GEORGIA
HEALTH POLICY CENTER






AT A CROSSROADS: EXPLORING TRANSPORTATION FOR OLDER GEORGIANS IN A RAPIDLY CHANGING LANDSCAPE

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ACRONYMS AND ABBREVIATIONS

AAAs	Area Agencies on Aging
AARP	American Association of Retired Persons
ACL	Administration for Community Living
ACS	American Community Survey
ADA	Americans with Disabilities Act
ARC	Atlanta Regional Commission
CBS	Community-based services
CEO	Chief executive officer
CTAA	Community Transportation Association of America
DAS	Division of Aging Services
DCH	Department of Community Health
DHS	Department of Human Services
DOT	Department of Transportation
FAST	Fixing America's Surface Transportation Act
FTA	Federal Transit Administration
FY	Fiscal year
GDOT	Georgia Department of Transportation
HCBS	Home- and community-based services
HSP	Human service provider
MBTA	Massachusetts Bay Transit Authority
MoNI	Mobility Need Index
MPO	Metropolitan planning organization
NADTC	National Aging and Disability Transportation Center
NEMT	Non-emergency medical transportation
OFSS TSS	Office of Facilities and Support Services Transportation Service Section
SMART	Suburban Mobility Authority for Regional Transportation
SSGB	Social Services Block Grant
TCRP	Transit Cooperative Research Program
TNC	Transportation network company
TRIP$	Transportation Request and Information Processing System
TSS	Transportation Services Section
UZA	Urbanized zoning area

EXECUTIVE SUMMARY

The Georgia Department of Human Services (DHS), Division of Aging Services contracted with the Georgia Health Policy Center to respond to a request from the Georgia General Assembly to assess the current unmet transportation need for older adults across the state by DHS' planning and service region. In addition, this report provides context regarding the infrastructure and delivery of transportation services, considers the future through the presentation of population projection data, and highlights promising practices that can be explored as opportunities to meet older adults' unmet transportation needs. Key findings include:

Population Characteristics and Considerations

- The proportion of the population that is 65 and older will grow substantially from 1.3 million in 2016 to 2.9 million in 2040, with the greatest rate of change among those 85 and older.
- Every DHS region will experience growth in the older adult population, but the change will not be equally experienced across regions. The percent change in population is projected to be the smallest in the Heart of Georgia region (2016-2025: 41%, 2025-2040: 21%), while the Atlanta region is expected to see the largest percent change (2016-2025: 77%, 2025-2040: 61%).
- It is estimated that, on average, older adults will outlive their driving ability by 11 years for women and six years for men.
- Great heterogeneity exists within the older adult population, and those with poor health, low income, and suburban or rural residence experience inequities in transportation access. While fixed-route services play an important role in transportation for older adults, demand-response services can be better suited for some older adults, particularly those with limited mobility and those living in less populated areas where fixed-route services are not feasible.
- Through the application of driving prevalence estimates by age and gender to Georgia's 2016 population, it is estimated that 263,582 individuals aged 70 and older had ceased driving. Based on this estimate of the nondriving population, approximately 34% of individuals aged 70 and older in the state were no longer driving. After considering the number served through DHS and Department of Community Health (DCH) programs, and assessing the use of alternative transportation modes, it is estimated that approximately 200,000 Georgians aged 70 and older may have unmet transportation needs.

Responsible Agencies and Funding

- The three state agencies responsible for the planning and delivery of the majority of transportation services for older adults in Georgia each have unique planning and service areas, also described as regions or districts.
- Public transit services are available in 123 out of 159 counties in the state, though service features, area covered, and capacity vary widely by county.
- The non-emergency medical transportation program, administered by DCH, is the largest provider of transportation for older adults. The program served an estimated 26,664 individuals 60 and older eligible for Medicaid in state fiscal year (FY) 2018.
- The majority of the DHS' Coordinated Transportation System providers are transit systems operated with Georgia Department of Transportation-administered Federal Transportation Authority Section 5311 funds.
- The DHS Coordinated Transportation System served 7,761 unduplicated individuals over age 60 in state FY 2018, and the majority of the trip destinations were to senior centers, where meals, programming, and socialization opportunities are provided.
- The DHS Coordinated Transportation System's most widely offered services, core trips (trips during regular operating hours) and noncore trips (trips after regular operating hours), operate at an average rate of $6.09 and $21.02 respectively across all regions.
- An estimate of the capital and operating costs for the primary transportation programs serving older adults included $7.1 million for non-emergency medical transportation (limited to the expenditures for beneficiaries aged 60 and older), $9.3 million for the DHS Coordinated Transportation System (limited to clients aged 60 and older), and $22.7 million for Section 5311 funds from the Federal Transportation Authority (not limited to older adults, but focused on all nondrivers). There are a few additional transportation services available, but the three provided by DCH, DHS, and Georgia Department of Transportation are by far the largest.

Assessment of Access and Needs

- Transportation services targeting older adults provided in addition to the three largest programs are more abundant in the Atlanta region than in other areas. Regardless of region, currently available programs funded or supported by the Area Agencies on Aging (AAAs) are typically delivered through transportation vouchers.
- Driver safety programs are readily available throughout the state and support keeping older adult drivers driving safely for longer.
- Travel training programs are not well advertised or accessed by older adults in the state but aim to increase use of public transportation as an alternative to driving.

- Three cycles of State Plan on Aging assessments have found that stakeholders consistently rank transportation as a priority for ensuring individuals have the opportunity to age in place and remain in the community setting for as long as possible.
- Transportation requests to DHS that cannot be met are not tracked or maintained on a waiting list, as it is historically rare for new transportation funding to become available and it is unlikely that the need will stay constant. Therefore, DHS administrative data could not be used to capture unmet need for the current study.
- Unmet transportation needs described by providers and older adults include regional medical trips, recurring trips (e.g., trips to dialysis treatment), trips beyond the public transit service area and out-of-county trips, and evening trips.
- Quality-of-life trips, which range from trips to the grocery store to social events, emerge as a significant, persistent unmet need from the perspective of service providers and consumers.
- Interest in addressing unmet needs through volunteer programs exists, but a lack of startup funding and insurance liability concerns have hindered these efforts.
- Some AAA regions are exploring new modes of service to provide quality-of-life trips through a fixed-route shuttle service to destinations such as the grocery store, pharmacy, and post office.
- Inadequate infrastructure, provider capacity, and information about services are persistent barriers across the state.
- The greatest current and projected future concentrations of older adults with high mobility needs are in urban and adjacent suburban areas.

Opportunities for Exploration

- Supportive relationships between state entities, regional and/or local providers, and the communities they serve are critical for creating and managing transportation supply for older adults.
- Allowing the flexibility to innovate at the local level is valuable, but it must be done in a way that allows for diffusion of promising ideas across communities and acknowledges some innovations may not be successful.
- Coordinating multiple funding streams and maintaining collaborative partnerships are the foundations of promoting local mobility through a variety of transportation options. This is the case for serving older adults, and it is also true for serving the broader community.
- A rapid environmental scan of promising practices in transportation solutions for older adults produced information regarding organizations that have sought to tackle similar issues as those facing Georgia and may offer options for addressing unmet need for the state.

INTRODUCTION

This report was prepared by the research staff at the Georgia Health Policy Center in collaboration with Georgia Department of Human Services (DHS) Division of Aging Services (DAS) to respond to a request from the Georgia General Assembly to assess the current unmet transportation need for older adults across the state by DHS planning and service region. In addition, the report provides context regarding the infrastructure and delivery of transportation services, considers the future through the presentation of population projection data, and highlights promising practices that can be explored as opportunities to meet older adults' unmet transportation needs.

Population of Focus

For the purposes of this report, older adults are defined as individuals aged 60 and older. When county-level information for individuals aged 60 to 65 years was incomplete in a primary data source used for this report, the American Community Survey (ACS), the age group 65 years and older was selected for analysis.

Unmet Need

Unmet need for transportation is defined differently throughout both the academic literature and in transportation planning practice. The concept of unmet need is complex, and needs vary widely across the older adult population. As resources are limited, unmet need often must be defined relatively narrowly and encapsulate only those needs that are considered reasonable to be met within the current climate. For this report, the research team adopted a broader definition of unmet need that attempts to acknowledge the spectrum of unmet need as experienced by older adults in the state. Therefore, unmet need for this report is defined as the inability of older adults to reach desired destinations due to a lack of reliable, affordable, or accessible transportation.

Background

The older adult population in Georgia experienced significant growth over the past decade and, like the rest of the United States, is projected to increase rapidly in size as the baby boom generation transitions into older age (Colby & Ortman, 2015; GDHS, 2015). Consequently, careful attention to the planning and allocation of resources for older adults is imperative to ensure that the supply of services and supports meets this increase in demand.

Of the services and supports available, transportation represents a unique challenge for the older adult population. Research indicates that in the United States, most older adults' primary mode of transportation is driving a private vehicle (Kostyniuk & Shope, 2003; Pucher & Renne, 2003). However, many older adults lack an alternative form of transportation, particularly as the majority of older adults live in suburban or rural areas, which typically lack accessible public transportation and/or built environments that are conducive to active transportation (Dye, Willoughby, & Battisto, 2011; Dickerson et al., 2017; Rosenbloom, 2012). This reliance on driving is complicated by the declines in physical, cognitive, and other abilities that accompany aging. Foley, Heimovitz,

Guralnik, & Brock (2002) found that, on average, older adults will outlive their driving ability by approximately 11 years for women and six years for men.

Despite the challenges associated with driving into advanced age, studies have also found that driving cessation significantly impacts health and quality of life for older adults, and that cessation is associated with depression, reduced access to goods and services, and social isolation (Bergen et al., 2017; Ragland, Satariano, & MacLeod, 2005; Satariano et al., 2012). These risks associated with immobility are augmented by declines in the availability of informal supports, especially adult children, to whom older adults have historically turned for transportation once they cease driving (Adler & Rottunda, 2006; Choi, 2012; Hendrickson & Mann, 2005; Johnson, 2008; Kostyniuk & Shope, 1999; Rosenbloom, 2003). Decreasing fertility rates and the geographic dispersion of families have left many older adults without a source of informal support, which, paired with the paucity of public and active transportation options, significantly restricts older adults' mobility once they cease driving. Thus, a significant and unmet need for transportation services among older adults exists, and planning that incorporates age-friendly transportation services and enhancements to the built environment is warranted to curb adverse outcomes.

Report Organization

This report is organized into six sections. A brief synopsis of the report sections follows.

Introduction
This section of the report provides the context and framing, including the population of focus, concept of unmet need, infrastructure, service delivery, and a grounding in the need for mobility support for older adults.

Transportation Services for Older Adults in Georgia
The primary transportation services available to older adults in Georgia are described. In addition, information regarding driver safety programs and travel training programs is provided in order to understand the broad range of available approaches to meet the mobility needs of older adults.

Measuring Transportation Need and Unmet Need for Older Adults in Georgia: Current and Future Trends
The authors describe the approaches currently utilized to measure transportation need and unmet need through a review of the literature, recent work within the state to improve transportation, and a summary of the available quantitative and qualitative data that depict current and future trends.

Promising Practices in Transportation Solutions Serving Older Adults
The transportation challenges facing Georgia are not unique to the state. The authors present ideas and approaches tested by organizations across the nation that may provide examples of solutions for further study and local application.

Limitations and Opportunities for Further Research

Limitations of this report are explained, which include the difficulty of determining a precise estimate of unmet transportation need due to the complexity of the transportation delivery system and the absence of integrated data sets. Additionally, this section describes the opportunities to address the transportation system more holistically, recognizes the changes related to the diffusion of technological innovation, and identifies opportunities for further research that include an integration of local knowledge regarding the needs of the community and assessment of solutions.

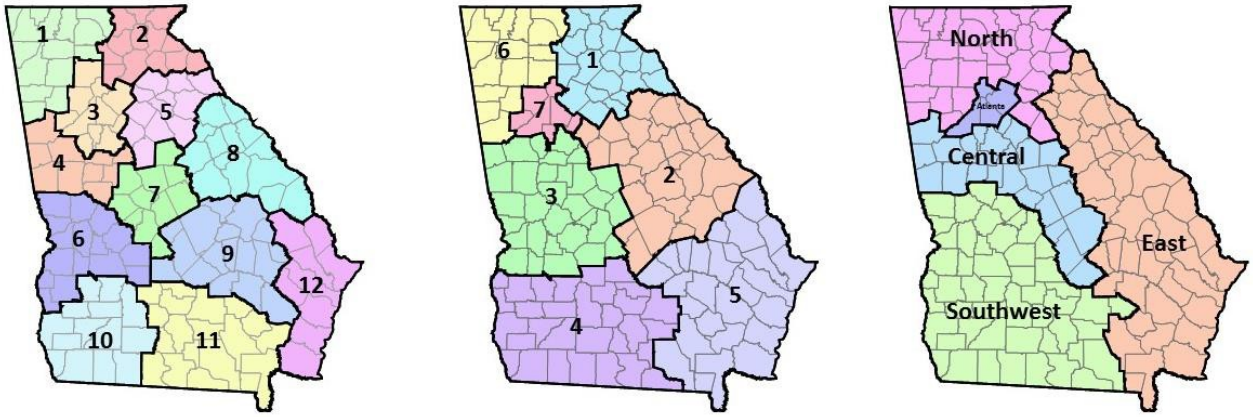
Conclusion

The authors summarize the main points.

Overview of Transportation Services

Three state agencies are responsible for the planning and delivery of the majority of transportation services for older adults in Georgia: Georgia Department of Transportation (GDOT), Department of Community Health (DCH), and DHS. Each agency currently operates very differently. For instance, the planning and service areas are unique to each agency, as depicted in Figure 1. For a list of the counties within each agency's planning and service area, see Appendix A.

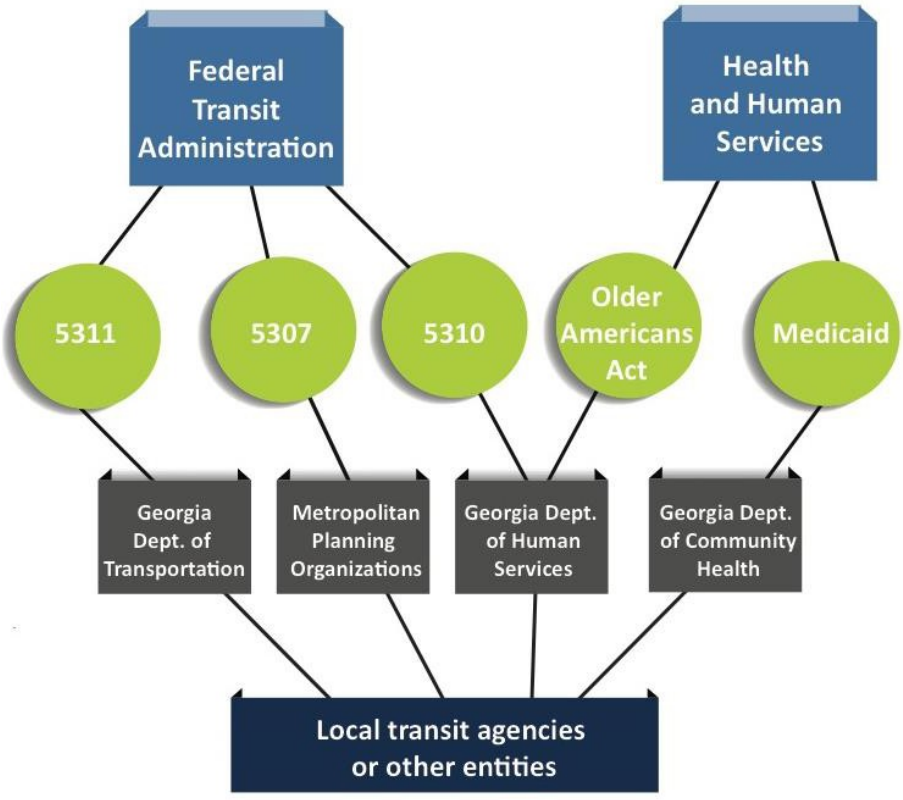
Figure 1: Planning and Service Area by Agency



DHS GDOT DCH

In addition, program service eligibility, program regulations, service tracking, and provider reimbursement methods vary for each agency. These differences, in part, are due to the flow of funding for each of the transportation programs from various federal agencies, as depicted in Figure 2.

