



# One Chattanooga: Transit for All

## Appendix C: Commuter Service Analysis Memo

*Prepared April 2025*



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## Table of Contents

Introduction.....	C-1
Methodology.....	C-1
Replica .....	C-1
On the Map (Census).....	C-1
Existing & Future Population .....	C-2
Peer Comparison .....	C-2
Hamilton County Analysis .....	C-3
Intercounty Analysis.....	C-4
Intercounty Travel .....	C-5
Long-Term Market Potential.....	C-8
Comparison with WeGo Express Routes .....	C-10
Recommendations .....	C-11
Fixed-Route Commuter Services Not Recommended at This Time .....	C-11
Monitor Emerging Commuter Markets.....	C-12
Invest in Flexible, Scalable Alternatives.....	C-12
Next Steps .....	C-12
Continued Collaboration with Regional Partners .....	C-12
Strengthen Existing TDM Efforts .....	C-12
Update Analysis Periodically .....	C-13

## Introduction

### *What makes a destination viable for commuter service?*

There are several interconnected factors to consider when exploring commuter and express transit services. Key factors to consider for successful implementation include strong and concentrated trip densities, competitive time advantage for using transit, and densely developed employment centers. Commuter routes typically fall within the range of 20–40 miles and often end in a dense employment area such as downtown.

This analysis evaluates the potential for commuter services between Hamilton County and its surrounding counties, as well as within the county. This memo documents analyses identifying major travel flows, comparing regional peer systems, and assessing demographic and travel trends. The findings are intended to support CARTA and regional partners in identifying mobility needs and scalable solutions within and beyond Hamilton County's borders.

## Methodology

### Replica

Current travel patterns can inform potential commuter service routes by highlighting locations that generate significant inbound travel. Trips with destinations within Hamilton County whether they originated within or outside of the County were identified using Replica, a third-party data platform that takes anonymized data from GPS enabled devices, primarily cell phones, to aggregate trip patterns. These patterns helped reveal where there is existing travel demand between two locations.

As this memo is interested in better understanding commute patterns, the analyses specifically look at average weekday trips. Weekday trips tend to be more consistent and predictable making them more reliable for replicating typical conditions. Roadways also experience higher volumes during the week, particularly during peak commuting hours. Analyzing weekday data provides a clearer picture of potential ridership and helps identify when and where commuter transit service can have the greatest impact. By identifying where inbound travel is most concentrated, the data will help determine whether current demand supports point-to-point commuter service and will inform long-term planning for regional transit investments.

### On the Map (Census)

To supplement the Replica data, employment data was analyzed using the U.S. Census Bureau's [On The Map](#) (OTM) tool. OTM provides information on residential and workplace locations for full-time workforce. OTM uses data from the decennial Census, which is updated every 10 years. For this analysis, 2020 data was used as it was the most recently available data. OTM was used to determine how many people are employed in Hamilton County and where those employees live.

## Existing & Future Population

Population data was incorporated to assess existing and future commuter market potential. Current population estimates for 2024 and projections for 2050 were compiled to understand long-term growth trends. Data for Tennessee counties was obtained from The University of Tennessee: Knoxville [Tennessee State Data Center](#), which updates county population updates for the entire state every two years. Data for Georgia counties was obtained from the [Governor's Office of Planning and Budget](#). This data was used to better understand where future growth may open up markets for dedicated commuter services outside of Hamilton County.

