



# LSCOG Best Friend Express Existing Conditions Report

Prepared by:



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# Table of Contents

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<b>Introduction .....</b>	<b>1</b>
<b>System Overview .....</b>	<b>2</b>
Fixed-Route Bus Services .....	2
Paratransit .....	3
Other Regional Service .....	3
Fares.....	4
Fleet.....	4
<b>Service Area Profile .....</b>	<b>6</b>
Aiken County Demographics.....	6
Travel Patterns .....	12
<b>Literature Review .....</b>	<b>15</b>
Key Recommendations .....	16
Summary of Priorities.....	19
<b>System Performance .....</b>	<b>20</b>
2017 – 2021 Five-Year Performance Summary.....	20
Peer Comparison.....	21
Summary.....	31
Ridership and On-Time Performance .....	33
<b>Opportunities and Challenges .....</b>	<b>36</b>

# Introduction

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The Lower Savannah Council of Governments (LSCOG), in coordination with the Federal Transit Administration (FTA) and local funding partners, provides public transportation services to the residents and visitors for the urbanized areas of Aiken County, South Carolina. Branded as the Best Friend Express (BFE), this service operated under contract by Aiken Senior Life Services, who also provide Americans with Disabilities Act (ADA) compliant demand-response paratransit service referred to as Dial-a-Ride that serves eligible residents within three-quarters of a mile of fixed-route services. Since 2004, BFE has operated three fixed-route services: the Blue Route connecting Aiken to North Augusta, the Green Route connecting Aiken to Langley Pond, and the Red Route which serves Aiken city from Crosland Park to College Acres. Each year BFE covers approximately 138,000 miles of revenue service and 25,000 passenger trips. BFE also operates a paratransit service. The BFE is administered and monitored by the LSCOG, the regional planning organization for South Carolina's six-county Lower Savannah region.

This existing conditions report represents the first deliverable of the BFE Transit Improvement Study, an initiative of LSCOG to develop a comprehensive set of recommendations to support strategic changes to the BFE network, including:

- Changes to bus stop locations and arrival/departure times;
- Reduction in headways and non-revenue mileage;
- Increased overall ridership, especially from Aiken Technical College and the University of South Carolina at Aiken; and,
- Investigating new technology opportunities.

This report comprises a summary of:

- The BFE system as it exists today;
- Area demographics and travel demand environment;
- A review of existing planning documents concerning the development of transit in the Lower Savannah region;
- An analysis of BFE's performance across a variety of financial and operational measures, as well as a comparison of its performance with similar agencies nationwide; and,
- The priorities, opportunities, and challenges which the system currently faces.

# System Overview

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The BFE principally serves Aiken County in the cities of Aiken and North Augusta, with connections to the towns of Graniteville, Gloverville, Burnetown, Clearwater, and Belvedere, South Carolina. These cities and towns have all been designated as part of the “urbanized portion” of Aiken County, as determined by the U.S. Census. The BFE connects with Augusta Transit at the Augusta Transfer Center on Broad Street in Augusta, Georgia. The BFE’s services consist of three fixed-route bus lines and a Dial-a-Ride service for eligible residents within a fixed distance of bus services. In 2021, BFE provided more than 30,000 passenger trips, including 20,000 on its local bus services and just under 10,000 on its demand-response paratransit services.

## Fixed-Route Bus Services

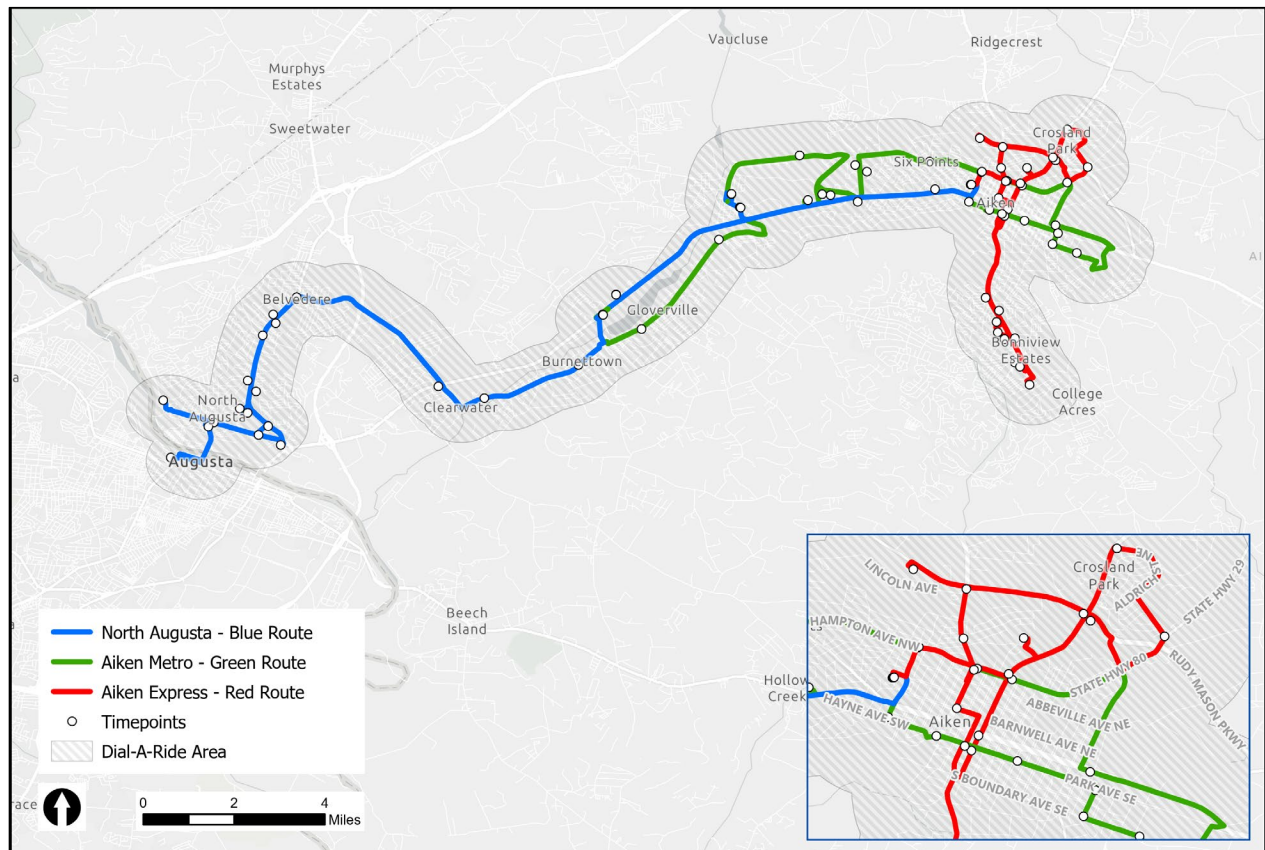
Table 1 describes the three fixed-route bus lines that serve the BFE in Aiken County. Routes generally run once every two hours from 7:00am to 7:00pm, Monday through Friday, and serve the communities of Aiken, North Augusta, and various communities in-between. BFE’s bus routes operate on a flag-stop basis with some fixed timepoints. These routes are shown on a map in Figure 1.