Figure 2: Flow of Federal Transportation Funding



Georgia Department of Transportation

GDOT is the state agency responsible for the planning, construction, and maintenance of Georgia's transportation system; the planning and programming of transportation funding; and the distribution and oversight of the Federal Transit Administration (FTA) grants authorized under the Fixing America's Surface Transportation (FAST) Act (GDOT, 2015). As presented in Figure 1, GDOT divides the state into seven districts for planning and service delivery: (1) Northwest Georgia; (2) East Central Georgia; (3) West Central Georgia; (4) South Georgia; (5) Southeast Georgia; (6) Northwest Georgia; and (7) Metro Atlanta (GDOT, 2017). GDOT also works closely with the state's 19 Metropolitan Planning Organizations (MPOs), 12 regional commissions, rural transit planning agencies, and other local entities in transportation service planning (GDOT, 2017).

MPOs are federally mandated policy-making organizations that represent localities in each urbanized zoning area (UZA; defined as having a population over 50,000 people, as determined by the U.S. census), while regional commissions represent nonmetropolitan areas (U.S. Department of Transportation [U.S. DOT], 2016). Regarding FTA funding, MPOs are direct recipients of certain grants, while GDOT receives and distributes other grant funding to transit subrecipients (e.g., regional commissions, transit agencies, etc.). Of the transportation services that fall under GDOT and the MPOs, those particularly relevant for older adults include public fixed-route transit,

demand-response services, and Americans with Disabilities Act (ADA) Complementary Paratransit/Paratransit services. Two specifically relevant funding sources for which GDOT is the recipient are the FTA Section 5307 Urbanized Area Formula Funding program and FTA Section 5311 Formula Grants for Rural Areas program.

Fixed-route transit follows a regular route with set or fixed stops and operates on a set schedule (Community Transportation Association of America, n.d.). Buses and trains commonly operate as fixed-route services. Demand-response services, in contrast, do not follow a fixed route, but pick up and drop off consumers at different points in response to individual requests. Typically, demand-response services require consumers to reserve a ride in advance, often 24-48 hours prior to the scheduled ride (National Aging and Disability Transportation Center, 2018). The availability of public fixed-route and demand-response transit services varies widely both across and within Georgia's regions. In rural and suburban areas, services may be very limited in terms of operating hours, days, and service area, or may not operate at all (GDOT, 2011). Further, even where services are available, they may not be accessible to older adults due to a number of factors, including cost, lack of amenities, and geographic gaps in service (Atlanta Regional Commission, 2016). Despite these barriers, fixed-route and demand-response transportation represent some of the only public alternative transportation options for older adults. The ADA, which sets requirements for both of these types of transportation services, has significantly impacted public transportation for older adults and will be discussed in more detail later in this section.

The Section 5307 program of the U.S. DOT provides funding to UZAs and states for public transportation capital projects, operating assistance, job access and reverse commute projects, and transportation-related planning (U.S. DOT, 2014). UZAs are differentiated as large or small by population; large UZAs have 200,000 or more in population, while small UZAs have between 50,000 and 200,000 (U.S. DOT, 2016). The Transit Program, within GDOT's Division of Intermodal, manages and ensures compliance for Georgia's 24 planning subrecipients, seven small urban (population under 200,000) transit systems, and 85 rural transit systems (GDOT, 2017). The Section 5307–funded programs in large UZAs (Metro Atlanta, Savannah, Columbus, and Augusta) are also relevant with respect to transportation for older adults, as these programs also provide the fixed-route and demand-response services often utilized by older adults. However, these programs are managed and coordinated directly by the large UZAs within the FTA, and do not fall under GDOT's purview.

The Section 5311 program of the FTA provides capital, planning, and operating assistance to support public transportation in rural areas, defined as areas with a population less than 50,000 (U.S. DOT, 2018). Funding is available to states and federally recognized Indian Tribes for a period of three fiscal years and is apportioned using a statutory formula that includes land area, population, revenue vehicle miles, and low-income individuals in rural areas (U.S. DOT, 2018). Currently the Rural Transit System covers 120 of Georgia's 159 counties, as well as three cities (GDOT, 2017). While the Section 5311 program does not specifically fund services for older adults, it serves as an important transportation option for nondrivers, including older adults, across the state.

Georgia Department of Community Health

Georgia DCH administers the largest transportation program that serves older adults in the state, Medicaid non-emergency medical transportation (NEMT; GDOT, 2011). Federal regulations require that state Medicaid agencies ensure qualified beneficiaries have transportation to and from medical services (Centers for Medicare and Medicaid Services, 2016). Each state, however, is responsible for determining eligibility for NEMT services, and qualifying unmet needs can include not having a driver's license; not having a working vehicle available; being unable to travel or wait for services alone; and having a physical, cognitive, mental, or developmental limitation (Centers for Medicare and Medicaid Services, 2016). Georgia DCH specifies that to be eligible, "members must have no other means of transportation available and are only transported to those medical services covered under the Medicaid program" (Georgia DCH, 2018).

DCH uses a brokerage system to deliver NEMT services and currently uses Logisticare and Southeastrans to coordinate NEMT services for Georgia's regions. Unlike GDOT, DCH divides the state into five regions: North, Atlanta, Central, East, and Southwest, as presented in Figure 1 (Georgia DCH, 2018). DCH pays the NEMT brokers a monthly capitated rate based on the number of eligible Medicaid members residing in their contracted region(s). Also of note, while Medicaid funds a substantial proportion of transportation services for older adults, Medicare does not typically cover transportation aside from ambulance transportation (CMS, 2018).

Georgia Department of Human Services

The Office of Facilities and Support Services Transportation Service Section (OFSS TSS) within DHS manages the state's Coordinated Transportation System. TSS administers coordinated transportation services to a range of consumers of human services, including older adults, through partnerships with a variety of human service providers in the state. The DAS is the state agency that partners with TSS to provide Coordinated Transportation services for older adults in Georgia. Services provided for DAS clients are funded through a combination of sources, including Older Americans Act Title IIIB and FTA Section 5310 Enhanced Mobility of Seniors and Individuals with Disabilities Program funds, as well as local contributions and additional state-administered fund sources, such as the Social Services Block Grant (SSBG). Older Americans Act and Section 5310 apportionments are both formula-driven and allocated based on the distribution of older adults residing within a given region. Two fund sources — Older Americans Act and SSBG — have local match requirements of 10% and 12%, respectively (Georgia DHS, 2017).

DHS is the designated recipient of FTA Section 5310 grant funding in Georgia. The FTA provides this grant to assist states in providing transportation to older adults and people with disabilities "when the transportation service provided is unavailable, insufficient, or inappropriate to meeting these needs" (U.S. DOT, 2018). The program seeks to enhance mobility for these two populations by removing barriers to accessing transportation services and expanding transportation mobility options (U.S. DOT, 2018). The FTA allocates Section 5310 funding based on the state's share of older adults and persons with disabilities, and supports activities in all geographical areas — large urbanized (over 200,000), small urbanized (50,000-200,000), and rural (under 50,000). States are

eligible recipients for rural and small urban areas funding, while recipients of funding for large urban areas are designated by the governor of the state.

In addition to formula grants, discretionary grants, known as Rides to Wellness Demonstration and Innovative Coordinated Access and Mobility Grants, are also available to Section 5310 grantees. Rides to Wellness is a pilot program that was established by Section 3006(b) of the FAST Act and funds innovative projects that aim to improve the coordination of transportation services and NEMT services (U.S. DOT, 2018).

In addition to Section 5310 funding, Older Americans Act funding is used across the state to provide transportation services for older adults. The Older Americans Act supports a range of community social services for older adults, and the 2006 reauthorization of the act contains specific provisions for states and Area Agencies on Aging (AAAs) to implement coordinated systems for home- and community-based services (HCBS), including transportation (Administration on Community Living, 2017). AAAs are the coordinating entities for all community-based services for older adults in each of the 12 DHS regions (Georgia DHS, 2015). Specifically, grantees can use Older Americans Act Title IIIB funds to transport seniors. Further, grantees have the option to use Title IIIB funds to meet match requirements for programs administered by the FTA, such as Section 5310 and 5311 programs (Administration for Community Living, 2017).

SSBG funding is also heavily utilized to support transportation services for older adults across the state. The SSBG is federal funding that the U.S. Department Health and Human Services allocates annually to states and territories to support social services for vulnerable children, adults, and families (U.S. Office of Community Services, 2018). SSBG funding is relatively flexible with regard to the specific services states can choose to support with the funds, and states can also modifythe funds over time in response to changes in the needs of the populations served. Many states, including Georgia, use SSBG funds to support transportation services for vulnerable populations. SSBG funding supports Coordinated Transportation System services in each Georgia DHS region of the state.

Community-Based Services (CBS) Program funding is another source of funding used to provide transportation services for older adults in some of the Georgia DHS regions. DAS receives CBS funding from the state legislature, then allocates it to the AAAs in each region to support a number of services, including transportation. AAAs can then elect, based on the needs within their respective region, whether or not to utilize CBS funding to support transportation services.

Key Approaches to Transportation Services for Older Adults

Apart from driving, older adults utilize a number of transportation services provided by both public and private entities throughout the state. The extent to which these services are geared toward older adults varies, and some services may not accommodate the specific needs of all older adults. Further, the availability, accessibility, and quality of each of these types of transportation differ both across and within regions.

As previously discussed, public fixed-route transit and demand-response services are critical transportation resources for older adults, particularly nondrivers. Providers of fixed-route services, including bus and rail, that receive FTA Section 5307 Urbanized Area Formula Grant funding are required to provide discounted fares for older adults (reduced so that older adults, defined as at least age 65 and older, pay half (or less than half) the normal peak hour fare amount) during nonpeak hours (49 U.S.C. Section 5307(d)(1)(D) of the Federal Transit Act). This fare reduction is intended to aid public transportation in meeting its objective of increasing mobility for disadvantaged populations (Newmark, 2014) and can mitigate financial barriers to transportation access for some older adults.

While fixed-route services play an important role in transportation for older adults, demand-response services can be better suited for some older adults, particularly those with limited mobility and those living in less populated areas where fixed-route services are not feasible. Demand-response services do not involve stops or require transfers, as fixed-route services often do, and take consumers directly from their home to their destination (ARC, 2017). Thus, older adults who need more assistance or specialized accommodations than may be available for fixed-route services can greatly benefit from demand-response systems.

In some areas, hybrid fixed-route and demand-response services, also known as deviated fixed-route services, are available. Deviated fixed-route services have some components of fixed routes but can deviate from the predetermined route to accommodate special requests (e.g., can drop a rider off at home) (ARC, 2017). These systems vary in service area and the amount of time required to schedule a deviated stop but can increase access to more traditional transportation systems for some older adults.

The ADA, which applies to almost all providers of transportation services, both public and private, requires that providers deliver accessible services and prohibits these entities from discriminating against persons with disabilities (National Rural Transit Assistance Program, 2016). The ADA requires transit agencies that run fixed-route services to provide supplementary paratransit services for individuals who are unable to access fixed-route services or independently navigate the system (National Rural Transit Assistance Program, 2016). The regulations stipulate that providers operate a complementary and comparable ADA paratransit service within three-fourths of a mile of the fixed-route that is available during the same hours as the fixed-route services (National Aging and Disability Resource Center, 2018). These services typically involve the use of smaller vehicles and provide demand-response service that is curb-to-curb or door-to-door (Community Transportation Association of America, 2018; Disability Rights Education & Defense Fund and TranSystems Corp., 2010).

The ADA establishes minimum eligibility requirements for paratransit but does not prescribe the process by which transit agencies determine eligibility, nor does it prohibit agencies from providing paratransit services to additional individuals (e.g., older adults with limited mobility but who do not qualify for paratransit) (U.S. DOT, 2015). Thus, some transit systems with broader

eligibility requirements may serve more older adults than others. Nonetheless, where it is available, paratransit plays an important role in transportation for older adults, and many who are eligible depend heavily upon the services. Further, the ADA's requirements regarding accessibility features have made transportation systems more accessible for all older adults, including those who do not qualify for paratransit.

Shared ride services or transportation network company (TNC) services are transportation services provided using a mobile application or online platform to connect passengers with drivers who are using their personal vehicles (American Association of Motor Vehicle Administrators, 2018). These services represent an emerging approach in providing transportation services for older adults. Many well-established TNCs, such as Uber and Lyft, now offer accessible options for older adults and have also developed features that enable individuals without TNC accounts (i.e., do not have the application) and/or smart phones to book rides via phone using an operator (NADTC, 2017).

Additionally, companies that further facilitate the ride-ordering process have become more prevalent in recent years. For instance, GoGo Grandparent, which was designed specifically for older adults, enables users to dial a toll-free number and arrange a ride using the keypad (e.g., users can dial 1 to request a car to their home) or by speaking with an operator (GoGo Grandparent, 2018). Other features include using preprogrammed locations, voice commands, setting a fixed pickup schedule, and sending text updates to family members regarding trips. These services and features aim to make TNC services more accessible for older adult users and may contribute to increases in TNC use as an alternative to driving among older adults in the future.

Another important strategy in the delivery of transportation services for older adults is through the use of transportation vouchers. Voucher programs provide reduced-fare or free rides to eligible, often low-income individuals. Riders receive vouchers that can be exchanged for transportation services (NADTC, 2018). Some voucher programs may offer vouchers for more traditional services, such as public transportation or taxis, or may restrict use to a specific trip type, such as a medical appointment (National Association of Area Agencies on Aging, 2018). Some programs, however, may enable older adult riders to use friends, family members, or volunteers for transportation services (Rural Health Information Hub, 2018b). These models can increase options for older adults, particularly those with less access to public transportation or taxi services, such as those living in rural areas.

Volunteer driver programs, which are often operated by nonprofit or faith-based organizations, provide free transportation services to individuals in need and play an integral role in filling gaps in transportation need in many communities (CTAA, 2018). Volunteer programs are particularly well suited for older adults, as drivers typically provide door-to-door service and, in some programs, may offer additional assistance (e.g., assisting older adult consumers during shopping trips) (Rural Health Information Hub, 2018a). Additionally, volunteer services typically have fewer constraints than traditional transportation services and may, for instance, accommodate multiple stops or cross county lines, and can address barriers to access that conventional transportation services

cannot (Kerschner, 2015). Existing programs vary significantly with regard to size, scope, and operation but, where they are available, can greatly enhance older adults' mobility.

In addition to directly providing transportation services, some programs, namely transportation safety and travel training programs, supplement existing systems and aid older adults in remaining independently mobile. Most transportation safety programs aim to enhance older adults' capacity to drive and can entail a range of both medical and behavioral assessments and interventions (Satariano et al., 2012). In contrast, travel training programs help consumers develop knowledge and self-efficacy with regard to alternative transportation options to increase the likelihood that they will utilize these services to meet their mobility needs (Transit Cooperative Research Program, 2014).

Older Adult Population Demographics

Generally, aging is associated with deteriorating physical and cognitive ability, with the most pronounced, rapid declines occurring during advanced age (Sprague, Phillips, & Ross, 2017). Consequently, within the older adult population, distinct segments emerge with differing mobility needs (Ettleman et al., 2017). These segments have been defined relatively inconsistently in the literature but are often divided into ages 60 or 65 to 74 years, 75 to 84 years, and 85 and older, especially within the area of driver safety (U.S. DOT, 2009). The marked differences with respect to vision, hearing, disease and illness, cognition, and other factors critical to the mobility of individuals in each segment are important to consider when characterizing transportation service and support needs among older adults (Satariano et al., 2012). Broadly, low mobility and an accompanying decrease in quality of life have been consistently observed among the oldest older adults (Hjorthol, 2013). As the absence of support is often the most detrimental for this subgroup, the needs of the oldest older adults warrant heightened attention when evaluating and addressing unmet transportation need and will be discussed in greater detail throughout this report.

TRANSPORTATION SERVICES FOR OLDER ADULTS IN GEORGIA

Existing transportation-related services and supports vary markedly within and across regions of the state. Available services include those that aim to maximize the amount of time older adults can drive safely and those that enable older adults to utilize alternative modes of transportation. Funding sources and amounts also differ by region, as do eligibility requirements per program. This section will provide an overview of the service expenditure, cost, and utilization data available at the state level for each of the major transportation providers and also describe the availability of driving support services, specifically driver safety and travel training programs.

