

A “Smart” Transit Hub in Rural Western Arkansas and Eastern Oklahoma Feasibility Study

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Abstract

This feasibility study is intended to offer and select a menu of technologies and programs that help connect people experiencing transportation barriers in rural communities surrounding Fort Smith, Arkansas to healthcare, employment, and higher education opportunities. The primary objective of this project is to develop a “Smart” Transit Hub Feasibility Study. This study identifies feasible rural transportation options that could be implemented over time in western Arkansas and eastern Oklahoma.

Disclaimer

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Cover photos:

Left: White Bus. Courtesy of Fort Smith Transit Facebook page

Right: Trolley. Courtesy of Van Buren Advertising and Promotion Commission

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LIST OF ACRONYMS

AASHTO	American Association of State highway Transportation Officials
APRIL	Association of Programs for Rural Independent Living
CARES	Coronavirus Aid, Relief, and Economic Security Act
CMM	Community Mobility Management
COG	Council of Governments
CPTA	Central Pennsylvania Transit Authority
CTSA	Consolidated Transportation Services Agency
DETCOG	Deep East Texas Council of Governments
DOT	Department of Transportation
FBO	Faith-Based Organizations
FTA	Federal Transit Administration
MaaS	Mobility as a Service
MAP-21	Moving Ahead for Progress in the 21st Century
MOD	Mobility on Demand
MPO	Metropolitan Planning Organization
MRHA	Missouri Rural Health Association
MR TMA	Missoula Ravalli Transportation Management Association
NASM	National Academies of Sciences and Medicine
NEMT	Non-Emergency Medical Transportation
NCHRP	National Cooperative Highway Research Program
NCMM	National Center for Mobility Management
NRTAP	National Rural Transportation Assistance Program
NTD	National Transit Database
ODOT	Ohio Department of Transportation
P4-MOD	Public-Private-Partnership for Paratransit Mobility on Demand
PDSA	Plan-Do-Study-Act
PSTA	Pinellas Suncoast Transit Authority
RDO	Regional Development Organization
RHI	Rural Health Information Hub
RPO	Rural Planning Organization
RTPO	Regional Transportation Planning Organization
SAE	Society of Automotive Engineers
SPR	State Planning and Research
SUMC	Shared Use Mobility Center
TANF	Temporary Assistance for Needy Families
TD	Transportation Disadvantaged
TNC	Transportation Network Company
VVTA	Victor Valley Transit Authority
WAPDD	Western Arkansas Planning and Development District

1. INTRODUCTION AND STUDY AREA BACKGROUND

The Western Arkansas Planning & Development District (WAPDD) is investigating the feasibility of a rural transit hub for western Arkansas and eastern Oklahoma to make healthcare, employment, and higher education opportunities more accessible for people experiencing transportation barriers. This feasibility study is intended to assist in:

- Determining how technology can be incorporated into a transit hub
- Identifying a hub model that can be implemented over time
- Coordinating partners such as community leaders, existing transit operators, medical providers, employers, and educational institutions
- Identifying funding opportunities
- Providing rural transit case studies
- Analyzing existing local transportation-related planning documents

The primary objective of this project is to develop a “Smart” Transit Hub Feasibility Study. This study identifies feasible rural transportation options that could be implemented over time. It offers a menu of technologies and programs that can help connect people in rural communities surrounding Fort Smith, Arkansas to health care, higher education, and employment.

This Background section contains the following information:

Section 1.1: Key Demographics and Trends Analysis

Section 1.2: Transportation Needs Assessment: Input from Community Representatives

Section 1.3: Existing Transportation Options and Resources

Section 1.4: Transportation Needs Index for Study Area

Chapters 2 through 6 comprise the literature review. As described in the Background section, fixed route and demand response transit systems currently exist in the study area. This literature review focuses on transportation technologies and programs that can supplement those existing systems. The review focused on programs providing affordable and reliable transportation options for the transportation disadvantaged, such as those experiencing low-income, older adults, and people with disabilities. The literature review is comprised of the following Chapters:

Chapter 2: Rural Regional Mobility

Chapter 3: Medical Transportation

Chapter 4: Transportation Technologies and Programs

Chapter 5: Transit Cost Benefit and Funding Options

Chapter 6: Literature Review Key Findings and Summary

1.1. Key Demographics and Trends Analysis

The study area is a region consisting of six counties in western Arkansas and two counties in eastern Oklahoma. The WAPDD service area comprises the six counties in Arkansas, which are Crawford, Franklin, Logan, Polk, Scott, and Sebastian Counties. The Frontier Metropolitan Planning Organization (MPO) partnered with WAPDD on this project and provided support to the research team. Portions of the Frontier MPO boundary include the two Oklahoma counties in this study area, which are Le Flore and Sequoyah Counties.

The Fort Smith Urbanized Area has an estimated population of 122,993 across 72 square miles, while the City of Fort Smith has an estimated population of 87,537 across 68 square miles. Outside of the Fort Smith urbanized area, Greenwood, Arkansas is the largest community with a population of 8,952. Most of the remaining rural communities have a population around 5,000 or fewer. Of the 6,452.6 square mile area across the eight counties, 99 percent of the area is rural.

Figure 1 shows a map of the eight-county study area, urbanized area, Frontier MPO boundary and large employer locations.

Fort Smith is a destination for many people from surrounding rural counties to access health care, higher education, and employment. In addition, there are other destinations outside of Fort Smith that also serve as medical, education and employment hubs. For example, in addition to the University of Arkansas at Fort Smith (UAFS), students travel to the University of Arkansas-Rich Mountain in Mena and the Arkansas Technical University in Ozark (ATU-Ozark).

Booneville, Mena, Ozark, Paris, and Waldron serve as hubs for employment, medical care and access to learning for surrounding areas. Each of these smaller communities has a hospital or fair-sized clinic that needs to have accessible transportation. Waldron has two major employers in the region, including an extension of the Mercy Clinic system and a county health unit. Each of these smaller communities are roughly a half hour or more drive to any city of comparable size and resources (education, medical and work).

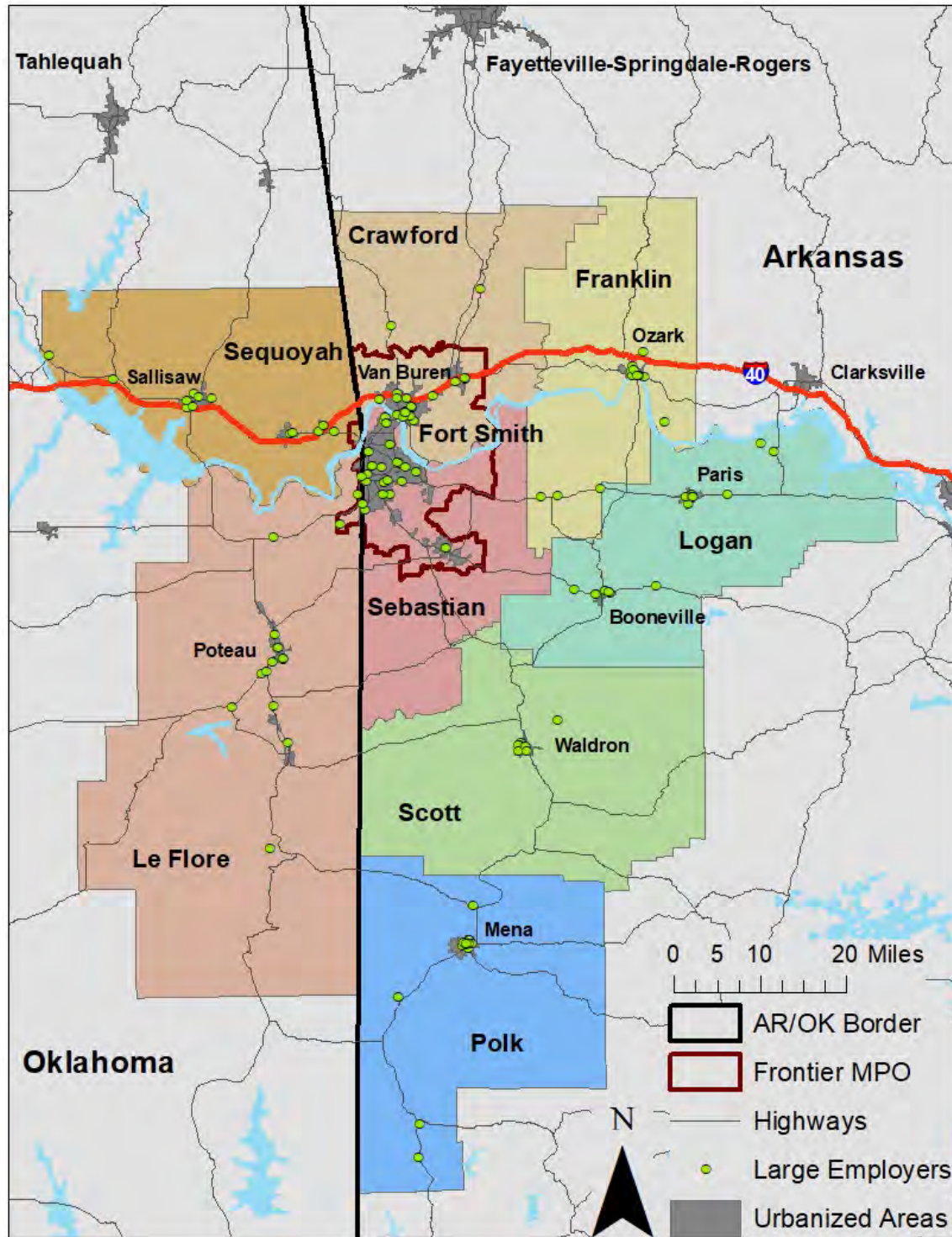


Figure 1: Oklahoma/Arkansas Eight County Study Area Map

Data Source: USDOT NTAD (Highways, Places, Counties, States), UTC Geodata Portal (Water Bodies), Frontier MPO (Boundary), US Census Bureau (Urbanized Areas)

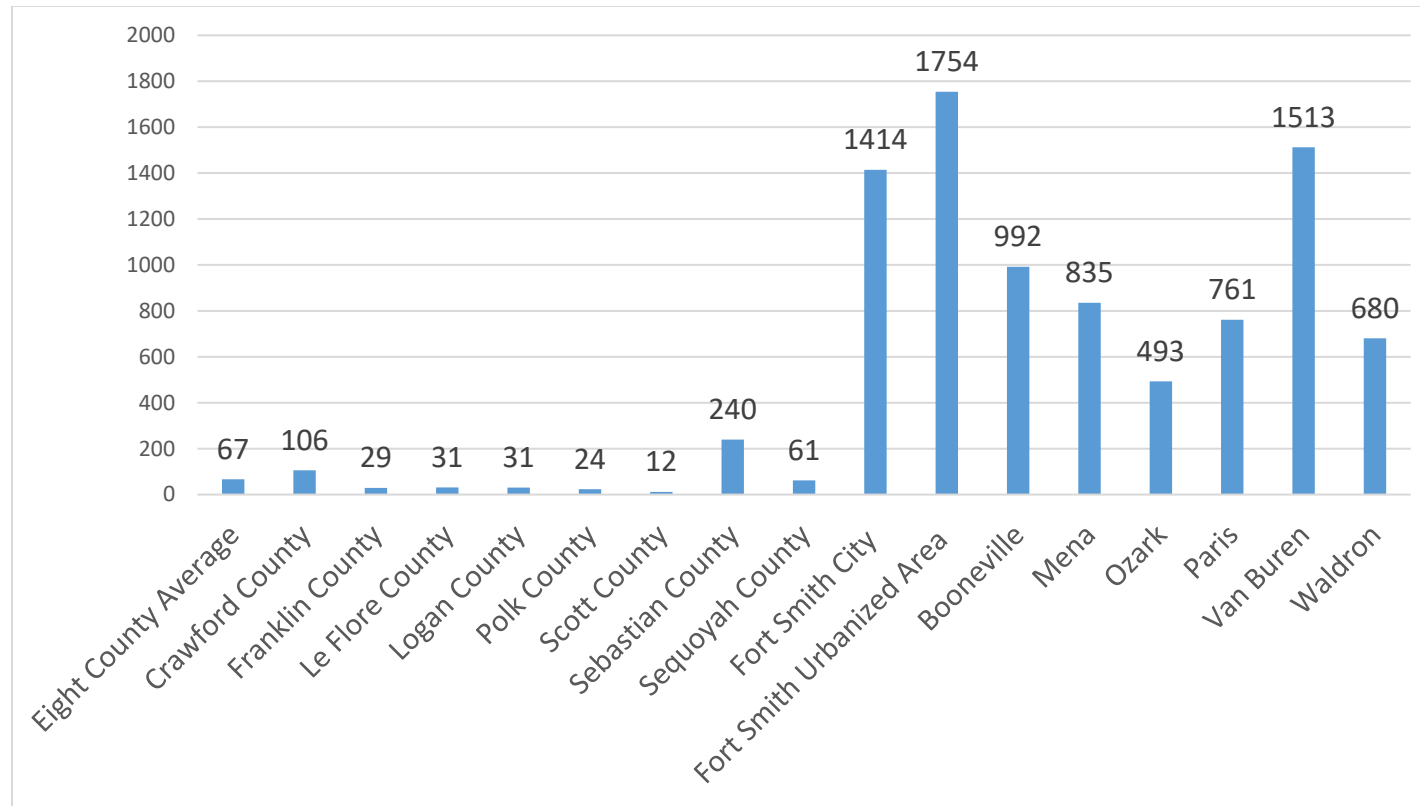
The following discussion focuses on demographic measures commonly used in needs assessments to predict transit ridership (NRTAP 2017) and identify populations at risk for becoming transportation disadvantaged. This study was prepared during the COVID-19 pandemic in 2020, which is likely to have a significant impact on demographic, employment and health trends moving forward. The primary sources of data are the U.S. Census Bureau’s 2000 Decennial Census and American Community Survey 5-Year Estimates for 2008-2012 and 2014-2018. Table 1 shows population and population density in the study area. The most recent available population estimate for the eight counties sums to 351,343 (ACS 2014-2018 5-Year Estimates).

Table 1: Total Population and Population Density in Eight County Study Area

Data Source	US	Eight County Total	Crawford	Franklin	Le Flore	Logan	Polk	Scott	Sebastian	Sequoyah
Total Population										
2000	281,421,906	326,881	53,247	17,771	48,109	22,486	20,229	10,996	115,071	38,972
2008-2012	309,138,711	351,633	61,670	18,110	50,056	22,352	20,535	11,170	125,795	41,945
2014-2018	322,903,030	351,343	62,472	17,780	49,909	21,757	20,163	10,442	127,461	41,359
Share of Eight Counties (2014-2018)			17.8%	5.1%	14.2%	6.2%	5.7%	3.0%	36.3%	11.8%
Population Density (Persons Per Square Mile)										
2014-2018	91	67	106	29	31	31	24	12	240	61

Data from-U.S. Census Bureau’s 2000 Decennial Census, American Community Survey 5-Year Estimates for 2008-2012 and 2014-2018.

Figure 2 shows population densities of study area counties, Fort Smith City and Ft Smith urbanized area as well as smaller communities that serve as educational, medical and employment hubs. Over 80% of the study area’s population lives in Sebastian, Crawford, Le Flore, and Sequoyah County. More than a third of the population resides in Sebastian County (36.3%), which is substantially denser (240 persons per square mile) than the rest of the counties. The other seven counties have population densities between 12 and 106 persons per square mile, demonstrating the rural nature of most of the study area. Many people living in these rural counties travel to Fort Smith to access employment, health care and other essential services. The total population for the eight counties has slightly decreased from the 2008-2012 ACS 5-Year Estimates to the 2014-2018 ACS 5-Year Estimates. Although Crawford and Sebastian Counties have seen an increase in population, the population of the remaining six counties has decreased since 2008.



Sources: 2014-2018 ACS 5-Year Estimates except for Fort Smith Urbanized Area, which is 2018 1-year estimate.

Figure 2: Population Density in Study Area by County and Community Hubs (Persons per Square Mile)

Table 2 shows that unemployment across the region has been nearly at or higher than the national average for the last twenty years. The unemployment rates of Logan, Polk, Scott, and Sequoyah Counties are higher than the regional average in the most recent ACS 5-Year Estimates. The average percentage of individuals in poverty across the region has been above the national average for the last twenty years. Le Flore, Polk, Scott, and Sequoyah Counties have had an even higher percentage of individuals in poverty than the regional average for the last twenty years.

Table 2: Unemployment and Poverty in Study Area

Data Source	US	Eight County Average	Crawford	Franklin	Le Flore	Logan	Polk	Scott	Sebastian	Sequoyah
Unemployment Rate										
2000	3.7%	5.5%	6.1%	5.9%	6.3%	5.3%	5.8%	3.9%	4.7%	6.1%
2008-2012	9.3%	9.0%	7.6%	10.5%	11.6%	8.5%	6.8%	9.3%	6.7%	10.8%
2014-2018	5.9%	7%	5.1%	3.0%	6.0%	8.8%	9.0%	10.3%	4.9%	8.2%
Poverty status (individuals)										
2000	12.4%	16.7%	14.2%	15.2%	19.1%	15.4%	18.2%	18.2%	13.6%	19.8%
2008-2012	14.9%	19.9%	19.3%	18.7%	22.3%	15.8%	21.5%	20.0%	20.5%	21.0%
2014-2018	14.1%	21.3%	15.9%	21.9%	21.7%	21.1%	24.5%	22.1%	20.3%	23.1%

denotes percentages above eight-county average

Table 3 shows the average older population (aged 65 and older) in the region has been higher than the national average for the last twenty years. The older population in Franklin, Logan, Polk, and Scott Counties has been even higher than the regional average for the last twenty years. The percentage of persons with disabilities (PWD) in each of the eight counties is higher than the US average for both the 2008-2012 and 2014-2018 ACS 5-Year Estimates. Higher unemployment rates due to the COVID-19 pandemic are not reflected in these numbers. Polk County is the only county that had a decrease in the percentage of PWDs from 2008-2012 to 2014-2018, but the most recent percentage remains 78% higher than the national average.

The percentage of zero car households in the study area was lower than the national average. This is just one of several factors used to estimate populations at risk for being transportation disadvantaged.

According to the Census Bureau, the coefficient of variation (CV) is used to measure the sampling error associated with each question on the ACS questionnaire and assess the reliability of an estimate. All county-level estimates for poverty status, older population, and disability status meet the standard for ‘high reliability’ as measured by a CV of less than or equal to 12. The unemployment rates for Crawford, Le Flore, Sebastian, and Sequoyah Counties have ‘high reliability’ while the estimates for Franklin, Logan, Polk, and Scott Counties have ‘medium reliability’ as measured by CV less than or equal to 40.

Table 3: Older Persons, Persons with Disabilities and Zero Car Households in Study Area

Data Source	US	Eight County Average	Crawford	Franklin	Le Flore	Logan	Polk	Scott	Sebastian	Sequoyah
Population Age 65 and over										
2000	12.4%	14.4%	11.3%	15.8%	13.8%	16.0%	17.0%	14.7%	13.0%	13.5%
2008-2012	13.2%	16.2%	13.5%	16.9%	15.3%	18.0%	19.8%	17.9%	13.1%	15.2%
2014-2018	15.2%	18.4%	16.1%	18.9%	17.5%	19.2%	22.2%	19.9%	15.2%	18.0%
Disability Status										
2008-2012	12.0%	20.3%	17.0%	19.6%	21.0%	20.7%	25.0%	20.3%	16.8%	22.0%
2014-2018	12.6%	21.4%	20.2%	21.0%	22.5%	21.0%	22.5%	22.1%	18.8%	23.1%
Zero Car Households										
2000	10.3%	7.3%	5.9%	7.2%	8.0%	7.4%	6.4%	7.4%	8.3%	7.5%
2008-2012	9.0%	5.4%	4.3%	5.3%	5.8%	4.8%	4.8%	5.9%	6.7%	5.6%
2014-2018	8.7%	5.9%	3.9%	5.4%	5.5%	4.7%	6.5%	8.6%	6.7%	6.0%

denotes percentages above eight-county average

The county-level percentages of people living in poverty, older population, and PWDs demographic data suggest that portions of the eight-county population have higher concentrations of transportation-disadvantaged population groups and, as a result, potentially higher needs for public transit and human services transportation.

The following section provides an assessment of transportation needs based on qualitative data collected through meetings and phone interviews with people in the community that have a variety of different perspectives.

1.2. Transportation Needs Assessment: Input from Community Representatives

This project was introduced at the Frontier MPO Policy and Technical board meetings held on October 2, 2019. After the board meetings, a small focus group of local stakeholders convened with the project team to give their perspective on the transportation needs of the rural Arkansas communities outlying Fort Smith. This focus group consisted of WAPDD and Frontier MPO staff, four local Arkansas mayors (City of Alma, Greenwood, Waldron, and Mulberry), the City of Waldron Clerk & Treasurer, and the Chief Fiscal Officer from the Arkansas Technical University at Ozark. WAPDD and Frontier MPO staff provided contact information of “community experts” to the project team for setting up interviews to gain greater insight into the transportation needs of the area. All stakeholders were asked to describe the transportation needs of their organization, clients, and/or community. The following sections, organized by transportation need, summarize the findings from the kickoff meetings and follow-up interviews.

“...when we had flooding [in 2019], folks that were affected had a lot of people in Sebastian County and Ft. Smith that opened their arms to help but Alma folks had no transportation to get over the river.”

– Mayor of Alma during kickoff meeting

1.2.1. Education

The Chief Fiscal Officer of Arkansas Technical University at Ozark (ATU-Ozark) explained that the university is a commuter campus with about 2,200 students and approximately 77% of the students are eligible for Pell grants. There are additional state grants available to help with tuition and fees as well as some employer programs to provide tuition assistance. However, these financial assistance programs cannot be used for transportation and therefore cannot be used by people facing transportation barriers. In the past, ATU-Ozark ran a bussing system paid through state aid and tuition. The system became cost prohibitive and was ended in 2002. The only transportation assistance available to students is a gas card. This assistance assumes that the student has access to a vehicle. The WAPDD Workforce Development representative shared that the President of ATU-Ozark acknowledged that transportation to the campus is a challenge and there is a clear need for providing more transportation options.

ATU-Ozark administered a survey in the fall of 2019 for students that attend classes on the Ozark campus. The survey asked respondents what county they currently lived in, if the respondent would be interested in using school provided transportation to the Ozark campus, the maximum daily amount they would be willing to pay for the transportation service, what days of the week that the person has classes on campus, the start time of their first class, the end time of their last class, and if the respondent had additional comments. When asked if the survey respondent would be interested in using school provided transportation, approximately 63% of responses (46 out of 73) were either “yes” or “maybe”. A respondent stated, “I don’t know if this would work because my classes end at 3:50. Plus I would be stuck on campus until the bus got to the school. I think this would work for people who don’t have their own car and/or don’t exactly have

the money to drive themselves.” Although offering a bus as a transportation service is one option, there are others such as organizing formal carpooling programs, providing gas vouchers, and/or carsharing. One respondent shared, “It will be helpful if the students could get gas vouchers for the ones who have class at night, like myself.” The same respondent continued by explaining that not being able to pay for gas is the reason they could not attend classes during the following week. The additional survey data on where survey respondents live, their class schedule, and amounts that they would be willing to pay can guide planning for pilot programs.

The Chancellor, Vice Chancellor of Finance and Administration, and the Dean of the College of Applied Science and Technology at the University of Arkansas at Fort Smith (UAFS) shared their perspective on the transportation needs and options for students. The UAFS campus serves 6,300 students, including approximately 1,200 concurrent enrollment high school students. Of the approximately 5,000 other students, 700 live on campus. A total of 5,000 parking permits are issued for the 4,300 students that commute to campus and the 620 full-time equivalent (FTE) employees.

UAFS was historically a community college that served a smaller region but there is a vision to broaden its reach and serve more students. Over half of UAFS students are eligible for Pell grants. Most students commute to campus with their own vehicle. One of the administrators shared, “most students have limited income so one dead car battery or flat tire could prevent them from getting to and from campus.” The administrators explained that there is interest in exploring a carsharing program for students that live on-campus. The Chancellor acknowledged that having more transportation options available could assist people who do not have access to their own vehicle but still want to pursue higher education. Currently, there are two Fort Smith Transit stops on campus. The school district brings concurrently enrolled high school students on school busses which were thought to only be about 25% full. There were no other transportation options available for students and no plans for expansion of transportation options.

When the project team spoke to the Arkansas mayors, several comments were made regarding education opportunities in the area. The Mayor of Greenwood said that a lot of the local kids go to UAFS and ArTech. The Mayor of Alma said that “Adult education is another thing that needs to be addressed as there are folks that are willing to educate themselves but experience transportation barriers that prevent them from pursuing education.”

1.2.2. Medical

Healthcare stakeholders conveyed a strong need for improved transportation options, especially for rural communities surrounding Fort Smith. A rural healthcare worker shared that when a van was requested for transporting rural patients to required follow-up medical appointments, staff were told “to partner with other entities such as a church.” Of note, a Fort Smith church representative shared that the church’s van was donated to a local non-profit several years ago because the vehicle insurance became too expensive. A Sebastian County Health Department representative expressed that while many of the county’s low-income patients may have health insurance, they must decide whether to pay their utility bills or pay for fuel in their car to drive to/from medical care. Assistance with transportation to the Sebastian County Health Department is currently unavailable in the portions of Sebastian County outside of Fort Smith, which makes

attending appointments more difficult for people living in those areas. Fort Smith Transit is available for patients that live within Fort Smith.

Dialysis Patients

A representative from the Fort Smith Dialysis Center shared that transportation barriers are especially significant for dialysis patients because “if a patient misses one treatment, their chance of death in the immediate future is 25% higher and that is a cumulative effect.” For some dialysis patients in outlying areas such as Paris, Ozark, or Waldron, transportation is a primary barrier to receiving dialysis treatment. SoonerRide, a program provided through the Oklahoma Health Care Authority, provides Oklahoma patients with rides for \$1-\$2. However, Arkansas does not offer a comparable service. The representative also said that the Area Agency on Aging in Arkansas offers rural transportation, but it can cost as much as \$20 per roundtrip to Fort Smith. Dialysis patients may first come in with what seems like adequate savings but within 6- to 12- months they can easily deplete their savings because of medical, medications, and transportation costs. Some patients from Waldron are paying as much as \$60 roundtrip to the Fort Smith Dialysis Center.

Although Waldron has a hospital, the Mayor explained that, “it is recognized as a medically underserved community with 1 doctor for 12,000 people.” This is equivalent to 0.83 doctors per 10,000. For reference, in 2017 there were “about 13 physicians per 10,000 population” for the entire state of Arkansas (Brock, Lehing et al. 2018).