In the case of the Blue and Green Routes, the first weekday run is structured differently than the runs operated regularly afterwards. This aids in the positioning of buses for their geographic service area while still operating revenue service – thus reducing deadheading, and it better serves some of the work-oriented trips in the morning hours. For the Blue Route, the first run travels from Aiken through Burnetown and North Augusta on to downtown Augusta, while subsequent runs are truncated at the north end to Burnetown. For the Green Route, the first run is a loop circulating through central Aiken from Morgan Street to Old Airport Road, while the full route extends further south and west through Graniteville and on to Burnetown. The Red Route follows the same route pattern throughout the day, running from the Target Shopping Center in the south to Crosland Park in the north. The Aiken Mall, previously located near the south end of the route, has been torn down to be replaced by new apartment buildings, restaurants, and retail developments. These destinations are accessible via the existing Red Route

**Table 1. Fixed-Route Bus Service Summary**

Route	Service Days	Hours of Service	Frequency (Minutes)	Description
Blue Route	Mon - Fri	7AM – 7PM	120	North Augusta, including Augusta transfers
Green Route	Mon - Fri	7AM – 7PM	120	Aiken Metro (Aiken to Burnetown)
Red Route	Mon - Fri	7AM – 7PM	120	Aiken Express (North-South)

**Figure 1. Map of Local Transit Routes and Dial-a-Ride Area**



## Paratransit

The ADA paratransit service that is tied to the Best Friend Express is referred to as Dial-a-Ride (DAR). It is a demand-response system in which eligible passengers may reserve an individual trip on a different vehicle than the BFE bus for their transit needs. The trip must originate within three-quarters of a mile from BFE’s established fixed route services and the requested destination must fall in the urbanized portion of Aiken County. Most often DAR passengers choose to originate a trip reservation from their place of residence. Dial-a-Ride service is only available for those with certain mobility needs, and prospective riders must complete an application to determine eligibility to receive a DAR Card. Dial-a-Ride trips are available as a “Next Day” trip reservation and cost \$3.00 one-way.

## Other Regional Services

The Best Friend Express offers passengers on the Blue Route a transit connection to Augusta Transit bus service. That connection takes place at the Augusta Transit Center on Broad Street in Augusta, Georgia. Augusta Transit serves the Georgia side of the Augusta region with nine fixed-route bus lines, with fares payable by cash or transit pass. There is no integration of fare payment between BFE and Augusta Transit as each transit system operates independently.

## Fares

The BFE has three fare categories for its fixed-route bus services. A regular one-way fare costs \$2.00 for the general public, \$1.50 for students, and \$1.00 for eligible seniors and people with disabilities. Dial-A-Ride fares are set at \$3.00, which is below the maximum allowable rate of twice the regular fixed-route fare.

**Table 2. Current Loudoun County Fare Structure**

Service Type	Fare Type	Cost
Fixed-Route Bus	Regular	\$2.00
	Student	\$1.50
	Senior/Medicare Card Holder	\$1.00
Dial-A-Ride	Regular	\$3.00

All fleet vehicles are equipped with fareboxes at the vehicle boarding entrance. Fares are collected at the time of a passenger's boarding. There are no fare vending machines or ticketing equipment. Tickets may be purchased in advance from Aiken Senior Life Services transit lobby. The BFE permits route transfers without requiring additional payment.

## Fleet

BFE's vehicle fleet principally consists of 14-passenger cutaway buses, approximately 20-24' in length. The benefit of these smaller transit vehicles is that they may be operated without a commercial driver's license (CDL), which could otherwise be a barrier to driver recruitment. All BFE cutaway vehicles are wheelchair accessible.

Per FTA requirements<sup>1</sup>, the medium-size, light-duty transit buses used for BFE service have a minimum useful life of 5 years or an accumulation of at least 150,000 miles. The Lower Savannah Council of Governments replaces all BFE buses within six years, according to their Transit Asset Management Plan. The fleet currently includes two new 2023 transit vehicles already operating in revenue service. Examples of typical BFE transit vehicles are shown in Figure 2.

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<sup>1</sup> FTA Circular 5010.1E Section IV Page 25(a)(4).

**Table 3. Fixed-Route Bus Fleet**

Year	Quantity	Manufacturer	Make/Model	Length	Current Mileage	Age (years)
2018	1	Ford	Starcraft Allstar	22'	161,405	5
2019	1	Ford	Starcraft Allstar	22'	158,727	4
2020	1	Ford	Starcraft Allstar	22'	95,759	3
2021	1	Ford	Transit	22'	23,508	2
2023	1	Ford	Starcraft Allstar	22'	2,702	0
2023	1	Ford	Econoline	20'	1,088	0

**Figure 2. BFE Cutaway Vehicles**



# Service Area Profile

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This section describes the population and general travel patterns within Aiken County and the BFE service area, including demographic characteristics that are relevant to transit usage and commute patterns that illustrate potential transit markets.

To understand the performance of current transit services and identify an opportunity for changes, geographic areas and travel corridors are identified as a precursor to route planning and design. Areas or corridors that offer transit-supportive characteristics, coupled with policy initiatives that promote transit-supportive built environments, will lead to development that is amenable to transit service or that are likely to have such characteristics in future.

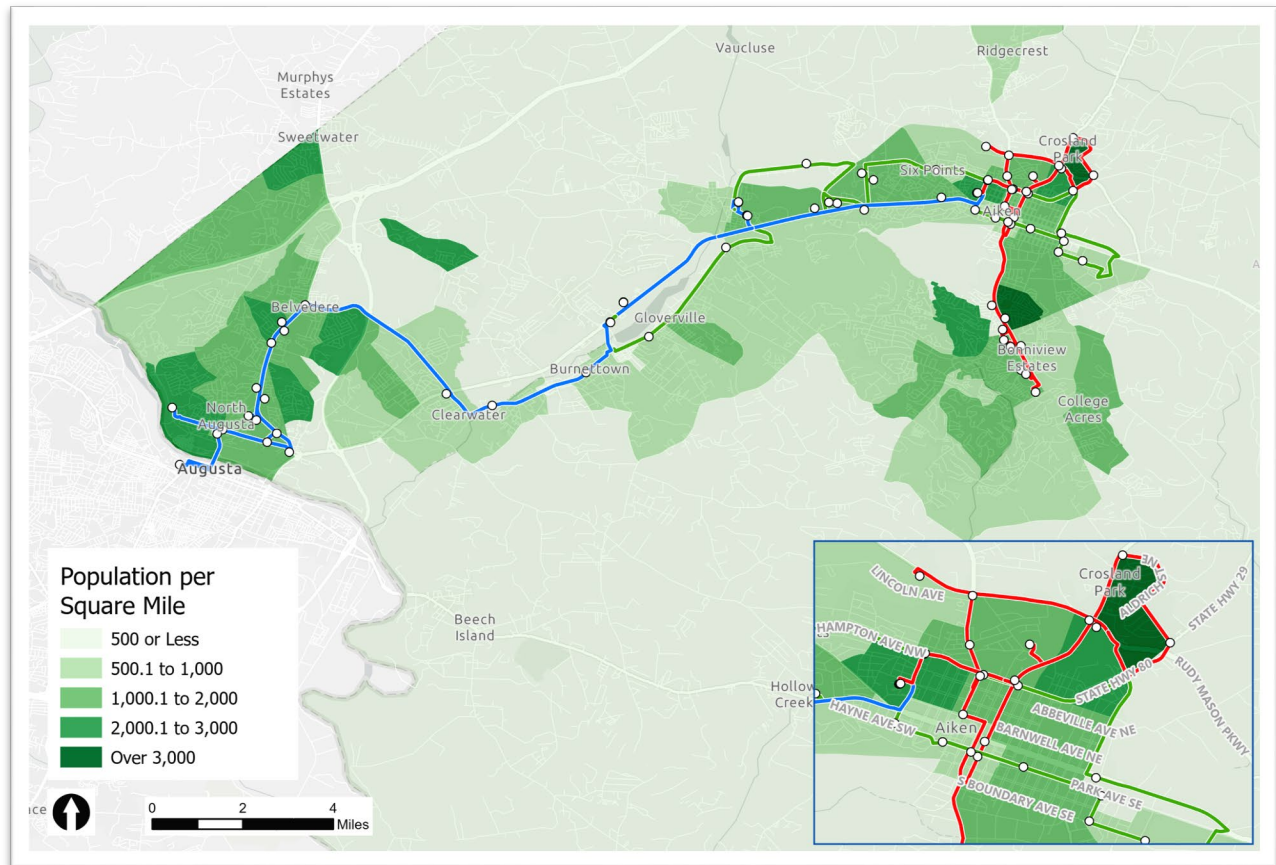
## Aiken County Demographics

### Population Density

Population density of Aiken County, shown in Figure 3, ranges from 500 to 3,000 persons per square mile, with the greatest density occurring in Aiken along the north and south edges of the Red Route and in North Augusta somewhat along the Blue Route. Other population clusters can be found in Graniteville and Clearwater. Most population clusters occur near existing BFE transit services, but the area around Silver Bluff Road offers a potential point of expansion for the existing Red Route.