Key Findings

- The three state agencies responsible for the planning and delivery of the majority of transportation services for older adults in Georgia each have unique planning and service areas, also described as regions or districts.
- Public transit services are available in 123 out of 159 counties in the state, though service features, area, and capacity vary widely by county.
- Through the NEMT program, DCH is the largest provider of transportation for older adults, serving an estimated 26,664 individuals 60 and older eligible for Medicaid in state FY 2018.
- The majority of the DHS Coordinated Transportation providers are transit systems operated with GDOT-administered FTA Section 5311 funds.
- The DHS Coordinated Transportation System served 7,761 unduplicated individuals over 60 in state FY 2018, and the majority of the trip destinations were to senior centers, where meals, programming, and socialization opportunities are provided.
- The DHS Coordinated Transportation System's most widely offered services, core trips (trips during regular operating hours) and noncore trips (trips after regular operating hours), operate at an average rate of $6.09 and $21.02 respectively across all regions.
- An estimate of the capital and operating costs for the primary transportation programs serving older adults included $7.1 million for NEMT (limited to the expenditures for beneficiaries aged 60 and older), $9.3 million for DHS Coordinated Transportation System (limited to clients aged 60 and older), and $22.7 million for Section 5311 funds from the FTA (not limited to older adults, but focused on all nondrivers). There are a few additional transportation services available, but the three provided by DCH, DHS, and GDOT are by far the largest.
- Transportation services targeting older adults provided in addition to the three largest programs are more abundant in the Atlanta region than in other areas. Regardless of region, currently available programs funded or supported by the AAAs are typically delivered through transportation vouchers.

- Driver safety programs are readily available throughout the state and support keeping older adult drivers driving safely for longer.
- Travel training programs are not well advertised or accessed by older adults in the state but aim to increase use of public transportation as an alternative to driving.

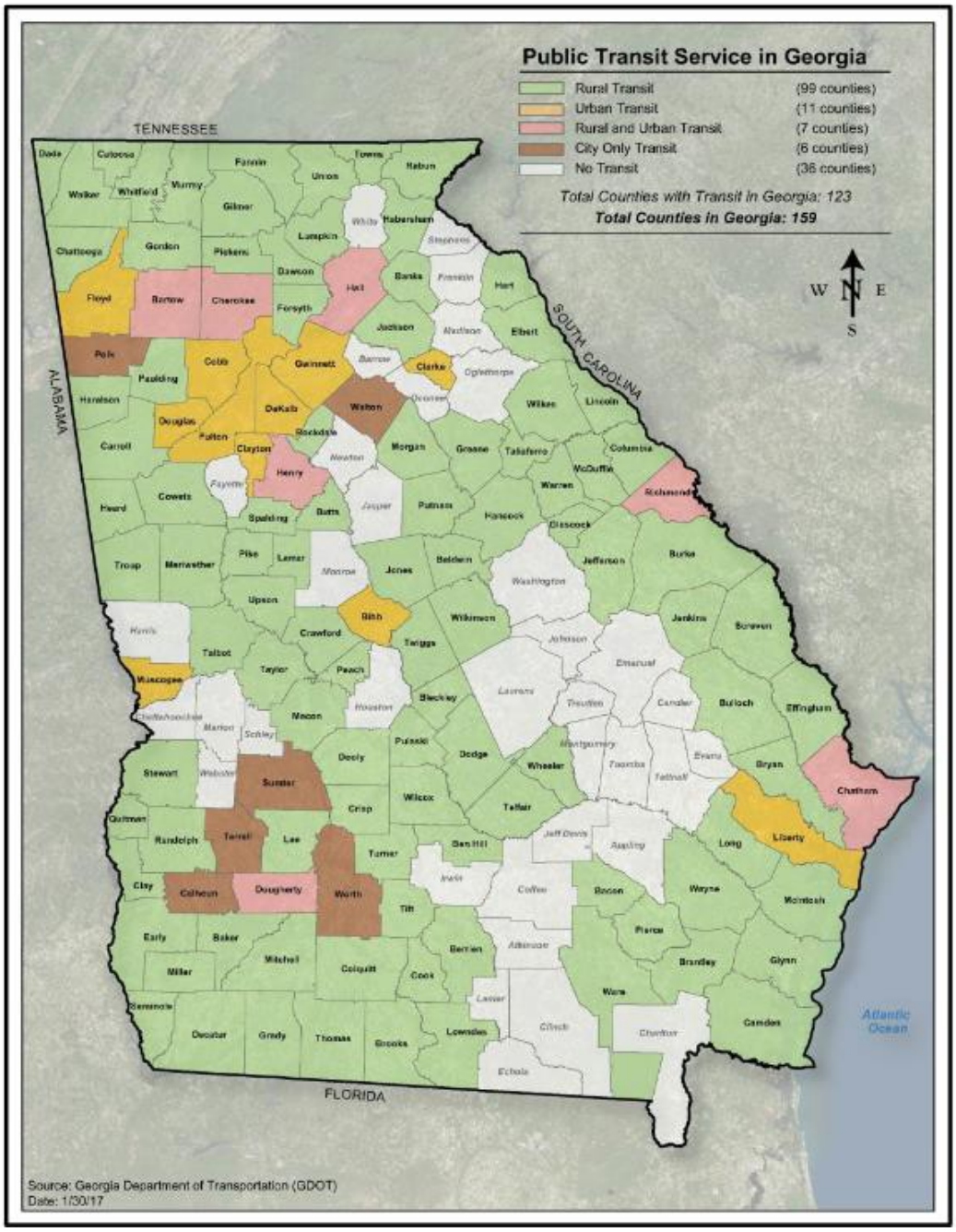
Public Transportation

GDOT is the state entity that has the responsibility for both the state's roads, bridges, and interstate highways and other modes of transportation, including rail, transit, general aviation, bicycle, and pedestrian programs. In FY 2017, the total budget for GDOT between state and federal funding sources was $3.65 billion, with state fees, taxes, and bond funds making up 56 percent and federal sources 44 percent (GDOT, 2017).

The services that are particularly relevant to meeting the needs of older adults who are not driving fall under the GDOT Intermodal Division. The division focuses on ensuring there are multiple modes of transportation with connectivity to one another, including rail, transit, aviation, and waterways. Regarding these modes of transportation, GDOT provides both planning and financial support. One of the offices within the division is the Transit Office, which has the mission to "identify and support cost effective, efficient and safe transportation systems." In FY 2017, $58 million of the GDOT budget was utilized to support transit capital projects, facilities, services, and shuttle buses and vans. The majority of the funds were federal funds (54%), followed by local (40%) and state funds (5%) (GDOT, 2017). Federal funding for transit is provided to the state by the FTA, an agency within the U.S. DOT. Of the FTA funding allocated to GDOT for transit, Section 5311 grant funding comprises a significant proportion. In FY 2017, GDOT received $21,857,873 in Section 5311 grant funding, which was then distributed to rural transit providers throughout the state (U.S. DOT, 2017).

GDOT partners with, and provides funds to, 91 transit systems operating across the state, including 80 rural, seven small urban, and four large systems. The existing systems are largely organized to serve individuals residing within a county. Services are available in 123 out of 159 counties, with a quarter of counties lacking any public transit service (GDOT, October 2017). Figure 3 provides a map of public transit coverage, including the breakout by system type.

Figure 3: Public Transit Coverage in Georgia



Source: Georgia Department of Transportation (2017)

The available transit systems provide one or more transportation services, including public, fixed-route transit, demand-response services, and ADA paratransit services. The service coverage within counties varies by system, with a spectrum of robust to limited service. Focusing on three

modes of service that are most relevant to older adults, bus, demand-response, and heavy rail, 146 million trips were provided across the state in FY 2016 (U.S. DOT, 2016). Table 1 provides additional details regarding the services provided by transportation mode through the transit agencies across the state of Georgia.

Table 1: Transit Data Elements by Transportation Mode for Georgia Providers

DATA ELEMENT	BUS (N = 14)	DEMAND RESPONSE (N = 95)	HEAVY RAIL (N = 1)
Operational Cost per Hour, Average and Range	$81.75 ($40.10-$162.47)	$36.69 ($11.92-$191.56)	$270.08
Cost per Passenger, Average and Range	$9.40 ($3.00–$42.50)	$21.71 ($5.85–$83.09)	$3.15
Fare Revenues Earned, Total	$73,853,712	$4,666,601	$75,717,593
Operating Expenses, Total	$295,028,907	$76,996,339	$225,438,652
Passengers per Hour, Average and Range	15.8 (2.0-34.2)	1.9 (0.5–4.6)	85.8
Unlinked Passenger Trips, Total	74,004,573	30,274	71,945,326
Vehicle Revenue Miles, Total	36,381,357	283,320	22,267,826

Source: U.S. DOT FTA National Transit Database, 2016
Notes: The sample size (n) is based on the number of providers for that mode that report data through the National Transit Database. All bus mode and demand-response services were included, with the exception of the University of Georgia Transit System.

A breakout of the recipients of transit funds indicates that there is significant variation in capacity and cost by recipient. For example, Brantley County provided 359 unlinked passenger trips, driving 16,618 miles, while Thomas County provided 89,653 unlinked passenger trips, driving 511,109 miles.

Non-Emergency Medical Transportation

For those eligible for Medicaid across the state, transportation to medical services and the pharmacy are provided when other transportation options are not available. Specifically, transportation is available to individuals in a fully covered eligibility category for Medicaid-covered services including medical treatment, medical evaluations, prescription drugs, and medical equipment (Georgia DCH, 2017). As shown in Table 2, there are two transportation brokers in the state, Logisticare and Southeastrans, covering the five regions structured by DCH. Each organization seeking to provide the broker service must serve the entire region(s) for which they are bidding. The contracts are negotiated every six years. The awarded broker is paid a capitated rate for each eligible Medicaid member that resides within the region(s) (DCH, 2018).

Table 2: Medicaid Non-Emergency Medical Transportation Broker, by Region

REGION	BROKER
North	Southeastrans
Atlanta	Southeastrans
East	LogistiCare
Central	LogistiCare
Southwest	LogistiCare

Source: Georgia DCH, 2018

To request transportation, a Medicaid member or person assisting the member calls the broker that serves the county where the beneficiary resides. The request must be made by telephone weekdays between 7 a.m. and 6 p.m., three days in advance of the trip needed, with exceptions for urgent situations. The brokers utilize a variety of modes and contract with transportation providers to deliver the transportation services to beneficiaries. According to a DCH fact sheet, the broker will use the most appropriate and cost-effective mode of transportation, which may include a minibus, wheelchair van, stretcher van, public transportation (including paratransit), gas reimbursement, or taxi services (Georgia DCH, 2018).

Current Medicaid policy sets minimum access standards for health care services based on geography as follows: 30 miles in urban communities, 50 miles in rural communities, 15 miles for adult day health care in urban and 30 miles in rural communities, and 15 miles for pharmacies in urban and 30 miles in rural communities (Georgia DCH, 2018). The transportation provider may expand the mileage length based on a health care provider's referral or on a case-by-case basis (Georgia DCH, 2018).

Data utilized in this report regarding NEMT use and expenditures were requested and provided through the DCH Medicaid data request portal. In state FY 2018, there were an average of 2.1 million Medicaid beneficiaries each month, with approximately 11% of those individuals aged 60 or older. Of the Medicaid beneficiaries over 60, there were an average of 238,315 members eligible for transportation services, and an average of 26,664 (11.2%) utilized transportation. Of the $104 million spent on transportation services, $7.1 million (6.9%) was spent servingindividuals 60 and older. There were a total of 1.9 million one-way trips provided, with 814,115 (41.2%) of those provided to individuals 60 and older. For information regarding Medicaid NEMT services for each region, please see the regional profiles in Appendix B-M.

DHS Coordinated Transportation System

The DHS Coordinated Transportation System delivers services in each of the 12 DHS regions through a series of purchase-of-service contracts with a variety of providers, including governmental entities, for-profit organizations, and private nonprofit organizations (Georgia DHS, 2017). Notably, the majority of these providers are transit systems operated with FTA Section 5311 funds administered by GDOT (GDOT, 2017). In many regions, a prime contractor, which is often the regional commission, manages the contract in coordination with the Regional Transportation Office and subcontracts with service providers. Contractors are reimbursed for service provision through a fee-for-service methodology in the form of one-way trip rates (Georgia DHS, 2017).

The Coordinated Transportation System's policies and procedures are unique within each region and are established by a Regional Transportation Coordinating Committee composed of regional division representatives, human service providers, and other stakeholders. The Regional Transportation Coordinating Committee also approves new contracts annually and oversees contractors within each region (Georgia DHS, 2017). The program also divides the most populous DHS region — the Atlanta Regional Commission (ARC) — into four subregions, which are managed separately and participate in the program at varying levels.

The program utilizes the Transportation Request and Information Processing System (TRIP$) to track services and provide reports on system usage. TRIP$ was designed by DHS' Office of Information Technology and is used by human service providers (HSPs) to order services and provide approvals through a reconciliation process (e.g., the HSP orders the trip, then re-enters the system once the trip is provided to verify that the service was delivered) (GDHS, 2017b). The system validates requests and generates manifests to track trips, and transportation providers generate invoices through TRIP$ based on the number of completed and approved trips each month (GDHS, 2017b).

Funding and Services: Regional Analysis

While the Coordinated Transportation System operates in each of the 12 DHS regions, some counties within a region may not participate to provide services for older adults or may participate only in specific services (e.g., a county may only purchase bus passes through the program). Consequently, the types and availability of services delivered through the program differ by region.

The program offers a range of trip types, including core trips; noncore trips; long-distance trips; group or field trips; wheelchair trips; and, in some areas, vouchers for alternative transportation services, taxis, and fixed-route transit. The program also operates shuttles in several regions. The rate for core trips, which are trips offered during regular operating hours (6 a.m. to 6 p.m. in most regions), averages $6.09 across all regions. The rate for noncore trips averages $21.02. Noncore trips, which are trips delivered outside of regular operating hours, are available in many regions,

although they may not be available in specific counties of a region. Long-distance trips, the parameters for which differ by contractor, range from 25 to 75 miles or more and vary widely in cost and availability by region. Similarly, the rates for group field trips and wheelchair trips differ, as does the availability of these trip types by region. As the cost to provide each type of service and the specific sources and respective amounts of funding for Coordinated Transportation vary by region, the service profiles for each region of the state are fairly diverse.

Overall Program Funding and Service Delivery

For state FY 2018, the Coordinated Transportation System operated on an overall budget of $9,273,740.08, delivered a total of 815,364 one-way trips, and served a total of 7,761 unduplicated clients. The combined subregions of the ARC had the largest total budget of $2,236,015.97. Regionally, the Three Rivers region had the largest total budget of $1,007,531.79, followed by subregion 3A of ARC and the Central Savannah River Region, with $906,869.47 and $801,432.16, respectively. In contrast, the regions with the smallest total budgets were subregion 3B of ARC ($70,169 total budgeted, 16,229 one-way trips, 130 clients), Heart of Georgia ($414,920.50 total budgeted, 25,430 one-way trips, 91 clients), and Middle Georgia ($440,668.38 total budgeted, 33,301 one-way trips, and 167 clients).

The programs with the highest service delivery across funding sources in terms of one-way trips were the Central Savannah River Area (97,654), Northeast Georgia (77,187), and the Georgia Mountains Region (75,968). With regard to total unduplicated clients, Three Rivers served the most unique clients (1,026), followed by subregion 3A of ARC (972) and Central Savannah River Area (895). The regions with the lowest numbers of total, one-way trips were subregion 3B (Cherokee, Cobb, Douglas) of ARC (16,229), subregion 3B (C, F, H) of ARC (24,121), and Heart of Georgia (25,430). Regarding unduplicated clients served, Heart of Georgia served the fewest total clients through the program (91), followed by subregion 3B (Cherokee, Cobb, Douglas) of ARC (130), and Middle Georgia (167).

The HSPs that provide transportation services undergo a yearly contract evaluation process to determine their renewal eligibility. This evaluation is a compilation of surveys, data, and information that is gathered by the Regional Transportation Office. Each HSP is required to obtain consumer satisfaction surveys that are used to assess client satisfaction and maintain quality of service and will contribute to the TSS' evaluation summary. The surveys measure factors such as the consumers' attitude toward the HSPs' responsiveness, professionalism, flexibility with scheduling, and timeliness. In state FY 2018, a total of 10,535 consumer surveys were disseminated, and 5,640 were completed (54% response rate). Overall, 96% of the consumers who completed the survey felt that the HSPs met or exceeded their expectations.

FTA Section 5310

For FY 2018, the state of Georgia received a total of $7,873,700 in Section 5310 grant funding (U.S. DOT, 2018) across all Section 5310 funding categories. The categories of Section 5310 funding (large UZA, small UZA, and nonurbanized rural) are apportioned to different recipients by the FTA. Per federal regulations, the state is the recipient of small UZA and nonurban rural Section 5310

funding, which it allocates via the Intrastate Funding Formula, while large UZA funding goes to a direct recipient as designated by the governor (Georgia DHS, 2017). The Atlanta, Augusta, Columbus, and Savannah MPOs are each designated direct recipients of large UZA Section 5310 funds (GDHS, 2017). Of note, there is a state match requirement for FTA Section 5310 funding, which Georgia DHS meets via a soft match. Specifically, DHS reports usage of other fund sources in Coordinated Transportation to the FTA to compensate for the required match (Georgia House of Representatives Transit Governance & Funding Commission, 2018).