For patients without Medicaid, there is a gap in transportation options and the Dialysis Center is not able to offer transportation because it is considered “enticement” according to federal rules. Even for Medicaid patients, there does not seem to be enough Southeastrans drivers for adequate service. According to their website, Southeastrans is an Atlanta- based company that manages a range of transportation programs including

“There’s plenty of incurable issues in medicine, transportation should not be one of them.”

– Rural Healthcare Worker in Western Arkansas

Medicaid non-emergency medical transportation, human service center transportation, and managed-care organization transportation services. In the western Arkansas area, Southeastrans serves an 11-county region. The Fort Smith Dialysis Center tells patients to try to reach out to neighbors, friends, members of their church and/or clubs to build a network of people to drive them to treatments, but that isn’t a very reliable approach for most patients.

Older Adults and Non-ambulatory Patients

One rural healthcare worker emphasized the unique needs of patients who are non-ambulatory and need vehicles with lifts. With age comes ailments and for many older adult patients, a common cold can easily turn into pneumonia in the absence of proper medical treatment. Although Mercy Hospital offers patients virtual care through iPads, not every patient is able to take advantage of this service option.

1.2.3. Workforce

During the focus group, participants shared that there is a significant migration of workers between counties and communities resulting from a few key factors. First, the skills required for available jobs do not always align with the skills of members within that community. Second, many employers are in communities so small that there are not enough residents to fill positions. Obviously, transportation is required to facilitate this migration. As a result, people without access to a personal vehicle may be unable to fully participate in the job market.

Another concern is regional “brain drain” due to younger community members leaving for places like Tulsa, Little Rock, Fayetteville, Dallas, or cities in Florida. The WAPDD Workforce Development representative shared that after many job seekers unsuccessfully search for local employment, they “leave for larger cities with more opportunities for higher wage jobs.”

A variety of perspectives were shared regarding transportation needs for people that do remain in the local workforce. A representative from the 100 Families Initiative shared that the primary challenge is not having a way to help at-risk families with transportation to and from work, especially for rural families. Several stakeholders shared that Fort Smith is a job hub and many of the outlying rural residents, such as in Greenwood or Waldron, travel into Fort Smith for work. Some people are forced to drive as much as 50 miles each way to work in Fort Smith.

Multiple stakeholders from varied perspectives shared that shift work is common in the area and people on the second or third shift especially struggle with transportation. The Director of Fort Smith Transit said that the most common complaint received is that the system does not operate late enough into the evening. For example, employees with a 7:00 pm shift at OK Foods are forced to arrive an hour early to work in order to ride Fort Smith Transit. These same employees must figure out some other way home since Fort Smith Transit does not operate when their shift ends. In the past, OK Foods offered transportation to employees. However, the perception of one stakeholder was that once there were enough workers to fill positions that did not need transportation assistance, OK Foods ended the service.

The Director of Ethics at Mercy Hospital in Fort Smith shared that there is a need for transportation for low wage employees such as Mercy Hospital shift workers in food and environmental services. Some of the shift workers have staggered shifts. For example, one shift ends at 2:30am. Many workers on that shift must find a friend or family member to take them home from work if they do not have their own vehicle. The lack of transportation options is believed to contribute to high employee turnover.

There were varying opinions among interviewed stakeholders on the role of employers for addressing workforce transportation: one believed that employers would take the lead to help with transportation for employees, whereas another would be shocked if employers considered providing transportation.

The representative from the Sebastian County Health Department identified in recent years that some local employers have a “point system” for absences that may discourage people from seeking medical treatment because an employee may be terminated for receiving “too many points.”

1.2.4. Various Quality of Life Needs

Food Deserts

The Mayor of Waldron and the Mayor of Mulberry both shared that food deserts are a reality facing their communities. Food insecurity is experienced across Crawford County, where Mulberry is located. Even for communities that do have some sort of grocery store, according to the 100 Families Initiative representative, some families do not have a way to get there to buy groceries.

Isolation

A representative from the First Presbyterian Church of Fort Smith shared that isolation is a major issue for people in rural communities because they do not have access to many of the resources in bigger cities, like Fort Smith. Several stakeholders expressed concern for older adults who may be non-ambulatory or unable to drive themselves and at greater risk of isolation.

Children’s Counseling Appointments

A representative from the Hamilton House Safety Center expressed concern for children that are referred to counseling appointments but are not able to go because of a lack of reliable transportation. Even for some rural families that have a reliable personal vehicle, they may not be able to afford fuel to take their children to frequent appointments within Fort Smith or Van Buren.

Court Ordered Appointments, Alternative Sentencing, People with Criminal Records

One person that volunteers in district court cited an example of a struggle for people with alternative sentencing. The volunteer knew of a person in Alma, which is about a 20-minute drive from Fort Smith, who was facing jail time because of a lack of transportation to Fort Smith to perform community service. Transportation can be an even bigger barrier for people with criminal records.

A concern was brought up about the liability of providing transportation options such as carpooling or vanpooling for people with felonies, because it could violate parole or probation “fraternizing” restrictions.

“I had to recommend to clients yesterday to stay in the local shelter instead of staying with friends in rural areas so that they could get around Fort Smith. Sometimes they’re required by DHS to go to appointments, get a job, etc. I can help them with bus pass but can’t help with transportation from rural locations. I have had to recommend shelters regularly to help people get on their feet.”

– Representative from 100 Families Initiative

1.2.5. Transportation Needs Assessment Conclusion

Four themes emerged through the focus group and interviews with community experts: the high rate of poverty in the area, the increase in the older adult population, the lack of reliable and affordable transportation options for vulnerable community members, and the long roundtrip travel times between small rural communities and Fort Smith. Furthermore, several stakeholders

speculated that the lack of transportation options is a result of a lack of funding. For example, one person shared, “everything comes back to money on why they can’t solve transportation.” There was a belief that due to the high rate of poverty, any option provided would have to be “close to no-cost” which one person felt is a challenge for attracting private partners. As one stakeholder stated, “no company would be willing to take that [offering a new transportation option] on if there isn’t a profit.”

The next section discusses existing transportation options and public transportation coordination efforts.

1.3. Existing Transportation Options and Resources

This section provides a summary of existing transportation options and resources in the study area, relevant transportation related plans, and transportation coordination efforts. In addition, this section describes methods used to calculate a transportation needs index for the study area.

Federal grant funding through the Federal Transit Administration (FTA) supports existing transit and human services transportation programs in Fort Smith and surrounding counties. [FTA 5307](#) program provides funding for urban areas and is a major funding source for the Fort Smith Transit system. [FTA 5311](#) program provides funds for rural transit systems including the Western Transit System which covers 11 counties surrounding Fort Smith. [FTA 5310](#) program provides funds for specialized transportation services for seniors and individuals with disabilities, which funds 14 different organizations according to the 2019 ARDOT Public Transportation Directory. Table 4 summarizes existing transit systems and human service organizations that provide transportation options in the areas surrounding Fort Smith.

Table 4: Existing Transit Systems and Organizations Providing Transportation Services

Name	Overview
<i>Urban System (FTA 5307)</i>	
Fort Smith Transit	Public transit operator offering a fixed route system within the city limits of Fort Smith. Fixed route and demand response. Mon-Sat 7am to 6 pm Fort Smith Transit
<i>Rural System (FTA 5311)</i>	
Western Transit System (WTS)	WTS is provided by the non-profit organization Western Arkansas Area Agency on Aging and offers Non-Emergency Medical Transportation (NEMT) for people with Medicaid as well as rural demand response for members of the public. Western Transit System
KATS – Ki Bois Area Transit	One of four providers under Cherokee Nation Transit. Offers demand response for people with no dependable form of transportation in 12 Oklahoma counties including Le Flore and Sequoyah. Mon-Fri 8 am to 5 pm Ki Bois Area Transit
<i>Enhanced Mobility of Seniors & Individuals with Disabilities (FTA 5310)</i>	
Arkansas Organizations in study area	<ol style="list-style-type: none"> 1. Abilities Unlimited of Fort Smith 2. Area Agency on Aging of Western Arkansas, Inc. 3. BOST, Inc.

Name	Overview
	4. Forrester-Davis Development Center, Inc. 5. Franklin County Learning Center, Inc. 6. Franklin County Senior Citizen Center, Inc. 7. Logan County Day Service Center for Limited Children, Inc. 8. Non-Ambulatory Transportation Service, Inc. 9. Polk County Development Center, Inc. 10. Quapaw House, Inc. 11. Scott County Senior Citizens, Inc. 12. Stepping Stone School for Exceptional Children, Inc. 13. Western Arkansas Counseling and Guidance Center, Inc. 14. Yell County Special Service Center, Inc.
SoonerRide	Transportation provider for travel to and from SoonerCare appointments in Oklahoma. SoonerCare (Oklahoma Medicaid) is a health coverage program jointly funded by federal and state government. SoonerRide Website
<i>Tribal Transit Systems</i>	
Cherokee Nation Transit	Demand response for Native Americans, tribal members, and Cherokee Nation employees who are unable to use the commuter routes and do not qualify for assistance programs. Has operation agreements with four providers Cherokee Transit
Choctaw Nation Health Services Authority (CNHSA)	Open to members of the public who live in the 10 ½ counties of the Choctaw Nation District Boundaries, including Le Flore County, with transportation to health care for non-emergency medical appointments. Covers Le Flore County. CNHSA Tribal Transit
United Keetoowah Band (UKB) of Cherokee Indians	The UKB Transit Department provides demand-response transportation to both UKB of Cherokee members and the public. Service areas are only within the nine UKB of Cherokee districts and for destinations that fall right outside of jurisdiction. https://www.ukb-nsn.gov/transit
<i>Other Transportation Options</i>	
Greyhound bus	Oklahoma City to Memphis- passing through Fort Smith
Jefferson Lines	Intercity Bus Service– Fayetteville-Fort Smith- Mena
Lyft and Uber	Transportation Network Companies (TNCs) currently operating in Fort Smith, Arkansas. During the site visit, research team was told that Uber has a program that offers discounts for disabled people.
Mercy Medical Center	Research team was told that there are 3 vans which provide an average of 700 trips per month across state. Representative expressed

Name	Overview
	a need for another vehicle and 2 more drivers. (Director of Ethics at Mercy Hospital in Fort Smith)
Tyson Foods	During site visit research team was told Tyson Foods would pick up employees in Fort Smith that work at the Waldron, AR location.
Additional Providers from the River Valley Transportation Planning Partners List (From the 2016 Frontier MPO Metropolitan Transportation Plan)	<ol style="list-style-type: none"> 1. Brookfield Assisted Living Center 2. Butterfield Place 3. Crisis Intervention Center 4. Gateway House 5. Gormon Towers 6. Harbor House, Inc. 7. Hope's Creek 8. Legacy Heights 9. Letsgo Charters 10. Mercy Crest 11. Razorback Cab Company 12. Sebastian Retirement Citizen's Association

1.3.1. Arkansas Transit Planning Documents

The project team reviewed four resources related to transit operations in the state of Arkansas which are presented here, starting with the most recent.

- Arkansas Public Transportation Directory (ARDOT 2019)
- Arkansas Statewide Transit Coordination Plan (Arkansas Department of Transportation 2018)
- Mobility Manager Handbook (Rosenberg 2010)
- Arkansas Transit Association

The following sections are organized to highlight information in the reviewed documents that may be most relevant to counties in the study area. More detailed information has been placed in the Appendices.

The [2019 Arkansas Public Transportation Directory](#) is intended “to educate both users and non-users of public and private transportation with information about publicly and privately owned public transit, paratransit passenger carriers and metropolitan planning organizations as well as commuter services and other for-hire services, and their geographic distribution throughout the State”. This Directory contains information on public and private transit providers throughout the state. Details of the following Arkansas transit providers located within the study area are shown in Appendix A:

- Fort Smith Transit system, the only urban system in the project study area and funded through the FTA 5307 Urbanized Area Formula Grants.
- Western Transit System, a rural public transit system funded through the FTA 5311 Formula Grants for Rural Areas.

- Fourteen “Specialized Paratransit Systems” in the Arkansas side of the study area that receive FTA 5310 funds (as listed in Table 4).

The [Arkansas Statewide Transit Coordination Plan](#) contains a wealth of information. The following paragraphs highlight key information from each of the six sections below that is relevant to this study.

1. Introduction
2. Overview of Coordination
3. History of Coordination in Arkansas
4. Arkansas Coordination Planning Process
5. Transportation Needs and Gaps Analysis
6. Coordination Strategies

The **Introduction** states “The overall goal of the Arkansas Statewide Transit Coordination Plan is to improve the availability, quality, and efficiency of transportation services for seniors, persons with disabilities (PWDs), those with low income, and other population groups with limited mobility options” (ARDOT 2018 page 4). This section describes the importance of coordination among transportation service providers and human services agencies and provides an overview of Arkansas’s population as well as planning and development districts.

The **Overview of Coordination** (p. 7) section describes: the history of federal regulations and requirements; coordination at federal, state, and local levels; as well as benefits and barriers to coordination. Coordination activities among transportation service providers may include:

- Cross-training of staff
- Workforce and equipment sharing
- Centralized maintenance
- Standardized data collection and reporting
- Joint marketing campaigns
- Regional transit fare structures
- One-call/one-click transportation service centers
- Schedule and driver assignment coordination
- Group emergency planning

Barriers to providing and improving transportation services include difficulty finding a local match for funding; the rural environment and long trip distances; and difficulty attracting qualified bus drivers (ARDOT, 2018).

This section discusses results from stakeholder outreach conducted across Arkansas (p. 8). The most frequent barriers identified during outreach events include:

- Regulatory and funding restrictions
- Lack of rider familiarity
- Jurisdictional limitations (i.e. not being able to provide service in other counties or outside of defined service areas)
- Different communications technologies
- Unique rider needs that require special assistance or equipment
- Providers acting as competitors

The barrier mentioned most at these workshops was regulatory restrictions. For example, some human services transportation providers (serving seniors or people with disabilities) noted that “many vehicles go unused during off-peak hours, because they were restricted from using them for any other purpose than transporting seniors or people with disabilities. These providers also noted that they did not have the staff available to provide additional trips throughout the day, as drivers often had multiple duties (e.g. teaching or providing food)” (ARDOT, 2018 page 8).

The **History of Coordination in Arkansas** section discusses the Arkansas Public Transportation Coordination Council (APTCC). This 12-member council is comprised of members of various state agencies, officials, and appointees. A few of their responsibilities relevant to this project are to:

- Serve as a clearinghouse for information relating to public transportation services, funding sources, innovations, and coordination efforts
- Identify barriers prohibiting the coordination and accessibility of public transportation services and aggressively pursue the elimination of these barriers
- Assist communities in developing public-transportation systems available for public use, with special emphasis on serving the transportation disadvantaged

“Activities carried out by the APTCC include adoption of the Arkansas Statewide Public Transit Needs Assessment, adoption of the 2012 Arkansas Statewide Transit Coordination Plan, and administration of a non-emergency medical transportation study. Prior to the development of the Arkansas Statewide Transit Coordination Plan, coordination plans were developed locally. In 2007 and 2008, 16 local Transit Coordination Plans were developed by various Metropolitan Planning Organizations (MPOs), planning and development districts (PDDs), and counties. This Transit Coordination Plan considers the recommendations and strategies identified in those plans as potential coordination opportunities in the development of coordination strategies” (ARDOT 2018 page 10). An ARDOT administrator in the Public Transportation Program searched the archives back to 1997 and was unable to find the non-emergency medical transportation study referred to above. The project team is attempting to identify an appropriate APTCC member to engage in our conversations about coordination efforts as part of this project.

The **Arkansas Coordination Planning Process** section explains the various steps necessary for stakeholders to identify resources and needs as well as develop strategies to address needs. These steps include public and stakeholder outreach; identify resources and needs; develop strategies to address gaps; prioritize strategies; and establish performance measures and monitor progress.

The **Transportation Needs and Gap Analysis** section describes methods for assessing needs and gaps. The transportation needs index is designed to indicate which counties in Arkansas have higher concentrations of transportation-disadvantaged population groups and, as a result, potentially higher needs for public transit and human services transportation. The transportation needs index for Arkansas counties was calculated using county level demographic data from the U.S. Census Bureau using the following methodology:

1. Compare county population % of seniors and people with disabilities, % in poverty, % minority, and % households with no vehicle access to statewide population percentages.
2. Calculate the ratio of county to statewide % results in an index, where:

- a. A value of 1 indicates county % is equal to the state %.
 - b. Values below 1 indicate that there is a lower % (i.e. less need) in that county compared to the state, and
 - c. Values greater than 1 indicate a higher % (i.e. more need) in that county compared to the state.
3. For each county, the index values of each population group were added to create a total needs index, where higher values indicate more potential need for public transit and human services transportation (ARDOT 2018 p. 13).

Figure 3 shows the transportation needs index for all counties in Arkansas. Results of this methodology suggest that within Arkansas's six county study area, Sebastian and Scott Counties have higher needs (4.0-4.0), Polk County shows slightly lower needs (3.5-4.0), followed by Crawford, Franklin and Logan Counties, which have low needs (3.5 or less).

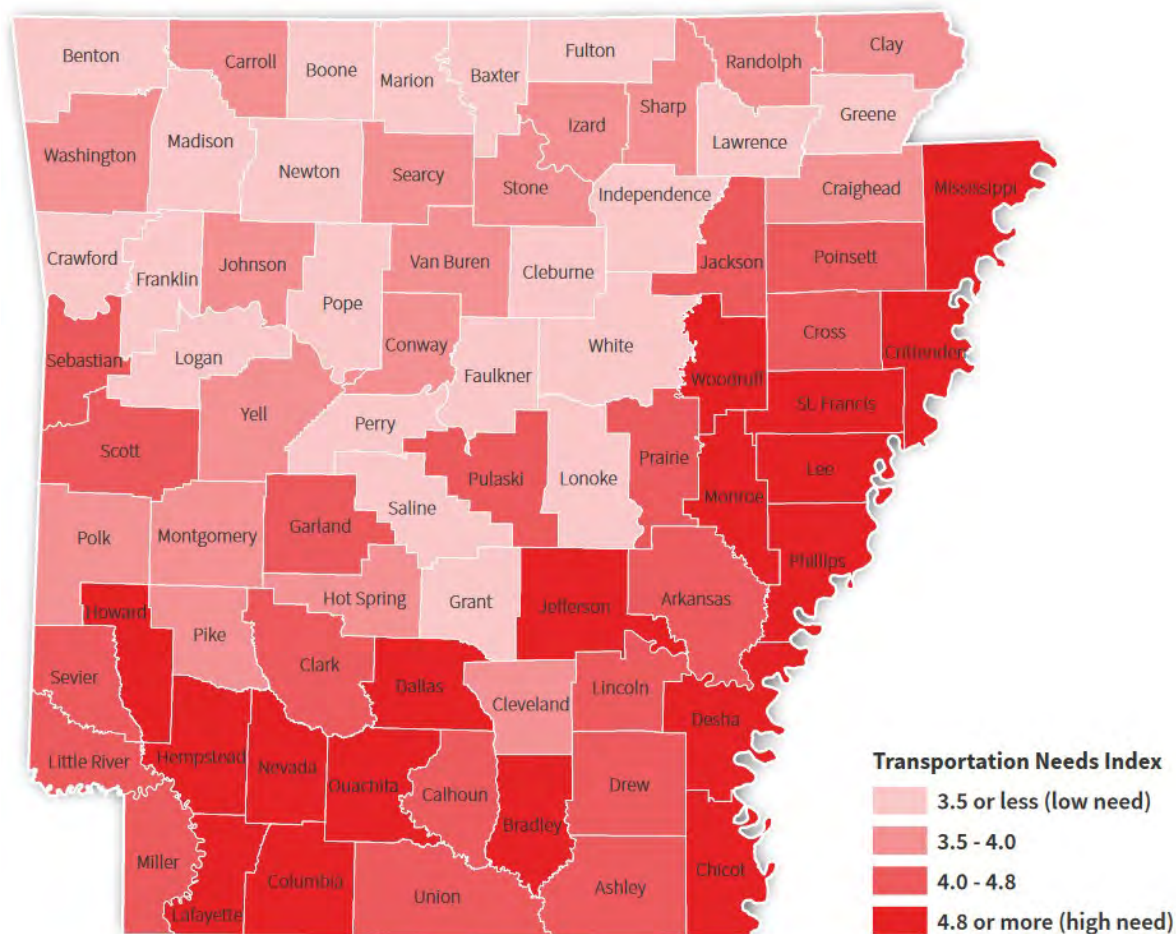


Figure 3: Arkansas Counties Transportation Needs Index (ARDOT, 2018 p. 14)

The project team conducted a transportation needs index analysis using this method to better understand which areas within the eight counties may have higher transportation needs. This analysis used census tract level data for the eight-county study area and can be found in Section 1.4.

The remainder of the **Transportation Needs and Gaps Analysis** section describes survey results from both transportation providers and transportation service users. Figure 4 shows key results from the provider survey, which received 105 unique responses from public transit and human services transportation providers in Arkansas. More details from the survey are available in the Transit Coordination report.

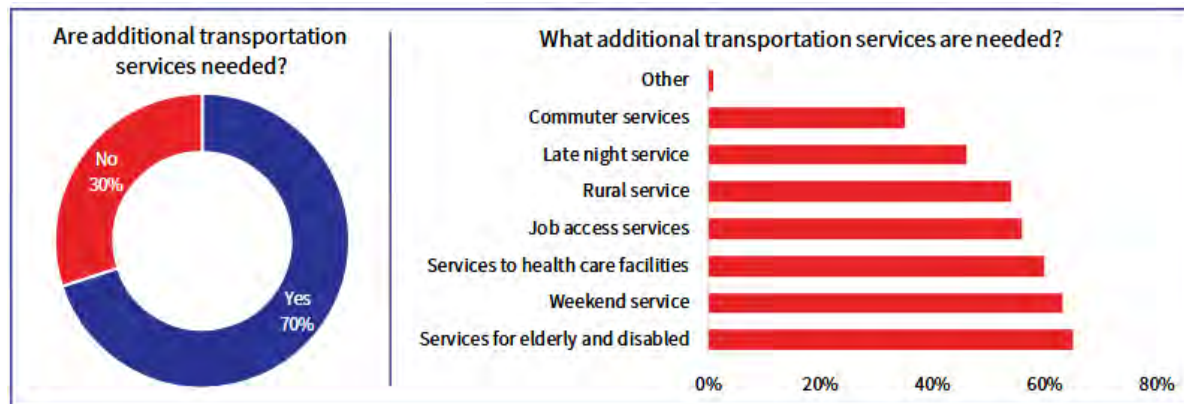


Figure 4: Transportation Provider Survey Results (ARDOT, 2018 p.16)

Figure 5 shows key results from the survey of transportation users which summarizes feedback from the public on taking public transit or human services transportation.

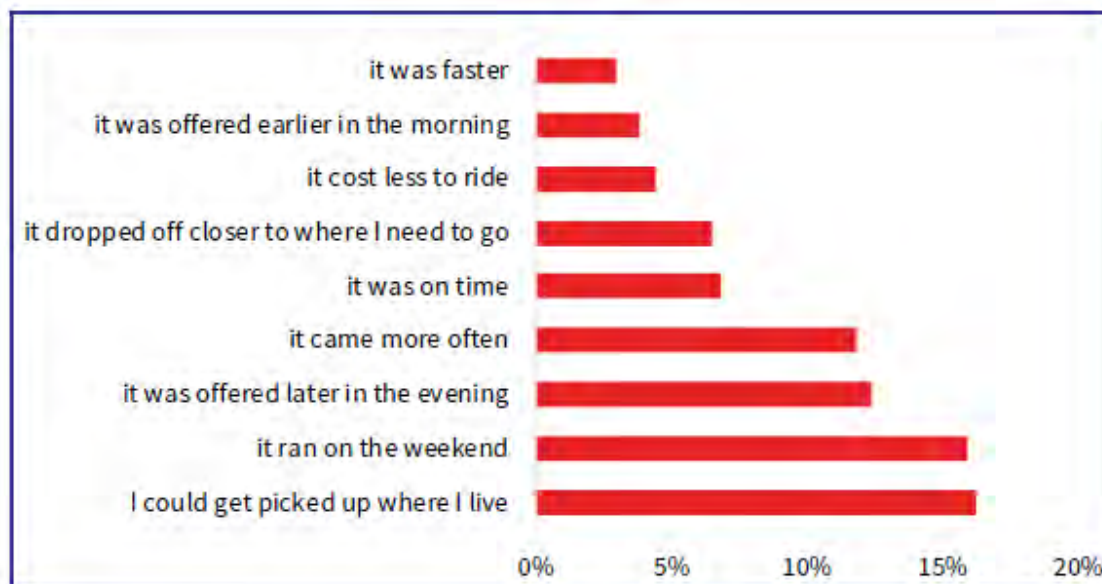


Figure 5: User Survey Results "I would likely use public transit more if..." (ARDOT, 2018 p.17)

Figure 6 shows locations of public transportation and human service transportation providers in the six Arkansas counties in the study area. This map only shows providers funded by FTA grant programs. It is important to note that there are other transportation services that may be offered by churches, nursing homes, child services organizations, veterans affairs, workforce development boards, volunteer drivers, intercity bus companies, taxi services and transportation network companies (like Uber and Lyft).

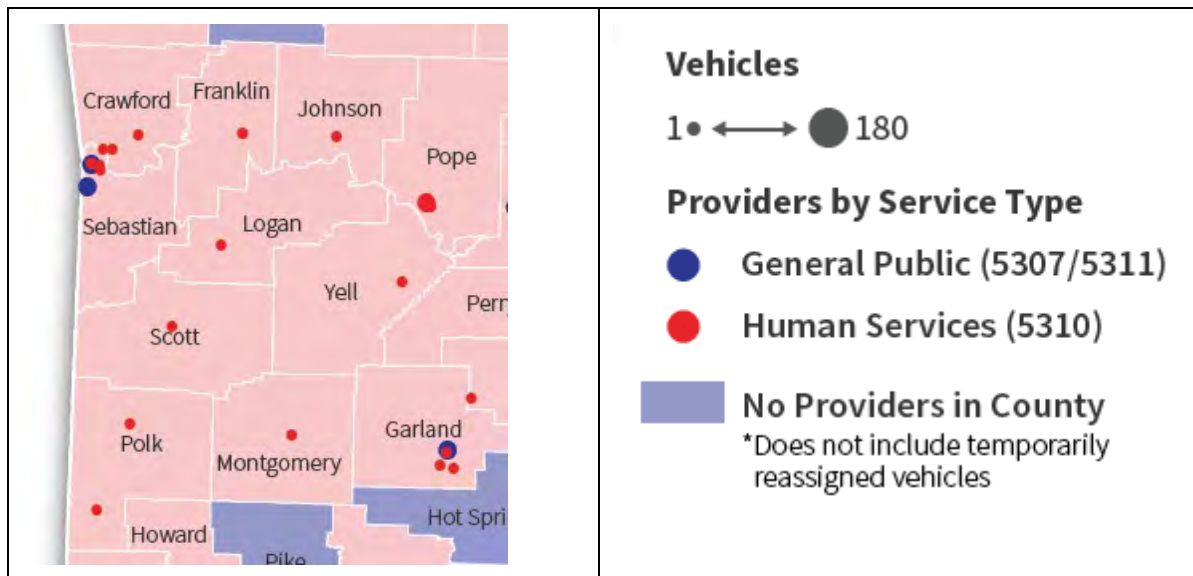


Figure 6: Active Public Transit and Human Services Transportation Providers in Western Arkansas (ARDOT, 2018 p.19)

Figure 7 shows the active transportation providers map overlaid on the transportation needs index map. Areas with more providers may indicate opportunities for coordination, such as in Sebastian County.