**Figure 3. Population Density in Aiken County**



The geographic distribution of population density is reflective of community development patterns observed elsewhere in South Carolina. The growth in population and the density of development along Whiskey Road in the City of Aiken’s southern half is attributable in part to infrastructure investments by the city and county, along with the expansion of commercial land uses supporting nearby residential neighborhoods.

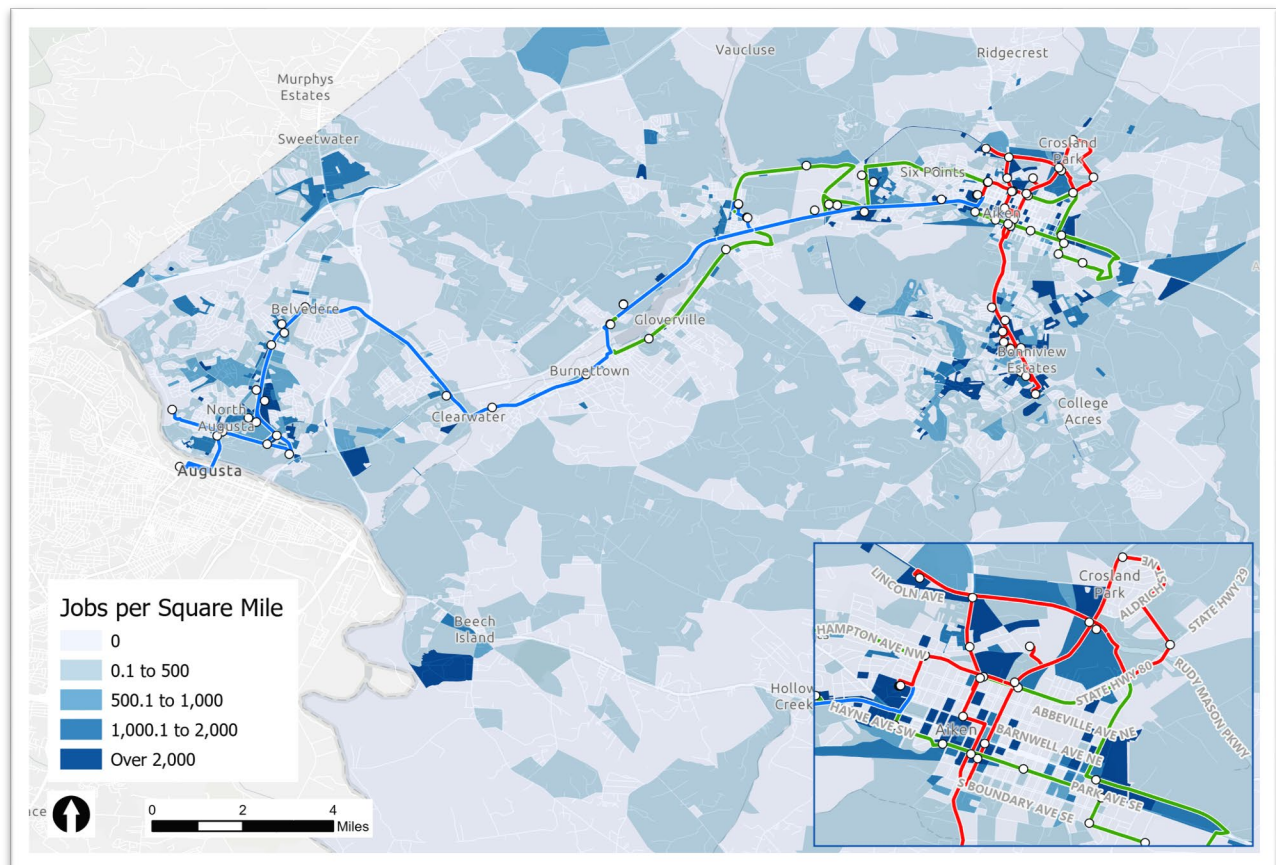
North of downtown Aiken, growth has been more modest in size and pace of development. The Aiken Regional Airport is located near the junction of U.S. Highway 1 and Interstate 20. While local planning has supported growth and intensification of land uses adjacent to the U.S. 1 corridor and leveraged the airport as a regional transportation facility for both passenger and freight movement, development south of downtown Aiken has absorbed much of the area's current growth. Some industrial parks and small residential developments are taking root north of town, but these developments may not currently warrant fixed-route transit service.

Residential development patterns in North Augusta are more concentrated around downtown North Augusta and major travel corridors, including Edgefield Road, Knox Avenue, and Georgia Avenue.

## Employment Density

Like population density, employment in Aiken County, shown in Figure 4, is concentrated in Aiken and North Augusta along the Red and Blue Routes. Employment density in Aiken is highest in the central and northern portions of the city, including the area just south of Bonniview Estates, where multiple restaurants, grocery, retail, and hospitality establishments are located. As in the population density map, the area west of the Red Route along Silver Bluff Road has some density of employment that may offer potential for service expansion.

**Figure 4. Employment Density in Aiken County**



The dispersion and concentration of jobs and job centers relative to residential areas of a community is not uncommon. As evidenced in Figure 4, the downtowns of Aiken and North Augusta have some of the BFE service areas' greatest concentrations of jobs. Along Edgefield Road in North Augusta, the area of town nearest Interstate 20's Exit 5 has experienced significant commercial growth in recent years. Still other areas of Aiken County show pockets of significant employment density, often attributable to a manufacturing facility or a governmental facility.


Density is a primary factor in the development of a transit network that is financially sustainable, well-used, and integrated as a public service to local communities. The Center for Transit Oriented Development (CTOD) summarizes the relationship between density and transit utilization, noting:

There are several mechanisms by which increased density can shape demand for transit. Firstly, higher density development intensifies the origins and destinations served by the transit system, thus increasing the number of people living near transit who could potentially travel to transit-served destinations and expanding the number of jobs in those locations. Secondly, higher density development tends to increase congestion and reduce parking availability, thus increasing the cost of driving relative to taking transit. (CTOD, 2012)

Considered comprehensively, the observed densities for both population and employment are sufficient, albeit low for fixed-route service. Generally, a residential density of 10 to 15 residents per acre, and an employment density of 5-10 jobs per acre, are considered sufficient to support fixed-route service between 30 and 60 minute frequencies. While there are pockets of Aiken and North Augusta that meet these density thresholds, there are vastly more areas with lower population and employment densities in the BFE service area. However, the analysis of population and employment density helps to inform where fixed-route service may be focused in order to maximize the return on investment (e.g. ridership), and where other transit service modes may be more economical options for both consumers and LSCOG.

Figure 5 provides an illustration of the typical relationship between population and employment densities and transit type and service frequency. Naturally, urban development patterns vary greatly across the United States. This illustration provides a “yard-stick” measure for how transit planners incorporate density as a key ingredient in the planning process.

