



Mobility for All:

Technology & Transportation Partnership to Improve Rural Service for Underserved Populations Pilot Final Report

3/28/2025

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Pilot Location

The study area for this project is located within five counties in northeastern North Carolina served by Inter-County Public Transportation Authority (ICPTA) – Pasquotank, Perquimans, Camden, Chowan and Currituck counties. This region of northeastern North Carolina is rural, geographically challenged and difficult to serve. ICPTA's service area encompasses 1,062 square miles of land with a total population of 103,005. The service area is divided by major rivers, sounds, and swamps with limited crossings by bridges and one ferry service. Due to these factors, considerable amount of effort, time, and resources are required to serve the community in this region.

Census data shows that 32% of the area's population is either elderly people or those with a disability. In the Northeast Region identified by the Locally Coordinated Plan, of which ICPTA is a part, 19.2% of residents live below the poverty level and 7.3% do not have access to an automobile.

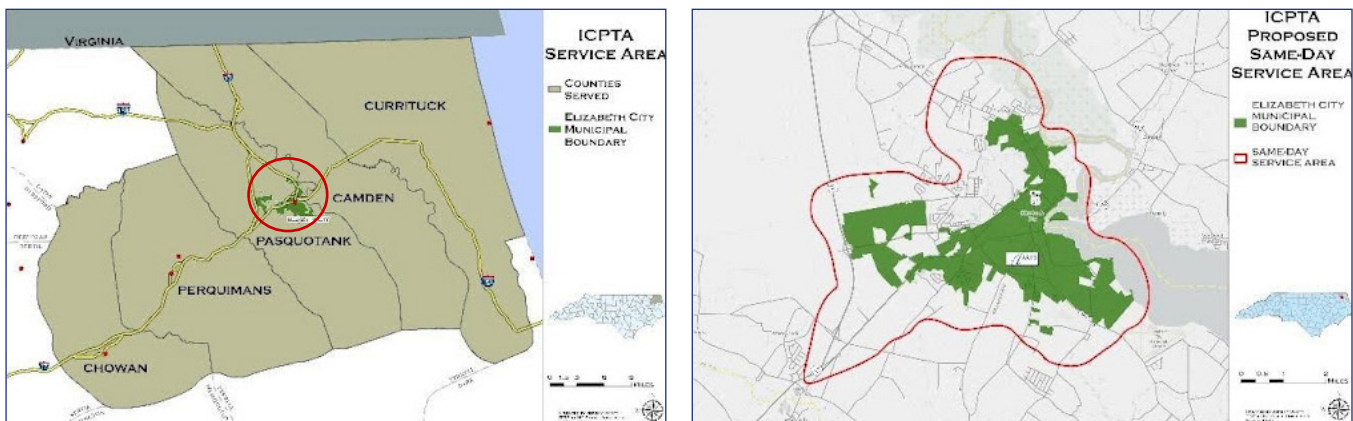


Figure 1: ICPTA demand response service area (left-hand side) and proposed same-day service area (right-hand side).

Alignment with Mobility for All Goals

The pilot project is aligned with the goals to Mobility for All and the grant program. New technology and coordination will enhance mobility options and improve access to community services for targeted populations.

Goal: Increase access to funding sources that can fund transportation.

The pilot began a conversation with other human service organizations that may receive funding eligible to cover transportation. In addition, NCDHHS was included because it has planned for an NCCARE360 pilot that would allow Medicaid funds to cover a portion of activities related to supporting social determinants of health. The link between public transportation and NCCARE360 is especially important in this area to support social determinants of health that provide access to health services and healthy to ICPTA's community.

Goal: Fill gaps in service and reduce duplication.

North Carolina has already seen a significant amount of local coordination of transportation services. As previously described, ICPTA provides services to a number of populations eligible for federal support. However, the pilot will fill gaps in service by connecting new clients to the opportunities provided by ICPTA. Once a client is connected with public transportation for one need, they will likely continue to use the service for other needs. In addition, forming relationships with new local service organizations will help to better serve the needs of their targeted populations, closing service gaps across the region and promoting health and quality of life.

