Robeson County/SEATS Microtransit Feasibility Study

Final Report

December 2024

Presented by RLS & Associates, Inc. in partnership with the North Carolina Department of Transportation Integrated Mobility Division.

recognition of

Project Partners

- North Carolina Department of Transportation Integrated Mobility Division
- Robeson County
- South East Area Transit System (SEATS)
- City of Lumberton
- Lumber River Council of Governments
- NC Works
- Robeson Community College
- Robeson County Department of Social Services
- UNC Health Southeastern

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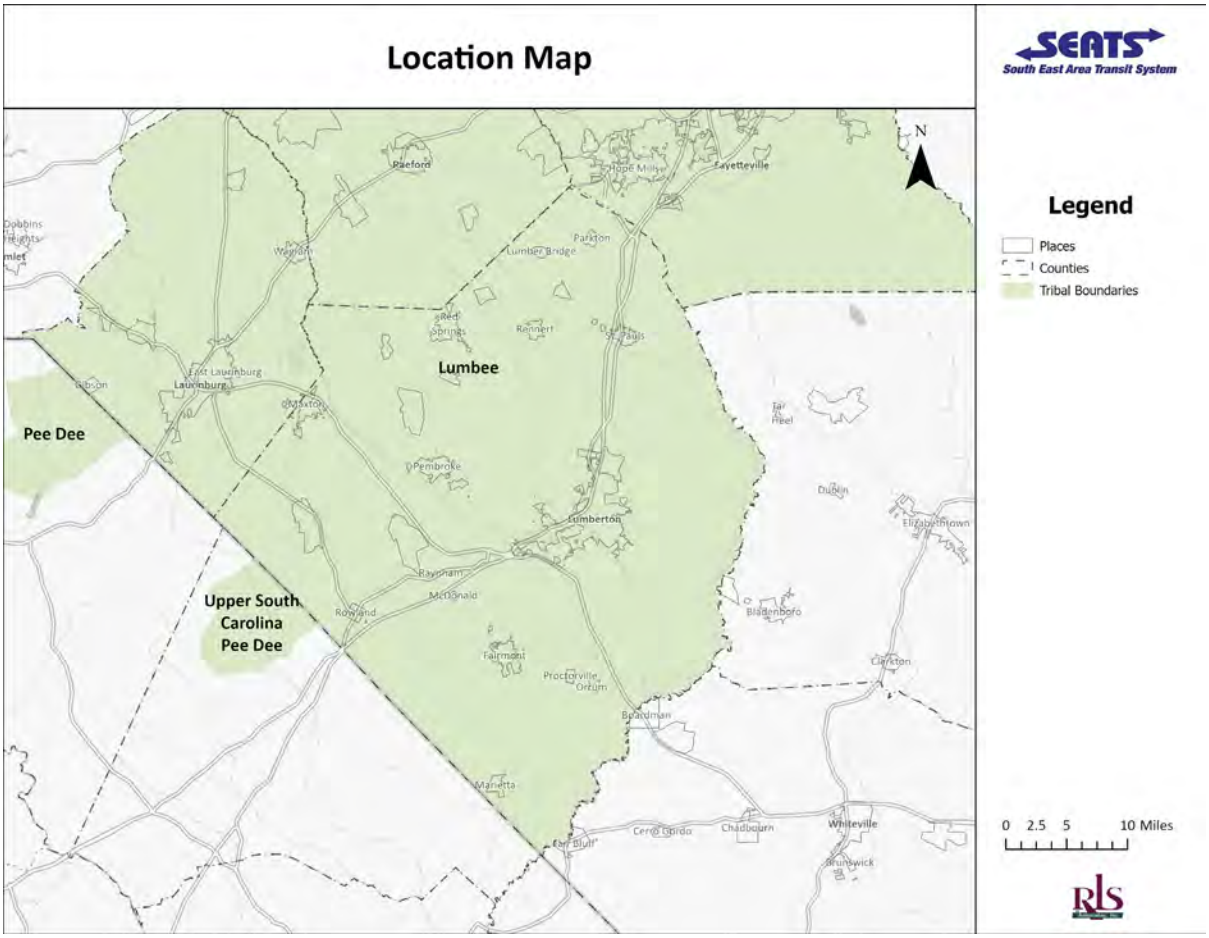
Introduction

Robeson County is located in south-central North Carolina and situated along the borderline of South Carolina to the south and west. The Lumber River traverses the central portion of the county through the City of Lumberton which serves as the county seat. The county has a total population of 116,530 and is the largest in the state in terms of land mass at approximately 947 square miles. The county encompasses 14 municipalities including cities, towns and villages, and is primarily rural in nature. The county's largest jurisdiction, City of Lumberton, has a population of just over 19,000 residents. The Towns of Red Springs and Pembroke are the next largest with a total combined population of approximately 8,000 residents.

Robeson County is served by South East Area Transit System (SEATS), which provides human service agency and rural general public transportation to Robeson County residents and visitors via demand response service. The majority of transportation services are concentrated within Robeson County; however, SEATS provides out-of-county medical trips to City of Fayetteville, Chapel Hill, City of Durham, Laurinburg, and Pinehurst. A map of the study area is depicted in Figure 1.

Figure 1. Study Area



Source: RLS & Associates, Inc.

Purpose

The North Carolina Department of Transportation (NCDOT) Integrated Mobility Division (IMD) engaged RLS & Associates to identify unmet transportation needs of Robeson County and determine the feasibility of a revised transportation service alternative: microtransit to meet current and future demand for Robeson County including City of Lumberton as well as the Towns of Fairmont, Parkton, Pembroke, Red Springs, and Saint Pauls. The study involves a comprehensive review of existing services and a strategic engagement campaign to garner feedback from existing customers and community members on transportation needs, service gaps, and use of public transportation services under a revised, on-demand service model.

Microtransit is a technology-enabled service that offers rides within a short window from when a customer requests a trip. Microtransit is a shared-ride service, so multiple passengers may ride together. Passengers are picked up shortly after a reservation is made; usually within thirty minutes to two hours after a request is submitted. Microtransit service is typically offered within a designated geographic area or zone, and passengers are typically

picked up and dropped off at a "virtual" stop or at the curb of their origin and destination.

The microtransit service delivery model has gained prominence in recent years. Transit providers across the United States have responded to shifts in economic conditions, travel patterns, and work schedules resulting from the COVID-19 pandemic through research and implementation of a more flexible, on-demand service delivery model into their portfolio of public transportation offerings. The convenience afforded under a microtransit service model provides an enhanced level of customer service while the use of smaller vehicles to deliver services can be an economical alternative to traditional transportation services, including fixed-route and demand response, particularly in small, more rural areas.

The work plan describes the methods and strategies used to meet the goals and objectives of the feasibility study. These activities, or tasks, were designed to ensure the final deliverable reflects the expectations of project partners including NCDOT IMD, Robeson County, and SEATS.

Study Organization

The scope of services was structured into a total of ten tasks, organized under two distinct phases, as presented.

Phase 1: Data Collection and Community Engagement

- Task 1: Document and Analyze the Existing Transportation Services in Robeson County
- Task 2: Convene Project Steering Committee
- Task 3: Implement Public Engagement Campaign
- Task 4: Analysis of Unmet Needs and Transportation Demand

Phase 2: Develop Recommendations and Determine Feasibility of Service under a Microtransit Model

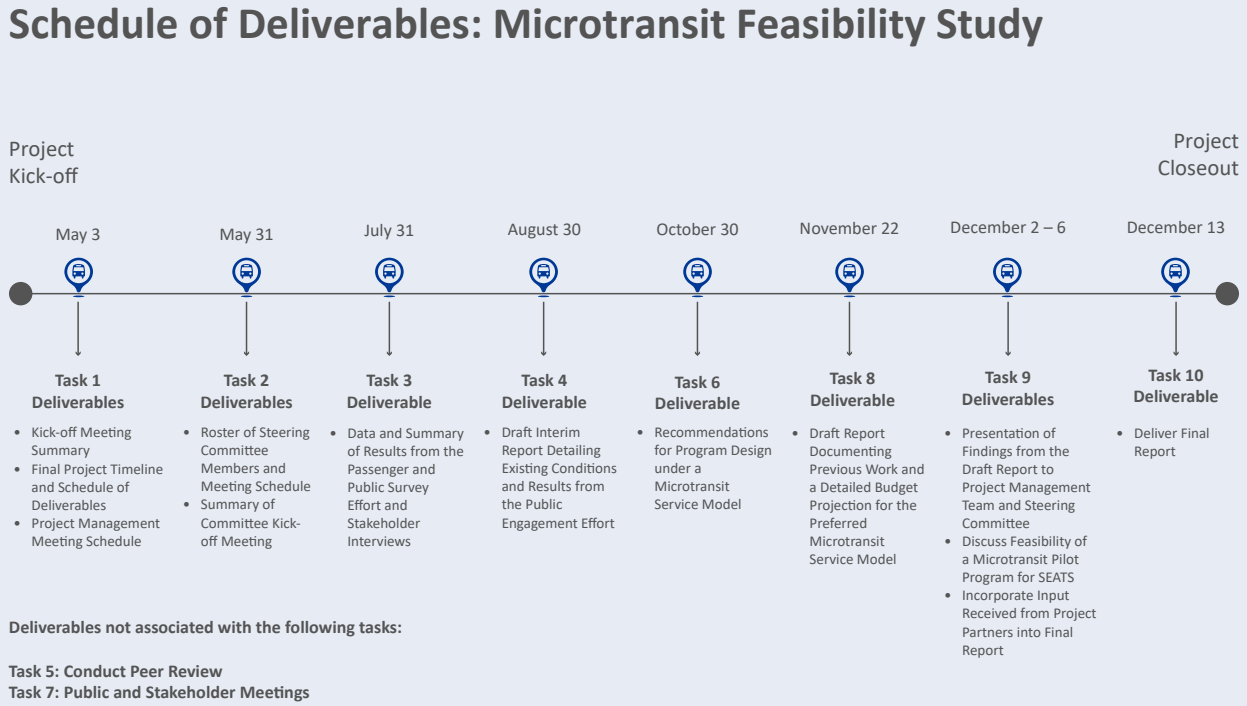
- Task 5: Conduct Peer Reviews
- Task 6: Develop Feasible Strategies to Meet Current and Future Needs under a Microtransit Model
- Task 7: Public and Stakeholder Meetings
- Task 8: Create Financial Projections and Forecast Ridership Demand
- Task 9: Determine Feasibility and Draft Implementation Plan
- Task 10: Deliver Final Report

The referenced tasks and associated subtasks were performed to address the feasibility study and lay out the strategic steps for implementation of the preferred service alternative under a microtransit pilot program. The data collected and analyzed under Phase I and results from the Peer Analysis conducted under Phase II of the study effort directly informed the recommendations on feasible service alternatives under an on-demand, more flexible service delivery model.

Project Timeline

The planning initiative was a seven-month endeavor. The project timeline and schedule of deliverables is illustrated in Figure 2 below. Dates reflect the 2024 calendar year.

Figure 2. Schedule of Deliverables



Existing Conditions Summary

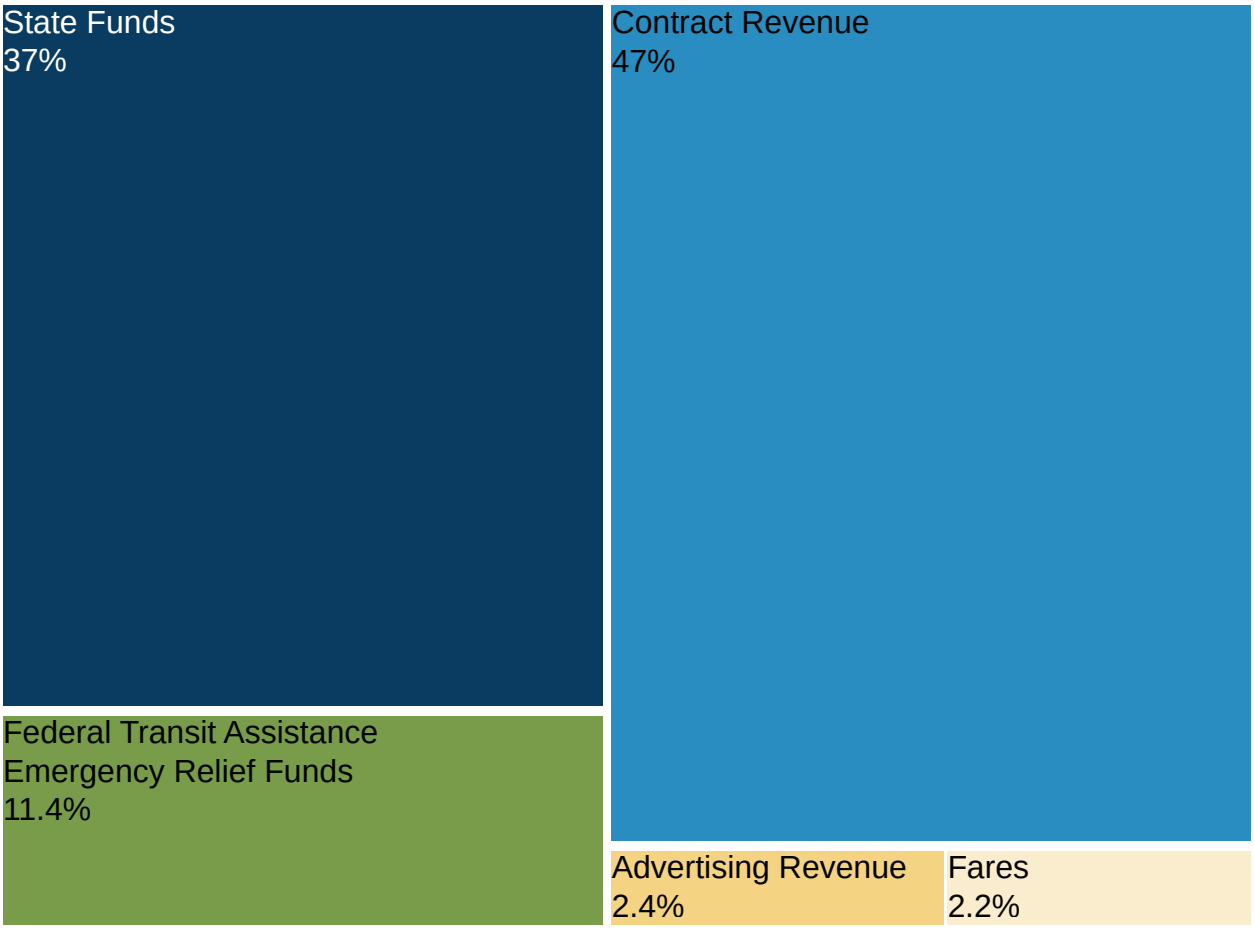
South East Area Transit System (SEATS) is the public transportation operator serving Robeson County. SEATS is the county's transportation program and a function of county government. SEATS offers coordinated non-emergency medical and general public transportation services to residents of Robeson County. SEATS operates origin-to-destination service six days a week, Monday through Friday from 5:30 AM to 5:30 PM, and Saturdays from 4:30 AM to 12:30 PM Trips occurring on Saturday account for 1 percent of the system's overall trips. Transportation is offered through advance reservation to the SEATS office no later than 12:00 PM the day prior to the requested trip. The majority of services are concentrated within Robeson County. Medical trips, however, are provided out of the county to surrounding areas.

This analysis of existing conditions provides insights on the nature of the existing SEATS organizational structure and services, including service delivery and consumption, system performance, local area demographics related to transportation needs, and input from elected officials, community stakeholders, Robeson County and SEATS personnel, transit users, and the general public. The existing conditions analysis laid the foundation for draft and final recommendation presented under this study. An overview of the results of the existing conditions analysis is presented herein. The full report is included as Appendix A of this document.

Operational and Financial Overview

SEATS operates with a $1.6 million annual operating budget and delivers approximately 41,000 rides to Robeson County residents and visitors per year. SEATS is funded primarily through North Carolina Department of Transportation funds provided to rural areas and contract revenues. SEATS received Federal Coronavirus Aid, Relief, and Economic Security (CARES) Act funding to support operations in fiscal years 2021 and 2022. The primary source of local match is revenue provided through SEATS's contract with Robeson County Department of Social Services (DSS) to operate non-emergency medical transportation for Medicaid clients. SEATS's revenue sources are illustrated in Figure 3. **As with many transit systems across the United States today, sustaining sufficient funding from Federal, state, and local sources is paramount to meeting local transportation needs and supporting future, on-demand services that may result from this study effort.**

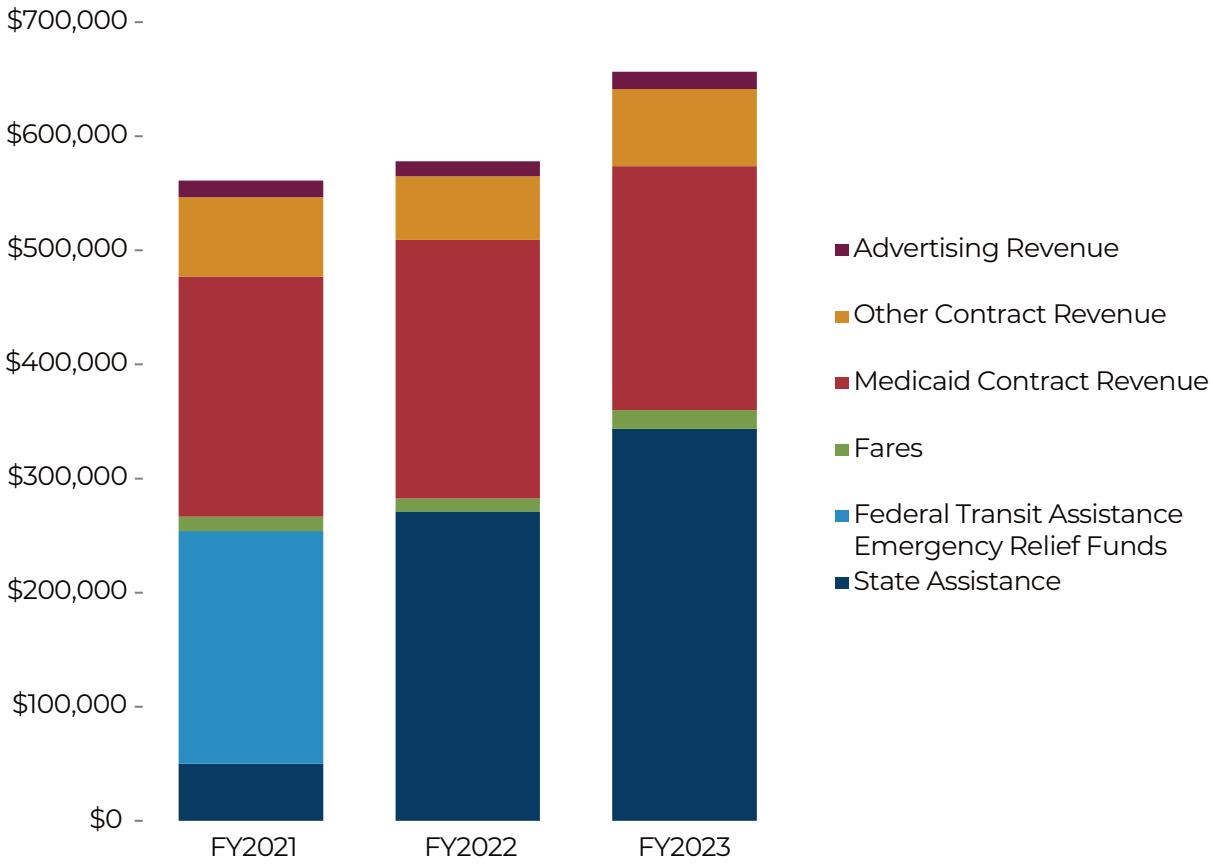
Figure 3. Revenue Sources, 2021 through 2023



Source: SEATS

The largest operating cost for SEATS is personnel, consisting of wages, and fringe benefits, which accounted for 73 percent of the total operating budget for fiscal year 2023. The second largest operating cost is miscellaneous expenses at 9 percent following by fuel at 8 percent of the total 2023 budget. Expenses under the miscellaneous category include, but are not limited to, onboard video surveillance equipment, and pest control, drug and alcohol testing, and vehicle cleaning services. Reduced expenses in 2020 and 2021 reflect service reductions due to the COVID-19 pandemic. Figure 4 illustrates the operating revenues over eight major categories from 2021 through 2023.

Figure 4. Total Operating Revenues, 2021 through 2023



Source: SEATS

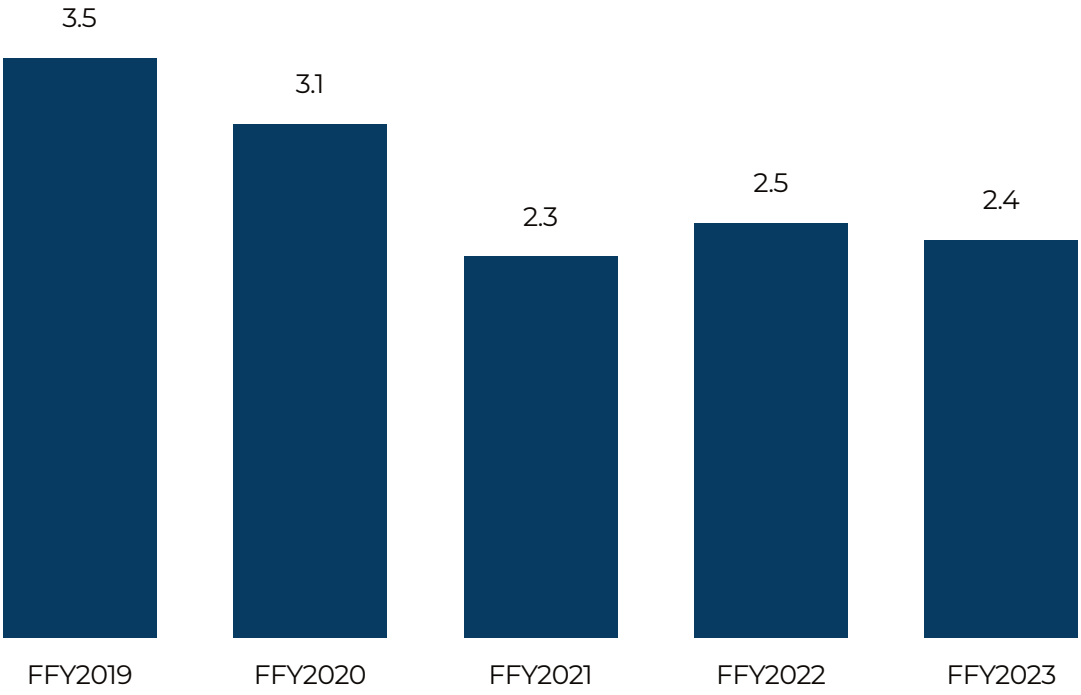
Annual ridership has declined since 2019 by approximately 31 percent due to the COVID-19 health pandemic; however, ridership trends from 2021 to 2023 have recovered to approximately 11 percent of pre-pandemic levels. With respect to service delivery, SEATS experienced a 3 percent decrease in annual revenue service hours from 2020 to 2021. The decline is attributed to the response to a reduction in the demand for transportation services. However, in 2023, hours saw an 8 percent recovery, with service hours exceeding 2019 and 2021 totals. The consistent trend in service delivery levels illustrates SEATS commitment in meeting customer demand and providing transportation services to the community during the COVID-19 pandemic. Shifts in travel patterns, work schedules, and community culture brought forth by the COVID-19 health pandemic have influenced recent trends in service delivery and consumption for SEATS. These shifts have forced many providers to identify the most effective service delivery model(s) under a post-pandemic landscape.

System Performance

System performance confirms the productivity and demonstrates the effectiveness of services delivered by SEATS. The performance of current services will serve as a baseline for assessing the performance of a new microtransit pilot program that might result from this study effort. Passenger trips per vehicle revenue hour is a measure of service effectiveness. The industry standard for average passengers per vehicle revenue hour for demand response service is between 1.8 to 2.5. The effectiveness of SEATS service exhibited over the past five years aligns with or exceeds industry standards at 2.5 passenger trips per revenue hour of service.

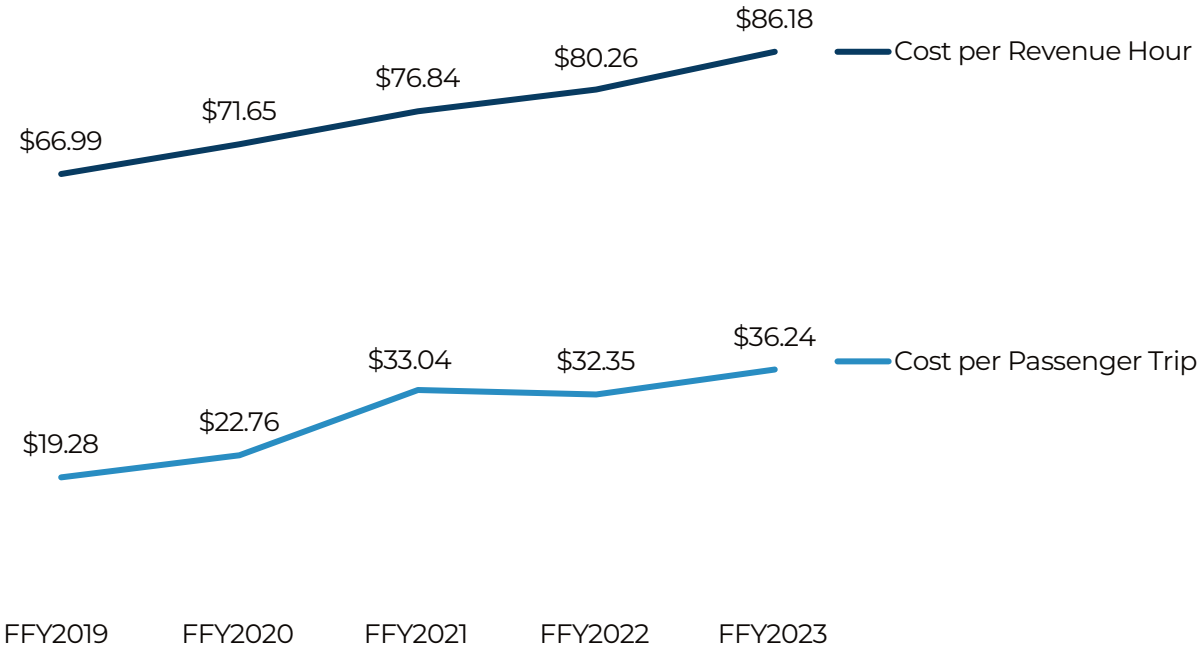
Data obtained from the National Transit Database (NTD) confirms that SEATS's performance in terms of service effectiveness, with an average of 2.4 passengers per revenue hour, and cost efficiency, with an hourly operating cost per hour of $86.18, is in line with industry standards for a rural, demand response system. The performance trends for SEATS services are depicted in Figure 5 and Figure 6, respectively.

Figure 5. Service Effectiveness: Passenger Trips per Revenue Hour, FFY2019 through FFY2023



Source: National Transit Database

Figure 6. Cost Efficiency: Cost per Revenue Hour and Passenger Trip, FFY2019 through FFY2023

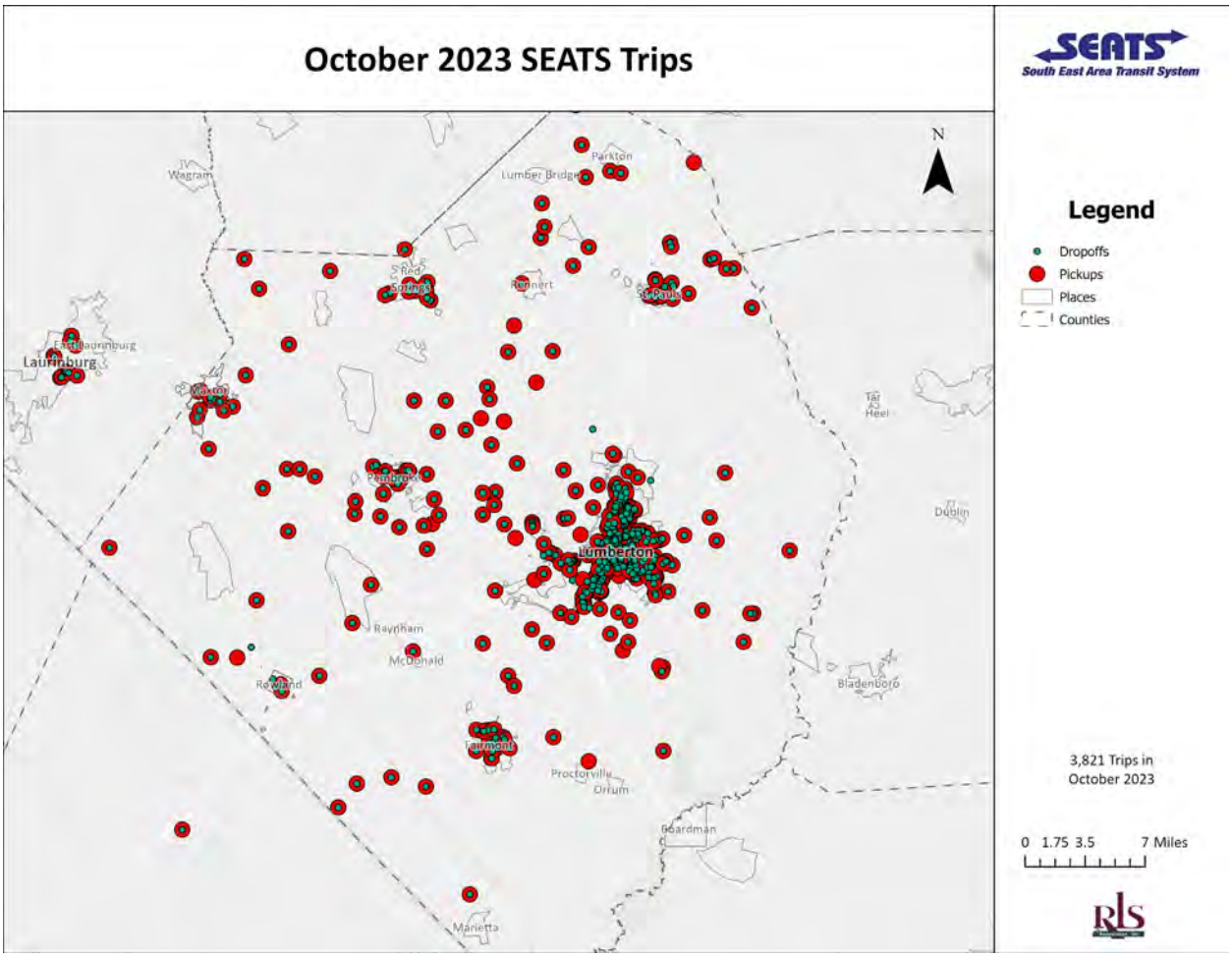


Source: National Transit Database

Overview of Travel Patterns

To understand the geographic locations of trip generators and the frequent customer destinations, SEATS offered a one-month sample of trips delivered during the month of October for fiscal year 2023. RLS analyzed trip origin and destination data for trips performed both in-county and out-of-county to understand current travel patterns for SEATS users. Trip origins and destinations for SEATS passenger trips within the sample period are illustrated in Figure 7 below.