**Figure 5. Density and Transit Type/Frequency**

Land Use			Transit Services	
Land Use Type	Population/ Acre	Employment/ Acre	Service Type	Frequency
 <b>Downtown and High-Density Urban Corridors</b>	> 45	> 25	Light Rail, Bus Rapid Transit, Express and Local Bus Services	10 minutes or better
 <b>Mixed-Use Urban</b>	30-45	15-25	Bus Rapid Transit, Express and Local Bus	10-15 minutes
 <b>Urban Neighborhood</b>	15-29	10-14	Local Bus	15-30 minutes
 <b>Suburban</b>	10-14	5-9	Local Bus and Microtransit	30-60 minutes
 <b>Low-Density</b>	2-9	2-4	Microtransit, Vanpool, and Rideshare	60 minutes or on-demand
 <b>Rural</b>	< 2	< 2	Vanpool and Rideshare	On-demand

## Minority Populations

Figure 6 shows the distribution of black, indigenous, and people of color (BIPOC) residents in Aiken County. Central and north Aiken, Graniteville, and Clearwater have the highest proportion of minority populations. Ensuring transit service in these areas, particularly in Aiken, may ameliorate the possibility of racial inequity in the distribution of transit services.

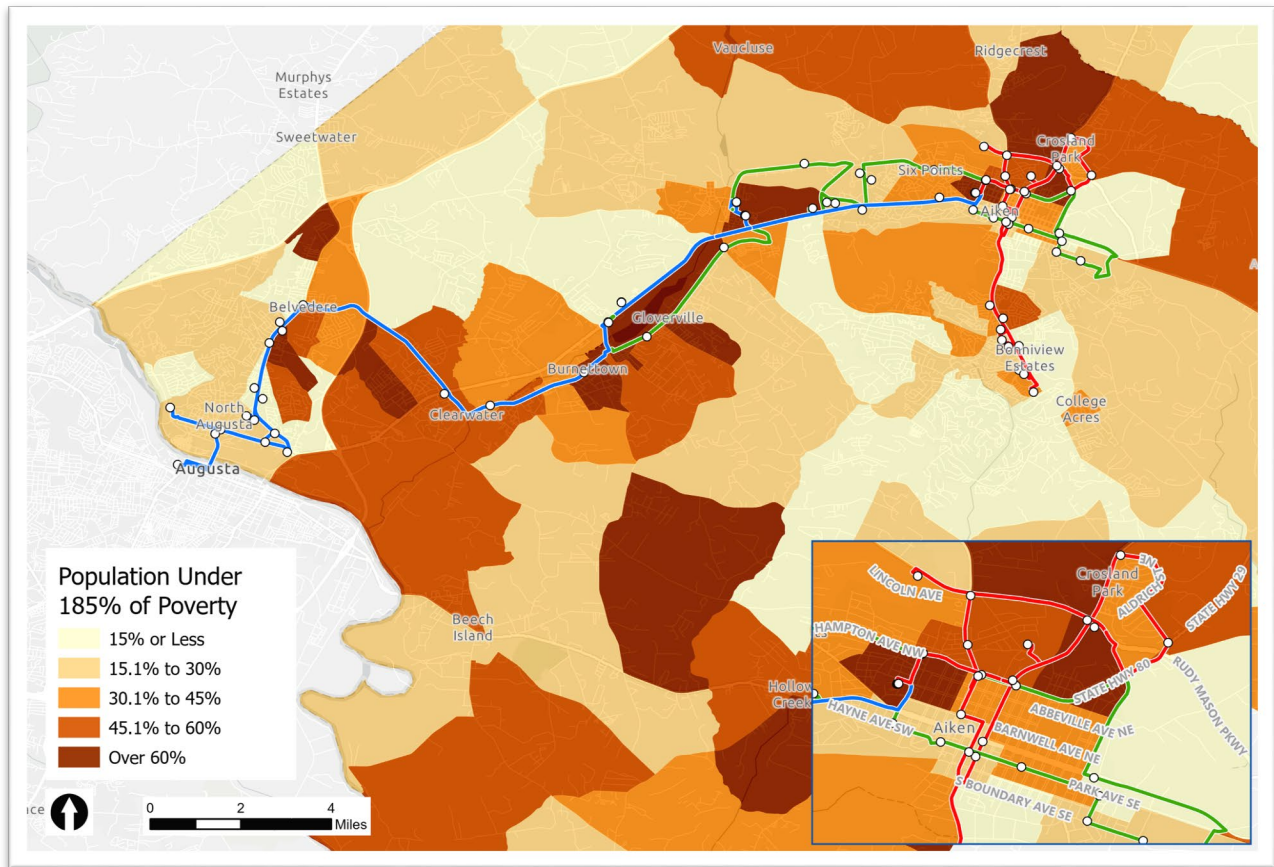
**Figure 6. BIPOC Populations in Aiken County**



## Low-Income Populations

Low-income populations in Aiken County, defined as those with household income less than 185% of the federal poverty line, are relatively high, as shown in Figure 7. Gloverville, Graniteville, and north Aiken all have block groups with over 60% of the population being low-income. All three routes have a significant role in ensuring transit service reaches the densest low-income populations in Aiken County. Burnettown and Clearwater additionally have high concentrations of low-income populations that are not currently served by any of the transit routes, and so it may be prudent to consider these areas for any future expansion or new connections.

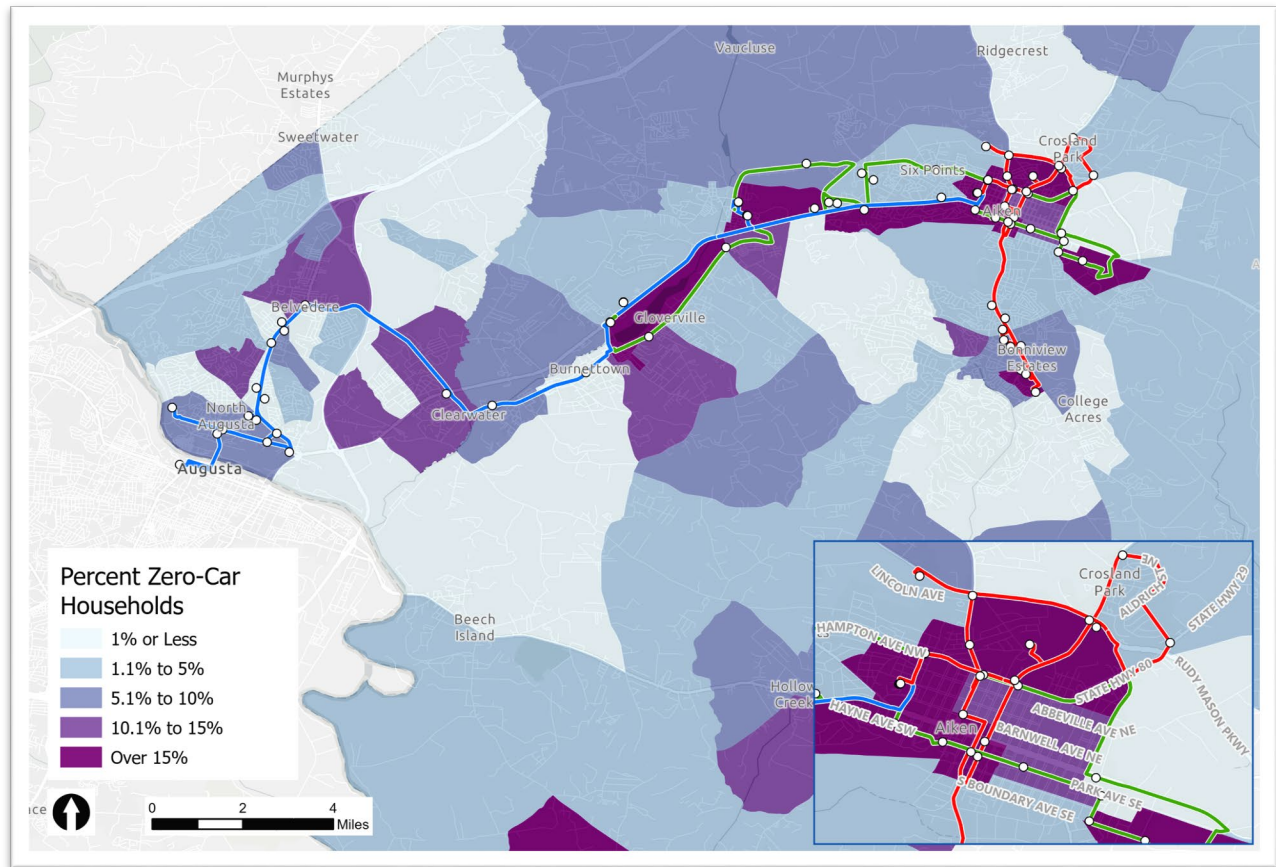
**Figure 7. Low-Income Populations in Aiken County**



**Zero-Car Households**

The distribution of households with no access to a vehicle in Aiken County, shown in Figure 8, is somewhat similar to that of low-income populations, with Gloverville, Graniteville, and north Aiken forming the highest concentrations of zero-car households. Additional concentrations can be found in Bonhiview Estates, Clearwater, and Belvedere. Each of the three BFE routes serve concentrations of zero-car households, with particularly dense concentrations present along the Green and Red Routes.