Goal: Provide more efficient service to underserved populations in rural and small urban areas.

The proposed pilot is focused on more efficient service for underserved populations in a rural region of North Carolina. Creating an efficient, single point of entry for transit appointments will improve these populations' ability and willingness to access transportation service. The addition of same-day curb to curb service within Elizabeth City will further assist underserved populations in accessing services they need in a timely manner.

Integration with Local Planning Documents

The pilot is also aligned with local planning documents, specifically the Locally Coordinated Plan. This plan included recommendations for ICPTA's region to:



Enhance technology like routing or scheduling software;



Ensure vital connections like Social Security offices and hospitals/medical facilities are available from every provider;



Expand existing service eligibility to new users; and



Improve distribution of information and awareness of existing transit options.

Supporting Partners

We appreciate the assistance of the Federal Transit Administration for providing funding for this Mobility for All project. We would also like to thank the National Aging and Disability Transportation Center for providing oversight and advice.

Additional partners include NCDOT, ICPTA, NCDHHS, N.C. Council on Developmental Disabilities, the NC Statewide Independent Living Council (NC SILC), the Raleigh Mayor's Committee for Persons with Disabilities, Albemarle Regional Health Service and the NC Dept. Military and Veteran Affairs. These partners have been involved in the development of the project and will assist in the training, outreach and marketing for this pilot.

Introduction

ICPTA is operated by Albemarle Regional Health Services and serves Pasquotank, Perquimans, Camden, Chowan, and Currituck counties in the northeastern part of North Carolina. ICPTA provides demand-response transit to allow the public access to nutrition sites, medical appointments, and other locations in order to access services or attend activities related to daily living, while promoting improved quality of life.

Located in a rural and geographically-challenged region, ICPTA is the only public transportation option available for seniors, people with disabilities, and other under-served populations. ICPTA seeks to facilitate the most efficient and effective use of Federal, State, and Local funds to provide quality passenger transportation through coordination of local programs and services in their communities.

Project Description

On-demand public transportation has become a very popular service, not only across North Carolina but also nationwide. The focus of on demand service is to provide the client with a service that offers accessibility, affordability, and convenience. ICPTA was interested in bringing this type of service to the Elizabeth City area which required implementing scheduling and routing software that also included a user-facing app. In addition, ICPTA added the goal of integrating the software with NC DHHS' NCCARE360 care coordination platform. This integration would allow transportation to be coordinated along with the services.

Implementation

ICPTA implemented same day service starting on October 1, 2023. Prior to that date, they provided solely traditional demand response service which requires clients to call in and schedule a trip for a date in the future. After October 1, 2023, they provided a blended service where the majority of clients still scheduled their trips but also started taking same-day trip requests within Elizabeth City.

The Table 1 shows the same-day ridership by quarter starting with 2023 Q4 which is based on the State fiscal year where the first quarter begins July 1.

Fiscal Year: Quarter	Ridership	Percent Increase from Previous Quarter
FY23: Q4	555	
FY24: Q1	1087	96%
FY24: Q2	1225	13%
FY24: Q3	1783	46%
FY24: Q4	1811	2%

Table 1: Same-Day Ridership

ICPTA saw significant growth from the first quarter the service was available to the second. This is clearly due to an increase in demand as word got out to the community about the service. ICPTA continued to see large increases in ridership for the next two quarters. In the last quarter of the period of interest, the ridership change from the previous quarter was nearly flat. This is likely due to ICPTA reaching its carrying capacity with only one vehicle available for the same-day service. The average increase by quarter for the 5 quarters where same-day service was available was 39%. If ICPTA were able to obtain funds for an additional vehicle, they would likely see continued increases, to a point, but they may not be quite at the level seen in the first few quarters.