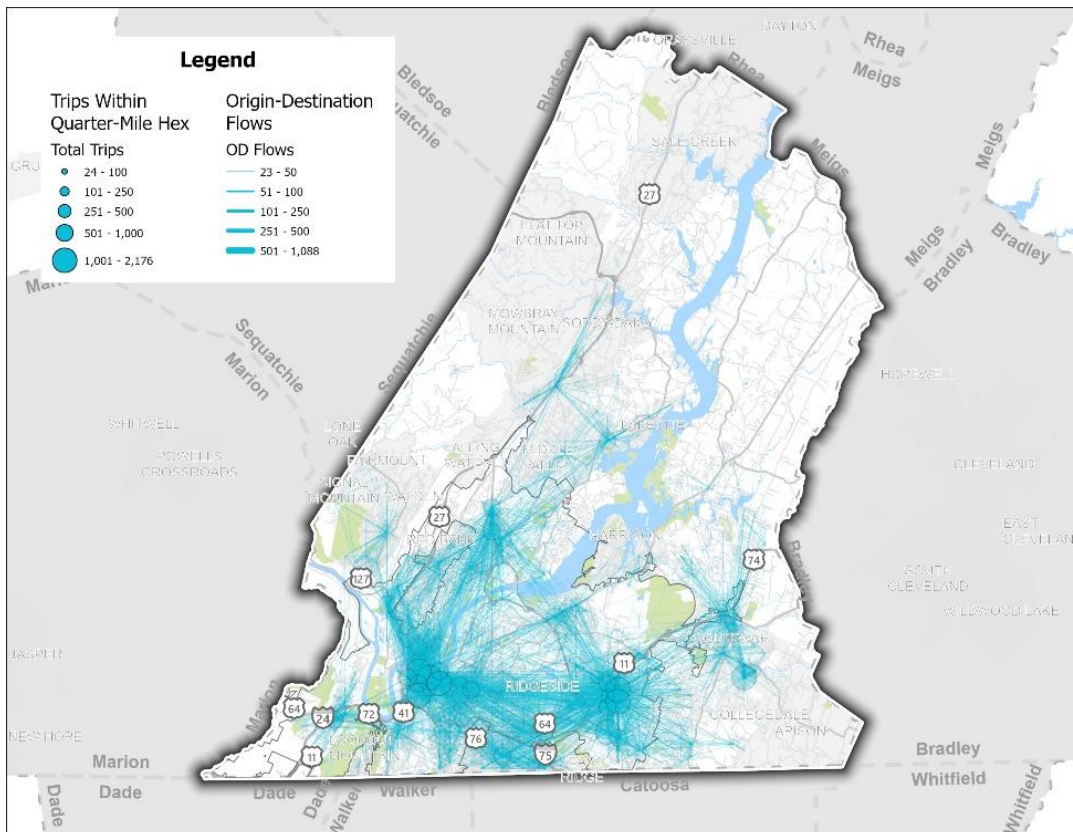
## Peer Comparison

CARTA ridership and regional population were also compared to WeGo Transit which serves the Nashville-Davidson County area. WeGo is the largest transit agency in Tennessee and provides commuter services to the surrounding region. Data for commuter services was readily available and allowed for a nuanced analysis of ridership. This data was used to analyze how express commuter transit service would perform in the Chattanooga region.

## Hamilton County Analysis

Additional analysis was performed to identify the travel patterns of those who are traveling exclusively within Hamilton County. Replica data was used for this analysis as well and was available at a more granular scale than the intercounty analysis. Data was aggregated into quarter-mile hexagons. Each point in Figure 1 represents the center of one hexagon and trips that begin or end within it. Each line in Figure 1 represents the travel flow between two hexagons.

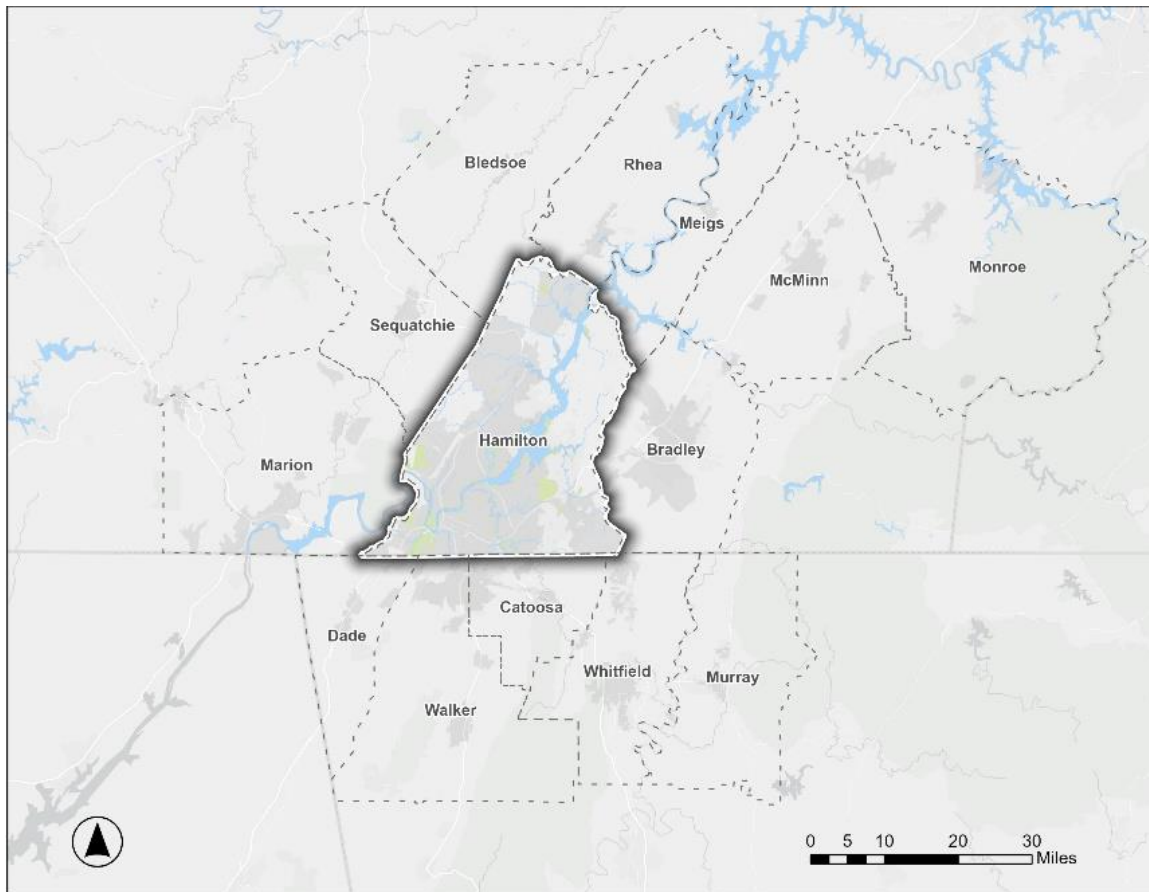
The most significant trip pairings occur between East Ridge and downtown Chattanooga, Collegedale and Ooltewah, and between Signal Mountain Village and downtown Chattanooga. These trips could be serviced with extensions of existing fixed routes or new corridor service. Locations further from downtown Chattanooga, such as Ooltewah and Soddy-Daisy, would be more appropriate distances for traditional commuter services, but the existing travel demand between those locations and concentrated employment centers is minimal. Existing travel demand between other areas, such as Lakesite and Red Bank, are not strong enough to warrant commuter service at this time.



