

RURAL ON-DEMAND TRANSPORTATION

RECOMMENDATIONS
FOR MICROTRANSIT IN
PITT AND BEAUFORT
COUNTIES

DECEMBER 6TH

20
23



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**Regional Transportation
Needs**

INTRODUCTION

This report summarizes the community-engaged transportation planning research project conducted by undergraduate Community and Regional Planning students in Dr. Kaylyn Levine's PLAN 4075 course during Fall 2023.

We would like to thank our community stakeholders for their ideas, feedback, and support throughout the semester:

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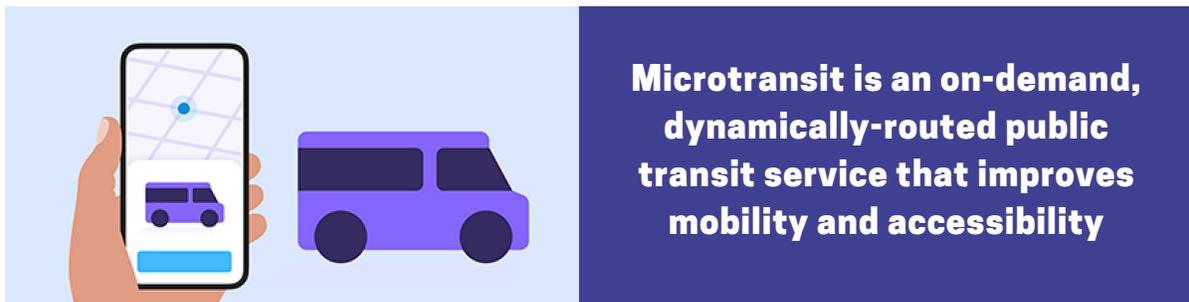
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PROJECT GOALS

Our class was tasked with providing evidence for how a new, rural, on-demand microtransit service could connect residents of Pitt and Beaufort counties to job opportunities in the region. We identified four goals and action items.

TABLE 1: PROJECT GOALS AND ACTIONS COMPLETED BY PLAN 4075 STUDENTS.

Goal	Action
Understand the current transportation and socioeconomic landscape of Pitt and Beaufort counties	Students researched regional and local transportation options, travel behavior, and demographics
Evaluating existing rural on-demand ride services in similar regions	Students conducted 10 case studies on existing microtransit programs in NC, VA, AL, and MA
Identifying regional transportation needs and activity centers, especially related to economic opportunities, through community engagement	Students lead a community engagement event at the Better Skills, Better Jobs Fair in October
Determining if on-demand ride services are the right fit, and if so, providing evidence-based recommendations	Students triangulated multiple data sources to identify potential pilot options



SOURCE: KNOXVILLE AREA TRANSIT

STUDY AREA

Pitt and Beaufort counties are located in eastern North Carolina, nestled between the Outer Banks and the Raleigh-Durham metro area. The region is largely rural, leaving driving a personal vehicle as the primary, and often only, transportation mode choice.



FIGURE 1: MAP OF COUNTIES IN NORTH CAROLINA. SOURCE: GISGEOGRAPHY.

Analyzing the transportation and socioeconomic data of the two-county region is a needed first step in evaluating the potential for microtransit service. The data described below include total population, population density, age, race, employment status for the total population 16 years and over, median household income, the number of vehicles available per household, disability status, and commute mode to work.

The total population of Pitt County reported in the 2021 5-year American Community Survey (ACS) was 170,600 with a population density averaging 261.5 people per square mile. In comparison, Beaufort County's reported total population in 2021 was noticeably smaller at 44,898 with a population density of 53.9 people per square mile. This data shows that both Pitt and Beaufort county cover a sizable amount of land and is home to a mostly rural population.

There are noticeable differences in the ages of Pitt and Beaufort county residents. The primary age of the total population of Pitt County was 18 to 24 years at 17.3% with 25 to 34 years succeeding the primary age at 13.7%. Beaufort County's primary age group, however, was 55 to 64 years at 15.8% with 65 to 74 years at 14.5% following second. The primary groups of Pitt County show that a younger demographic makes up most of the total population whereas an older demographic comprises the total population of Beaufort County. Some of this age difference can be attributed to East Carolina University as well as the suburban/urban environment of Greenville attracting young adults into the area.

TABLE 2: POPULATION SHARES BY AGE IN PITT AND BEAUFORT COUNTIES. SOURCE: 2021 5-YEAR ACS.

AGE	Beaufort County	Pitt County
Total Population:	44898	170600
Under 5 Years	4.80%	5.70%
5 to 9 Years	5.10%	5.60%
10 to 14 Years	6.10%	6.40%
15 to 17 Years	3.90%	3.80%
18 to 24 Years	7.20%	17.30%
25 to 34 Years	9.80%	13.70%
35 to 44 Years	10.70%	11.70%
45 to 54 Years	12.80%	11.20%
55 to 64 Years	15.80%	11.30%
65 to 74 Years	14.50%	8.40%
75 to 84 Years	7.00%	3.70%
85 Years and Over	2.30%	1.30%

The majority of residents in the two-county region are White (not Hispanic) or Black (not Hispanic). Pitt County's largest racial group, White was reported at 70.7% in the 2021 5-Year ACS. The second-largest group of Pitt County was Black (not Hispanic) at 24.3%. The largest racial group of Beaufort County, White (not Hispanic), was noted at 55.3% with Black (not Hispanic) following behind at 35.2%. Figure 2 compares the racial composition of the study area by county.

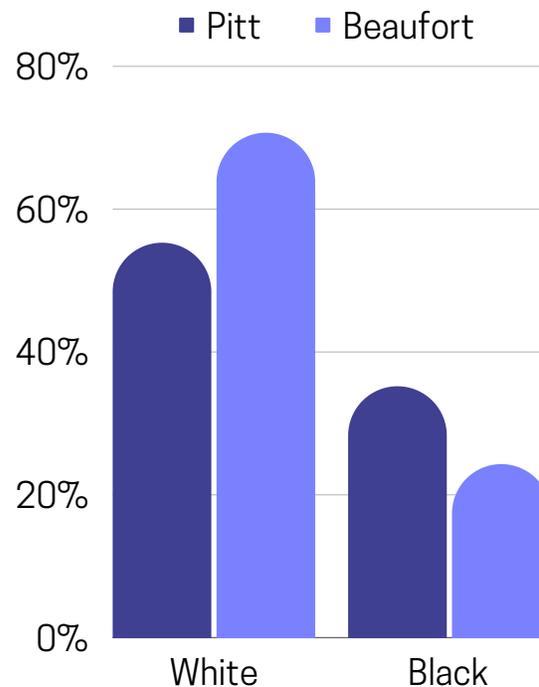


FIGURE 2: RACIAL COMPOSITION BY COUNTY.
SOURCE: 2021 5-YEAR ACS.