After implementing the microtransit software, ICPTA reached out to NC CARE360 with the expectation that transportation could show up as an option for all of the other resource providers in the portal. However, the design of NC CARE360 is such that transportation vendors must be searched for like all other resource providers. NC CARE360 is aware that adding a transportation resource overlay connected to the geography of the resource providers is an important enhancement to the program, but these changes are not in the near-term plans for programming changes. As a work around, ICPTA is set up as a resource provider in the platform which contains a unique email address designed to track trip requests that originated from the portal. Unfortunately, ICPTA did not receive any trips requests from NCCARE360 during the study period. These findings could indicate a lack of need for matching transportation to human service requests, but more likely is that the workaround for inclusion in NCCARE360 is not effective.

Performance Measures

Several goals and outcomes were set prior to the beginning of the project to evaluate the implementation of same-day service. The discussion below examines each goal and outcome. In addition, several figures help visualize how ridership changed by quarter to help understand the growth of same-day service relative to traditional demand response service that existed prior to October 1, 2023.

Activity Goals

The table below shows the four activity goals set prior to the beginning of the project and how ICPTA performed relative to the goal. Each goal was set to evaluate different aspects of the project to highlight the overall efficacy of same-day service. These include a minimum expectation of same-day ridership, increased presence in the community reflected through new ridership and improved relationships with community health care providers by coordinating directly with clients of NCCARE360.

Activity Goals	Numerical Target	FY24 Q2
A. Number of same day trips carried by quarter	600 (10/weekday)	1,225
B. Number of trips carried with an NCCARE360 case number by quarter	60 (1/weekday)	0
C. Number of clients originating from NCCARE360 by quarter	12 (1/week)	0
D. Percent increase in unduplicated active riders for each quarter	5%	7%

Table 2: Activity Goals

As seen in Table 2, ICPTA exceeded expectations for goals A and D. Each of these two goals are directly related to the implementation of same-day service. ICPTA did not actively market the new service but rather let word of mouth among the community help the service grow naturally. Therefore, the first quarter of service did not meet the numerical target in A, but by Q2 and each additional quarter the ridership far exceeded ICPTA's goals.

ICPTA saw an average increase of 21 new same-day riders per quarter, with the number of new riders increased significantly during the last two quarters.

For ICPTA to achieve their goals for B and C, they needed cooperation from NCCARE360 to book trips through a third-party scheduling portal that was set up. Unfortunately, because of technological difficulties ICPTA did not receive any trips from NCCARE360. ICPTA hopes to work with NCCARE360 and other similar organizations in the future to have trips booked through the online portal.

Outcomes

A single outcome was defined at the beginning of the project.

Outcome:	Percentage change in average number of quarterly trips by individuals – 5%
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Similar to the activity goals defined above, this outcome is a way to measure the impact same-day service had on the community. A positive percent change indicates people in the community have greater mobility and therefore increased access to healthcare, employment, shopping, childcare, recreation, and other destinations. The overall goal is to increase the ridership by those utilizing on-demand public transportation until the number of trips served approaches the number of trips performed by individuals with ready access to automobiles.

ICPTA saw an increase in same-day ridership for each quarter, with only the last quarter showing an increase of less than 5%. The lower increase for Q4 FY24 could be due to a couple of factors. First, the weather may have caused people to stay home more often than previous quarters. Traditional demand response saw a significant drop off in ridership for November and December relative to the rest of the year as well. The other cause for the slowing rate of increase could be related to vehicle capacity constraints. Even though ridership was down in general, the same-day service is blended in with traditional demand response and, depending on the type of trips served during November and December, ICPTA may not have as easily been able to serve same-day trips. Further data collection and analysis is required to try and determine if the slowing demand is due to vehicle constraints or other causes.

The table below shows the change in new riders by quarter along with the percent increase. The table shows the percent increase for all riders as well as same-day riders to compare the impact implementing microtransit had on attracting new clients.