**Figure 1: Trips Beginning and Ending Within Hamilton County on an Average Weekday**

## Intercounty Analysis

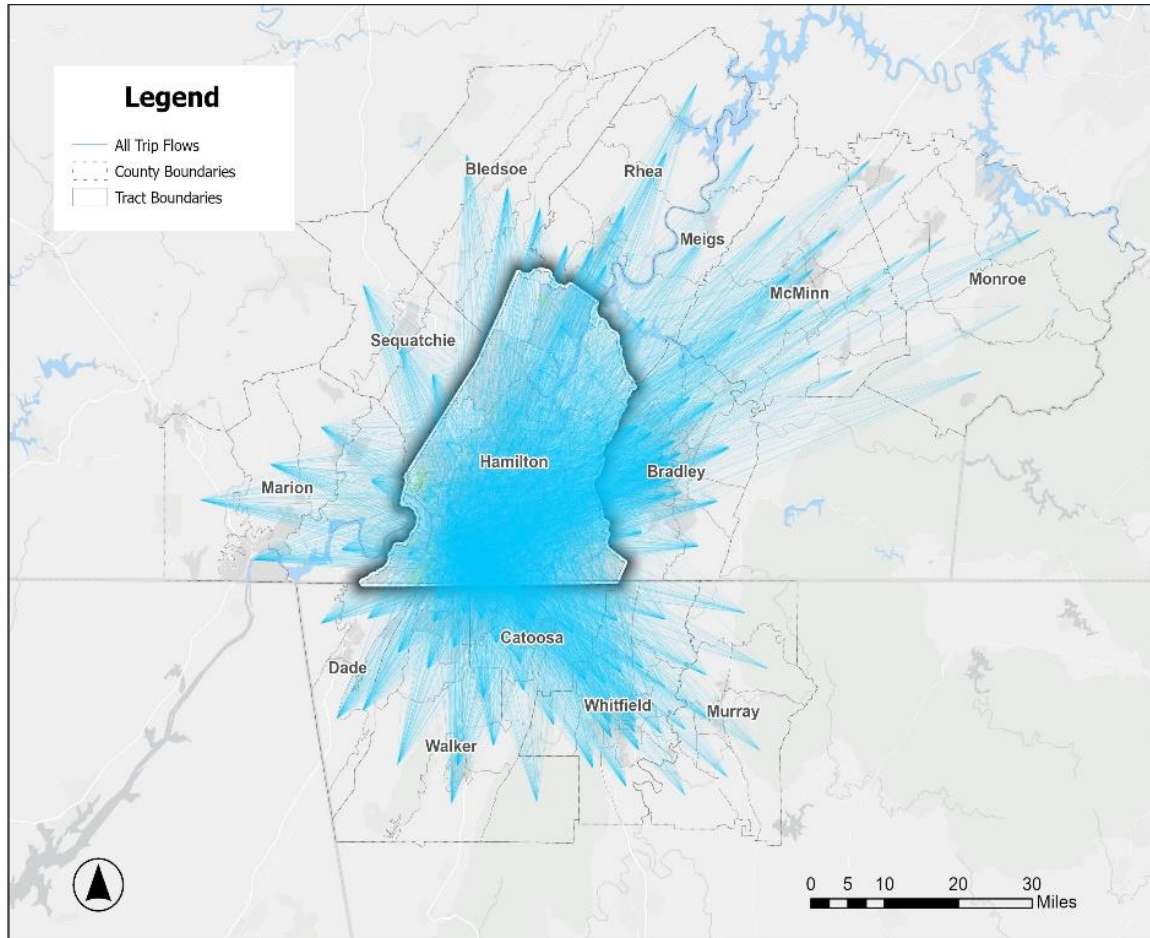
Understanding travel patterns from surrounding counties into Hamilton County is essential for evaluating the feasibility of future commuter services. The Intercounty Analysis analyzes trip flows from 13 adjacent counties (Figure 2) focusing on average weekday travel into Hamilton County.