The employment status for Pitt and Beaufort county residents 16 years and over included an average of 63.1% residents in the labor force. Out of those in Pitt County's labor force, 58.1% are employed and 4.6% are unemployed. Those not in the labor force were at 36.9%. In comparison, Beaufort County's population 16 years and over was 36,946 with 54.0% comprising the labor force. Out of the labor force for Beaufort County, 50.4% made up the employed, and 3.6% made up the unemployed.

The median household income for Pitt and Beaufort counties are similar. Pitt County's reported median household income is at \$50,422 and Beaufort County's at \$51,894. For Pitt County, the primary household income in 2021 was \$75,000 to \$99,999 at 12.7% with the second averaging less than \$10,000 at 9.5%, likely due to the university student population. Both counties fall under the statewide median household income of \$60,516.

Almost all residents in the two-county region use a personal vehicle, ride as a passenger, or carpool to work. In Pitt County, more residents use transit and active transportation modes compared to Beaufort County.

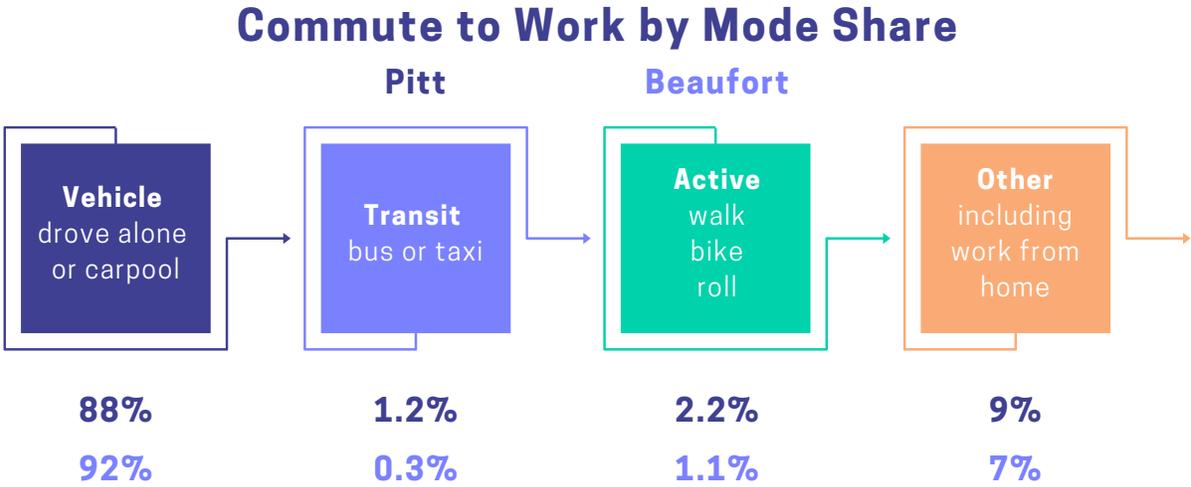


FIGURE 3: COMMUTE TO WORK BY MODE SHARE IN PITT AND BEAUFORT COUNTIES.
SOURCE: 2021 5-YEAR ACS.

Greenville, the most populated jurisdiction in the two-county region, has a fixed-route bus transit system. Greenville Area Transit (GREAT) operates six routes within the city limits. However, the system only runs from 7:25am to 5:15pm Monday through Friday, presenting challenges for residents without regular access to vehicles or who cannot drive. This includes youth, seniors, disabled, and low-income people. Approximately 14.6% of Pitt County residents have at least one disability. For Beaufort County, the disability rate is higher at 17.2%. The trend reverses for vehicle ownership. About 8.4% of Pitt County residents live in zero-vehicle households, while in Beaufort the rate drops to 7.2%.

Beyond fixed-route transit, both counties have rural transportation services that operate similar to paratransit (PATS and BATS).

CASE STUDIES

We reviewed and analyzed case studies of permanent and pilot microtransit programs in nearby areas or areas with similar contexts. Case studies serve as useful examples to learn from when developing a rural, on-demand transportation system. We review these case studies and consider the strengths and weaknesses of different microtransit designs and services. Then, we synthesize our findings to determine which case study approaches could be implemented successfully in Pitt and Beaufort counties.

TABLE 3: SELECTED MICROTRANSIT CASE STUDIES.

Microtransit Service	Location	Operators
Bay Transit Express	Gloucester, VA	Bay Transit and Via
Birmingham Demand	Birmingham, AL	Birmingham-Jefferson County Transit Authority and Via
Durham Connect	Durham, NC	GoDurham and Lyft
GoWake SmartRide	Wake County, NC	Wake County and EcoLane
ICPTA	Elizabeth City, NC	Inter County Public Transit Authority and Via
MetGo	Norton, VA	Mountain Empire Older Citizens and Via
Morrisville Smart Shuttle	Morrisville, NC	GoCary, GoTriangle, and Via
NewMo	Newton, MA	City of Newton, Boston Region MPO, and Via
RIDEMicro	Wilmington, NC	Wave Transit and NCDOT
RIDE	Wilson, NC	City of Wilson and Via

Bay Transit Express

- Non-profit transit system in Gloucester County, VA
- Microtransit service launched in June 2021
- Operates from 8am-5pm Monday through Friday at \$1 per trip

Birmingham Demand

- Serves Birmingham and Jefferson County, AL
- Microtransit service launched in December 2019
- Operates from 6am-11pm Monday through Friday and 10am-11pm on Saturday at \$1.50 per trip

Durham Connect

- Microtransit service launched in 2020
- Multiple service zones complementing fixed-route transit
- Free rides (limited per person)

GoWake SmartRide

- Fills transit gap in Wendell, Zebulon, and Rolesville
- Microtransit service launched in March 2022 and connects to fixed-route into Raleigh
- Operates 6am-6pm Monday through Saturday and is currently free to ride

ICPTA

- Geared towards older, disabled adults in Elizabeth City and rural five-county region
- Microtransit service launched in October 2020
- Operates 8am-4pm Monday through Friday

MetGo

- Serves the Town of Wise and City of Norton, VA
- Microtransit service launched in June 2021
- Operates 7am-7pm Monday through Friday and is free to ride

Morrisville Smart Shuttle

- Fixed pick-up and drop-off points
- Microtransit service launched in Fall 2021
- Operates from at least 8am-7pm seven days a week and is free to ride
- Connects to fixed-route in Raleigh and Cary