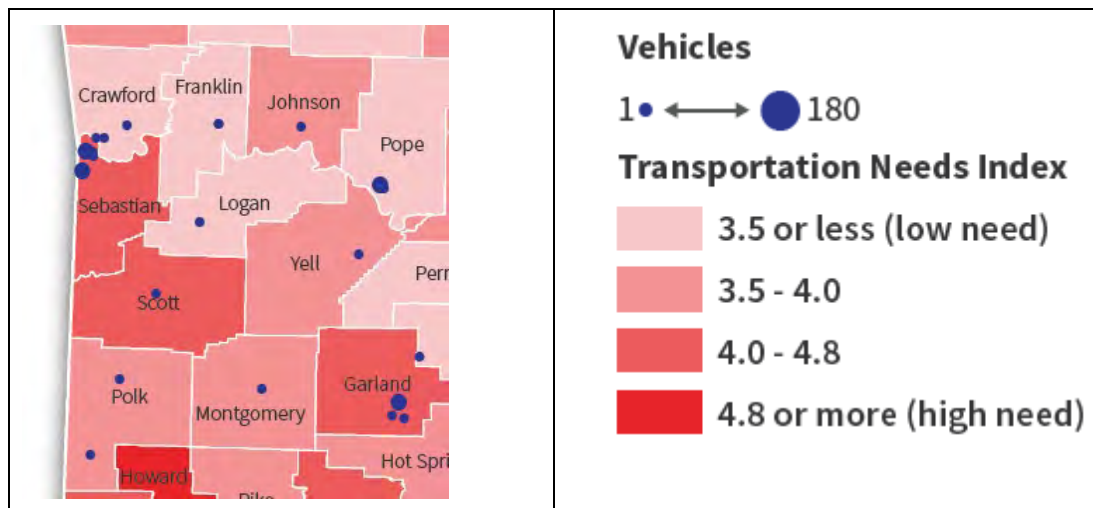


Figure 7: Transportation Providers and Needs Index (ARDOT, 2018 p. 22)

The transportation needs index for all of Arkansas’s counties vary from 7.93 (highest need) in Phillips County to 2.83 (lowest need) in Grant County. Table 5 shows transportation gap indicators for the six counties in the Arkansas study area sorted by the highest transportation needs index in Sebastian to the lowest in Crawford County. This subset of data is from the Transit Coordination Plan (ARDOT, 2018 p. 25-26). The bottom two rows show the high and low numbers based on all counties in Arkansas.

Table 5: Transportation Gap Indicators for Six Counties in Arkansas

County	Transportation Needs Index	Providers in County	Served by General Transit	5307/5311 Vehicles per 10k Persons	5310 Vehicles per 10k Persons (seniors and PWDs only)
Sebastian	4.46	7	Yes	2.04	6.95
Scott	4.12	1	Yes	-	3.20
Polk	3.96	2	Yes	-	4.03
Logan	3.46	1	Yes	-	4.44
Franklin	3.28	2	Yes	-	9.64
Crawford	3.12	3	Yes	-	8.63
High	7.93	26		16.92	49.19
Low	2.38	0		0	0

This data suggests that Sebastian County has the highest need of the 6 counties. However, this county also has 7 transportation providers. The Fort Smith Transit System (urban 5307 program) combined with the Western Transit System (rural 5311 program) together have 2 vehicles per 10,000 people. Human services organizations have almost 7 vehicles per 10,000 people to serve seniors and people with disabilities (5310 program). This may suggest a need for coordination amongst existing providers.

Scott County has a relatively high need. It has just one provider and 3.2 vehicles per 10,000 people (the lowest in the six counties). This may indicate a need for more transportation options.

Polk County has a slightly lower need than Scott. It has 4.03 vehicles per 10,000 people for seniors and people with disabilities.

Franklin and Crawford Counties have lower transportation needs and have about 9 and 8 vehicles per 10,000 people respectively to serve seniors and people with disabilities.

This information provides an initial assessment of where there are needs and what resources are available in each county. Interviews with local representatives in the study area were conducted to better understand transportation needs and gaps, as described in Section 1.2.

The remainder of this section of the Transit Coordination Plan describes performance measures including ridership, community satisfaction, vehicles per 10,000 persons, percentage of transit demand met, average cost per trip, productivity, percentage of key destinations served, coordination workshop attendees, and percentage of providers coordinating. It provides a summary of baseline performance measures for all counties in Arkansas.

The final section of the Transit Coordination Plan, called **Coordination Strategies**, explains opportunities and recommendations for coordination. “The overall objective of the Arkansas Statewide Transit Coordination Plan is to determine where there are gaps in public transit and human services transportation service in Arkansas and to develop coordination strategies and projects to address these gaps. This objective reflects the intentions of FTA, CCAM, and the requirement for coordinated transportation plans. For the Arkansas Transit Coordination Plan to be successful, it must also coincide with the overall statewide transportation goals and planning processes” (ARDOT 2018, page 30).

Table 6 shows the various coordination strategies that were recommended and ranks them from highest to lowest based on a prioritization process. These strategies should be considered for regional coordination within the project study area. Shaded areas show work in progress, anticipated for release in 2021.

Key destinations are defined as medical facilities, employment centers and schools/ universities. A statewide analysis in Arkansas of general public transportation (5307 urban and 5311 rural) show these systems serve about 60% of key destinations. Human services transportation services (5310) serve about 68% of key destinations across the state. (ARDOT, 2018 page 28)

Table 6: Coordination Strategies and Prioritization Score (ARDOT 2018 page 32)

Coordination Strategy	Score
1. Identify and contact agencies that could provide transportation in areas where transportation service gaps exist and provide support to secure funding and establish service.	11.0
2. Develop informational materials to provide coordination examples and best practices to transportation providers.	10.8
3. Develop an online directory of services (e.g. maintenance) and trainings offered by transportation providers to other providers.	10.4
4. Develop an online map version of the public transportation directory.	10.4
5. Coordinate development of model contracts or agreements for sharing resources.	10.0
6. Identify and appoint statewide and/or regional mobility managers.	9.6
7. Establish regional coordination districts to lead local coordination efforts.	8.6
8. Organize reoccurring coordination work sessions that providers are required to attend.	8.6
9. Coordinate partnerships between providers to offer free/reduced transfers between services.	8.4
10. Establish a one-call/one-click transportation service center.	8.0
11. Establish a centralized volunteer driver program.	7.8
12. Establish a qualified driver application and job opening directory.	7.6

The Public Transportation Programs Section of ARDOT is charged with coordinating implementation strategies along with collaboration with transit, other state, and local agencies. According to an ARDOT administrator in April 2020, a web-portal/website is under development (with release anticipated in 2021) that will address Strategies 2, 3, 4, 5 and 11, which are shaded in Table 3. A

link to the online map of the public transportation directory (Strategy 4) can be found here:

<http://ardot.maps.arcgis.com/apps/webappviewer/index.html?id=598058a6c4f84886977a99eaedf013bc>

All 12 of these coordination strategies are relevant to the project study area. However, establishing a regional coordination district (#7) and mobility manager (#8) may be the most important strategies to ensure continued coordination efforts and project implementation will occur over time.

The **Mobility Manager Handbook (Rosenberg 2010)** was created to support local and regional efforts to improve coordination of transportation services. The handbook was the outcome of a project that was awarded to the Bi State Metropolitan Planning Organization (BSMPO) in cooperation with Ft. Smith Transit and University of Arkansas at Fort Smith in 2008. BiState MPO’s boundaries have been adjusted and it is now the Frontier MPO. The Handbook provides guidance for a Mobility Manager to facilitate a scope of work for coordination activities among regional transit providers. It explains that the mobility management concept is much broader than fixed route transit and may include collaborating with partners, ridesharing, subsidizing carpools, coordination of private shuttles, assistance for volunteer and community transportation services and many other alternatives to the single occupant automobile. It characterizes a Mobility Manager as being a “collaborator, change agent and a leader.” Examples of mobility management activities described in the Handbook are:

Planning Activities

- Creating and maintaining an inventory of transportation services.
- Identifying opportunities for coordination of service delivery.
- Monitoring and influencing land-use decisions so that social service and health facilities locate near transit.

Coordinating Activities

- Facilitating relationships among service providers to deliver service efficiently without duplication.
- Serving as a clearinghouse for services and trip requests.

Operating Activities

- Developing and operating call centers to coordinate information for all travel modes, which may also include managing eligibility requirements for various services.
- Assisting with technological tools to improve the delivery of service.
- Managing shared vehicles for service delivery.

Outcomes of the above planning, coordinating and operating activities include:

- Improved transportation options for the public, particularly low-income, elderly, and disabled populations.
- Improved coordination among all service providers.

In summary, the 2010 Mobility Manager Handbook provides a detailed roadmap of how a mobility manager may support local and regional efforts to improve coordination of transportation services. Based on a meeting with the Fort Smith Transit Director in October 2019, there was a lot of enthusiasm for the Handbook and a mobility manager while funds were available for the position. After funding for the position ended, formal coordination efforts amongst regional providers did not move forward. However, the effort did result in creating good relationships among the providers that were involved, who can contact one another.

The **Arkansas Transit Association** (ATA) is a non-profit trade association that provides technical assistance and training for Arkansas’s public transit systems. More information on ATA membership, annual conference, training and resource center may be found online at <https://www.arkansastransit.com/>.

1.3.2. Oklahoma Transit Planning Documents

The project team reviewed four resources related to transit operations in the state of Oklahoma, which are presented here starting with the most recent. A summary of existing transit providers in the study area, including those in the two Oklahoma counties can be found in Table 4. The following sections are organized to highlight topics in these documents that may be most relevant to Le Flore and Sequoyah counties.

Oklahoma Public Transit Policy Plan (Nelson Nygaard 2020)

The 2019 Oklahoma House Bill 1365, codified as Title 69 Section 322 of the Oklahoma Statutes, requires an Oklahoma Public Transit Policy Plan. The Plan is currently under development by consulting firm Nelson Nygaard for the Oklahoma DOT and Oklahoma Transit Association. The plan must be submitted to the Governor and the Oklahoma Legislature by July 1, 2020. As written in HB165, this plan shall “provide for future collaboration and coordination of an effective network of public transit systems across Oklahoma as well state agencies with an interest in public transit,” such as the Oklahoma Department of Commerce, Oklahoma Department of Labor, Oklahoma Health Care Authority, and Oklahoma State Department of Education. This plan should be referenced upon moving forward with any collaborative efforts between Oklahoma and Arkansas transportation providers.

Statewide Personal Mobility Needs for Oklahoma 2018-2028 (Mistry, Peterson et al. 2019)

This study was conducted by the Small Urban and Rural Transit Center (SURTC) at the Upper Great Plains Transportation Institute at North Dakota State University to provide the Oklahoma Transit Association and state policy makers with information about the changing demographics and mobility needs of the state of Oklahoma. This study also “identifies gaps likely to exist due to population growth and changing demographics.” Information relevant to Sequoyah and Le Flore counties have been summarized here.

A needs assessment survey of Oklahoma transit providers was conducted in November 2018 to collect information on current levels of service, needed facility upgrades, need for new services, challenges to providing new services, staffing capabilities, and other issues. The report indicates that transit agencies in Sequoyah and Le Flore county reported that transit needs are being met “very well” in those counties (Figure 6.10, p. 92).

While there is no single measure that “accurately defines the sufficiency of transit service for a given location, this study utilizes three different measures and establishes benchmarks for each: trips per capita, vehicle miles per capita, and vehicle hours per capita” (p. 101).

“Per capita service levels provide information on how well transit providers are meeting the needs of their communities. Comparing service levels with benchmarks and target levels helps identify where increases in service levels are necessary” (p. 101). Rural benchmarks are national averages based on transit agencies that serve rural counties and are based on data from the 2017 National Transit Database. “Accurate population estimate data for tribal transit providers were not readily available so tribal transit was not considered for this analysis” (p. 102). Therefore, the metrics shown in Table 7 are based on the Ki Boi Area Transit system (KATS) service.

Table 7: Comparison of KATS Service to Rural Benchmarks in Sequoyah & Le Flore Counties

	Trips per Capita	Vehicle Miles of Service per Capita	Vehicle Hours per Capita
Rural Benchmark	2.1	8.1	0.5
Sequoyah & Le Flore Counties	>2	>16	>0.6

Recommendations in the study include increasing funding to expand services, wage increases for employees, purchasing additional vehicles, and improving transit facilities throughout the state to meet or exceed benchmarks. The report estimates costs for expanding systems at the state level. However, due to the KATS system exceeding benchmarks and the projected decrease in population in Sequoyah and Le Flore counties, it may be difficult to apply the recommendations for expanding services to those two counties alone.

2012 Oklahoma Transit System Overview and Gap Analysis (Parsons Brinckerhoff 2012)

This report was prepared for the Oklahoma Department of Transportation by Parsons Brinckerhoff to “identify current passenger transportation services available in Oklahoma, to identify new initiatives underway to improve passenger mobility throughout the state, and to examine intermodal connections and gaps in service that, if addressed, can enhance statewide passenger travel.” A survey of transit providers conducted as part of this study to identify transit gaps across Oklahoma and findings relevant to this project have been summarized here.

Intermodal Connections

Survey results indicated that both counties of interest have intercity bus, airport, and Amtrak intermodal connections available upon request by Ki Boi Area Transit System (KATS) but there are no intercity bus stops, Amtrak stops, or airports within the counties.

Transit System Connections

More than half of the transit provider survey respondents indicated an interest in “connecting with other transit providers to serve destinations beyond their boundaries” (p. 2-4). Transit system managers stated that demand and frequent passenger requests are the stimulus that encourages the systems to establish connection agreements (p. 2-4).

“Their [transit system managers] compassion and empathy for their patrons’ needs suggested a strong willingness to participate in future efforts to provide expanded service” (p. 2-2). Several survey respondents indicated that two of the major barriers to making additional planned connections are a lack of funding and administrative personnel to work out details for system linkages.

Transit Service Coordination - Mobility Manager

A recommendation was made in this study, based on a large majority of the survey respondents, to provide a low-cost coordination service or “mobility manager” to assist transit users in navigating Oklahoma’s transit systems and other transportation modes. Furthermore, it was stated that such a service could “extend beyond state lines to furnish information for passenger transportation access to adjacent cities and states” (p. 2-7). It was suggested that the mobility manager could also facilitate dispatching vehicles and drivers among the state’s urban, rural, and tribal systems to respond to inter-regional travelers’ needs. Two survey respondents indicated that a similar service was attempted in prior years but had failed due to inadequate and unreliable information, as well as a lack of marketing to make potential users aware of the service.

This report discusses necessary considerations in establishing a mobility manager service such as funding, publicizing the service, potential providers of the service, and initial efforts needed to launch it (p. 2-16 and 2-17).

The **Oklahoma Transit Association** (OTA) is the state’s voice for public transit. “OTA’s membership is comprised of the 34 urban, small urban, suburban, rural and tribal transit agencies in the state who share the common priority of providing and improving mobility and access for all Oklahomans”. OTA member benefits include advocacy, education, networking, communication, marketing, and assistance with grant writing. More information may be found online at <https://oktransitassociation.com/>.

1.4. Transportation Needs Index for Study Area

The project team calculated the transportation needs index for each of the 76 census tracts in the study area using the Transit Coordination Plan method (ARDOT, 2018 p.13-15). However, rather than comparing county and statewide average percentages, this analysis compares census tract % to the average % for the eight-county study area as follows:

1. Compare census tract population % of seniors and people with disabilities, % in poverty, % minority, and % households with no vehicle access to eight county average percentages.
2. Calculate the ratio of census tract to study area % results in an index, where:
 - a. A value of 1 indicates county % is equal to the study area %.
 - b. Values below 1 indicate that there is a lower % (i.e. less need) in that census tract compared to the study area, and
 - c. Values greater than 1 indicate a higher % (i.e. more need) in that census tract compared to the study area.
3. For each census tract, the index values of each population group were combined to create a total needs index, where higher values indicate more potential need for public transit and human services transportation.

A sample calculation for one census tract is shown in Table 8. Census tracts generally encompass a population between 2,500 to 8,000 people, and the study area consists of 76 census tracts. Table 9 shows the number of census tracts in each of the eight study area counties. Sebastian County has 26 tracts, reflecting its larger population, while Scott County has just 3 Census Tracts, reflecting its lower population.

Table 8: Transportation Needs Index Sample Calculation

	% Seniors	% People with Disabilities	% in Poverty	% Minority	% Households with no vehicle	Needs Index
Eight county average	17.4%	21.1%	21.2%	24.9%	6.1%	-
Census Tract 401350301 in Sequoya County	15.4%	25.2%	33.4%	49.9%	16.1%	-
Index (Census Tract/Eight County Avg.)	0.88	1.19	1.58	1.64	2.65	7.94

Data from American Community Survey 2014-2018 5-Year Estimates.

Table 9: Number of Census Tracts in Study Area Counties

County	Crawford	Franklin	Leflore	Logan	Polk	Scott	Sebastian	Sequoia
# of Census Tracts	11	3	12	6	6	3	26	9

Figure 8 shows the results of the Transportation Needs Index analysis for the 76 Census Tracts in the study area. Index values range from a low of 2.8 to a high of 8.8. Higher values indicate locations where there are higher populations of people at risk for being transportation disadvantaged (seniors/people with disabilities, poverty, minorities, and households with no vehicles). The indexes were organized into categories consistent with the Arkansas Transit Coordination Plan as follows:

- 3.5 or less is low need
- 3.5- 4
- 4.0-4.8
- 4.8 -6.5 (high need)
- 6.5 or more (highest need)

For this analysis, the transportation needs index category of “4.8 and more” was broken into two categories (4.8-6.5 and 6.5 or more) to provide a more nuanced breakdown of the needs. Based on this analysis, the highest needs are in western Sequoyah County and in northwest Sebastian County in portions of the Fort Smith urban area.

This analysis provides a general indication of areas where “transportation disadvantaged” people live who may experience the greatest benefit from increasing transportation options within the study area. This information may be supplemented by input from community representatives who have experience and a deeper knowledge of the needs of people trying to access school, healthcare, work, and other essential destinations as discussed in Section 1.2.

The reliability of estimates at the census tract level varies more widely than at the county level. Census tract data reliability in the study area is “high” for % of older adults and people with disabilities; reliability is “medium” for % poverty and “low” for % minority and % with no vehicle. As a result, the transportation needs index shown in Figure 8 should be considered as indicative of needs across the area, but not strictly interpreted in terms of magnitudes.

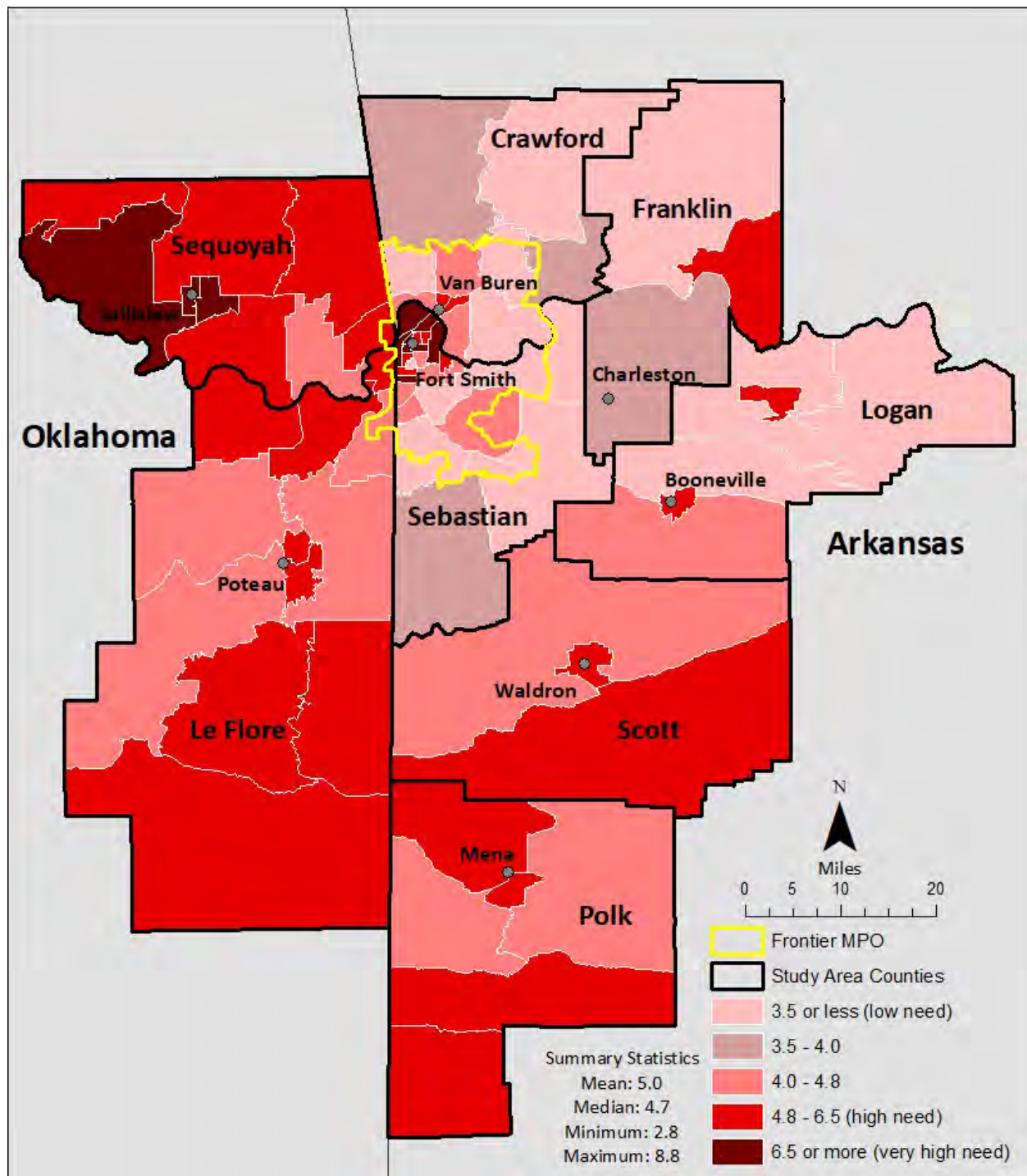


Figure 8: Study Area Transportation Needs Index by Census Tract

Data Sources: USDOT NTAD (Places), US Census Bureau (Tracts), CDC Social Vulnerability Index (Compilation of American Community Survey 5-Year Estimates)

1.5. Summary of Study Area Background Information

Fort Smith, Arkansas is an urban area surrounded by eight counties that are predominantly rural. The latest 2014-2018 American Community Survey 5-Year Estimates data shows the study area has higher percentages of unemployment, poverty, older adults, and people with disabilities than the national average for at least the past twenty years. These are populations that are at higher risk for being transportation disadvantaged.

Community representatives indicate that transportation disadvantaged people face challenges in accessing school, healthcare, work, and other essential destinations. Community members expressed concerns about the high rate of poverty in the area, the increase in the older adult population, the lack of reliable and affordable transportation options for vulnerable community members, and the long travel times between small rural communities and Fort Smith.

Arkansas and Oklahoma transit planning documents contain descriptions of existing transit systems and coordination efforts among the systems. Key recommendations from both state-level Arkansas and Oklahoma documents include appointing a regional mobility coordinator.

An analysis of transportation needs and gaps for each county presented in the [Arkansas Statewide Transit Coordination Plan](#) suggests that:

- Sebastian County has the highest need of the 6 counties. It has 7 transportation providers, which suggests there may be a need for coordination amongst existing providers.
- Scott County has a relatively high need and has just one transportation provider, which may indicate a need for more transportation options.
- Polk County has a slightly lower need than Scott. It has 4.03 vehicles per 10,000 people for seniors and people with disabilities.
- Franklin and Crawford Counties have lower transportation needs and have about 9 and 8 vehicles per 10,000 people respectively to serve seniors and people with disabilities.

An analysis of transportation needs for the 76 census tracts in the study area show there are several tracts that have potentially higher needs in Arkansas and Oklahoma as shown in the darker shades of red in Figure 8.

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2. RURAL REGIONAL MOBILITY

Through the course of initial information gathering and pursuing grant opportunities, it was discovered that more capacity was necessary to plan and implement transportation programs across the project’s rural region. Within the eight-county study area, there are multiple planning organizations with differing boundaries, but no single entity able to coordinate, plan, and implement across the entire region.

A report on best practices for rural regional mobility identified the following seven thematic lessons learned (KFH Group and Cambridge Systematics 2017):

1. State policies can make a difference
2. Different organizational approaches can work
3. Local champions are required
4. Needs of multiple markets should be addressed
5. An appropriate service design will attract more riders
6. Connectivity and providing service information are important
7. Creative funding may be needed

Case studies of various programs across the U.S. are provided in this report to highlight the myriad of ways that rural regional mobility gaps can be addressed.

2.1. Mobility Hubs

During initial meetings with local project partners, the concept of physical mobility hubs was discussed. Often seen in urban areas, mobility hubs provide a centralized location for multimodal transportation. With the growing landscape of shared use mobility options, such as bikesharing or ridesharing (described below), the transportation options that can be made available at a physical mobility hub location are seemingly endless.

The Federal Transit Administration (FTA) and the Shared Use Mobility Center (SUMC) awarded six transit agencies funding through the Mobility on Demand (MOD) On-Ramp Program to develop concepts, partnerships, and plans to prepare for the implementation of MOD options. When the city of Indianapolis’s transit system, IndyGo, set out to site mobility hubs or locations where transportation services could be co-located and digitally integrated as their MOD project, they uncovered valuable considerations through their community outreach process (SUMC 2020). For example, when establishing partnerships, it is important to note that priorities will vary based on partners’ varied perspectives. Transportation providers were concerned with optimizing operations while neighborhood livability advocates were focused on placemaking elements to create a more welcoming environment for people. Furthermore, funding priorities of lead entities may shift and ultimately dictate the process. A major lesson learned through the MOD On-Ramp program project was that mobility hubs should be flexible as technology, mobility solutions, and user needs evolve.