**Figure 8. Zero-Car Households in Aiken County**



The assessment of service area densities and demographics offers important indicators that contribute to transit utilization. Several factors contribute to transit ridership, but those that may be particularly relevant to the BFE service area include the following:

- Higher residential and employment densities are more transit supportive because the transit provider can focus limited transit resources toward a greater portion of the population, resulting in more cost-effective service.
- Parking availability, pricing and time limits can either encourage or discourage the use of transit by making car travel less attractive or more convenient. In the BFE service area, parking is generally available with few restrictions, including in Aiken, where no fees, permits, or other restrictions are present.. Persons with lower incomes are more likely to use transit since it is less expensive than owning, insuring, and maintaining an automobile.
- Plans and development policies that encourage transit-supportive development and usage will be important to advancing transit utilization in the future.
- Students, shift-workers, or service-industry workers often operate on classroom or work schedules. This produces predictable peaks of travel demand. Transit needs to account for these schedules in order to facilitate better utilization of transit services as opposed to driving.

## Travel Patterns

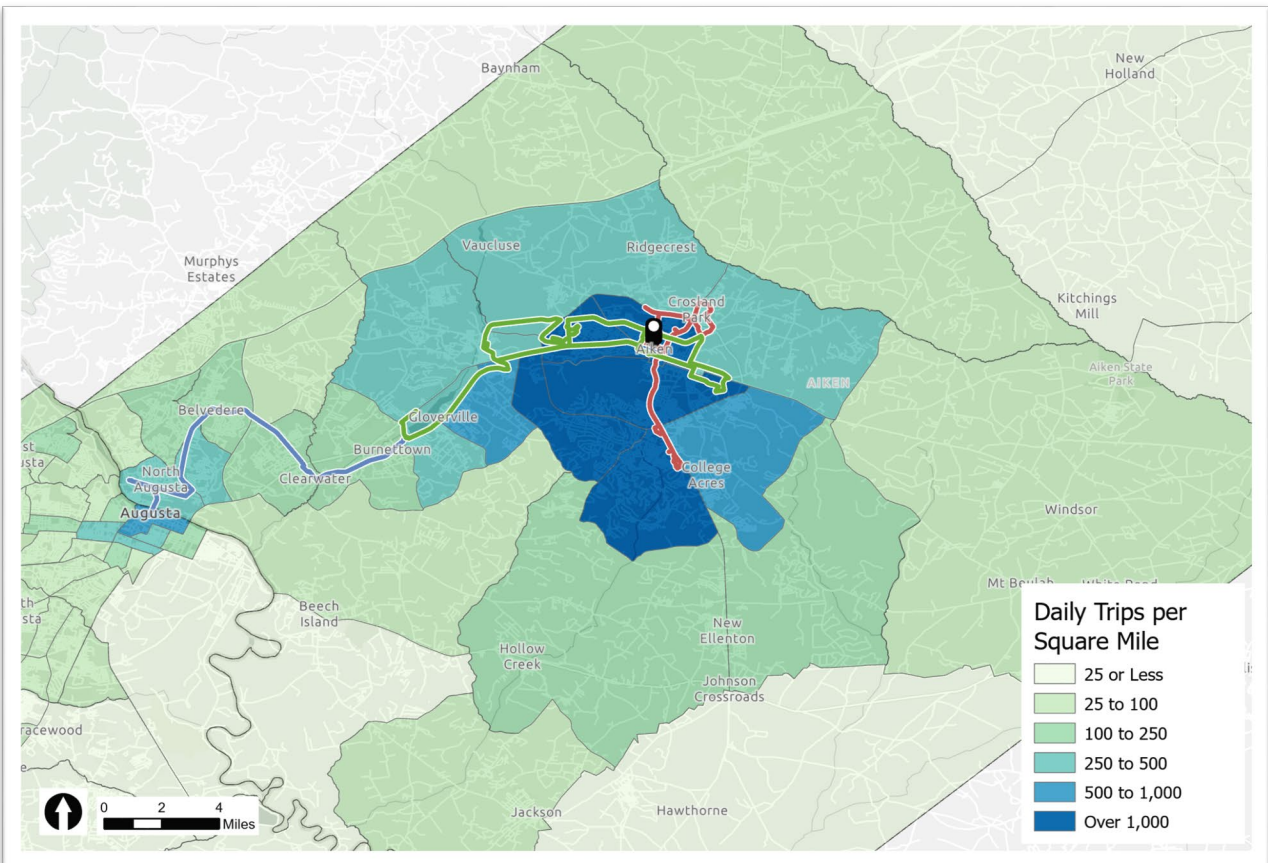
The following section describes travel patterns throughout the BFE service area, divided into three submarkets:

- Trips originating in the City of Aiken
- Trips originating in Burnetown, Langley, and Gloverville
- Trips originating in the City of North Augusta

### City of Aiken

Figure 9 shows the average weekday flow from the City of Aiken to surrounding census tracts, divided by tract area to indicate the density of travel demand. Trips predominantly follow Jefferson Davis Highway and the immediate area around downtown Aiken. Most of these areas are already served in some capacity by BFE's three transit routes, with the exception of the area along Silver Bluff Road and the area along Pine Log Road/Hitchcock Parkway southwest of downtown Aiken. Depending on infrastructural and operational factors, these areas may present ideal opportunities for new transit service, as they demonstrate stronger overall travel demand than most of the areas currently served.