Figure 7. Trip Origins and Destinations, October 2023



Source: SEATS and RLS & Associates, Inc.

SEATS delivered 3,821 trips within the one-month sample period, approximately 95 percent (3,624) of which were performed within the county and 5 percent (197) delivered to locations outside of the county. Approximately 27 percent (1,048) were non-emergency medical transportation (NEMT) trips for Medicaid recipients. A total of 444 (12 percent) NEMT trips originated *and* terminated *within* Lumberton.

Table 1 below illustrates the trips that occurred *within* each jurisdiction. Fifty percent of the total trips performed during the sample period occurred in Lumberton. **This data is integral to the planning process as microtransit programs with demonstrated successes in rural communities maintain smaller service zones concentrated around local jurisdictions.**

Table 1. Trips Performed by Municipality, October 2023

Location	In-town Trips Performed (Trips originating and terminating within the jurisdiction)	Cross-County Trips Performed (Trips originating or terminating within the jurisdiction)
Lumberton	1,933	2,546
Pembroke	65	175
Red Springs	60	117
Fairmont	38	128
Maxton	0	43
St. Pauls	0	43
Rowland	0	13
Parkton	0	0
Robeson County	Total Trips Performed During Sample Period	3,624
Out-of-County	Total Trips Performed During Sample Period	197

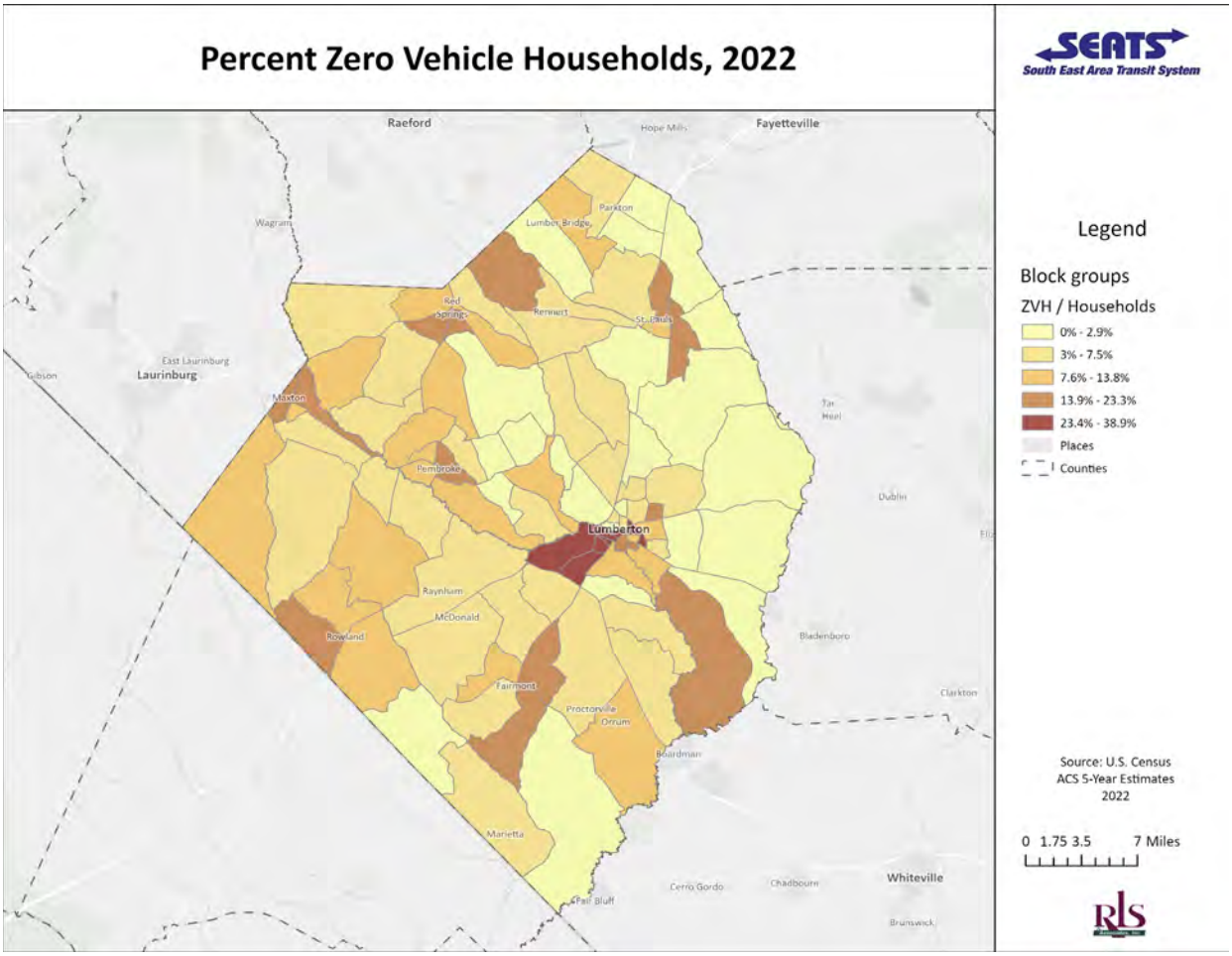
Source: SEATS

Summary of Demographic Analysis

The demographic analysis is instrumental in understanding the various factors influencing the demand for public transportation service. Results from the demographic analysis revealed that there is potentially more demand for transit in the central portion of the county near Lumberton, the southwestern portion of the county near Fairmont, the northern portion of the county near Red Springs, and the southeastern portion of the county adjacent to the Whiteville boarder due to higher poverty and lower vehicle ownership rates.

Within Robeson County, there are an estimated 43,716 households, of which about 3,568 (8.2 percent) households do not have access to a vehicle. Figure 8 illustrates the concentration of zero-vehicle households throughout the study area. Areas with the highest percentages of households (between 23.4 to 38.9 percent) with zero vehicles available are located in the central portion of the county, in the western portion of Lumberton. Block groups with the second lowest percentage of service households are located on the periphery of the county along the border of neighboring communities including Raeford, Laurinburg, Whiteville, and South Carolina.

Figure 8. Percentage of Zero Vehicle Households



Lumberton is the county's hub for government and social services. Employment data reveals the majority of employment opportunities are concentrated in and around the county seat. The primary destination for survey respondents who use SEATS for work, medical, shopping, and other reasons is Lumberton. The data supports a need for in-town and cross-county transportation to the county seat. **A microtransit service delivery model is well suited for short trips, at 4 miles or less. Advanced reservation service is appropriate for longer trips, especially those connecting Lumberton to the smaller towns and cities.**

Summary of Public and Stakeholder Input

A formal public engagement campaign was established under the study effort. The campaign was organized under two defined phases. Phase I was implemented in June 2024 following the formal kick-off of the study effort. The objective was to garner feedback from area stakeholders, SEATS customers, community members, and SEATS personnel on primary needs and current gaps in transportation services. Phase II occurred in October 2024. The objective was to garner feedback on the proposed recommendations for service alternatives under a microtransit service delivery model.

The community survey effort deployed under Phase I of the public engagement campaign yielded a total of 381 responses with a target response rate of 300 to 500. Questions on the survey instrument ranged from basic demographic data of respondents to travel patterns, use and awareness of SEATS services, ease of securing transportation services, use of smartphone technology, and utilization of a more flexible, on-demand public transportation service alternative.

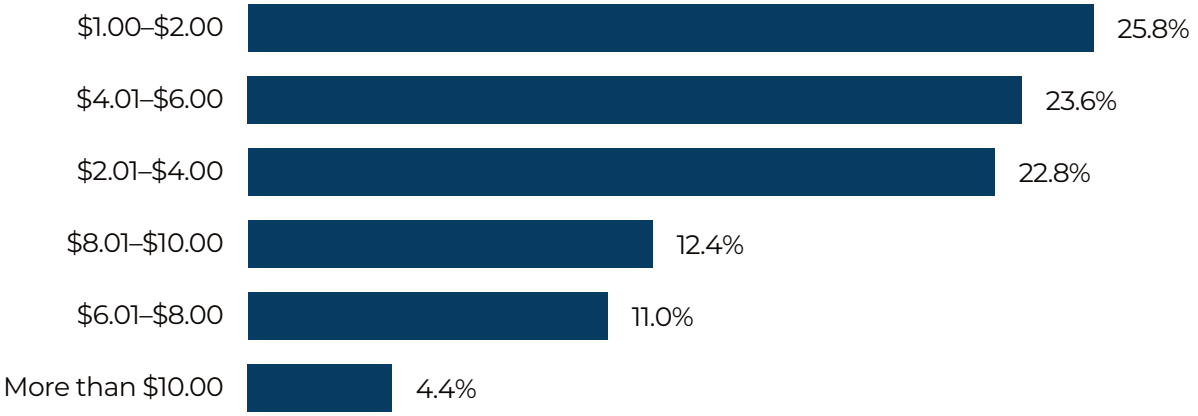
Approximately 6 percent of survey respondents were current SEATS users; however, the majority of respondents (76.2 percent) indicated that an on-demand microtransit service alternative would be of benefit to Robeson County, as shown in Figure 9.

Figure 9. Survey Responses for "How Helpful Would a Microtransit Service Option be for Robeson County?"

Of the 6 percent of survey respondents who indicated they use SEATS as their primary mode of transportation, approximately 70 percent confirmed they use and have access to a smartphone. However, the majority (49.1 percent) responded they would not use a smartphone to schedule and pay for microtransit services. The need to maintain a low-tech option for trip schedule and fare payment was confirmed though the survey effort and substantiated by feedback received through the stakeholder interview effort.

When comparing the one-way, adult fare for SEATS's current, advanced reservation service ($2.00 per trip) to what respondents expressed they would be willing to pay for an enhanced service, there appears to be a tolerance for higher fares for a more personalized service. The majority of survey respondents confirmed that a fare of $1.00 to $2.00 is favorable; however, approximately 24 percent of participants indicated that they would be willing to pay higher fares than what SEATS charges today (Figure 10). Additionally, stakeholders interviewed expressed support for a higher fare for a more personalized service afforded under an on-demand, same-day service delivery model.

Figure 10. Survey Responses for "What is the Highest Amount You Would be Willing to Pay for an On-demand, Same Day Public Transportation Service Option?"



Feedback from interviews conducted with community stakeholders and SEATS personnel indicated that while complaints received for SEATS is extremely low, the majority of complaints received from SEATS customers is lengthy wait times. The introduction of an on-demand, same day service will increase the customer experience through reduced wait and ride times.

It is difficult to educate the community about the services offered by SEATS and how they operate. The need for increased education under a comprehensive and ongoing outreach campaign is warranted with the introduction of any new service. It is recommended that SEATS prioritize educating residents and stakeholders about existing services and new services that may result from this study effort.

Peer Analysis

The results from the peer analysis reflect three North Carolina agencies that have implemented a microtransit program under a Software-as-a-Service (SaaS) model. However, research efforts extended to providers that have employed a Transportation-as-a-Service (TaaS). The review included peer providers, the majority of which serve rural communities, with similar administrative and operational characteristics to SEATS. The peer systems selected utilize the same scheduling and dispatching software solution for microtransit services as SEATS does for their demand response service. This confirms that SEATS has the technical infrastructure to support future software enhancements that accommodate on-demand, same day scheduling and service delivery.

Interviews were conducted as appropriate to ensure the benefits and challenges of program implementation were understood. The results from the peer analysis provide insight on program design and best practices and lessons learned from statewide providers, similar to SEATS, who have integrated a microtransit service delivery model into their system of public transportation offerings.

The system profile for SEATS and North Carolina providers included in the peer analysis are presented in Table 2. The modes of service operated for peer agencies reflect “traditional” transportation service modes in addition to on-demand microtransit service. The Peer Analysis, included as Appendix B, of this offers a detailed operational profile of the on-demand microtransit programs employed by each agency. The identified peers can serve as a resource for Robeson County/SEATS beyond the study effort. JCATS operates a fleet of five electric powered transit vans to deliver microtransit service under the QuickRide Program. JCASTS leadership can provide future insight on alternatively fueled vehicles and charging equipment/infrastructure for the provision of on-demand service.

Table 2. Peer Comparison

Provider	Modes of Service Operated	Service Area	Total Population	Population Density (people per sq. mile)	Annual Ridership	Total Annual Revenue Service Hours
South East Area Transit System (SEATS)	Demand Response	Robeson County	117,537	123.6	39,436	15,898
Johnston County Area Transit System (JCATS)	Demand Response	Johnston County	219,042	276.6	82,864	62,020
Inter-County Public Transportation Authority (ICPTA)	Demand Response	Pasquotank, Perquimans, Camden, Chowan, and Currituck **Total**	40,454 13,053 10,547 13,835 28,616 **106,505**	178.3 52.8 43.9 80.1 109.3	58,156	32,402
Yadkin Valley Economic Development District, Incorporated (YVEDDI)	Demand Response	Davie, Stokes, Surry, and Yadkin **Total**	43,030 44,696 71,429 37,280 **196,435**	163.2 98.0 532.8 111.3	76,414	63,605

Sources: United States Census Bureau, 2022 American Community Survey (ACS) 5-Year Estimates and 2022 National Transit Database (NTD) Reports

Draft Recommendations

The data collected and analyzed under Phase I and results from the Peer Analysis conducted under Phase II of the study effort confirmed the feasibility of an on-demand, microtransit service delivery model for Robeson County. Additionally, the data directly informed the draft recommendation for program design. The operational framework for the two microtransit pilot program service alternatives were identified as most feasible for Robeson County. These two alternatives addressed the following:

- Service area
- Response time (customer wait time)
- Operational schedule
- Fare structure

The draft recommendation included two potential service alternatives.

- Alternative 1: Lumberton Microtransit with One-Hour Response from 8:00 AM to 5:00 PM and Enhanced Countywide Demand Response
- Alternative 2: Lumberton Microtransit with One-Hour Response from 8:00 AM to 5:30 PM and Reduced Countywide Demand Response

The first model is designed to address the unmet transportation needs for Robeson County within potential available financial resources. The second option offers a microtransit model with controlled cost by focusing service coverage in Lumberton and reducing the level of countywide services. The second option is an economical compromise to serve expand service availability where demand is highest. The estimated annual costs and productivity for the two service alternatives is included in Appendix B.

Phase II of the public engagement campaign occurred in October 2024. Community meetings were held at Robeson Community College and the Robeson County Administrative Building. The attendee count for both meetings totaled 24. The purpose of the meetings was to present the draft recommendation on service alternatives to the public and local stakeholders. The draft recommendation was presented to the project Management Team and Advisory Committee for feedback on program design and input on the preferred service alternative.

A financial and implementation plan for the preferred alternative, Alternative 1, is included in the report.

Microtransit Pilot Program Design

The recommendation for program design under a microtransit service model is presented herein. The financial and implementation plan included as part will service as the foundation for a formal microtransit pilot program that may result from this feasibility study.

Service Model

An overview of the three microtransit models within the industry is presented in Figure 11 below.

Figure 11. Visual Representation of Three Transportation Models

Software-as-a-Service (SAAS)

Agency only purchases the software to operate microtransit service. This includes the backend scheduling and dispatch platform and customer-facing technology. Service is directly operated and managed by the provider.

Blended Model

The agency maintains separate contracts for software, vehicles, or drivers.

Transportation-as-a-Service (SAAS)

This model is a full turnkey solution. The agency contracts with a third-party vendor to provide the drivers, vehicles, software, and operations management.

It is recommended that Robeson County adopt the Software-as-a-Service (SaaS) alternative for its on-demand microtransit pilot. SEATS currently uses TripMaster by CTS Software as their scheduling and dispatching software for demand response service. The software provider's microtransit function will seamlessly integrate with SEATS's existing scheduling and dispatch software. Trip reservations made through the customer-facing app or weblink will go directly into SEATS's backend

software. The dispatchers will receive real-time notifications of trip reservations performed electronically by customers. Additionally, customers will have an opportunity to pay for their trip via debit of credit card through the app or weblink.

Although the SaaS model provides the technology infrastructure for reserving and paying for transportation services, SEATS would offer a low-tech option for customers. SEATS would allow trip reservations to be made via phone and fares paid by cash upon boarding.

The need for a low-tech option was substantiated by community survey data and feedback received from community stakeholders and local elected officials during the interview effort.

The SaaS model is recommended because SEATS is well-established and has earned inherent trust from the community. SEATS's leadership and staff have built relationships with customers, community partners, and local stakeholders. Under a directly operated service, SEATS has greater control

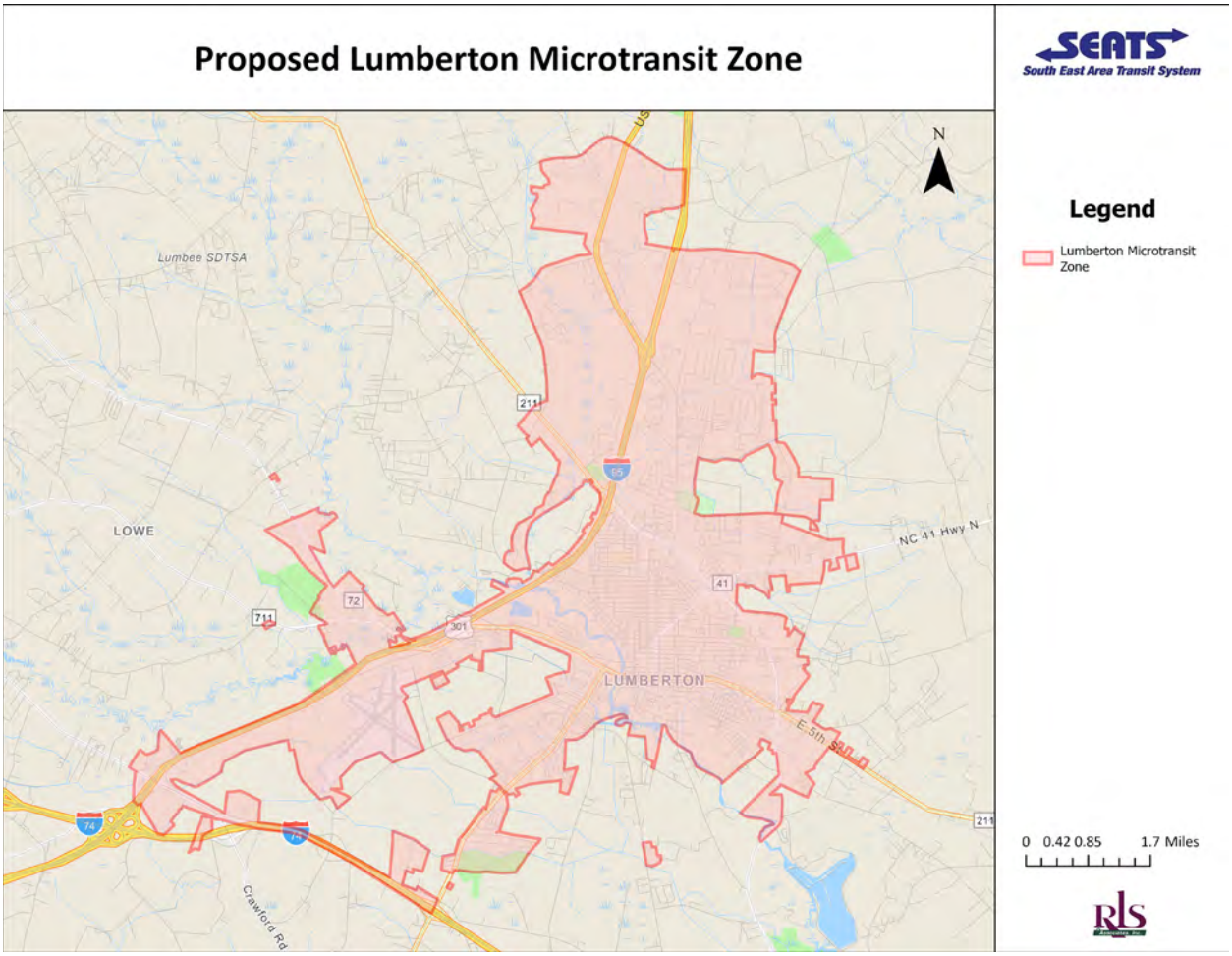
over customer service and program performance.

Service Area

The demographic analysis revealed that the demand for transit is greatest within the Lumberton City limits. Employment data reveals the majority of employment opportunities are concentrated in and around the county seat. Lumberton is the primary destination for survey respondents who use SEATS for work, medical, shopping, and other reasons. The data supports a need for in-town and cross-county transportation to the county seat. **A microtransit service delivery model is well suited for short trips of 4 miles or less.** Advanced reservation service is appropriate for longer trips, especially those connecting Lumberton to the smaller towns and cities.

The proposed microtransit service zone is concentrated in the Lumberton city limits, high-density residential areas, and major destinations along the periphery to the north of Lumberton. The recommended microtransit service zone is depicted in Figure 12 below. The service zone totals 22.8 square miles.

Figure 12. Proposed Microtransit Service Zone



Although microtransit service will be concentrated in one jurisdiction, the benefits of a same day service offering will be countywide. The recommendation reflects an expansion to SEATS's current services. The microtransit pilot program would not supplement existing demand response service, but rather add to the transportation services offered by SEATS.

SEATS operates three to four vehicles, and an average of 51 percent of its passenger trips, in Lumberton daily under its current structure. By dedicating a portion of the vehicle fleet to same-day, short-distance trips within Lumberton, SEATS will be able to allocate a more appropriate level of resources to other communities within Robeson County. The expansion will (1) increase capacity for demand response service throughout the county, helping to increase response time and reduce wait times for demand response customers; and (2) customers traveling to Lumberton will be able to make trips to multiple destinations within the city.

Operational Considerations

Target Response Time

The response time refers to the length of time customers have to wait after reserving a trip by phone through the main office or electronically through the customer-facing app or weblink. Response times vary by community and the size and characteristics of the service zone. Establishing a target response time will help set expectations on service delivery for current and prospective customers, and it serves as a measure of program performance. It can enhance the agency's marketing efforts, highlighting the benefits and convenience of the new service offering.

A target response time of one hour is recommended under the Lumberton microtransit pilot program. When customers reserve a trip, the software will seat that trip on the next or closest available vehicle. Response times could be greater than or less than an hour based upon travel time and availability of resources. The software also permits advanced booking for same day, on-demand service.

Service Schedule

The recommended service schedule under a microtransit pilot program would reflect traditional business hours, Monday through Friday 8:00 AM to 5:30 PM The total annual revenue service hours under the proposed operating schedule for the 2025 calendar year is projected to be 38,868. The revenue service hours for SEATS's demand response service totaled 17,176 for fiscal year 2023. The total annual service hours for microtransit, under the proposed operating schedule, represents a 126 percent increase in the total annual revenue service hours as compared to fiscal year 2023.

Stops

Some agencies offer *curb-to-curb* service in which customers are picked-up and dropped off at the address indicated when reserving the service. Other providers offer *corner-to-corner* service in which customers are picked up and dropped off at the nearest corner or "virtual stop". The TripMaster by CTS Software supports *curb-to-curb* transportation for microtransit passengers. At the present time, the

software does not support virtual stops. The curb-to-curb model is consistent with SEATS's demand response service. The congruency is helpful in educating customers on how to use the microtransit pilot program.

Fare Structure

The fare for general public transportation within Robeson County is $3.00 per trip and $4.00 per trip for transportation to Mount Aire. A discount is applied for bulk purchases of 10 and 20 trips, and individuals with disabilities and seniors 65 years of age and older ride free with valid id. The passenger fare structure is presented in Table 3.

Table 3. Fare Structure for SEATS's Demand Response Service

Location	Regular Fare	Quantity Discount
Robeson County	$3.00	
10 trips (one week)	$30.00	$28.50
20 trips (two weeks)	$60.00	$57.00
Mount Aire	$4.00	
10 trips (one week)	$40.00	$38.50

Source: SEATS

Fares could be implemented through a phased approach. As a courtesy to customers and marketing strategy to promote and encourage use, SEATS should consider delaying implementing fares through the initial launch, or Phase I, of the program. Phase I could be defined by a specific time period (e.g. 30 days) or number of rides (e.g. first 10 rides are free). In Phase II, cash fares would be offered. In Phase III, SEATS would introduce an electric fare payment option and a multi-trip pass, offered at a reduced rate.

Under SEATS's current fare structure, a quantity discount of five percent is applied to purchases of 10 trips (one week) and 20 trips (two weeks). A discount of this nature could be applied for a weekly and monthly reloadable pass. **The cost and ride limit for a weekly and monthly pass could be adjusted based on data collected within the first six months of the pilot program.**

Table 4 reflects the fare structure under the phased approach, as outlined. A half fare program for individuals with disabilities and seniors (65 years of age and older) could be implemented during the pilot or under a longstanding, established program. Projected fare revenues under each option are reflected in the financial plan.

Table 4. Fare Structure for Microtransit Pilot Program

Phase	Duration	Adult Fare
Phase I	Within the first 30 days following program launch	Free
Phase II	1 month to 6 months	One-Way Trip: $4.00
Phase III	6 months to one year	Weekly Pass (10 trips): $38.00; Monthly Pass (40 trips): $152.00

Vehicle Fleet and Ownership

SEATS uses a fleet of approximately 16 wheelchair-accessible Light Transit Vehicles (LTVs) to operate its services. All SEATS drivers are required to maintain a Commercial Driver's License (CDL) for operation of all revenue vehicles within the agency's fleet. Smaller transit vans are the common vehicle type for microtransit services. Smaller vehicles are more fuel efficient and less costly to maintain than larger transit vehicles and do not require a CDL to operate, which often equates to lower operational costs. Additionally, smaller vehicles would be less costly to outfit with program branding.

In order to meet projected demand and maintain the established target rate for response time, a fleet size of four wheelchair-accessible vehicles is recommended for the microtransit pilot program. This represents a 25 percent increase to the SEATS fleet. A directly-operated service under the SaaS model requires the agency to procure or lease the vehicles required to deliver services. Leasing options within the market area are limited, therefore, SEATS would need to procure the capital equipment/rolling stock required to deliver service. **Although this recommendation requires an additional capital investment, it also provides an opportunity for Robeson County/SEATS to further consider, plan for, and integrate alternative fueled vehicles into the SEATS fleet.**

Personnel Needs

The introduction of a new service results in the need for increased capacity in terms of personnel. As noted, microtransit service would not supplement demand response service but increase the level of service provided by Robeson County/SEATS. SEATS has the administrative capacity to manage the program. However, increased capacity in operations personnel, including dispatch and operators, would be required to deliver service. The recommended staffing levels under a microtransit pilot program are presented in Table 5 below. The flex operator would serve in a dual capacity, serving as an operator and providing support in the dispatch office as needed.

Table 5. Projected Staffing Needs

Position	Number of Full-time Employees	Number of Part-time Employees
Dispatcher	1	0
Flex Operator	1	0
Operators	1	4

Personnel costs for projected staffing needs are outlined in the Financial Plan. Two alternatives for operator wages are presented in the Financial Plan. Option 1 in Table 7 reflects a lower hourly wage for non-CDL operators; Table 11 reflects SEATS's current wage scale for CDL credentialed drivers.

Marketing and Branding

The need for increased education under a comprehensive and ongoing outreach campaign is warranted with the introduction of any new service. Extensive community outreach and customer education is imperative to the success of on-demand services in Robeson County. It is often difficult for current and potential customers to translate the new service into a positive experience. A strategic marketing and promotional effort is recommended to ensure the community (a) is aware of new service offerings, (2) understands the benefits of a flexible, on-demand service solution, and (3) are informed on how to secure transportation services under a microtransit pilot program. In addition to a comprehensive marketing campaign, travel training during the initial launch of program and beyond should be provided to current and prospective customers.

The development of a distinct program brand will aid in marketing efforts. Brand recognition will help increase community awareness and assist in outreach efforts to promote the new service offering. SEATS can engage a third-party vendor for brand development, engage the community or local educational institutions for assistance from graphic design or arts major students, or perform in house. A community branding effort would help bring awareness to the microtransit pilot.

TripMaster by CTS Software offers marketing packages that can be tailored to the needs of the provider and community. Additionally, the vendor offers a general, customer-facing Rider Portal app for trip reservation and payment. A white label app can be created with SEATS's program branding for an additional cost. This cost for marketing and the creation of a white label is included in the budget.

Figure 13. Image: White Label App Created by TripMaster by CTS

Source: TripMaster by CTS

National RTAP's Marketing Toolkit is a free resource providing valuable information on marketing activities for different service modes.

Travel Training

Travel training, including classroom and field training, are critical to bring awareness to and promote new service to the community. SEATS could offer a training program to include a standing "Transit 101" educational effort that is offered in-person or via social media. The creation and publication of a *How to Ride* video could be created, published, and distributed for promotional purposes. Additional training and educational materials are recommended for development and distribution in print format. Ongoing engagement and standing travel training sessions should be established with the local school systems, health and human service agencies and senior centers, major employers, and/or primary housing complexes located within the service area. Travel training opportunities will educate the community on how to access and successfully navigate the new service.

Benefits and Challenges

The SaaS model for a microtransit pilot program serving Robeson County has recognized advantages and disadvantages. The benefits and challenges are organized by category and reported under Table 6.

Table 6. Benefits and Challenges

Category	Benefits	Challenges
System Performance	Increases ridership and the number of trips provided per revenue vehicle hour and mile.	The system may struggle to respond within one hour of a trip request if demand exceeds resources.
Customer Service	Reduces passenger wait time. Passengers can make a same-day trip reservation. The SaaS model affords continuity in transportation services for customers and reinforces SEATS's commitment to providing an exemplary level of customer service to current and future customers.	The system may struggle to respond within one hour of a trip request during peak hours of operation if demand exceeds resources.
Capital Equipment	This option provides an opportunity for SEATS to consider, plan for, and integrate alternative fueled vehicles into its SEATS fleet. SEATS should carefully consider the charging infrastructure for future electric battery-charged vehicles as industry standards have demonstrated that additional vehicles may be needed to meet charging needs. Additionally, existing conditions at the SEATS administrative and operations facility including vehicle storage location and access to electricity must also be taken into consideration.	This option carries implications to SEATS's rolling stock due to a required fleet expansion. SEATS would have an increased financial responsibility of securing capital and local match required for the procurement of additional rolling stock required to deliver on-demand microtransit service. A fleet expansion of four vehicles would require additional storage at the SEATS's administrative and operations facility. Although vehicles used for service delivery under a microtransit pilot program are smaller, SEATS may see space constraints for vehicle storage.
Staffing/ Labor	Microtransit offers a variety of service options and areas for drivers to choose from. The addition of a dispatcher may offer additional coverage for demand response service during peak service hours when radio traffic and call volumes are high.	The introduction of a microtransit would require an increase in staffing. Existing conditions within the local labor market may impede SEATS's ability to secure qualified personnel and build the workforce to a level required to support microtransit. Workspace will need to be identified for incoming dispatch personnel. The space in the SEATS dispatch office is extremely limited and will not be able to accommodate an increase in dispatch personnel, especially during certain shifts/ hours.