NewMo

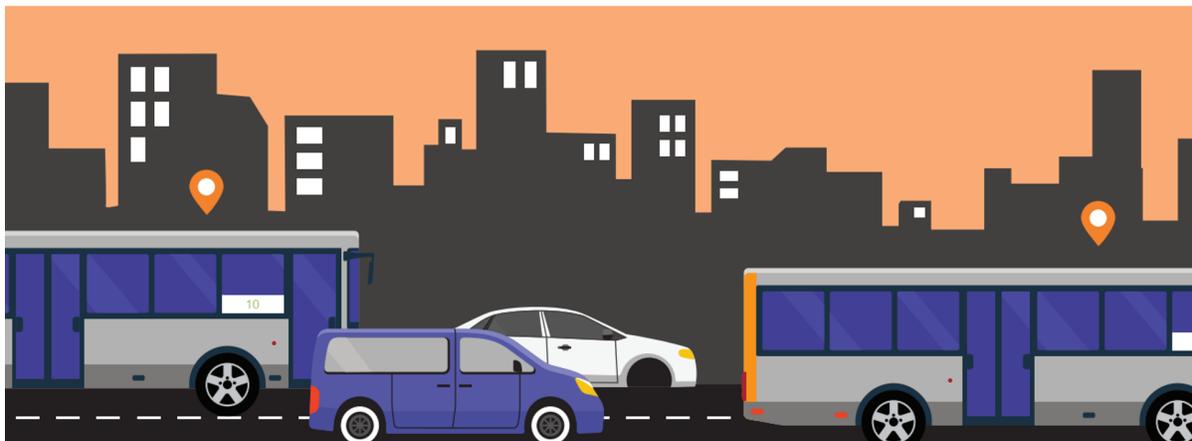
- Serves as first and last mile transit in Newton, MA
- Microtransit service launched in 2019
- Operates from 7am-6:30pm Monday through Friday at \$4 per trip

RIDEMicro

- Provides first and last mile connections across three counties and in Wilmington, NC
- Multiple zones of service with different operating hours
- Microtransit service launched in January 2022
- Cost of \$2 per ride

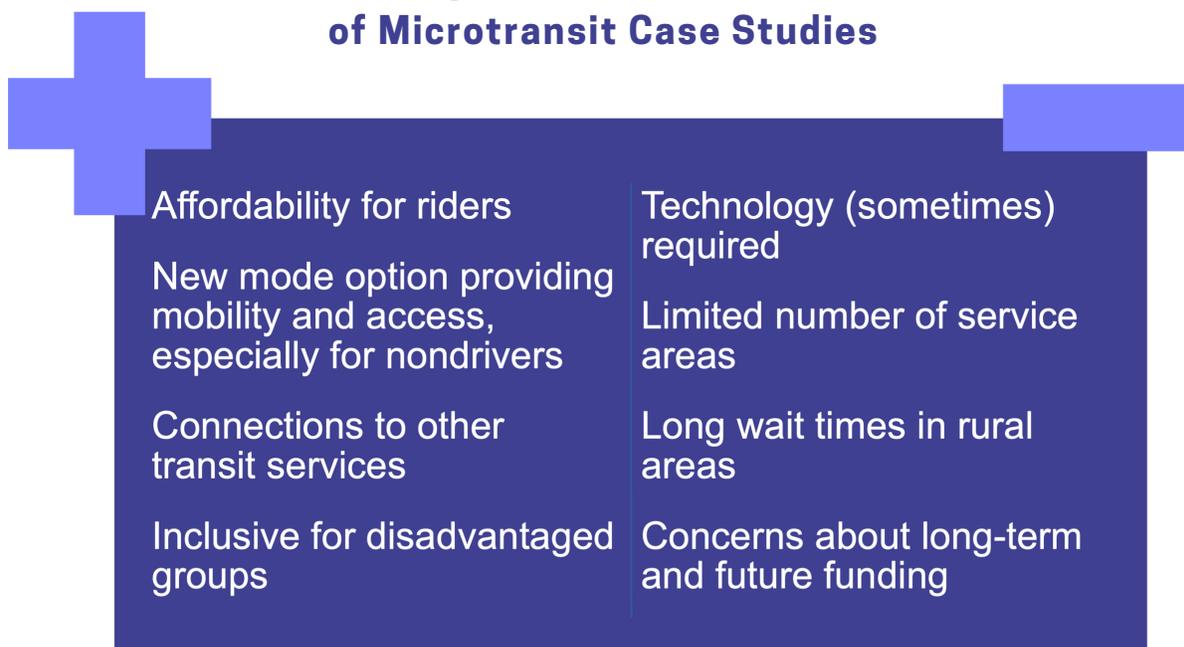
RIDE

- Replaced fixed-route bus system in Wilson, NC
- Microtransit service launched in September 2020
- Operates from at least 7am-6pm Monday through Saturday and is \$2.50 per ride



SOURCE: MTM TRANSIT

Strengths and Weaknesses of Microtransit Case Studies



Affordability for riders	Technology (sometimes) required
New mode option providing mobility and access, especially for nondrivers	Limited number of service areas
Connections to other transit services	Long wait times in rural areas
Inclusive for disadvantaged groups	Concerns about long-term and future funding

FIGURE 4: STRENGTHS AND WEAKNESSES OF SELECTED MICROTRANSIT CASE STUDIES.

For a microtransit system being implemented in Pitt and Beaufort counties, there are multiple boxes that need to be checked. First, different zones must be covered and have access to the main economic hub of the county in Greenville. North of the Tar River and the southern part of Pitt County could both benefit from a service that will bring them to the center economic activity. However, it is important to consider the distance and service area boundaries. Too large of a service area may result in long wait times and higher operating costs.

In terms of funding, there are multiple grants for pilot transportation programs and then the price could be determined afterwards depending on what grants are received. When viewing the pros and cons from the reviewed case studies, most negatives for the service are from lack of funding, limited areas of coverage, only offering fixed route services, and difficulty to access and schedule. When implementing microtransit, these challenges need to be considered and solutions such as feasible service area sizes and ease of access need to be addressed. This synthesis of case studies provides important features for Pitt and Beaufort county leaders to consider when developing microtransit services.

REGIONAL TRANSPORTATION NEEDS

On October 5th, 2023 we visited the **Better Skills, Better Jobs Fair**. This event was located at the Greenville Convention Center, attracting both employers seeking to recruit and individuals in pursuit of career opportunities. It was sponsored by Pitt County Community College, the Greenville Eastern North Carolina Alliance, and Pitt County Economic Development. Our primary objective was to engage with the community and identify transportation challenges to employment faced by Pitt County and Beaufort County residents. We aimed to address these challenges from a bottom-up approach centered around public involvement. Through meaningful conversations and a participatory mapping exercise, we gathered input from approximately 30 individuals residing in Pitt and Beaufort counties.