For state FY 2018, the combined ARC regions expended the most Section 5310 funding ($674,820.84 between all four subregions). Regionally, Central Savannah River Area, Northeast Georgia, and subregion 3A of ARC expended the largest amounts of Section 5310 funding, with $482,365.52, $333,812.80, and $329,230.95, respectively. The regions that expended the lowest amounts of Section 5310 funding were ARC subregion 3B (Cherokee, Cobb, Douglas) ($32,606.22), Coastal Georgia ($66,020.77), and Northwest Georgia ($100,207.06). Regarding trips funded through Section 5310, Central Savannah River Area delivered the highest number of trips, with a total of 62,805, followed by Northeast Georgia and Three Rivers, which provided 31,770 and 24,817 trips, respectively. The regions with the lowest numbers of Section 5310–funded trips were Coastal Georgia (7,126 trips), subregion 3B of ARC (9,969 trips), and Middle Georgia (10,324).

Older Americans Act Title IIIB

Older Americans Act Title IIIB funding is allocated by the state to the AAAs in each region using the Intrastate Funding Formula. This formula is updated decennially and draws on the most current census data to distribute funding based on the geographical distribution of older adults, as well as the proportion of older adults with the greatest economic and social needs (with a particular focus on low-income minorities) within each AAA region (GDHS, 2015). Per Older Americans Act Title III regulations, AAAs are to utilize these funds to develop or enhance comprehensive and coordinated community-based systems, which include transportation (Administration for Community Living, 2017). Title IIIB funding has a nonfederal match requirement of 15%, which is then shared between the state and local area as determined by the state division (ACL, 2017).

For state FY 2018, a total of $1,864,117.33 was expended and 199,253 trips were delivered across all 12 regions using Title IIIB funding. Coastal Georgia expended the highest amount of Title IIIB funding on transportation services at $267,649.30, followed by Georgia Mountains ($266,433.42) and subregion 3A of ARC ($192,841.97). The regions that expended the lowest amounts of Title IIIB funding on transportation services were subregion 3B (Cherokee, Cobb, Douglas; $15,928.07), subregion 3B (C, F, H) of ARC ($20,594.97), and Heart of Georgia ($42,390.10). Coastal Georgia delivered the highest number of trips funded through Title IIIB, with 29,082, followed by Georgia Mountains (26,043) and Southwest Georgia (24,642). The subregions of the ARC delivered the lowest numbers of trips using Title IIIB funding, with ARC 3B (C, F, H) providing 1,844 trips, ARC 3B (Cherokee, Cobb, Douglas) totaling at 2,652 trips, and ARC 3B (Gwinnett) delivering 3,274 trips.

Additional Funding Sources

As described previously, several other funding sources play a role in funding program services by region, including SSBG, CBS, 5316, and 5317. Of these sources, SSGB funding is the largest and most widely used to support program services. SSBG funding is allocated to DAS by the state Legislature and is then distributed to the AAA in each region. The AAA can then decide, based on regional need, how to best distribute the allocation across services, including transportation. A total of $2,727,557.63 was expended across all regions on program services for state FY 2018. The largest SSBG expenditures by region were made by subregion 3A of ARC ($346,478.47), Three Rivers ($323,004.87), and subregion 3B of ARC (Gwinnett; $272,375.88). Subregion 3B (Cherokee, Cobb, Douglas) of ARC had the lowest SSBG expenditures with $21,632.71, followed by subregion 3B (C, F, H) of ARC ($45,761.43) and Middle Georgia ($93,874.48). Regarding total trips funded through SSBG, Northwest Georgia (28,244), subregion 3A of ARC (27,215), and Three Rivers (26,604) delivered the most trips, while subregion 3B (Cherokee, Cobb, Douglas) of ARC (3,608), subregion 3B (C, F, H; 5,194), and Heart of Georgia (5,581) delivered the fewest.

The remaining funding sources, CBS, 5316, and 5317, are not used across all regions to fund program services for older adults, and AAAs or other planning/service delivery organizations may determine whether or not to utilize certain available funds for transportation services. Four regions drew on CBS funds in state FY 2018 to support program services: Three Rivers ($157,010.90; 12,995 trips), Northeast Georgia ($23,940; 2,704 trips), River Valley ($27,926; 2,660 trips), and Coastal Georgia ($111,344; 12,345 trips). Sections 5316 and 5317 are both expired FTA programs for which additional funds remain and have been carried over to fund services in several regions. Specifically, Northeast Georgia and River Valley drew on 5316 and 5317 funds to provide program services during state FY 2018.

DHS Transportation Services Delivered Outside of the Coordinated Transportation System

Outside of the Coordinated Transportation System, very few DHS-funded transportation services for older adults exist in any region of the state. Where they are operating, these services are predominantly financed using Older Americans Act funds and range in service mode and purpose. The types of services supported include voucher and volunteer programs, as well as demand-response type services, which are often limited to a specific purpose (e.g., medical appointments). These services are typically restricted to DHS clients, and some target specific areas of a region, such as rural counties without a public transit system.

Within the state, the vast majority of programs operated outside of the Coordinated Transportation System using DHS funding are located in the Atlanta region. For state FY 2018, six programs that were jointly funded through Section 5310 and through Section 5316 and 5317 grants provided services in six counties within the ARC region. The programs vary in size and scope, but are largely voucher programs offered through county senior centers. These programs enable older adults to purchase transportation vouchers at a discount for use with traditional public transit providers, private transportation providers (e.g., taxis or car services), or volunteers, depending on the program. In addition to the voucher programs, ARC funds a pilot program

offered through a nonprofit, Common Courtesy, in partnership with Uber and Lyft, as well as Checker Cab within the Metro Atlanta area. Common Courtesy acts as a liaison between riders and transportation providers and coordinates each trip, and also follows up with riders once the trip is complete to ensure safe arrival (Common Courtesy Inc., 2018).

Driver Safety Programs

A number of driver safety programs are offered for older adults throughout the state, both in person and online. Each program includes unique features and topic areas ranging from defensive driving techniques to safe medication use while driving. One of the largest programs available in the state is the American Association of Retired Persons' (AARP's) Smart Driver Course, which is available both online and in person. In-person trainings are provided in various locations, including senior centers, faith-based organizations, and libraries, and while they are most concentrated in the metropolitan areas of the state, they are also offered in many suburban and rural areas (AARP Smart Driver Course Locator website available in the references). Similar to the AARP program, the American Automobile Association offers Roadwise Driver, which is also available both online and in person. The Roadwise Driver program focuses on refreshing participants' driving knowledge, providing comfort and safety tips, learning to adjust to changes in reflexes and vision, and several other topics (American Automobile Association, 2018). The American Automobile Association also developed Roadwise Rx, which is a tool that enables users to record all of their medications, and the tool will provide customized feedback regarding interactions and how the medications can affect safe driving (American Automobile Association, 2018).

In addition to AARP's course, Georgia Department of Public Health's Older Driver Safety Program represents one of the largest driver safety efforts within the state. The program is funded by the Governor's Office of Highway Safety and is led by the Georgia Older Drivers Task Force, which is a multidisciplinary partnership between the Governor's Office of Highway Safety, DAS/AAAs, academic and research centers, and occupational and physical therapists (Georgia Department of Public Health, 2017). The program's focus is on reducing the number of injuries and fatalities experienced by older drivers and, where possible, enhancing mobility options for older adults through a number of activities, including education, policy enforcement, and building partnerships (e.g., with law enforcement emergency responders) (GDCH, 2017). The program also provides CarFit training to enable interested individuals to become CarFit technicians or event coordinators. CarFit is a national educational program that hosts educational events for older adults to assess how well they fit their vehicles, make adjustments and recommendations regarding vehicle fit to enhance safety and comfort, and also provide community resources for driver safety (CarFit, 2018).

Travel Training Programs

Travel training programs available through public transit providers are relatively scant throughout the state and are mostly offered by providers in the Atlanta area. Two examples within the Atlanta area include Gwinnett County Transit and Cobb County Transit. Gwinnett's program, How to Ride the Bus with Us, walks riders through the process of riding on an active bus and also provides information on how to pay a fare, read a bus schedule, utilize the program's app, and other related topics (Gwinnett County Transit, 2018). Cobb County Transit, known as CobbLinc, provides travel seminars, trainings, and tours targeted at older adults, persons with disabilities, and students (Cobb County Transit, 2018). Overall, travel training programs aim to increase the uptake of public transportation but are not widely available and may not be easily accessible to many older adults throughout the state.

MEASURING TRANSPORTATION NEED AND UNMET NEED FOR OLDER ADULTS IN GEORGIA: CURRENT AND FUTURE TRENDS

While an understanding of existing unmet need among older adults is important to inform transportation planning, little agreement on definitions, measures, and methodologies exists among academics and practitioners. Thus, a diverse and relatively inconsistent body of literature is available to guide efforts to quantify this construct. Consequently, the authors utilized an approach that draws on several methodologies to best characterize current and future need among older adults in the state. This section will include a literature review, description of relevant studies conducted in the state, characterization of disproportionately impacted populations, and methods used and main findings for the current study.

Key Findings

- Great heterogeneity exists within the older adult population, and those with poor health, low income, and suburban or rural residence experience inequities in transportation access.
- Transportation need, number served, and unmet need is difficult to precisely quantify. Current practices of managing waiting lists for tracking unmet need is not utilized, nor feasible, for estimating transportation unmet need.
- Unmet transportation needs described by providers and older adults include regional medical trips, recurring trips (e.g., trips to dialysis treatment), trips beyond the public transit service area and out-of-county trips, and evening trips.
- Quality-of-life trips, which range from trips to the grocery store to social events, emerge as a significant, persistent, unmet need from the perspective of service providers and consumers.
- Interest in meeting unmet needs through volunteer programs exists, but a lack of startup funding and insurance liability concerns have hindered these efforts.
- Some AAA regions are exploring new modes of service to provide quality-of-life trips through a fixed-route shuttle service to destinations such as the grocery store, pharmacy, and post office.
- Inadequate infrastructure, provider capacity, and information about services are persistent barriers across the state.
- The proportion of the population that is 65 and older will grow substantially from 1.3 million in 2016 to 2.9 million in 2040, with the greatest rate of change among those 85 and older.

- Every AAA region will experience growth in the older adult population, but the change will not be equally experienced across regions. The percentage change in population is projected to be the smallest in the Heart of Georgia region (2016-2025: 41%, 2025-2040: 21%), while the Atlanta region is expected to see the largest percentage change (2016-2025: 77%, 2025-2040: 61%).
- Through the application of driving prevalence estimates by age and gender to Georgia's 2016 population, it is estimated that 263,582 individuals aged 70 and older had ceased driving. Based on this estimate of the nondriving population, approximately 34% of individuals aged 70 and older in the state were no longer driving. After considering the number served through DHS and DCH programs, and estimating the use of alternative transportation modes, it is estimated that approximately 200,000 Georgians aged 70 and older may have unmet transportation needs.
- The greatest current and projected future concentrations of older adults with high mobility needs are in urban and adjacent suburban areas.
- Three cycles of State Plan on Aging assessments have found that stakeholders consistently rank transportation as a priority for ensuring individuals have the opportunity to age in place and remain in the community setting for as long as possible.

Review of the Literature

Identifying transportation need and unmet need, both current and future, is a component of the traditional public transportation planning process. According to the U.S. DOT (2007), the overall planning process should include:

- Monitoring existing conditions;
- Forecasting future population and employment growth;
- Identifying current and projected future transportation problems and needs, and analyzing, through detailed planning studies, transportation improvement strategies to address those needs;
- Developing long-range plans and short-range programs of alternative capital improvement and operational strategies;
- Estimating the impact of recommended future improvements to the transportation system on environmental features, including air quality; and
- Developing a financial plan for securing sufficient revenues to cover the costs of implementing strategies.

This process traditionally takes place within a defined geographic area and is led by an MPO for urbanized areas, while the state, in partnership with local officials and transit providers, carries out planning activities in nonmetropolitan areas (U.S. DOT, 2018).

As stated above, the identification of current and projected future transportation problems and needs occurs through detailed studies within the larger public transportation planning process. In practice, studies of public transportation need can vary substantially depending on the study's focus. Problems and needs considered can range from road safety to environmental impacts and involve myriad measures and methodologies both within and between topics. Accessibility studies, which are becoming more common in transportation planning practice, evaluate people's ability to reach desired goods, services, and activities via the transportation system (Levinson and El Geneidy, 2006). These too can differ in focus and may involve evaluating existing transit services; identifying needs through activities such as field observations, on-board rider surveys, demographic analyses, and input from community stakeholders; and identifying strategies, such as improving travel options and encouraging the use of alternative modes of transportation (Litman, 2012). Transportation assessments that focus specifically on unmet need and access in the public sector may also examine service gaps that exist for transit-dependent or transit-disadvantaged populations, who are generally defined as individuals who cannot provide their own transportation due to age, disability, or income constraints (U.S. Government Accountability Office, 2015), and thus rely on the public system. These assessments typically include multiple transit-dependent subpopulations, such as older adults as well as persons with disabilities, and can involve similar steps to transportation needs assessments for the general population, but narrow in on the specific subpopulation(s) of focus in their characterization of services, needs, projections, and strategies (Jiao, 2013).

Although more traditional transportation planning assessments of unmet need can yield important findings, current research on the travel behaviors and mobility of older adults indicates that these types of assessments may not capture the intricacy of older adults' needs (Hjorthol, 2013). Studies have found that, in addition to differences between age groups (i.e., 60 or 65 to 74, 74 to 84, and 85 and older), great heterogeneity in transportation-related need exists within these groups regarding factors such as health, socioeconomic status, and gender (Siren & Hakamies-Blomqvist, 2004). Consequently, researchers have struggled to find consensus in defining need and unmet need, and studies have varied considerably with regard to measures, variables, and samples (Luiu, Tight, & Burrow, 2017).

Many evaluations of transportation need specifically among older adults have relied heavily on qualitative methods, such as surveys, interviews, and focus groups. Of these, survey methods are particularly common and examine different individual characteristics, as well as aspects of transportation need. For instance, Dobbs & Pidborochynski (2016) administered three separate assessments that evaluated unmet need in relation to (1) sociodemographic characteristics, such as age, sex, marital status, income, and health status; (2) urban versus rural setting and the availability of alternative and specialized transportation services; and (3) the need for and availability of intermunicipal and regional medical transportation. In an analysis of survey data collected in Norway on travel and participation in activities in old age, Nordbakke & Schwanen (2014) studied the impact of sociodemographic characteristics and accessibility-related variables

(e.g., supply of public transportation), as well as the relationship between respondents' social support and network and unmet need.

In addition to, and sometimes in combination with, surveys and other qualitative methods, many assessments have utilized demographic data available through the U.S. Census Bureau to geographically identify areas where need is likely to be concentrated. In a needs assessment of Clinton County, N.Y., for example, TranSystems Corp. used 2009 U.S. Census Bureau ACS data to map the density of transit-dependent populations within the county, including older adults, low-income households, zero-vehicle households, and persons with disabilities (TranSystems, 2011). The authors also compared relative transit need to the location of important trip generators (locations to which the general public, especially transit-dependent populations, need access, such as nursing homes and adult day centers, accessible and low-income housing, and major employers) within the county.

In a different vein, but also often to supplement qualitative findings, some evaluations have included mathematical modeling to capture transportation need among older adults. The Denver Regional Council of Governments' Transit Needs Assessments and Alternatives Analysis (2005) utilized three mathematical models to estimate demand for specialized transportation. The methodology drew on a previous survey of travel patterns of older adult/disabled residents and used factors such as daily trip rate and transportation mode of choice for various subgroups (e.g., for one calculation, those who would use specialized transit under any circumstances, those who would not use specialized transit, and those who do not use transit now but would if it were available to them) to calculate total estimated demand. The Denver Regional Council of Governments complemented these quantitative findings with results from surveys of different consumer groups and transit providers.

Another approach used to capture unmet need within Georgia, though not specifically for transportation services, is through the use of DHS' administrative database. The database is used by AAA staff to document requests, services received, and waiting lists for several home- and community-based services. However, the database is seldom used to capture unmet transportation needs, as if the request cannot be met it is unlikely that additional funding will become available to meet the need or that the need will stay constant (e.g., a client in need of transportation to a medical appointment the following week would no longer need that trip beyond the scheduled appointment date). Thus, transportation requests that cannot be met are not tracked or maintained on a waiting list. Due to this fact the authors were not able to draw on administrative data to capture unmet need for the current study.

