?

18. What types of assistance do you need when traveling? Let me know any and all that apply to you.
- a. Help into and out of your home or business
 - b. Help to and from the vehicle to the front door of your home or business
 - c. Getting into and out of the car or vehicle
 - d. Knowing when the driver is there to pick you up
 - e. Getting to the right office once you get to your destination
 - f. Helping with shopping or other activities once you get there
 - g. Any other type of support?
 - i. Can you explain how this assistance works for you? [Probe for scheduling and meeting assistance, quality of assistance, etc.]
 - h. What do you need assistance for that you are not getting?
19. How often does not driving prevent you from doing any of the activities or chores you need or want to do? [Very often, often, sometimes, rarely, never]
20. How many trips where you leave the house using transportation do you usually do in a week? [I travel daily, several times a week, once a week, several times a month, once a month, less than once a month]
- a. If you had access to a car and driver anytime you wanted, how often would you take spontaneous or unplanned trips? (Would you say daily, several times a week, once a week, several times a month, once a month, less than once a month)
 - b. Where would you go?
 - c. Why are these trips not possible now?
21. What if anything do you do to prepare for a trip to an unfamiliar destination?
22. Do you use a smart phone like an iPhone or Android phone? (Yes, no)
- a. If yes, do you use any apps to schedule your transportation? (Yes, no)
 - b. If so, what apps do you use?
 - c. Do you use any apps for navigation? If so, which ones?
 - d. Which ones do you like best?
 - e. If not, how do you schedule your transportation? [Use a regular landline phone and talk to a scheduler or dispatcher, have a friend or family member do it for me, use GoGo Grandparent or a similar service, other please explain]

23. As you think about the future of transportation options where you live, how do you expect the availability of transportation services to change? Do you expect them to get better, worse or stay the same?
 - a. Why do you say that?
24. Thinking about all the topics we've covered in this survey, is there anything else you'd like to say about transportation issues you face?

Thank you for your participation.

Appendix C: Consent Forms

A. Consent to Screen

Thank you very much for your interest in participating in the transportation survey. My name is ... and I work with the American Foundation for the Blind. I would like to take a few minutes at this time to ask you a few introductory questions about you. We want to make sure to recruit people with a variety of characteristics and situations to make sure we get the most representative sample of the blind and visually impaired community we can. For example, we want to interview people in urban and rural areas throughout the country, with a variety of demographic characteristics and in different living situations. So we'll ask you a few questions now and call you back later if we'd like to conduct the full survey with you. I can assure you that your answers will be kept confidential – only staff of AFB who work on the study will see your answers. You can decide not to answer any of the questions if you feel uncomfortable doing so. This should take about five minutes. Is this a good time?

B. Consent to Participate in Full Study

Thank you very much for your interest in participating in the transportation survey. My name is ... and I work with the American Foundation for the Blind. I would like to take about 45 minutes of your time to ask you about your transportation experience and needs. I can assure you that your answers will be kept confidential – only staff of AFB who work on the study will see your answers. You can decide not to answer any of the questions if you feel uncomfortable doing so. Is this ok with you?