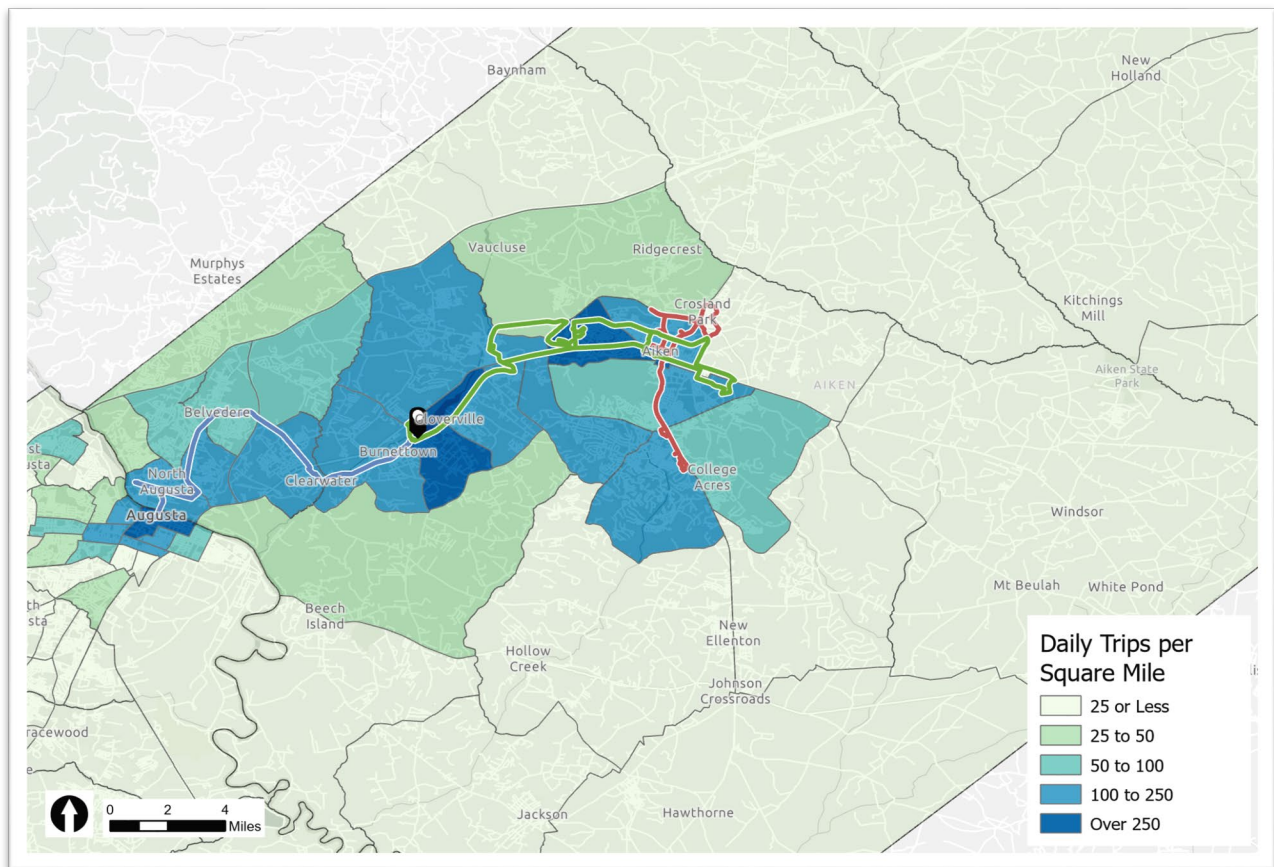
**Figure 9. Flow of Daily Trips from Aiken**



## Burnettown, Langley, and Gloverville

Figure 10 shows the average weekday flow from the cities of Burnettown, Langley, and Gloverville to surrounding census tracts, divided by tract area to get a better sense of the actual density of travel demand. These trips align very closely to existing BFE service, save for the areas around Pine Log Road/Hitchcock Parkway and Silver Bluff Road, as well as the area directly north of Langley Pond which includes the newer developments around Aiken Technical College. Compared to trips from Aiken, trips to Augusta are more prominent, sensibly due to the closer relative distance. The most popular destination in Aiken itself is decidedly the University of South Carolina – Aiken.

**Figure 10. Flow of Daily Trips from Burnettown-Langley-Gloverville**

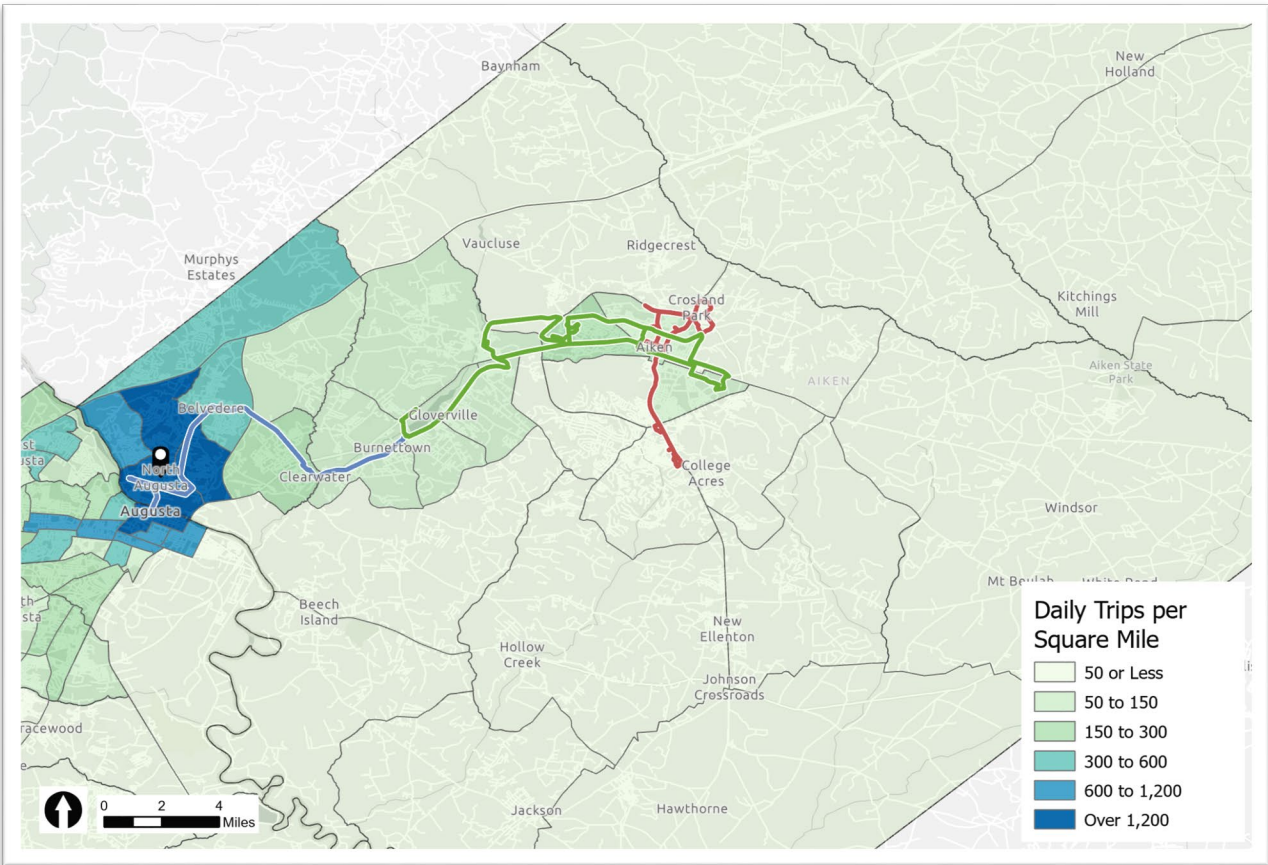


## City of North Augusta

Figure 11 shows the average weekday flow from North Augusta to surrounding census tracts, divided by tract area to get a better sense of the actual density of travel demand. Here, trips are decidedly drawn more to Augusta, sensibly due to the immediate distance of the two. Compared to existing BFE service, the highest demand area not currently served are the two tracts directly northwest of central North Augusta and west of Knox Avenue. The most popular destination in Aiken is the University of South Carolina and the tract directly southeast of downtown Aiken.



**Figure 11. Flow of Daily Trips from North Augusta**



### Summary of Travel Patterns

From these observations the following priority travel markets for new or improved service are identified, as well as their current levels of service, if any:

- Aiken (especially USC-Aiken) to North Augusta via Burnettown/Langley/Gloverville
  - o Currently served by Blue and Green Routes, albeit with long travel times
- Downtown Aiken south to areas along Silver Bluff Road and Pine Log Road/Hitchcock Parkway
  - o Not currently served by any routes
- North Augusta north up Knox Ave to Belvedere and Clearwater
  - o Served by Blue Route until Belvedere, Clearwater not served
- Aiken and Langley to developments west of Aiken Technical College
  - o Partly served by Blue Line, major new developments far from existing routes

# Literature Review

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Current planning documents exist throughout the Lower Savannah Region at the local, regional, and state level, each referencing transportation and public transit to varying extents. Existing plans contain useful information on transportation priorities that will impact the viability of new local and regional public transit options. The final recommendations for the BFE will take these existing plans into account and seek to develop synergies with existing policy wherever possible.