Fiscal Year: Quarter	Total New Riders	Total New Rider Percent Change	Same-Day New Riders	Same-Day New Rider Percent Change
FY23: Q2	464			
FY23: Q3	173	37%		
FY23: Q4	129	20%	18	
FY24: Q1	139	18%	19	106%
FY24: Q2	120	13%	12	32%
FY24: Q3	149	15%	29	59%
FY24: Q4	78	7%	27	35%

Table 3: New Riders for Demand Response and On-Demand Services

Data Analytics

Several additional metrics were evaluated to highlight the impact of same-day service within Elizabeth City. Each of the figures below show a myriad of ways to compare same-day ridership with traditional demand response to understand how this new service changed over time relative to a service that has existed for years.

The percentage increase in new riders for same-day service was greater than the percentage increase in total riders during the same period. This is expected given how new the service is and the community begins to learn about the new offering. ICPTA also expects the ridership to level off in demand due to their existing limited capital capacity. If ICPTA were able to purchase an additional vehicle or two and additional operating funds were made available, they would likely continue to see a similar increase in new riders until that new capacity is consumed.

ICPTA implemented same day service starting on October 1, 2023. Prior to that date, they provided solely traditional demand response service which requires clients to call in and schedule a trip for a date in the future. The minimum reservation time to request a trip is 2 days. After October 1, 2023, they began providing a blended service where the majority of clients still scheduled their trips in advance but also started taking same-day trip requests within Elizabeth City municipal boundary. The two graphs below compare the quarterly ridership before and after the implementation of ICPTA's same-day service: Figure 2. Total Unlinked Passenger Trips;

Figure 3. Traditional Demand Response. The black line denotes the start date of the implementation of same day service offerings in Elizabeth City.

Figure 2 shows the total unlinked passenger trips which include both traditional demand response and same-day services. Overall, ICPTA experienced a gradual increase in ridership during the 18-month period with some seasonal variation, especially during November and December. The black vertical line in Figures 2 and 3 represent the beginning of same-day service being offered.