The methodology used for this study and described in more detail in subsequent sections of this report most closely aligns with access-oriented transit planning methodologies. Though these methodologies are more appropriate for the current study than those used for traditional congestion- or safety-oriented planning, they can miss some of the nuances of older adult transportation need. Consequently, the authors supplemented the access-oriented, quantitative methodology used with qualitative data, which includes surveys and interviews with consumers

and aging services professionals. The authors sought to examine unmet need among older adults more comprehensively through the use of these combined approaches, and, while these approaches are imprecise, they aimed to yield more accurate findings than would be possible using any singular approach.

A Closer Look at Unmet Need

Addressing transportation-related unmet need among older adults is inherently challenging, as determinants of unmet need are complex and interrelated. Consequently, a singular solution to this growing problem does not exist. Within the older adult population, specific subgroups are disproportionately disadvantaged and should be considered with regard to service planning and policy design. Subgroups identified through both a review of the existing literature and input from providers and consumers across the state include older adults with poor health status, low-income, and low-density suburban or rural residence. Additionally, certain trip types, such as medical trips, are often prioritized over trips for other purposes, such as social and community events. Although trips to medical appointments are inarguably critical, the restriction of resources for other trips often reduces or even eliminates opportunities for social inclusion and activities that promote well-being for many older adults. Thus, transportation to quality-of-life-enhancing trips is a persistent unmet need for many across the state and should also be recognized, as unfulfilled social, leisure, and related needs regarding out-of-home activities have been found to have deleterious effects on older adults' health and wellness (Nordbakke & Schwanen, 2014).

In a systematic review of the literature, Haustein & Siren (2014) found that health status was a main predictor of driving cessation among older adults. Furthermore, poor health has been consistently reported as affecting travel behavior, to include not only driving but also mobility broadly, especially among the oldest old (adults 75 years old and older) and women (Luiu, Tight, & Burrow, 2017). Research indicates that poor health, both mental and physical, medical diagnoses, and perceived health-related mobility limitations can impact self-efficacy regarding mobility and can prevent some older adults from engaging in any out-of-home activity, irrespective of actual mobility (Webber, Porter, & Menec, 2010). Of the vast array of health conditions that affect older adults, dementia, frailty, physical disabilities, and chronic conditions requiring frequent medical visits have repeatedly emerged as determinants of mobility.

Among older adult drivers, an estimated 4% of those over 75 years of age have dementia, and many will continue to drive as the disease progresses (Wadley, Okonkwo, & Crowe, 2009; Foley, Masaki, Ross, & White, 2000). A dementia diagnosis can also cause older adults to limit activities outside of the home due to fear of getting lost and wandering (Adler & Silverstein, 2008; Cotter, 2007). Similarly, older adults who have experienced a fall or report fear of falling are more likely to restrict their mobility outside of the home (Webber, Porter, & Menec, 2010). Dementia, frailty, and physical disabilities can also inhibit older adults' use of public transportation services, as they may experience difficulties boarding and alighting vehicles, navigating transportation systems, or accessing transit stops (Hjorthol, 2013; Luiu, Tight, & Burrow, 2017). Within the state, particular concern surfaced among aging services professionals regarding older adults who require recurring

specialized transportation for conditions such as chemotherapy or dialysis treatment. Across the state, many older adults, especially nondrivers who lack informal supports, struggle to access treatment for these chronic conditions largely due to financial constraints or inadequate public transportation service coverage. Therefore, a multitude of health conditions can affect access to transportation and mobility among older adults, including driving, utilizing alternative transportation options, and making decisions regarding activities outside of the home.

Income is also among the most significant determinants of mobility among older adults and impacts access in many ways. The literature suggests that people with lower incomes are more likely to be transportation-disadvantaged and that income-related mobility restrictions can impact psychosocial, physical, and environmental factors related to well-being (Webber, Porter, & Menec, 2010). Perhaps the most obvious way an individual's financial resources can impact access to transportation is in one's ability to own a personal vehicle or afford alternative transportation options (e.g., pay for a bus fare). However, income can also dictate decisions regarding the location of one's home, which influences a host of access-related factors, such as proximity to services, cost to travel, and neighborhood characteristics (e.g., presence of sidewalks). Income-related mobility restrictions can severely limit older adults' access to basic needs, including one's ability to engage socially and maintain relationships outside of the home (Webber, Porter, & Menec, 2010). Further, isolation can compound immobility, as older adults with social connections may be able to leverage those relationships to help meet mobility needs, whereas isolated older adults lack that potential. Income is worth highlighting within the context of older adult need, as older adults are particularly vulnerable financially due to fixed incomes and competing expenses (e.g., payments for health care). Therefore, income factors heavily into older adults' mobility and has immense capacity to impact health and wellness.

Low-density suburban and rural residence also presents multifaceted challenges with respect to transportation access among older adults. These communities often have limited public transportation systems or lack public transportation altogether. According to a White House report (2010), rural and small communities tend to have smaller tax bases due to decreased economic opportunities and lower standards of living and, as a result, typically have insufficient resources to support a public transportation program. Inadequate public transportation can quickly isolate older adults in these communities once they cease driving, as viable alternatives to driving may not exist, especially among individuals without informal supports, such as a child, spouse, or neighbor, to assist.

Therefore, several subpopulations of older adults are more likely to experience transportation disadvantage at present and warrant attention in current planning and policy efforts, as well as continued focus moving forward. The potential for shifts in factors that impact life in older adulthood, such as technology, make it unclear whether the disparities observed among these subgroups will persist. Technological advances and the increased likelihood of their adoption among future generations of older adults have the potential to ameliorate some of the challenges faced by these subgroups, as well as older adults broadly at present. However, as the aging population grows, the prevalence of many of these determinants of mobility, such as health

conditions and financial insecurity, is also anticipated to increase. Therefore, it is imperative that actions are taken to address existing inequities in access among these subgroups of older adults, as, otherwise, the effects of transportation disadvantage are likely to worsen over time.

Past and Current Work within Georgia

Efforts to address unmet transportation need for different groups have been made in recent years within the state, including work that is currently underway. A major focus within the state over the past decade has been on the development and improvement of the rural transportation system. The Rural Human Services Transportation Committee of the Governor's Development Council was established as a result of HB 277 to oversee rural and human services transportation coordination (HNTB, 2011). A significant body of work exists as a result of the committee's activities, including a series of reports comprising the Georgia Rural Human Services Transportation Plan 2.0. Beginning in 2011, HNTB Corp. began publishing these reports, which detail recommendations based on a thorough needs assessment of rural transportation in the state, data collected during two sets of workshops held in each of the state's 12 regional commissions, and national research (HNTB Corp., 2011). The goal of this specific project was to design an enhanced rural and human services transportation model that increases coordination among public and human services transportation providers and, ultimately, increase capacity, efficiency, and cost-effectiveness.

The House Commission on Transit Governance and Funding, established through HR 848 during the 2017 legislative session, has also initiated important activities regarding rural transportation in the state. The commission is working with Deloitte on the Georgia Transit Governance and Funding Study, which is currently aiming to establish the design and legislative support for a new governance and funding model for rural transit in the state (Deloitte, 2018). The commission's work, along with that of the Governor's Development Council's Rural Human Services Transportation Committee, has contributed significantly to the understanding of operations and identification of deficiencies within the state's rural transportation system, and both bodies are actively shaping the future of rural transportation in Georgia.

Another significant area of work relevant for transportation-disadvantaged groups in the state, including older adults, is occurring at the local and regional level. The Rural Transit Need and Demand Spreadsheet, developed by the Transit Cooperative Research Program of the Transportation Research Board, is an approach that is currently used in some rural areas of the state to quantify the need for passenger transportation services and the demand that is likely to be generated if passenger transportation services are provided (Transit Cooperative Research Program, 2013).

Using the tool, planners and transit operators can estimate need, which is defined as the number of people likely to need passenger transportation and the number of trips required to provide individuals without personal vehicles with a level of mobility equal to those having access to

personal vehicles. Demand is estimated by four markets: (1) general public services (5311); (2) social services or other program-sponsored trips; (3) fixed-route service in small urban towns in rural areas; and (4) travel on commuter services from rural counties to urban areas. The tool uses demographic data (preferably ACS data), including number of persons living below the poverty level, number of persons residing in households owning no vehicle, and population 60 years of age and older, to compute an estimate for the number of persons within the study area who are in need of passenger transportation services. The tool also uses the mobility gap, which is defined as the total number of trips not taken because members of households without a vehicle do not have the ease of mobility available to members of households with a vehicle (TCRP, 2013). The mobility gap is derived from 2009 National Household Travel Survey data and is calculated for each of the nine census regions individually. The estimate generated using the mobility gap quantifies the resources that would be needed to meet unserved demand. These estimates are paired with the knowledge of local need among planners and service providers to address unmet transportation need in areas of rural Georgia.

The study described in this report drew on several methods, including a literature review, surveys with consumers and aging services providers, interviews with transportation providers and experts, estimation of nondriving by age and gender, and use of the Mobility Need Index for aging populations. The index, which was developed by Ettleman et al. (2017), allows for the geographical identification of areas of the state where higher mobility needs exist. Detailed descriptions of the methodologies used in the statistical analyses included in this report are available in Appendices N, O, and P.

Survey of Georgia AAA Staff

To gain local insights about transportation issues specific to older adults, as well as potential solutions, the study team conducted a statewide survey with follow-up telephone contacts with AAA staff from each region. The AAA staff are knowledgeable regarding the transportation services available and have significant awareness of the unmet needs of older adults in the region they serve. Common themes emerged across regions with regard to unmet needs, key issues, underserved subpopulations, and opportunities to mitigate barriers to access. From the perspective of the AAA staff, shopping trips, local and regional medical trips, specialized recurring trips (e.g., trips to dialysis treatment), trips beyond the public transit service area and out-of-county trips, and evening trips were most frequently cited as unmet needs. As senior center and medical trips are often prioritized within the DHS Coordinated Transportation System, quality-of-life trips, which can be trips ranging from the grocery store or pharmacy to trips to social events, are seldom available to nondriving older adults who lack informal supports or financial resources. Additionally, although medical trips are prioritized, many respondents noted that unmet need for medical transportation persists and that current funding is inadequate to bridge gaps in access, especially for conditions requiring recurring treatment visits.

With respect to barriers, respondents reported that limited public transportation availability, hours, and affordability; the availability and accessibility of information about services; and

inadequate demand-response services most often inhibit access to transportation. Regarding underserved populations, older adults not connected to senior centers were identified as a subgroup with significantly less access to services and information about transportation. Additionally, respondents indicated that older adults residing in rural areas are particularly disadvantaged. For instance, the paucity of medical providers in rural counties often requires residents to travel outside of their county of residence for treatment, which many transportation providers cannot accommodate. Thus, pervasive issues, such as inadequate transportation for medical appointments, can be augmented for older adults residing in rural areas. Respondents also reported that older adults with specialized transportation needs (e.g., door-to-door service), especially dementia patients, frail elderly, and those with sensory impairments, are underserved across the state, as many regions lack the capacity to transport these individuals.

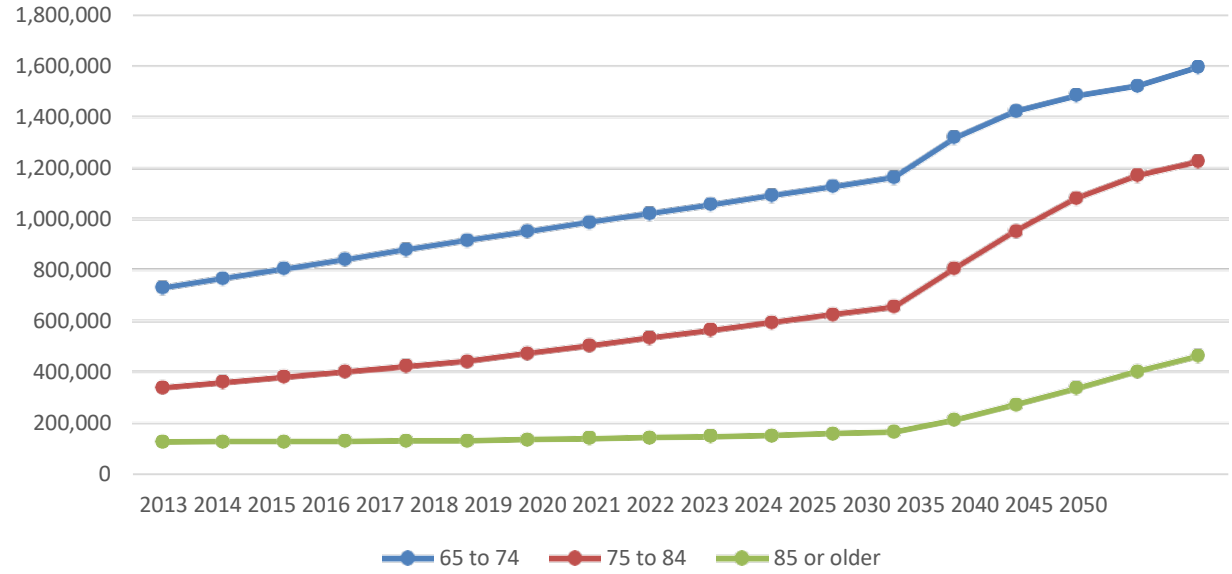
When asked what strategies could be implemented to overcome barriers to service access, providers most often responded that shuttle services, volunteer programs, and voucher programs are the most feasible to implement within their respective regions. In several regions, the aforementioned services are either already operational or will begin service within the next year. Many respondents stated that voucher and volunteer programs are cost-effective solutions and are particularly well suited to client needs. Several respondents also indicated that cost-sharing could contribute to the sustainability of various programs and strategies.

Demographic Analysis

The current and projected changes with regard to the aging of the population were analyzed utilizing demographic characteristics available for older adults in Georgia. The data presented in this section were drawn from the ACS 2016 5-Year Estimate data and the Georgia Office of Planning and Budget population projection data 2015 series. Due to data availability at the county level from the ACS files, the older adult population described in this section focuses on individuals 65 and older.

The key takeaway from the information provided with these data is that the population in Georgia is getting older. In 2016, 13% (1.3 million) of the state's population was aged 65 and older, and by 2040 that share is projected to grow to 22% (2.9 million). Due to longer life expectancies, the older adult population growth rate is different across age groups. As shown in Figure 4, while the population of individuals 65 and older makes up the largest share of the population, the rate of change is greatest for the 85 and older population. The dramatic increases seen around 2025 represent the last of the baby boom generation turning 65.

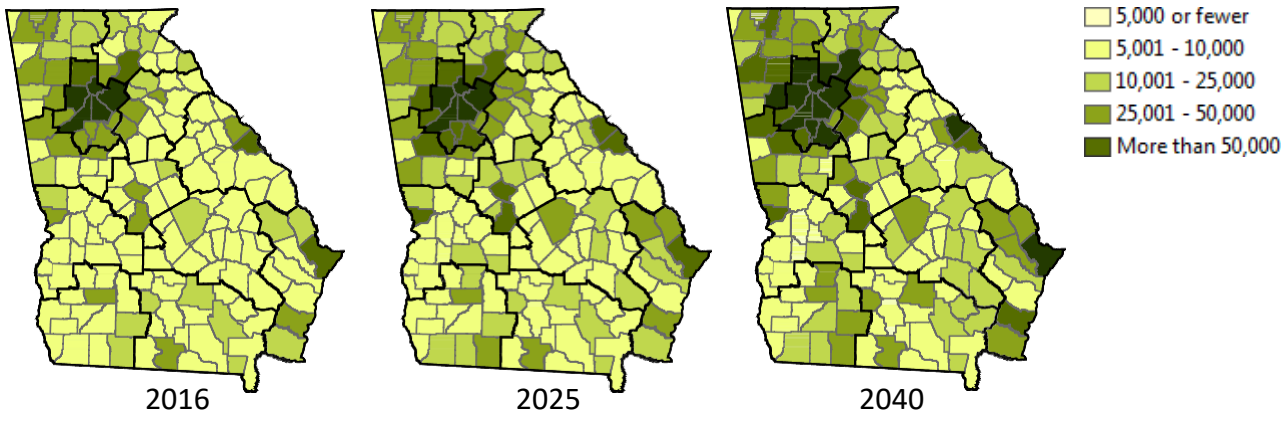
Figure 4: Georgia Population Projections by Age Group



Source: Authors' analysis of population projections from the Governor's Office of Planning and Budget, Series 2015

The information presented in Figure 5 shows the change in the absolute number of individuals over age 65 by county at three time points: 2016, 2025, and 2040. As presented in the maps, the counties with the largest number of older adults are generally concentrated in Atlanta, the suburban counties surrounding Atlanta, the northwest corridor, Georgia's coastal counties, and the counties in the Augusta area. The projected population growth between 2016 and 2040 is expected to occur largely in the counties that currently have more older adults.