Financial Projections and Productivity

The Lumberton microtransit service would operate from 8:00 AM to 5:30 PM on weekdays. Early morning and Saturday service within Lumberton would be provided via SEATS's demand response service. Vehicles would respond within one hour of receiving a trip request. There exists an opportunity to reduce the trip request time beyond the pilot phase, following review of program data.

Projected Operating Expenses and Revenues

The potential revenues each year include the current funding sources from state and Federal sources, contract revenue, advertising revenue, and passenger fares. Passenger fare revenues are projected to include a $4.00 fare for microtransit trips within Lumberton and a $3.00 fare for countywide demand response trips. Assuming that approximately 45 percent of the microtransit trips and 26 percent of the countywide demand response trips will be for Medicaid-eligible clients, and therefore no fare will be collected from that portion of the ridership, annual fare revenue is projected to be approximately $162,950 to $165,000 per year. The actual fare revenue will fluctuate based on the number of discounted passes sold.

Projected revenues after 2025 may exceed expenses creating a transit reserve that can be applied in future years. After 2026, projections indicate a deficit if revenues do not increase but labor and materials expenses continue to increase by three to five percent annually. SEATS may consider adjusting its hours of service at that time to reduce expenses, or seek additional revenue as a result of the enhanced services to the community.

Table 7 and Table 8 provide estimated five-year projections of expenses and revenue with hourly wage rates consistent with current SEATS operators. The total projected revenue is presented in Table 9, and Table 10 illustrates the bottom-line accounting for CDL drivers.

Table 7. Operating Expense Projections with ***CDL Drivers,*** *FY2025 through FY2029*

Operating Expenses	FY2025	FY2026	FY2027	FY2028	FY2029
Estimated Operating Costs: Labor	$1,300,120	$1,352,124	$1,406,209	$1,462,458	$1,520,956
Estimated Operating Costs: Services	$16,426	$16,426	$16,426	$16,426	$16,426
Estimated Operating Costs: Materials and Supplies Consumed	$280,720	$289,141	$297,816	$306,750	$315,953
Estimated Operating Costs: Utilities	$19,800	$19,800	$19,800	$19,800	$19,800
Estimated Operating Costs: Casualty and Liability Costs	$0	$0	$0	$0	$0
Estimated Operating Costs: Marketing & Miscellaneous Expenses	$53,696	$10,000	$5,000	$5,000	$5,000
Subtotal Estimated Operating Costs	$1,670,762	$1,687,492	$1,745,251	$1,810,434	$1,878,135

Table 8. Projected Local and Federal Operating Revenues with ***CDL Drivers****, FY2025 through FY2029*

Operating Revenue Categories	FY2025	FY2026	FY2027	FY2028	FY2029
Federal Transit Administration Section 5311	$835,381	$835,381	$835,381	$835,381	$835,381
State Rural General Public Assistance	$175,000	$180,250	$185,658	$191,227	$196,964
State Elderly and Disabled Grant Funds	$172,000	$177,160	$182,475	$187,949	$193,588
Medicaid Contract Revenue	$215,000	$221,450	$228,094	$234,936	$241,984
Other Contract Revenue	$70,000	$72,100	$74,263	$76,491	$78,786
Area Agency on Aging Contract Revenue	$70,000	$72,100	$74,263	$76,491	$78,786
Advertising Revenue	$15,000	$15,450	$15,914	$16,391	$16,883
Subtotal Potential Local and Federal Revenues	$1,537,381	$1,558,441	$1,580,133	$1,602,475	$1,625,488

Table 9. Total Revenue Projections with ***CDL Drivers****, FY2025 through FY2029*

Operating Revenue Categories	FY2025	FY2026	FY2027	FY2028	FY2029
Potential Local and Federal Revenues	$1,537,381	$1,558,441	$1,580,133	$1,602,475	$1,625,488
Passenger Fare Revenue*	$162,950	$164,580	$164,580	$164,580	$164,580
Subtotal Revenue	$1,700,331	$1,723,021	$1,744,713	$1,767,055	$1,790,068

**Passenger Fares do not count as local match for FTA Section 5311 but are used as revenue for transit only.*

Table 10. Estimated Bottom Line with ***CDL Drivers****, FY2025 through FY2029*

Operating Revenue Categories	FY2025	FY2026	FY2027	FY2028	FY2029
Subtotal Costs	$1,670,762	$1,687,492	$1,745,251	$1,810,434	$1,878,135
Subtotal Revenue	$1,700,331	$1,723,021	$1,744,713	$1,767,055	$1,790,068
Difference	$29,569.63	$35,528.84	−$538.57	−$43,378.86	−$88,066.85

Table 11 provides an estimated projection reflective of a lower wage rate for non-CDL drivers. **The projected cost differential in labor between non-CDL and CDL drivers for FY25 is $27,430 (2.1 percent) and $112,560 (1.6 percent) over the five-year horizon.**

The projected operating revenues, consistent with projections presented above, are presented in Table 12 and Table 13. Table 14 illustrates the bottom-line accounting for non-CDL drivers. Projected revenues from 2025 through 2027 may exceed expenses creating a transit reserve that can be applied in future years. After 2027, projections indicate a deficit if revenues do not increase but labor and materials expenses continue to increase by three to five percent annually.

Table 11. Operating Expense Projections with ***non-CDL Drivers****, FY2025 through FY2029*

Operating Expenses	FY2025	FY2026	FY2027	FY2028	FY2029
Estimated Operating Costs: Labor	$1,272,690	$1,323,598	$1,376,542	$1,431,604	$1,488,868
Estimated Operating Costs: Services	$16,426	$16,426	$16,426	$16,426	$16,426
Estimated Operating Costs: Materials and Supplies Consumed	$280,720	$294,756	$309,494	$318,778	$328,342
Estimated Operating Costs: Utilities	$19,800	$19,800	$19,800	$19,800	$19,800
Estimated Operating Costs: Casualty and Liability Costs	$0	$0	$0	$0	$0
Estimated Operating Costs: Marketing & Miscellaneous Expenses	$53,696	$10,000	$5,000	$5,000	$5,000
Subtotal Estimated Operating Costs	$1,643,333	$1,664,580	$1,727,262	$1,791,608	$1,858,436

Table 12. Projected Local and Federal Operating Revenues with ***non-CDL Drivers****, FY2025 through FY2029*

Operating Revenue Categories	FY2025	FY2026	FY2027	FY2028	FY2029
Federal Transit Administration Section 5311	$835,381	$835,381	$835,381	$835,381	$835,381
State Rural General Public Assistance	$175,000	$180,250	$185,658	$191,227	$196,964
State Elderly and Disabled Grant Funds	$172,000	$177,160	$182,475	$187,949	$193,588
Medicaid Contract Revenue	$215,000	$221,450	$228,094	$234,936	$241,984
Other Contract Revenue	$70,000	$72,100	$74,263	$76,491	$78,786
Area Agency on Aging Contract Revenue	$70,000	$72,100	$74,263	$76,491	$78,786
Advertising Revenue	$15,000	$15,450	$15,914	$16,391	$16,883
Subtotal Potential Local and Federal Revenues	$1,537,381	$1,558,441	$1,580,133	$1,602,475	$1,625,488

Table 13. Total Revenue Projections with ***non-CDL Drivers****, FY2025 through FY2029*

Operating Revenue Categories	FY2025	FY2026	FY2027	FY2028	FY2029
Potential Local and Federal Revenues	$1,537,381	$1,558,441	$1,580,133	$1,602,475	$1,625,488
Passenger Fare Revenue*	$162,950	$164,580	$164,580	$164,580	$164,580
Subtotal Revenue	$1,700,331	$1,723,021	$1,744,713	$1,767,055	$1,790,068

**Passenger Fares do not count as local match for FTA Section 5311 but are used as revenue for transit only.*

Table 14. Estimated Bottom Line with ***non-CDL Drivers****, FY2025 through FY2029*

Operating Revenue Categories	FY2025	FY2026	FY2027	FY2028	FY2029
Subtotal Costs	$1,643,333	$1,664,580	$1,727,262	$1,791,608	$1,858,436
Subtotal Revenue	$1,700,331	$1,723,021	$1,744,713	$1,767,055	$1,790,068
Difference	$56,998	$58,481	$17,451	-$24,553	-$68,368

Projected Capital and Technology Costs

The projected capital costs presented in Table 15 include the procurement of rolling stock to support the implementation of microtransit services. The integration of four new vehicles represents a 25 percent expansion to the SEATS fleet. The smaller transit-style, wheelchair-accessible vans recommended for the microtransit pilot program are available on the North Carolina state contract, which includes options for both gasoline and electric-powered vehicles. Cost projections for both vehicle types are included in Table 15. Additionally, the table reflects the costs for a Level 2 eight-hour charger for electric vehicles. Installation of charging equipment requires professional services from a licensed electrician to ensure proper wiring and compliance with safety standards.

Per Federal capital grant requirements, the local match obligation is 20 percent of the total project cost, limiting local investment to no more than this percentage. **The microtransit service fleet can consist of a mix of vehicle types, including a percentage of wheelchair-accessible and/or electric vehicles, depending on the priorities established by Robeson County/ SEATS.**

Table 15. Projected Capital Costs, Gasoline and Electric Powered ADA Accessible Vehicles

Vehicle Type	Estimated Unit Cost	Estimated Total Cost	Local Investment (20%)
Transit Passenger ADA Van	$83,000–$85,000	$332,000–$340,000	$66,400–$68,000
Electric-Transit Passenger ADA Van	$105,000–$109,000	$420,000–$436,000	$84,000–$87,200
Level 2 Electric Vehicle Charger	$2,000	$8,000	$1,600

Table 16 outlines the initial, one-time costs associated with technology enhancements to SEATS's backend scheduling and dispatch software. These upgrades include the addition of a microtransit suite to the backend software and the introduction of an electronic and app-based ride reservation and payment portal. Additionally, the cost of a white-label app, customized with the program's brand, is included as an optional add-on. The one-time marketing and ongoing support fees are included as operating expenses, presented above.

Table 16. One-time Technology Costs

Item	Total Cost
TripMaster Microtransit Suite*	$21,500
Optional TripPortal White Label App	$20,000

**Includes software vehicle fee, trip reminder module, online and app-based booking for passengers and third-party entities, installation, and onsite training.*

Performance Implications

The introduction of on-demand microtransit service represents an improvement in efficiency and an expansion of annual vehicle miles and hours for the system. SEATS is projected to provide up to 3.7 passenger trips per hour, which is an increase over its 2023 performance of 2.4 passenger trips per hour. The increased productivity will result in an overall increase in annual passenger trips from the projected 41,000 passenger trips for the year 2024 to a projected 70,380 passenger trips after the first year of implementation. The increase in ridership will occur because of the ability for microtransit to provide more short-distance trips and countywide demand response to focus on the longer-distance rides.

Table 17 outlines the projected annual operating hours and miles, and annual passenger trips for this alternative.

Ultimately, adding microtransit service will generate more annual hours and miles (and the associated cost) because of the ability to provide more short-distance trips within a concentrated service area. The additional investment will yield higher ridership and better meet current and projected demand in and around Lumberton.

Table 17. Projected Performance Implications

Service Component	Passenger Trips/Hour	Annual Revenue Hours	Annual Revenue Miles	Annual Passenger Trips
Lumberton Microtransit, 8:00 AM to 5:30 PM	2.0	9,348	74,784	18,696
Countywide Demand Response	1.7	29,520	393,600	49,200
Total	3.7	38,868	468,384	67,896

The overall projected operating cost per hour is $43.76. The total vehicles dedicated to microtransit is 4, and the total vehicles for countywide demand response would total 10.

Implementation Plan

The strategic action steps required for the successful implementation and operation of a microtransit pilot program, under the recommended alternative, are described below. The implementation schedule reflects an acquisition of vehicles, band development, public and customer engagement, an enhancement to existing technology solutions, and an increase in personnel capacity. The introduction of a microtransit pilot program is anticipated to be a 6-month endeavor, following the identification and securement of operating and capital funds to support the 12-month pilot program.

Vehicle Securement and Preparation

A fleet expansion of four vehicles is required to support on-demand service under the pilot program. Industry vendors have reported that electric-powered, transit style vans are in stock and available immediately. Gasoline-powered vans, depending on the specifications, are immediately available. New builds are on a three-to-four-month lead time. Upon receipt of delivery, vehicles will need to be entered into the SEATS vehicle inventory and asset management software, outfitted with program branding, and prepared for service. As referenced, the installation of chargers by a professional engineer is required for electric-powered vehicles.

Implement Internal Education Campaign

SEATS leadership will issue an internal communication to inform personnel about upcoming service enhancements under the microtransit pilot program. This marks the beginning of a broader educational campaign that will provide detailed information on the new pilot program, its benefits, and its impact on current demand response services and SEATS personnel. SEATS should facilitate a series of town hall style drop-in meetings for the leadership and management team to provide a timeline of events associated with the introduction of new service and to field questions presented by employees.

Employee Recruitment and Onboarding

This action step addresses the administrative preparations required for increasing personnel capacity with the introduction of new services. Administrative preparations include addressing the Human Resources paperwork and action items required with the onboarding of dispatch and operator personnel including, but not limited to, conducting background checks, driver's license checks, pre-employment drug and alcohol testing and preparing of the appropriate paperwork for each new employee. Administrative preparations encompass IT and communications equipment set-up, update of software platforms and on-board equipment, and securement of uniforms.

Technology Enhancement Implementation, Testing, and Training

SEATS leadership and management personnel will collaborate closely with the TripMaster by CTS project manager to implement technology enhancements to SEATS's existing infrastructure. Key upgrades include integrating a microtransit suite into the backend software and introducing an electronic, app-based ride reservation and payment portal. These advancements aim to streamline operations and improve the rider experience. SEATS will also coordinate with the technology vendor to schedule comprehensive personnel training, ensuring staff are well-equipped to utilize the new systems effectively.

Program Brand Development

The development of a district brand is essential for the success of new public transportation offerings in Robeson County. A strong, recognizable brand establishes trust, increases visibility, and promotes the value of transit services administered by SEATS. By fostering public awareness and reinforcing a positive perception of transit, brand development encourages increased ridership and community engagement. Brand development will ensure consistency in messaging across all platforms, from advertising to customer service, which is critical in building credibility and reliability. An effective brand will increase public awareness and strengthen the program's connection with community stakeholders. SEATS may elect to engage a third-party vendor for brand development, engage the community or local educational institutions for assistance from graphic design or arts major students, or perform in-house. The engagement of the community in brand development will aid SEATS in its marketing and educational efforts.

Implement Marketing and Public Outreach Campaign

SEATS will develop and implement a marketing and public outreach campaign informing current and prospective customers, agency partners, and community stakeholders of new services and enhancements to the agency's demand response program. The public engagement campaign will encompass marketing initiatives facilitated by TripMaster by CTS and should include internal communication strategies and methods of disbursement informing customers, external partners, and community stakeholders of the coming changes. Outreach materials will provide education and set expectations for service delivery under the microtransit pilot program. A series of public meetings and community pop-up events should be held to provide information and field questions from Robeson County residents.

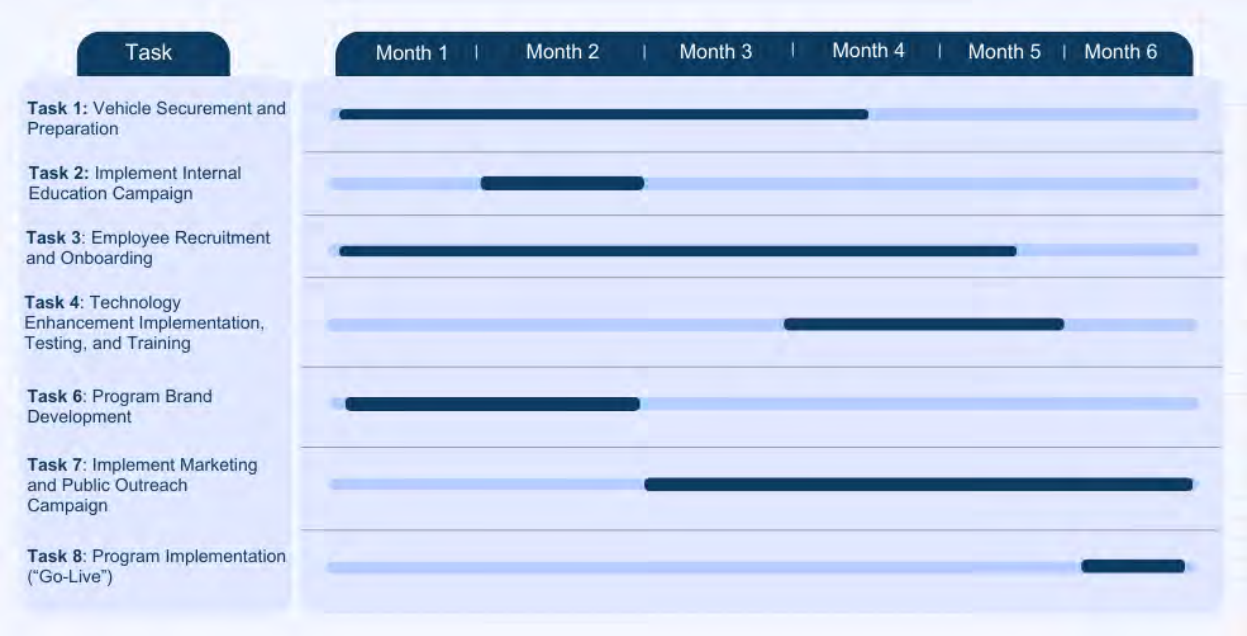
The activities and action items included in the external marketing and outreach campaign will occur over a 60-day period leading up to program implementation. Travel training opportunities and community education will remain ongoing through the duration of the pilot program.

Program Implementation ("Go-Live")

The action steps addressed in the implementation plan will level set expectations and ensure all parties including SEATS personnel, customers, agency partners, and community stakeholders are informed of service enhancements under the microtransit pilot program. The suspension of passenger fares for a defined period of time following program implementation is a recommended best practice as a courtesy to current customers and a strategy for recruiting new customers. Challenges are inherent with any transition that impacts the delivery of transportation services to the public. These challenges can be mitigated through advanced planning efforts, open and ongoing internal and external communications, and enhanced customer service efforts.

Figure 14 illustrates the schedule of events outlined above.

Figure 14. Implementation Schedule for Microtransit Pilot Program



Appendix A: Existing Conditions Report

South East Area Transit System (SEATS) is the public transportation operator serving Robeson County. SEATS is the county's transportation program and a function of county government. It provides demand responsive, human service agency and general public transportation service, delivering approximately 41,000 rides to Robeson County residents and visitors per year. SEATS's annual ridership has declined since 2019 by approximately 31 percent due to the COVID-19 health pandemic; however, ridership trends from 2021 to 2023 have recovered to approximately 11 percent of pre-pandemic levels. Industry trends in the past decade have supported increased research and adoption of microtransit as a more flexible and convenient alternative providing an enhanced level of customer service to current and prospective transit users.

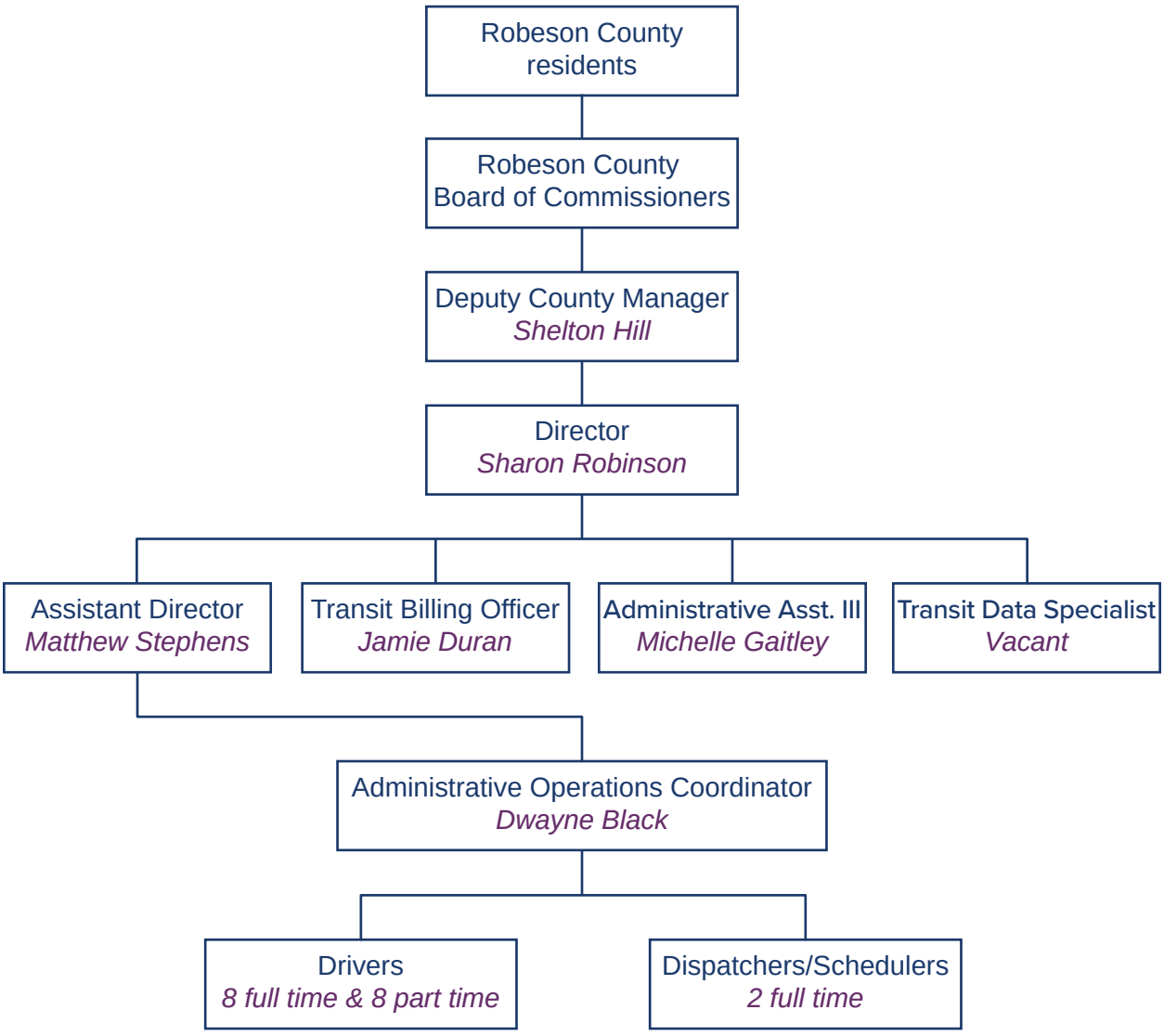
Shifts in travel patterns, work schedules, and community culture brought forth by the COVID-19 health pandemic have forced many providers to identify the most effective service delivery model(s) under a post-pandemic landscape. The North Carolina Department of Transportation Mobility Division, Robeson County, and SEATS wish to determine the effectiveness of meeting the transportation needs of county residents and visitors under a microtransit pilot program.

This analysis of existing conditions provides insights on the nature of the existing SEATS organizational structure and services, community demographics related to transportation needs, and input from elected officials, community stakeholders, Robeson County and SEATS personnel, transit users, and the general public. The analysis will lay the foundation for recommendations presented under this study. The results from the demographic analysis are presented herein.

Administrative Structure

South East Area Transit System (SEATS) administers human service agency and general public transportation services as a program and function of Robeson County. The organizational chart presented in Figure 15 reflects the administrative team responsible for overseeing, managing, and supporting SEATS services. Service delivery is performed through a team of 16 operators; eight full time and eight part time.

Figure 15. Organizational Chart, South East Area Transit System (SEATS)



The SEATS office is located at 1519 Carthage Road in Lumberton, the county seat. The facility houses all SEATS operations and contains a secure, outdoor parking lot for the SEATS fleet. Vehicle maintenance is performed off-site by Robeson County and private service vendors.

Financial Overview

SEATS's annual operating budget of approximately $1.6 million is funded primarily through North Carolina Department of Transportation funds provided to rural areas and contract revenues. SEATS received Federal Coronavirus Aid, Relief, and Economic Security (CARES) Act funding to support operations in fiscal years 2021 and 2022. The primary source of local match is revenue provided through SEATS's contract with Robeson County Department of Social Services (DSS) to operate non-emergency transportation for Medicaid clients. Other sources of local match include contracts with Non-Emergency Medical Transportation (NEMT) brokers and revenues garnered through the agency's Advertising Program. As with many transit systems across the United States today, sustaining sufficient funding from Federal, state, and local sources is paramount to meeting local transportation needs. SEATS's revenue sources are illustrated in Table 18.

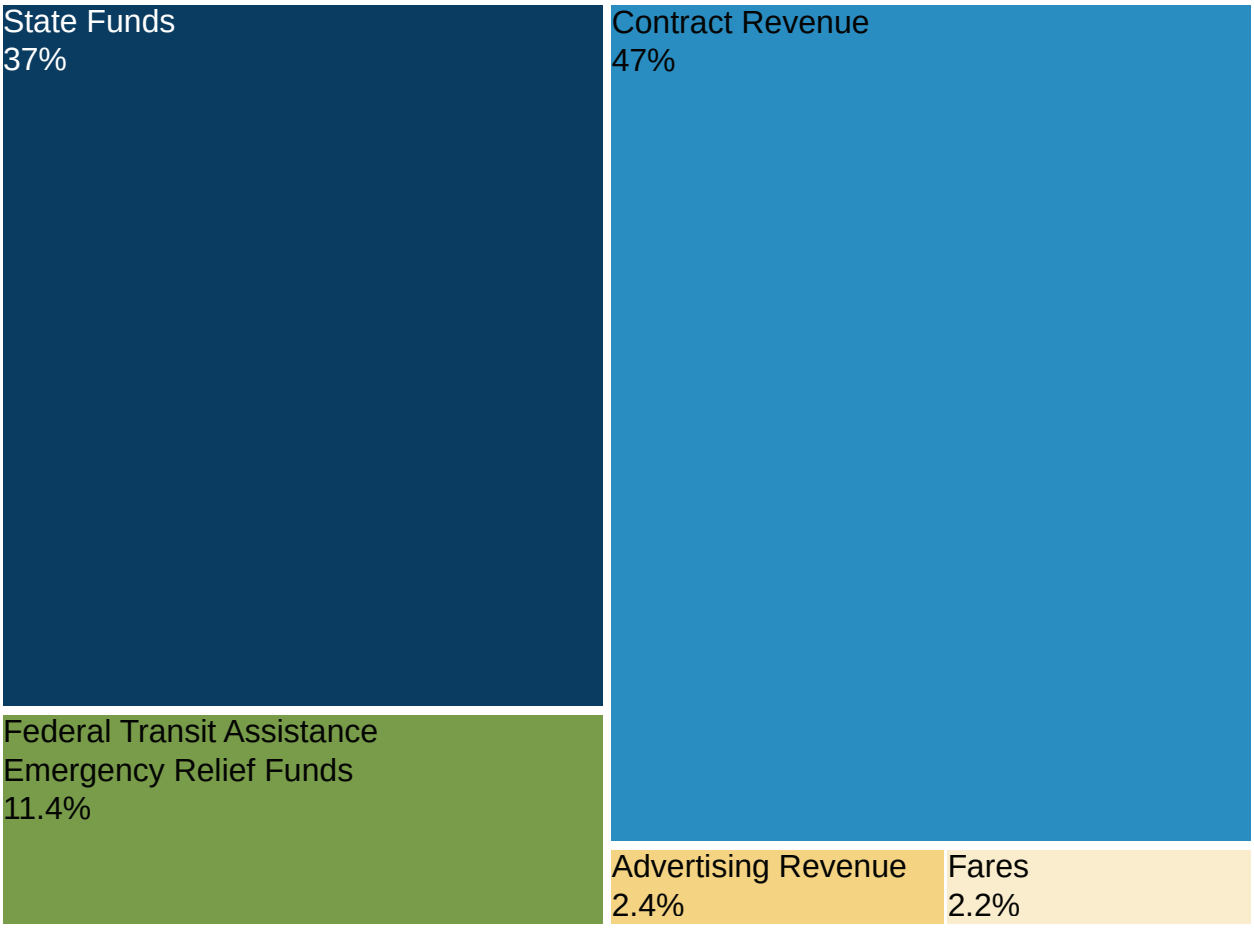
Table 18. Revenue Sources, 2021 through 2023

Funding Source	Percent
Contract Revenue	47.0%
State Funds	37.0%
Federal Transit Assistance Emergency Relief Funds	11.4%
Advertising Revenue	2.4%
Fares	2.2%

Source: SEATS

Operating revenues over 2021 through 2023 are depicted in Figure 16. Revenue sources and amounts fluctuated during 2021 and 2022 due to the COVID-19 pandemic, which resulted in lower state assistance with the availability of one-time Federal relief funds, which carried no matching requirement.