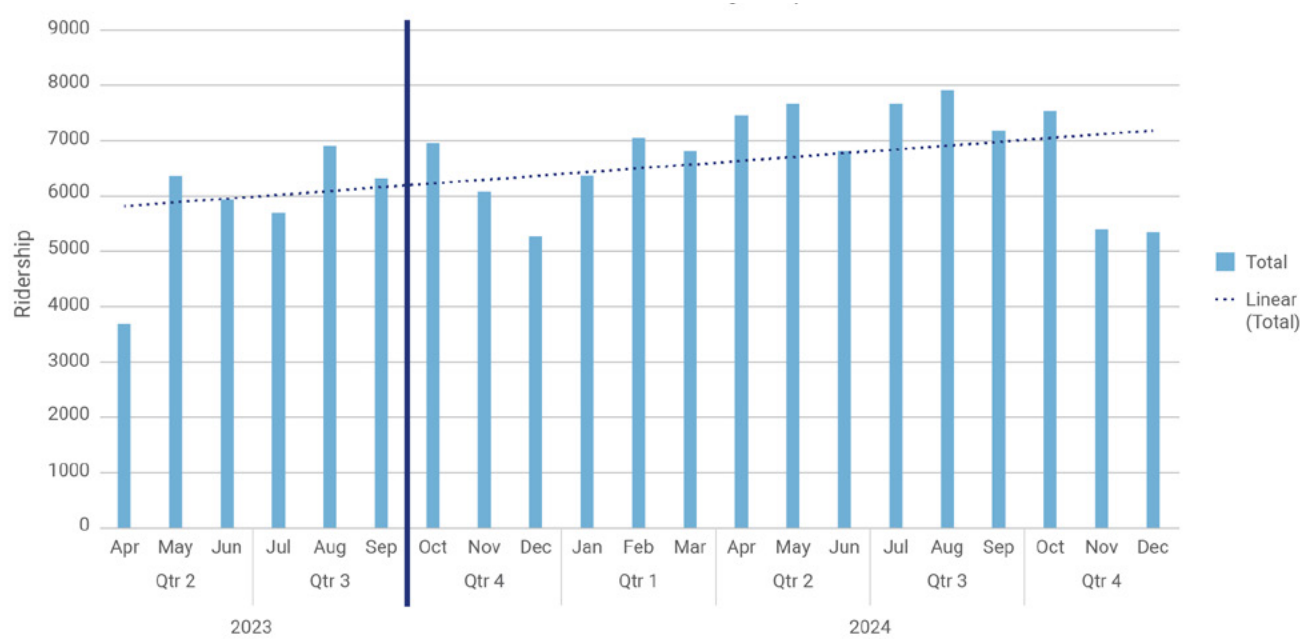


Figure 2: Total Unlinked Passenger Trips

Figure 3 shows only the traditional demand response unlinked passenger trips. ICPTA saw a similar but slightly lower rate of increase in their traditional demand response service compared to the rate of increase in ridership that includes both traditional demand response and same-day service.

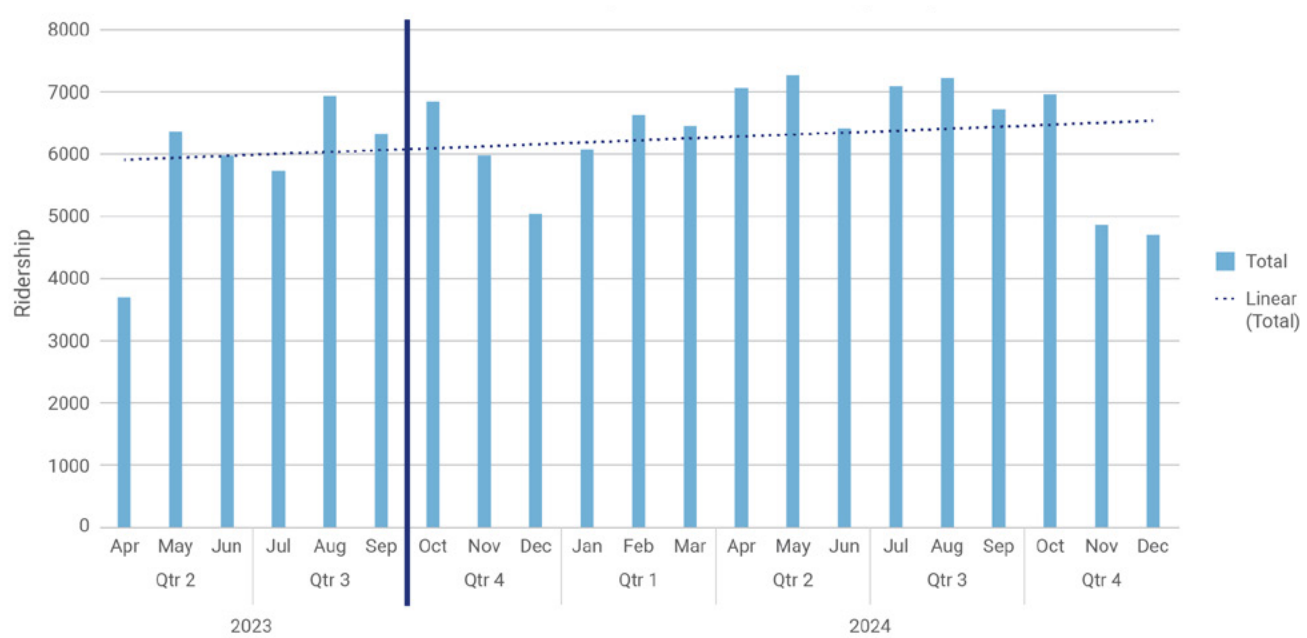


Figure 3: Traditional Demand Response Unlinked Passenger Trips

Figures 4 and 5 below show traditional demand response and same-day ridership for the same period. While traditional demand response ridership saw a slight decrease in ridership, same-day service saw a significant increase. People in Elizabeth City have shown a willingness to try this new service due to the convenience of requesting on-demand transit. As seen in other communities implementing same-day service, the increase in demand is expected to slow as ridership continues to increase resulting in longer wait times. At that point, ICPTA will need to decide whether or not to add additional vehicles to meet the increased demand.