**Figure 2: Counties Analyzed in Intercounty Analysis**

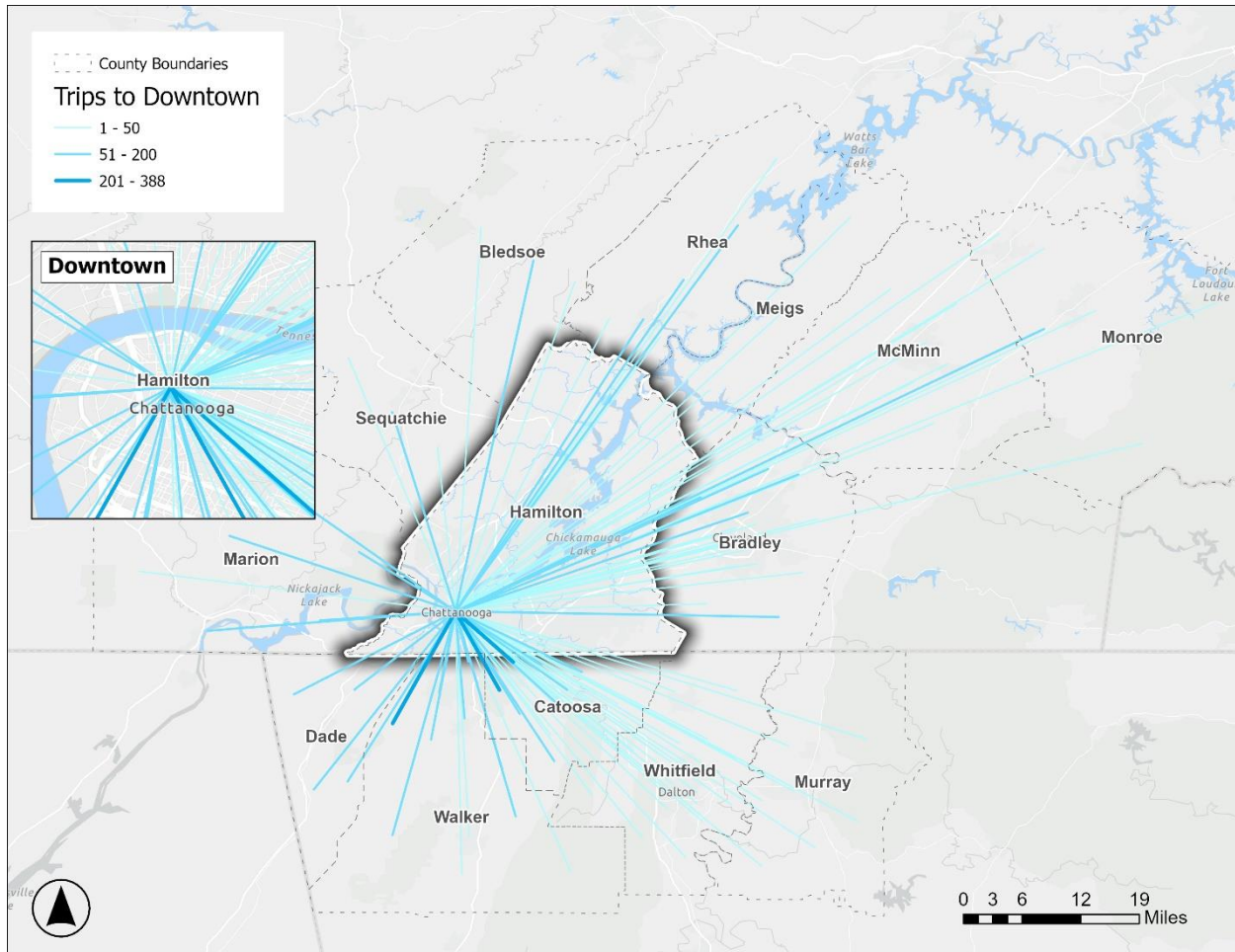
## Intercounty Travel

Using existing travel data from Replica, trip flows from 13 counties surrounding Hamilton County were analyzed. As Georgia is in a different Replica dataset from Tennessee, only Census tract level analysis was available for this analysis.



**Figure 3: Average Weekday Trips Beginning Outside Hamilton County and Ending Within Hamilton County**

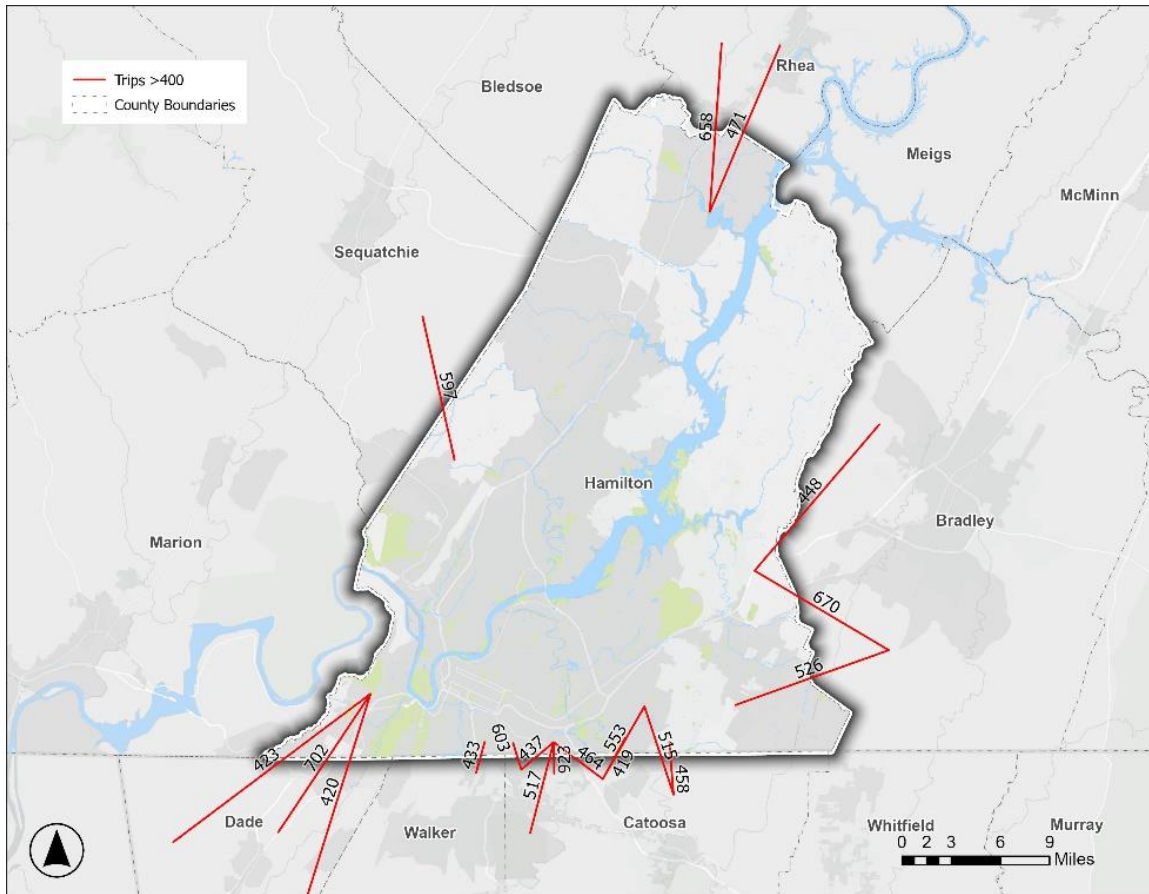
Each blue line in Figure 3 represents the weekday average number of all trips that begin in a tract outside of Hamilton County and end in a tract in Hamilton County. Each trip flow represents the average number of weekday trips, regardless of trip purpose, mode, or time of day. As such, these flows do not exclusively represent commute trips but still indicate general travel demand. By illustrating the volume of trips between specific origins and destinations, this analysis helps identify where travel demand into Hamilton County is most concentrated.