In the context of regional transportation needs, participatory mapping involved centering the community in a collaborative effort to collaboratively identify areas of the two-county region where microtransit is most needed. Residents used stickers to identify locations on a physical map and visualize their concerns spatially.

This strategy helps ensure that the needs, values, and desires of the Pitt and Beaufort county communities are prioritized during the microtransit planning and decision-making process. Residents shared valuable insights regarding public transit needs, potential improvements, and opinions on microtransit during this event.



SOURCE: JENPARLE

An important part of transportation planning is shifting power into the hands of the community, and this approach helped ensure community engagement in the planning process by using the information they provided to create a blueprint outlining important goals and necessities for the future transportation network. The information gathered can subsequently be integrated into more extensive regional transportation planning, while still highlighting community-driven goals.

At the job fair, individuals were asked to examine a map of the two-county region and place a sticker where they experienced transportation challenges and a microtransit system would be of value. Individuals were also encouraged to share with students their positive and negative transportation experiences in the region. Many participants felt there were extensive issues with the current fixed-route bus system in Greenville. They believed that the current routes did not match the needs of the community, and that bus stops were often placed in areas that made resources hard to get to. Accessibility to jobs, services, and resources was inadequate with the current transit system. With input from approximately 30 respondents, a wide range of needs were discovered across the two counties.



**Better Skills,
Better Jobs.**



**Job Fair • October 5, 2023
Greenville Convention Center**

The infographic features a blue header with the text 'Better Skills, Better Jobs.' Below this is a 2x2 grid of images. The top-left image shows a female healthcare worker in a blue scrubs talking to a patient. The top-right image shows a male factory worker in a blue jacket and yellow headphones operating a machine. The bottom-left image shows a male construction worker in a blue shirt and yellow hard hat looking at a blueprint. The bottom-right image shows a female office worker in a black blazer smiling at the camera. At the bottom of the infographic is a green banner with the text 'Job Fair • October 5, 2023 Greenville Convention Center'.

FIGURE 5: JOB FAIR INFOGRAPHIC.



FIGURE 6: STUDENTS FROM PLAN 4075 ENGAGING WITH THE COMMUNITY AT THE JOB FAIR.

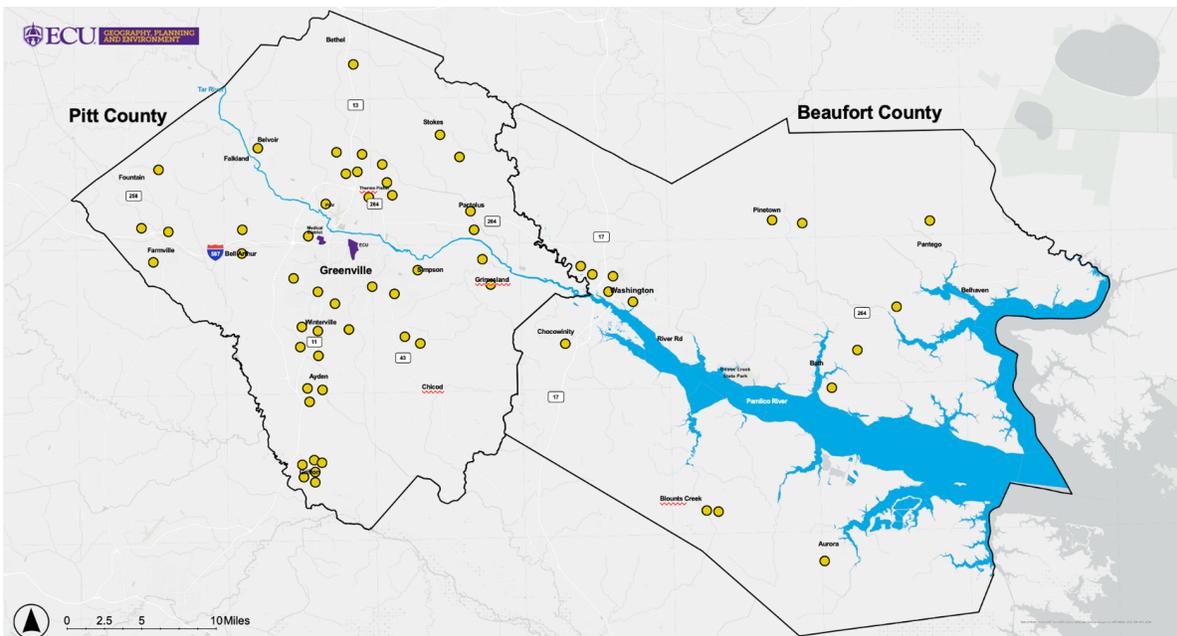


FIGURE 7: RAW DATA FROM PARTICIPATORY MAPPING EVENT.

Figure 7 presents the data collected at the job fair. From the first look at this data map, sticker points can be seen everywhere, and it can take time to decipher exactly where a microtransit option will be of best use. One notable finding is the high concentration of stickers in Grifton, indicating a pronounced demand for improved transportation services. The proximity of stickers in Ayden, Winterville, Farmville, Grimeland, and Washington further underscores the need for enhanced connectivity. This concentrated demand suggests that establishing microtransit routes in rural regions could be particularly impactful in addressing residents' transportation challenges when seeking access to jobs, resources, and everyday necessities.

The data also reveals a significant contribution from North Greenville, with nine stickers distributed north of the Tar River. Although these stickers are more spread out, they signify a dispersed yet noteworthy demand for improved transportation infrastructure in this area. A common criticism from many of the community members was that current fixed-route transportation services were not efficient or reliable enough to consistently travel to various job sites north of the Tar River. This insight is crucial for devising a microtransit system that effectively serves densely populated and more geographically scattered regions, ensuring comprehensive coverage of the identified needs.