Figure 5: Total Population Aged 65 and Older in 2016, 2025, and 2040



Source: Authors' analysis of population projections from the Governor's Office of Planning and Budget, Series 2015

With regard to the regional differences in population change, Table 3 presents the population 65 and older subtotaled by region across the three time points. Every region will experience growth

in the older adult population, but the change will not be equally experienced across regions. For

example, the percentage change in population is projected to be the smallest in the Heart of Georgia region (2016-2025: 41%, 2025-2040: 21%), while the Atlanta region is expected to see the largest percentage change (2016-2025: 77%, 2025-2040: 61%).

Table 3: Total Population 65 and Older by Region, 2016, 2025, and 2040

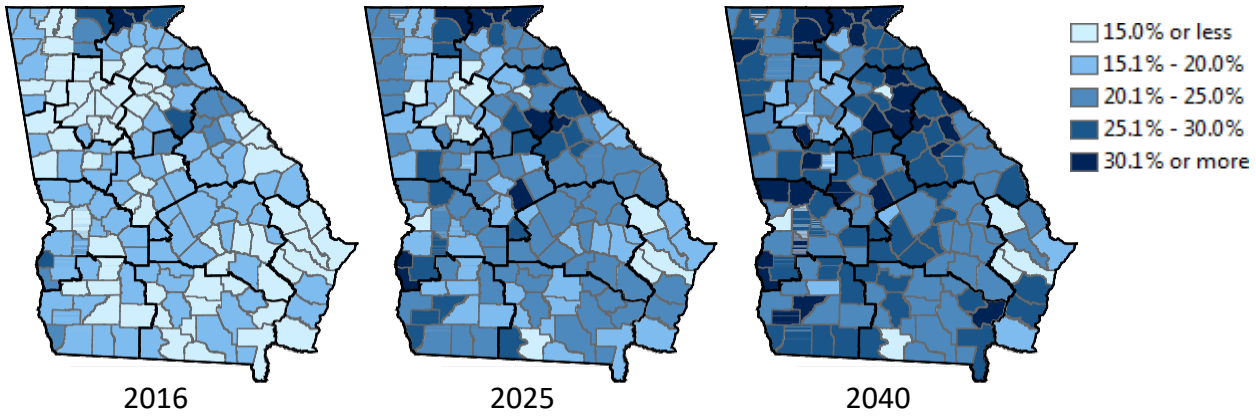
REGION	2016	2025	2040	PERCENT CHANGE 2016-2025	PERCENT CHANGE 2025-2040
Northwest Georgia	125,220	191,210	262,808	53%	37%
Georgia Mountains	102,743	152,612	234,802	49%	54%
Atlanta Region	443,748	785,032	1,265,761	77%	61%
Three Rivers	70,078	109,373	153,942	56%	41%
Northeast Georgia	76,447	121,693	184,122	59%	51%
River Valley	53,103	77,220	94,296	45%	22%
Middle Georgia	70,040	103,321	130,805	48%	27%
Central Savannah River Area	66,742	103,081	135,696	54%	32%
Heart of Georgia	45,505	64,257	77,982	41%	21%
Southwest Georgia	52,523	74,819	90,449	42%	21%
Southern Georgia	55,829	80,351	99,713	44%	24%
Coastal Georgia	83,139	121,372	168,250	46%	39%
Statewide	**1,245,116**	**1,984,341**	**2,898,626**	**59%**	**46%**

Source: Authors' analysis of population projections from the Governor's Office of Planning and Budget, Series 2015

In addition to reviewing the absolute population, Figure 6 examines the proportion of the total population over age 65 by county. In 2016 the 65 and older population made up less than 15% of the population in 66 counties, while in 2025 the number is projected to drop to 12 counties, and in

2040 to six counties. The six counties in 2040 with the lowest share of older adults are very small and rural or include large college student or military base populations.

Figure 6: Proportion of Population Aged 65 and Older, 2016, 2025, and 2040



Source: Authors' analysis of population projections from the Governor's Office of Planning and Budget, Series 2015

As shown in Table 4 below, the percentage of population 65 and older presents a different story than the absolute number. Where the Atlanta region had the largest number of older adults, the population accounts for 10% of the population in 2016, the smallest proportion of all 12 regions in the state that year. The region with the largest proportion of older adults in 2016 was the Georgia Mountains region (16%). All regions will experience significant growth in the proportion of the population that is 65 years and older, where older adults will comprise close to one-quarter of the population in most of the regions by 2040.

Table 4: Percent of Population 65 and Older by Region, 2016, 2025, and 2040

REGION	2016	2025	2040
Northwest Georgia	14%	20%	25%
Georgia Mountains	16%	19%	22%
Atlanta Region	10%	15%	21%
Three Rivers	14%	19%	23%
Northeast Georgia	13%	18%	22%
River Valley	14%	19%	22%
Middle Georgia	14%	19%	23%
Central Savannah River Area	14%	19%	23%
Heart of Georgia	15%	20%	24%
Southwest Georgia	15%	20%	24%
Southern Georgia	14%	18%	21%
Coastal Georgia	12%	16%	18%
Statewide	**13%**	**17%**	**22%**

Source: Authors' analysis of population projections from the Governor's Office of Planning and Budget, Series 2015

Estimate of Transportation Need, Number Served, and Unmet Need

To estimate the total number of individuals in Georgia who may need access to transportation services and supports, the authors utilized prevalence of driving estimates by age and sex determined by Foley, et al. (2002) and applied the estimates to the state's population. This analysis focuses on the population 70 and older due to the limitations of the data available from the dataset utilized for the study conducted by Foley et al., the Asset and Health Dynamics of the Oldest Old. Additionally, the subgroup of older adults excluded from the analyses are less likely to experience unmet need, as the majority of older adults under the age of 70 are still driving (AARP, 2011).

The findings, as presented in Table 5, estimate that there are approximately 263,582 individuals aged 70 and older who were not driving in 2016. Based on this estimate of the nondriving population, approximately 34% of individuals aged 70 and older were no longer driving. As indicated, the majority of nondrivers are female, based on findings that females were much more likely to have never driven, stopped driving, and have longer life expectancies than males (Foley, 2002). For additional information regarding the methodology of the estimate of nondrivers, see Appendix P.

Table 5: Estimate of Nondrivers in Georgia, 2016

REGION	Female Nondrivers Aged 70 and Older	Male Nondrivers Aged 70 and Older	Total Nondrivers Aged 70 and Older
Northwest Georgia	20,018	6,174	26,192
Georgia Mountains	15,987	5,499	21,486
Atlanta Region	74,678	21,062	95,740
Three Rivers	11,326	3,258	14,584
Northeast Georgia	10,547	3,125	13,672
River Valley	9,217	2,457	11,675
Middle Georgia	11,567	3,363	14,930
Central Savannah River Area	10,289	3,037	13,326
Heart of Georgia	7,418	2,241	9,660
Southwest Georgia	9,130	2,604	11,734
Southern Georgia	9,256	2,859	12,115
Coastal Georgia	14,091	4,378	18,469
Statewide	**203,524**	**60,058**	**263,582**

Source: Authors' analysis of the U.S. Census Bureau, ACS 5-Year Estimates using driving prevalence rates from Foley et al., 2002

After estimating the number of individuals who may need transportation services, it is important to consider the number of individuals who are being served by the programs currently operating. The number of individuals aged 60 and older served by existing transportation programs provided through the Georgia DCH and DHS statewide is estimated in Table 6. In total, approximately 37,877 individuals aged 60 and older were served. The programs provided clients 1,786,634 one-way trips and had $17,045,420 in total program expenditures.

Table 6: Estimate of Individuals Served, Number of Trips, and Program Expenditures by Agency in FY 18

AGENCY	Unduplicated Clients	One-Way Trips	Program Expenditures
Department of Human Services, Coordinated Transportation, Clients Aged 60 and Older	7,761	815,364	$8,271,375
Department of Human Services, Outside of Coordinated Transportation, Estimate of Clients Aged 60 and Older	3,452	157,155	$1,635,036
Department of Community Health, Medicaid Members Aged 60 and Older	26,664	814,115	$7,139,009
Total	**37,877**	**1,786,634**	**$17,045,420**

Source: Authors' analysis of administrative data provided by DHS, DCH, and the state's 12 AAAs

The authors were unable to estimate the number of older adults served by the public transportation agencies receiving funding through the GDOT due to a lack of available data. However, findings from an analysis by the AARP of data from the National Household Travel Survey suggest that a relatively small proportion of older adults' trips, approximately 2.2%, are by public transit (AARP, 2011). According to the report, individuals aged 65 and older use active transport more often than public and make approximately 8.8% of trips on foot. It is not possible to know if nondrivers in Georgia utilize alternative transportation modes such as public transit or walking at the same rate as the national estimate, but if the estimates were accurate, nearly 29,000 nondrivers may have their transportation needs met.

Table 7 presents a summary of the estimates utilized to understand the possible number of older Georgians with an unmet transportation need.

Table 7: Summary of Estimates for Transportation Need, Served Need, and Unmet Need

	Estimate of the Total Nondriver Population Individuals 70 and Older, 2016	Total DCH and DHS Program Clients Served in FY 18	Estimate of Nondriver Population Need Met by Public Transit*	Estimate of Nondriver Population Need Met by Walking**	Possible Number of Individuals with an Unmet Need
Statewide	263,582	37,877	5,799	23,195	196,711

Source: Authors' analysis of the U.S. Census Bureau, ACS 5-Year Estimates, administrative data provided by the DHS, DCH, and the state's 12 AAAs
Notes: Application of findings from the AARP analysis of the National Household Travel Survey regarding trip modes of public transit and walking. *Applies estimate that 2.2% of individuals 70 and older who do not drive have their needs met through public transit. **Applies estimate that 8.8% of individuals 70 and older who do not drive have their needs met through public transit.

In summary, an estimated 263,582 Georgians aged 70 and older may need access to services and supports to meet their transportation needs due to driving cessation. The DHS- and DCH-funded programs are serving approximately 37,877 individuals, which could be meeting the transportation need, partially or completely, for about 14% of older adults in the state. In applying national estimates of public transit and walking, an additional 28,994 individuals may have their needs met, at least in part. An undetermined portion of nondrivers may have their needs met through other modes of transportation, having services and goods delivered, or family and friends. Ultimately, some portion of the population of nondrivers have unmet needs, for which an exact number of individuals is difficult to estimate, but using the estimates provided could be nearly 200,000 Georgians aged 70 and older. An additional examination of the distribution of individuals who are likely in need of mobility support is considered in the next section.

Analysis of Geographic Density of Transportation Need

The Texas A&M Transportation Institute tested and published a methodology for identifying the geographic density of mobility need for the older adult population (Ettleman et al., 2017). The researchers named the methodology the Mobility Need Index (MoNI). The key benefits of the approach are the focus on older adults and that it combines several characteristics, drawn from publicly available ACS data, that are likely to indicate mobility need, in a composite index score. The six characteristics include age separated into three age groups, population 65 and older living in poverty, population 65 and older with a disability, and households aged 65 and older with no vehicle. The assigned weights and justifications for the characteristics included in the MoNI are provided in Table 8 below.

Table 8: MoNI Characteristics, Weights, and Weight Justifications

Characteristic	Weight	Justification for Weight Value
Aged 65–74 (young-old)	0.5	Young-old adults are the least likely segment of the aging population to have mobility challenges and are often still working, driving, and in good health.
Aged 75–84 (old)	1	Old adults in the 75–84 age segment face increased mobility challenges as transportation options, such as operating an automobile, become more limited.
Aged 85 and over (old-old)	1.5	Old-old adults have more mobility challenges and fewer options (e.g., inability to walk unassisted).
Persons living in poverty aged 65 and over	1.5	Lower-income populations have less access to services such as taxis and TNCs and are more likely to have to rely on public services for transportation.
Households with no vehicle aged 65 and over	1.5	Low vehicle access reflects populations that do not have the option to drive themselves.
Persons with a disability aged 65 and over	1.5	Individuals with disabilities have increased mobility challenges and may require access to specialized transportation options.

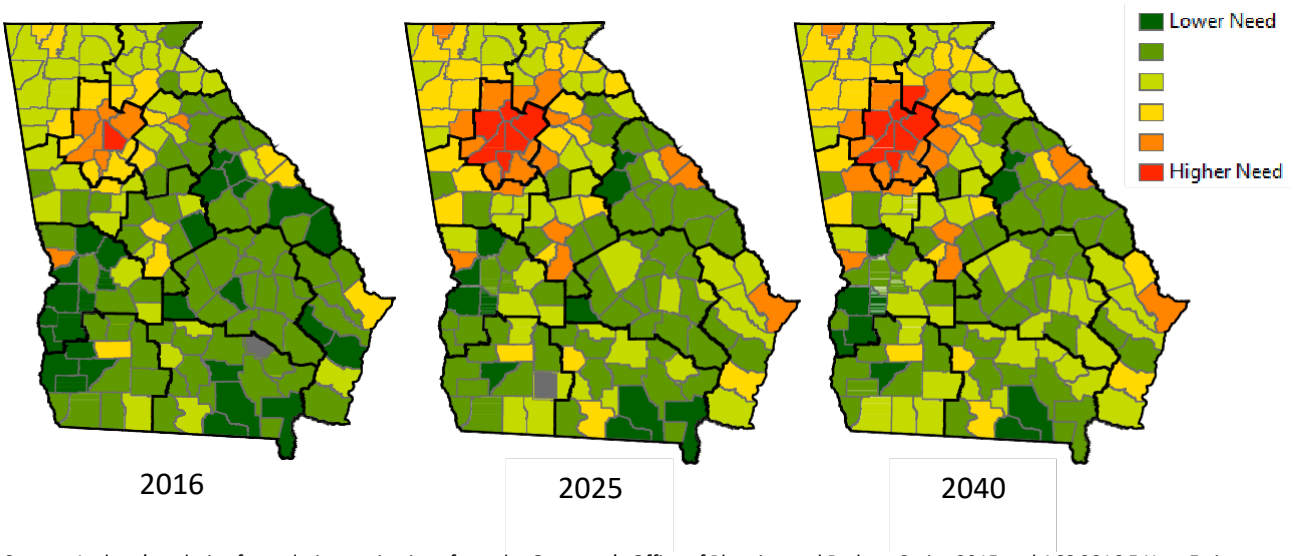
Source: Ettelman, et al., 2017

The weights applied to the characteristics are assigned to account for the relative importance of the characteristic to the increased need for mobility support. The MoNI takes into account the land area of the county in order to represent the density of individuals with greater mobility need per square mile. Due to the large variation in the population density by county in Georgia, similar to Texas, the MoNI was log transformed to produce a normal distribution of the values. This approach provides the opportunity for a greater level of variance of the counties outside of those that are more densely populated. Finally, in addition to looking at the current period (2016), the authors' maintained assumptions that the poverty rates, rate of households with no vehicle, and rate of disability would stay the same and projected the MoNI score for 2025 and 2040 utilizing the population projections. There are concerns with maintaining these assumptions, as significant changes in the economy or advances in medical technology, for example, would change the rates seen in current county statistics. However, the information is provided as a potential scenario that could be utilized to guide planning, with attention to what is also known by local planners. For additional information regarding the application of the MoNI, see Appendix N.

The results of the MoNI are displayed in Figure 7. The results of the analysis indicate that the most significant mobility need in 2016 existed in the core of the Atlanta region, in Muscogee County (Columbus), and Athens-Clarke counties. Additional areas of higher need include Bibb and

Houston counties (Macon), Catoosa and Whitfield counties (Dalton), and Chatham County (Savannah). Over time, the projected need increases in those original geographies and spreads to the suburban areas adjacent to those locations.

Figure 7: MoNI Results, 2016, 2025, and 2040



Source: Authors' analysis of population projections from the Governor's Office of Planning and Budget, Series 2015 and ACS 2016 5-Year Estimate data

The MoNI brings to the forefront the counties where the need is highest; the findings provided do not suggest that the areas on the lower end of the index do not have individuals with transportation needs. The analysis is intended to present the counties with the greatest density of need per square mile. If the rates of population growth, disability, car ownership, and poverty remain constant, it is projected over time that the need will either be constant or increase. The results suggest that there would essentially be no measurable reduction in mobility need over time due to the growth in the older adult population. There is an observable growth of need in suburban areas and much of northern Georgia. Further, the change observed shows increasing mobility need over time in many additional, more rural counties.