**Figure 4: Regional Trips to the Downtown Core**

Figure 4 illustrates all of the regional trips that begin outside of Hamilton County and end in the downtown core. This figure demonstrates the disparate nature of the trip concentrations. Of the 193 tracts included in this analysis, only 56% had a trip ending within the downtown core. Of those, only three had more than 200 trips and originated from the northern parts of Catoosa and Walker Counties.

This analysis examined areas with the highest concentrations of trip flows. Figure 5 is a simplified map that uses a threshold of 400 daily trips to identify significant trip flows between tracts outside of Hamilton County and destinations within the county. Only 12 tracts (17 trip flows) of 193 met this threshold and all but one origin tract shares a border with Hamilton County. Five of these tracts (and nine of the trip flows) originated from Catoosa County. The single strongest pairing (923 trips) was also from Catoosa County to a tract in East Ridge, Tennessee, containing Parkridge East Hospital and an AMC movie theater.



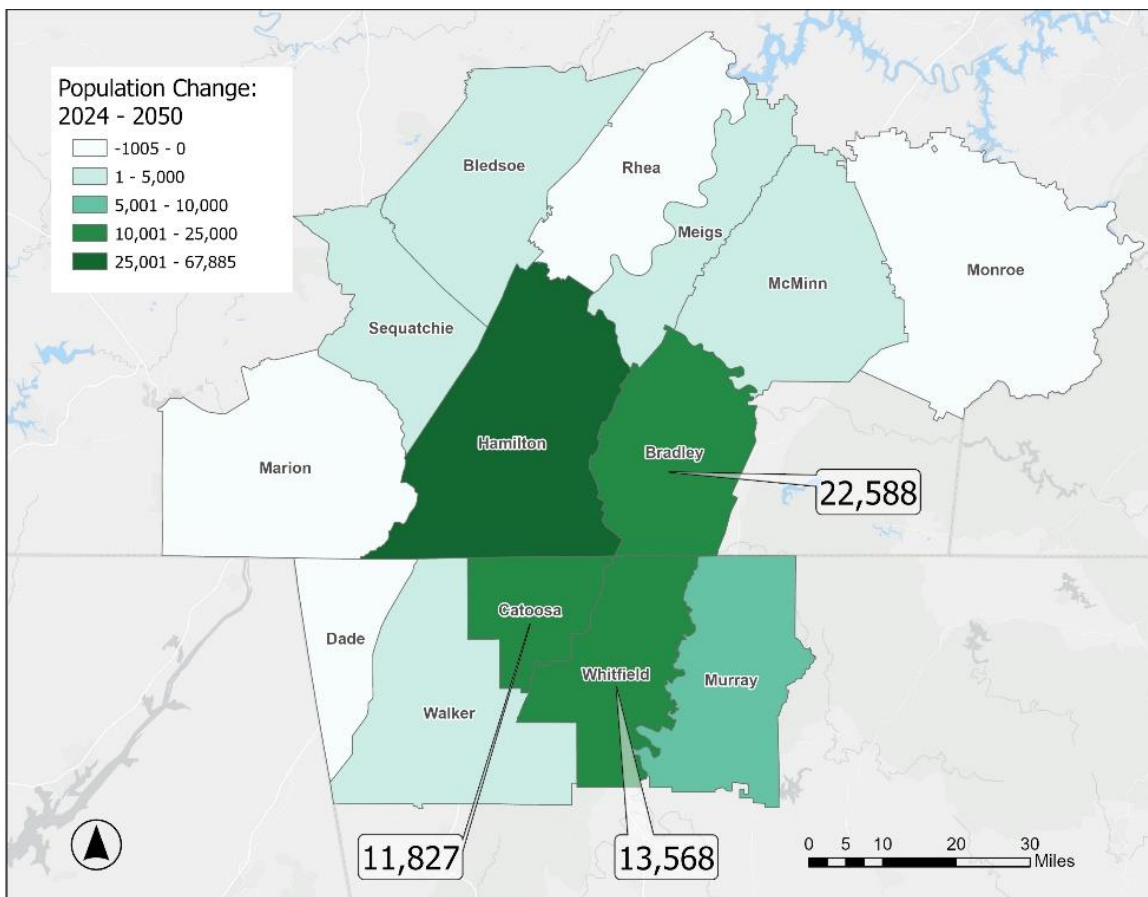
**Figure 5: Trip Pairs Greater than 400 Between Hamilton County and Selected Counties**

Although a significant number of trips originate in Bradley, Catoosa, and Walker Counties, these represent all trips destinations within Hamilton County, not just commute trips, and are too dispersed to support a point-to-point service. Additionally, the densest trip flows, those exceeding 400 trips, are concentrated just across the county line and span distances too short to be effectively served by a regional commuter system. Dedicated commuter service requires substantial investment in operating costs, driver hours, and vehicle resources. To be cost-effective, these routes typically need higher sustained ridership to ensure a reasonable cost per trip and efficient use of resources. Without a higher concentration of demand, dedicated service may run underutilized, leading to poor farebox recovery and performance metrics.