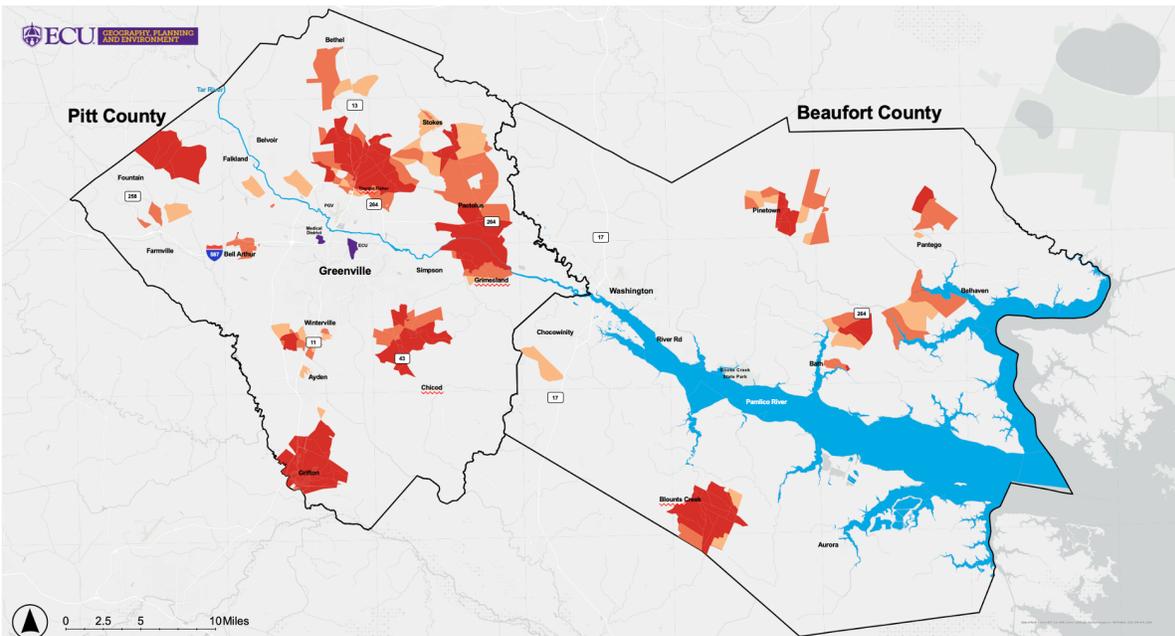


FIGURE 8: HOTSPOTS OF REGIONAL TRANSPORTATION NEEDS USING CENSUS TRACTS.

Figure 8 represents the same data summarized using spatial statistics to find significant hot spots. The methodology employed for hot spot analysis uses spatial statistics to calculate the intensity of point clustering by census tract, enabling the differentiation of areas with varying degrees of demand. The hot spot map helps discern patterns and concentrations within our dataset. In the context of identifying transportation needs, each data point on the map represents a location where individuals have expressed a demand for improved transit infrastructure or service.

The hot spot map tells a clearer story than the raw data can reveal alone. Multiple locations are classified by higher density transportation needs, the largest one being the northeast area of Pitt County. This area, including North Greenville, Grimesland, and Pactolus, is a significant part of the territory that needs a regional transit service option. Southern Pitt County areas such as Grifton, Winterville, Ayden, and Chicod also may require microtransit services. The outlier within the bunch includes North Fountain, which almost stands alone in west Pitt County. This may be an area that has proven hard to provide transportation. In Beaufort County, hotspots were identified in Blount's Creek and northeast Beaufort County along the river. The hot spot map effectively pinpoints multiple locations for further exploration. These findings lay a robust foundation for our microtransit research, substantiating the potential of on-demand ride services to bridge the transportation gap for residents seeking better transportation opportunities to work and other resources in Pitt County and Beaufort counties.

In conclusion, the findings from our participatory mapping workshop unveil a nuanced narrative, illustrating the multifaceted landscape of transportation needs in Pitt and Beaufort counties. This comprehensive understanding validates the viability of on-demand ride services in bridging the transportation gap for disadvantaged residents. Our commitment to community involvement, innovative methodologies, and strategic analysis collectively positions our initiative as a transformative force in addressing transportation disparities and fostering enhanced connectivity for those seeking employment opportunities in rural settings.

RECOMMENDATIONS

Microtransit implementation within counties presents a crucial decision point, offering two distinct pathways: in-house services or a public-private partnership model. Fixed costs, such as vehicle purchases, remain constant, but variables like application development and marketing introduce nuances based on the chosen approach. An increasingly acknowledged best practice involves engaging in a public-private model, partnering with established microtransit providers like Via. Via is currently operational in over 600 communities across 36 countries (Via, 2023). This approach addresses several overlooked expenses related to software management, branding, fleet sourcing, and employee management. On the contrary, the alternative method of operating microtransit in-house may incur higher costs due to increased investments in technology and human resources.



SOURCE: WHITE 2019

In-House Services

In-house service provision for microtransit implementation requires many considerations. Capital purchases are imperative, involving the procurement of vehicles essential for the service. Additionally, there are costs tied to hiring drivers, a crucial element for the successful operation of the micro transit program. The technology aspect also emerges prominently, covering expenses associated with running and maintaining the program efficiently. Opting for public services mandates that each county assumes the responsibility for handling all these facets internally, placing a substantial burden on their resources.

Public-Private Partnerships

Public-private partnerships offers a distinct advantage in streamlining the implementation of microtransit services across multiple counties. Partnerships with established providers, such as Via, bring in their expertise and existing infrastructure, significantly alleviating the burden on the counties. In a private service model, considerations like software management, branding, fleet sourcing, and employee management are assumed by the private partner. The reliability and extensive reach of established providers contribute to the success of the micro transit program, ensuring efficiency in service delivery while concurrently reducing the workload for each county involved.

Which model is better?

The choice between in-house and private services at the county level carries inherent pros and cons. Public-private partnerships, as exemplified by providers like Via, prove advantageous in terms of leveraging established networks and expertise across multiple counties. This approach minimizes oversight costs and enhances the efficiency of microtransit implementation. On the other side, in-house services potentially offer more control, but might lead to increased costs related to technology and human resources for each county individually. The decision-making process should consider not only the immediate financial implications but also the long-term sustainability and effectiveness of the microtransit program across the region. The crucial factor is finding a balance that meets the unique needs of each community while optimizing the allocation of resources for a successful and sustainable micro transit service spanning multiple counties.

Evaluating Microtransit

Microtransit pilot programs have proven useful for areas looking to implement on-demand, dynamic transit services in their community. The Virginia Department of Rail and Public Transportation conducted a pilot program to outline the effects of microtransit services in rural communities. There were positive outcomes and challenges concluded from the program. Overall, they found that riders believed the pilot program was safe, reliable, affordable, and accessible.

The challenges the program revealed were that the microtransit service needed more vehicles, drivers, and longer hours of operation to meet the demand that the community possessed for reliable transportation. To summarize, the pilot program was a success as it proved that the microtransit service was a great asset for the community despite the challenges it faced.

Data and Metrics

There are many factors and data that provide insight on how to improve a microtransit services output and success rate. The cancellation rate of rides booked can signal a major problem with service performance and customer satisfaction, so a proposed microtransit service must keep these to a minimum. Connecting modes are also another major factor in microtransit data and metrics. It was found that 69% of riders use at least two modes of transportation in their work commute (Transloc, 2021). Transit providers must plan better for multimodal transportation to maintain success. Spatial data of trip origins and destinations, trip purpose, overall ridership, percentage of rides shared, ride times, trip denial rates, vehicle miles traveled, vehicle utilization, and wait times are more important metrics to keep track of and improve. To implement a successful microtransit service these factors must be tracked and then evaluated iteratively, especially during a pilot program, to ensure the community's transportation needs are being met.