Analysis of Stakeholder Input Across Georgia

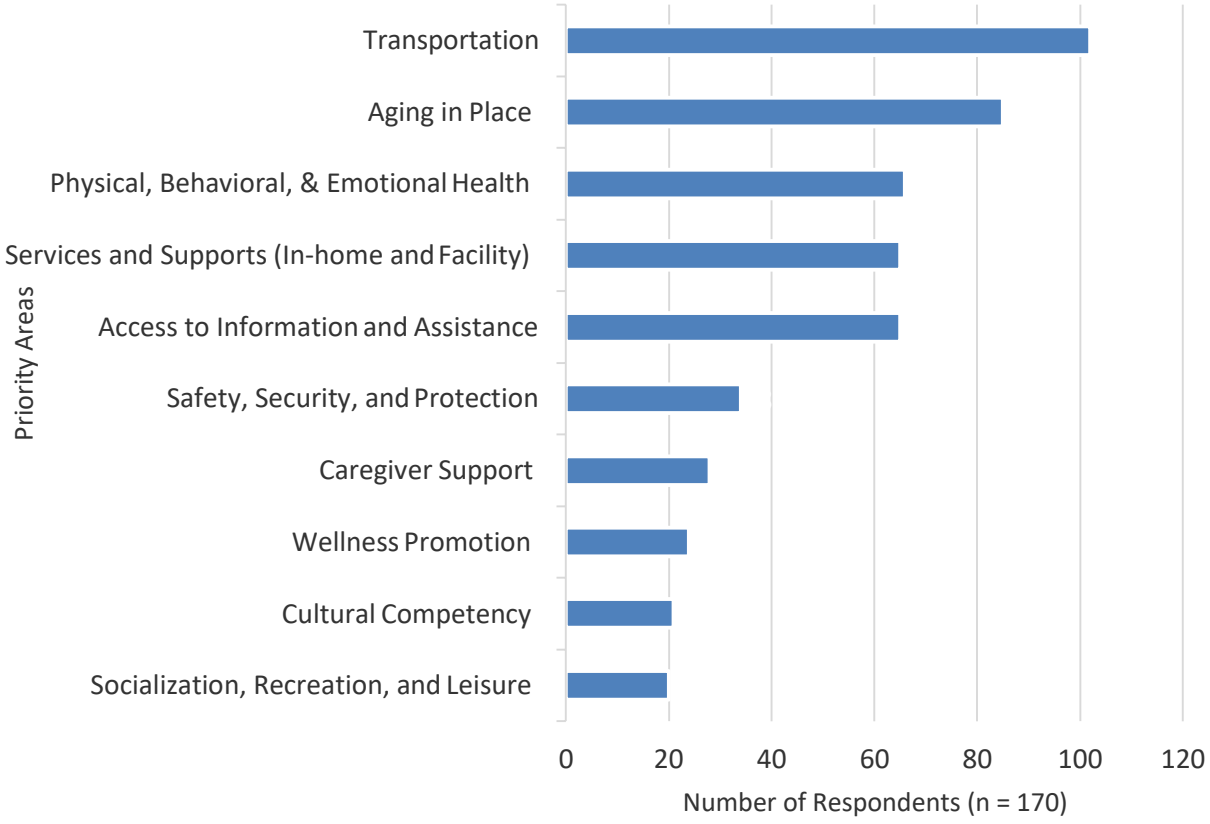
DAS contracted with the Georgia Health Policy Center at Georgia State University in 2018 to gather stakeholder input in preparation for the State Plan on Aging, a requirement to receive funding from the Administration for Community Living. The input was gathered through two modes: a web-based survey and 12 community convenings, one held in each of the DAS regions. Information collected regarding transportation through each mode is provided below. It should be noted that DAS has collected data for several years to understand the needs of older adults, and in the previous two state plan cycles transportation has been the issue respondents indicated they most needed to remain in the community, as well as continue to reside in their homes (Georgia DHS, 2011; Georgia DHS, 2015).

Survey

Stakeholders were able to complete the web-based survey between April and August 2018. The survey was promoted through the community conversations, social media, the DAS website, and other outreach completed by DAS and partner organizations. Included in the analysis that follows are 188 survey responses provided by individuals who self-identified their primary role with regard to aging and adult services as one of the following: service provider (37%), advocate (20%), unpaid caregiver/family member (14%), consumer (12%), and other (18%). The individuals who chose "other" described themselves in a variety of ways, such as AAA staff, volunteer educator, and retired citizen. Thirty-three percent of respondents were aged 60 or older, 31% were under 60 years of age, and 36% did not provide their age.

Respondents were given a list of 10 priority areas and asked to choose the top three areas the state should focus on over the next four years. As shown in Figure 8 below, the priority selected by respondents most often was transportation, which was chosen by 102 of the 170 respondents who answered this question.

Figure 8: Selection of Top 3 Priority Areas



Survey respondents were asked three follow-up questions regarding each of the priority areas selected: (1) What is working well? (2) What is not working well? and (3) What ideas or other

specifics would you like to share about this area? The respondents who selected transportation provided information regarding what is working well, including transportation to senior centers, some public transportation services within city or county boundaries, a volunteer program available in Hall county, and reduced or free fares for seniors, when available.

Survey respondents identified several areas that are not working well. Relevant to the small number of operating volunteer programs, there is difficulty recruiting and retaining volunteers. Focusing on publicly available services, respondents provided several issues, including issues related to access, service, and cost. Access issues included limited availability of services, county or city border challenges, difficulty getting to a fixed-route stop to utilize the service, and challenges gaining approval for paratransit. The service concerns were related to long wait and ride times, lack of responsiveness to phone calls when attempting to schedule rides, and a lack of benches at fixed-route stops. Finally, respondents felt that the service was not always affordable, particularly for those who have low income. In some cases the issues reported were general in nature or not necessarily describing a specific type of transportation service, and those are described next. Individuals felt that the transportation services are particularly lacking in rural parts of the state, and where available the service is often limited to morning hours during weekdays and more often on a fixed route. Respondents felt that not only should there be more services but the services should be more individualized, provide through-door service, and have well-trained drivers who are aware of the needs of older adults, including those who may have early-stage dementia. There is a reported lack of transportation providers, and one individual stated that they felt that additional monitoring of vehicles should be conducted. Finally, while ridesharing may be of interest for the opportunity it has to give a door-to-door trip, there was a concern about trusting the drivers given recent news coverage of incidents, as well as a lack of technological awareness for how to use a smartphone or an application.

Respondents provided additional information regarding transportation, which further highlights the importance of the issue and ideas for how to address the gap in services. First, respondents indicated that the lack of transportation is a very difficult challenge and one that is pivotal to get right. Transportation is a service utilized to access medical services, the grocery store, the pharmacy, and opportunities to have social outings. A respondent shared the following when asked what her greatest concerns are regarding maintaining her independence and staying in her home and community as she ages: “Transportation and remaining socially connected. There is no public transportation here and my church is approximately 15 miles away. So things like going to the movie, church, which I enjoy, going to the ‘Y,’ the library … and the supermarket might become difficult unless affordable and accessible transportation is in place or some other alternative.” There was also the acknowledgement that there are individuals working hard to address the gaps that exist and that additional information needs to be collected regarding what works, what doesn’t work, and who is not being served.

Survey respondents felt that there is a lack of awareness of the services that might be available and that further outreach should be done to ensure that learning about the resources is not haphazard. One respondent said, “If there are programs, there is little [or] no public awareness.

There is a tremendous gap of information between programs provided by the private [or] public sectors … and the aging [population] in general." Several respondents suggested increasing the resources and funding available to provide transportation. Solutions to increase capacity with additional resources included partnerships with nonprofit agencies, ridesharing, vouchers, and mass transit in Atlanta and surrounding counties. Important considerations for these options include regulating training requirements and background checks for drivers, as well as improving the capacity and support for phone-based scheduling and dispatch.

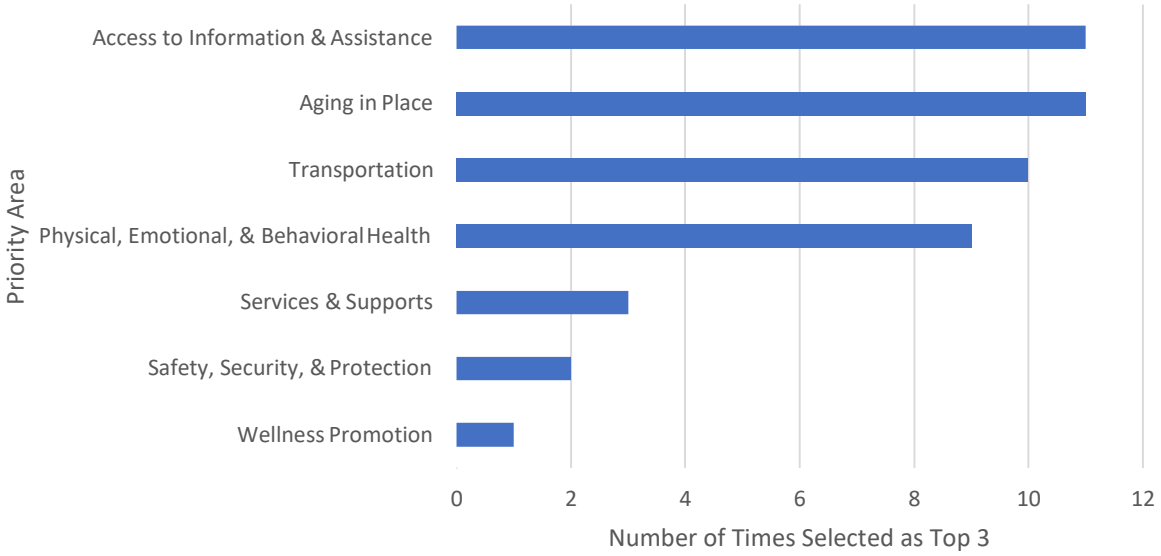
Community Conversations

Between April and August 2018, DAS held a Community Conversation hosted by the local AAA in each of the 12 DAS regions. The purpose of these sessions was to provide information to community members regarding recent DAS initiatives, for community members to provide input drawn from their experiences, and for the information shared to ultimately guide the state's upcoming four-year strategic plan for aging services.

Across the state, more than 650 individuals participated in the sessions, with an average of 55 participants per session. Of those who completed a demographic profile distributed at the end of the session, individuals were asked to indicate their primary role with regard to aging and adult services as one of the following: service provider (35%), consumer (26%), advocate (19%), unpaid caregiver/family member (6%), paid caregiver/professional (2%), and other (12%). The individuals who chose "other" described themselves in several terms, including active senior, university/education, planner, and Adult Protective Services staff. The majority (54%) of participants were 60 years of age or older, 40% were under 60 years of age, and 6% did not provide their age.

During each session, attendees participated in the identification of key priority issue areas using the same list of 10 priorities as the survey. Participants were asked to consider and prioritize their top five issue areas related to aging services: access to information and assistance; transportation; caregiver support; cultural competency; socialization, recreation, and leisure; aging in place; physical, emotional, and behavioral health; safety, security, and protection; wellness promotion; and services and supports. Participants then utilized instant polling technology to identify their top three issue areas. Figure 9 below provides a summary of the number of times each issue area was chosen. Transportation was selected as a priority area in 10 out of the 12 sessions. Two priority areas were chosen in 11 out of the 12 regions: "aging in place" and "access to information and assistance."

Figure 9: Top 3 Priority Areas Selected in Community Conversations



Notes: (1) There are more than three priority areas per session in total due to some sessions having a tie between priority areas. (2) There were three issue areas that were not chosen among the top three during the sessions: caregiver support; cultural competency; socialization, recreation, and leisure.

Once the top three priority issue areas were established, participants were asked to think about what works well, what does not work well, and ideas or recommendations they had for each priority issue area. Participants shared their perspectives with others seated at their table, while one individual at each table recorded the items discussed. An analysis of the table notes mirrors much of the information collected through the survey. When thinking about what is working well with regard to transportation, participants highlighted current services that are working well in certain geographies for particular individuals. Those highlighted include transportation to senior centers, public transit including demand-response services, Veterans Affairs services, health plan–covered transportation (e.g., Medicaid), volunteer-based programs to address gaps, and the ARC's Simply Get There program. Particular transportation policies or strategies that were highlighted included discounted rates for older adults who rode public transit, voucher programs, ensuring the built environment supports active transportation modes, and ridesharing services booked through phone-based third parties.

When the table discussion turned to what is not working well, there was significant concern expressed regarding a lack of awareness of available services, gaps in service coverage, particularly in rural areas, and county boundaries, which create barriers to accessing desired destinations. For those who had public transit available, there were many comments regarding individuals living too far from routes to get on buses, a lack of sidewalk and shelter availability, limited hours and days of service, long and unpredictable wait times, cost, and navigational challenges. For some of the services provided outside out public transit, services were often limited to particular destinations such as the senior center or a medical appointment. Individuals felt that services for shopping,

pharmacy, and social visits were often not available. Some individuals stated that many older

adults continue to drive, despite physical or mental declines, due to the lack of services available. Finally, there were concerns regarding the training and sensitivity of drivers and safety of the riders, regardless of the provider of transportation services.

In addition to the polling and table conversations, participants were encouraged upon their arrival and throughout the session to complete a feedback form, which asked, “What feedback, question, or idea do you want to be sure we hear today.” The feedback forms enabled participants to record ideas or questions as they arose at any point throughout the meeting and served as another means of gathering input from attendees. Many attendees took the opportunity to provide their input using the forms, often reflecting on the gaps they see in the services available, or the opportunity for the quality of the services provided to be better. Across the state, transportation was indicated as a need on feedback forms in every session except for one. One participant from the session held in Augusta summarized the need for transportation this way: “I see a HUGE need for affordable transportation for people who cannot drive due to health issues or vision. It would also help people who cannot afford cars. Current bus service does not cover many areas. Many elderly have trouble getting to bus stops, but may not meet the strict guidelines for paratransit or may not live near enough to bus stop. Transportation needs to be available evenings, weekends (including Sunday) and holidays. It [will] also improve public safety as many people who should not drive continue to do so due to lack of other affordable options. Some elders can’t afford Uber and don’t have smart phones.”

PROMISING PRACTICES IN TRANSPORTATION SOLUTIONS SERVING OLDER ADULTS

As many of the issues detailed in this report are not unique to Georgia, the authors conducted a rapid environmental scan of promising practices in transportation solutions for older adults from around the United States. As part of this process, we also conducted targeted phone interviews with some of the people involved in these programs. The aim in this section is for Georgia to consider how organizations in other states have tackled similar issues and integrate that perspective into solutions tailored specifically for the state.

Key Findings

- Supportive relationships between state entities, regional and/or local providers, and the communities they serve are critical for creating and managing transportation supply for older adults.
- Allowing the flexibility to innovate at the local level is valuable, but it must be done in a way that allows for diffusion of promising ideas across communities and acknowledges that some innovations may not be successful.
- Coordinating multiple funding streams and maintaining collaborative partnerships are the foundations of promoting local mobility through a variety of transportation options. This is the case for serving older adults, and it is also true for serving the broader community.
- A rapid environmental scan of promising practices in transportation solutions for older adults produced information regarding organizations that have sought to tackle similar issues as those facing Georgia and may offer options for addressing unmet need for the state.

Overview of the Issues and Challenges

- Rural and suburban service delivery: Rural and suburban areas lack the provider capacity to meet demand.
    - Many nonmetropolitan providers lack the vehicles and staff to meet the demand for services.
    - Long-distance trips are cost-prohibitive.
- Rigid policies and restrictions on use of funding: Policies and restrictions limit opportunities for innovation and growth.
    - Program participation is often limited to agency clients or people who qualify for specific funding programs.
    - Trip purpose is frequently restricted.
    - Transportation is often limited in terms of days and hours service is provided.

    - Transportation service areas are often limited by administrative boundaries.
- Community support and engagement: Transportation organizations lack community support and engagement.
    - Lack of community buy-in can limit opportunities for sustainability through service utilization, planning, and funding support.
    - Collaborative partnerships: Opportunities to increase cost-effectiveness and expand services through collaboration exist but often are not pursued.
- Limited use of technology: Technologies that can enhance service delivery are often underutilized.

Insights from Interviews

A variety of formal and informal relationships between local and regional service providers and their respective state's bureaucracy exists, and the quality of these relationships plays a key role in making positive impacts on mobility for older adults. In Texas, regular convenings of partners from across the state help foster relationships and diffuse innovations in practice.