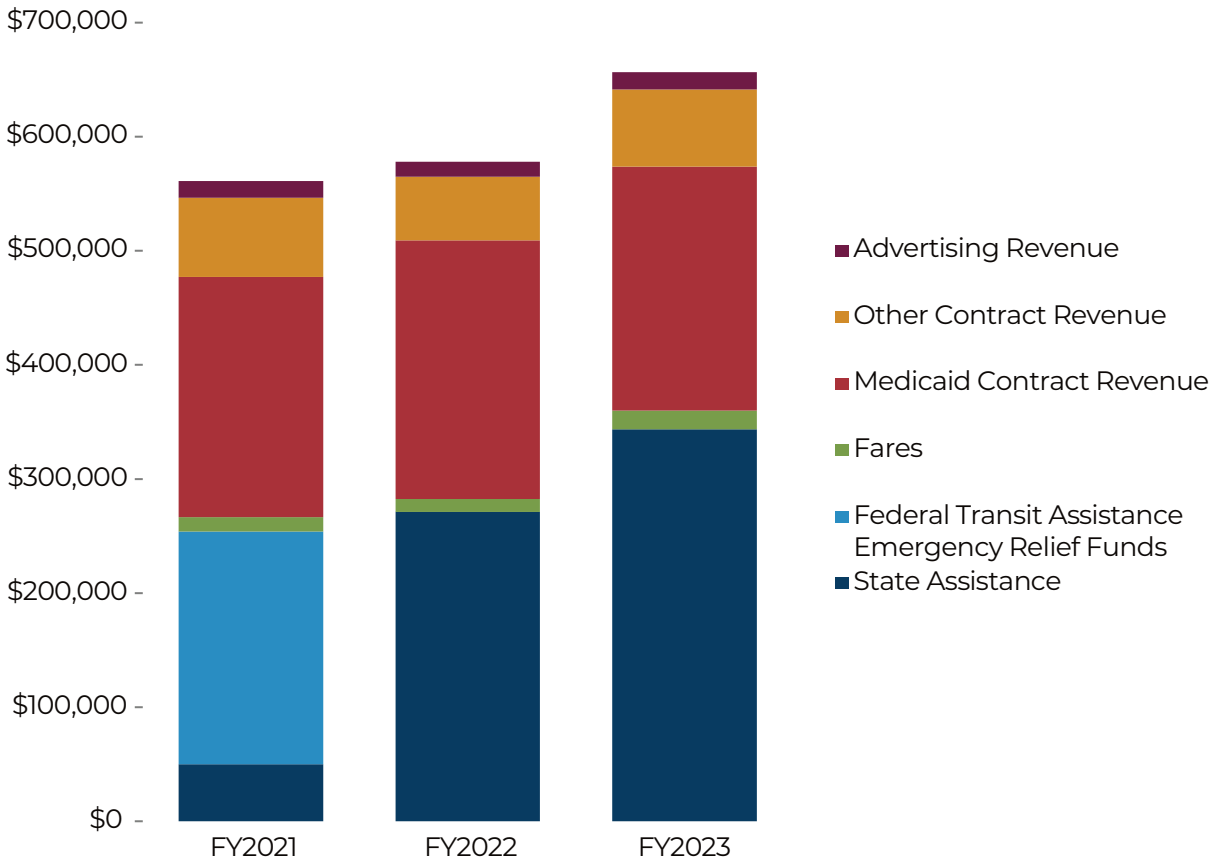
Figure 16. Total Operating Revenues, 2021 through 2023



Source: SEATS

Figure 17 provides operating expenses over eight major categories from 2021 through 2023. The largest operating cost for SEATS is personnel, consisting of wages, and fringe benefits, which accounted for 73 percent of the total operating budget for fiscal year 2023. The second largest operating cost is miscellaneous expenses at 9 percent following by fuel at 8 percent of the total 2023 budget. Expenses under the miscellaneous category include, but are not limited to, onboard video surveillance equipment, and pest control, drug and alcohol testing, and vehicle cleaning services. Reduced expenses in 2020 and 2021 reflect service reductions due to the COVID-19 pandemic.

Figure 17. Total Operating Expenses, 2021 through 2023



Source: SEATS

Operational Overview

SEATS offers coordinated non-emergency medical and general public transportation services to residents of Robeson County. SEATS operates origin-to-destination service six days a week, Monday through Friday from 5:30 AM to 5:30 PM, and Saturdays from 4:30 AM to 12:30 PM Transportation is offered through advance reservation to the SEATS office no later than 12:00 PM the day prior to the requested trip. The majority of trips performed on Saturdays are medical and employment related. Saturday trips account for less than 1 percent of total system trips.

Fare Structure

The fare for general public transportation within Robeson County is $3.00 per trip and $4.00 per trip, regular adult fare, for transportation to neighboring Mount Aire. **Individuals age 65 years and older and individuals with disabilities ride fare free with valid identification.** A five percent discount is applied for bulk purchases of 10 and 20 trips. The passenger fare structure is presented in Table 19.

Table 19. Fare Structure for SEATS's Demand Response Service

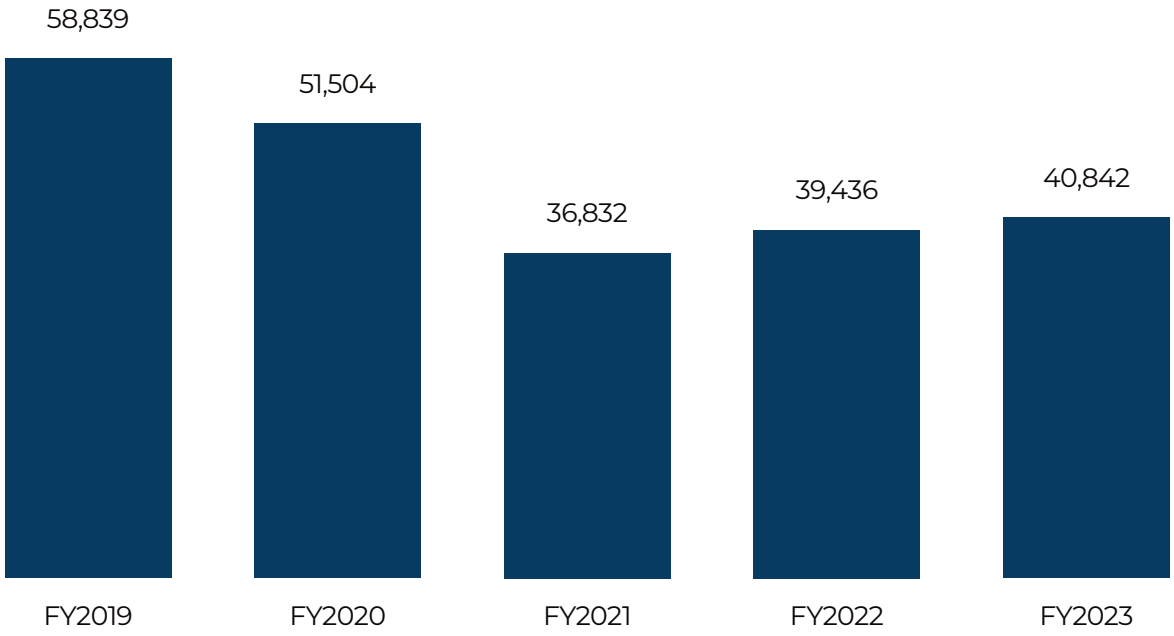
Location	Regular Fare	Quantity Discount
Robeson County	$3.00	
10 trips (one week)	$30.00	$28.50
20 trips (two weeks)	$60.00	$57.00
Mount Aire	$4.00	
10 trips (one week)	$40.00	$38.50

Source: SEATS

Service Consumption

SEATS performed a total of 40,842 trips in fiscal year 2023. SEATS has experienced a 31 percent decrease in annual ridership over a five-year horizon, decreasing from a total of 58,839, annual one-way trips in fiscal year 2019. General public trips accounted for approximately 65 percent of system trips while contracted services including non-emergency Medicaid transportation (NEMT) and local human service agency, accounted for less than half of system trips preformed (2023). This is important as revenues garnered from providing local contracted and NEMT services can be used as local match to leverage Federal assistance for urban providers and state funds for rural systems. Ridership trends over a five-year horizon are illustrated in Figure 18.

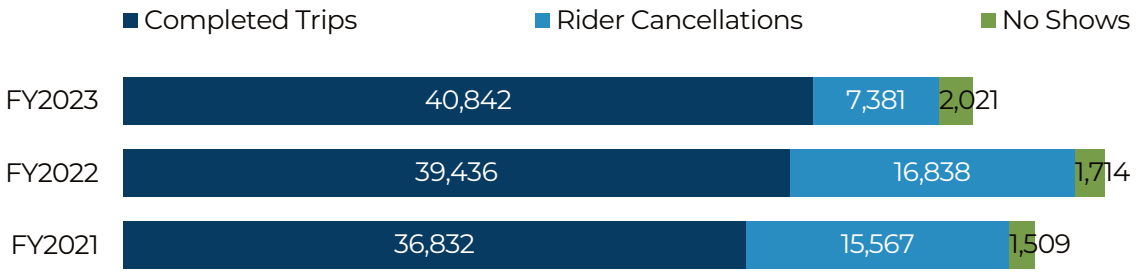
Figure 18. System Ridership, 2019 through 2023



Sources: National Transit Database and SEATS

Rider cancellations for 2023 totaled 7,381 with total no-shows recorded at 2,201. Cancellations do not present the same challenges as no-shows. No-shows are trips that the rider does not take and fails to cancel ahead of time, resulting in wasted resources and capacity that could have accommodated other trips. Figure 19 displays no-shows and cancellations as compared to total trips performed from 2021 through 2023.

Figure 19. No-Shows and Rider Cancellations, 2021 through 2023



Source: SEATS

Service Delivery

SEATS uses a fleet of approximately 16 wheelchair-accessible Light Transit Vehicles (LTVs) to operate its services. The fleet consists of 25ft and 20ft vehicles which carry varied seating capacities. All SEATS drivers are required to maintain a Commercial Driver's License (CDL) for operation of all revenue vehicles within the agency's fleet.

SEATS has demonstrated recent investments in capital to replace rolling stock that has exceeded its useful life, investing approximately $500,000 in fleet upgrades from 2021 to 2023.

On average, SEATS operates a total of 12 vehicles in maximum, or peak, service. Table 20 below illustrates the total annual revenue hours and miles performed by SEATS from 2019 to 2023.

Table 20. Revenue Hours and Trips, 2019 through 2023

Fiscal Year	2019	2020	2021	2022	2023
Revenue Miles	357,124	341,882	354,158	351,596	350,336
Revenue Hours	16,932	16,358	15,837	15,898	17,176

Source: National Transit Database

SEATS experienced a 3 percent decrease in annual revenue service hours from 2020 to 2021. The decline is attributed to the response to a reduction in the demand for transportation services. However, in 2023, hours saw an 8 percent recovery, with service hours exceeding 2019 and 2021 totals. The consistent trend in service delivery levels illustrates SEATS commitment in meeting customer demand and providing transportation services to the community during the COVID-19 pandemic.

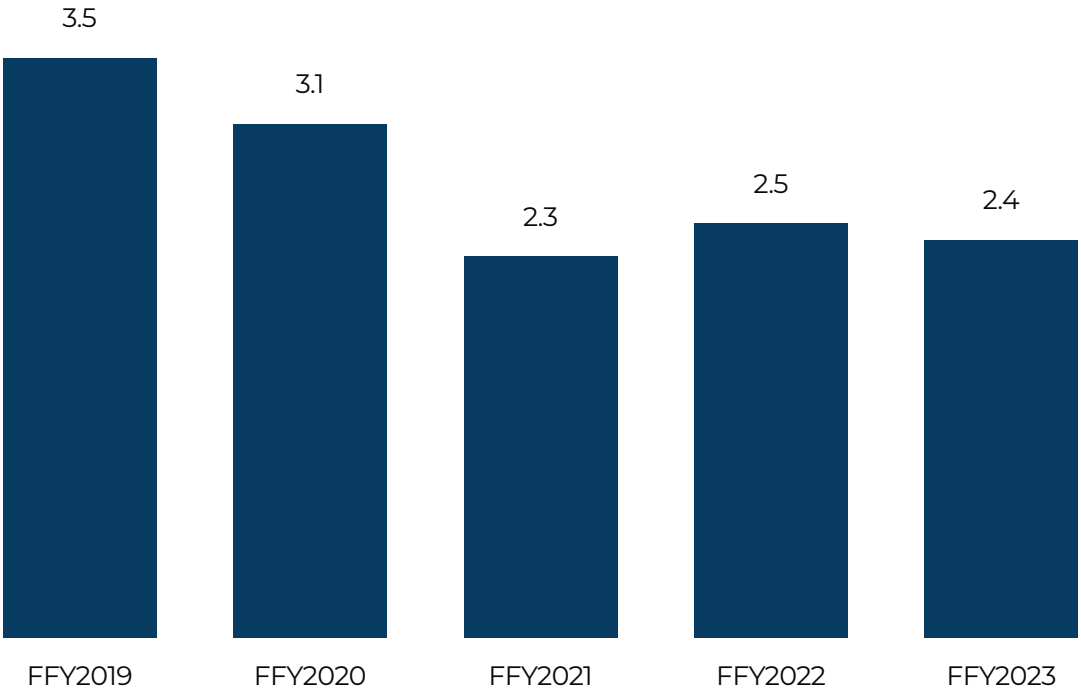
System Performance

The performance analysis confirms productivity and demonstrates the effectiveness of services delivered by SEATS. Performance data was obtained from the National Transit Database (NTD) as reported by SEATS for fiscal years 2019 through 2023.

Service Effectiveness

Passenger trips per vehicle revenue hour is a measure of service effectiveness. The industry standard for average passengers per vehicle revenue hour for demand response service is between 1.8 to 2.5. The effectiveness of SEATS service exhibited over the past five years aligns with or exceeds industry standards at 2.5 to 2.5 passenger trips per revenue hour of service. The performance trend for SEATS services is depicted in Figure 20.

Figure 20. Service Effectiveness, FFY2019 through FFY2023



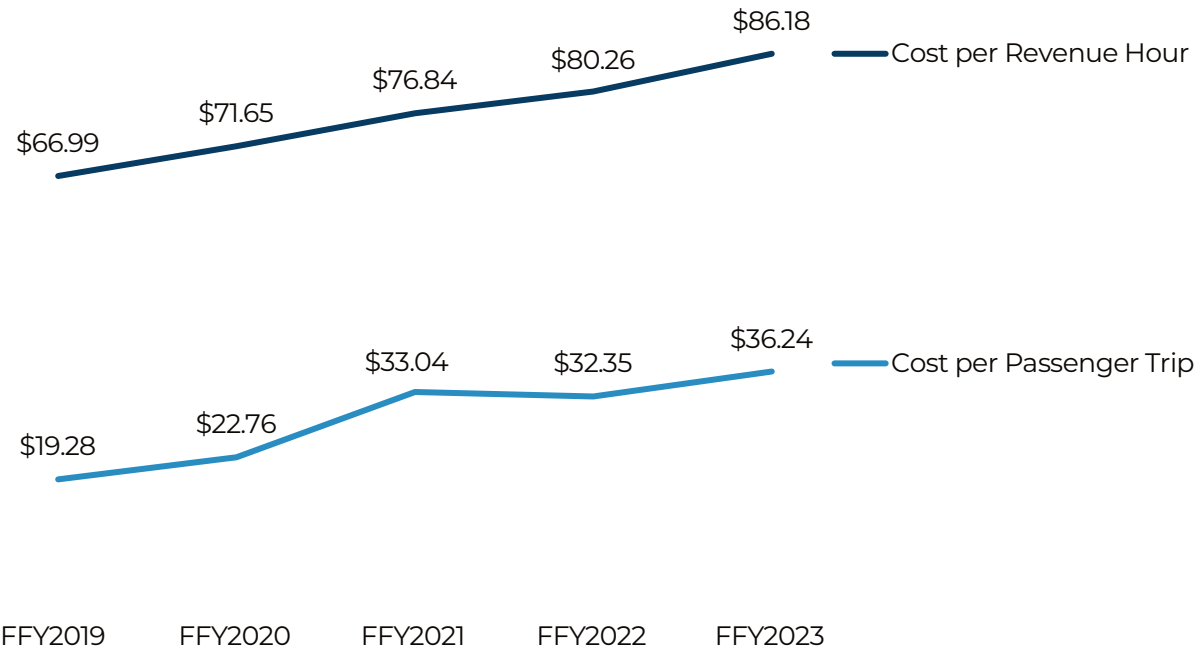
Source: National Transit Database

Financial Performance

Cost efficiency refers to the amount of public transportation services produced for the community in relation to the resources expended. This measure attempts to answer the question *How many resources were expended per unit of public transportation service?* Units of service produced are measured in terms of service outputs such as vehicle hours or vehicle miles. Resources expended include labor, capital, materials, and services. The smaller the number of resources expended to produce a unit of service, the greater the resource efficiency of the public transportation service.[1] Costs increased by approximately 20 percent over the four-year horizon, increasing from $66.99 in 2019 to $80.26 in 2022.

The consumption of public transportation services in relation to the resources expended is referred to as cost effectiveness. This concept attempts to answer the question *How many resources were expended per unit of consumption?* Consumption is measured by passenger boardings, passenger trips, or passenger miles. The smaller the number of resources expended in relation to the service consumed, the more cost-effective the service.[2] The cost per passenger trip in 2022 was recorded as $32.35. Figure 21 depicts the cost efficiency and cost effectiveness of SEATS services over a four-year period.

Figure 21. Cost per Revenue Hour and Passenger Trip, FFY2019 through FFY2023



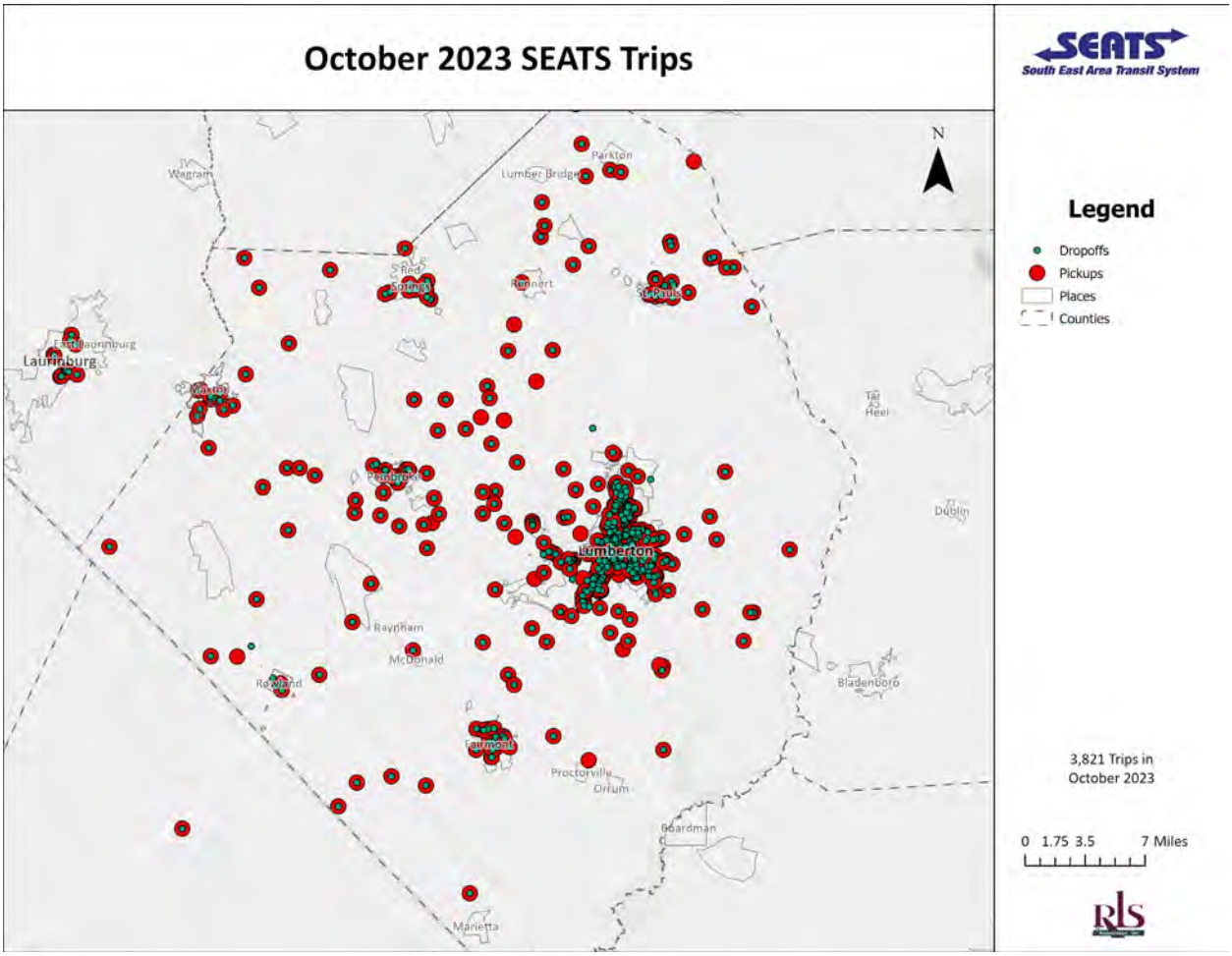
Source: National Transit Database

[1] This evaluation framework and definitions are derived from Burkhardt, et. al., Financial Management Guidelines for Rural and Small Urban Transportation Providers, American Association of State Highway and Transportation Officials (AASHTO), Washington, D.C., 1992.
[2] Ibid.

Travel Patterns

To understand the geographic locations of trip generators and the frequent customer destinations, SEATS offered a one-month sample of trips delivered during the month of October for fiscal year 2023. RLS analyzed trip origin and destination data for trips performed both in-county and out-of-county to understand current travel patterns. October is one of the most active months within the year for passenger trips. Trip origins and destinations for SEATS passenger trips within the sample period are depicted in Figure 22 below.

Figure 22. Trip Origins and Destinations, October 2023



Source: SEATS and RLS & Associates, Inc.

SEATS delivered 3,821 trips within the one-month sample period, approximately 95 percent (3,624) of which were performed within the county and 5 percent (197) delivered to locations outside of the county. Table 21 below illustrates the trips that occurred *within* each jurisdiction. This data is integral to the planning process as microtransit programs with demonstrated successes in rural communities maintain smaller service zones of up to three to four miles or nine to 16 square miles, concentrated around local jurisdictions. A microtransit service model is well suited for in-town travel while advanced reservation is appropriate for longer trips, especially those connecting Lumberton to other communities with fewer resources.

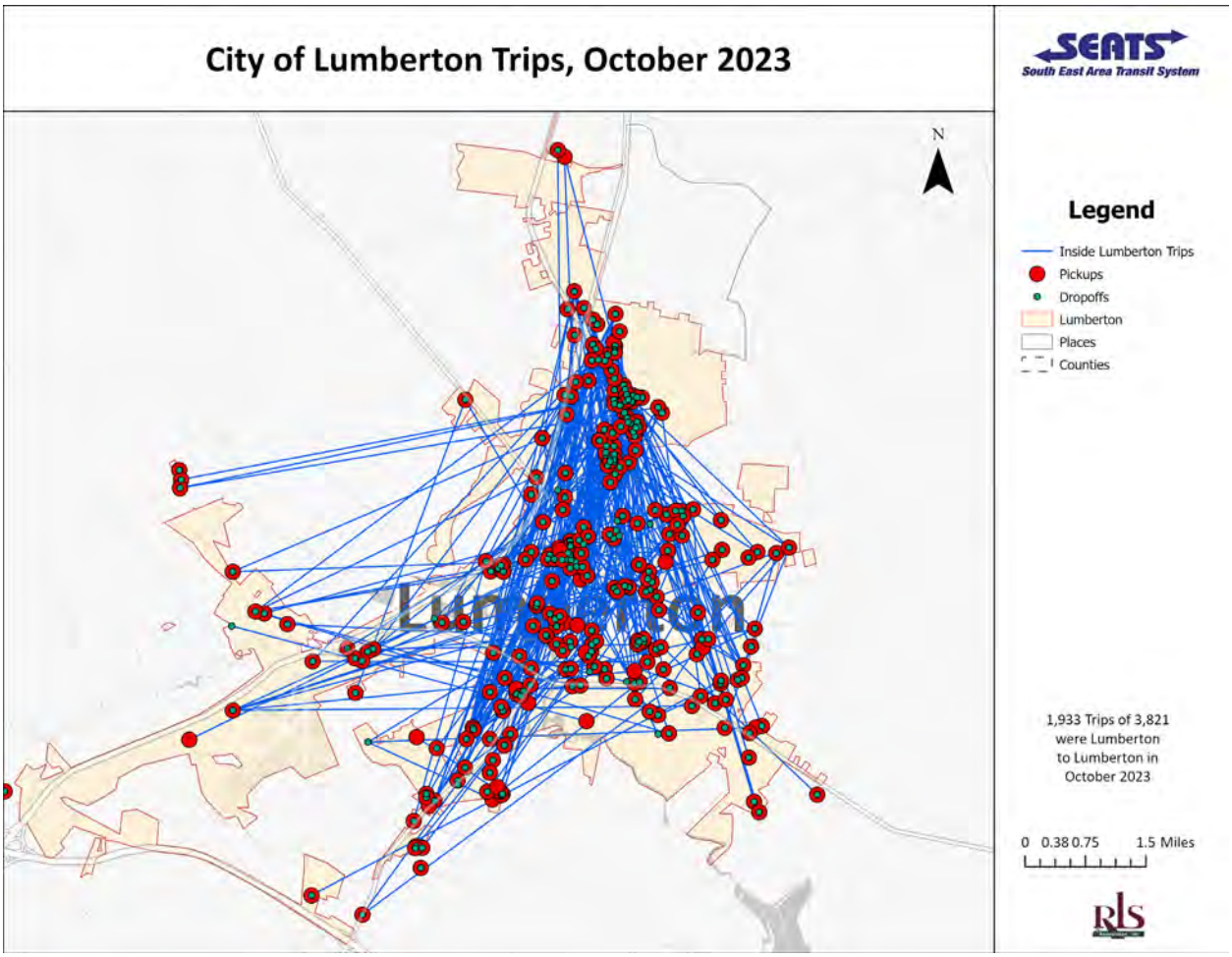
Table 21 illustrates the in-town and cross-county trips performed in the sample period by each municipality within the study effort and Maxton and Rowland. Fifty percent of the total trips performed during the sample period occurred in Lumberton. The origins and destinations of the in-town trips performed for the locations with applicable data are depicted in Figures 23 through 26.

Table 21. Trips Performed by Municipality, October 2023

Location	In-town Trips Performed (Trips originating and terminating within the jurisdiction)	Cross-County Trips Performed (Trips originating or terminating within the jurisdiction)
Lumberton	1,933	2,546
Pembroke	65	175
Red Springs	60	117
Fairmont	38	128
Maxton	0	43
St. Pauls	0	43
Rowland	0	13
Parkton	0	0
Robeson County	Total Trips Performed During Sample Period	3,624
Out-of-County	Total Trips Performed During Sample Period	197