Service Recommendations

According to the data and programs evaluated thus far, it is recommended to begin microtransit service as a pilot program with a manageable service area and a feasible number of reliable drivers and vehicles, likely through a public-private partnership. Most microtransit services see much demand in more rural areas, so the majority of the service area should be rural in nature. When beginning the service, the pilot program can provide valuable data and metrics to guide future and long-term microtransit planning. Financial decisions and decisions about where or how the microtransit service operates should be an ongoing discussion, changing over time based on evaluation and customer feedback.

Funding Sources

To kickstart this project off the ground and maintain a high quality service, we recommend multiple funding opportunities. We have broken down the funding strategies into two different sections: short-term and long-term. The short-term section provides different grants that would help the initial start-up cost of the project, and help the project continue running for a few years. The long-term section provides different funding opportunities used by different cities across the United States to help provide continued funding for transit related projects. Our goal is for the two-county region to find the funding it needs to successfully bring microtransit to much needed parts of the region.

Table 4: Short-Term Opportunities

Name	Description	Link
The Rural Surface Transportation Grant Program (Federal) (closed)	The Rural Surface Transportation Grant Program supports projects that improve and expand the surface transportation infrastructure in rural areas to increase connectivity, improve the safety and reliability of the movement of people and freight, and generate regional economic growth and improve quality of life.	https://www.transportation.gov/grants/rural-surface-transportation-grant-program
Accelerating Innovative Mobility (Federal) (closed)	FTA's Accelerating Innovative Mobility Initiative highlights FTA's commitment to support and advance innovation in the transit industry. AIM will drive innovation by promoting forward-thinking approaches to improve transit financing, planning, system design and service. The AIM Initiative also supports innovative approaches to advance strategies that promote accessibility, including equitable and equivalent accessibility for all travelers.	https://www.transit.dot.gov/AIM

Table 5: Long-Term Opportunities

Name	Description	Link
Durham model	<p>Article 43: A half-cent sales and use tax in Durham County, generating around \$40,301,000 in fiscal year 2022. Article 50: A five percent vehicle rental tax by GoTriangle, providing Durham with approximately \$1,442,000 in fiscal year 2022. Articles 51 and 52: Involving a \$3 increase to GoTriangle's vehicle registration fee and a \$7 County vehicle registration fee, respectively.</p>	<p>https://www.dconcc.gov/county-departments/departments-a-e/board-of-commissioners/special-projects/transit-plan</p> <p>https://www.goforwardnc.org/durham-county/</p>
Los Angeles, CA	<p>The city has implemented a sales tax increase to fund transportation projects, including transit improvements. Measure M, passed in 2016, increased the countywide sales tax by half a cent.</p>	<p>https://rebuildsocal.org/initiatives/measure-m/</p>
Denver model	<p>RTD's primary funding source is the one percent sales-and-use tax levied within the district's boundaries. That one percent has two parts: 0.6 percent supports RTD's base system and 0.4 percent is reserved for FasTracks. "Since 2004, we have built 25.1 miles of light rail track and 53 miles of commuter rail track, launched the Flatiron Flyer bus rapid transit service, and opened an intermodal hub at Union Station right in downtown Denver. Through the FasTracks program, we're expanding into more neighborhoods to provide even more convenient transportation options for people on the go."</p>	<p>https://www.rtd-denver.com/about-rtd/board-of-directors/annexation</p>

PILOT PROGRAM LOCATIONS

Our final task was identifying potential pilot program locations based on the triangulation of data from reviewing best practices, understanding our study area, and gathering community insights. We created distinct North, South, and Washington Zones in the region to deploy microtransit that are shaped by economic, demographic, and community factors. The North Zone features major employers like Thermo-Fisher, a varied demographic mix, and insights from participatory mapping. The South Zone is defined by a concentration of low to moderate-income populations, identified microtransit service clusters, and the necessity of transporting residents to Greenville's major job centers. The Washington Zone focuses on connecting Chocowinity to employment and providing basic levels of access in Little Washington, leveraging insights from participatory mapping, and integrating major employers and educators like ECU Health and Beaufort County Community College. These zones showcase the interplay of economic, social, and community dynamics, shaping their distinct identities within the broader regional context.

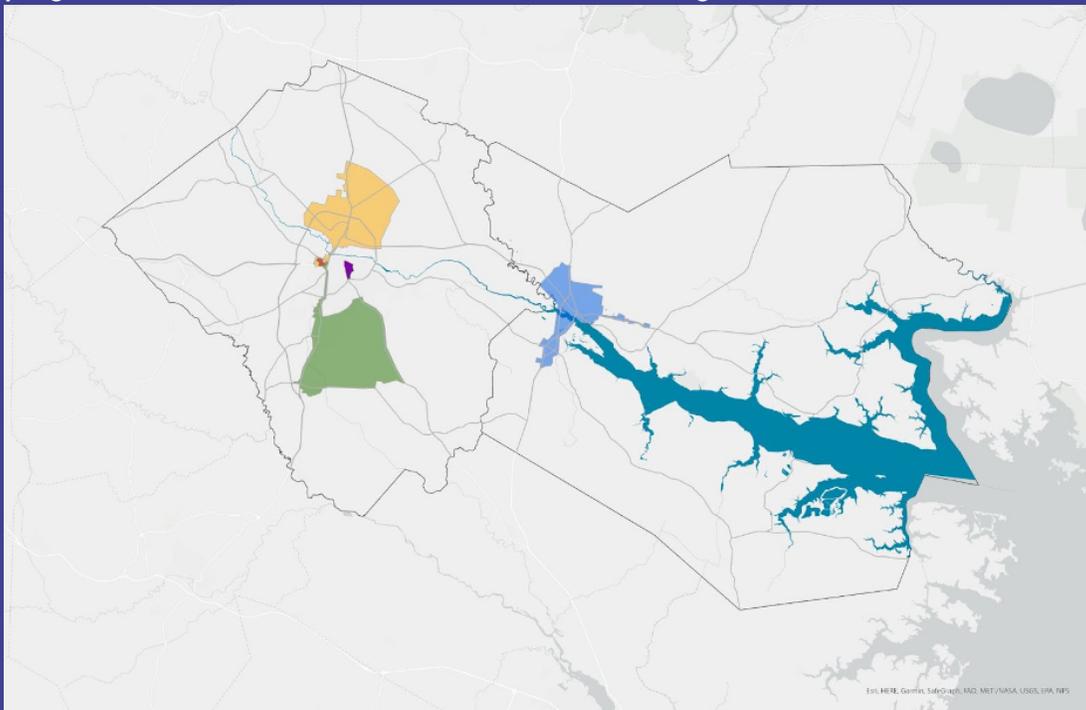


FIGURE 9: OVERVIEW MAP OF THREE RECOMMENDED MICROTRANSIT PILOT ZONES.