## Key Recommendations

Key recommendations from existing plans in the Lower Savannah Region are summarized in Table 4 through Table 8 below. Major themes are discussed in the Summary of Priorities section beginning on page 19.

**Table 4. Local Comprehensive Plans**

Plan	Summary and Key Recommendations
<a href="#">City of Aiken Comprehensive Plan 2023 Update</a>	<p>The City of Aiken’s Comprehensive Plan serves as the foundational document that guides all aspects of the ongoing growth and development of the city.</p> <p>Prioritize route frequency to increase ridership in accordance with recommendations from public engagement.</p> <p>Enhance public transportation options for vulnerable populations.</p> <p>Enforce connectivity between developments.</p> <p>Expand service area and add more stops.</p> <p>Improve marketing and publicization of service offerings.</p>
<a href="#">North Augusta 2021 Comprehensive Plan</a>	<p>The North Augusta Comprehensive Plan represents the synthesis of a community’s vision for its growth and development.</p> <p>Require designated pedestrian facilities in activity centers between transit stops and destinations.</p> <p>Improve bus stops with amenities such as shelters, lighting, trash receptacles, street furniture, and bike racks.</p> <p>Incorporate Complete Street planning into future roadway design projects.</p>

**Table 5. Regional Plans**

Plan	Summary and Key Recommendations
<a href="#">Augusta Regional Transportation Study (ARTS) Metropolitan</a>	<p>The ARTS MTP is a regional blueprint and policy guide for future transportation infrastructure, recommending multi-modal transportation capital improvements over the next 30 years.</p>

Plan	Summary and Key Recommendations
<a href="#">Transit Plan 2050</a>	<p>Add vehicles to fleet to increase frequency.</p> <p>Extend operating hours to 10 PM.</p> <p>Operate on Saturdays.</p> <p>Enhance ADA offerings by adding more ADA compatible vehicles.</p> <p>Expand service area to Northeast Aiken County.</p>
<a href="#">LSCOG 2045 Long Range Transportation Plan (LRTP)</a>	<p>The LSCOG serves as the go-between for local government and public agencies to secure funding, promote projects, and encourage regional growth. The COG provides guidance when needed but does not have authority over member counties or municipalities. This LRTP is a 25-year transportation vision for the rural area.</p> <hr/> <p>Improve and expand bike and pedestrian facilities, especially due to absence of a major transit system.</p> <p>Develop seamless transfers between bicycling and public transportation.</p> <p>Enhance local and regional connectivity by shortening headways, maintaining schedule adherence.</p> <p>Improve bus stop amenities, specifically to include passenger information systems and facilitate trail connections.</p> <p>Continue to offer flag stops and alightings for rider convenience.</p>
<a href="#">Aiken County Comprehensive Plan 2014-2024</a>	<p>Aiken County's Comprehensive Plan provides the framework and guidance for the County's comprehensive planning process. It identifies the basic elements of the planning process, describes them with an inventory of each element's existing conditions, when appropriate includes forecasts of future conditions, and includes goals that the planning process must achieve in order to meet identified issues and needs.</p> <hr/> <p>Prioritize sidewalks, bike lanes, and trails connecting existing facilities.</p> <p>Include dedicated ROW for bike and pedestrian connections between new developments.</p> <p>Plan for Complete Streets design considerations for all new roadway construction and upcoming improvements.</p> <p>Integrate all forms of non-motorized transportation into an interconnected county-wide network.</p>
<a href="#">LSCOG Transportation Improvement Plan (TIP) 2021-2027</a>	<p>The LSCOG establishes regional goals and objectives, identifies the current condition of the transportation system, provides research and data analysis, identifies and prioritizes transportation needs for input to the Lower Savannah Transportation Improvement Program (TIP).</p> <hr/> <p>Support and develop safety related projects such as roadway improvement for high accident locations and construction of sidewalks and bicycle paths on congested corridors.</p> <p>Support land use, zoning, design and road standards, and development conditions that improve safety, transit access and nonmotorized travel.</p>
<a href="#">ARTS Bicycle and Pedestrian Plan 2023 Update</a>	<p>This document focuses on program, policy, and infrastructure recommendations to continue improving the walking and bicycling environment in the two-state metropolitan area.</p>

Plan	Summary and Key Recommendations
	<p>Connect regional active transportation network with transit stops</p> <p>Redesign Augusta Road from Clearwater Street to Hitchcock Parkway/Highway 118 (along Blue Route and Green Route) from 4 lane roadway to 3 lane roadway with dedicated bicycle lanes</p> <p>Consider multi-modal LOS in engineering studies to assure appropriate pedestrian, bicycle, and transit facilities are available</p>

**Table 6. Coordinated Human Services – Public Transportation Plans**

Plan	Summary and Key Recommendations
<a href="#">Lower Savannah Regional Transit &amp; Coordination Plan</a>	<p>The 2040 South Carolina Multimodal Transportation Plan (2040 MTP) planning process includes several major components that encompass public transportation, including Transit &amp; Coordination Plan Updates for each of the 10 COG regions. The purpose of this Lower Savannah Regional Transit &amp; Coordination Plan Update is to identify existing public transportation services, needs, and strategies for the next 20 years.</p> <hr/> <p>Offer accessible public and social service transportation services that are coordinated, convenient, reliable, and support economic development.</p> <p>Improve frequency and span of service to support spontaneous use for a wide range of needs.</p> <p>Increase farebox recovery ratio for fiscally responsible service.</p>

**Table 7. Regional Economic Development Plans**

Plan	Summary and Key Recommendations
<a href="#">Lower Savannah Region Comprehensive Economic Development Strategy 2022-2027</a>	<p>The purpose of the Comprehensive Economic Development Strategy is to encourage the development of a diverse economy while recognizing the need to maintain a balance between attracting new investment, supporting existing businesses, fostering local entrepreneurship, and strengthening the region’s key industries. This will enhance the region’s quality of life by identifying and promoting projects for funding that strengthen the regional economy.</p> <hr/> <p>Support the development of an efficient and affordable public transit system in nearby urban centers</p> <p>Maintain safe, efficient multi-lane roadways (within the BFE service area, Augusta Road specifically) and highways for regional connections</p>

**Table 8. Statewide Plans**

Plan	Summary and Key Recommendations
<a href="#">South Carolina Department of Transportation (SCDOT)</a>	<p>The 2040 Multimodal Transportation Plan update includes fully integrated modal plans for the Interstate, Strategic Corridors, Public Transit and Human Health Service Coordination, Freight, and Rail.</p>

Plan	Summary and Key Recommendations
<a href="#">2040 Statewide Multimodal Transportation Plan (MTP)</a>	Facilitate collaboration between counties, MPOs, COGs, and transit providers to identify opportunities to implement premium transit services in urban areas Advance multimodal options, including public transportation, for residents and visitors in all areas of the state Close the gap between transit funding needs and available funding levels Establish reliable, coordinated information resources and public transit promotion strategies Focus on bicycle and pedestrian safety concerns, acknowledging past omission of infrastructure

## Summary of Priorities

While existing plans in the Lower Savannah Region show consistency in the prioritization of safety enhancements and multimodal transportation connectivity, agencies vary on the extent to which they report the need to improve public transit, especially when compared to active transportation modes.

The City of Aiken Comprehensive Plan specifically discusses the challenges facing the BFE, indicating that top priorities include increasing frequency, span of service (including adding service on Saturdays), and the number of bus stops with shelters and other infrastructure. The city prioritizes connecting existing and future developments with the BFE. There is also local awareness of marketing issues and a lack of familiarity with the service. ARTS and LSCOG regional transportation plans contain similar improvement strategies for the BFE. However, despite the stated need for bus stop infrastructure, jurisdictions vary in their perceptions of the “flag stop” system and whether convenience for riders outweighs efficiency.