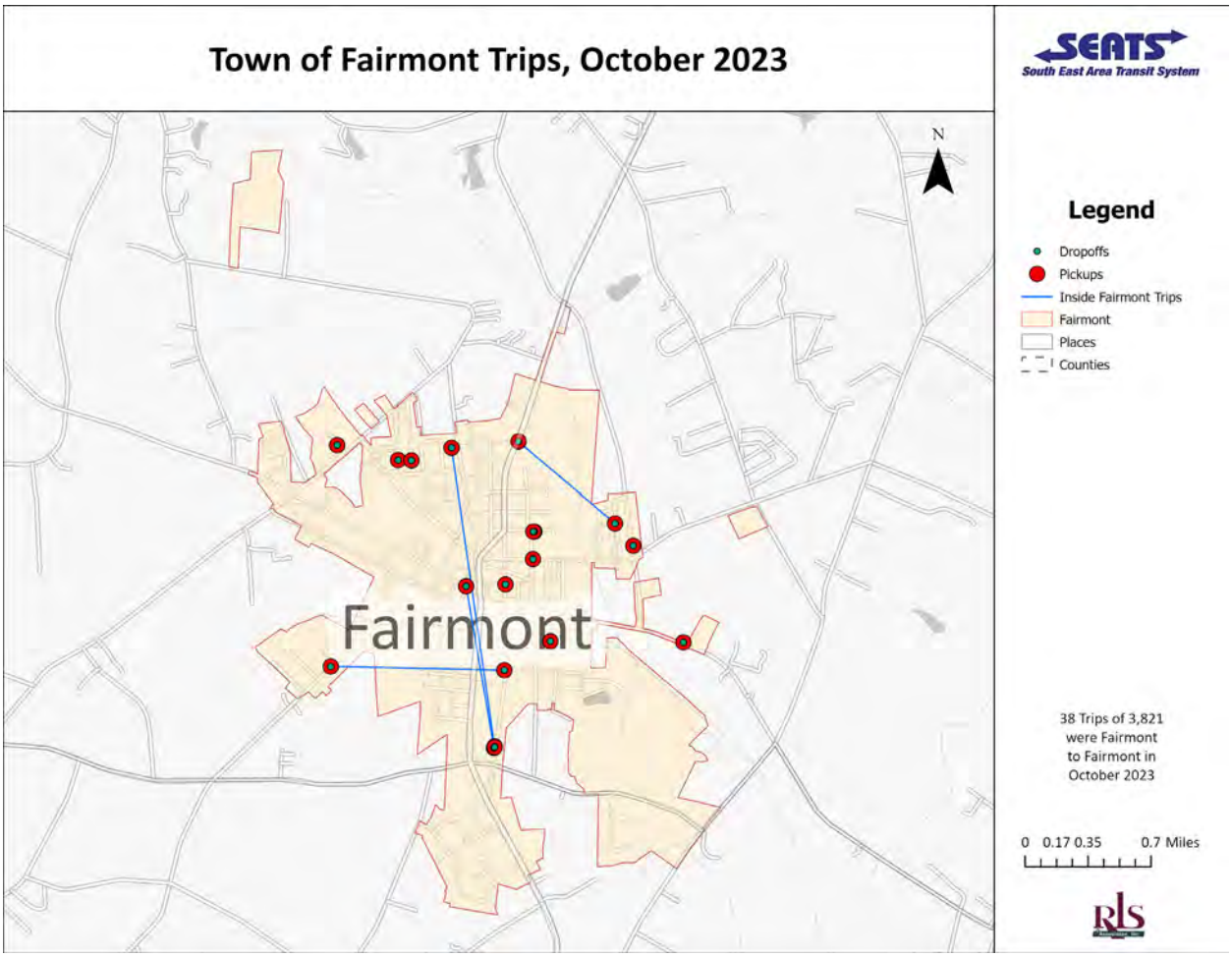
Source: SEATS

Figure 23. Trip Origins and Destinations within Lumberton, October 2023



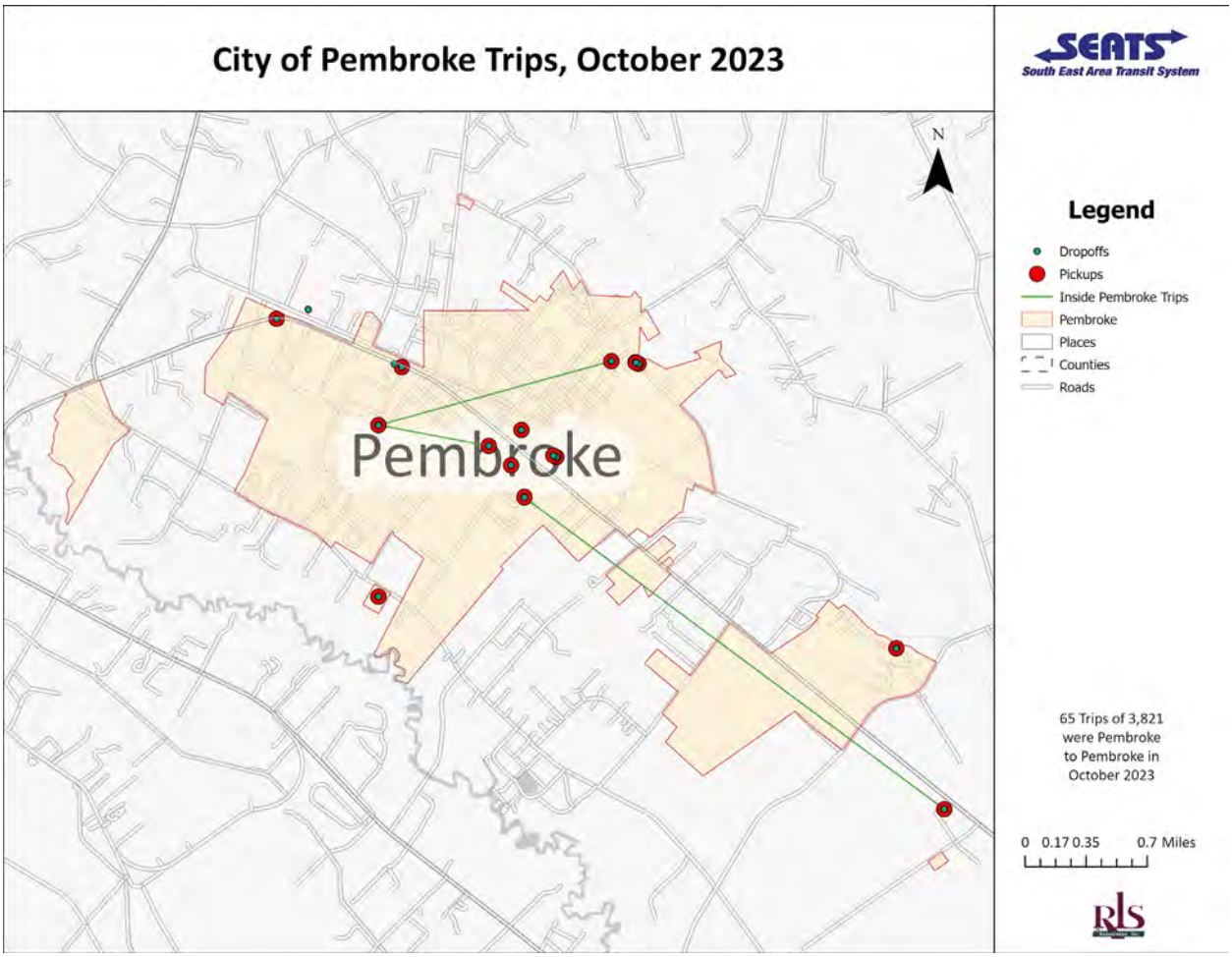
Source: SEATS

Figure 24. Trip Origins and Destinations within Fairmont, October 2023



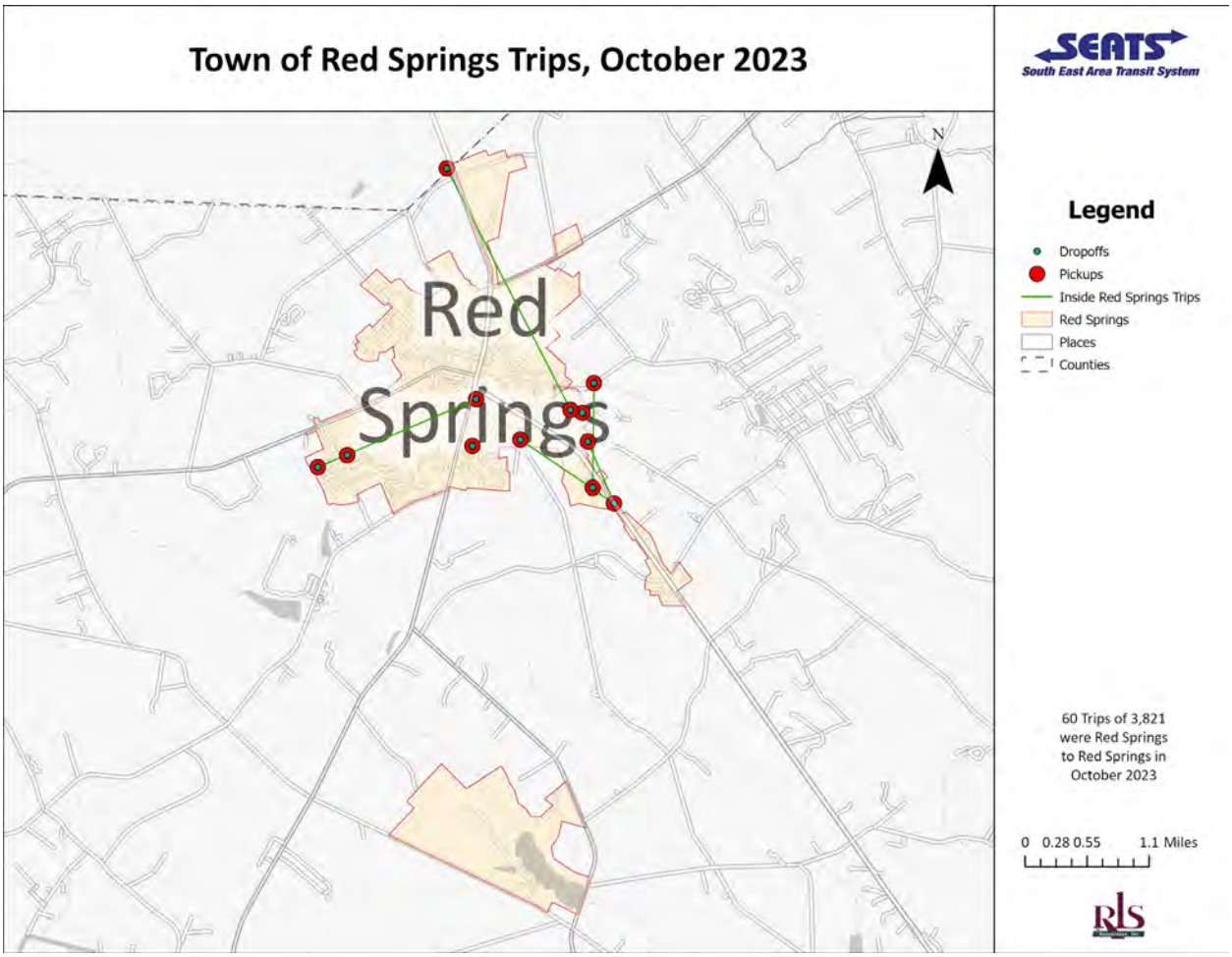
Source: SEATS

Figure 25. Trip Origins and Destinations within Pembroke, October 2023



Source: SEATS

Figure 26. Trip Origins and Destinations within Red Springs, October 2023



Source: SEATS

Major Trip Generators

The destinations within Robeson County most frequented by SEATS customers are presented in Figure 27. Locations include healthcare facilities, educational institutions, grocery retailers, and employers. The distribution of employers within the study area is depicted in Figure 28.

Figure 27. Major Trip Generators

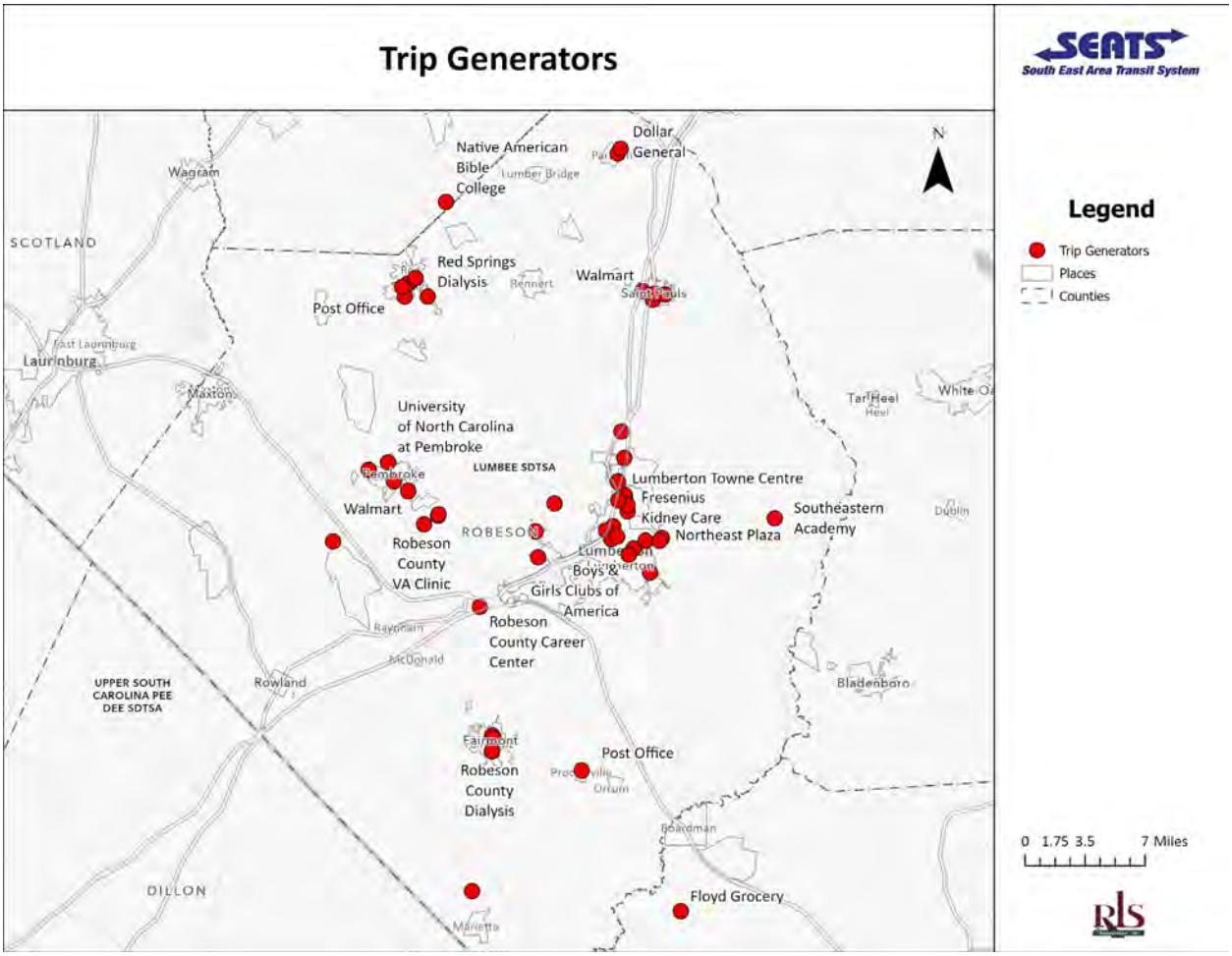
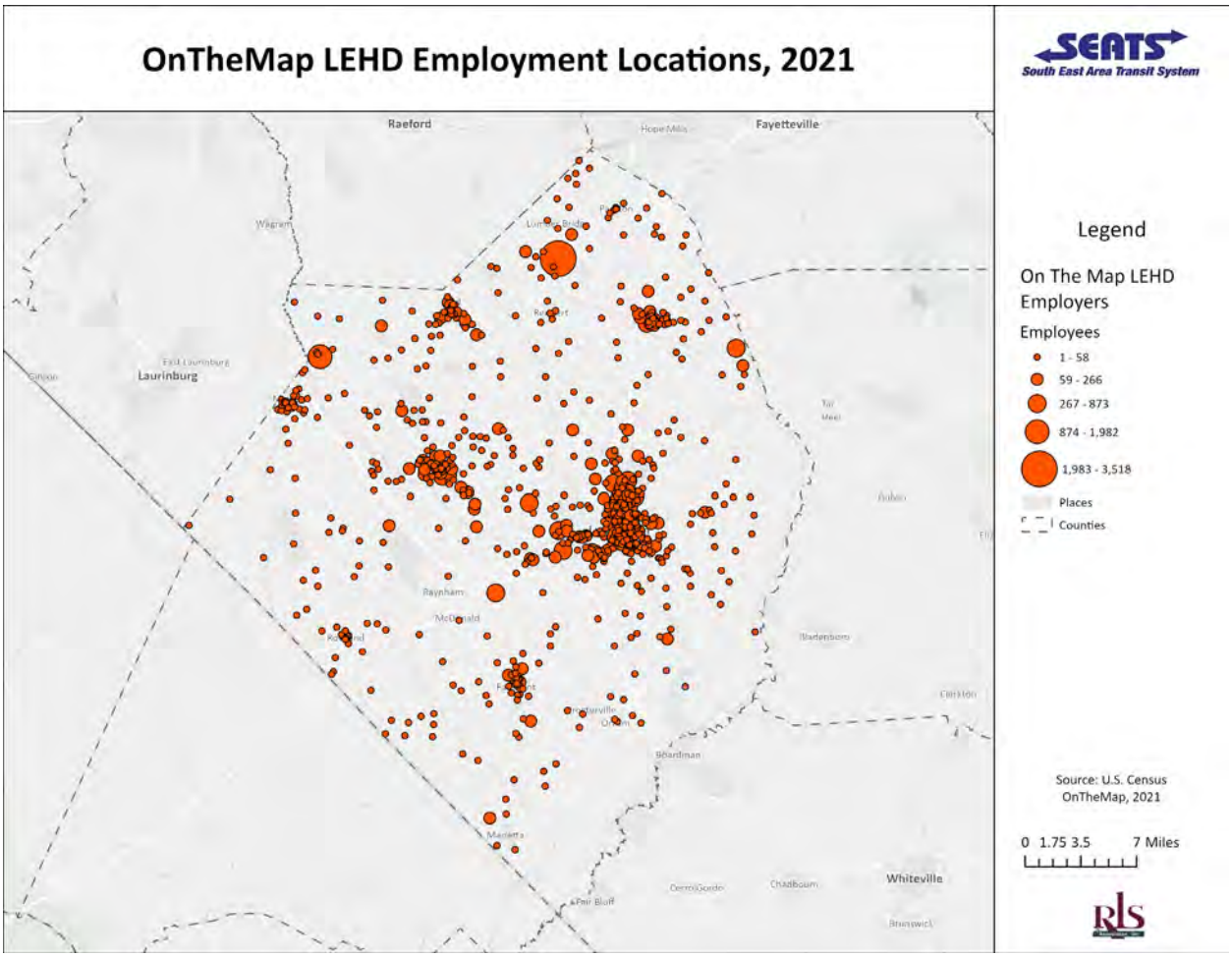


Figure 28. Distribution of Employers



Transit Demand Analysis

The Transit Demand Analysis is instrumental in understanding the various factors influencing the need for and performance of transportation services offered to Robeson County residents. It is a foundational assessment for *future planning, ensuring that transportation resources align with the community's needs and growth patterns*. The analysis focuses on current trends in population growth, income, and employment and how these trends impact commuting patterns and transportation needs. Additionally, an assessment of current economic conditions within the local market was conducted as part of this effort.

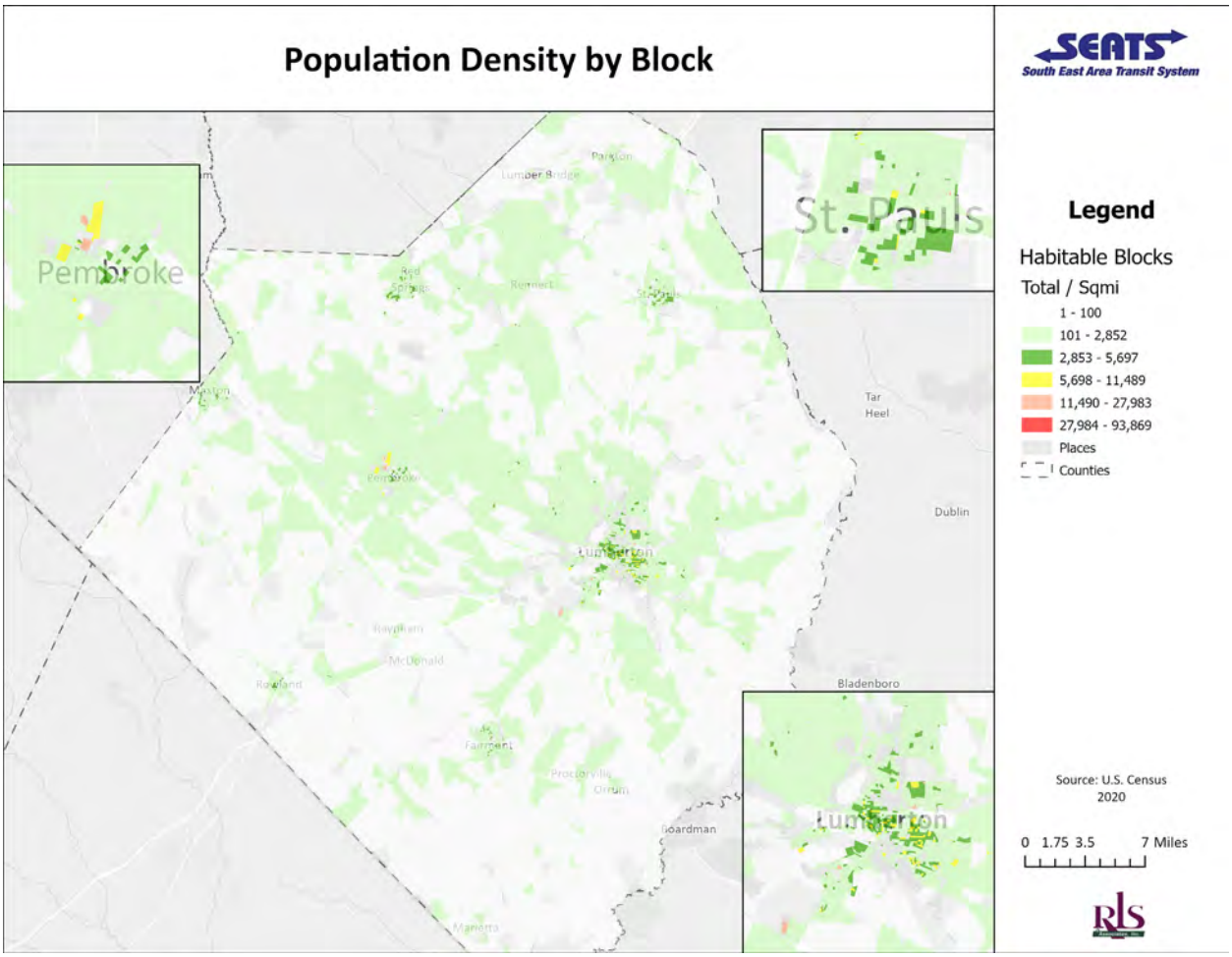
Demographic Analysis

The demographics of an area are a strong indicator of demand for transit service. A variety of socio-economic data was compiled and computed on a block group basis and analyzed as part of the analysis effort. The data consulted as part of this effort is from the U.S. Census Bureau's 2020 American Community Survey (ACS) Five-Year Estimates. ACS Five-Year Estimates have been used to supplement data that is not available through the 2020 Decennial Census. As a five-year estimate, the data is subject to a margin of error, and represents a percentage based on a national sample and does not represent a direct population count. Results of this effort are presented herein.

Population

The majority of block groups in the county have densities of less than 2,000 people per square mile, the typical minimal level of population density that will support fixed-route transit service. The block groups with densities of at least 2,853 persons per square mile are concentrated in Lumberton, Pembroke, and St. Pauls. On the periphery and outside of the larger cities and towns, population density is lower: a finding not unique to Robeson County, this trend is inherent to cities across the United States. The population densities represented in the county are appropriate for demand response, or origin-to destination transit service. Demand response service is likely to be more cost-efficient than fixed-route service in areas in which population density is low. The population density for Robeson County is illustrated in Figure 29. The most densely populated areas are represented in dark green, symbolizing at least 2,853 people per square mile.

Figure 29. Population Density



The 2022 population for each of the six municipalities within the study area is presented in Table 22.

Table 22. 2022 Robeson County Population by Municipality

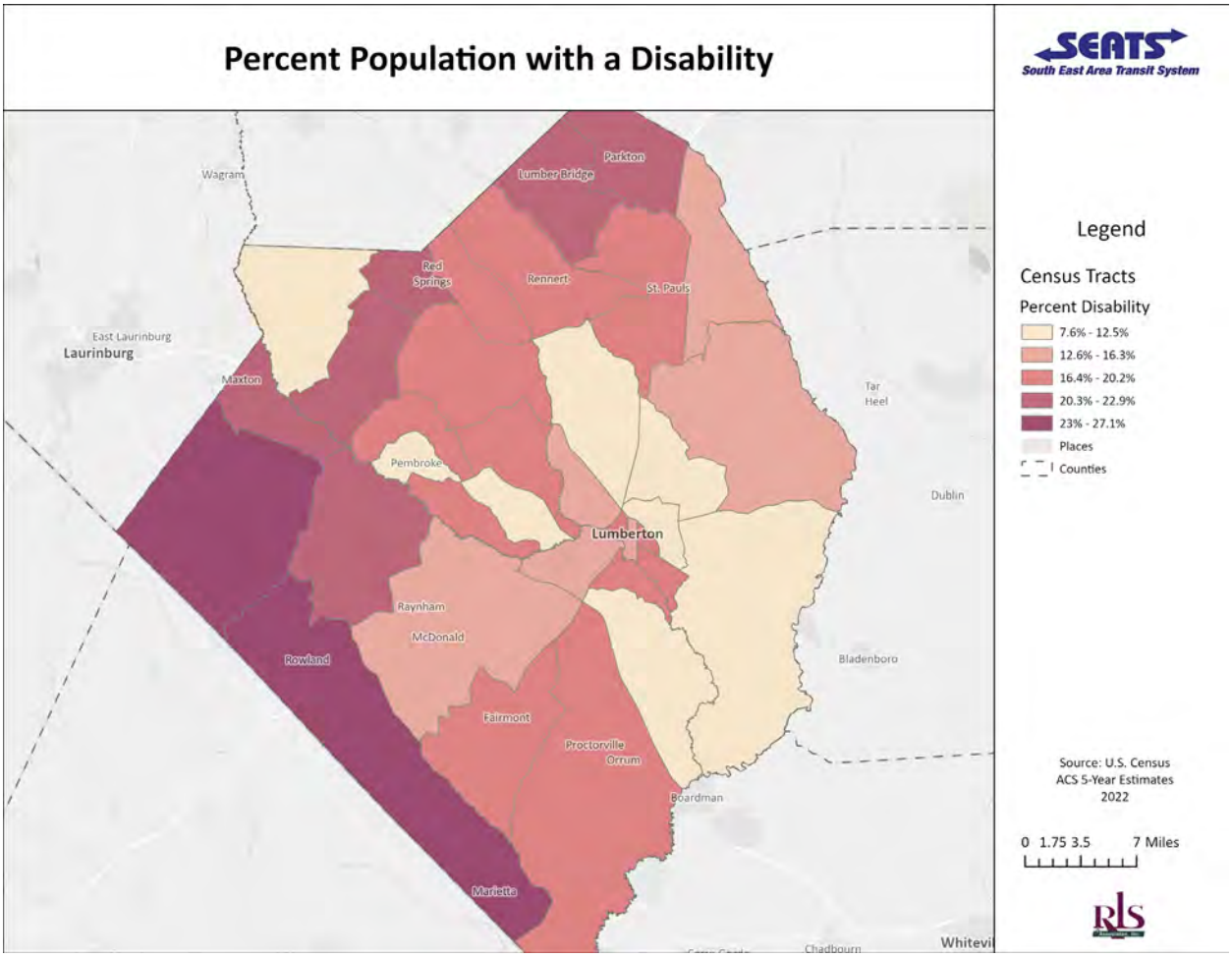
Municipality	Population
Lumberton	19,099
Fairmont	2,519
Parkton	451
Pembroke	2,832
Red Springs	3,118
St. Pauls	2,261

Source: United States Census Bureau

The 2020 Decennial Census accounted for a population of 116,530 in Robeson County. The SEATS service area has witnessed a 13.2 percent decrease in population over a ten-year horizon (2010 to 2020). The Decennial Census and the North Carolina Office of State Budget and Management (OSBM) offer population perspectives and forecasts from 2020 to 2050. The projected population growth from 2020 to 2050 is 30 percent. The significant amount of population growth will put additional pressure on local transportation systems, including SEATS, to grow and expand services and increase the effectiveness of services provided.

The U.S. Census Bureau, 2022 American Community Survey (ACS) data estimates that 17.2 percent (an estimated 19,751) of Robeson County residents have a disability. A demographic map presented under Figure 30 illustrates the tracts with the highest number of individuals with disabilities (23 to 27.1 percent) are concentrated in the western and southwestern portion of the county.

Figure 30. Population of People with a Disability



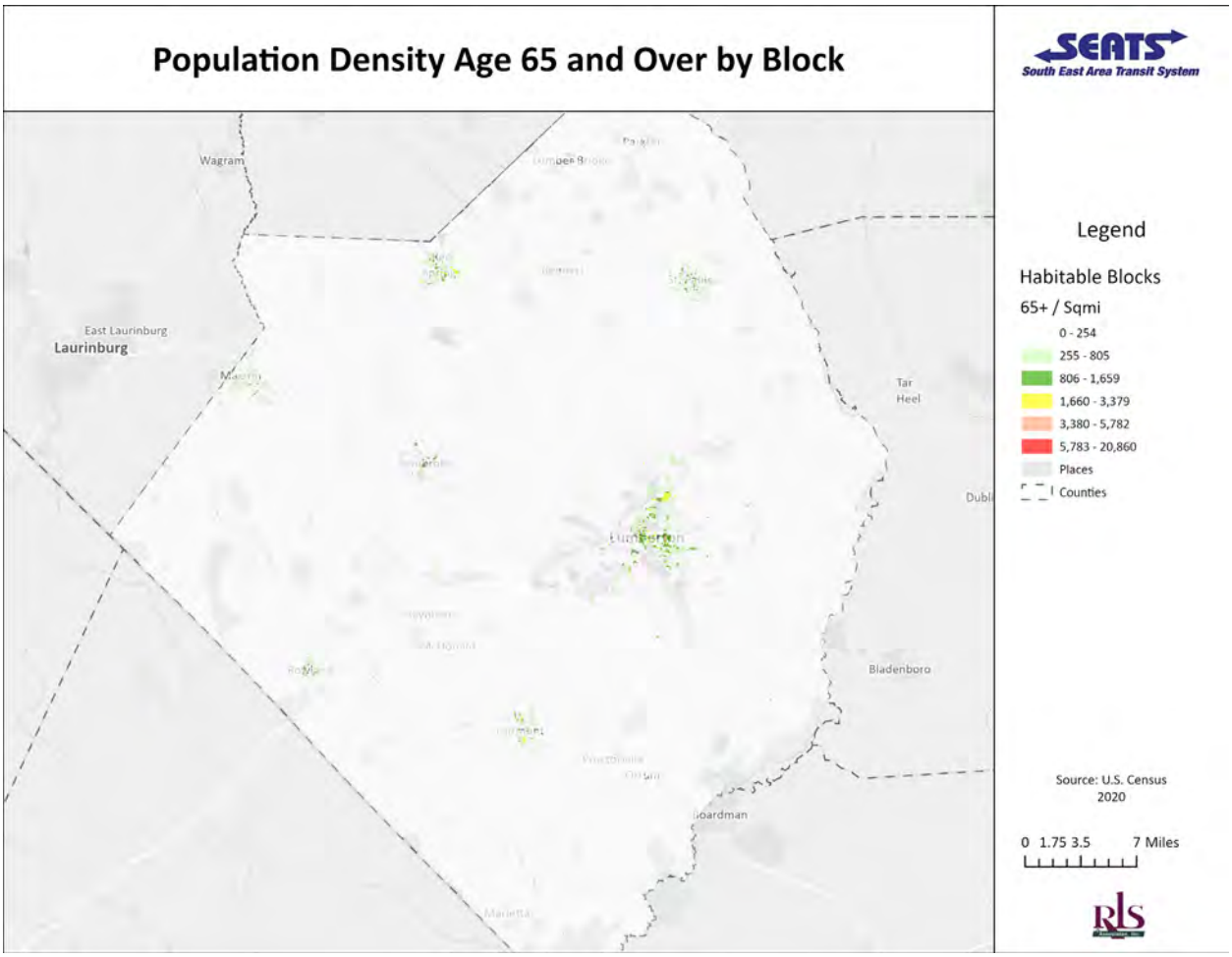
Older Adult Population

The population across the United States is aging. Most individuals born during the post-WWII "baby boom" era, defined by the Census Bureau as persons born from 1946 through 1964, are now over the age of 65, increasing their likelihood of needing and pursing alternate transportation options to driving personal vehicles. Survey data reported by the Administration on Aging (U.S. Department of Health and Human Services) confirmed an increase in longevity and health for this demographic group as compared to historical years. Quality of life issues and the desire to live independently place increasing pressure on existing transportation providers to meet the growing demand.

Older adults are most likely to use transportation services when they are no longer able or choose not to drive. Elders are more likely to be on a fixed and limited income, thus making public transportation a more economical option to vehicle ownership. For these reasons, the population of older adults is an indicator of potential transit demand. SEATS is not the exception, as a significant portion of current customers fall within this demographic group.

Figure 31 illustrates the density per square mile of the population aged 65 years and older by block group. The block groups with the largest densities of older adults are located in the City of Lumberton and areas surrounding the city to the north, east, and southwest. Other areas with a higher density of older adults include the eastern portion of Red Springs and the northern portion of St. Pauls.