NORTH ZONE

The North Zone's configuration is primarily influenced by three key factors. Firstly, major employers like Thermo-Fisher strategically position themselves within this area, significantly impacting its economic landscape. Secondly, a higher concentration of low to moderate-income populations characterizes the demographic makeup. Thirdly, the participatory mapping exercise with local job-seekers provided crucial data points in this area, offering insights into community needs and preferences. These elements collectively contribute to the distinctive identity and socio-economic structure of the North Zone.

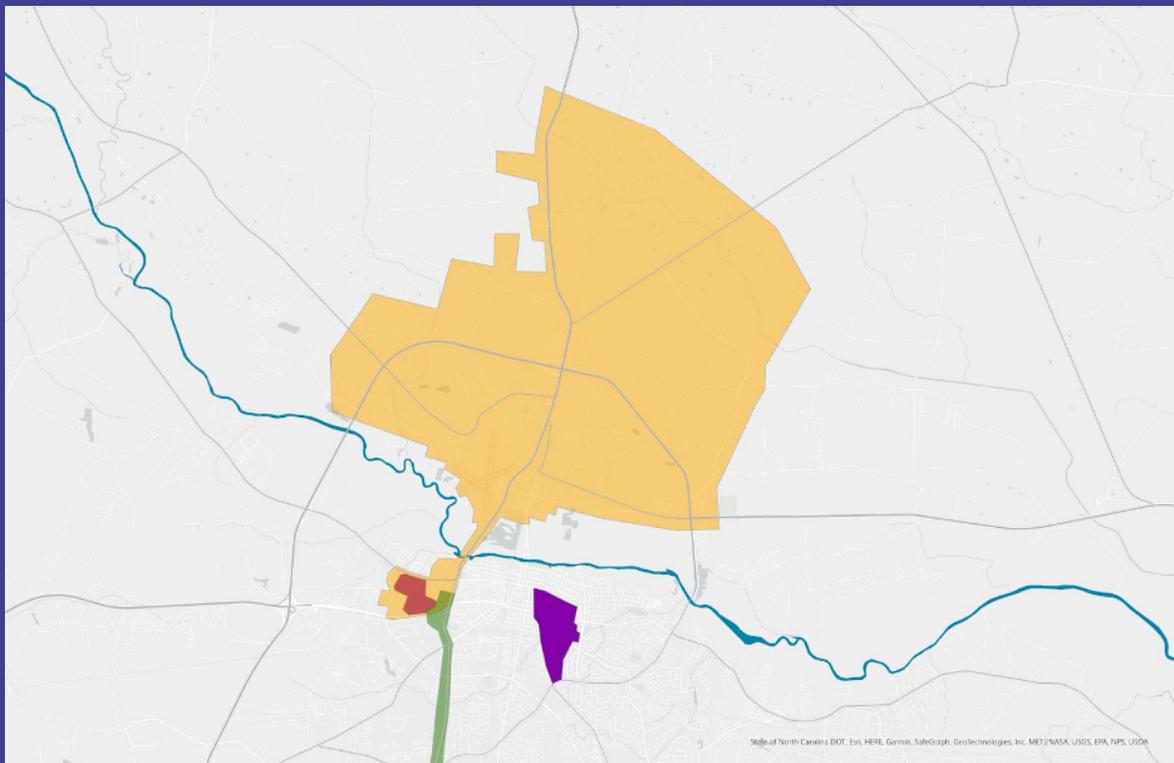


FIGURE 10: MAP OF THE NORTH ZONE PILOT LOCATION.

SOUTH ZONE

The configuration of the South Zone is shaped by several key factors. Firstly, there is a notable presence of higher levels of low to moderate-income populations in southern Pitt County. Secondly, insights gathered from the participants of the participatory mapping exercise indicated the need for microtransit services within this area. Thirdly, major job centers in Greenville along NC-11, including ECU Health, play a crucial role in shaping the development of the area. Lastly, a connection to Greenville’s fixed-route system exists in this zone.

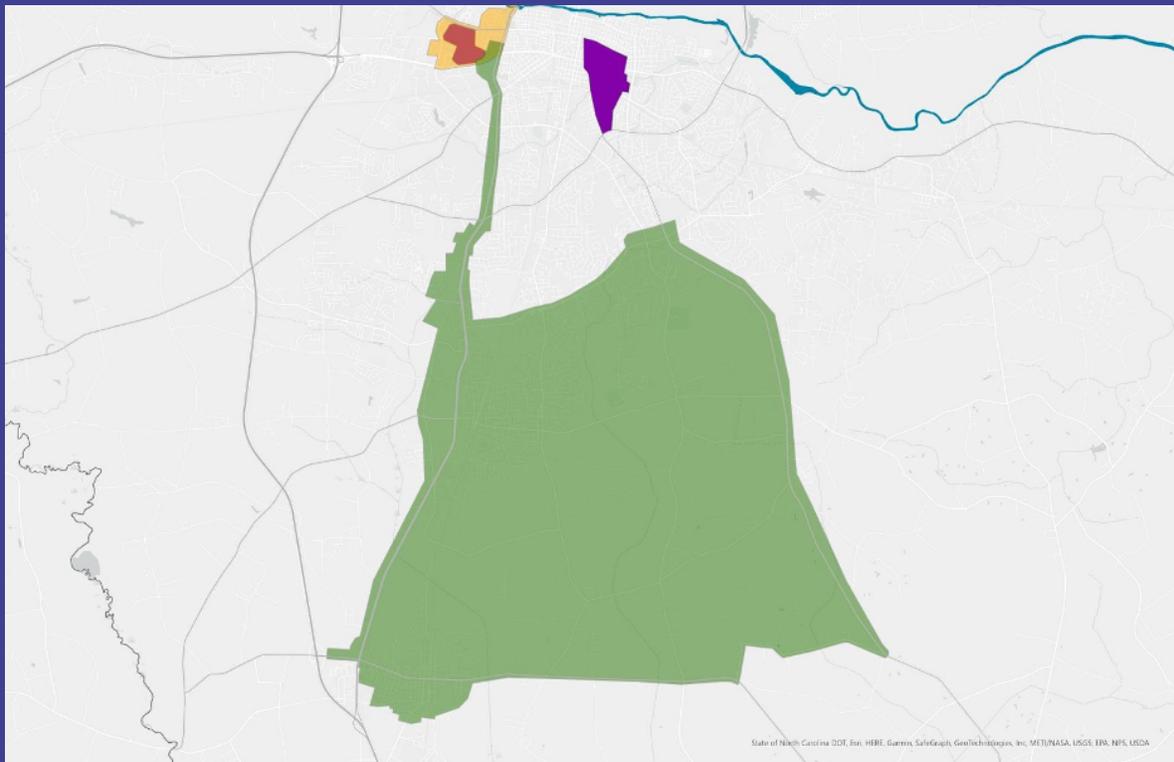


FIGURE 11: MAP OF THE SOUTH ZONE PILOT LOCATION.