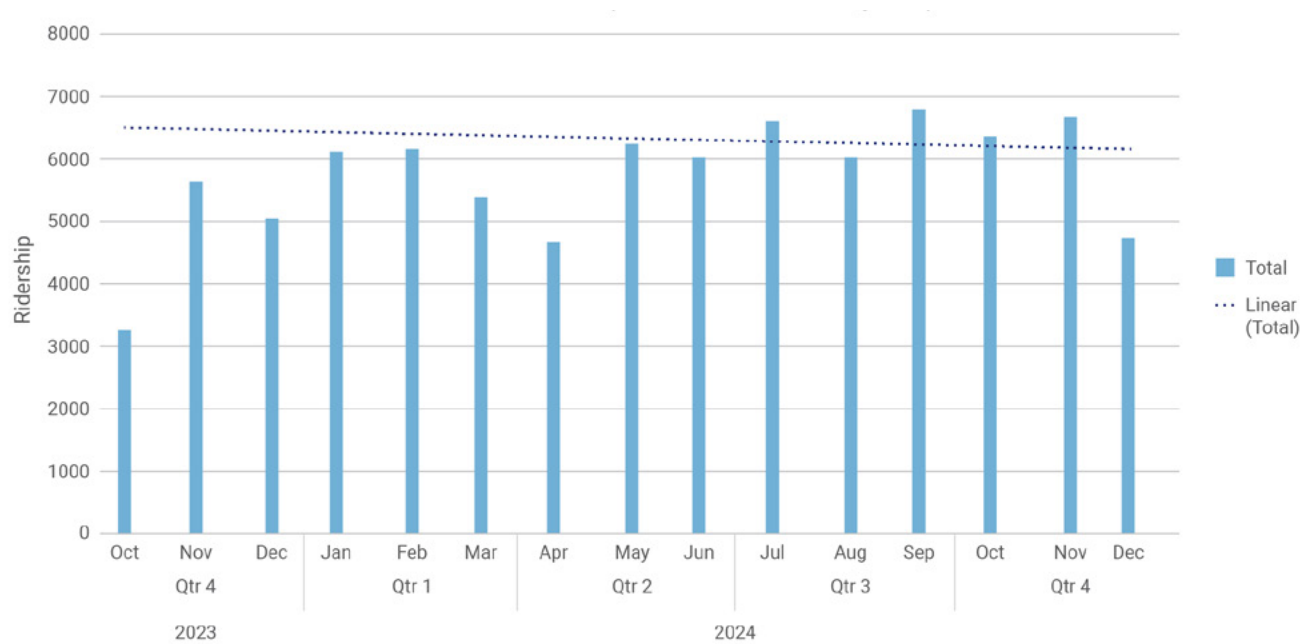


Figure 4: Demand Response Unlinked Passenger Trips

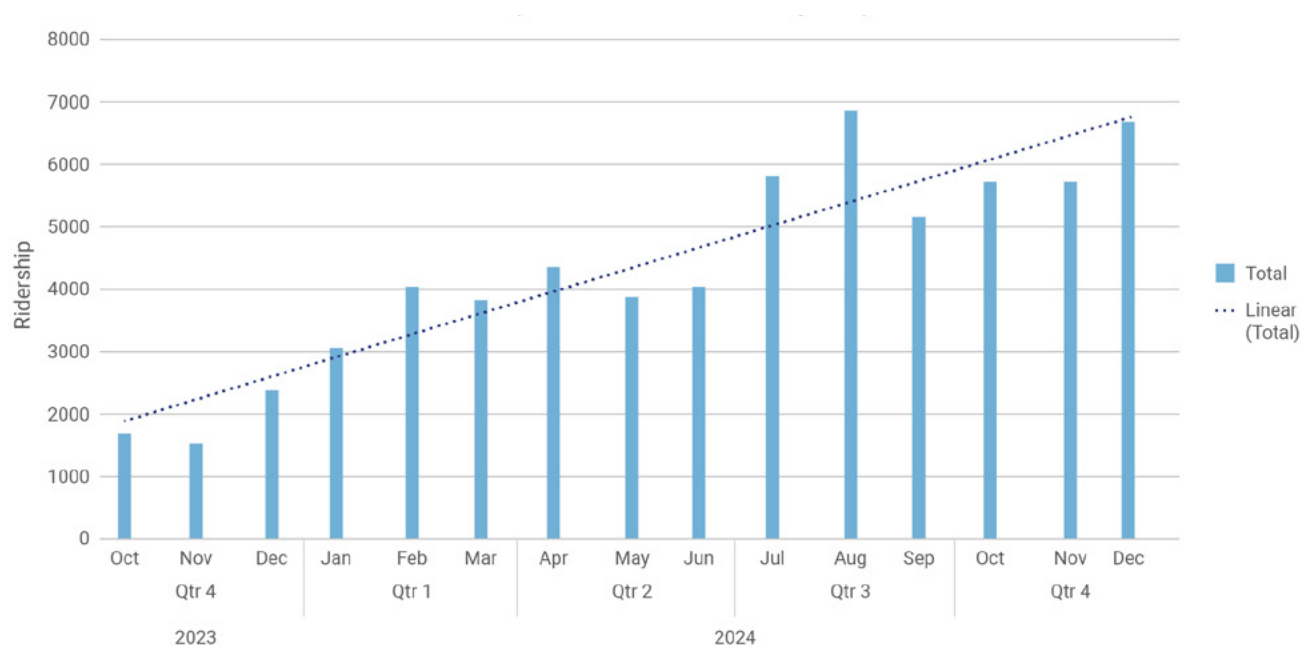


Figure 5: Same-Day Service Unlinked Passenger Trips

Figure 6 shows a side-by-side comparison of ridership between traditional demand response and same-day service. Although both services show variation from month-to-month, the variation in traditional demand response appears to be highly correlated to the seasons with lower ridership in November and December compared to other months. At this point, the seasonal variations appear to have a lesser impact on ridership compared to traditional demand response. However, further analysis is required to determine how seasonal variations impact the demand for same-day service.