Figure 31. Older Adult Population

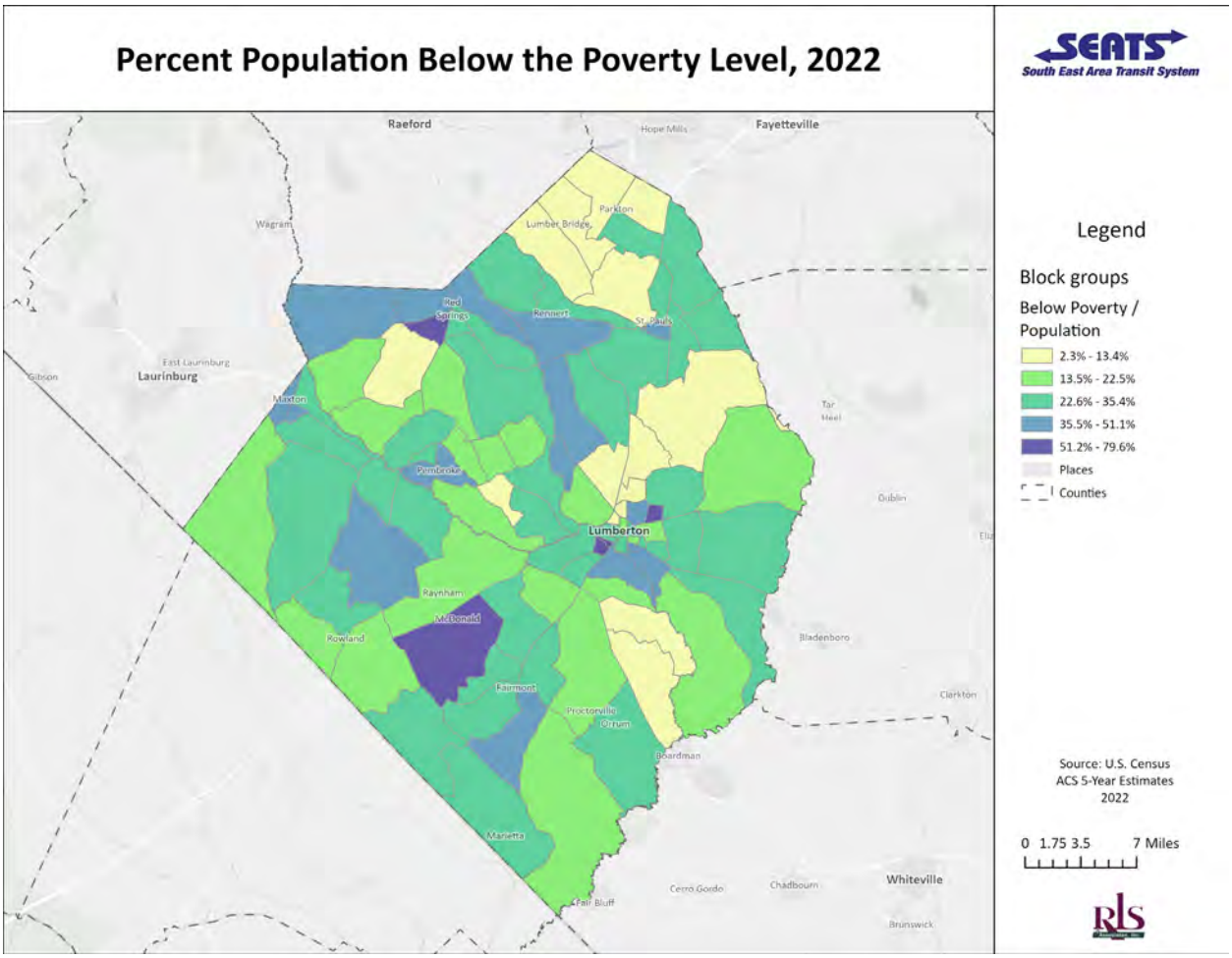


Household Income and Poverty

U.S. Census American Community Survey data confirms 43,716 households within Robeson County. The median household income is $38,610. The highest income bracket is $35,000 to $49,999, which includes 14.2 percent of the population, followed by $50,000 to $74,999 at 14.1 percent. The total population making less than $10,000 per year is 13.6 percent. Roughly 26.5 percent of Robeson County residents live below the poverty line. This is more than twice the national average of 12.6 percent.

The Census Bureau uses a set of money income thresholds that vary by family size and composition to determine who classifies as impoverished. If a family's total income is less than the family's threshold then that family and every individual in it is considered to be living in poverty. Figure 32 depicts the distribution of individuals in poverty throughout the county. The block groups that have the highest percent of households in poverty are concentrated in and around the Town of McDonald. Smaller pockets are also found in the southwestern portion of Red Spring and around the county seat.

Figure 32. Population Below Poverty Level

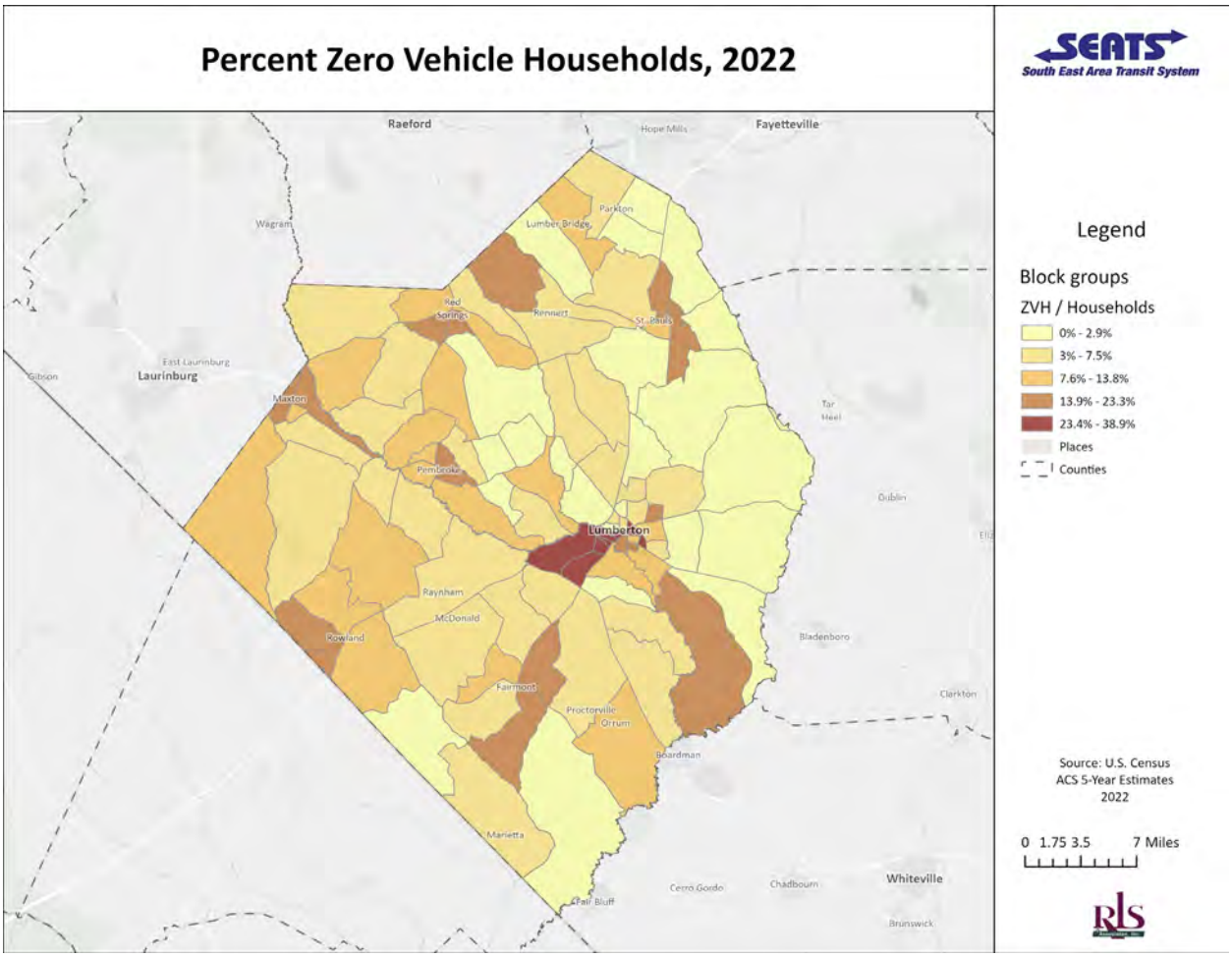


Zero Vehicle Households

Transportation is traditionally a household's second-largest expense next to housing. The characteristics of the household's neighborhood or community will impact the costs of transportation. Locations that are close to services and employment will allow the household to spend less time, energy, and money on transportation, while locations with greater sprawl may involve higher costs and more time for transportation. The Center for Neighborhood Technology's Housing and Transportation (H+T) Index calculation for Robeson County is $13,291 for the typical household's annual transportation spending, an average of 38 percent of household income. More information about the H+T Index can be found at its website.

Within Robeson County, there are an estimated 43,716 households, of which about 3,568 (8.2 percent) households do not have access to a vehicle. Figure 33 illustrates the concentration of zero-vehicle households throughout the study area. Areas with the highest percentages of households (between 23.4 to 38.9 percent) with zero vehicles available are located in the central portion of the county, in the western portion of Lumberton. Block groups with the second lowest percentage of service households are located on the periphery of the county along the border of neighboring communities including Raeford, Laurinburg, Whiteville, and South Carolina.

Figure 33. Percentage of Households

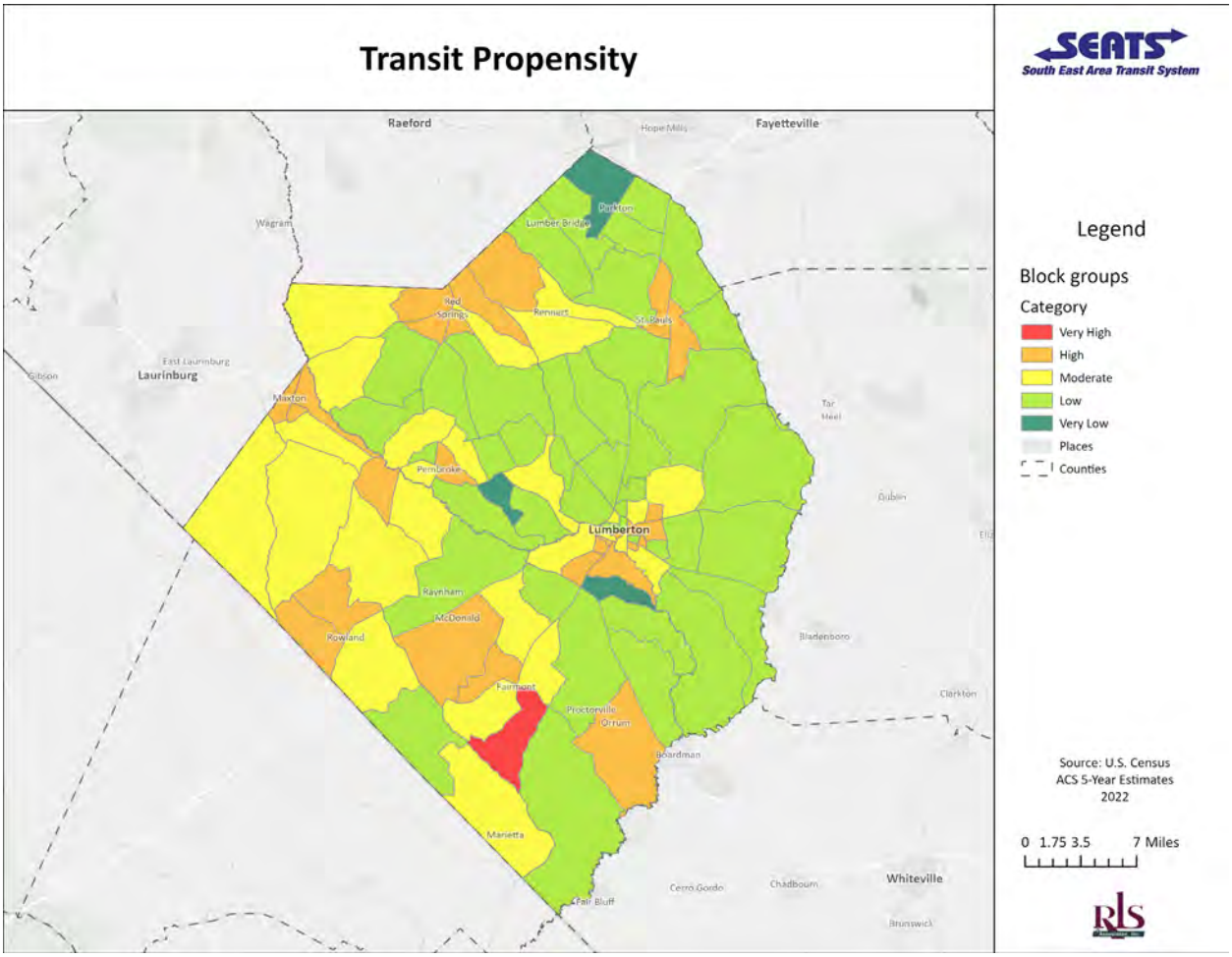


Transit Propensity

One method of projecting which locations contain residents with the greatest transportation need is to calculate transit propensity. Transit propensity considers demographic characteristics to measure the likelihood that a local population will use transit service. The model was derived through research completed on transit trip generation. The result is an estimate of the relative propensity for transit per Census block group. To calculate transit propensity, American Community Survey 5-Year Estimates were gathered at the block group level for Robeson County. The data included total population, total households, population below poverty level, number of persons age 65 and older, and the number of households with zero vehicles available.

Figure 34 illustrates a comparative analysis of high, moderate, and low propensity. It must be noted that "Very low" and "Low" values do not indicate a lack of need, but a level of need that is below the mean (average) value for the study area. The analysis results indicate that need is spread throughout the county, with a pocket of the highest level of need located south of Fairmont.

Figure 34. Transit Propensity



Public Engagement Activities and Community Input

A formal public engagement campaign was established under the study effort. The campaign is organized under two defined phases. Phase I was implemented in June 2024 following the formal kick-off of the study effort. The objective was to garner feedback from community stakeholders, SEATS customers, community members, and SEATS personnel on primary needs and current gaps in transportation services. Phase II will occur in October 2024.

Phase I of the public and stakeholder input process was conducted from June through August 2024. Feedback received directly informed the development of recommendations. The process consisted of the following activities:

- A general community and customer survey was administered on June 2, 2024, and concluded on August 1, 2024, following the Lumbee Tribe of North Carolina's Insurance Fair and Back to School Event.
- The survey instrument and associated promotional content was available in both English and Spanish. The 17-question survey was distributed in hard copy and electronically by members of the formal Advisory Committee, project management team, and partner agencies.
- A total of 381 survey responses were gathered.
- SEATS managers, office staff, and operators participated in the one-on-one guided interviews.
- A total of nine interviews were conducted with local elected officials and leadership from community organizations and partner agencies.
- Public open house events were held at the Robeson County Department of Social Services
- (DSS) and SEATS offices; and project management team members and SEATS personnel participated in a total of six community pop-up and public events held at various locations within Robeson County including the Towns of Red Springs and Pembroke, Robeson Community College, Pembroke, and UNC Health Southeastern Community Health Education Center (CHEC).
- The data collected from activities performed under Phase I of the

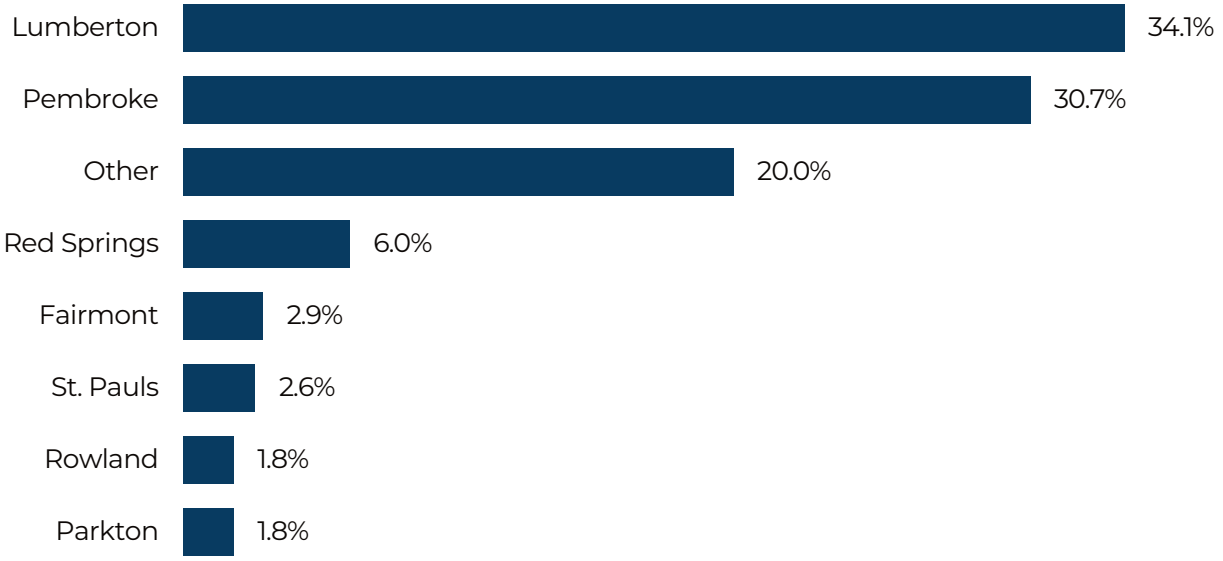
public engagement campaign and results from the analysis of North Carolina peers influenced the recommendations for feasible service options under a microtransit pilot program. The framework for program design and service alternatives were presented to project stakeholders and the community.

Community Survey

The survey effort yielded a total of 381 responses with a target response rate of 300 to 500. Six percent of survey respondents use SEATS as their primary mode of transportation. The survey instrument is provided in Appendix A to this report. Questions ranged from basic demographic data of respondents to travel patterns, use and awareness of SEATS services, ease of securing transportation services, use of smartphone technology, and utilization of a more flexible, on-demand public transportation service alternative. Responses to the demographic questions provide context to other questions and illuminate the need and potential usage of enhanced public transportation services offered under a microtransit service model.

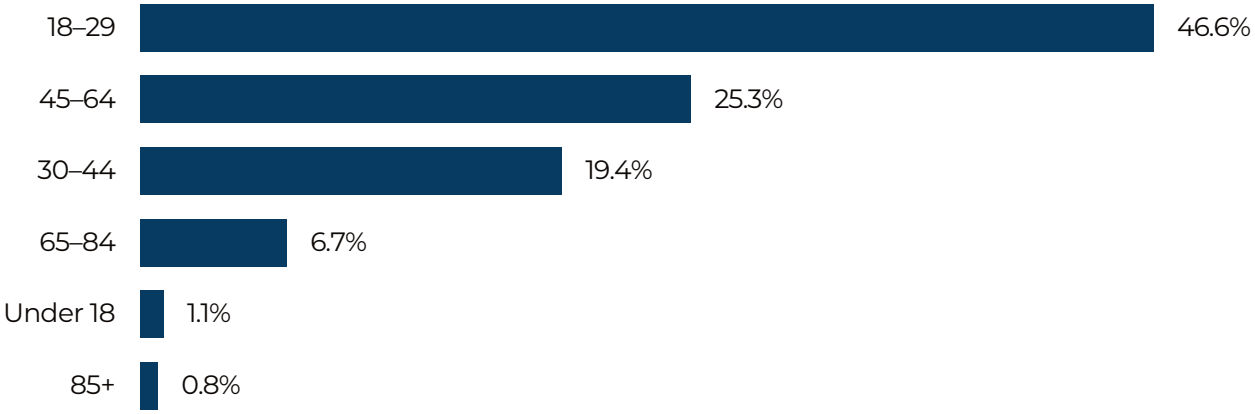
As illustrated in Figure 35, survey respondents represented communities across Robeson County; however, 31 percent reported living in Pembroke, second only to Lumberton at 34 percent. Approximately nine percent reported living in the northern portion of the county in Fairmont and Red Springs. Notably, the Towns of Parkton and Rowland were not well represented with only seven respondents. Locations recorded as "Other" include, Maxton (15.7 percent) as well as Laurinburg (7.9 percent) and Fayetteville 11.8 percent) which are outside of the SEATS service area.

Figure 35. Survey Responses for "Where do you live?"



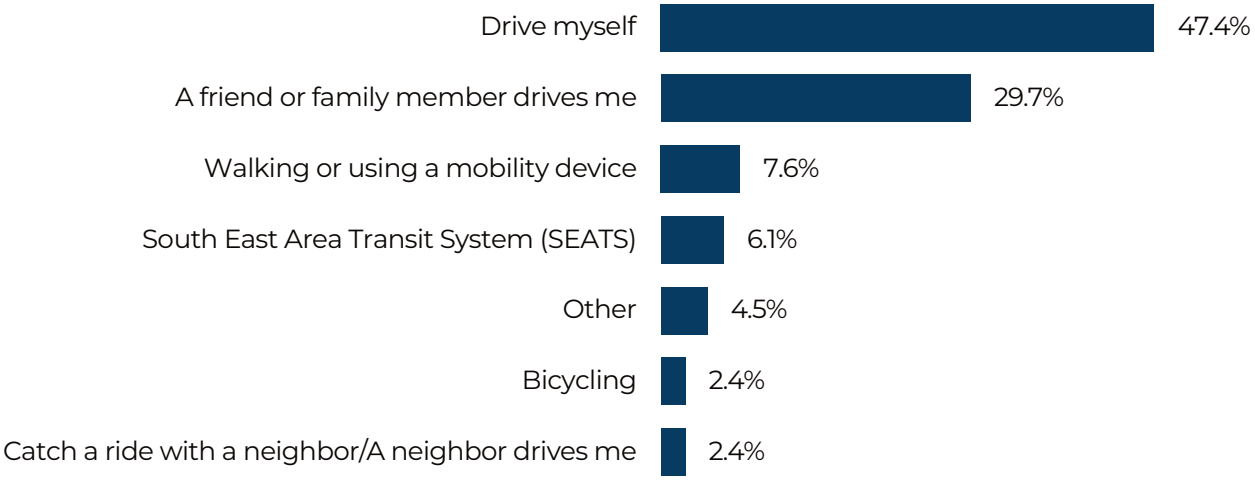
The majority, or approximately 46 percent, of respondents fall under the 18 to 29 age range, with an additional followed by 25.3 percent in the 45 to 64 range (Figure 36). As indicated, six percent of participants reported they use SEATS as their primary mode of transportation. Of those 6 percent, approximately 30 percent fell into the 45 to 64 age range, with an even distribution of 26 percent in the 30 to 44 and 65 to 84 range.

Figure 36. Respondent Age Distribution



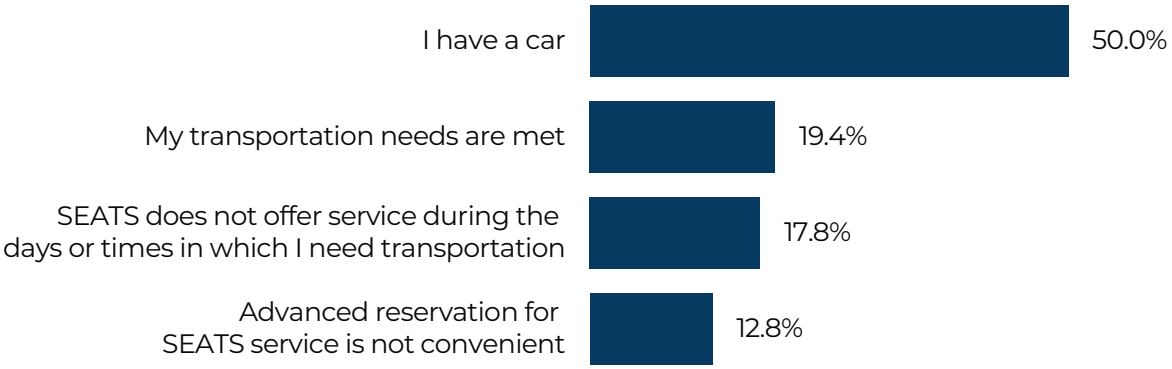
Approximately 47 percent of survey respondents reported they use a personal vehicle as their primary means of transportation. The high percentage of respondents using personal vehicles is typical for rural communities such as this one. Roughly 32 percent of participants rely on a family member or a friend with a personal vehicle as their primary means of transportation, as shown in Figure 37. Responses recorded as "Other" include, Uber and the University Bus System. While 9.5 percent of survey participants use SEATS, roughly 16 percent responded they have a family member or friend who uses SEATS.

Figure 37. Respondents' Primary Means of Transportation



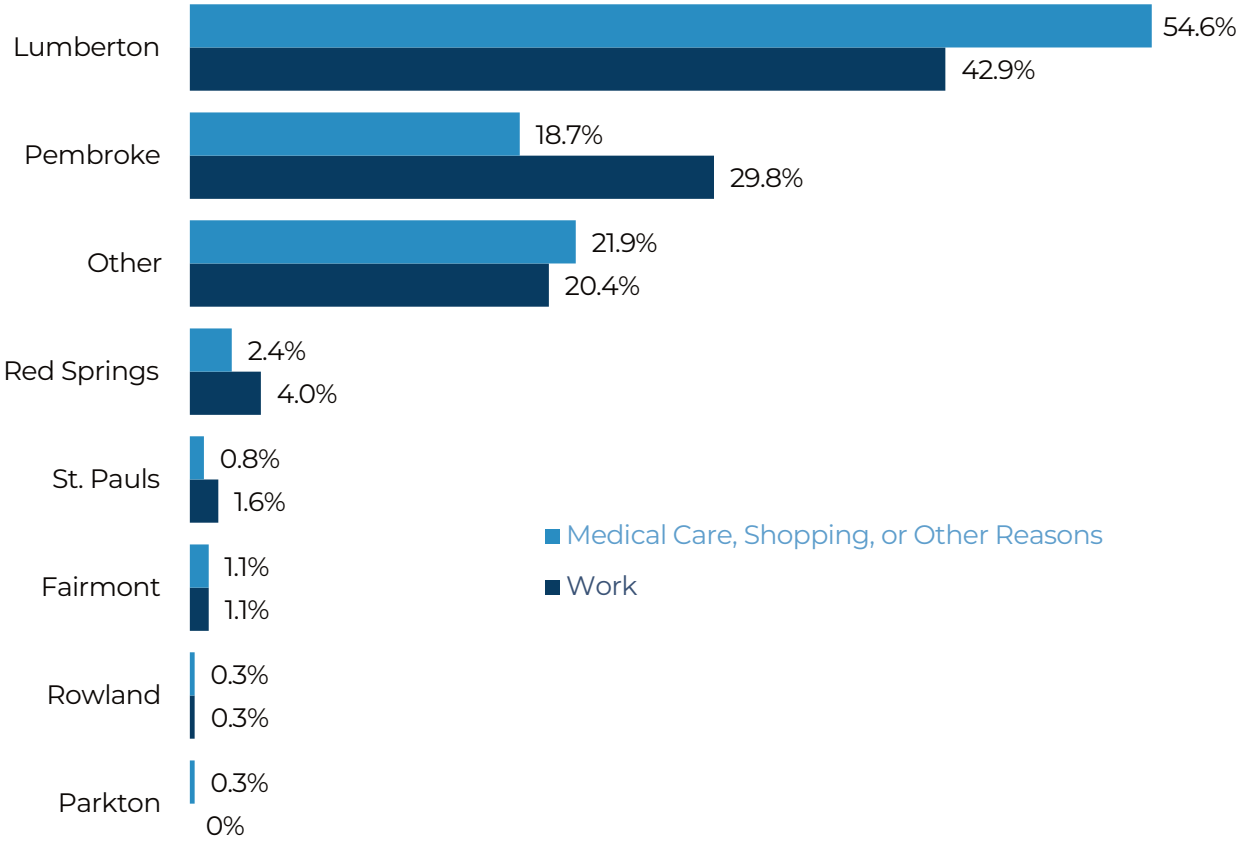
As depicted in Figure 38, the majority of respondents reported car ownership as the primary reason for not utilizing SEATS (50.0 percent); however, respondents reported the limited availability of SEATS services (17.8 percent) and lack of convenience (12.8 percent) as the primary factor.

Figure 38. Respondents' Primary Reason for Not Using SEATS



As illustrated in Figure 39, the majority of participants reported Lumberton as their primary destination for employment, medical care, shopping, and other trip purposes.

Figure 39. Respondents' Primary Destination for Work, Medical Care, Shopping and Other Reasons



Respondents stated that they sometimes experience difficulties getting to work (21.7 percent), medical offices, clinics, or hospitals (22.4 percent), and shopping centers, including grocery stores (25.9 percent), while the majority of respondents (36.8 percent to 41.4 percent) experience no difficulties in getting to these places. Figure 40 shows that some respondents experience difficulty accessing health care, employment, or other destinations. Some stated that they always or frequently experience difficulties getting to medical (28.2 percent), shopping (25.3 percent), work (20.2 percent), and recreational or social gatherings (29.0 percent).

Figure 40. Respondents' Difficulty in Securing Transportation to Primary Destinations

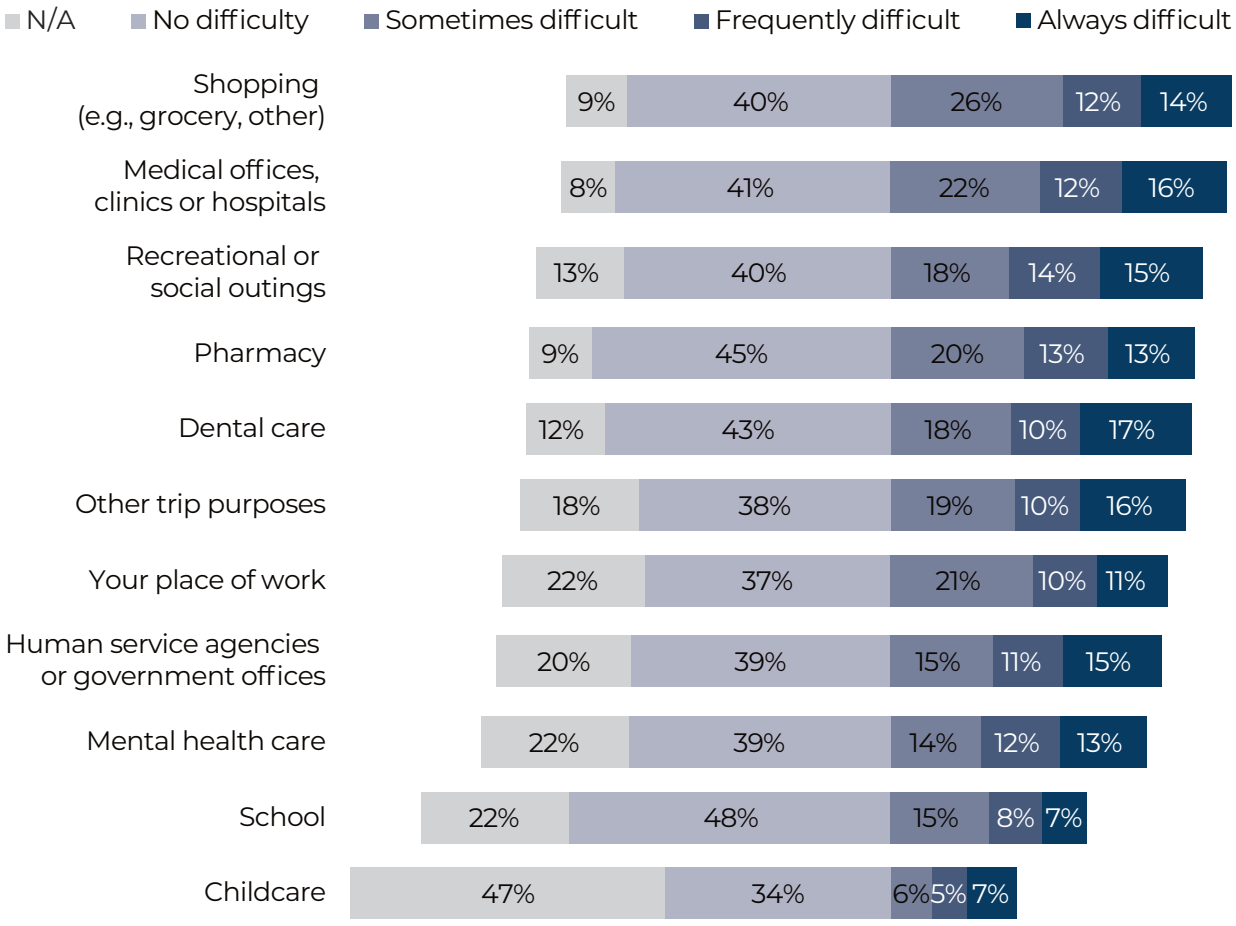


Figure 41 and Figure 42 illustrate an even distribution in the days and times in which respondents reported they have difficulty in securing transportation. Respondents were able to select multiple answers for each question.