## Long-Term Market Potential

Table 1 shows employment in Hamilton County and a summary of population changes by county.

Using population projections from the Tennessee State Data Center and Georgia’s Office of Planning and Budget, the analysis identified which counties may be emerging as potential commuter bus service markets (Figure 6). This analysis revealed that Marion, Rhea, Monroe, and Dade Counties are projected to have a declining population over the next 25 years. Although Whitfield County is projected to add an additional 13,500 people by 2050, currently only a small number of Whitfield County residents are employed in Hamilton County. Even with the projected increase, employment numbers may be too low to support commuter service. Bradley and Catoosa Counties show the strongest growth potential and may represent the most promising markets for future commuter bus service investments.



**Figure 6: Projected Population Change from 2024 to 2050**

**Table 1: Employment and Population Changes by County**

County	Employed in Hamilton County (2020)	2024 Population	2050 Growth Rate	2050 Total Growth	2050 Population
Hamilton County, TN	158,420	382,302	17.76%	67,885	450,187
Bradley County, TN	8,414	112,859	18.03%	20,345	133,204
Whitfield County, GA	2,526	104,519	12.98%	13,568	118,087
Catoosa County, GA	15,014	69,612	16.99%	11,827	81,439
Walker County, GA	10,793	70,003	7.13%	4,988	74,991
McMinn County, TN	705	55,440	5.50%	3,050	58,490
Monroe County, TN	166	48,599	-0.83%	-404	48,195
Murray County, GA	440	41,446	13.24%	5,486	46,932
Rhea County, TN	2,236	33,877	-1.45%	-492	33,385
Marion County, TN	4,337	29,125	-3.45%	-1,005	28,120
Sequatchie County, TN	2,204	17,377	19.09%	3,317	20,694
Bledsoe County, TN	869	15,117	10.37%	1,567	16,684
Dade County, GA	2,959	16,232	-0.46%	-75	16,157
Meigs County, TN	678	13,614	13.82%	1,881	15,495

## Comparison with WeGo Express Routes

To better understand the viability of commuter services to counties surrounding Hamilton County, a comparative analysis was conducted using WeGo Public Transit’s commuter services in the Nashville-Davidson metropolitan area. WeGo operates eight commuter routes (seven bus and one rail) that serve eight counties.

Table 2 and Table 3 present the number of commuters that live in a surrounding county and work in Davidson County, as defined by OTM, along with the average daily ridership and route distance.

This data was then compared to Hamilton County’s surrounding counties to evaluate potential parallels. Catoosa, Walker, and Bradley Counties emerged as having the highest employment in Hamilton County. These levels are comparable to those seen in Robertson, Cheatham, and Montgomery Counties serviced by WeGo. Additionally, the distance from the geographic centers of Walker and Bradley Counties to downtown Chattanooga are similar to the route lengths of WeGo’s commuter services.

However, the WeGo commuter ridership remains modest, ranging from 22 to 132 daily boardings per route. This underscores that even under more favorable conditions (including extensive regional coordination and infrastructure), ridership may remain limited.

**Table 2: Population and Employment by County, Counties Surrounding Hamilton County**

Home County	Employed in Hamilton Co. (2020)	Population Growth Rate (2020 – 2050)	Distance from County Center to CARTA North
Catoosa County	15,014	17%	18 miles
Walker County	10,793	7%	28 miles
Bradley County	8,414	20%	33 miles
Marion County	4,337	-3%	32 miles
Dade County	2,959	-0.46%	22 miles
Whitfield County	2,526	13%	32 miles
Rhea County	2,236	-1%	48 miles
Sequatchie County	2,204	22%	42 miles

**Table 3: Population and Employment by County, Counties Surrounding Davidson County**

Home County	Employed in Davidson Co. (2020)	Route Number(s)	Weekday Daily Ridership by Route (2024)	Route Distance
Rutherford County	36,545	84 and 86	157	38 and 23 miles
Williamson County	32,610	95	90	34 miles
Sumner County	28,868	87	96	27 miles
Robertson County	12,186	89	22	28 miles
Cheatham County	10,345	88 and 94	132	41 and 39 miles
Montgomery County	8,646	94	103	39 miles
Dickson County	5,918	88	29	41 miles