The dispersed communities, healthcare facilities, employment, and other critical services within this Arkansas/Oklahoma Transit Feasibility Study’s eight rural counties limit (or eliminate) feasible locations for physical mobility hubs compared to more urbanized settings. Park and ride

lots have the potential to expand mobility options for rural residents if there is adequate coordination among transportation providers.

The concept of a “virtual” hub where people could find information online and/or call a mobility manager has more flexibility to evolve and adapt to customer needs over time versus a physical location. The next section describes the concept of mobility management in greater detail as well as information on regional planning. Coordination among providers, as well as between riders and providers, is foundational to any new mobility program in a rural, resource constrained environment.

2.2. Mobility Management

Mobility management overlaps the concept of a physical mobility hub in several ways. A physical hub may have onboarding locations for bus or van service and a place where customers can purchase tickets. A mobility management service can inform customers of their transportation options that are specialized to their needs and assist with booking and purchasing fares. Mobility managers can also leverage “virtual” hubs to provide specialized customer service where customers may go online, call, or email to get more information about their transportation options.

As discussed in the Background section, both state level Arkansas and Oklahoma documents recommend appointing a regional mobility coordinator. The *Mobility Manager Handbook* was created to support local and regional efforts to improve coordination of transportation services in the study area. Mobility coordinators or managers are an untapped resource that can coordinate transportation for older adults, people with disabilities, veterans, and other members of the public (Birnie, McLary et al. 2019). The definition of mobility management is an “approach to designing and delivering transportation services that starts and ends with the customer” (Sriraj, Hall et al. 2018). The National Center for Mobility Management (NCMM) describes the core tenets of mobility management as:

- Encourages innovation and flexibility to reach the “right fit” solution for customers
- Plans for sustainability
- Strives for easy information and referral to assist customers in learning about and using services
- Continually incorporates customer feedback as services are evaluated and adjusted

In a national scan of statewide mobility management networks, it was discovered that a strong political backing is necessary. Most networks were brought into existence with legislative action and led by the respective state DOTs (Sriraj, Hall et al. 2018). Nevertheless, there are examples of non-profits and/or local agencies offering mobility management services (Birnie, McLary et al. 2019).

It is anticipated that throughout this project, WAPDD, Frontier MPO, and project stakeholders will consider how a mobility manager could play a key role in future coordination efforts and what organizational model could work best to improve coordination across the study area.

There are ample resources available for launching, funding, and operating a mobility management network in small urban and rural communities (National Cooperative Highway

Research Program 2018). The NCMM website continually updates resources such as funding opportunities for interested entities. From *The National Mobility Management Initiative: State DOTS Connecting Specialized Transportation Users and Rides*, the continuum of mobility management is described in Table 10.

Table 10: Continuum of Mobility Management Services Linking Specialized Transportation users and Rides (Rodman, Berez, & Moser, 2016)

Level	Name	Functionality	Description
1	Central Repository	Creation of, or linkage with, existing centralized repository of transportation resources	Static, hard copy listing of services and programs distributed or accessed via phone or website
1A	Provider Portal	+ provider portal	Service providers can update their information at any time
2	Matching Assistance	+ ways to narrow down service and program options	Customers supply search criteria or answer “triage questions” asked by a mobility specialist (call-taker) or prompted by an online system to reduce providers to viable options
3	Trip Planning Assistance	+ trip planning assistance	Customers use online system or call a mobility specialist to get detailed ways to make a particular trip
4	Trip Booking Assistance	+ trip booking by mobility specialist	Mobility specialist call provider to book trip on behalf of customer
5	Direct Trip Booking	+ trip booking by customer	Trip booking via links to paratransit systems (one system allows provider schedule to schedule trip onto a partner’s vehicle run)

Level 1 can be described as a very basic, low-tech service while Level 5 involves greater coordination and more technology. An agency may choose to step through the continuum as more resources, such as funding and partnerships, are secured.

2.2.1. Mobility Management Case Study: HealthTran, a Program of the Missouri Rural Health Association (MRHA)

Source

Mobility Managers - Transportation Coordinators for Older Adults, People with Disabilities, Veterans, and Other Members of the Riding Public (Birnie, McLary et al. 2019)

See also:

<https://www.ruralhealthinfo.org/project-examples/859>

Background


Missouri Rural Health Association (MRHA) is a human service non-profit health care 501(c)(3) organization with a mission to safeguard and improve the health of rural Missourians. The focus is on those most in need: chronically ill, disabled, veterans, older adults, and individuals with low/fixed income.

Under a grant from the Missouri Foundation for Health, HealthTran began as a pilot program sponsored by MHRA and the Missouri Public Transportation Association from 2013-2016. HealthTran was designed to bridge the transportation gap between patients and providers by using a framework known as Community Mobility Management (CMM). Customers are provided access from a single point through CMM to multiple travel modes for anyone with a transportation barrier to health and wellness.

Funding/Costs

HealthTran began with three years of funding from the Missouri Foundation for Health in 2013. In 2015, HealthTran also received a \$25,000 Federal Transit Administration/National Center for Mobility Management Design Challenge Grant for Rides to Wellness as well as general technical assistance from CTAA. With this guidance, a membership model was developed. For the most part, HealthTran is a fee-based, self-sustaining membership program. Section 5310 grants from the Missouri Department of Transportation and United Healthcare supplement member program resources. The total revenue in 2018 was \$259,681 that was sourced through grants, health plans, and private foundations.

Funding is sustained through HealthTran’s membership model. HealthTran members include rural health providers such as hospitals, health clinics, and federally qualified health centers. Members have the option to use the HealthTran platform via a monthly subscription fee, which covers the costs associated with the use of the technology, a booking fee per scheduled ride, and the cost of transportation. The fee varies based on the number of trips that the health provider plans to provide. The following components comprise the fees:



MOBILITY MANAGEMENT CASE
STUDY: HEALTHTRAN, A PROGRAM
OF THE MISSOURI RURAL HEALTH
ASSOCIATION (MRHA)

Serves: *chronically ill, disabled, veterans, older adults, low/fixed income.*

Focus: bridges the transportation gap between patients and providers by using the Community Mobility Management (CMM) framework.

Funding: Fee-based, self-sustaining membership program.

- Annual membership of \$250 nonprofit/\$500 for profit
- Monthly subscription beginning at \$37.50 per month for up to 20 scheduled trips
- \$3 booking fee per scheduled ride
- Direct transportation expenses incurred for trips
- A launch fee for the 90-day setup and implementation process (begins at \$20,000).

Per ride costs plus the booking fees typically are as follows:

- In town rates within a 2-mile radius are \$5.20 for volunteer driver ride and \$5.00 for city transit ride
- Outside city limit rates within 10 miles are \$14.00 for volunteer driver ride, \$10.50 public transit route, and \$22.00 for public transit on demand (based on 20 minutes time).

Partners

HealthTran created partnerships among transportation agencies, health providers, and communities in a defined region to expand and coordinate transportation options. HealthTran is working with community-action agencies and other nonprofit organizations to address issues of access to nutritional foods and pharmacy/medicine, among other challenges.

To ensure that transportation resources serve vulnerable and underserved populations, MRHA has been working for the past four years in partnership with Community Asset Builders, LLC, to include transportation funding in health-related grant applications. Addressing transportation barriers to care has become a priority across multiple agencies within Missouri, because of:

- MRHA’s ongoing work
- An annual Rural Health Conference
- Inclusion of transportation in grants

Program Specifics

HealthTran is an innovative mobility coordination and service program designed to address rural transportation limitations and barriers by bridging the transportation gap between patients and providers. With a primary focus on health, this flexible system can coordinate and schedule rides within minutes or at a month in advance through a one-stop technology platform. The service combines a technology platform with support and training to implement mobility management at the local level. Trained mobility managers can access multiple transportation options (local public and private transportation vendors, ambulance services, and volunteer drivers) within minutes under this one-stop system.

Transportation services are delivered by public transit operators, medical transportation providers such as ambulance districts, taxis, and a volunteer driver program. MRHA provides the management and fiscal support for the system. And HealthTran works with members and communities to resolve transportation barriers. In 2018, the service area included 18 counties.

Here’s how HealthTran works:

1. Organizations or communities interested in offering HealthTran services contact MRHA for an initial review and become an MRHA member.

2. A community launch strategy is completed; it includes marketing, training, community involvement, and setting the service area and first ride date.
3. Prior to first ride, local mobility managers and schedulers are trained to use the platform to ensure that patient transportation needs are being met. All available transportation options are entered into the system. MRHA volunteers are recruited and vetted.
4. Individuals with transportation barriers are identified. Referring members have the flexibility to set guidelines of those to be served.
5. Schedulers enter the ride request onto the platform.
6. The local mobility manager monitors the technology program to ensure that all rides are accepted and assigned.
7. The HealthTran coordinator (regional) supports the local mobility managers in all aspects of mobility coordination.
8. MRHA provides monthly usage reports – that is, one statement for all costs incurred.
9. Monthly reports are available within the system for tracking individual riders, locations, etc.

Outcomes

HealthTran acts as the hub in connecting and supporting transportation across membership service areas. Over the course of the pilot (August 2014 – May 2016), HealthTran arranged 4,729 rides. The direct transportation costs were approximately \$147,850 (\$31.27 per ride). Surveys showed that 72% of the patients using HealthTran services had not been readmitted to the hospital and 75% of the participants had not been admitted to the emergency room in the past six months after having health access. As of September 2015, one provider experienced a 20.2% reduction in missed appointments as a result of patient referrals to HealthTran (RHIHub n.d.).

Also, in just one rural hospital system, HealthTran provided 2,470 rides for patients receiving services at a cost of just over \$66,000 over 17 months. The hospital earned \$7.68 in patient insurance reimbursement for every dollar invested in transportation.

In the future, MRHA envisions communities working together through a HealthTran network administrator (HTNA) to address regional coordination and strategic planning. Using a local strategic partner, such as a regional planning commission or community action agency, would build community solutions, create networks, and improve health outcomes across multiple counties. The HTNA would operate as the link between all members within the service region, and the role would be determined by the members he or she leads. As of 2018, future plans to expand the program across the entire state were in place.

2.3. Regional Coordination & Planning

Regional coordination requires dedicated staff within an organization to lead any efforts. The terms “regional” and “rural” have been used interchangeably when referring to planning areas outside of metropolitan planning areas. This section provides an overview of rural planning organizations (RPO) and regional transportation planning organizations (RTPO) as possible models to manage and coordinate transportation technologies and programs across the study area.

Texas examined the potential role of RPOs to determine if they can offer a means for improving the transportation planning and programming process (Overman, Ellis et al. 2011). The following issues were outlined by Overman et al. as those frequently identified in the literature as most relevant to RPOs:

- Rural transportation planning is integrally linked to economic development.
 - From a policy perspective, rural stakeholders and local officials generally view transportation as a means to support economic development.
 - From an organizational perspective, RPOs are housed in existing Council of Governments (COGs)/Regional Development Organization (RDOs) and the same planning practitioners (staff) and stakeholders share interest in both economic development and transportation.
- Many RPOs face similar organization challenges.
 - Funding: There is no established funding allocation to support RPOs. Those state DOTs that provide funding support generally use State Planning and Research (SPR) funds and most require some form of local match. Funding for RPO varies among the states.
 - Organization: The RPO organization and process is typically incorporated within established regional planning commissions or economic development districts. The majority of the RPOs have policy and technical committees similar to those found in MPOs.
 - Interagency Coordination: The coordination between multiple agencies and multiple funding programs was cited in many instances as a challenge. For example, transportation planning coordination should occur with MPOs, state DOTs, multiple County Commissions/Boards of Supervisors, COGS, RDOs, and local municipalities. Each organization has multiple responsibilities, locations, boundaries, and organizational missions.
- Geographic Boundaries: The majority of RPO boundaries align with regional planning commissions or economic development districts but exclude areas inside MPO boundaries.

Ohio established an RTPO program to help identify local transportation needs, assist local governments, and support the statewide transportation planning process in non-metropolitan regions of the state (ODOT 2018). The Ohio DOT document explains that while a few states initiated RTPOs to improve rural transportation planning at the regional level as early as the 1970s, it was not until the 2012 Moving Ahead for Progress in the 21st Century (MAP-21) legislation that the structure and responsibilities of RTPOs were formally defined in federal statute. Ohio became the first state to grant the designation using the federal definition, resulting in five Rural Planning Organizations (RPOs) attaining the RTPO designation in January 2016. In Ohio, benefits of establishing RTPOs include:

- enhanced level of engagement between state and local officials
- a framework to coordinate planning efforts.
- funding, resources, and increased capacity that was not previously available to RPOs.

One Ohio RTPO worked with the United Way to develop transportation options for zero-car households. Another Ohio RTPO has secured over \$6 million in project funding by focusing on grant writing for existing programs. Ohio RTPOs have conducted various transportation studies, provided technical assistance and grant writing services, and built/enhanced regional partnerships.

In summary, Ohio’s RTPO program has led to improved regional input into transportation planning and a direct line of communication between non-metropolitan areas and the state. Through funding and assigning MPO mentors, RTPOs are better able to serve their local interests in the statewide transportation planning process. Both ODOT and the RTPOs acknowledge this concept is relatively new and growing pains are anticipated moving forward. The ODOT document concludes by noting that “including RTPOs in the development of the Access Ohio 2045 Long-Range Transportation Plan is a major advancement for the state as it continues to assess how best to prioritize its transportation resources”. (ODOT, 2018)

3. MEDICAL TRANSPORTATION

There is ample research on the transportation needs of rural medical patients across the U.S. A 2013 report by Health Outreach Partners identified transportation as the second most prevalent barrier to accessing health care services among underserved populations served by outreach programs at health centers. Respondents indicated that the top four barriers preventing access to transportation services consisted of: 1) living in a rural area; 2) cost; 3) limited or a lack of transportation options; and 4) the inability to obtain a driver’s license (Health Outreach Partners 2014).

As discussed in the Background section, project stakeholders reported there is a significant need in the study area for medical transportation. It is likely this need is growing due to the COVID-19 pandemic. There are many resources that exist to assist communities with medical transportation. This section gives an overview of a few existing resources, though a comprehensive review is beyond the scope of this project. It should be noted that many of the technologies and programs summarized in Section 1.4 Transportation Technologies and Programs could be implemented for medical transportation.

3.1. Health Outreach Partners

Health Outreach Partners works with local community-based organizations across the country to improve the quality of life of low-income, vulnerable, and underserved populations. They launched a transportation initiative in March 2016 to document the impact of transportation barriers on healthcare costs and to strengthen patient-centered transportation solutions. The following documents were produced as part of this transportation initiative.

Transportation & Health Access: A Quality Improvement Toolkit. Using a Continuous Quality Improvement Process to Reduce Missed Appointments Due to Transportation Barriers (Health Outreach Partners, 2019)

Link: <https://outreach-partners.org/2016/10/19/transportation-quality-improvement-toolkit/>

This toolkit was created to assist health centers with assessing the scope of the problem of missed medical appointments due to transportation barriers, and implementing the Plan-Do-Study-Act (PDSA) cycle, a continuous quality improvement (CQI) process, to find patient-centered solutions. The process described in the toolkit can help a health center do the following:

- Assess the stage of readiness to implement a PDSA cycle.
- Conduct a landscape scan of community resources, such as transit authorities and aging services access points, local organizations operating non-emergency medical transportation services, etc.
- Gather information directly from patients to determine the extent of the problem.
- Calculate costs of missed appointments.

Rides to Wellness Community Scan Project (Health Outreach Partners, 2017)

Link: <https://outreach-partners.org/2017/06/23/rides-wellness-community-scan-project/>

The purpose of this project was to determine the impact of transportation barriers on health care costs and to highlight existing patient-centered transportation solutions. This report summarizes the following two topics:

- National survey: Implementation of a national survey of health centers and private providers to identify the impact of lack of transportation on missed medical appointments and associated healthcare costs.
- Community profiles: Development of profiles illustrating communities that are adopting patient centered transportation solutions that show promising opportunities for return on investment.

Overcoming Obstacles to Health Care — Transportation models That Work (Health Outreach Partners, 2014)

Link: <https://outreach-partners.org/2014/06/04/overcoming-obstacles-to-health-care-transportation-models-that-work/>

This report summarizes key findings of successful patient centered transportation models. It recommends steps that organizations can take to establish or expand existing transportation services and it presents six in depth case studies of patient centered transportation models.

Many organizations are ill-equipped to provide transportation and struggle with issues such as liability, the high cost of gas and vehicles, funding, and integrating transportation into health and social service programs. Health Outreach Partners identified six key findings that enable the overall success of the patient-centered transportation models involved in this project, including:

1. Diverse Strategies: Case study organizations use more than one strategy to overcome transportation barriers facing their respective communities.
2. Customized Approaches: Case study organizations do not take a “one-size-fits-all approach” to providing transportation. Instead they customize services depending on the need of the population served and resources available.
3. Organizational Commitment: Case study organizations cultivate strong organizational commitment—particularly from leadership staff and Board of Directors—to provide solutions to transportation barriers.
4. Dedicated, Competent Staff: Case study organizations hire staff and recruit volunteers who are committed, competent, professional, and reliable.
5. Diversified Funding Streams: Case study organizations are creative in pulling together funding and continually looking for opportunities to solicit financial support.

6. Expansive Partnerships: Case study organizations take an expansive approach to developing partnerships by working with community, governmental, and business partners to offer transportation services.”

Two of the Health Outreach Partners six transportation case studies included rural community examples:

***Helping Our Women (HOW)** is a nonprofit organization located in rural Provincetown, Massachusetts. HOW collaborates with the local airline and regional transit authority for longer trips (normally to Boston) and operates a volunteer program for local rides for clients living with life-threatening and chronic illnesses.*

***Finger Lakes Community Health (FLCH)** is a Community Health Center serving rural upstate New York with administrative offices located in Penn Yan, New York. FLCH provides basic transport, in-camp mobile services, and school-based dental services to migrant and seasonal farmworkers and their children. They also offer telehealth services to all community members.*

Transportation Webinar Series (Health Outreach Partners, 2018) This three-part transportation webinar series covered:

- Webinar #1 The Need for Research and Data to Address Transportation Barriers
- Webinar # 2 The Role of Ridesharing Services in Addressing Transportation Barriers
- Webinar # 3 Addressing the Transportation needs of the Elderly Population

Link: <https://outreach-partners.org/2018/02/28/2018-transportation-webinar-series/>

3.2. Rural Health Information Hub

The Rural Health Information Hub (RHI), formerly the Rural Assistance Center, is funded by the Federal Office of Rural Health Policy to be a national clearinghouse on rural health issues. They support healthcare and population health in rural communities. Two transportation related resources from RHI are described below.

Rural Transportation Toolkit compiles promising models and resources to support organizations implementing transportation programs in rural communities across the United States. The toolkit information is focused on developing, implementing, evaluating, and sustaining rural transportation programs. The program clearinghouse section provides examples of transportation programs in rural communities <https://www.ruralhealthinfo.org/toolkits/transportation/3/program-clearinghouse>

Link: <https://www.ruralhealthinfo.org/toolkits/transportation>

The **Arkansas State Guide** also provided by the Rural Health Information Hub contains health related resources, organizations, funding opportunities, events, and more Arkansas specific information.

Link: <https://www.ruralhealthinfo.org/states/arkansas/>

3.3. Transportation for Dialysis

Dialysis Transportation: The Intersection of Transportation and Healthcare (2019) is from the Transit Cooperative Research Program and responds to major concerns of public transportation agencies on the rising demand and costs to provide kidney dialysis trips and how these trips require more specialized services than public transportation is designed to provide.

Link: <https://www.nap.edu/catalog/25385/dialysis-transportation-the-intersection-of-transportation-and-healthcare>

3.4. Guidebook to Help Communities Improve Transportation to Health Care

The *Guidebook and Research Plan to Help Communities Improve Transportation to Health Care Services* published by the National Academies of Sciences, Engineering, and Medicine (2020) addresses the various dimensions and elements of working towards a health care and transportation partnership. It discusses the following framework for pursuing a health care and transportation partnership:

- Understanding motivations for a partnership may differ between the health care and transportation sectors.
- Identifying appropriate entities to engage for a partnership.
- Identifying specific transportation needs. Possible data sources are Community Health Needs Assessments and/or Community Health Assessments.
- Starting a dialogue between the health care and transportation sectors.
- Sharing a goal for improving transportation access.
- Recognizing and addressing barriers (such as the health care sector concerns about protecting patient privacy).
- Developing appropriate transportation solutions to meet defined needs.
- Sustaining the improved transportation.

Link: <https://www.nap.edu/catalog/25980/guidebook-and-research-plan-to-help-communities-improve-transportation-to-health-care-services>

“Two rural transit operators in Arkansas, Central Arkansas Development Council and Southeast Arkansas Transit eliminate silos by brokering Medicaid NEMT with its public transportation. This allows these operators to maintain a robust network of services for the general public and in particular access to health care as the public rides with Medicaid NEMT riders in many cases.”
(National Academies of Sciences, Engineering, and Medicine, 2020 page 4-5)

4. TRANSPORTATION TECHNOLOGIES & PROGRAMS

The following sections describe a variety of technologies and programs that may supplement existing fixed route and demand response transit systems. Each section contains a case study to demonstrate how the technologies and/or programs are being implemented.

4.1. Transportation Network Companies (TNCs)

Transportation network companies (TNCs), also known as ridesourcing companies, “serve as intermediaries between those seeking to pay for rides and potential drivers.” (Harley, Ysasi et al. 2017). Uber and Lyft are well known TNCs. There is an emerging interest in transit agencies engaging with TNCs in partnerships to provide specific types of service, meet or respond to a specific policy goal or challenge, and/or demonstrate innovation and flexibility to experiment (Curtis, Merritt et al. 2019). “Due to the prohibitive cost of implementing public transportation in rural areas, TNCs create flexible opportunities for services to be offered with minimal investment” (Harley, Ysasi et al. 2017).

4.1.1. Experimenting with TNC Models in Rural Areas

There have been efforts to explore how TNC models could work in rural areas. For example, in 2016, the non-profit Liberty Mobility Now was launched in several Midwest states as a TNC business model for ridesourcing services in rural areas. However, in early 2018, “Liberty Mobility ceased operations and filed for bankruptcy, citing a lack of resources and time to prove the feasibility of the model” (Godavarthy, Hough et al. 2019). Yankton, South Dakota, (pop. 14,700 U.S. Census Bureau 2018) was one of the communities where Liberty’s ridesourcing service was launched in July 2017. According to Yankton City Commissioner Nathan Johnson, Liberty had 12 active drivers in Yankton at the cessation of activity and had completed 1,200 trips. “As a city commissioner, I kept hearing from business owners and non-profit organizations that there was a need for expanded transportation options in the community,” Johnson said. “In its 2016 annual report, the Helpline Center identified transportation as the top unmet need for Yankton County. That’s what led me to seek solutions and, ultimately, to learn more about Liberty Mobility.” “During its time in Yankton, Liberty Mobility worked closely with Yankton Transit to fill transportation gaps on nights and weekends,” he said. “Those efforts were especially focused on those with limited incomes and in need of reaching medical services. Those needs have not gone away. The community will need to continue to focus on transportation needs and options to address them” (Nielson 2018).

Johnson said Liberty’s shuttering once again demonstrates the tenuous climate that start-up operations face, but he hopes the experience will still serve as an inspiration. “It’s unfortunate that the company’s mission to bring transportation options to rural residents looks to be in jeopardy,” he said. “Start-ups face a multitude of challenges, which is why many of them ultimately fail. Hopefully, this experience does not deter our community from finding ways to strategically partner with promising services in the future. Rural communities need to be willing to experiment in order to meet the challenges of today and the years to come.” (Yankton Daily Press & Dakotan, January 2018). It should be noted that leaders from Liberty Mobility have moved on to a new non-profit organization called Feonix Mobility Rising, whose mission is

“creates mobility solutions, technology, educational programs, and global communities around the common goal of transportation for all.” Feonix Mobility Rising is the non-profit organization that is a partner in both Winnebago County, Wisconsin’s Catch a Ride program, outlined in Section 4.8.1 and the Missouri’s HealthTran program, outlined in Section 2.2.1.

4.1.2. Research on TNC Fare Structures in Rural California

A research project used available census tract, transit, and TNC fare structure data in California in attempts to estimate which rural communities were most likely to support successful ridesourcing programs. Research in the San Joaquin Valley estimated that the ridesourcing fare structure of nearby Fresno, CA could not be applied to rural operations in the Valley due to negative median driver revenue (Rodier and Podolsky 2017). The researchers noted that a higher fare structure would be necessary so that a driver did not lose revenue on rural trips. Furthermore, the researchers estimated that if a higher fare structure was implemented then there still could be a cost savings of \$19 to \$27 per trip if current transit was replaced by ridesourcing services in over half of the study area’s census tracts (Rodier and Podolsky 2017). However, in some of the other census tracts, researchers estimated that the cost of current transit services was lower than the estimated ridesourcing services. If transit was replaced in those census tracts, then the average per trip cost could increase by \$11 to \$31. In summary, TNCs have the potential to replace rural transit in some, but not all, rural communities if drivers could count on a higher fare structure. However, higher fares are likely a barrier for many transportation disadvantaged individuals.

4.1.3. Future Trends in Transit Agency/TNC Partnerships

Looking ahead, a 2018 analysis of future trends in reshaping public agency partnerships with TNCs predicts that “more large transit agencies will likely roll out partnerships to test the waters on TNC collaborations”; “more formal evaluations of programs will need to be carried out”; “more cities will explore options for improving paratransit service through ridesharing partnerships”; and “the integration of fares for trips involving transit/TNC connections is a logical next step in the development of partnerships” (Schwieterman, Livingston et al. 2018). A partnership playbook was developed to allow for informed decision making (Curtis, Merritt et al. 2019). Further research is also recommended in several areas to “increase the transit industry’s capacity for planning and managing TNC partnerships and for applying a mature understanding to an array of new mobility partnerships” (Curtis, Merritt et al. 2019). Suggestions include developing specific guidance on appropriate budget allocations and resulting returns on investments; defining best practices for management of partnerships; inventorying strategies to comply with ADA requirements in the context of TNC partnerships; identifying feasible data-sharing mechanisms; determining further guidance on procurement and contracting standards; determining whether TNC modes meet the statutory definition of public transportation; and evaluating the viability of shifting transit agency roles from direct service providers to mobility managers who oversee mobility-as-a-service programs, a collaborative industry forum that convenes transit practitioners and TNC staff, and an annual awards program to highlight best practice partnerships (Curtis, Merritt et al. 2019). In short, the use of TNCs for filling mobility gaps is an area ripe for further exploration.