Figure 41. Days Respondents have the most Difficulty in Securing Transportation

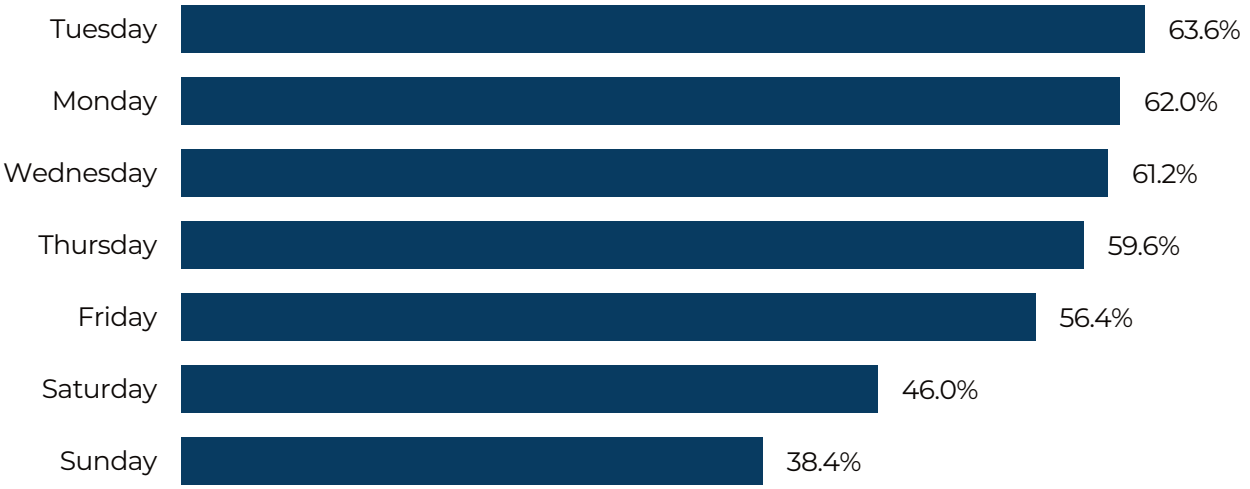
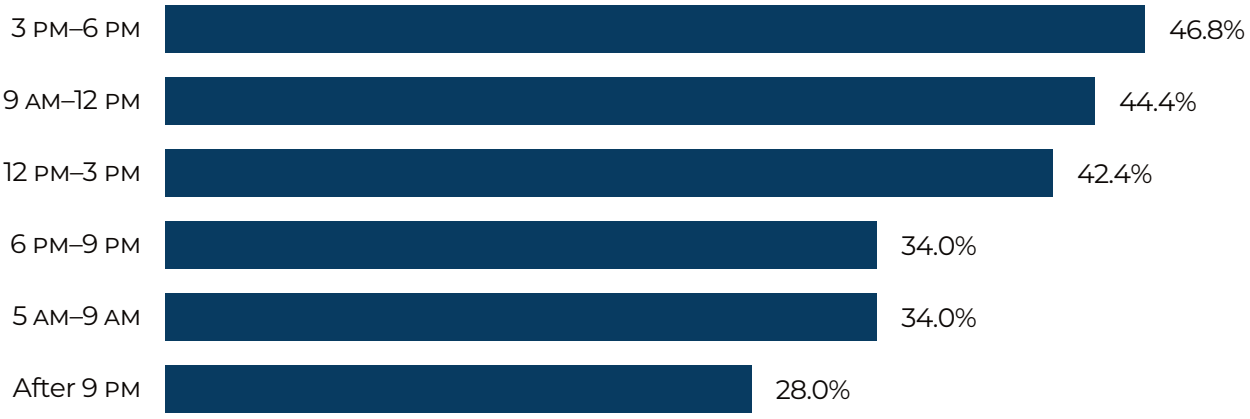


Figure 42. Times Respondents have the most Difficulty in Securing Transportation



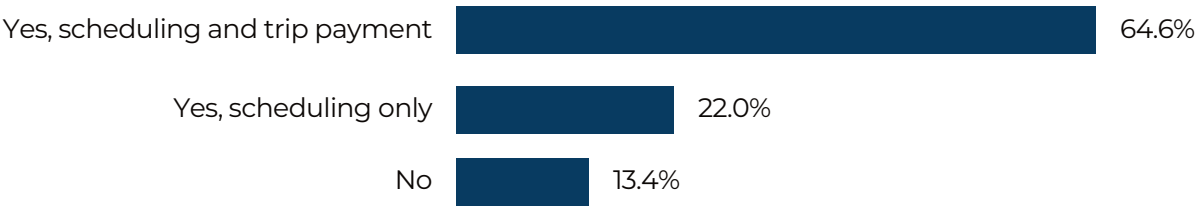
The majority of respondents (76.2 percent) indicated that an on-demand microtransit service alternative would be very helpful to the community, as shown in Figure 43. Ninety-two percent of participants (348 individuals) reported they use or have access to a smartphone.

Figure 43. Survey Responses for "How Helpful Would a Microtransit Service Option be for Robeson County?"

Figure 44 illustrates the feedback on usage of smartphone technology to reserve and pay for SEATS services from respondents with the majority of respondents confirming they would reserve and pay for transportation services via smartphone. However, of the six percent of survey respondents who indicated they use SEATS as their primary mode of transportation, the majority (49.1 percent) responded they would not use a smartphone to schedule and pay for a trip with SEATS even though 69.6 percent confirmed they use of have access to a smartphone.

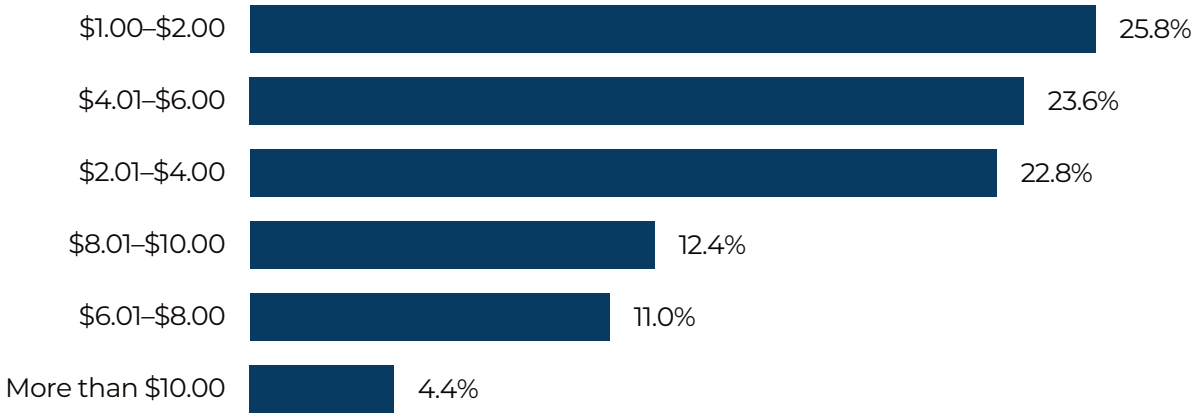
The reasons why the total overall respondents would not use technology for trip reservation and payment include, but are not limited to, "not a SEATS rider", "use cash only", and "unable to use a smartphone". One respondent inquired about the safety of fare payment technology, demonstrating that safety concerns might be a deterrent to adoption/use of such technology.

Figure 44. Survey Responses for "Would You use a Smartphone to Schedule and Pay for a Trip with SEATS?"



What respondents would be willing to pay for a more convenient, on-demand service is presented in Figure 45. When comparing the one-way, adult fare for SEATS's current, advanced reservation service to what respondents expressed they would be willing to pay for an enhanced service, there appears to be a tolerance for higher fares for a more personalized service.

Figure 45. Survey Responses for "What is the Highest Amount You Would be Willing to Pay for an On-demand, Same Day Public Transportation Service Option?"



Survey respondents had an opportunity to provide open-ended comments. All comments received and recorded are included as an attachment in the final report. The following is a sampling of feedback provided by SEATS customers and Robeson County residents and visitors:

- As an educator in this county for almost 30 years, I've found education to be a huge barrier. I feel on-demand travel would be excellent. I surely hope this becomes an option for our residents.
- Don't have a credit card needed to pay for service. Need other options to pay
- I am a Peer Support Specialist (CPSS). I feel my clients will most definitely benefit from this. The only concern - I feel they would have is if they had to wait an unreasonable amount of time before they can be transported back home.
- I ♥ public transportation
- I have no problem with transportation they take me to my appointment and back no long waiting and very comfortable
- I would use this service. Thank you!
- I currently learn at UNCP, and I am an out-of-state student with no car. My only form of transportation is relying on friends with cars cause there's no public transportation around at all.
- I believe that you guys are creating a great idea and I'm here for it, I appreciate the thought you guys are giving into our community

"Love SEATS. It's really helped me out. Keep up the good work!"

SEATS Staff and Stakeholder Interviews

In-person interviews were conducted with four SEATS staff members in June and July 2024. The system's Administrative Operations Coordinator and three drivers were included in the interview effort. Additionally, the consultant team performed one-on-one interviews with various community stakeholders, providing education about the feasibility study underway, introducing the prospect of an enhanced microtransit service offering, and garnering feedback on transportation needs within Robeson County. Leadership and representatives from the following municipalities, organizations, and community groups were included in the interview effort:

- Lumbee Tribe of North Carolina
- Lumber River Council of Governments (COG)
- Robeson County Housing Authority
- SEATS's Transportation Advisory Board
- Town of Pembroke
- Town of Rowland
- UNC Health Southeastern Next Steps
- University of North Carolina Pembroke (two interviews)

The interviewees' comments, summarized by theme, are presented below.

Community Awareness of SEATS

The majority of interviewees indicated that community members had a general awareness of SEATS services. Stakeholders were asked to rate the community's awareness of public transportation services on a scale of 1 to 5, with 5 being strongly aware. The most frequent answer was a "3 or 4." Many stakeholders said that their clients had a stronger awareness of SEATS than the general public in the county. Increased and ongoing education of SEATS services was noted as a need by many stakeholders including SEATS personnel. This sentiment was reinforced through feedback provided by members of the public received during the community open houses and pop-up events. A marketing and public awareness campaign, targeting specific demographics including older individuals, is warranted with the introduction of new on-demand microtransit service/program.

SEATS Strengths and Value to the Community

Stakeholders regard SEATS as an asset within the community members, including for their clients/constituents that drive. This is particularly true for stakeholders who serve a demographic group of older individuals, age 60 and above, most notably. The increase in population among this demographic group will place increased demand for SEATS to grow and expand services. A few stakeholders and agency personnel noted that SEATS is a "lifeline" for

residents as access to transportation is a barrier for many community members, including older adults.

Community Perception of SEATS

Stakeholders described the community's perception of SEATS in regards to topics like quality of service, reliability, and safety.

Positive perceptions included:

- Service is regarded as safe and operators are professional and kind toward customers.
- Drivers are professional and courteous to customers.
- Stakeholders reported their office receives little to no complaints about SEATS.

Areas of concern included:

- While the majority of stakeholders noted complaints are few and far between, client/constituent feedback traditionally centers around lengthy wait times and the availability of services.
- As referenced, customers would like ride timeliness to improve: pick-ups can be too early or late; rides and wait times can be too long.

Important Unmet Transportation Needs

Stakeholders were asked to provide insight on the current gaps in services including portions of the county with a demonstrated need. The high priority needs expressed by stakeholders and SEATS personnel included:

- Service to Maxton, Parkton, and Orrum.
- Increased service offerings to Pembroke; a lot of tribal members live within a 12-mile radius of Pembroke and are in need of transportation to primary destinations including the pharmacy.
- Availability of transportation services in the evenings and weekends; outside of the SEATS service schedule.
- More frequent service, particularly in the rural portions of the county including Rowland and Red Springs.
- Majority of destinations most frequented are located in Lumberton; some jurisdictions are located over 20 miles outside the county seat. The distance has an adverse impact on the level of frequency in which services are/can be provided.

The University of Pembroke operates a shuttle service, connecting students to shopping/retail centers located just off campus. Additionally, transportation to the Raleigh airport is available through advanced reservation during certain times throughout the academic year. Furthermore, the University organizes out-of-county recreational activities for students throughout the academic year. Transportation for these outings is provided by the University. The small footprint of campus supports multimodal activities including biking and walking. Stakeholders confirmed that other than an increased demand for service to/from the airport, current transportation offerings adequacy meet the needs of UNCP students.

Feedback on Microtransit Services and Fare Structure

The advantages of a same-day service option were recognized by stakeholders and SEATS personnel. SEATS makes every effort to grant same-day service requests; however, capacity is limited. Stakeholders noted that increased/adequate capacity (personnel staffing and vehicles) would be required to support same-day service. Feedback on service delivery and fares under a microtransit pilot program is presented as follows:

- Program branding will help with marketing and outreach efforts; community outreach and education is integral to the success and adoption of any new service/program. Engagement strategies for outreach to targeted community groups were offered by several stakeholders.
- Smaller vehicles are recommended to deliver services.
- The majority of stakeholders and SEATS personnel interviewed recommended charging a higher fare than traditional SEATS services ($3.00 per trip for adults). An enhanced level of service was justification for the higher fare. Recommendations provided ranged from $4.00 to $6.00 per trip. Two stakeholders recommended a mileage-based fare structure as longer trips are inherently more costly to provide.
- Stakeholders stated that while many community members would use an app or website to schedule and pay for transportation services, a low-tech solution must be retained for customers who do not use or have access to a smartphone.

Robeson County/South East Area Transit System (SEATS) Microtransit Transit Study Survey

SEATS is undertaking a study to evaluate the feasibility of implementing an on-demand, Microtransit pilot program in Robeson County. Microtransit is a flexible public transportation alternative providing on-demand, same day service to the public. Individuals can reserve and pay for trips electronically through a weblink or smartphone app. Transportation services or trip requests can also be made by contacting the SEATS office. Please take our survey to let us know what you think! **At the end of the survey, you may optionally enter your name and contact information to be entered into a drawing for a $50 Walmart gift card.** Otherwise, we will not retain your personal information or use it in any other manner.

You may also take this survey online by scanning the QR code, or by visiting https://www.surveymonkey.com/r/RobesonSEATS

For additional information, please contact RLS & Associates at (937) 299-5007.

1. Where do you live?

- ☐ Lumberton
- ☐ Pembroke
- ☐ Red Springs
- ☐ St. Pauls
- ☐ Parkton
- ☐ Rowland
- ☐ Fairmont
- ☐ Other (please specify): _____

2. What is the primary way you travel?

- ☐ A friend or family member drives me
- ☐ Catch a ride with a neighbor (a neighbor drives me)
- ☐ Drive myself
- ☐ South East Area Transit System (SEATS)
- ☐ Walking or using a mobility device (wheelchair or scooter)
- ☐ Bicycling
- ☐ Other (please specify): _____

3. Do you, or does a friend or family member, use SEATS for transportation?

- ☐ Yes, I ride SEATS
- ☐ Yes, a friend or family member rides SEATS
- ☐ No
- ☐ Unsure

4. If you do not ride SEATS (answered No to Question 3), what is the primary reason?

   ☐ I have a car
   ☐ My transportation needs are met
   ☐ Advanced reservation for SEATS service is not convenient
   ☐ SEATS does not offer service during the days or times in which I need transportation (specify day(s) and time(s)): _____

5. Where do you <u>most often</u> need to travel for **work** (select only one)?

   ☐ Lumberton
   ☐ Pembroke
   ☐ Red Springs
   ☐ St. Pauls
   ☐ Parkton
   ☐ Rowland
   ☐ Fairmont
   ☐ Other (please specify): _____

6. Where do you <u>most often</u> need to travel for **medical care, shopping, or other reasons** (select only one)?

   ☐ Lumberton
   ☐ Pembroke
   ☐ Red Springs
   ☐ St. Pauls
   ☐ Parkton
   ☐ Rowland
   ☐ Fairmont
   ☐ Other (please specify): _____

7. Do you have difficulty getting the transportation you need to any of the following types of destinations?

	No difficulty	Sometimes difficult	Frequently difficult	Always difficult	Not applicable to me
Your place of work	☐	☐	☐	☐	☐
Medical offices, clinics or hospitals	☐	☐	☐	☐	☐
Mental health care	☐	☐	☐	☐	☐
Dental care	☐	☐	☐	☐	☐
Pharmacy	☐	☐	☐	☐	☐
Shopping (e.g., grocery, other)	☐	☐	☐	☐	☐
School	☐	☐	☐	☐	☐
Human service agencies or government offices	☐	☐	☐	☐	☐
Recreational or social outings	☐	☐	☐	☐	☐

Childcare	☐	☐	☐	☐	☐
Other trip purposes	☐	☐	☐	☐	☐

8. What days and times do you have the most difficulty in securing transportation (select all that apply)?

☐ Monday
☐ Tuesday
☐ Wednesday
☐ Thursday
☐ Friday
☐ Saturday
☐ Sunday

☐ 5am-9am
☐ 9am-12pm
☐ 12pm-3pm
☐ 3pm-6pm
☐ 6pm-9pm
☐ After 9pm

9. An on-demand, Microtransit service option would provide same day service to Robeson County residents and visitors. Under this service alternative, you would contact SEATS and a driver would pick you within an hour to take you where you need to go. How helpful do you feel this type of public transportation service would be to your community (or how likely would you be to use this type of service)?

	Not helpful	Somewhat helpful	Very helpful	Unsure
A service in which I call SEATS <u>at least one day in advance</u>, and a vehicle picks me up to take me where I need to go	☐	☐	☐	☐
A service in which I call SEATS, and a vehicle picks me up <u>within one hour</u> to take me where I need to go	☐	☐	☐	☐

10. What is the <u>highest</u> amount you would be willing to pay for an on-demand, same day public transportation option (select only one)?

☐ $1.00-$2.00
☐ $2.01-$4.00
☐ $4.01-$6.00
☐ $6.01-$8.00
☐ $8.01-$10.00
☐ More than $10.00

11. Do you use or have access to a smartphone (Android, iPhone)?

- ☐ Yes
- ☐ No

12. Would you use a smartphone to schedule and pay for a trip with SEATS?

- ☐ Yes, scheduling only
- ☐ Yes, scheduling and trip payment
- ☐ No

If no, why not: _____

13. What is your age group?

- ☐ Under 18
- ☐ 18-29
- ☐ 30-44
- ☐ 45-64
- ☐ 65-84
- ☐ 85+

14. What is your race?

- ☐ White
- ☐ Black or African American
- ☐ Asian or Asian American
- ☐ American Indian or Alaska Native
- ☐ Native Hawaiian or Other Pacific Islander
- ☐ Other Race

15. What is your ethnicity?

- ☐ Hispanic or Latino
- ☐ Not Hispanic or Latino

16. Do you have any other feedback or comments about public transportation services in your community?

_____

_____

17. First/last name and e-mail address or phone number for gift card drawing:

_____

_____

_____

_____

Thank you for your time!

Attachment B | Open Ended Comments from Community Survey Effort

Responses to “Do you have any other feedback or comments about public transportation?”
I am a Peer Support Specialist (CPSS). I feel my clients will most definitely benefit from this. The only concern I feel they would have is if they had to wait an unreasonable amount of time before they can be transported back home.
I am a UNCP student. I have a very old car, and it is unreliable. Sometimes, I need a ride and would be willing to schedule and pay for one.
I am ED nurse at UNC Health Southeastern and we have patients almost daily that need transportation home. We have to either rely on our ambulance service, which is in short supply and should be limited to patients that cannot walk, or call a healthcare transportation company which can be expensive. We are often referred to SEATS but they need 24 hours notice and patients have to be “approved” by SEATS with insurance. We would utilize a pay per use service in Robeson County with funds that are available if it could be same-day and affordable.
I believe that you guys are creating a great idea and I’m here for it, I appreciate the thought you guys are giving into our community
I believe transportation should be available on all college campuses. I know too many students who rely on others in order to get to where they need to go. I believe we should have a system that is available 24/7 (even during the summer) for all students.
I currently learn at UNCP and I’m an out of state student with no car, my only form of transportation is relying on friends with cars cause there’s no public transportation around at all
I do not have a car and have difficulty visiting Lumberton for shopping and other reasons, also I do think a lot of UNCP students are unaware of such a service so would be grateful if you make sure the students know about your service cause a lot of us do not have vehicles on demand.
I do not have a need for this transportation, but I feel it would be helpful to those that do have a need for transportation.
I had a bad problem back in the Fall when my car went in the shop for a while and I had no way to school. I had a very hard time getting to and from school. Very hard. I called SEATS and they didn’t offer rides to campus except at a time that I could t go because I also had my kids and my kids daycare didn’t open. Until 7:30. Then I worked in Lumberton. It was an extremely stressful time and having this Transit system would have saved me so much problem and head ache.
I have a car, but I would use public transportation if I had known about SEATS
I have no problem with transportation they take me to my appointment and back no long waiting and very comfortable
I hope that you will not have to wait an extended amount of time to be picked up from your designation
I hope this will help people like me.
I live in a rural area and seats doesn’t come to my area
I personally do not need this but many persons in our county would benefit from this service as most do not have transportation our have to pay more than $10.00 for transportation.
I think public transportation is a great idea, the thought of also being held with technology as in paying and scheduling is also helpful for students.
I think this is a great idea and opportunity.
I think this is a great plan!
I think this is an awesome idea. I hope everything can move forward in a positive direction. This would help alot of people who struggle with transportation.

Responses to “Do you have any other feedback or comments about public transportation?”
I was born in Brooklyn, New York and my family moved to North Carolina when I was young with only one vehicle. For most families in rural areas, such as Robeson County, one to no vehicles is very common, thus having some sort of transit system supplement would help the residents to get to the places that they need to go. I see people walking or riding bikes daily who I know would appreciate some support from our area, especially when they need to purchases multiple items, like groceries. Our elderly, our students without vehicles, and our community would really benefit from having a system that supports their needs.
I work at UNC Health Southeastern and I feel this would be a great resource for our community. I feel it may be difficult for most of our residents to arrange appointments via phone and also paying online. Most of our older community members do not have smartphones and have a grade school education level.
I would LOVE public transportation options.
I would use this service. Thank you!
It is DESPERATELY needed in Robeson County, especially at the UNC PEMBROKE for college students. We have literally nothing (not even Uber).
It would be awesome to make this happen!! Especially since I don’t have a license or a car.
it would be helpful to have something like that so students like myself can get to work or go somewhere they need to go if they do not have a car
it would be perfect for UNCP campus students!
IT WOULD BE VERY HELPFUL
IT WOULD HELP ME GET AROUND
It’s a great opportunity
Love SEATS. It’s really helped me out. Keep up the good work!
Make sure the bus is cool for the summer and warm for the winter that’s all
Many residents need transportation in our county
More public transportation is much needed.
Most of the Elder Fairmont residents that I know need SEATS available. We do not have transportation. Need immediately.
Need better communication for someone who D/HOH and with other disabilities and room for wheelchair
need hours (last word was not legible but appears as “hours”)
Need hours.
Need it bad in Maxton.
No bus Tuesday and Thursday after noon in Fairmont.
No, I feel like this a good idea especially for students like me who live away from home and no car, needing places to go sometimes I.
No, I have a car, but I am from new Bern, and some of my dental and vision care offices are there, for general care I’m good, I would only use seats probably for trips, anything else like going to work, shopping, etc. I’m good
Pembroke needs a transportation system. Some UNCP students don’t have a car.
Please bring a transportation in Pembroke

Responses to “Do you have any other feedback or comments about public transportation?”
Please implement this. I cannot afford to buy a car people take advantage of you if you have to ask them for a ride.
Please make it affordable for college students
Public transportation is in my opinion really helpful and a good way for internationals to explore the area a bit more. For me as an international it is often difficult to get to another place and I am used to public transport. I always have to ask friends and often feel bad to ask constantly if I need to go to a medical office or another supermarket which is not in pembroke
Public transportation is really needed in Pembroke for college students like me. This will guarantee us a way to go get food and groceries.
reservation and pick up should be clear and simple. we should not be left guessing where we need to go or meet. I think a system like this is a BIG need for our community. students have been asking UNCP to provide transportation to off campus housing for years, but the school said they cannot afford it. this would solve that issue and take us students to lumberton for some shopping or relaxation on the weekends (when there isn’t much else to do and everyone goes home)
SEAT would be very helpful
Seats could help me out on my community
Seats should partner with schools for free transportation to students
Seats was scheduled to take me to a doctor’s appointment. They never came to my residents. Claim they beat the horn. Why not knock on the door or ring the bell.
Several people in Red Springs do not drive. He receives ride requests from family members and friends. He drove a friend to the Juneteenth celebration.
Thankful to have SEATS
There is no public transportation in pembroke besides the collage shopping shuttle that runs three days out of the week and gets full fast. We need more options for those who are in need.
There is no public transportation in Pembroke. We all the students struggle to go to places. It’s crazy how theres a University of North Carolina System flagship university and the entire county doesnt have public transportation.
There should be more avenues of transportation for the community, regardless of whether it’s for commuting to school, work, home, and running errands.
This could be helpful for elders who cannot get to appointments because they no longer drive.
This is desperately needed!
This is for my son who has trouble finding work because he does not drive and transportation is a factor
This is long overdue it would benefit me to pick up my kids from school and take to doctor appointments
This service would be extremely useful to our elderly population.
This would be extremely helpful to me as a college student at UNCP.
This would be very helpful for not only the students of UNCP but to the residents of the pembroke and surrounding communities
This would be very helpful to the student body at UNCP and be used a lot by us .
This would give many that are unable to secure transportation means to handle day to day living,
This would help those that don’t have there on transportation.

Responses to “Do you have any other feedback or comments about public transportation?”
Throughout my first and second year I always had trouble getting transportation for medical appointments and getting groceries so this is a massive help. Also, when it comes to students, make sure that its open during and after class hours!
transportation would helpful
Transportation for an International student to go tu lumberton for special occasions will be very helpful since how limited it is for international students from UNC Pembroke.
Transportation in events of emergencies is difficult
Transportation services for work and childcare in rural communities are greatly needed.
Transportation would be helpful.
Visually impaired and must rely on aging parents for transportation. Don’t know how much longer they will be able to assist
We do not need to use our county vehicles like SEATS to pick up people for Lyft or Uber. It should only be used for elderly and disabled only!!!!
We have students that use the Seats Transportation.
We need Transportation in our community
We often have parents who do not have transportation who have trouble getting to school to get their children registered. Would this service provide that?
We really need public transportation in Lumberton
What is earliest time for pickup in Maxton?
While I don’t have immediate need for this service, it would benefit UNCP students and community members.
While it’s not something I would personally be using I often act as transportation for my friends and family because I have a car. Having a way for my loved ones to get around without trying to make sure it aligns with my schedule will give them a sense of freedom they don’t currently have.
Why y’all never come Saint Pauls in the morning time but when it’s 10am yall come this way
Wish it was more available in the community.
With the addition of more accessible transportation, I feel more people will feel more welcomed.
Would there be a chance we can have seats on campus to take us to our various classes
Would this transportation be free to the disabled that cannot drive through Medicaid? It would be a lifesaving service for those with a lifetime of seizures who cannot drive.
Yea they be early sometimes
Yes, sometimes it takes more than 30-minutes to pick me up from Walmart because they are so busy.

Appendix B: Peer Analysis

The results from the peer analysis reflect three North Carolina agencies that have implemented a microtransit program under a Software-as-a-Service (SaaS) model. However, research efforts extended to providers that have employed a Transportation-as-a-Service (TaaS). The review included a peer providers, the majority of which serve rural communities, with similar administrative and operational characteristics to SEATS. Interviews were conducted as appropriate to ensure the benefits and challenges of program implementation were understood. The results from the peer analysis provide insight on best practices and lessons learned from statewide providers who have integrated a microtransit service delivery model into their system of public transportation offerings.

The system profile for SEATS and North Carolina providers included in the peer analysis are presented in Table 23. The modes of service operated for peer agencies reflect "traditional" transportation service modes in addition to on-demand microtransit service.

Table 23. Peer Comparison

Provider	Modes of Service Operated	Service Area	Total Population	Population Density (people per sq. mile)	Annual Ridership	Total Annual Revenue Service Hours
South East Area Transit System (SEATS)	Demand Response	Robeson County	117,537	123.6	39,436	15,898
Johnston County Area Transit System (JCATS)	Demand Response	Johnston County	219,042	276.6	82,864	62,020
Inter-County Public Transportation Authority (ICPTA)	Demand Response	Pasquotank, Perquimans, Camden, Chowan, and Currituck **Total**	40,454 13,053 10,547 13,835 28,616 **106,505**	178.3 52.8 43.9 80.1 109.3	58,156	32,402
Yadkin Valley Economic Development District, Incorporated (YVEDDI)	Demand Response	Davie, Stokes, Surry, and Yadkin **Total**	43,030 44,696 71,429 37,280 **196,435**	163.2 98.0 532.8 111.3	76,414	63,605

Sources: United States Census Bureau, 2022 American Community Survey (ACS) 5-Year Estimates and 2022 National Transit Database (NTD) Reports

An overview of the peer providers included in the analysis and a detailed profile of the on-demand microtransit programs employed by each agency are presented below.