WASHINGTON ZONE

The Washington zone's service area is guided by three main factors. Firstly, there is a focus on establishing a connection between Chocowinity and job opportunities in Little Washington, aiming to enhance employment prospects. Secondly, insights derived from the participatory mapping exercise showed that there was a need for microtransit services within this area generally. Thirdly, the Washington zone includes major employers such as ECU Health. Additionally, the presence of workforce development partners, like Beaufort County Community College, enriches the zone by providing educational and skill-building resources.

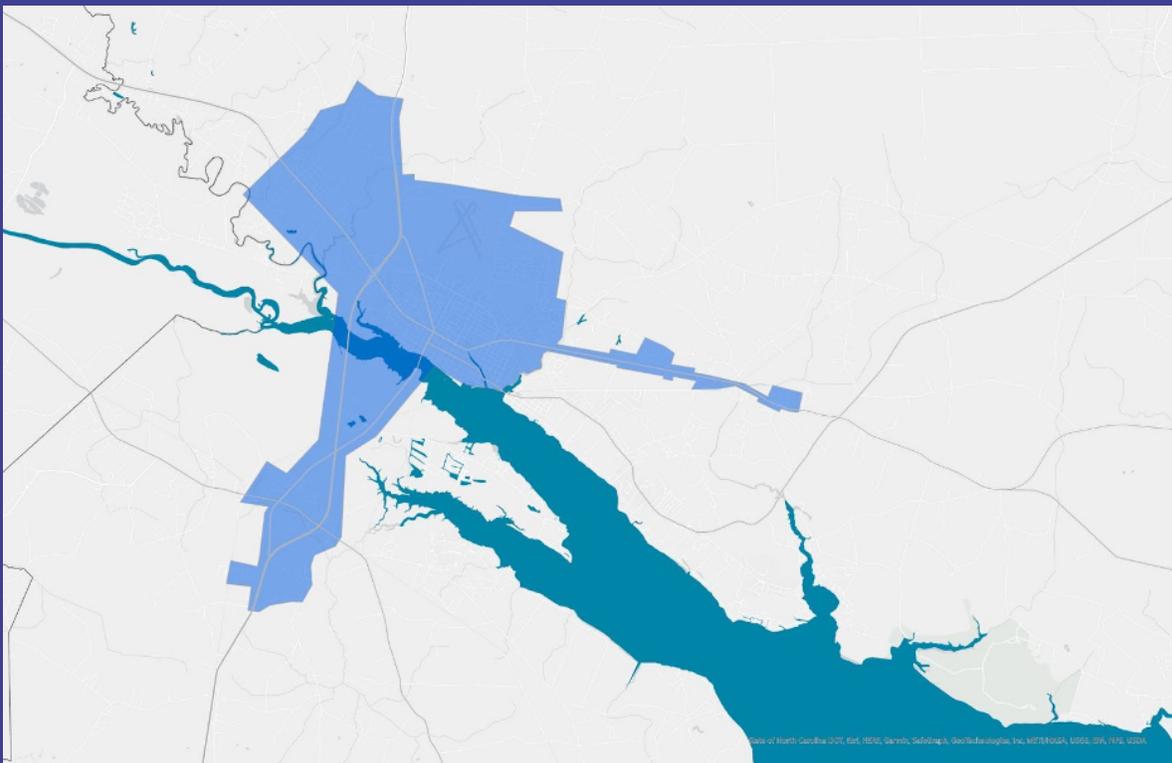


FIGURE 12: MAP OF THE WASHINGTON ZONE PILOT LOCATION.

REFERENCES

American Community Survey 2021 (5-Year Estimates). In SocialExplorer.com. Retrieved December 1, 2023 from <https://www.socialexplorer.com/>

City of Wilson. (2023). RIDE. <https://www.wilsonnc.org/residents/all-departments/public-works/wilson-transit-ride-wilson-industrial-air-center/ride>

GISGeography. (2023, October 26). North Carolina County Map. <https://gisgeography.com/north-carolina-county-map/>

GoTriangle. (2023). Durham Connect. <https://gotriangle.org/durham-connect>
ICPTA. (2023). Schedule Transportation. <https://icpta.net/services/schedule-transportation/>

Jenparle. (2023). Participatory mapping tool. <https://en.jenparle.fr/outils/cartographie-participative>

Knoxville Area Transit. (2022, February 28). The Consideration of Microtransit Solutions. <https://www.wuot.org/news/2022-02-28/knoxville-area-transit-the-consideration-of-microtransit-solutions>

MTM Transit. (2023). RTC Washoe County FlexRIDE Microtransit. <https://mtmtransit.com/case-studies/rtc-microtransit/>

TransLoc. (2021, November 16). The Metrics of Success for On-Demand Microtransit. <https://transloc.com/blog/metrics-of-success-on-demand-microtransit/>

Via. (2023). Via: Bring on-demand microtransit to your community. https://info.ridewithvia.com/via-transportation-g?utm_source=google_ads&utm_medium=adwords&utm_campaign=WMX_Search_NA_BF_Microtransit&utm_term=microtransit&gad_source=1&gclid=Cj0KCQiAsburBhCIARIsAExmsu6Y4UaRMr1Xfd6AqQfvV9mMKjxQL08Nq4OWbEz2s3MOHGW2XMwv3YAaAkBzEALw_wcB

Virginia Department of Rail and Public Transportation. (2023, April). Rural Microtransit Case Study and Report. <https://drpt.virginia.gov/studies-and-reports/rural-microtransit-case-study-and-report/>

Wake County Government. (2023). GoWake SmartRide NE. <https://www.wake.gov/departments-government/health-human-services/programs-assistance/gowake-smartride-ne>

Wave Transit. (2023). RideMICRO. <https://www.wavetransit.com/ridemicro/>

White, C. (2019, September 30). Via, on-demand mobility app, rethinks public transit in Birmingham and Atlanta's Buckhead. FreightWaves. <https://www.freightwaves.com/news/via-on-demand-mobility-app-rethinks-public-transit-in-birmingham-and-atlantas-buckhead>

WUOT. (2022, February 28). Knoxville Area Transit: The Consideration of Microtransit Solutions. 91.9 FM WUOT, Your Public Radio Station. <https://www.wuot.org/news/2022-02-28/knoxville-area-transit-the-consideration-of-microtransit-solutions>