4.1.4. TNC Case Study: Pinellas Suncoast Transit Authority – Pinellas County, Florida

Source

Partnerships Between Transit Agencies and Transportation Network Companies (Curtis, Merritt et al. 2019)

Background

Although Pinellas County, Florida has a population exceeding 974,000 and is part of a Metropolitan Statistical Area, this case study included suburban mobility and sought to address a similar mobility gap as one identified in the Western Arkansas and Eastern Oklahoma region which is providing mobility options for low-wage, third-shift workers.

A one-cent sales tax referendum to fund transit operations in Pinellas County, Florida failed to pass in 2014. The Pinellas Suncoast Transit Authority (PSTA) had been relying on reserves to fund base operations, and as a result of the transit referendum’s failure, the transit agency was considering discontinuation of three underperforming local bus routes and consolidation of two others. PSTA sought out TNCs for three different programs:

1. “Direct Connect:” TNCs to provide more cost-effective first/last mile transit connections to areas that could potentially lose fixed-route service.
2. “Transportation Disadvantaged (TD) Late Shift:” TNCs to provide point-to-point mobility for low-income service workers who need transportation in late evening hours after PSTA’s fixed-route service stops operating.
3. “Public-Private-Partnership for Paratransit Mobility on Demand” (P4-MOD): TNCs to provide same-day, on-demand mobility for paratransit riders, at a lower cost to PSTA, via modernized central dispatch center.

The focus of this case study summary will be on the TD Late Shift program, although additional information is provided in the source cited above on the other two programs.



Serves: Low-wage, third-shift workers

Focus: Provides transportation to work for shifts that begin or end between 9pm and 6am.

Funding: Center for Transportation Disadvantaged(State-funded)

Funding/Costs

The funding source for the TD Late Shift program is primarily through the Center for Transportation Disadvantaged which is a state-funded program (requiring a 10% local match) that provides reduced cost transportation throughout the county for eligible residents. The allocated budget for the program has varied over each fiscal year. In follow-up conversations with PSTA staff, the research team learned that in the program’s first year (2016), approximately \$300,000 was allotted for the program through the Center for Transportation Disadvantaged (Epstein 2020). The program became so popular that it quickly realized that more funding was necessary. This year, PSTA received approximately \$683,000 from the Center for Transportation Disadvantaged and provided \$75,000 in local match.

Program participants must pre-enroll with PSTA to become eligible for the program. Participants pay \$11 per month for a discounted PSTA transit pass (regularly \$70 per month) and an additional \$9 per month for up to 25 Uber, United Taxi, or Care Rides per month.

Program Specifics

The TD Late Shift partnership began in August 2016 and is still in operation. Late Shift riders must earn no more than 150% of the federal poverty level, and discounted rides are only valid from 10 p.m. to 6 a.m., when PSTA fixed-route transit is not in service. Riders must have a job that begins or ends between 9 p.m. and 6 a.m. on any day of the week and can only use the service to go between registered home and work addresses. PSTA is able to access data through the Uber for Business platform. The data includes rider name, time and date of trip request, cost of the trip, gratuity, vehicle type, and the city where the trip occurred. To comply with Title VI of the City Rights Act, riders who do not have access to smartphones or wish to pay cash may call a 24/7 telephone hotline to request a cab from United Taxi. The use of taxicabs that provide drug/alcohol testing and background checks allowed PSTA to comply with FTA guidance. Furthermore, to provide equivalent service for people with disabilities, riders can request discounted rides on-demand from wheelchair and ambulatory transportation providers.

Partners

PSTA, Uber, United Taxi, Care Ride, Wheelchair Transport Service and Lyft (Epstein 2020).

Outcomes

The TD Late Shift program is very popular with over 4,000 participants in Pinellas County. PSTA surveys Late Shift riders and has learned that participants have been able to get new jobs and work more shifts. In addition, people who previously walked or rode bikes late at night to get home from their jobs told PSTA they now feel safer. “People aren’t staying on the TD Late Shift Program forever. They are getting promoted, working different shifts, and/or end up saving enough money to buy their own vehicle” (Epstein 2020).

Monthly trip volumes have been as high as over 3,000 rides per month. During the COVID-19 crisis, trip volumes have decreased to around 60% of pre-pandemic levels but there is still a demand for the program. Many of the late shift workers in the service economy were impacted by COVID but there are still numerous 24-hour businesses in Pinellas County that are still operating. In terms of adapting the program to address COVID-19, Uber asks that all riders and

drivers wear masks and if a rider is experiencing COVID symptoms they are asked to not use the service.

A lesson learned through this partnership is that it can be difficult to get TNCs to share the level of data needed to report to the National Transit Database (NTD). Uber’s limited data sharing and non-disclosure agreement made measuring performance of TD Late Shift difficult and created problems for PSTA in being unable to report ridership data to NTD. Another lesson learned is that focusing on transportation disadvantaged communities (e.g. shift workers, seniors) is likely to have better outcomes than on discretionary riders because these communities are more likely to use transit.

4.1.5. TNC/Transit Agency Partnership Case Study: Central Pennsylvania Transportation Authority – Central Pennsylvania

Source

Partnerships Between Transit Agencies and Transportation Network Companies (Curtis, Merritt et al. 2019)

Background

Central Pennsylvania Transit Authority (CPTA), doing business as RabbitTransit, uses a network of various subcontracted providers to supplement its directly operated paratransit service, meeting demand across a large 10-county service area that includes urban, suburban, and rural areas. The transit agency reached out to Lyft and Uber to see if the TNCs might fit as additional providers for its paratransit provider network.

Funding/Costs

The funding source of the TNC trips is the Pennsylvania Shared Ride Program which is funded through the Commonwealth’s lottery. This funding source does not call for all of the requirements of FTA funding, such as drug and alcohol testing. CPTA realized that TNCs may be unable to meet all FTA requirements so the agency used less restrictive state transit funds for the trips. During FY2017, a total of \$11,032 was used to cover the TNC trips.



TRANSPORTATION NETWORK COMPANIES / TRANSIT AGENCY PARTNERSHIP CASE STUDY: CENTRAL PENNSYLVANIA TRANSPORTATION AUTHORITY – CENTRAL PENNSYLVANIA

Serves: Paratransit

Focus: Uses a network of various subcontracted providers to supplement its directly operated paratransit service to meet demand.

Funding: Pennsylvania Shared Ride Program (Lottery)

Program Specifics

CPTA schedules its paratransit trip demand so that directly operated paratransit fleet and drivers are used first. This ensures that the transit agency’s workforce is fully productive. In mid-2017, CPTA began scheduling Lyft and Uber trips directly on behalf of customers when:

1. The TNC trip is cost effective, that is, equal to or less than reimbursement from the Commonwealth’s Shared Ride Program
2. The customer is ambulatory, can travel without supervision, and understands that an unbranded private vehicle will arrive for the trip.

The transit agency provides capacity in its scheduling software for the TNC companies. When it is determined that a particular trip meets the two requirements for a TNC trip, the dispatcher requests the trip for the customer using a desktop application for a Lyft trip or a smartphone for an Uber trip. Once a TNC driver accepts the trip, the dispatcher contacts the customer with the trip information: “Today your trip is assigned to [Lyft/Uber], your driver is [name] and will arrive in a [car description, etc.].” CPTA has a corporate account with the TNCs and is billed at the end of the month for trips provided.

The TNC provides data on trips they provided and “some data” on the trip particulars with the monthly billing statement. The transit agency would prefer to receive actual data for passenger miles and revenue hours, but it is not dependent on the TNCs for data needed for NTD reporting. The transit agency has the trip origin and destination data in its paratransit software and can generate data for revenue miles/time from mapping software.

Partners

CPTA, Uber, Lyft

Outcomes

Lyft and Uber provide another mobility option for the transit agency to use to meet peak demand for its paratransit service – “another tool in the toolbox.” A rough estimate of monthly average ridership is 300-600 trips. The new service has received a mixed response from customers: some “love it” and some “hate it,” with about a 50-50 split. Those on the negative side prefer the dedicated RabbitTransit service, with a branded vehicle and a driver with whom they have come to know. Those customers also like the social aspect of riding with other seniors to their destinations. There’s uncertainty among riders about how to share complaints about TNCs. Looking forward, the transit agency is exploring ways to charge customers a copay for TNC trips. When the partnership was established in 2017, the TNC model did not allow a copay option.

4.2. Ridesharing

“Ridesharing is defined as the formal or informal sharing of rides between drivers and passengers with similar origin-destination pairings. Ridesharing includes vanpooling, which consists of 7 to 15 passengers who share the cost of a van and operating expenses, and may share driving responsibility” (Godavarthy, Hough et al. 2019). Carpooling is also a type of ridesharing.

The Missoula Ravalli Transportation Management Association (MR TMA) is a non- profit organization that connects people in rural areas of western Montana to carpools or vanpools. Their vanpool program is aimed at people traveling 15 miles or more and uses a basic vanpool rideshare application available online. MR TMA uses the application information to match potential riders with vanpools. According to their website, over 150 people participate in the vanpool program. MR TMA provides the vehicles and pays for insurance and maintenance. Vanpool participants share the cost of the fuel. To encourage vanpooling, MR TMA offers a subsidy to lower participants' commuting expenses. To be eligible for the MR TMA subsidy, vanpoolers must be registered for the program, have an origin within a participating county and maintain and report ridership data. Details of MR TMA’s vanpool rideshare program can be found at <https://www.mrtma.org/>

MR TMA also manages a carpool rideshare program where participants use their own vehicles. More details can be found at <https://www.mrtma.org/carpool.html>

There are many technologies available that help match people with other potential carpool partners with similar schedules and destinations. Some technologies allow people to find carpool partners they are comfortable with by addressing factors such as workplace, gender, smoking/non-smoking, or mutual friends. Finding carpool partners requires a critical mass of riders with similar schedules and destinations, which can be a challenge in rural settings. This sentiment was echoed by a project stakeholder at Arkansas Tech University in Ozark who reported students cannot carpool because they are coming from too diverse of areas around the region and state.

Without technology, ridesharing is scaled down to a person’s known social network of families, friends, etc. However, technological platforms, such as smart phone applications, used to match riders with transportation services can broaden their network of connections and mobility options.

This project’s study area population of older adults is above the national average which warrants careful consideration of their needs in using ridesharing services. From a 2018 survey of 39 drivers age 65 years or older, “post-drive interviews also revealed that older adults in rural settings were more receptive to sharing rides and interested in a web-based ridesharing tool as they needed to rely heavily on friends and family due to the lack of alternate transportation services” (Payyanadan and Lee 2018). The report goes on to explain that older adults had concerns about driver availability, reliability, communication, privacy, and personal needs such as storage for their wheelchair or oxygen tanks. One solution put forth when using a web-based ridesharing tool is to allow the rider to specify personal preferences to address concerns around personal needs when scheduling a ride.

4.2.1. Ridesharing Case Study: Green Raiteros Electric Vehicle Ridesourcing Program in Huron, California

Source

Opportunities for State DOTs (and others) to Encourage Shared Use Mobility Practice in Rural Areas (Godavarthy, Hough et al. 2019)



RIDESHARING CASE STUDY GREEN RAITEROS ELECTRIC VEHICLE RIDESOURCING PROGRAM - HURON, CALIFORNIA

Background

The rural community of Huron has a predominantly Latino population of more than 7,000 people. It is one of California’s poorest communities and a quarter of its residents do not own a car.

In the past, there was an information and coordinated ridesourcing service called “Raiteros” where retired farmworkers provided rides to local residents. The maximum distance for the service was to Fresno, CA, a nearby large city located 53 miles (approximately 1 hour) from Huron. Raiteros used personal vehicles and provided rides for residents to access hospitals, government agencies, and other critical services. In return, Raiteros charged the riders gas and lunch expenses.

Serves: Local Rural Residents

Focus: Provides ridesourcing for medical services, schools, shopping, and other services in a rural community.

Funding: California Public Utilities Commission; Family Foundation; NGO

Funding/ Costs

In 2017, grant funding of \$519,400 was provided by the California Public Utilities Commission to form the Green Raiteros program after the mayor explored funding opportunities to strengthen the existing program. A grant of \$69,000 was provided by the Schmidt Family Foundation. The Latino Environmental Advancement & Policy (LEAP) Institute, a non-profit based in Fresno, received funding to develop the Green Raiteros program.

Project Partners

LEAP Institute, Schmidt Family Foundation, Shared-Use Mobility Center (SUMC), and EVgo

Program Specifics

The program provides ridesourcing for medical services, schools, shopping, government services, etc. The non-profit Green Raiteros rural ridesourcing service was launched on October 12, 2018. The program had two electric vehicles and four veteran retired farmworkers serving as volunteer drivers to provide affordable transportation to underserved individuals. Drivers who continue to use their own vehicles receive insurance from the program and are reimbursed for their miles driven. Riders can book a ride 24 hours in advance with drivers by a phone call or by visiting the

Green Raiteros office. The funding received for the project was used to lease a headquarters facility, hire staff, and pay administrative costs, and purchase two electric vehicles.

Outcomes

As of 2019, there were plans to expand the program with more electric vehicles and up to 12 drivers making 100 trips a day. Future plans also call for a smartphone application for making reservations and managing rides. The research team was unable to contact program partners during the COVID-19 crisis for a more recent update.

4.3. Transportation Vouchers

The Rural Health Information Hub Rural Transportation Toolkit (RHlhub) describes the voucher models as using “tickets, checks, or coupons that eligible riders can offer to a participating transportation provider in exchange for a ride.” Providers can vary from dial-a-ride services, taxis, or volunteer drivers and the success of the program depends on the available transportation modes in a community. Rider eligibility is determined by the sponsoring agency or county and eligibility criteria may include people who cannot operate a personal vehicle due to disability, age, etc. The Association of Programs for Rural Independent Living (APRIL) offer the following advantages of voucher programs in rural communities:

- Allows riders more choices in where they work and live
- Puts resources into the hands of riders rather than agencies
- Places emphasis on rider needs rather than agency considerations
- Promotes rural traditions of volunteers
- Promotes cost-sharing among service agencies, riders, and transit providers

When considering the implementation of a transportation voucher program, community partnership plays a key role. Partners are needed for establishing transportation providers, marketing, and estimating user demand of the program. The scale of the voucher program can match available funding. Minimal initial investment is required to launch a program if using existing resources. In communities with some transportation options, a voucher program can expand the options such as providing services during night or weekend hours. Examples of funding agencies with voucher programs for persons with disabilities include state offices of vocational rehabilitation, Chambers of Commerce, and United Way (Harley, Ysasi et al. 2017).

4.3.1. Voucher Program Case Study: Deep East Texas Council on Governments Pilot Program

Source

Deep East Texas Council of Governments Transportation Voucher Program (Villwock-Witte, Fay et al. 2019)

Background

The Deep East Texas Council of Governments (DETCOG) has a twelve-county service region. In 2018, a pilot voucher program was launched in five of the counties (Jasper, Newton, San Augustine, Sabine, and Tyler). These five counties were selected based on the large percentages

of people with disabilities, veterans, older Americans; the average household income is 25% below the state average; there is no existing public transportation options; and the county populations are small. The intent of the pilot was to provide transportation to individuals 60 years of age and older for access to grocery stores, non-Medicaid appointments, personal care appointments, and other approved trips that contributed to participants’ quality of life. Issues this pilot was created to address included Medicaid transportation not providing access to groceries, social isolation leading to depression, and a lack of healthy food choices that contribute to obesity and other illnesses. During an initial meeting with project partners, the research team learned of communities in the study area that are considered food deserts, such as Waldron, Arkansas.

Funding/Costs

A budget of approximately \$150 per month (\$1,800 per year) per person was provided to approximately forty approved participants for a total budget of \$72,000. During the nine-month pilot, the highest monthly reimbursement amount was slightly more than \$5,000.

Program Specifics

Potential riders were contacted by DETCOG to be enrolled in the transportation voucher program, given information on how the program works, and provided with voucher checks. A trifold brochure was made available to riders and ride providers to explain the program. Transportation providers for the pilot included the East Texas Support Services; Watts Transportation; Jasper and Newton County Nutrition and Senior Services; Veterans of Tyler County; Nutrition and Services for Seniors; and Volunteer Ride Providers. A rider’s personal network such as friends or family members could be reimbursed for mileage if they used their own vehicle as part of the Volunteer Ride Provider option. Travel voucher checks were used in place of cash to pay for transportation. Participating transportation providers were reimbursed by DETCOG.

Partners

DETCOG, The Western Transportation Institute (for technical assistance during the pilot), East Texas Support Services, Watts Transportation, Jasper and Newton County Nutrition and Senior Services, Veterans of Tyler County, and Nutrition and Services for Seniors



VOUCHER PROGRAM CASE STUDY: DEEP EAST TEXAS COUNCIL ON GOVERNMENTS PILOT PROGRAM

Serves: Individuals 60+ years of age

Focus: Provides transportation vouchers for access to grocery stores, non-Medicaid appointments, personal care appointments, and other approved trips that contributed to participants’ quality of life.

Funding: Deep East Texas Council of Governments (DETCOG)

Outcomes

Fifty-one individuals enrolled in the pilot program and 265 trips were made during the nine-month pilot. Many trips were used for multiple purposes, but the most common purposes were medical and shopping. During the enrollment period, there was a well-known phone scam going on so many potential riders were hesitant to answer phone calls. To overcome this, in-person visits were required to enroll individuals which highlights the need for trusted, on-site individuals to launch programs. Riders were able to access other programs such as SNAP (Supplemental Nutrition Assistance Program) as a result of their participation in this program. DETCOG is working to sustain program funding and hopes to expand services to riders under 60 years of age that are experiencing transportation barriers.

4.4. Community-Based & Volunteer Programs

Many rural communities across the United States are resource constrained and often rely on bootstrapping to address needs. Several of the previously cited case studies incorporate volunteer driver programs as part of a package of solutions to fill mobility gaps. “The future successes of your community transit will be affected by the amount of non-traditional support and ownership in the transportation mission [that] can be cultivated in the political and business sectors” (NRTAP 2017). The National Rural Transportation Assistance Program (NRTAP) publication *Getting Started: Creating a Vision & Strategy for Community Transit* provides insight on tasks to use when either starting a new transportation system or expanding and modifying existing transportation services. The seven-part process is:

Part 1: – Identify Key Community Stakeholders

Part 2: – Call a Meeting of the Stakeholders and Identify your Champions – A Core Leadership Group

Part 3: Develop a Consensus of Values

Part 4: Analyze the Community’s Transportation Needs

Part 5: Identify Community Transportation Resources: Financial, Capital, and Human

Part 6: Spell out the vision for the future of transit in your community – your mission statement

Part 7: Create a Strategic Plan for Transit Development

The foundation of any volunteer or community-based transportation program is the need for collaboration and a coordinated system. “Through collaboration, community transportation resources can be more predictable and stretched to give all aspects of the community better transit services” (NRTAP 2017). Coordination is not a one-size-fits-all strategy and can take on a variety of forms, depending on the specific will and resources available in the community. In Tennessee, the Tennessee Vans program is a financially self-sufficient program that provides vehicle lease and purchase programs for community groups and organizations as well as provides help with vehicle insurance, maintenance, and fleet management assistance to commuter groups wanting to vanpool to and from work (Newsom and Meyers 2011). In Dakota County, Minnesota the Dakota Area Resources and Transportation for Seniors (now called DARTS) program is a

nonprofit community service organization that engages in vehicle sharing. One notable arrangement is sharing a bus secured through the FTA Section 5310 Program between the City of Farmington and two local churches to transport seniors and individuals with disabilities (Douma and Garry 2013).

These examples of “non-traditional” programs show that with a little creativity and collaboration, mobility gaps can be addressed with less capital than would be required for traditional public transportation programs such as fixed-route systems. When considering a vehicle sharing agreement, Douma & Garry outline common barriers and solutions of which many require political action such as changing state laws or reducing state regulatory obligations. This reaffirms the need for cultivating “ownership in the transportation mission” within the political sector.

However, some examples of volunteer and community-based programs simply require individuals wanting to help other individuals, such as the Health Buddy Program in Hillsborough County, Florida. “The primary objective of the Healthy Buddy program is to enhance transportation-disadvantaged older adults’ quality of life by improving their access to health care facilities and daily life events. The Health Buddy Program seeks to accomplish this goal by pairing Hillsborough County residents over the age of 65 with students from the University of South Florida. Student volunteers will provide their older adult “buddy” with personalized transportation information and local health resources through a private profile on the Healthy Buddy website” (Jang, Lee et al. 2018).

The NRTAP’s guidance on issues to consider when exploring volunteer programs in transportation highlights “because volunteer drivers are often more difficult to recruit than volunteers who do not have to operate motor vehicles, recruiting for transportation programs can be difficult, even in communities with a strong history of volunteer work. Investigate whether or not your area has an active volunteer center with experience in volunteer recruitment. Identify other agencies in town that have had good success with volunteer recruitment over the years. Examine special reasons why people might pull together in the spirit of helping.” The NRTAP guidance continues, “A well-recruited, well-managed volunteer program may provide more reliable, satisfactory service than an inadequately funded program that utilizes underpaid driver.” A final word of wisdom is to “Be sure your program includes some form of volunteer recognition” (NRTAP 2018). Communities must weigh the advantages against the disadvantages such as the ones provided in Table 11.

Table 11: Advantages and Disadvantages of Volunteer Transportation Programs (NRTAP, 2018)

Advantages	Disadvantages
1. It may save money over using paid employees	1. Success depends on volunteer recruitment and commitment.
2. It helps build a better community.	2. Labor or competing private companies might object.
3. It can be extremely flexible.	3. It will not work everywhere.
4. It can be fulfilling.	4. It can be stressful.

Advantages	Disadvantages
5. An entire community can be served.	5. Responding to demand may be difficult.
6. High visibility makes for ease with volunteer recruitment.	6. Attracting board members with necessary skills may be difficult.

Risk, liability, and insurance have been identified as primary issues for Volunteer Driver Programs. Figure 9 provides a summary of recommended solutions to these challenges. “Many of the challenges of starting, operating, and sustaining volunteer driving programs are related to liability. The responses to these challenges have resulted in a wide spectrum of program structures, operational characteristics, and markets served by the many driving programs in existence today” (Hendricks and Audino 2011).

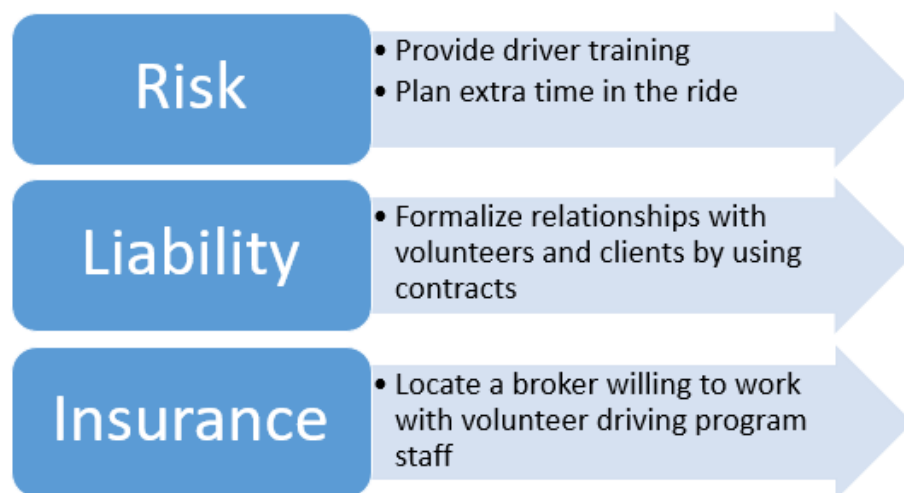


Figure 9: Primary Issues That Require Addressing for Volunteer Driver Programs with Recommended Solutions (Hendricks and Audino 2011).

In several stakeholder interviews, the possibility of partnering with local churches to address mobility gaps in the study area was mentioned. Exploratory research consisting of surveying 288 rural faith-based organizations (FBO) indicates that “about one third of the respondents were either willing or very willing to become involved in providing transportation to people with disabilities who were not members of their congregation. However, the data indicate that these rural congregations owned few vehicles, and that a very small proportion of those [vehicles] were equipped with lifts or ramps that would permit a person who used a wheelchair or scooter to ride” (Seekins, Bridges et al. 2008).

Furthermore, many of the FBOs reported that “the major barriers facing them in any effort to become involved in providing transportation to people with disabilities in their communities were the lack of financial resources to do so, lack of staff to manage or provide such services, concerns about liability, lack of skills and knowledge about disability and transportation issues, and concerns that such involvement would stretch the time commitments of the congregation.

A third of respondents indicated that it was simply not in their mission or that they were concerned about becoming entangled in government programs” (Seekins, Bridges et al. 2008). The researchers go on to advise that before approaching an FBO as a potential partner, it is important to understand their orientation and limitations as reactions to forging community-based partnerships for increasing transportation options for people with disabilities may differ significantly.

In the San Joaquin Valley, *VOGO*, a volunteer ridesharing service: Serves disadvantaged rural communities in San Joaquin and Stanislaus counties. Residents will soon be able to use Vamos to make reservations for eligible VOGO trips (i.e., trips that begin or end in the disadvantaged service areas and cannot be served by existing transit). Volunteer drivers are reimbursed at the IRS reimbursement rate to drive eligible residents to destinations within the two counties. The Volunteer Transportation Center (VTC) is responsible for scheduling, dispatching, and other back-end operations for VOGO. Essential trips during the COVID-19 crisis has been provided through the VOGO service. The VTC manages over 300 volunteers per year who drive over 5 million miles to fulfill over 130,000 trips. The VTC’s business model enables them to provide trips at an average cost of \$1.10 per mile in rural upstate New York. MOVE is a non-profit volunteer transportation service provider who recruits and enrolls volunteer drivers in the VOGO program (Rodier).



VOLUNTEER RIDESHARING SERVICE IN THE SAN JOAQUIN VALLEY: VOGO

Vogo: Volunteer ridesharing serving disadvantaged rural communities

Function: Volunteer drivers provide rides to eligible residents to destinations within two counties.

Success To Date:

300 Volunteers, 5 million miles driven, 130, 000 trips.

4.5. Carsharing

“Carsharing offers members access to vehicles by joining an organization that provides and maintains a fleet of cars and/or light trucks. These vehicles may be located within neighborhoods, public transit stations, employment centers, universities, etc. The carsharing organization typically provides insurance, gasoline, parking, and maintenance. Members who join a carsharing organization typically pay a fee each time they use a vehicle” (Godavarthy, Hough et al. 2019). In a cost benefit analysis of the San Joaquin Valley, carsharing and split-carsharing showed the greatest cost savings potential relative to current transit service. Carsharing is estimated to be less expensive in about 90% of the population census tracts and split-carsharing is less expensive in 100% (Rodier and Podolsky 2017).