Johnston County Area Transit System (JCATS)

QuickRIDE

Johnston County Area Transit System (JCATS) is organized under the Johnston County Council on Aging (COA) and provides rural general public transportation to Johnston County residents and visitors via demand response service. The agency provides general public, human service agency, and non-emergency medical transportation (NEMT) services to Medicaid recipients.

JCATS launched QuickRIDE, an on-demand, same-day service option, as a pilot program in March 2023. The program was developed in response to the increased availability of ride hailing services within the local market and transit industry and the need to provide customers with a direct booking option to reserve trips. JCATS maintains a low-tech option for trip reservation and fare payment. Reservations for transportation services can be made by phone and the agency accepts cash payment. The program has a unique brand identity, separating it from the agency's demand response service.

Service Model: Software-as-a-Service (SaaS) Solution. JCATS uses TripMaster by CTS Software for the backend scheduling and dispatch software and customer facing, trip reservation and fare payment technology. Transportation services are directly operated by JCATS.

Service Area: Service operates in one zone with a footprint of approximately 20 square miles, in and around the towns of Smithfield and Selma.

Operating Hours: Service is available Monday through Saturday from 6:00 AM to 8:00 PM

Fare Structure: Fares start at $6.00 per trip. Fares can be paid electronically using a debit or card. Cash is currently accepted.

Fleet Size and Vehicle Ownership: JCATS delivers on-demand, same day service utilizing a fleet of five transit vans. JCATS owns the vehicles which are outfitted with the QuickRide but can be used for general, demand response service, if/as needed.

Benefits and Challenges: The QuickRIDE program is popular with local constituents and has proven successful under a limited-service footprint. Approximately 12,000 trips were performed in the first 10-months, following the formal launch of the pilot program. The seamless integration of the microtransit technology solution to JCATS' existing technology infrastructure was identified as a primary benefit. The integration of electronic fare payment with the agency's accounting system was identified as a challenge following program launch. The identification of a sustainable funding model to support microtransit service beyond the pilot program was identified as a primary challenge. Efforts to advocate for a sustainable and more predictable funding for the microtranist program remain ongoing.

Inter-County Public Transportation Authority (ICPTA)

Same Day Service

The Inter-County Public Transportation Authority (ICPTA) provides rural public transportation to a five-county region serving, Pasquotank, Perquimans, Camden, Chowan, and Currituck Counties. The authority provides general public, human service agency, and non-emergency medical transportation (NEMT) services to Medicaid recipients. Medical transportation is provided outside of the service area to neighboring Virginia and Greenville. The ICPTA office is located in Elizabeth City.

Service Model: Software-as-a-Service (SaaS) Solution. ICPTA uses TripMaster by CTS Software for the backend scheduling and dispatch software and customer facing, trip reservation technology. Transportation services are directly operated by ICPTA.

Service Area: Service operates within Elizabeth City limits.

Operating Hours: Service is available Monday through Friday from 8:00 AM to 4:00 PM

Fares: Same Day Service is currently free to users.

Vehicle Ownership: ICATS owns the vehicles utilized for on-demand, same day service. Vehicles are outfitted with ICPTA branding.

Yadkin Valley Economic Development District, Incorporated (YVEDDI)

GOTransit

The Yadkin Valley Economic District, Incorporated (YVEDDI) operates rural demand response service within a four-county region, serving Davie, Stokes, Surry and Yadkin Counties. YVEDDI launched the GoTransit Program in July 2022. The fixed route circulators operating in the towns of Mocksville (Davie County) and Elkin (Surry and Wilkes Counties) were revised to an on-demand microtransit service delivery model in response to a decrease in demand realized with the onset of the COVID-19 health pandemic. Demand response service is provided within the YVEDDI service area with on-demand service provided in the town limits of Elkin, Jonesville, Mocksville. The program has enhanced the customer experience, offering decreased wait and ride times as compared to the fixed route circulators. The program has a unique brand identify, separating it from the agency's demand response service.

Service Model: Software-as-a-Service (SaaS) Solution. The backend software and customer facing, trip reservation and fare payment app provided by TripMaster by CTS Software. Transportation services are directly operated by YVEDDI.

Service Area: Service operates within the towns of Elkin, Jonesville, and Mocksville.

Operating Hours: Service is available Monday through Friday from 6:00 AM to 6:00 PM

Fares: The cash fare is $1.00 per boarding (trip). A weekly pass is available at a cost of $10.00 and capped at 25 rides within a one-week period. A $30.00 monthly pass is also available with a cap of 100 trips within a one-month period. Passes are reloadable and may be purchased through the driver or at the YVEDDI office located in the Town of Mocksville.

Fleet Size and Vehicle Ownership: YVEDDI delivers on-demand, same day service utilizing a fleet of four transit vans. YVEDDI owns the vehicles utilized for the delivery of microtransit services, and vehicles are outfitted with GoTransit program branding.

Appendix C: Draft Recommendations

The demographic data for the study area, input received from SEATS customers, local stakeholders, and members of the public, and results from the peer analysis helped identify the most feasible program design and operational framework for a microtransit pilot program serving Robeson County. The service alternatives are the result of a data-driven process. The draft recommendations for the on-demand service delivery models most feasible for Robeson County are presented herein.

Service Model

A description of the microtransit models is provided below.

Figure 46. Visual Representation of Three Transportation Models

Software-as-a-Service (SAAS)

Agency only purchases the software to operate microtransit service. This includes the backend scheduling and dispatch platform and customer-facing technology. Service is directly operated and managed by the provider.

Blended Model

The agency maintains separate contracts for software, vehicles, or drivers.

Transportation-as-a-Service (SAAS)

This model is a full turnkey solution. The agency contracts with a third-party vendor to provide the drivers, vehicles, software, and operations management.

The recommended service model of an on-demand microtransit pilot program serving Robeson County is Software-as-a-Service (SaaS). SEATS currently uses TripMaster by CTS Software as their scheduling and dispatching software for demand response service. The software provider's microtransit function will seamlessly integrate with SEATS's existing scheduling and dispatch software. Trip reservations made through the customer facing app or weblink will go directly into SEATS's backend software. The dispatchers will receive real-time notifications of trip reservations performed electronically by customers. Additionally, customers will have an opportunity to pay for their trip via debit of credit card through the app or weblink.

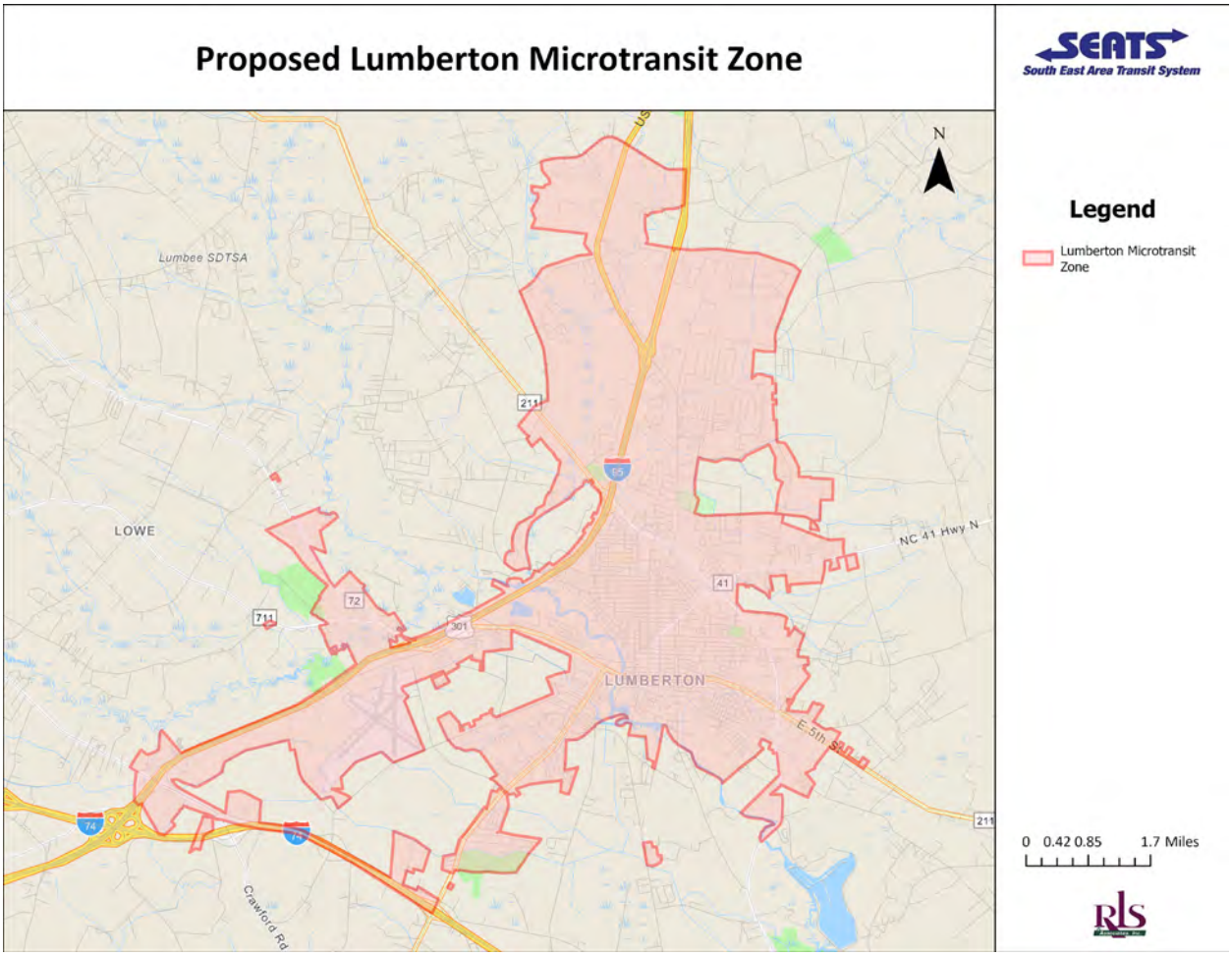
Although the SaaS model provides the technology infrastructure for reserving and paying for transportation services, SEATS would offer a "low-tech" option for customers to secure and pay for on-demand services; trip reservations can be made via phone and fares paid by cash upon boarding.

The SaaS model is recommended because SEATS is well-established and has earned inherent trust from the community. SEATS's leadership and staff have built relationships with customers, community partners, and local stakeholders. Under a directly operated service, SEATS has greater control over customer service and program performance.

Service Area

The demographic analysis revealed that the demand for transit is greatest within the Lumberton City limits. Employment data reveals the majority of employment opportunities are concentrated in and around the county seat. The primary destination for survey respondents who use SEATS for work, medical, shopping, and other reasons is Lumberton. The data supports a need for in-town and cross-county transportation to the county seat. **A microtransit service delivery model is well suited for short trips, at 4 miles or less.** Advanced reservation service is appropriate for longer trips, especially those connecting Lumberton to the smaller towns and cities. The proposed microtransit service zone is concentrated in the Lumberton City limits, high-density residential areas, and major destinations along the periphery to the north of Lumberton. The recommended microtransit service zone is depicted in Figure 47 below. The service zone totals 22.8 square miles.

Figure 47. Proposed Microtransit Service Zone



Although microtransit service will be concentrated in one jurisdiction, the benefits of a microtransit pilot program will be realized countywide. Under the expansion model (Alternative 1) the microtransit pilot program would not supplement existing demand response service, but rather add to the transportation services offered by SEATS.

SEATS operates three to four vehicles, and an average of 51 percent of its passenger trips, in Lumberton daily under its current structure. Staff and stakeholder feedback indicated the most common complaint among SEATS customers is lengthy wait times for the vehicle to pick them up. By dedicating a portion of the vehicle fleet to same-day, short-distance trips within Lumberton, SEATS will be able to allocate a more appropriate level of resources to other communities within Robeson County. The expansion will (1) increase capacity for demand response service throughout the county, helping to increase response time and reduce wait times for demand response customers; and (2) customers traveling to Lumberton will be able to make trips to multiple destinations within the city.

Resources for demand response service will continue to be provided in

Lumberton to support non-emergency medical transportation (NEMT) for Medicaid recipients during the *pilot* phase. The GOTransit program operated by YVEDDI supports transportation for Medicaid passengers; pre-approval and pre-scheduling are required.

Operational Considerations

Target Response Time

The response time refers to the length of time customers have to wait after reserving a trip by phone through the main office or electronically through the app or weblink. Response times vary by community and the size and characteristics of the service zone. Establishing a target response time will help set expectations on service delivery for current and prospective customers, and it serves as a measure of program performance. Furthermore, it can enhance the agency's marketing efforts, highlighting the benefits and convenience of the new service offering.

A target response time of one hour is recommended under the Lumberton microtransit pilot program. When customers reserve a trip, the software will seat that trip on the next or closest available vehicle. Response times could be greater than or less than an hour based upon travel time and availability of resources. The software also affords for advanced booking for same day, on-demand service.

Service Schedule

SEATS operates demand response service six days a week, Monday through Friday from 5:30 AM to 5:30 PM, and Saturdays from 4:30 AM to 12:30 PM The majority of early morning and weekend trips are medical in nature and could continue to be provided via demand response service.

The recommended service schedule under a microtransit pilot program would reflect traditional business hours, Monday through Friday 8:00 AM to 5:30 PM The total annual revenue service hours under the proposed operating schedule for the 2025 calendar year is projected to be 38,868. The revenue service hours for SEATS's demand response service totaled 17,176 for fiscal year 2023. The total annual service hours for microtransit, under the proposed operating schedule, represents a 126 percent increase in the total annual revenue service hours as compared to fiscal year 2023.

Stops

Some agencies offer *curb-to-curb* service in which customers are picked-up and dropped off at the address indicated when reserving the service. Other providers offer *corner-to-corner* service in which customers are picked up and dropped off at the nearest corner or "virtual stop". The TripMaster by CTS Software supports *curb-to-curb* transportation for microtransit passengers. At the present time, the software does not support virtual stops. The curb-to-curb model is consistent with SEATS's demand response service. The congruency is helpful in educating customers on how to use the microtransit pilot program.

Fare Structure

The one-way adult fare for demand response service is $3.00. Approximately 24 percent of survey respondents indicated $4.01 to $6.00 would be the

highest amount they would be willing to pay for an on-demand, same-day service option; this is second only to $1.00 to $2.00 from 25.8 percent of respondents. When comparing the one-way, adult fare for SEATS's current, advanced reservation service to what respondents from the public and customer survey effort expressed they would be willing to pay for an enhanced service, there appears to be a tolerance for higher fares in exchange for a more personalized service. Additionally, responses from interviews conducted with community stakeholders confirmed that a higher fare is reasonable/justified for a more responsive level of service.

Fares could be implemented through a phased approach. As a courtesy to customers and marketing strategy to promote and encourage use, SEATS should consider not implementing fares through the initial launch, or Phase I, of the program. Phase I could be defined as 30 to 45 days. Phase II could be the offering of cash fares and electronic payment for a one-way trip. Then, Phase III would introduce a multi-trip pass, offered at a reduced rate.

Under SEATS's current fare structure, a quantity discount of five percent is applied to purchases of 10 trips (one week) and 20 trips (two weeks). A discount of this nature could be applied for a weekly and monthly reloadable pass. **The cost and ride limit for a weekly and monthly pass could be adjusted based on data collected within the first six months of the pilot program.**

Table 24 reflects the fare structure under the phased approach, as outlined.

Table 24. Fare Structure for Microtransit Pilot Program

Phase	Duration	Adult Fare
Phase I	Within the first 30 days following program launch	Free
Phase II	1 month to 6 months	One-Way Trip: $4.00
Phase III	6 months to one year	Weekly Pass (10 trips): $38.00; Monthly Pass (40 trips): $152.00

Vehicle Fleet and Ownership

SEATS uses a fleet of approximately 16 wheelchair-accessible Light Transit Vehicles (LTVs) to operate its services. All SEATS drivers are required to maintain a Commercial Driver's License (CDL) for operation of all revenue vehicles within the agency's fleet. Smaller transit vans are the common vehicle type for microtransit services. Smaller vehicles are more fuel efficient and less closely to maintain than larger transit vehicles and do not require a CDL to operate, which often equates to lower operational costs. Additionally, smaller vehicles would be less costly to outfit with program branding.

In order to meet projected demand and maintain the established target rate for response time, a fleet size of four, wheelchair accessible vehicles is recommended for the microtransit pilot program. A directly operated service under the SaaS model requires the agency to procure or lease the vehicles required to deliver services. Leasing options within the market area are limited. The two service alternatives carry different implications on the agency's fleet. The recommendation is to identify four vehicles within the SEATS demand response fleet that have reached or exceeded their useful life and replace with smaller, transit style vans.

Personnel Needs

The introduction of a new service results in the need for increased capacity in terms of personnel. As noted, the microtransit service would not supplement demand response service but increase the level of service provided by Robeson County/SEATS to varying degrees. SEATS has the administrative capacity to manage the program. However, increased capacity in operations personnel, including dispatch and operators, would be required to deliver service under each alternative. The recommended staffing levels under a microtransit pilot program are presented in Table 25 below. The flex operator would serve in a dual capacity, serving as an operator and providing support in the dispatch office as needed. Personnel costs for projected staffing needs are outlined in the budget.

Table 25. Projected Staffing Needs

Position	Number of Full-time Employees	Number of Part-time Employees
Dispatcher	1	0
Flex Operator	1	0
Operators	1	4

Marketing and Branding

The need for increased education under a comprehensive and ongoing outreach campaign is warranted with the introduction of any new service. Extensive community outreach and customer education is imperative to the success of on-demand services in Robeson County. It is often difficult for current and potential customers to translate the new service into a positive experience. A strategic marketing and promotional effort is recommended to ensure the community (a) is aware of new service offerings, (2) understands the benefits of a flexible, on-demand service solution, and (3) are informed on how to secure transportation services under a microtransit pilot program. In addition to a comprehensive marketing campaign, ongoing travel training during the initial launch of the should be provided to current and prospective customers. TripMaster by CTS Software offers marketing packages that can be tailored to the needs of the provider and community. The projected marketing costs are included in the budget.

The development of a distinct program brand will aid in marketing efforts. Brand recognition will help increase community awareness and assist in outreach efforts to promote the new service offering. SEATS can engage a third-party vendor for brand development or engage the community or educational institutions for assistance from graphic design or arts major students. A community branding effort would help bring awareness to the effort.

Benefits and Challenges

The SaaS model for a microtransit pilot program serving Robeson County has recognized advantages and disadvantages. The benefits and challenges are organized by category and reported under Table 26 below.

Table 26. Benefits and Challenges

Category	Benefits	Challenges
System Performance	Increases ridership and the number of trips provided per revenue vehicle hour and mile.	The system may struggle to respond within one hour of a trip request if demand exceeds resources.
Customer Service	Reduces passenger wait time. Passengers can make a same-day trip reservation. The SaaS model affords continuity in transportation services for customers and reinforces SEATS's commitment to providing an exemplary level of customer service to current and future customers.	The system may struggle to respond within one hour of a trip request during peak hours of operation if demand exceeds resources.

Category	Benefits	Challenges
Capital Equipment	This option provides an opportunity for SEATS to consider, plan for, and integrate alternative fueled vehicles into its SEATS fleet. SEATS should carefully consider the charging infrastructure for future electric battery-charged vehicles as industry standards have demonstrated that additional vehicles may be needed to meet charging needs. Additionally, existing conditions at the SEATS administrative and operations facility including vehicle storage location and access to electricity must also be taken into consideration.	This option carries implications to SEATS's rolling stock due to a required fleet expansion. SEATS would have an increased financial responsibility of securing capital and local match required for the procurement of additional rolling stock required to deliver on-demand microtransit service. A fleet expansion of four (4) vehicles would require additional storage at the SEATS's administrative and operations facility. Although vehicles used for service delivery under a microtransit pilot program are smaller, SEATS may see space constraints for vehicle storage.
Staffing/ Labor	Microtransit offers a variety of service options and areas for drivers to choose from. The addition of a dispatcher may offer additional coverage for demand response service during peak service hours when radio traffic and call volumes are high.	The introduction of a microtransit would require an increase in staffing. Existing conditions within the local labor market may impede SEATS's ability to secure qualified personnel and build the workforce to a level required to support microtransit. Workspace will need to be identified for incoming dispatch personnel. The space in the SEATS dispatch office is extremely limited and will not be able to accommodate an increase in dispatch personnel, especially during certain shifts/ hours.

Estimated Annual Costs and Productivity

Alternative 1: Lumberton Microtransit with One-Hour Response 8:00 AM to 5:30 PM and Enhanced Countywide Demand Response

The Lumberton microtransit service would operate during the same SEATS hours of operation as the countywide demand response service (8:00 AM to 5:30 PM) on weekdays. Vehicles would respond within one hour of receiving a trip request.

Estimated Operating Cost

Tables 27 through 33 provide an estimated breakdown of operating costs for Alternative 1 (capital costs are not included in the table). The estimated annual operating cost for Alternative 1: Microtransit plus Countywide Demand Response service is approximately $1,700,675. Cost estimates include labor and benefits for the drivers, fuel, maintenance, and advertising. The costs do not include additional software. The shared cost of administration and operations are calculated in the estimate and represented in the countywide demand response column. It is anticipated that the microtransit portion of the service will require approximately

one additional dispatcher, and two full-time equivalent (FTE) and four part-time equivalent (PTE) driver positions while the countywide demand response service will require approximately 13.5 to 14 FTE (made up of an appropriate mix of full-time and part-time staff).

Table 27. Estimated Annual Labor Operating Costs, Alternative 1

Expense Object Class	Countywide Demand Response	Lumberton Microtransit 8:00 AM to 5:30 PM	Total
Salaries and Wages	$752,275	$180,788	$933,063
Taxes (FICA Contributions)	$65,283	$16,408	$81,692
Retirement	$122,798	$29,512	$152,310
Insurance Contributions	$107,274	$25,780	$133,055
Subtotal: Labor	$1,047,631	$252,489	$1,300,120

Table 28. Estimated Annual Services Operating Costs, Alternative 1

Expense Object Class	Countywide Demand Response	Lumberton Microtransit 8:00 AM to 5:30 PM	Total
Janitorial Supplies	$3,522		$3,522
Uniforms	$3,350	$1,400	$4,750
Supplies (Office and Data Processing)	$5,534		$5,534
Program Materials	$2,619		$2,619
Miscellaneous	$146,172		
Subtotal: Services	$161,198	$1,400	$16,426

Table 29. Estimated Annual Materials and Supplies Operating Costs, Alternative 1

Expense Object Class	Countywide Demand Response	Lumberton Microtransit 8:00 AM to 5:30 PM	Total
Fuel	$149,568	$28,418	$177,986
Vehicle Maintenance and Equipment	$110,208	$20,940	$131,148
Telephone and Postage	$12,470	$2,000	
Utilities	$9,288		
Print Services	$472		
Office Equipment		$1,500	$1,500
Subtotal: Materials and Supplies	$282,006	$52,857	$310,633

Table 30. Estimated Annual Utilities Operating Costs, Alternative 1

Expense Object Class	Countywide Demand Response	Lumberton Microtransit 8:00 AM to 5:30 PM	Total
Rent	$19,800		$19,800

Table 31. Estimated Annual Casualty and Liability Operating Costs, Alternative 1

Expense Object Class	Countywide Demand Response	Lumberton Microtransit 8:00 AM to 5:30 PM	Total
Vehicle Insurance			
Subtotal: Casualty and Liability Costs			

Table 32. Estimated Annual Miscellaneous Expenses Operating Costs, Alternative 1

Expense Object Class	Countywide Demand Response	Lumberton Microtransit 8:00 AM to 5:30 PM	Total
Dues and Subscriptions	$550		$550
Travel and Training	$1,196		$1,196
Advertising/Promotion Media	$11,950	$40,000	$51,950
Subtotal: Miscellaneous Expenses	$13,696	$40,000	$53,696

Table 33. Estimated Annual Operating Costs, Alternative 1

Expense Object Class	Countywide Demand Response	Lumberton Microtransit 8:00 AM to 5:30 PM	Total
Subtotal: Labor	$1,047,631	$252,489	$1,300,120
Subtotal: Services	$161,198	$1,400	$16,426
Subtotal: Materials and Supplies	$282,006	$52,857	$310,633
Subtotal: Utilities	$19,800		$19,800
Subtotal: Casualty and Liability Costs			
Subtotal: Miscellaneous Expenses	$13,696	$40,000	$53,696
Total Costs	$1,524,331	$346,746	$1,700,675

Performance Implications

Alternative 1 represents an improvement in efficiency and an expansion of annual vehicle miles and hours for the system. SEATS is projected to provide up to 3.7 passenger trips per hour which is an increase over its 2023 performance of 2.4 passenger trips per hour. The increased productivity will result in an overall increase in annual passenger trips from the projected 41,000 passenger trips for the year 2024 to a projected 70,380 passenger trips after the first year of implementation. The increase in ridership will occur because of the ability for microtransit to provide more short-distance trips and countywide demand response to focus on the longer-distance rides. Table 34 outlines the projected annual operating hours and miles, and annual passenger trips for this alternative.

Ultimately, adding the microtransit service will generate more annual hours and miles (and the associated cost) because of the ability to provide more short-distance trips within a concentrated service area. The additional investment will yield higher ridership and better meet current and projected demand in and around Lumberton.

Table 34. Projected Performance Implications

Service Component	Passenger Trips/Hour	Annual Revenue Hours	Annual Revenue Miles	Annual Passenger Trips
Lumberton Microtransit 8:00 AM to 5:30 PM	2.0	9,348	74,784	18,696
Countywide Demand Response	1.7	29,520	393,600	49,200
Total	3.7	38,868	468,384	67,896

The overall projected operating cost per hour is $43.76. The total vehicles dedicated to microtransit is 4, and the total vehicles for countywide demand response would total 10.

Alternative 2: Lumberton Microtransit with One-Hour Response 8:00 AM to 5:30 PM and Reduced Countywide Demand Response

Alternative 2 offers a more conservative model with reduced service projections for countywide demand response.

Estimated Operating Cost

Tables 35 through 41 provide an estimated breakdown of operating costs for Alternative 2 (capital costs are not included in the table). The estimated annual operating cost for Alternative 2: Microtransit plus Countywide Demand Response service is approximately $1,648,730. The shared cost of administration and operations are calculated in the estimate and represented in the countywide demand response column. It is anticipated that the Alternative 2 level of service will require approximately 11.5 to 12 Full-Time Equivalent (FTE) driver positions and the expansion of one additional dispatcher.

Table 35. Estimated Annual Labor Operating Costs, Alternative 2

Expense Object Class	Countywide Demand Response	Lumberton Microtransit 8:00 AM to 5:30 PM	Total
Salaries and Wages	$752,275	$180,788	$933,063
Taxes (FICA Contributions)	$65,283	$16,408	$81,692
Retirement	$122,798	$29,512	$152,310
Insurance Contributions	$107,274	$25,780	$133,055
Subtotal: Labor	$1,047,631	$252,489	$1,300,120

Table 36. Estimated Annual Services Operating Costs, Alternative 2

Expense Object Class	Countywide Demand Response	Lumberton Microtransit 8:00 AM to 5:30 PM	Total
Janitorial Supplies	$3,522		$3,522
Uniforms	$3,350	$1,400	$4,750
Supplies (Office and Data Processing)	$5,534		$5,534
Program Materials	$2,619		$2,619
Miscellaneous	$146,172		
Subtotal: Services	$161,198	$1,400	$16,426

Table 37. Estimated Annual Materials and Supplies Operating Costs, Alternative 2

Expense Object Class	Countywide Demand Response	Lumberton Microtransit 8:00 AM to 5:30 PM	Total
Fuel	$119,654	$28,418	$148,072
Vehicle Maintenance and Equipment	$88,166	$20,940	$109,106
Telephone and Postage	$12,470	$2,000	
Utilities	$9,288		
Print Services	$472		
Office Equipment		$1,500	$1,500
Subtotal: Materials and Supplies	$230,050	$52,857	$258,678

Table 38. Estimated Annual Utilities Operating Costs, Alternative 2

Expense Object Class	Countywide Demand Response	Lumberton Microtransit 8:00 AM to 5:30 PM	Total
Rent	$19,800		$19,800

Table 39. Estimated Annual Casualty and Liability Operating Costs, Alternative 2

Expense Object Class	Countywide Demand Response	Lumberton Microtransit 8:00 AM to 5:30 PM	Total
Vehicle Insurance			
Subtotal: Casualty and Liability Costs			

Table 40. Estimated Annual Miscellaneous Operating Costs, Alternative 2

Expense Object Class	Countywide Demand Response	Lumberton Microtransit 8:00 AM to 5:30 PM	Total
Dues and Subscriptions	$550		$550
Travel and Training	$1,196		$1,196
Advertising/Promotion Media	$11,950	$40,000	$51,950
Subtotal: Miscellaneous Expenses	$13,696	$40,000	$53,696

Table 41. Estimated Annual Operating Costs, Alternative 2

Expense Object Class	Countywide Demand Response	Lumberton Microtransit 8:00 AM to 5:30 PM	Total
Subtotal: Labor	$1,047,631	$252,489	$1,300,120
Subtotal: Services	$161,198	$1,400	$16,426
Subtotal: Materials and Supplies	$230,050	$52,857	$258,678
Subtotal: Utilities	$19,800		$19,800
Subtotal: Casualty and Liability Costs			
Subtotal: Miscellaneous Expenses	$13,696	$40,000	$53,696
Total Costs	$1,472,376	$346,746	$1,648,720

Performance Implications

As with Alternative 1, SEATS is projected to provide up to 3.7 passenger trips per hour which is an increase over its 2023 performance. The increased productivity may result in an overall projected annual ridership of 58,056. Like Alternative 1, the increase in ridership will occur because microtransit vehicles will provide more short-distance trips and countywide demand response to focus on the longer-distance rides. The total annual miles and hours under Alternative 2 are less than Alternative 1 because this alternative offers only eight countywide demand response vehicles (compared to 10 under Alternative 1). Table 42 outlines the projected annual operating hours and miles, and annual passenger trips for this alternative.

Ultimately, adding the microtransit service will generate more annual hours and miles (and the associated cost) because of the ability to provide more short-distance trips within a concentrated service area. The additional investment will yield higher ridership and better meet current and projected demand in and around Lumberton.

Table 42. Projected Performance Implications

Service Component	Passenger Trips/Hour	Annual Revenue Hours	Annual Revenue Miles	Annual Passenger Trips
Lumberton Microtransit 8:00 AM to 5:30 PM	2.0	9,348	74,784	18,696
Countywide Demand Response	1.7	23,616	314,880	39,360
Total	3.7	32,964	389,664	58,056

The overall projected operating cost per hour is $50.02. The total vehicles dedicated to microtransit is 4, and the total vehicles for countywide demand response would total 8.