## Recommendations

Based on the analysis of travel patterns, employee home locations, trip volumes, and projected population growth, the following recommendations are provided:

### Fixed-Route Commuter Services Not Recommended at This Time

Analysis of trip flows from surrounding counties into Hamilton County indicate relatively low and geographically dispersed travel demand. Of the 193 Census tracts evaluated, only 12 exceeded the 400 daily trip threshold used to indicate strong travel demand. The concentration of trips in adjacent tracts suggests that travel patterns may reflect proximity-based needs, such as access to retail, healthcare, or other essential services, rather than traditional work commutes.

Additionally, comparison with WeGo Public Transit’s commuter routes in the Nashville-Davidson region shows that even in higher-demand corridors with dedicated regional service and infrastructure, ridership can remain modest. As such, dedicated commuter routes outside of Hamilton County are not recommended at this time.

Origin and destination trip pairs within Hamilton County were strongest near Chattanooga. Many of these, such as between downtown Chattanooga and Signal Mountain Village and Red Bank, could be covered by microtransit and new service corridors that accommodate commuters as well as non-commuters.

## Monitor Emerging Commuter Markets

While fixed-route commuter service is not currently viewed as viable, some counties are projected to experience population growth that may lead to increased travel demand into Hamilton County over time. Specifically, Catoosa and Bradley Counties should be monitored for future demand. These areas had some of the highest trip volumes and strongest tract-level flows in the analysis. Additionally, as growth in Hamilton County continues, new transit markets may emerge.

## Invest in Flexible, Scalable Alternatives

Given the dispersed nature of travel demand, flexible and lower-cost commuter solutions should be considered:

- Vanpool programs: Support formal vanpool services for groups of commuters with similar origin-destination pairs. Providers such as Commute with Enterprise and vRide partner with local agencies to provide such services.
- Carpool matching: Promote ride-matching platforms or employer-based carpool initiatives.
- Park-and-ride locations: Begin identifying strategic sites near key corridors to support future commuter demand. Locations along the I-75 corridors with minimal travel delay should be prioritized.
- Employer engagement: Work with major employers to assess commuter needs and build interest in shared mobility options.
- These alternatives can build a foundation of regional mobility while avoiding the upfront costs and risks of fixed-route service.

## Next Steps

To support long-term planning and future readiness for fixed-route commuter service, the following actions are recommended:

### Continued Collaboration with Regional Partners

Continue coordinating with cities, counties, Chattanooga-Hamilton County/North Georgia Metropolitan Planning Organization (MPO), and the Chattanooga-Hamilton County Regional Planning Agency (RPA) to explore potential for collaborative transportation solutions. Use insights from this analysis to inform park-and-ride site planning and support policies that concentrate jobs and housing along regional travel corridors. Long-term dedicated funding for regional transit including public investment, regional transportation funds, or employer contributions should be identified.

### Strengthen Existing TDM Efforts

Consider working with the MPO to expand and relaunch the [existing Transportation Demand Management \(TDM\) program](#) to increase brand awareness. TDM programs can be great tools to help

encourage commuting via modes other than single-occupancy vehicles and educate about the options available. Consider direct engagement with major employers in outer counties to better understand commuter needs and potential demand for shared mobility services. Identify champions at major employers like the University of Tennessee at Chattanooga and Volkswagen and build partnerships to help promote commuter options and establish a regional transportation coalition.

Programs such as parking cash-out, priority carpool parking, or guaranteed ride home programs (GRHP) can also encourage mode shift and can be particularly beneficial for commuters who do not live in areas densely populated enough to support dedicated commuter bus service.

Aligning TDM efforts with RPA planning and travel modeling will help ensure integration with broader transportation and land use planning efforts as a core solution to achieving regional mobility goals.

### Update Analysis Periodically

Revisit this commuter analysis in approximately five to seven years to track shifts in travel demand, particularly in fast-growing counties like Bradley and Catoosa. Identify the minimum ridership needed to support efficient commuter or express transit service. Look for increasing trip densities with a geographic concentration of origins and destinations as well as changes in congestion which may increase the demand for services.

Commuter surveys or travel diaries can help gain a better understanding of how and why people are traveling, and how commuter service could help overcome barriers and challenges faced by commuters. Travel diaries, which ask participants to record their trip purpose, timing, and mode throughout a day or week, offer valuable insight into commuter behavior and service gaps that aren't always visible through passive data. This type of survey may be useful to help begin identifying strategies to provide transit solutions along key corridors used by commuters.