Currently in the San Joaquin Valley, Miocar, an electric vehicle carsharing service is located in seven affordable housing complexes in rural disadvantaged communities in Tulare and Kern Counties. The service is administered by a non-profit which allows for improved insurance coverage at a lower price. Three months after the public launch, over 200 people applied for membership and over 100 members are active users. As of November 1, 2019, there were 27

electric vehicles purchased and insured for the Miocar service. Project partners secured over \$600,000 for expanded marketing and \$750,000 from the Federal Department of Energy to integrate ridesharing into the carsharing system from 2021 to 2022 (Rodier).

In terms of how transit agencies are thinking of carsharing programs, a 2019 *Analysis of Recent Public Transit Ridership Trends* outlined a two part objective of the analysis as producing “a current snapshot of public transit ridership trends in the U.S. on bus and rail services in urban and suburban areas, focusing on what has changed in the past several years” and presenting “strategies that transit agencies are considering and using for all transit modes in response to changes in ridership” (Watkins, Berrebi et al. 2019). While the report does not include the rural context, the following findings in the literature overview are still relevant:

- Carsharing services make auto ownership less necessary but there is evidence they may be replacing transit trips in the urban and suburban context. “Some transit agencies and city officials are skeptical of integration with these services as they see them as competitors” (Watkins, Berrebi et al. 2019).
- There are a growing number of resources that replace the need to make trips such as telecommuting, telemedicine, and delivery services.

4.5.1. Carsharing Case Study: Needles Carshare Program in Rural California

Source

Opportunities for State DOTs (and others) to Encourage Shared Use Mobility Practice in Rural Areas (Godavarthy, Hough et al. 2019)

Background

Needles, California has a population of around 5,000 residents and nearly a quarter live below the poverty line. Most destinations like grocery stores or medical facilities are located in two nearby cities, Laughlin, NV and Bullhead, AZ which are approximately 25 miles from Needles. Providing public transportation services to these nearby cities was a challenge for the city because these cities are located in two different states. The Consolidated Transportation Services Agency (CSTA) for the 950 square miles in which Needles is located in is Victor Valley Transit Authority (VVTA). The CSTA director identified the option of providing a small affordable carshare program in partnership with Enterprise Carshare program to help people transport themselves to nearby cities located across state boundaries.



Miocar: Electric Vehicle CarSharing

Function: Located in seven affordable housing complexes in rural disadvantaged communities.

Success to Date:

Purchased and insured 27 electric vehicles, 200 membership

Funding/Costs

VVTA offered Enterprise a guaranteed monthly minimum payment to cover the carshare program costs regardless of the usage which amounts to approximately \$19,000 annually for two cars. Users pay \$5 per hour to use the car without a membership cost or sign-up fee. The \$5 user fee includes fuel for up to 200 miles per trip and users are charged 33 cents per mile for miles exceeding 200 miles per trip. The revenue generated by the program has covered about 70% of the program cost, which is much higher than the traditional fare box revenue received for rural transit programs. VVTA funds the remaining 30% of the program costs directly out of its budget. Without utilization revenue generated, the cost would have been \$32,000 annually.



CARSHARING CASE STUDY:

NEEDLES CARSHARE PROGRAM IN RURAL CALIFORNIA

Serves: Individuals in a rural, low-income small town

Focus: Providing affordable mobility to car-less residents, low-income populations, and seniors that have a driver’s license.

Funding: Victor Valley Transit Authority (VVTA); User Fees

Program Specifics

The program was launched August 8, 2016 with a Nissan Altima and a Dodge Caravan. Users become members by signing up and can later reserve a car online for a desired date and time. By August 2017, the program had 50 members. The two vehicles are located in the parking facility of a local bank (Desert Communities Federal Credit Union) and an Enterprise Carshare kiosk is available inside the bank for users to make reservations if they do not have access to a computer or smartphone. For residents who do not have credit cards, VVTA worked with a local financial company, Sole Financial, to create payroll debit cards that people can use for the carshare program. The program is available 24 hours a day and seven days a week. Users must be licensed drivers who are 21 or older. To perform maintenance on the vehicles, Enterprise contracts with local shops in Needles. While there are no local Enterprise rental car services in Needles, there is one in Bullhead. If any major maintenance is needed for one of the vehicles, the Bullhead office provides another car while major maintenance is performed.

Partners

Victor Valley Transit Authority, Desert Communities Federal Credit Union, Enterprise Carshare

Outcomes

The program has been very successful in providing affordable mobility to car-less residents, low-income populations, and seniors that have a driver’s license. The Needles Carshare program has been so popular and completely booked at a certain point in its initial stages that Enterprise representatives had difficulty scheduling vehicle maintenance. The minivan is the most popular

vehicle and often four families share the cost so they can all go grocery shopping at the same time.

The CSTA director thinks that the rural carshare program is an untapped resource and is a unique solution for meeting transportation needs in rural areas. However, a transit agency or other agency needs to provide leadership to establish the program and demonstrate that it is going to be successful. There are plans for the program to go fully electric and expand the program into another community.

4.6. Shared Use Mobility (SUM)

The Society of Automotive Engineers (SAE) defines shared mobility as “the shared use of a vehicle, motorcycle, scooter, bicycle, or other travel mode; it provides users with short-term access to a travel mode on an as-needed basis” (SAE 2018). While traditional forms of shared mobility such as taxis or transit busses have existed, the integration of smart mobile phone applications and other technologies has allowed newer forms of shared use mobility (SUM) to broaden transportation modes and models of matching riders with services. Furthermore, SUM programs such as carsharing or bikesharing has existed in urban areas for several years but potential applications have only recently been explored in the rural context.

“While significant mobility gaps exist in rural transit/transportation services due to factors such as lack of funding, low population densities, and long travel distances in rural areas, SUM practices have the potential to fill those mobility gaps by offering fast, on-demand, and reliable transportation options. Many innovative SUM initiatives are being piloted and implemented in rural communities in conjunction with already-existing rural transit/transportation services and with business models tailored for rural communities” (Godavarthy, Hough et al. 2019). Godavarthy et. al describes various rural SUM pilots and programs such as ridesourcing, carsharing, bikesharing, and microtransit as well as provides a Rural SUM Toolkit to “inform state DOTs, regional transportation agencies, rural transit agencies, local governments, human service agencies, and other state and local agencies about the various steps and tasks involved for strategically planning to pilot and implement relevant SUM strategies to meet the unique transportation needs in rural communities” (Godavarthy, Hough et al. 2019). The five tasks recommended in the Rural SUM Toolkit are:

Task 1: Identify Mobility Gaps, and Determine Service Needs

Task 2: Determine the SUM Category that Best Suits Rural Community Needs

Task 3: Establish Partnerships

Task 4: Evaluate Challenges, Accessibility, and Impacts

Task 5: Funding and Implementation

Portions of each of these tasks are being accomplished by this study to assist local stakeholders and partners in identifying transportation options that have the best chance for success in the study area.

As previously discussed, there have been ongoing efforts to address mobility gaps in rural communities of the San Joaquin Valley in California. A study was completed to compare the cost-

effectiveness of existing intercity transit services in rural disadvantaged communities to hypothetical ridesharing and carsharing services. “The results show significant potential to reduce transit costs and reinvest those cost savings to expand shared mobility services” (Pike, Rodier et al. 2017). Out of that 2017 study, two SUM pilot concepts in seven communities across four counties in the San Joaquin Valley region were developed. The first was a carsharing and ridesourcing program in affordable housing complexes and the second pilot was a technology platform that enables improved efficiency for multiple independently operated demand responsive platforms in several counties. “Careful analysis is required to understand where, when, and how shared-use mobility services can be introduced to expand transportation access to residents in rural communities” (Pike, Rodier et al. 2017).

The researchers published a report titled *The Potential for Shared Use Mobility in Affordable Housing Complexes in Rural California* which summarized findings from a survey of low-income residents at affordable housing complexes in the San Joaquin Valley. Relevant findings from that survey include respondents indicating a strong willingness to use ridesourcing and carsharing services located at their affordable housing complex. The use of such services was stated as for traveling to work, higher education, K-12 travel, shopping, health care travel, and household errands. It was also discovered through this survey that a barrier to paying for such SUM services was some community members’ lack of credit cards and/or bank accounts.

In 2020, a policy brief was published based on the 2017 study which stated, “demonstration projects will be important to test whether these services improve access in rural disadvantaged communities. Furthermore, demonstrations will present opportunities to overcome barriers to implementing shared-use mobility services, including finding ways to accommodate users without smart phones, credit cards, or bank accounts, who do not speak English and who have disabilities. The researchers are working with regional governments in the San Joaquin Valley to evaluate several ongoing pilot projects” (Rodier and Podolsky 2020). Additional information on these pilot projects is shared elsewhere in this report.

Factors leading to significant mobility gaps such as sparse populations, limited funding, and long travel times between destinations are present in the project study area. Therefore, careful consideration was given to feasible and beneficial transportation options that may address existing mobility gaps by supplementing the existing transportation providers as described elsewhere in this report. Previous sections describe SUM options and provide case studies of existing programs.

4.7. Mobility on Demand (MOD)

“MOD is a concept based on the principle that transportation is a commodity where modes have economic values that are distinguishable in terms of cost, journey time, wait time, number of connections, convenience, and other attributes. MOD enables customers to access mobility, goods, and services on demand by dispatching or using shared mobility, delivery services, and public transportation strategies through an integrated and connected multimodal network” (Shaheen 2020). Of the transportation modes that Shaheen and Cohen list as modes that are facilitated through MOD, the following may be most applicable to the rural setting of the project study area: carsharing, ridesharing, TNCs, and public transportation. In general, MOD is a broad

concept that not only includes transporting people, but also transporting goods and services, such as UberEats. For the purposes of this rural area study, solutions addressing the mobility of people will be the focus, as discussed in the following sections.

4.8. Mobility as a Service (MaaS)

The non-profit organization Feonix Mobility Rising defines Mobility as a Service (MaaS) as, “the integration of various forms of transport services into a single mobility service accessible on demand.” However, in terms of an industry-wide definition, as explained in *A Topological Approach to Mobility as a Service: A Proposed Tool for Understanding Requirements and Effects, and for Aiding the Integration of Societal Goals*, “There is currently no established definition of MaaS,” (Sochor, Arby et al. 2018). The general themes of MaaS are to offer:

- A service with a rider’s needs as the focus
- Multimodal mobility
- Integration of transport services, information, payment, and ticketing.

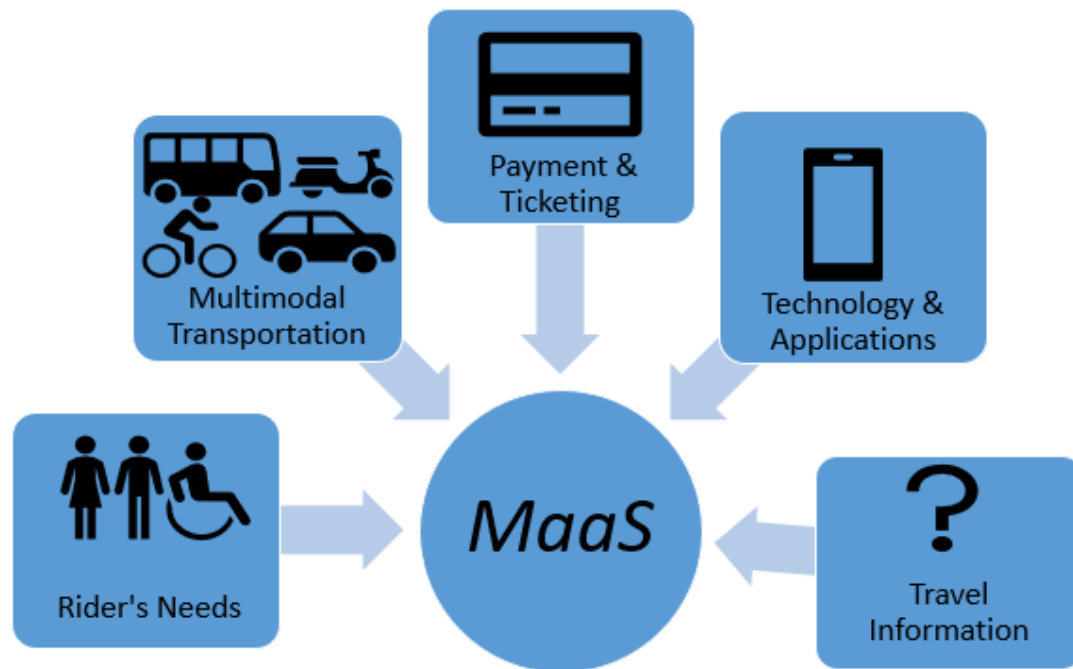


Figure 10: The General Theme of Maas

The “core” elements of MaaS are providing travel information and payment services for riders. This integration can utilize a mobile app or “smart card” that provides access to different modes and may also include organizational integration through collaboration between different providers (carsharing, bikesharing, transit). In some cases, a subscription service is offered for trips with different modes, called bundling. These elements are typically provided through connected platforms such as mobile phone applications or websites. However, some systems

also offer call centers for customers without connected devices. In rural communities, MaaS platforms can, “integrate already existing public transit services, volunteer driver programs, and other specialized transportation services into one platform so target users and rural residents can access information about various services based on their eligibility; make trip reservations; and pay for the trip, all at one place...Rural MaaS platform can also potentially integrate multiple transit/transportation providers within a county or among adjacent counties” (Godavarthy, Hough et al. 2019). In other words, MaaS has the potential to serve as a virtual mobility hub.

Godavarthy et al. also described some of the opportunities for implementing rural MaaS platform, such as:

- Providing a one-stop shop (as described above).
- Including additional rural SUM services (such as carsharing) to a rural MaaS platform alongside other existing transit/transportation services.
- Setting up alerts and reminders to the rider after making the reservation and before the trip as well as providing alerts/reminders to destination contacts if needed.
- Managing and coordinating volunteer driver programs.
- Facilitating reservations and gathering confirmations from individual transit/transportation providers to boost interoperability so that riders can make a single trip request to travel across rural communities or counties.

“Rural areas have great potential for organizing transport services more efficiently through collaboration, open-minded development, and innovative solutions” (Eckhardt, Nykänen et al. 2018). However, “rural areas may not have the critical market size to attract MaaS providers to service their area. Some blend of regulation and incentives may be required to encourage MaaS operations in a rural area” (National Academies of Sciences and Medicine 2020).

“By enhancing traveler convenience, multimodal trip planning and fare payment initiatives have the potential to serve as a ‘multimodal multiplier’ where technology magnifies the effectiveness of active and public transportation” (Shaheen 2020).

In the San Joaquin Valley, *Vamos, a Mobility as a Service (MaaS) smartphone application*, enables residents of San Joaquin and Stanislaus counties to plan transit or bicycle trips within each county and between the two counties. The app includes all transit services in these counties, real-time transit information when available, and on-demand transit services (Rodier).



MAAS IN THE SAN JOAQUIN VALLEY:

VAMOS

Vamos: a Mobility as a Service (MaaS) smartphone application

Function: enables residents of San Joaquin and Stanislaus counties to plan transit or bicycle trips within and between the two counties.

The app: includes all transit services in these counties, real-time transit information when available, and on-demand transit services (Rodier).

4.8.1. MaaS Case Study: Winnebago Catch-a-Ride (WCAR) Rural MaaS Pilot Program

Source

Opportunities for State DOTs (and others) to Encourage Shared Use Mobility Practice in Rural Areas (Godavarthy, Hough et al. 2019)

Background

Winnebago County, Wisconsin is approximately 580 square miles and has a population of around 167,000 (population density: 288 people per square mile). For comparison, Sebastian County, Arkansas has a population density of 233 people per square mile. A pilot program was developed to integrate all available transportation services on a single technology platform and to introduce a ridesourcing program with volunteer drivers. According to the Lutheran Social Services of Wisconsin and Upper Michigan, some of the existing transportation providers for the “Make the Ride Happen” program are: Senior Wheels volunteer drivers, FISH volunteer drivers, Bus Buddy assistance for older adults wanting help with determining routes/riding the bus, Valley Transit & Valley Transit II, Rural Outagamie County Paratransit, Calumet County Aging & Disability Resource Center volunteer drivers, and Dial-a-Ride in northern Winnebago County.

Funding/Costs

The pilot program received \$100,000 from the Easter Seals Project Action and \$30,000 from the “Commute to Careers” grant from the Wisconsin Department of Workforce Development (which was used to subsidize employment trips for unemployed, underemployed, disabled, and/or low-income workers).

Riders were charged a \$2 booking fee and \$0.58 mileage rate which would go directly to the volunteer driver for their personal vehicle. Riders that qualified for the subsidy would pay the \$2 booking fee and \$0.33 per loaded mile.

Program Specifics

The pilot program was launched in October 2018 and ran through September 2019. The pilot program goals were to:

- Improve employment and healthcare transportation (partner with employers and healthcare providers).



MAAS CASE STUDY:

WINNEBAGO CATCH-A-RIDE (WCAR) RURAL MAAS PILOT PROGRAM

Serves: Those needing transportation in Winnebago County, Wisconsin

Focus: Integrates all available transportation services on a single technology platform and provides a ridesourcing program with volunteer drivers.

Funding: Easter Seals Project Action; Wisconsin Department of Workforce Development; User Fees

- Manage existing transportation assets.
- Fill mobility gaps (especially during nights and weekends).

The Qryde technology platform was used to build the MaaS platform and the program was administered and branded by Feonix Mobility Rising. Riders could access information through a website, smartphone application, and/or a call center.

Make the Ride Happen has run volunteer driver programs for over 15 years for older adults and people with disabilities. The screening process for conducting driver interviews, background checks, and vehicle inspections that was previously established was maintained for the pilot. Finding proper insurance for volunteer drivers is one of the primary challenges in volunteer driving programs (Hendricks and Audino 2011). Insurance for volunteer drivers was covered by Feonix Mobility Rising Volunteer Insurance through CIMA.

Partners

East Central Wisconsin Regional Planning Commission, Make the Ride Happen (a program of Lutheran Social Services of Wisconsin and Upper Michigan), Winnebago County Health Department, Wisconsin Department of Workforce Development, University of Wisconsin – Madison Extension, Forward Services Corporation, Greater Oshkosh Economic Development Corporation

Outcomes

The first ride was provided on February 9, 2019 and by April 25, 2019 a total of 84 rides were provided by six volunteer drivers. One challenge of the pilot program was that the strength and coverage of internet service was not adequate to operate a reliable ridesourcing service with a smartphone application.

Additional outcomes, takeaways, and lessons learned were shared by a WCAR program partner in July 2020 with the research team (Keenan 2020). Project partners reflected upon the MaaS pilot program and offered up the following takeaways:

- While many things can be done remotely with partners that are not local, there must be a local presence to help roll out a new program.
- Do not be afraid of trying something new or bringing forward/addressing any issues as they are identified.
- A plan is necessary, but partners must be willing to adapt and reorganize frequently if something is not working.
- Consider rolling out technological features incrementally rather than introducing all at once to more easily address the inevitable challenges of a new program and technology.
- It is important to explain what MaaS is in detail to partners and clients. If you can get the right people around the table to understand the concept, the program is more likely to be successful.

Additional grant funding was awarded to maintain the relationship with Feonix Mobility Rising, the technological platform used for the MaaS program, and to recruit additional volunteer drivers. Looking ahead, project partners are working on expanding the MaaS program into another county as they are optimistic it can work in areas outside of Winnebago County.

5. TRANSIT COST BENEFIT AND FUNDING OPTIONS

This section provides a brief overview of one method to estimate the benefit cost ratio of transit investment. This is followed by an overview of funding options for transit and transportation technologies and programs.

5.1. Cost & Benefits of Public Transportation

A study of rural and small urban transit systems in Minnesota found that for every \$1 spent on transit, the benefits of transportation ranged from \$1.50 to \$4.20 and a benefit-cost ratio for rural transit to equal 2.2 (Mattson, Peterson et al. 2020). Further, a large share of the benefits is due to health care benefits. More specifically, the benefits result from providing health care trips to riders who otherwise would not make these trips. In Minnesota, the cost of transit can be justified solely by these benefits. A practical application of this study was the creation of a spreadsheet that can be used to estimate benefits, impacts, and benefit-cost ratios for individual transit systems.

5.2. Funding Options

Funding for transit and supporting transportation technologies and programs is typically a combination of local and state taxes, federal funding, and fare revenue. The funding landscape is constantly evolving, especially during this unprecedented time of the COVID-19 pandemic. This section provides some background on transit funding in Arkansas and Oklahoma, an overview of FTA federal funding and a few resources on creative options to consider.

5.2.1. AASHTO Survey of State Funding for Public Transportation

Arkansas Department of Transportation

Between FY 2014 and 2018, state funding of public transit through the Arkansas DOT remained nearly the same at approximately \$3.5 million each year. During the same period, the federal formula amounts for public transit generally increased (except for a decrease between FY 2017 and FY 2018) with \$38.3 million reported for FY 2018. According to the *FY 2018 AASHTO Survey – Program Overview*, the total Arkansas state transit funding was \$3.5 million for a total of 17 transit systems of which over \$3.1 million comes from “5% of sales tax on short-term vehicle rentals” and over \$346,000 comes from “Corporate Franchise Fee”. There are no restrictions on the eligible uses for state transit funding. In comparing FY 2014 with FY 2018, the total state funding decreased 0.7% and the per capita funding decreased 2.2% from \$1.20 to \$1.17. The local transit funding sources include “city/county general funds,” “donations,” and “farebox revenue.” Local funding dollars were not included in the report. The *FY 2018 AASHTO Survey – Program Structure* reports over \$1.5 million total program funds for capital match and operating assistance for rural transit systems. This formula-based funding is based on three factors – operating costs, population, and ridership. For urban systems, there is a total of \$2 million for capital match and operating assistance that is also formula-based with the same three factors as rural systems. Additional general comments shared in the survey were that “5310 has a \$600,000

set aside to procure vehicles.” Urban agencies receive 60% and rural receive 40% of the remaining funds.

Oklahoma Department of Transportation

Between FY 2014 and 2018, state funding of public transit remained the same at \$5.75 million each year. The federal formula amounts for public transit generally increased (except for a decrease between FY 2017 and FY 2018) with \$58.7 million reported for FY 2018. The major sources for overall transit funding in Oklahoma are gas tax (14.8%), state transportation fund (33%), and income tax revenue (52.5%). There are no restrictions on the eligible uses for state transit funding. In comparing FY 2014 with 2018 for state transit funding, the total funding remained unchanged, but the per capita funding decreased 1.6% from \$1.48 to \$1.46. There are 24 transit systems in Oklahoma. The State Public Transit Revolving Fund receives dedicated funding from the fuel tax and income tax revenue. The survey results indicated that local funding sources include local sales taxes, city/county general funds, donations, service contracts, and advertising.

5.2.2. FTA formula grants

The FTA provides annual formula grants, which are typically distributed to state DOTs and then to transit agencies, as described in the previous section. A list of current grants can be found at <https://www.transit.dot.gov/grants>

5.2.3. FTA competitive grants

In addition to formula grants, FTA also provides competitive grants that are available to agencies as well as cities and states. Over the past four years, the federal government has launched several innovation grant programs to assist transit agencies and communities in experimenting with new technologies. A few examples of innovation grants include:

- [*Accelerating Innovative Mobility \(AIM\)*](#), which is intended to drive innovation in the transit industry by promoting forward-thinking approaches to improve financing, system design, and service.
- [*Integrated Mobility Integration program*](#) and the [*Mobility on Demand Sandbox Demonstration Program*](#).

In response to increasing interest from the transit industry in partnering with on-demand, shared mobility services such as ride-hailing companies, the FTA has identified [FAQs](#) about funding eligibility under federal public transportation law for FTA grant programs, like the Urbanized Area and Rural formula programs.

The project team drafted an application for Helping Obtain Prosperity for Everyone (HOPE), one of the competitive FTA grants. While the grant was not submitted, it was a learning experience in the importance of developing relationships with partners and the information may be used for future applications when the time is right.

The FTA maintains an [email update system](#) to enable one to stay apprised of various programs. Another way to stay apprised of funding options is through communications from transit-oriented organizations such as the Community Transportation Association of America (CTAA).

5.2.4. Other Federal Funding

The Coordinating Council on Mobility Management (CCAM) has a couple of funding resources. The [CCAM Cost-Sharing Policy Statement](#) recommends transportation cost-sharing to encourage greater state and local funding coordination. Fully coordinating transportation through vehicle and ride sharing for Medicaid, aging, and other human service transportation trips can result in a 10-percent increase in passengers per hour, which can create significant cost savings for federal, state, and local agencies.

The [CCAM Program Inventory](#) identifies 130 Federal programs that are able to provide funding for human services transportation for people with disabilities, older adults, and/or individuals of low income. In 2018 and 2019, CCAM agency representatives determined which programs to include via internal agency program validation efforts and the CCAM Program Analysis Working Sessions.

5.2.5. Local Match

Communities receiving Federal funds need local match. While many communities find match in their local budgets, rural communities are often challenged to find local match. There are some federal programs that provide funding that can serve as a local match. The FTA outlines these programs in an [FAQ](#). They include transportation assistance programs from the Older Americans Act and Temporary Assistance for Needy Families (TANF).

In June 2020, the Coordinating Council on Access and Mobility (CCAM) published the [Federal Fund Braiding Guide](#). This guide defines Federal fund braiding for local match and program eligibility to enable Federal agencies and Federal grant recipients to more effectively manage Federal funds and coordinate human service transportation. Federal fund braiding for local match, also referred to as Federal fund braiding, is when funds from one Federal program are used to meet the match requirements of another. The term “braiding” describes multiple independent funding streams coming together to fund a single project.

In March 2020, Congress passed the Coronavirus Aid, Relief, and Economic Security (CARES) Act, which provided \$25 billion in [transit funding](#) that can be used at a 100% match for all operating expenses. “Transit agencies can use these funds to make up for lost revenue, cover cleaning expenses, and personal protective equipment as well as launch new programs to address essential worker transit and meal delivery - including microtransit” (Via 2020) . Ben Franklin Transit (BFT) in Washington launched [BFT Connect](#) in April, a new on-demand transit service that is, in part, paid for with CARES Act funding (Via 2020).

5.2.6. Creative Funding Options

An NCHRP report titled *Use of In-Kind as Match for Federal Transit Administration Awards* (Wagner, King et al. 2020) serves as a reference on how to use in-kind as match for FTA awards. It explores potential options for use of in-kind as match, incorporates information from a survey

of state departments of transportation, case studies, and discussion with FTA staff. One of the case studies describes how the Missoula Ravalli Transportation Management Association (MR TMA) in Montana used a long-term lease of land from the University of Montana as in-kind match for the construction of a transit facility.