Building relationships based on trust with the communities being served is a critical foundation for meeting need through more formalized partnerships between public agencies and providers. This takes time and effort.

In regions with multiple operators in multiple jurisdictions, there can be confusion for the consumer whose needs may require travel across administrative boundaries. Community relationships and the individuals within the community are critical to success, but this also leads to wide variations in quality across a decentralized system, especially in low-density suburban and rural contexts.

Pilot programs with TNCs have seen cost-neutral increases in mobility, as measured by number of trips taken. Interviewees also cautioned that TNCs (as well as autonomous vehicles) should be viewed as a piece of a broad set of solutions across the transportation system and not as a "silver bullet" for addressing unmet need.

When an existing transit provider becomes a Managed Transportation Organization (MTO) for Medicaid-funded NEMT, they are often well-positioned to provide the most cost-effective and flexible combination of existing transit services (through their own services and those of subcontractors) and individual transport through a volunteer network.

Good data on use, costs, perceptions, and service management are critical for informing adaptations. Collecting these data from across multiple service providers presents an important, but not insurmountable, challenge.

Because many of the needs are similar or overlapping between older adults and persons with disabilities, services should be geared toward inclusiveness while still promoting independent mobility. Conceptually, this is relatively straightforward; however, it presents challenges administratively due to various sources of funding and associated requirements for specific populations.

Nobody has fully solved the issues involved with providing services for older adults, and there will always be a gap between supply and demand in terms of publicly supported services. A general recognition that this demand will continue to grow should drive solutions and innovation, and not be used as an excuse for inaction.

Programs for Further Exploration

Medicaid NEMT: Flexibility for Cost-Effectiveness

Project Amistad in West Texas serves a large, mostly rural, region of 23 counties as their MTO, with a contractual agreement and oversight by the Texas Health and Human Services Commission. Their NEMT services include providing mass transit tickets to get beneficiaries to medical appointments when that is determined to be the most cost-effective means of transportation. However, when mass transit is not available or accessible, as is often the case in rural areas of the country, they rely on a robust network of individual transportation participants to provide NEMT. These can be family members, friends, or others who use a personal car to transport beneficiaries to health care appointments, and who are then reimbursed for miles, as well as meals and lodging when appropriate. This flexibility enables beneficiaries to access health care appointments in an environment of relatively limited resources and options. Project Amistad also provides transportation to thousands of persons through various contracts and partnerships with the city and county of EI Paso, the Texas DOT, and various local agencies, expanding the portfolio of NEMT options for transportation to doctor's appointments, cancer treatments, therapy, dialysis, pharmacies, or other approved medical appointments. Out-of-town and out-of-state travel can also be arranged by Project Amistad staff with advance notice.

Project Amistad's chief of operations for transportation programs noted that offering this broad range of NEMT services is not without its challenges. They serve over 250,000 clients with an annual budget of around $9 million. As an existing transit provider in the El Paso area, they were well positioned to leverage their more traditional transit expertise in an expanded regional context once they became the MTO. Coordinating across the numerous subcontractors, while avoiding client confusion, seemed to be the main hurdle. They received good guidance from the state and requested some technical support to address identified challenges. This helped them to gain a better understanding of their enhanced oversight role and to become more efficient in capturing required information from both clients and providers. With that support from the state, they were able to streamline the amount of paperwork clients are responsible for, leading to a 50% decrease in complaints. Overall, Project Amistad's actions to diversify its NEMT services, and Texas' provision of technical assistance and policy guidance, have enabled the program to

overcome barriers to service delivery that are currently encountered in many parts of the United States.

Community Collaboration: Building Trust over Time

Ride Connection has a long history of serving older adults in the Portland, Ore., area. They are a private, nonprofit organization with diverse streams of funding that allow them to coordinate and provide transportation services to people with limited options. Over 30 years ago, TriMet, the regional transit agency, was looking at better, more cost-effective ways to serve older adults and persons with disabilities. They examined needs and services throughout their region and determined that a major barrier to more efficient options for consumers was the fact that so many social service agencies were providing transportation as a secondary service. This meant there were numerous options, but they were woefully undercoordinated. The resulting recommendation to formally coordinate services across these disparate providers and centralize some functions (like driver training) led to the creation of Ride Connection, which by 1988 was functioning as an independent nonprofit.

According to the Ride Connection CEO, trust is a major key to their success. This trust stems from a recognition in the community that TriMet does a good job with mass transit and that human services transportation is a key component of meeting individual unmet need. Having such strong support from TriMet and social service agencies is unique and critical. With this established trust comes the ability to innovate and constantly evolve, all while maintaining a strong network of volunteers, who make up two-thirds of their drivers. Other critical factors noted were having visionary leaders across partner organizations and creative staff who are willing to talk to the consumers and create new ideas to effect change.

In one example of how Ride Connection works collaboratively to innovate, they used a participatory planning process to identify existing challenges related to transportation for kidney dialysis patients and how these challenges impacted patient health. It involved the creation of an advisory committee and implementation of a public engagement effort. The project resulted in a pilot program with an NEMT method of grouping rides by neighborhood for trips to the clinic, providing flexible return trips and allowing patients to change pickup times as needed, and allowing same-day ride requests. This example illustrates two concepts their CEO noted as important: make community and user engagement a foundational part of project and program planning, and continually reinforce the high level of trust on which their business model is based. Ride Connection's commitment to community involvement and mutual support has created opportunities to increase access and sustainability and, ultimately, satisfactorily meet the transportation needs of more older adults in its service area.

Augmenting Fixed-Route Options in Suburban and Rural Areas through Local Partnerships

SMART Ride in southern Michigan provides transit services for the large region around Detroit, which includes many low-density suburban and rural areas, where the limited fixed-route system cannot realistically provide services. SMART works closely with local municipalities and counties to

augment their fixed-route options with small bus and van services to help customers remain mobile. Around 60% of their fleet of 600 vehicles is made up of these smaller buses and vans. Community partnerships play a key role in maintaining support for and expanding the services throughout the region, where local providers can use SMART-funded and maintained vehicles. However, these local partnerships vary in quality for a host of reasons and can result in a confusing patchwork of services for people traveling to and from different parts of the region. As one of the county ombudsmen noted, this reliance on local-level partnerships has benefits for fostering innovation, but it also has drawbacks for diffusing them.

In one example of success, SMART partnered with a local emergency medical services provider in two suburban townships to use off-duty ambulances for regular doctor appointments or trips to the pharmacy. This provider developed an arrangement that eventually provided access to SMART resources for a van to use for non-emergency trips. In this case, the emergency medical services director understood the public health perspective of transportation issues in his community and was willing to innovate. The program became so successful that it is now in 11 communities in the northern part of the region, with 10 vehicles and almost 30,000 rides last year. The partnerships SMART has been able to foster over time have significantly expanded access for individuals living in suburban and rural areas, and the program's approach could be modeled in other areas with limited fixed-route service options.

Shared Ride Services (TNCs): On-Demand Paratransit Opportunities

The Massachusetts Bay Transit Authority (MBTA) has an ADA program called The RIDE. Generally, anyone in the Boston area who is unable to take the bus or subway due to disability qualifies for The RIDE service. In 2016, the transit authority began a pilot to see if shifting some of these trips to TNCs (ride-shares) would be cost-effective or cost saving. Under the pilot program, customers sign up via The RIDE website, have eligibility confirmed by MBTA, and then access a coupon code through their own Uber or Lyft account that allows them to take trips for $2 (the regular price for a trip on The RIDE is $3.15). The transit authority pays the next $40, and the customer pays any additional cost beyond that. Trips are capped based on how much a given customer was using The RIDE before enrolling in the pilot: the more they used The RIDE, the more TNC trips they are eligible for. The high end of the trip cap is 40 rides per month, based on previous use. According to one of the program's administrators, the trip cap is naturally a little controversial because users inevitably want more trips than their determined cap. The pilot program has successfully increased mobility, as demonstrated by a 40% increase in number of trips taken over The RIDE alone. The per-trip cost is lower for MBTA at about $17 per trip, compared to $40 per trip for The RIDE. Though the mobility increase cancels out some of the cost savings overall, the pilot has been cost-neutral and well-received by users.

All funding for the pilot comes out of the MBTA operational budget, so there are no additional subsidies or grants. The agency moved forward under the premise that their spending on the pilot is what would otherwise be spent on The RIDE. The pilot program is restricted to ADA trips, so simply being a senior does not qualify one to participate. There needs to be a real mobility challenge that prevents a potential rider from using the train or bus regularly. The transit authority

pursued the pilot as a way to avoid the inability to do same-day trip reservations with The RIDE, which is easy to do with TNCs. This approach also provides much more direct routing, with estimated time of arrival (of vehicle) usually around seven to eight minutes versus an hour pickup window for The RIDE. Learning how to use the TNC technology is a challenge for some seniors, but not as significant of a barrier as initially expected, and Lyft offers a call-in option that addresses this challenge. Generally, the pilot has been well-received and extended to a point where it appears to be a stable part of the transit authority's services. One challenge noted by the program administrator is the issue of wheelchair-accessible vehicles: these are not a regular part of TNC fleets, so there is a lack of supply in this respect.

Taxi Services as an Alternative for Paratransit

The San Francisco Municipal Transportation Agency Paratransit service implemented an innovation to provide people who are eligible for paratransit with a non-ADA option that may suit their needs for much less cost. The San Francisco Paratransit Taxi program is not an ADA paratransit service because in some cases it does not meet the minimum requirements. However, it is similar to ADA paratransit service, and it may satisfy transportation needs of many ADA-certified riders. It enables riders to request same-day rides, rather than prescheduled ADA van rides. Eligible riders are issued a debit card with photo ID and assigned a monthly purchase allotment. For every $6 an individual pays into their debit card account, San Francisco Paratransit will add $30 to the account. This scheme is feasible because San Francisco requires all taxi companies to participate in the program, and there are over 100 taxis with wheelchair-accessible ramps, making a suitable supply of accessible vehicles available. The program has allowed for significant cost savings and enhanced accessibility for paratransit riders who are able to use the taxi program.

Demand Response: Service Across State Lines

In eastern Washington state, the Council on Aging's transportation program, COAST, supports rural mobility needs through demand-response ride service. They use both volunteer drivers with their own vehicles and paid drivers with accessible company vehicles. Additionally, the agency looks to build community resources and has done so through the creation of vehicle and insurance pools and by offering driver training. The vehicle pool enables COAST to distribute used vans to agencies that COAST cannot economically serve, while the insurance pool allows small agencies in the region to access affordable insurance coverage. The agency also trains drivers for many smaller agencies in the region. Regarding COAST's transportation services, the agency allows personal care attendants to accompany riders free of charge. Typically, residents of the service area schedule rides 48 hours in advance.

COAST also provides services to residents across state lines. The agency serves Whitman, Asotin, Garfield, and southern Spokane counties in Washington and Latah, Nez Perce, Clearwater, Idaho, and Lewis counties in Idaho. As mentioned previously, administrative boundaries, including county and state lines, act as transportation barriers for people across the country. COAST's delivery of services to older adults in multiple states and innovative strategies to extend limited resources set

it apart from many organizations in the United States and greatly increase access for residents of this large, rural area.

Transportation Voucher Programs

Voucher programs are particularly useful due to their cost-effectiveness, especially in low-density suburban and rural settings, and capacity to provide additional support for older adult riders. Additionally, voucher programs can offer more convenient and comfortable alternatives to public transit options.

Mystic Valley Elder Services, a 501(c)(3) nonprofit serving 11 counties in northern Massachusetts, offers a unique, free, passenger-controlled transportation program open to older adults and adults living with disabilities in the region. The program, called TRIP Metro North, provides the tools older adults need to make arrangements with friends, neighbors, and others interested in providing transportation support. Consumers work one-on-one with their driver to make the arrangements, and Mystic Valley provides a monthly check to reimburse for mileage.

My Rides, another voucher program, is a collaboration between the Western Placer Consolidated Transportation Services Agency, Seniors First, and the local AAA in Placer County, Calif. It aims to fill gaps in the traditional public transit system for older adults, persons with disabilities, and families of limited means with young children. Eligible residents can enlist a relative, neighbor, friend, or a pool of existing volunteer drivers to be driven to medical appointments, public assistance, and quality-of-life services.

LIMITATIONS AND OPPORTUNITIES FOR FURTHER RESEARCH

As described throughout this report, assessing transportation unmet need among older adults poses inherent challenges. The manner in which unmet need is conceptualized as it relates to older adults and transportation varies broadly, and how it is ultimately defined can significantly impact evaluation outcomes. Also, the diversity of the systems, funding streams, and players involved, and the complex ways in which they interact, complicate measurement and efforts to identify means of leveraging resources to address existing service gaps. Thus, an exact quantification of unmet need and the resources required to address it is somewhat impractical given the nature of the problem and data available. The authors applied several approaches to estimate the possible transportation unmet need among older adults, but the numbers presented should not be considered precise counts. Further research is needed to supplement these findings with regional and local knowledge of need and potential solutions, as well as account for economical, medical, and other changes that could impact older adult transportation in the future.

Regardless of the precision with which unmet need can be quantified for older adults, evidence of a large unmet need exists throughout the state, and, based on demographic projections and the current service infrastructure, this unmet need will grow immensely in the coming years if changes are not initiated. Strategies adopted to curb unmet need will need to be multifaceted and involve innovative planning and policy approaches, collaboration across agencies and sectors, and the application and dissemination of emerging technologies, among other critical components.

Planning and policy approaches that promote independence and aging in place among older adults have significant implications for transportation access and mobility broadly. AARP's Public Policy Institute (2018) published a report that includes general principles to guide planners and policymakers in the development of age-friendly communities. The principles include adopting a commitment to equity in policymaking and planning decisions; maximizing independence through convenient access to mobility options for those who do not drive; developing infrastructure that meets universal needs (e.g., design buildings, vehicles, built environments, products, services, and user interfaces that accommodate persons of all ages and ability levels); supporting livable, sustainable communities by maintaining safe, walkable streets, age-friendly housing and transportation options, and opportunities for residents of all ages to participate in community life; and encouraging data system and platform interoperability and data sharing between public and private transportation providers to inform planning and improve efficiency (AARP, 2018). Long-term, sustainable solutions that address unmet need among older adults must be initiated and maintained through planning and policymaking processes.

Cross-agency and cross-sector communication, which is interconnected with planning and policy approaches, is also essential to ensure available resources are maximized and unmet needs are addressed to the greatest extent possible. At present, transportation services for older adults are

fragmented, and differing administrative boundaries, reimbursement methodologies, and data systems among providers impede collaboration and create inefficiencies, which lead to service gaps. Enhanced communication, data sharing, and collaboration across all parties engaged in serving older adults will be critical for the system to adapt to meet the increases in demand that are likely to accompany the anticipated demographic shift.

The diffusion of new technological innovations also has the potential to dramatically impact transportation for older adults. In-vehicle technologies can extend the amount of time older adults can drive safely and are increasingly available. In a synthesis of advanced in-vehicle technologies relevant for older adults, Eby et al. (2015) reported that forward collision warning/mitigation, parking assistance (including rearview display, cross traffic warning, and semiautonomous parking assistance), navigation assistance, and automatic crash notification all present a high potential to benefit older adult drivers. Autonomous vehicles also present an opportunity for increased mobility among older adults, as they reduce the need for human involvement during driving, but their availability and likelihood of adoption among older adults remains unclear (Anderson et al., 2014). Additionally, smartphone applications hold great potential for increasing mobility and access for older adults, not only with regard to using transportation, such as through ordering TNC-delivered rides, but also in the delivery of services and goods to the home (Shirgaokar, 2018). These and other technological advances are likely to shape transportation access and mobility for older adults in the future and could mitigate some of the difficulties faced by the older adult population today.

CONCLUSION

Transportation plays a vital role in the maintenance of older adults' independence, social participation, health, and overall well-being. Many players are involved in the planning and delivery of transportation services, including federal, state, and local agencies and planning organizations; public and private transportation providers; and legislators. Although many in the state strive to deliver services tailored to the diverse needs of this population, opportunities to increase access and efficiency exist and could lead to improvements in health and quality of life among older adult residents.

Several key actions have the potential to mitigate current barriers to service delivery across the state, including improved communication regarding available services, increased coordination across agencies, and the promotion and adoption of cost-effective programs and new technologies. Of these, planning and policy initiatives that promote the development of age-friendly communities represent especially impactful long-term solutions and are needed to yield sustained positive outcomes.

Future research is needed to inform planning, policy, and service delivery in this evolving landscape. Older adults are currently among the most vulnerable to inequities in the transportation system, and efforts to address transportation disadvantage are immediately necessary, as the anticipated population shift will likely exacerbate existing disparities.

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