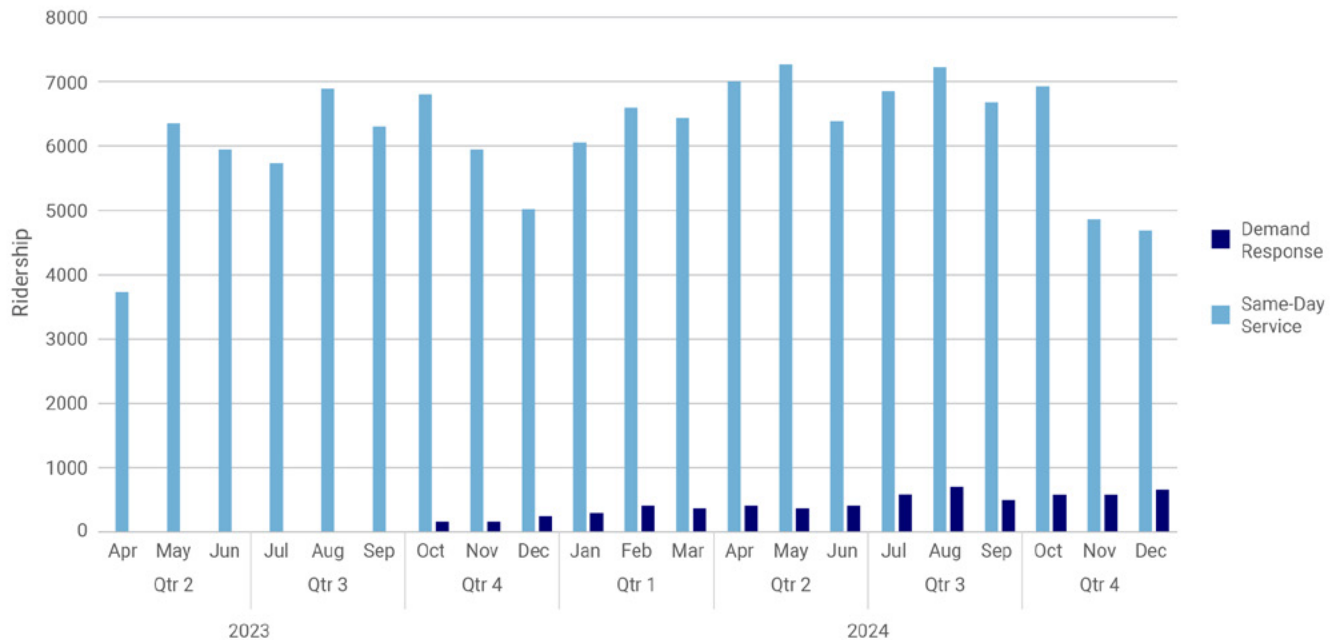


Figure 6: Unlinked Passenger Trip Comparison

Lessons Learned

Since ICPTA was interested in a blended service that inserted on-demand trips into existing traditional demand response services as the trip requests were received, they experienced some difficulties in finding the right software to fit all of their needs. The software selected in the first RFP works better with same-day service and had difficulty incorporating standing order and traditional demand response rides into the runs. This reduced ICPTA's productivity because the new software scheduled fewer trips per service vehicle hour. In addition, ICPTA was unable to change the order of the runs once they were set by the software. After working with the first software vendor for months to try and reconcile these issues, it was agreed a different direction as necessary and ICPTA issued a second RFP. Through the second RFP, ICPTA selected a software vendor that had years of experience working directly with demand response transit systems across North Carolina and added enhancements to their software that allowed for same-day trip requests. ICPTA has seen their productivity increase to previous levels and have the freedom to change runs as they see fit.

With regards to the relationship with NCCARE360 and the plan to have them book trips directly into a third party portal for their clients, this did not come fully into fruition. Rather than have a social worker at NCCARE360 providers book the trip for their client, they forwarded instructions to the client that would explain how to schedule a trip. The point of setting up the portal was to have office staff at NCCARE360 book the trips directly on behalf of their client. ICPTA will continue to work with NCCARE360 to see how the two organizations can provide the best service to their community to ensure they receive all of the benefits they require.

Conclusion

Same-day or microtransit service is still a new offering by transit systems, not only in North Carolina but across the country. There is no 'one size fits all' model due to the uniqueness of transit systems both in terms of geography and the community they serve. Therefore, transit systems will need time to understand the different options available to them and maybe even need to try different models to see what fits their community best. Same-day ridership has seen continued growth from quarter to quarter since implementing the service within Elizabeth City. ICPTA understands that this will eventually level off due to vehicle capacity constraints but hopefully additional funding becomes available in the future to satisfy increased demand. The performance metrics that ICPTA can control have exceeded the targets established at the onset of the project. Overall, same-day ridership continues to grow and ICPTA will continue to look for opportunities to provide their community with the best possible service. ICPTA was one of the early adopters of this type of service, although they experienced some challenges along the way, especially in finding the right software to fulfill their needs, the project has been quite successful overall.