Another NCHRP report titled *Cross Modal Investments* (Claney, Libberton et al. 2017) describes examples of funding acquired by or intended for one mode can be used to support another mode. The purpose of this guide is to share best practices and potential issues with agencies to enable them to determine whether a cross modal investment may fund a capital project or sustain operating and maintenance of a new or existing transportation system. The funding opportunities described are generated from non-transit revenues, such as roadways, highways, toll roads, freight and intercity passenger rail, ports, and air. “Such cross modal investments in the form of gas taxes, motor vehicle fees, toll revenues, port usage fees, and passenger facility charges have been used to advance transit projects of all sizes across the United States that otherwise may not have been funded. Complementary to this resource guide is a searchable cross modal funding database, which provides additional detail and examples of cross modal funding options and successful uses of these tools across the United States.”

The Rural Health Information Hub maintains a list **of federal agencies and programs that provide funding for transportation.**

Link: <https://www.ruralhealthinfo.org/toolkits/transportation/6/federal-funding>

The RHI Hub also contains links to both **Arkansas and Oklahoma specific funding and opportunities:**

Arkansas Link: <https://www.ruralhealthinfo.org/toolkits/transportation/6/federal-funding>

Oklahoma Link: <https://www.ruralhealthinfo.org/toolkits/transportation/6/federal-funding>

One last creative funding idea is to look into the state lottery program. Section 4.1.5 mentions that the funding source of the TNC trips is the Pennsylvania Shared Ride Program which is funded through the Commonwealth’s lottery.

6. LITERATURE REVIEW KEY REFERENCES AND SUMMARY

Chapters 2 through 5 presented a literature review of topics relevant to this study as follows:

Chapter 2 - Rural Regional Mobility

Chapter 3 - Medical Transportation

Chapter 4- Transportation Technologies & Programs

Chapter 5 - Transit Cost Benefit and Funding Options

In this chapter, authors present a summary table of key references and attempt to distill relevant findings based on the literature review. Table 12 presents a short list of relevant references that a mobility manager may use for more information on various categories discussed within the literature review. The titles contain a link to access the documents online and the table shows which publications contain case studies and which ones serve as toolkits.

Table 12: Literature Review Summary Table: Key References

Author	Title	Publication Year	Case Studies	Toolkit
Mobility Hubs & Mobility on Demand				
Shared-use Mobility Center	Webinar: Lessons Learned from the MOD On-Ramp Program: MOD for Mobility Integration	2020		
Mobility Management				
Birnie et al.	Mobility Managers - Transportation Coordinators for Older Adults, People with Disabilities, Veterans, and Other Members of the Riding Public	2019	X	
NCHRP Project 20-65 (68)	Expanding Access to Our Communities: A Guide to Successful Mobility Management Practices in Small Urban & Rural Areas	2018	X	X
KFH Group & Cambridge Systematics	Research Report 861: Best Practices in Rural Regional Mobility	2017	X	
Regional Coordination and Planning				
Ohio Department of Transportation	RTPO White Paper, Access Ohio 2045	2018		
Overman et al.	Rural Planning Organizations - Their Role in Transportation Planning and Project Development in Texas	2011		
Medical Transportation				
Ellis et al.	Dialysis Transportation: The Intersection of Transportation and Healthcare	2019	X	
Health Outreach Partners	Transportation & Health Access: A Quality Improvement Toolkit	2019		X

Author	Title	Publication Year	Case Studies	Toolkit
Health Outreach Partners	Rides to Wellness Community Scan Project	2017	X	
Health Outreach Partners	Overcoming Obstacles to Health Care - Transportation Models that Work	2017		
National Academies of Sciences, Engineering, and Medicine	Guidebook and Research Plan to Help Communities Improve Transportation to Health Care Services	2020	X	X
Transportation Network Companies (TNCs)				
Curtis et al.	Partnerships Between Transit Agencies and Transportation Network Companies (TNCs)	2019		X
Godvarthy et al.	Opportunities for State DOTs (and others) to Encourage Shared-Use Mobility Practices in Rural Areas <i>(Also contains info on ridesharing-carpool/vanpool, Shared Use Mobility and Mobility as a Service)</i>	2019	X	X
Transportation Vouchers				
Association of Programs for Rural Independent Living	Toolkit for Operating a Rural Transportation Voucher Program	2017		X
Villwock-Witte et al.	Deep East Texas Council of Governments Transportation Voucher Program	2019	X	
Volunteer and Community Based				
Hendricks & Audino	Liability Issues of Volunteer Driving Programs	2011		
NRTAP	Getting Started: Creating a Vision & Strategy for Community Transit	2017		X
NRTAP	Volunteers in Transportation: Some Issues to Consider	2018		
Seekins et al.	Faith-Based Organizations: A Potential Partner in Rural Transportation	2008		
Carsharing & Shared Use Mobility				
Rodier & Podolsky	Shared-Use Mobility Services Can Improve Access and Reduce Costs in Rural Disadvantaged Communities	2020	X	
Funding				
Claney et al.	Cross Modal Investments	2017		

Author	Title	Publication Year	Case Studies	Toolkit
Mattson et al.	Measuring the Economic Benefits of Rural and Small Urban Transit Services in Greater Minnesota	2020		
Wagner et al.	Use of In-Kind Match for Federal Transit Administration Awards	2020		

6.1. Summary

“There are three key elements in transportation: vehicles, money, and models for organizing the two so that people can get where they need to go effectively and efficiently. Models are important because they describe how to bring resources and people together; how a system can operate routinely,” (Association of Programs for Rural Independent Living 2017). Some models, such as “Mobility as a Service” (MaaS) are mostly dependent on technology while others, such as voucher programs, do not require much more than formal agreements and paper.

The transportation industry continues to explore how to leverage transformational technologies and applications to influence how businesses and individuals use public right of way, curb space, parking, intermodal transfer facilities, and transform the movement of people and goods (National Academies of Sciences and Medicine 2020). Meanwhile, many rural communities are facing challenges such as lacking infrastructure, i.e. cell phone towers, for personal communications devices and/or having lower broadband subscription rates compared to urban areas. The “expansion of high-speed, high-capacity internet” was identified as a key infrastructure priority by a federal task force on agriculture and rural prosperity (Perdue 2017). The NASM report identifies Arkansas as one of the states with the lowest percentage of households connected to broadband internet service (less than 70 percent of households).

Therefore, the research team acknowledges the current barriers in the project area for accessing technology and applications. Furthermore, no amount of technology can replace a safe, reliable, and affordable transportation program. However, as these unique challenges facing rural areas are solved over time, the use of technology and applications in closing mobility gaps becomes more realistic. Until then, many of the models outlined in Chapters 2 through 5 may still be able to address mobility needs even before the “expansion of high-speed, high-capacity internet” arrives.

In summary, research is on-going to address the need for transportation options and filling mobility gaps in rural communities. Several themes emerged from the reviewed literature:

- Shared Use Mobility (SUM) programs can fill in rural mobility gaps by offering reliable transportation with less resources compared to traditional transportation models such as fixed route systems.
- Collaboration and partnerships among both traditional and non-traditional partners are foundational to starting or expanding transportation options in rural communities.
- Obtaining a clear understanding of the transportation needs of a community and addressing transportation-disadvantaged populations first will improve the long-term success of a program.

- Pilot programs allow for evaluation and adaptation of systems.
- Limited resources are not unique to this project study area. Often times, creative funding mechanisms can provide the capacity necessary for demonstrating the feasibility of a program and improve the likelihood of securing long-term, sustainable funding.
- There is not a one-size-fits-all or right answer to addressing mobility gaps in rural communities.
- The COVID-19 pandemic has impacted public transportation programs but there is still a need to offer services for people experiencing transportation barriers.

7. SUMMARY OF WEBINAR AND VIRTUAL WORKSHOP

This section describes goals and outcomes of a September webinar and an October small group workshop. The project team conducted a two-hour **webinar on September 25, 2020** intended to update stakeholders on work completed to date including transportation needs and potential solutions identified for the study area. During the webinar, the project team presented an overview of the project and partners, highlights of demographics and transportation needs, and potential mobility options that may be feasible in the study area. Three guest speakers shared their experience and knowledge of transportation solutions that could work well in the study area.

- Ross Silvers, Mobility Manager at Pinellas Suncoast Transit Authority in Pinellas County Florida discussed the Transportation Disadvantaged Late Shift Program, a TNC case study using public/private partnerships (as outlined in Section 4.1.4).
- Patty Cantrell, Chief Community Development Officer at New Growth community development corporation discussed the Rides to Health and Wealth Program: Building rural transportation in west central Missouri (which uses the HealthTran program discussed in Section 2.2.1)
- Holly Keenan, Mobility Manager at Lutheran Social Services of Wisconsin and Upper Michigan discussed the Winnebago Catch-a-Ride Rural Mobility as a Service Program in Wisconsin (as outlined in Section 4.8.1).

The webinar was attended by approximately 35 people and the recording can be accessed by visiting https://westerntransportationinstitute.org/research_projects/technical-assistance-for-rural-transportation-systems-connecting-rural-transportation-with-economic-opportunity-arkansas/

The project team then conducted a two-hour “**small group” workshop on October 20, 2020**, intended to bring stakeholders together to prioritize transportation needs and determine which pilot projects may be most feasible. It was aimed at introducing local partners to each other and learning from local experience and knowledge of transportation issues. Attempts were made to hold this workshop in person. However, it was held online using the WebEx format due to COVID-19. Informed by the September 25th webinar and a review of project Background and Literature Review (as shown in Chapters 1-6), participants discussed transportation needs and which solutions are of the most interest to pursue for pilot project implementation. Thirteen people participated in the workshop including local mayors and personnel from WAPDD and Frontier MPO, Mercy Medical, and Fort Smith Transit as well as representatives from Hamilton House, 100 Families initiatives, and United Way of Fort Smith.

This workshop was led by David Kack, Executive Director at WTI. The workshop began with introductions, followed by a presentation called *Implementing New Mobility Options in the Region*. Participants were then split into two groups and asked to discuss seven questions, which were provided a week in advance. After the 45-minute break out, the two groups came back together and presented results from their discussions, which are summarized herein.

1. How is someone you know that is facing transportation barriers able to travel around the region?

They rely on family, SouthEast Trans (Medicaid) & family members, Mercy Medical’s (Non-Emergency Medical Transportation (NEMT) service, carpooling/ridesharing (faith based, word of mouth), walk/bike (in Fort Smith) as well as friends. Area Agency on Aging (seniors).

An elderly mother with a walker uses on demand service, which seems hit or miss. A friend working early shift tried on demand, though it did not work out as well as hoped.

Fort Smith Transit does a good job and makes the best system with the resources available. Fixed routes do not work well after nightfall, demand response would be better. People can catch a ride going home a lot easier than going to work. Patients use the on-demand bus. Fort Smith Transit provides certain number of tickets for patients and does a good job getting patients to appointments on time.

2. Is there a program outlined in the Literature Review that would be of greatest benefit to the person you know currently facing transportation barriers?

- Vouchers with taxi company (Foundation funding), fuel cards.
- Vans at homeless centers/facilities to help get folks to/from work. Vans to get students to classes.
- Car share (church in Fort Smith may already have one), could be used for medical transportation.
- Programs with a monthly fee, offering a certain number of rides would be great for patients. NEMT is \$60 for one trip to dialysis center, which is not affordable. Cost sharing and voucher programs.
- Volunteer programs where a client pays a certain amount per trip, then some per mile for transportation. Medical programs (like HealthTran) could work well. Some may not be practical for day to day rides, however.
- Transportation for people who do not have cars that want to work (like Wisconsin Catch a Ride Program). Consider how to be more proactive with legislators to come up with state funding to help. It would help economy if we have more transportation.
- Pinellas County - TNCs like Uber/Lyft to complement transit agencies could meet needs for later in evening or further out into region. A downside is that TNCs often do not meet funding requirements such as drug/alcohol testing and recording statistics. Hoping to see more of nexus between TNCs and transit agencies, where they would comply w/ federal requirements and be able to use federal funds. Would like to see project to use TNC for part of service. While a paratransit bus may be needed for dialysis, rides for job access later in evening, may not need lift equipped van and could be handled by Uber or Lyft.

3. How can you and/or your organization be a part of breaking down transportation barriers for members of the rural community?

- Mercy Medical has 3 vans and wants to hear about issues.
- Building partnerships and working with low-income individuals (Heather-Sebastian County Coordinator for 100 Families Initiative, United Way of Fort Smith Area);

- Planning efforts (grant funds), coordinate and move toward implementation, provide info/one-stop shop (Reese- Frontier MPO);
- Relationships & contacts, keep momentum going (Mayor Martin)
- WAPDD - work to reduce stigma issues for public transportation. Could have people ride that do not normally ride. Change perceptions so that public transportation is not viewed as an indication of income/status, rather just something we use in Fort Smith.
- Kim with Hamilton House in Crawford County- Willing to help and play a role when we know more about what will be put in place.
- Ken at Fort Smith Transit-Help orient people where the busses are with real time bus tracking system.
 - Customer Portal: <https://fortsmith.routematch.com/customer/>
 - Fixed Route : <https://fortsmith.routematch.com/fixedroute/>
 - RouteShout : <https://fortsmith.routematch.com/routeshout/>

4. From your viewpoint, what are the highest priority transportation/mobility needs in the area?

- Job access and access to social services (20% lack high school equivalency);
- Healthcare (including mental health);
- Access to education (both higher ed, and adult education-GED).
- Having enough resources/funding to have gas for a longer trip (may be able to afford local trips).
- Trips from rural areas into Fort Smith (first mile/last mile); return trip back to rural areas

5. Who else should be part of this discussion?

DPHHS, County, Area Agency on Aging, Chamber of Commerce, Fort Smith Regional Alliance (community development organization).

6. What solutions sound feasible to develop/pilot?

Using the library as a carshare location, also provides internet access.

7. Are we ready to hire a Mobility Manager to help move this project forward?

In general, we ran out of time to discuss questions 6 and 7.

In summary, the September webinar provided an update on the project to stakeholders, which included new participants who had not been previously involved. The October small group workshop engaged stakeholders in conversation about priorities and possible pilot projects. It is anticipated this is the beginning of developing relationships and continuing conversations on how best to address rural transportation issues.

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8. CONCLUSION AND RECOMMENDATIONS

Chapter 1 presented background information, key demographics and a trends analysis, transportation needs assessment, and existing transportation options and resources. Rural residents from the Arkansas counties of Crawford, Franklin, Sebastian, Logan, Scott, and Polk, as well as the Oklahoma counties of Sequoyah and Le Flore often rely on services and opportunities within the urban boundary of Fort Smith, Arkansas. Table 13 shows demographic indicators often used to predict transit ridership and populations at risk of becoming transportation disadvantaged. These values indicate higher concentrations of transportation-disadvantaged groups in portions of the study area and suggest there is greater need for improved transportation options.

Table 13: Key Demographic Summary

Transportation Disadvantaged Indicator	Eight County Average	U.S. Average
Poverty	21.3%	12.4%
Age 65 or older	18.4%	15.2%
Persons with disabilities	21.4%	12.6%

Data from the 2014-2018 American Community Survey 5-year estimates

Within the six Arkansas counties, there is one urbanized public transit system, one rural public transit system, and 14 specialized paratransit systems. There is one rural public transit system and two tribal transit agencies that provide service to the two Oklahoma counties. Focus groups and community experts indicate that the transportation needs of rural residents are not met with available services. Existing rural transit providers shared with researchers that they have little to no capacity to advertise services or coordinate with outside agencies in order to improve resource utilization and more efficiently meet the needs of riders.

As discussed in Section 1.3, both state level Arkansas and Oklahoma transit planning documents recommend appointing a regional mobility coordinator (ARDOT, 2018; Parsons Brinckerhoff, 2012). The Mobility Manager Handbook (K. Rosenberg, 2010) was created to support regional efforts to improve coordination of transportation services in the study area.

Chapters 2 through 6 consist of the literature review for this project. Chapter 2 presents information on rural regional mobility including: best practices, mobility hub concepts, mobility management and regional coordination and planning. The concept of a “virtual” hub is a place where people can find information online and/or call a mobility manager. A virtual hub has more flexibility to evolve and adapt to customer needs over time than a physical hub. Rural transportation planning is often viewed as a means to support economic development. Transportation planning/mobility management for rural areas outside of urban focused MPOs (such as Frontier MPO) often fall within the purview of existing economic development organizations (such as WAPDD). In summary, information presented in Chapters 1 and 2 support hiring a mobility manager. Chapter 2 provides guidance and resources to inform the process.

Chapter 3 presents resources on access to medical care, which is a significant issue in the study area and across the U.S. Chapter 4 summarizes technologies and programs that could help connect people in rural communities surrounding Fort Smith, Arkansas to health care, higher education, and employment. Chapter 5 discusses benefit-cost ratios of rural transit and provides funding resources. Chapter 6 attempts to distill key findings from the literature review presented in the previous chapters. Chapter 7 provides a summary of a webinar and a small group workshop intended to inform stakeholders and engage them in discussions to clarify transportation needs and identify which solutions are of most interest in the study area.

There is not a one-size-fits-all or one right answer to addressing mobility gaps in rural communities. The following recommendations are a starting point. There are various transportation programs that could be implemented over time that are outlined in Chapters 3 and 4. Implementation timing will depend on local champions, developing partnerships and identifying funding opportunities.

1. **Hire a regional mobility manager.** Mobility management consists of short-range planning, management activities and projects for improving coordination among public transportation and other transportation service providers (FTA Circular page III-10).
 - As part of the planning process, a mobility manager can continue to strengthen public/private partnerships among existing rural/urban/tribal transit providers and with regional employers, medical professionals, non-profits, and faith-based organizations.
 - A mobility manager can work toward implementing pilot projects such as voucher programs, volunteer driver programs, rural carshare or models like TNC/transit partnerships, or shared used mobility programs. These programs can address economic development by improving access to jobs and higher education for rural residents currently facing transportation barriers.
 - Mobility management is an eligible use of FTA Section 5307 (small urban) and 5311 (rural) funds, and Arkansas/Oklahoma DOTs may have funds available given the use of CARES act funding over the past year in response to COVID-19. Details regarding Mobility Management for the FTA Section 5311 program are outlined in FTA Circular 9040.1G on pages I-4; II-3; III-10 and III-15. Page III-15 also notes the match requirements for capital projects (80% Federal funds). Appendix C contains an example work plan that may inform a mobility manager position.
2. **Explore methods to connect more people with rides on the Western Transit System.** WTS is a rural transit system operated by the Area Agency on Aging of Western Arkansas (AAAWA). Transportation managers at AAAWA expressed that while they have many ideas regarding improving the service, they have little capacity to advertise services or coordinate with outside agencies to improve resource utilization and more efficiently meet the needs of riders. For example, many people are not aware that the system is not just for older adults and people with disabilities.
 - Reach out to local colleges to help rebrand WTS and develop marketing materials. Develop an eye-catching brand/logo that could be displayed on vans, website, and

- other marketing materials. Re-design website to increase WTS visibility and raise awareness that the service can be used by anyone needing a ride to school, work, medical, shopping, and/or social events. National RTAP has information on building websites at <https://www.nationalrtap.org/Web-Apps/Website-Builder>.
- Arkansas Tech’s marketing programs including a Digital Marketing Track and a Marketing Strategy Track. The University of Arkansas at Fort Smith has a Bachelor of Business Administration with Concentrations in Consumer and Digital Marketing that could be another source of support for WTS marketing.
3. **Create a 5-year transit development plan for the AAAWA’s Transportation Services (WTS and NEMT).** Review existing service to identify patterns, offer strategies to increase efficiency and improve coordination and service for riders. Evaluate existing proprietary scheduling system and explore new software/options to coordinate with other scheduling systems in the area (such as Fort Smith Transit’s Routematch system). Planning is an eligible expense for FTA 5311 funds.
 4. **Pilot a new transportation program.** Take an incremental approach, choosing one program for the mobility manager to focus on and allow time for evaluation and adaptation. Depending on which local champions are most engaged, how partners come together and contribute, and how funding sources are identified and used, certain projects will rise to the top. Consider starting with one of the following pilot programs:
 - Public/private partnership with a TNC (Uber or Lyft) or taxi service to supplement existing transit systems to get people to work for third shift/after hours and to reach beyond existing transit service boundaries.
 - Transportation voucher program.
 - Volunteer driver program.
 5. **Start now and build on momentum from this feasibility study.** Set up an ongoing meeting time and place to continue discussions and building relationships with partners and local champions. The feasibility of a program or technology will depend on local champions, coordination, partnerships, funding, and other factors. A list of people who expressed interest in or contributed to this study by attending a stakeholder meeting, or participated in an interview, webinar, or workshop is shown in Appendix D. This may serve as an initial contact list of local partners and champions that can help a mobility manager to move transportation initiatives forward. This list contains many of the key stakeholders recommended by a mobility management checklist in *Expanding Access to our Communities: A Guide to Successful Mobility Management practices in Small Urban and Rural Areas* (NCHRP, 2018) shown below.

Transportation Providers

- Public transit providers
- Private transportation

Planning Agencies

- County and other local planning departments
- Regional planning agencies
- State-level agencies

Passengers and Advocates

- Existing and potential customers, targeted populations (individuals with disabilities, older adults, veterans, and people with lower incomes)
- Advocacy organizations such as centers for independent living and transportation rider groups
- Volunteer groups, community organizations, and foundations
- Tribes, faith-based groups, and organizations representing ethnic groups

Human Service Partners

- Agencies that administer health, aging, housing, employment, or other support programs for targeted populations
- Human service organizations that serve targeted populations
- Job training and placement agencies
- Housing agencies
- Food banks

Healthcare Providers

- Hospitals
- Healthcare centers
- Doctor’s offices
- Dialysis treatment centers

Private Industry

- Employers
- Developers of new retail, residential, and educational facilities

In closing, there are many resources throughout this document that were used to inform these recommendations. “Smart” transportation models that depend on technology such as MaaS have potential to help fill gaps in rural transportation. However, technology on its own cannot solve complex transportation issues; it must be integrated into existing programs and be accompanied by local champions to ensure safe, reliable, and affordable transportation programs. A mobility manager is a critical piece of the puzzle to maintain communications among partners and lead a focused effort for improved coordination and program implementation.

“Plans are worthless, but planning is everything”

President/General Eisenhower

“I have been impressed with the urgency of doing. Knowing is not enough; we must apply. Being willing is not enough; we must do.”

Leonardo Da Vinci

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APPENDIX A: LARGE EMPLOYERS IN THE STUDY AREA

The largest employers across the eight counties are concentrated in a few key industries: higher education, poultry processing, healthcare, and casinos (Table 14). Several large employers within the Frontier MPO remain beyond the reach of the Fort Smith Bus System (Figure 11).

Table 14. Largest Employers in the Study Area

Employer Name	Industry	County
Experian Consumer Direct	Call center	Crawford
Consolidated Printing	Commercial printing	Crawford
Pepper Source Limited	Condiments and sauces (mfg)	Crawford
Citizens Bank & Trust Company (multiple locations)	Financial institutions	Crawford
Community Health Systems (CHS)	Health care	Crawford
Victoria Healthcare Properties LLC	Health care	Crawford
Lowe’s Companies	Home centers	Crawford
Simmons Foods	Poultry processing	Crawford
Tyson Foods	Poultry processing	Crawford
Alma School District	Public schools	Crawford
Cedarville School District	Public schools	Crawford
Mountainburg School District	Public schools	Crawford
Van Buren School District	Public schools	Crawford
McDonald’s Corporation (multiple locations)	Restaurants	Crawford
Sonic Drive-In (multiple locations)	Restaurants	Crawford
Walmart Stores	Retail department stores	Crawford
Stepping Stone School	Special academic schools	Crawford
Dancor Transit	Trucking	Crawford
USA Truck	Trucking	Crawford
Bekaert Corporation	Wire products (mfg)	Crawford
Arkansas Tech University – Ozark Campus	Colleges/universities	Franklin
Arkansas Valley Electric Cooperative Corporation	Electric companies	Franklin
Bank of the Ozarks (multiple locations)	Financial institutions	Franklin
SGL Carbon LLC	Graphite electrodes (mfg)	Franklin

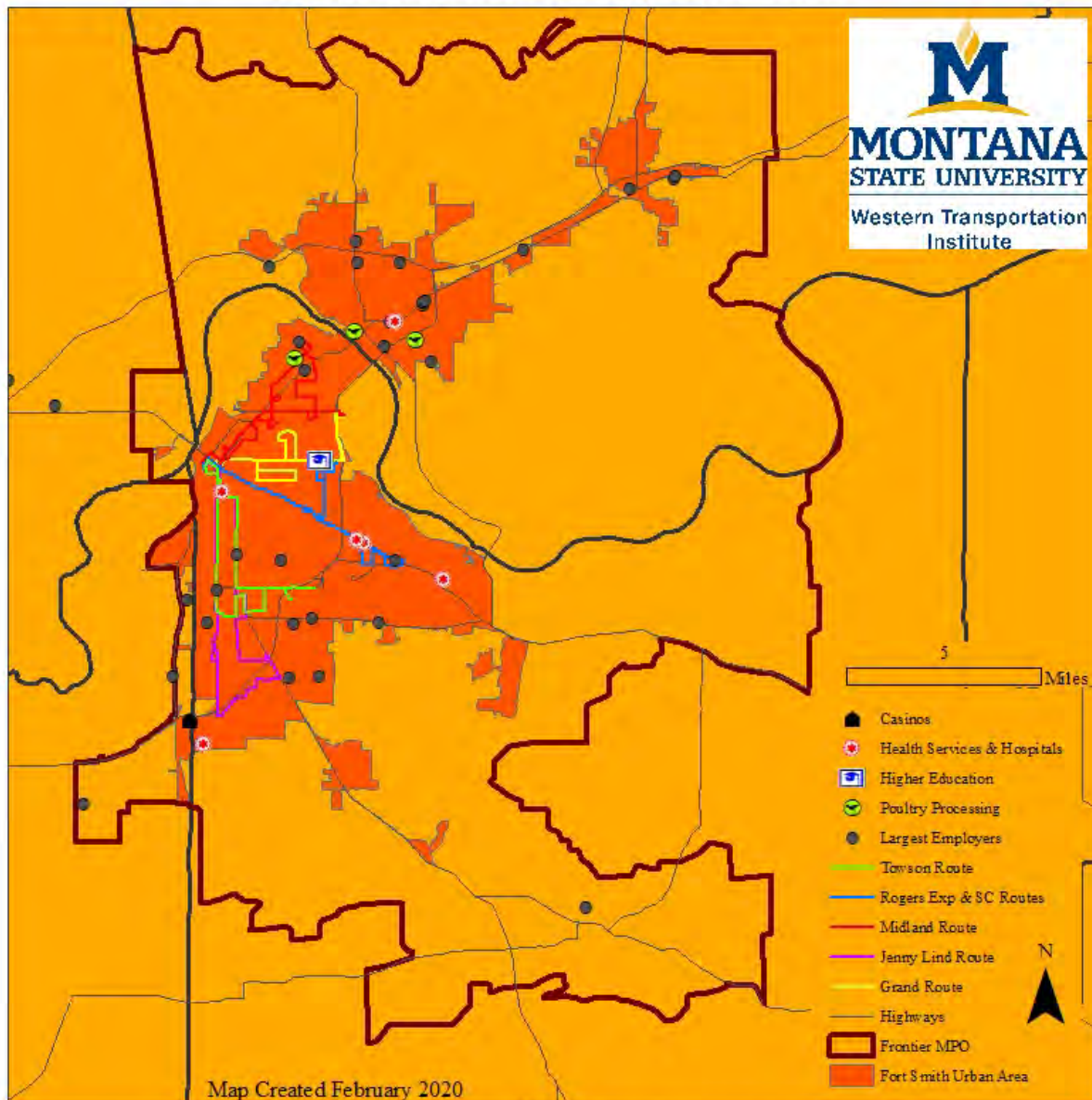
Employer Name	Industry	County
Mercy Hospital Ozark	Health care	Franklin
Baldor Electric Company	Integral horsepower A.C. motors (mfg)	Franklin
Black Hills Energy	Natural gas distribution	Franklin
Greenhurst Nursing Center	Nursing and convalescent homes	Franklin
Ozark Nursing Home, Inc.	Nursing and convalescent homes	Franklin
Butterball, LLC	Poultry processing	Franklin
Charleston School District	Public schools	Franklin
County Line School District	Public schools	Franklin
Ozark School District	Public schools	Franklin
Walmart Stores, Inc. (2 locations)	Retail department stores	Franklin
CV's Family Foods, Inc. (IGA)	Retail grocery stores	Franklin
Community State Bank	Bank	Le Flore
Choctaw Casinos	Casinos	Le Flore
Choctaw Hotel & Casino	Casinos	Le Flore
Choctaw Nation Health Service	Clinics	Le Flore
Carl Albert State College	Colleges/universities	Le Flore
Walmart Supercenter	Department store	Le Flore
Blake Construction	General contractor	Le Flore
Jim E Hamilton Correctional	Government	Le Flore
Oaks Healthcare Center	Health services	Le Flore
Eastern Oklahoma Medical Center	Hospital	Le Flore
Midwest Automation	Industrial equipment	Le Flore
Jamatt RV	Recreational vehicle dealer	Le Flore
Pocola Public School Office	School districts	Le Flore
Poteau School Superintendent	School districts	Le Flore
Spiro Public School Superintendent	School districts	Le Flore
Wister Jr-Sr High School	Schools	Le Flore
Je Systems	Security systems	Le Flore
Stark Manufacturing LLC	Aluminum headers for automotive a/c's	Logan

Employer Name	Industry	County
Cloyes Gear and Products, Inc. (2 locations)	Automotive timing gears & sprockets	Logan
Mercy Hospital (2 locations)	Health care	Logan
Tyson Foods, Inc.	Meal; poultry, poultry fat and feather	Logan
Oak Manor Nursing and Rehabilitation	Nursing and convalescent homes	Logan
Paris Health and Rehabilitation	Nursing and convalescent homes	Logan
Booneville School District	Public schools	Logan
Magazine School District	Public schools	Logan
Paris School District	Public schools	Logan
Scranton School District	Public schools	Logan
McDonald’s Corporation (2 locations)	Restaurants	Logan
Sonic Drive-In (2 locations)	Restaurants	Logan
Wal-Mart Stores, Inc. (2 locations)	Retail department stores	Logan
CVs Family Foods – IGA (2 locations)	Retail grocery stores	Logan
Rockline Industries, Inc.	Wet wipes (mfg)	Logan
Southwest EMS, Inc.	Ambulance service	Polk
Street and Performance, Inc.	Automotive parts (mfg)	Polk
Union Bank of Mena	Banking institutions	Polk
Sterling Machinery Company, Inc.	CNC milling and turning/machine shop	Polk
Rich Mountain Community College	Colleges/universities	Polk
Nidec Motor Corporation	Electric motors (mfg)	Polk
Mena Regional Health System	Health care	Polk
Rich Mountain Nursing & Rehabilitation Center	Nursing and rehabilitation centers	Polk
Tyson Foods, Inc.	Poultry processing	Polk
Cossatot River School District	Public schools	Polk
Mena School District	Public schools	Polk
Ouachita River School District	Public schools	Polk
McDonald’s Corporation	Restaurants	Polk
Walmart Stores, Inc.	Retail department stores	Polk

Employer Name	Industry	County
Smith Pallet Company, Inc.	Wood pallets, boxes, and crates (mfg)	Polk
STI Cems Services LLC	CEMS/COMS equipment (mfg)	Scott
Arkansas Valley Electric Cooperative Corporation	Electric companies	Scott
Mercy Hospital Waldron	Health care	Scott
Waldron Nursing Center, Inc.	Nursing and convalescent homes	Scott
Tyson Foods, Inc.	Poultry processing	Scott
Waldron School District	Public schools	Scott
McDonald’s Corporation	Restaurants	Scott
Walmart Stores, Inc.	Retail department stores	Scott
Harp’s Food Stores, Inc.	Retail grocery stores	Scott
WeighTec, Inc.	Scales (mfg)	Scott
The Trane Company (two locations)	Air conditioning (mfg)	Sebastian
Rheem Manufacturing Company, Inc.	Air conditioning equipment (mfg)	Sebastian
Gerber Products Company	Baby foods (wholesale & mfg)	Sebastian
University of Arkansas Fort Smith	Colleges/universities	Sebastian
Mercy Hospital - Fort Smith (multiple locations)	Health care	Sebastian
Baptist Health (previously Sparks Health System) (multiple locations)	Health care	Sebastian
Valley Behavioral Health System	Health care	Sebastian
Baldor Electric Company (multiple locations)	Motors and generators (mfg)	Sebastian
Golden Living (GGNSC) (<i>may not be here anymore or if they are, they have very small workforce per Frontier MPO</i>)	Nursing and convalescent homes	Sebastian
Kraft Heinz (Planters Company)	Nuts and snacks (mfg)	Sebastian
Georgia-Pacific (Fort Smith – Dixie)	Paper products (mfg)	Sebastian
Cooper Clinic, PA (2 locations)	Physicians and clinics	Sebastian
OK Foods, Inc (two locations)	Poultry processing	Sebastian
Fort Smith School District	Public schools	Sebastian
Greenwood School District	Public schools	Sebastian

Employer Name	Industry	County
McDonald's Corporation (multiple locations)	Restaurants	Sebastian
Wal-Mart Stores, Inc. (multiple locations)	Retail department stores	Sebastian
Bost Human Development Services (multiple locations)	Schools; handicapped and special needs	Sebastian
Gerda MacSteel	Steel - bar, sheet, strip, tube (mfg)	Sebastian
ARCBest Corporation (multiple locations)	Trucking	Sebastian
Gardenwalk of Roland	Apartments	Sequoyah
Cherokee Casino Roland	Casinos	Sequoyah
Cherokee Casino Sallisaw	Casinos	Sequoyah
Sequoyah Manor LLC	Convalescent homes nursing	Sequoyah
Walmart Supercenter	Department store	Sequoyah
Public Safety Dept	Government	Sequoyah
People Inc	Group homes	Sequoyah
Sequoyah Memorial Hospital	Hospital	Sequoyah
Ltc Solutions PLLC	Long term care nursing	Sequoyah
O K Foods Inc	Poultry processing	Sequoyah
Roland Superintendent's Office	School districts	Sequoyah
Vian School District	School districts	Sequoyah
Muldrow Public Schools	Schools	Sequoyah

**A "Smart" Transit Hub in Rural Western Arkansas and Eastern Oklahoma Feasibility Study:
Largest Employers in Frontier MPO - Key Industries**



Sources:

State Boundaries & Highways - USDOT National Transportation Atlas Database

County & Urban Area Boundaries - US Census Bureau 2019 TIGER/Line Shapefiles

Frontier MPO Boundary & Fort Smith Bus System - Frontier MPO

Largest Employers - Compiled Using Information from Arkansas Economic Development Commission & Oklahoma Department of Commerce

Notes:

Geocoding Completed Using USCB Geocoder - Nonmatches Manually Approximated Using Google Maps

Only One Location Per Business Included Within Each County

Health Services & Hospitals Includes Hospitals, Physicians & Clinics, Nursing, Rehabilitation, & Convalescent Homes, Ambulance Services, & Other Health Care Providers

Figure 11: Largest Employers in Frontier MPO

APPENDIX B: TRANSPORTATION PROVIDER DETAILS

Fort Smith Transit

6821 Jenny Lind Road
Fort Smith, AR 72902

Primary Contact: Ken Savage, Transit Director

Phone: 479-783-6464

Fax: 479-494-7347

E-mail: transit@fortsmithar.gov

Website: www.fortsmithar.gov/index.php/departments/transit

Days and Hours of Operation:

Fixed Route:

7:00 a.m. – 6:00 p.m. (M-S)

Demand Response/Paratransit:

5:30 a.m. – 7:00 p.m. (M-F)

7:00 a.m. – 7:00 p.m. (Sat)

Service Area: City of Fort Smith

Fort Smith Transit (FST) began operations in June of 1996 providing safe, prompt and dependable transportation to the people of Fort Smith. The system is owned and operated by the City of Fort Smith which is governed by a seven member Board of Directors and a five member Transit Advisory Commission. FST operates six fixed routes, a free downtown trolley route, as well as three demand response/paratransit service vehicles.

*2010 Census Data



Characteristics of Transportation System

Vehicles

Fixed Route	7
Demand Response	3

Base Fare

Fixed Route	\$1.25
Paratransit	\$2.50
Demand Response	\$3.00

Personnel (Operating) 33

Operation Class Fixed & Demand

***System Population** 86,209

Funding Class Small Urban

Total Operating Cost	\$2,253,855	Cost Per Mile	\$4.98
Ridership	258,946	Cost Per Passenger Trip	\$8.70
Annual System Miles	452,669	Annual Vehicle Hours	30,739
Passenger Trips Per Mile	0.57	System Square Miles	62

NTD 2017 DATA

Figure 12: Fort Smith Transit - Urban Transit System Details (ARDOT, 2019, p. 11)

Western Transit System (WTS)

524 Garrison Avenue
Fort Smith, AR 72901

Primary Contact: David Joplin, Transportation Director
Phone: 479-783-4500 ext. 2211
Fax: 479-783-5539
E-mail: pjoplin@agingwest.org
Website: <https://agingwest.org/transportation>

Days and Hours of Operation: Monday-Friday
Hours vary, call for schedule.

Service Area: Conway, Crawford, Franklin, Johnson, Logan, Perry,
Polk, Pope, Scott, Sebastian and Yell Counties.

Western Transit System (WTS) initiated public transportation service in 2011. Sponsored by the Area Agency on Aging of Western Arkansas, Inc., WTS recognized the transportation needs of all rural residents in its service area. This program offers mobility and connects the citizens of these very rural, economically depressed regions with various kinds of services including medical, social, nutritional, and recreational as well as shopping, bill paying, and employment opportunities.

By expanding its mission from services to seniors, WTS will improve access to transportation in rural areas to all citizens which will in turn make it possible for opportunities to seek employment, shopping and medical and personal services.

Characteristics of Transportation System

Vehicles	10	Operation Class	Demand
Personnel	7	Funding Class	Rural
Base Fare (round trip)	\$6.00	System Population	280,548

Total Operating Cost	\$162,845	Cost Per Mile	\$1.76
Ridership	2,666	Cost Per Passenger Trip	\$61.08
Annual System Miles	92,678	Annual Vehicle Hours	4,710
Passenger Trips Per Mile	0.03	System Square Miles	7,514



Figure 13: Western Transit System Details (ARDOT, 2019, p. 28)

Table 15: Arkansas Organizations Receiving FTA Section 5310 Paratransit Funds Details (ARDOT, 2019)

Organization	Clientele	Service Area	Purpose
Abilities Unlimited of Fort Smith	Disabled	Sebastian County	To help individuals recognize their abilities, improve their quality of life, and become productive members of their community.
Area Agency on Aging of Western Arkansas, Inc.	Disabled	Crawford, Franklin, Johnson, Logan, Polk, Pope, Scott, Sebastian, Yell, Conway, Perry Counties.	To assist older individuals in maintaining desired lifestyles through accessible and affordable alternatives.
BOST, Inc.	Disabled, Employment, and Low Income	Crawford, Logan, and Sebastian Counties.	Empowers people with disabilities, and their families, to achieve greater independence by providing lifelong choices, support and learning opportunities
Forrester-Davis Development Center, Inc.	Disabled	Johnson and Logan Counties	Provide educational/habilitative services, including work center activities, to developmentally disabled adults.
Franklin County Learning Center, Inc.	Disabled	Franklin County	In operation since 1972 providing education and training to individuals with special needs in Franklin County
Franklin County Senior Citizen Center, Inc	Seniors	Franklin County	To establish a group of concerned, knowledgeable citizens elected to assist the area planning agency in developing a program of comprehensive services for older people, and to implement the plan to make the program a reality
Organization (cont.)	Clientele	Service Area	Purpose

Logan County Day Service Center for Limited Children, Inc.	Disabled	Franklin, Logan, Scott, Sebastian Counties.	To provide facilities and opportunities and operate and maintain schools and classes for the education and training of those whose needs are not provided in the public-school system.
Non-Ambulatory Transportation Service, Inc	Seniors and Disabled	Crawford, Logan, Scott, and Sebastian Counties.	To provide a low-cost transportation service for the disabled and seniors.
Polk County Development Center, Inc.	Disabled	Montgomery and Polk Counties.	Dedicated to providing services to the developmentally disabled citizens of Montgomery and Polk Counties so that they may live as independently as possible in the least restrictive environment.
Quapaw House, Inc.	Disabled	Many counties including Crawford	Dedicated to compassionately providing comprehensive behavioral health prevention, treatment, and education services to clients, families, and communities. Committed to providing high quality affordable programs that utilize a therapeutic and holistic approach that enriches their lives and quality of life they live.
Scott County Senior Citizens, Inc.	Seniors and Disabled	Scott County.	To provide assistance to seniors and disabled in any way that is needed.
Stepping Stone School for Exceptional Children, Inc	Disabled	Crawford County.	To provide assistance to the needy members of the communities in the area. To help families escape poverty, while striving toward a self-sufficient lifestyle
Organization (cont.)	Clientele	Service Area	Purpose

Western Arkansas Counseling and Guidance Center, Inc.	Disabled	Sebastian, Crawford, Logan, Franklin, Scott, and Polk Counties	Dedicated to providing comprehensive treatment of adolescent chemical dependency and coexisting psychiatric problems, utilizing an interdisciplinary approach.
Yell County Special Service Center, Inc.	Disabled	Logan, Perry, Pope, Scott, and Yell Counties.	To help those with developmental disabilities to become independent and able to live successfully in the home and work environment.

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APPENDIX C: EXAMPLE MOBILITY MANAGER WORK PLAN

A regional mobility manager will have two main roles. The first is to coordinate regional transportation options based on the prioritized strategies developed in the Arkansas Statewide Transit Coordination Plan (ARDOT, 2018). The second role is to develop financial and technical plans to implement transportation pilot programs recommended in this Feasibility Study. Strategies from the Arkansas Statewide Transit Coordination Plan are noted in parentheses below.

In the first year, partners will identify and appoint a rural mobility manager (MM) (Strategy #6) and establish a regional coordination district to lead local coordination efforts (Strategy #7). Once the rural MM is in place and the coordination district established, the MM will work on the following strategies:

- Identify and contact agencies that could provide transportation in areas where transportation service gaps exist and provide support to secure funding and establish service (Strategy # 1). The MM will plan to “establish service” with new transportation choices for rural residents such as voucher programs, volunteer driver programs, and/or shared-use mobility programs like carsharing. The MM will develop financial and technical plans to pilot at least one new program.
- Develop informational materials to provide coordination examples and best practices to transportation providers (Strategy #2).
- Develop an online directory of services (e.g. maintenance) and trainings offered by transportation providers to other providers (Strategy #3).
- Develop an online map version of the public transportation directory (Strategy #4).
- Coordinate development of model contracts or agreements for sharing resources (Strategy #5).
- Organize reoccurring coordination work sessions that providers are required to attend (Strategy #8).
- Coordinate partnerships between providers to offer free/reduced transfers between services (Strategy #9).

First year deliverables include the strategies accomplished and a progress report outlining accomplishments, challenges, lessons learned and next steps. In year two, the MM will continue coordination efforts and implement one or two pilot programs. It is anticipated pilot programs may overlap with the following strategies from the Statewide Transit Coordination Plan (ARDOT, 2018).

- Establish a one-call/one-click transportation service center (Strategy #10).
- Establish a centralized volunteer driver program (Strategy #11).
- Establish a qualified driver application and job opening directory (Strategy #12)

Year 2 deliverables will include the strategies accomplished and progress report.

In year 3 the MM will continue implementation of pilot programs and evaluate program outcomes. Year 3 deliverables will include an evaluation of pilot programs implemented, strategies accomplished, and a progress report.

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APPENDIX D: STAKEHOLDER LIST

The following list includes people that have expressed interest in or contributed to this study by attending a stakeholder meeting, participating in an interview, webinar or workshop.

Affiliation or Organization	Name	Title
1. 100 Families Initiative	Karen Phillips	Director of Operations
2. Area Agency on Aging of Western Arkansas	David Joplin	Director of Transportation
3. Arkansas Department of Health	Nell Smith	Branch Chief, Health Systems Licensing
4. Arkansas DOT	Greg Nation	Administrator, Public Transportation Programs Section
5. Arkansas DOT	Christopher Dillaha	Transportation Planner (MPO Coordination)
6. Arkansas DOT	Chad Adams	District 4, District Engineer
7. Arkansas DOT	Marcus Rainwater	District 4, Construction Engineer
8. Arkansas Tech University - Ozark	Laury Fiorello	Chief Fiscal Officer-Ozark Campus
9. Cherokee Nation	Robert Endicott	Transportation Planner
10. City of Alma, AR	Jerry Martin	Mayor
11. City of Barling, AR	Steve Core	City Administrator
12. City of Fort Smith, AR	George McGill	Mayor
13. City of Fort Smith, AR	Jurena Storm	Government Affairs Liaison
14. City of Greenwood, AR	Sonny Bell	Planning and Development Director
15. City of Greenwood, AR	Doug Kinslow	Mayor
16. City of Lavaca, AR	Hugh Hardgrave	Mayor
17. City of Mulberry, AR	Gary Baxter	Mayor
18. City of Paris, AR	Daniel Rogers	Mayor
19. City of Van Buren, AR	Joe Hurst	Mayor
20. City of Van Buren, AR	Wally Bailey	Planning Director
21. City of Waldron, AR	Sherry Johnston	Clerk & Treasurer
22. City of Waldron, AR	David Millard	Mayor
23. Crawford County Adult Education Center	Debbie Faubus-Kendrick	Director
24. First Presbyterian of Fort Smith	Keley Simpson	Missions Facilitator
25. Fort Smith Transit	Ken Savage	Director
26. Fort Smith Transit	Lori Carr	Transit Superintendent
27. Hamilton House, Crawford County	Kim Whorton	

Affiliation or Organization	Name	Title
28. Highlands Oncology Group (Rogers AR) Previously at Mercy	Cara Cox	Office Operations Manager (according to LinkedIn Cara left Mercy in October)
29. Ki Bois Community Action Foundation	Redonna Perry	Operations Manager
30. Mercy Hospital	Teresa Nichols	Senior Recruiter
31. Mercy Medical	Father Paul Fetsko	Director of Ethics/staff chaplain
32. Mercy Medical Community Care Services	Leslie Maddox	Rural Community Health Care Worker
33. Regional Dialysis Center	Anna Mullis	Social Worker
34. Regional Dialysis Center	Elaine Brecher	Social Worker
35. Riverview Hope Campus	Chris Joannides	Executive Director
36. Sebastian County Department of Health	Joni Padilla	Health Information Specialist
37. Sebastian County Department of Health	Matthew Hicks	Administrator
38. United States Senate (AR)	Andrew Kelley	Legislative Correspondent
39. United Way of Fort Smith Area	Heather Edwards	Sebastian County Coordinator - 100 Families Initiative
40. United Way of Fort Smith Area	Charlotte Douglas	100 Families Crawford County Coordinator
41. University of Arkansas Fort Smith	Ken Warden	Dean of College of Applied Science & Tech
42. University of Arkansas Fort Smith	Terisa Riley	Chancellor
43. University of Arkansas Fort Smith	Jennifer Belt	Chief of Staff, Office of the Chancellor
44. WAPDD	Ashley Garris	Assistant Executive Director
45. WAPDD	Sasha Grist	Executive Director
46. WAPDD	Dennis Williamson	Director of Workforce Development
47. WAPDD	Tracee McKenna	Community Development
48. WAPDD	Cody Schindler	Transportation Planner
49. WAPDD / Frontier MPO	Reese Brewer	MPO Director

REFERENCES

- ARDOT (2019). Arkansas Public Transportation Directory. Publicly and Privately Owned Transit Administered by the Arkansas Department of Transportation.
- Arkansas Department of Transportation (2018). Arkansas Statewide Transit Coordination Plan.
- Association of Programs for Rural Independent Living (2017). "Toolkit for Operating a Rural Transportation Voucher Program."
- Birnie, D., et al. (2019). "Emerging Innovations: Mobility Managers."
- Birnie, D., et al. (2019). Mobility Managers: Transportation Coordinators for Older Adults, People with Disabilities, Veterans, and Other Members of the Riding Public.
- Brock, M., et al. (2018). Arkansas Health Professionals Manpower Statistics 2017. . Arkansas Department of Health.
- Claney, E., et al. (2017). Cross Modal Investments Final Report.
- Curtis, T., et al. (2019). Partnerships Between Transit Agencies and Transportation Network Companies (TNCs).
- Douma, F. and T. Garry (2013). "Vehicle Sharing Among Human Service Providers in Minnesota: Steps to Address Barriers."
- Eckhardt, J., et al. (2018). "MaaS in rural areas-case Finland." Research in Transportation Business & Management **27**: 75-83.
- Epstein, B. (2020). TD Late Shift Program
- Godavarthy, R., et al. (2019). "Opportunities for State DOTs (and others) to Encourage Shared-Use Mobility Practices in Rural Areas."
- Harley, D. A., et al. (2017). Disability and Vocational Rehabilitation in Rural Settings, Springer.
- Health Outreach Partners (2014). Outreach Across Populations: 2013 National Needs Assessment of Health Outreach Partners. Oakland, CA.

Hendricks, S. J. and M. J. Audino (2011). "Liability issues of volunteer driving programs." Transportation research record **2265**(1): 177-183.

Jang, S., et al. (2018). "Improving Quality of Life for Transportation Disadvantaged Older Adults through a Community-Based Healthy Buddy Program."

Keenan, H. (2020). Phone Call Regarding WCAR Outcomes & Lessons Learned.

KFH Group and Cambridge Systematics (2017). Best Practices in Rural Regional Mobility, Transportation Research Board.

Mattson, J., et al. (2020). Measuring the Economic Benefits of Rural and Small Urban Transit Services in Greater Minnesota.

Mistry, D., et al. (2019). Statewide Personal Mobility Needs for Oklahoma. Upper Great Plains Transportation Institute, Prepared for Oklahoma Transit Association. Small Urban and Rural Transit Center.

National Academies of Sciences, E. and Medicine (2020). "Foreseeing the Impact of Transformational Technologies on Land Use and Transportation."

National Cooperative Highway Research Program (2018). Expanding Access to Our Communities: A Guide to Successful Mobility Management Practices in Small Urban and Rural Areas.

Nelson Nygaard (2020). Oklahoma Public Transit Policy Plan.

Newsom, T. J. and D. F. Meyers (2011). "Tennessee vans: a user-based and financially-sustainable approach to develop community mobility resources." Journal of Public Transportation **14**(2): 5.

Nielson, R. (2018). Lawsuit Brings Liberty Mobility to a Halt. Yankton Daily Press & Dakotan. Yankton, SD.

NRTAP (2017). "Getting Started: Creating a Vision & Strategy for Community Transit."

NRTAP (2018). "Volunteers in Transportation: Some Issues to Consider."

ODOT (2018). "RTPO White Paper, Access Ohio 2045."

Overman, J., et al. (2011). Rural Planning Organizations-Their Role in Transportation Planning and Project Development in Texas.

Parsons Brinckerhoff (2012). Oklahoma Transit System Overview and Gap Analysis.

Payyanadan, R. P. and J. D. Lee (2018). "Understanding the ridesharing needs of older adults." Travel Behaviour and Society **13**: 155-164.

Perdue, S. (2017). Report to the President of the United States from the task force on agriculture and rural prosperity, USDA.

Pike, S., et al. (2017). "The Potential for Shared Use Mobility in Affordable Housing Complexes in Rural California."

RHHub "Rural Transportation Toolkit, Voucher Models."

RHHub (n.d.). "HealthTran Project Example." from <https://www.ruralhealthinfo.org/project-examples/859>.

Rodier, C. Email Correspondence

Rodier, C. and L. Podolsky (2017). "Opportunities for Shared-Use Mobility Services in Rural Disadvantaged Communities in California's San Joaquin Valley: Existing Conditions and Conceptual Program Development."

Rodier, C. and L. Podolsky (2020). Shared-Use Mobility Services Can Improve Access and Reduce Costs in Rural Disadvantaged Communities, Institute of Transportation Studies, UC Davis.

Rosenberg, K. (2010). Mobility Manager Handbook.

SAE (2018). Taxonomy and Definitions for Terms Related to Shared Mobility and Enabling Technologies, SAE International Warrendale, Pennsylvania, USA.

Schwieterman, J. P., et al. (2018). "Partners in transit: A review of partnerships between transportation network companies and public agencies in the united states."

Seekins, T., et al. (2008). "Faith-based organizations: A potential partner in rural transportation." Journal of Public Transportation **11**(1): 6.

Shaheen, S. C., Adam (2020). "Similarities and Differences of Mobility on Demand (MOD) and Mobility as a Service (MaaS)." ITE Journal(June 2020): 29-35.

Sochor, J., et al. (2018). "A topological approach to Mobility as a Service: A proposed tool for understanding requirements and effects, and for aiding the integration of societal goals." Research in Transportation Business & Management **27**: 3-14.

Sriraj, P., et al. (2018). "Mobility Management: State of the States Report."

SUMC (2020). "MOD On-Ramp Program Lessons Learned Webinar."

Via (2020). "Creative Ways to Fund On-Demand Public Transportation and Microtransit." from <https://ridewithvia.com/resources/articles/creative-ways-to-fund-on-demand-public-transportation-and-microtransit/>.

Villwock-Witte, N., et al. (2019). "Deep East Texas Council of Governments Transportation Voucher Program."

Wagner, D., et al. (2020). "Use of In-Kind as Match for Federal Transit Administration Awards."

Watkins, K., et al. (2019). "Analysis of Recent Public Transit Ridership Trends." TCRP Research Report(209).