Regional and statewide plans tend to acknowledge the need for safer and better-connected bike and pedestrian infrastructure to a greater degree than public transit improvements. Documents acknowledge that multimodal transportation improvements should include considerations for transit (such as in the development of Complete Streets), but generally indicate that sidewalk, bikeway, and trail networks take precedence in terms of connecting current and future activity centers. Plans discuss the importance of connecting bike and pedestrian infrastructure with transit stops. Specifically, a segment of Augusta Road (along which both the Blue Route and Green Route travel extensively) is set to undergo a 4-to-3 lane conversion with added bike lanes, entirely using existing right-of-way.

Other themes across all plans include the desire for transportation improvements to be fiscally responsible and coordinated across geographic levels and agencies. There is an emphasis on safety, equity, and economic development throughout these documents. Combined with demographic data, peer agency analysis, and stakeholder input, these plans will inform the development of new concepts for transit service in the Lower Savannah region.

# System Performance

## 2017 – 2021 Five-Year Performance Summary

To assess systemwide performance over time, the following section uses data from the National Transit Database (NTD) to report annual operating statistics and performance measures for Loudoun County’s fixed-route and commuter bus system. These measures are reported for the most recent available five-year period from fiscal year 2017 (starting July 2016) through fiscal year 2021 (ending June 2021). Data for FY 2020 and particularly FY 2021 include the impact of the COVID-19 pandemic.

Table 9 shows BFE local bus operating statistics from FY 2017 to FY 2021.

**Table 9. Local Bus Operating Statistics, 2017 - 2021**

Operating Statistic	2017	2018	2019	2020	2021
Revenue Hours	7,067	6,875	7,563	7,808	7,808
Revenue Miles	123,096	123,322	135,132	151,081	150,532
Passenger Trips	25,636	28,916	29,351	29,154	20,337
Passenger Revenue	\$25,104	\$25,719	\$27,611	\$25,015	\$22,494
Operating Expenses	\$442,889	\$443,920	\$486,241	\$450,175	\$538,498

Source: National Transit Database, 2017-2021.

Table 10 shows performance measures for BFE local bus service from FY 2017 to FY 2021. These measures are calculated based on the operating statistics reported in Table 9. Subsidy per passenger trip, operating expense per passenger trip, and operating expense per passenger trip all steadily declined from 2017 to 2021 but increased in 2020 and 2021. LSCOG staff indicate that the increase in costs per revenue hour in 2021 is primarily due to a new operating contract, which increased the hourly rate paid to the contractor from \$48 to \$54 per hour.

**Table 10. Local Bus Performance Measures, 2017-2021**

Performance Measure	2017	2018	2019	2020	2021
Operating Expense Per Passenger Trip	\$17.28	\$16.49	\$16.57	\$17.90	\$26.48
Operating Expense Per Revenue Hour	\$62.67	\$64.57	\$64.29	\$57.66	\$68.97
Passenger Trips Per Revenue Hour	3.63	3.92	3.88	3.22	2.60
Average Fare Per Passenger Trip	\$0.98	\$0.96	\$0.94	\$0.99	\$1.11

Performance Measure	2017	2018	2019	2020	2021
Operating Ratio (%)	%5.67	%5.79	%5.68	%5.56	%4.18
Subsidy Per Passenger Trip	\$16.30	\$15.54	\$15.63	\$16.90	\$25.37

Source: National Transit Database, 2017-2021.

## Peer Comparison

The peer analysis examined the performance of the BFE’s fixed-route network relative to that of peer systems. Since there are no recognized industry standards for most measures of transit system performance, widespread practice is to compare the performance of a system to the average values of a peer group of systems. Data used in this report come from the FTA’s National Transit Database (NTD), a repository of data about American public transit systems. NTD was used because its data are readily available and consistently reported.

The following peer analysis compares BFE performance to a peer group of six other fixed-route bus systems (listed in Table 11). The selection of the peer groups for BFE was based on a list of peer agencies generated using the Urban Integrated National Transit Database (iNTD). The tool considers operational, economic, and population data to rate transit agencies on their similarity to the agency of choice (BFE Transit). Using this list, along with input from BFE agency staff, a list of eight peer agencies was generated. The analysis was conducted using performance measures listed in Table 12.

**Table 11. Regional and National Peers**

Agency	Location	Information
Buncombe County	Asheville, NC	<a href="#">Website</a>
City of Ashland	Ashland, KY	<a href="#">Website</a>
City of Bettendorf	Bettendorf, IA	<a href="#">Website</a>
City of Bowling Green (NC)	Bowling Green, KY	<a href="#">Website</a>
Davidson County Transportation	Lexington, NC	<a href="#">Website</a>
Henderson County	Henderson, NC	<a href="#">Website</a>
Lawrence County Port Authority	South Point, OH	<a href="#">Website</a>
Lorain County	Elyria, OH	<a href="#">Website</a>

Figure 12 is a summarizes BFE’s performance measures relative to the national peer group in 2021. Based on the results, BFE appears to perform better than average or within one standard deviation of its peers on all measures. However, a deeper dive into trend performance on specific measures can reveal additional insights. The remainder of this section will describe the analysis and findings from 2017 to 2021.

Figure 12. Peer Performance Summary (Local Bus)

National Peer Summary Performance Measures								
Agency	Operating Expense per Passenger Trip	Operating Expense per Revenue Hour	Passenger Trips per Revenue Hour	Passenger Trips per Capita	Revenue Hours per Capita	Average Fare per Passenger Trip	Operating Ratio	Subsidy per Passenger Trip
Bumcombe County	\$37.16	\$104.58	2.81	0.08	0.03	\$0.00	0.00%	\$37.16
City of Ashland	\$21.28	\$73.64	3.46	1.69	0.49	\$0.59	2.76%	\$20.69
City of Bettendorf	\$16.26	\$77.43	4.76	1.44	0.30	\$0.36	2.23%	\$15.90
City of Bowling Green	\$21.86	\$72.05	3.30	0.67	0.20	\$0.06	0.26%	\$21.80
Davidson County Transportation	\$21.39	\$55.95	2.62	0.18	0.07	\$0.00	0.00%	\$21.39
Henderson County	\$27.23	\$96.10	3.53	0.45	0.13	\$0.69	2.53%	\$26.54
Lawrence County Port Authority	\$65.57	\$78.12	1.19	0.06	0.05	\$0.33	0.50%	\$65.23
Lorain County	\$36.71	\$72.02	1.96	0.15	0.08	\$1.33	3.63%	\$35.37
Lower Savannah Council of Governments	\$26.48	\$68.97	2.60	0.24	0.09	\$1.11	4.18%	\$25.37
<b>Average</b>	\$30.44	\$77.65	2.92	0.55	0.16	\$0.50	1.79%	\$29.94
<b>Standard Deviation</b>	\$14.08	\$13.71	0.96	0.57	0.14	\$0.45	1.53%	\$14.07
<b>Acceptable Range</b>	\$44.52	\$91.36	1.95	-0.02	0.02	\$0.04	0.26%	\$44.01
	Better than average	Better than average	Within satisfactory range	Within satisfactory range	Within satisfactory range	Better than average	Better than average	Better than average



## BFE Transit Performance Relative to Peer Groups

This section summarizes the results of the single-year (2021) and multi-year (2017-2021) analyses of specific performance measures. BFE is compared to its peer group for each of the performance measures. The section is split into five metrics that the measures apply to (Table 12).

**Table 12. Metrics for Measuring System Performance Among Peers**

Metric	Measure(s)
Cost Effectiveness	Operating cost per passenger trip
Cost Efficiency	Operating cost per revenue hour
Service Effectiveness	Passenger trips per revenue hour
Passenger Revenue Effectiveness	<ul style="list-style-type: none"> <li>• Passenger revenue per passenger trip</li> <li>• Operating ratio</li> <li>• Net expense (subsidy) per passenger trip</li> </ul>
Community Investment	<ul style="list-style-type: none"> <li>• Passenger trips per capita</li> <li>• Investment per capita</li> </ul>

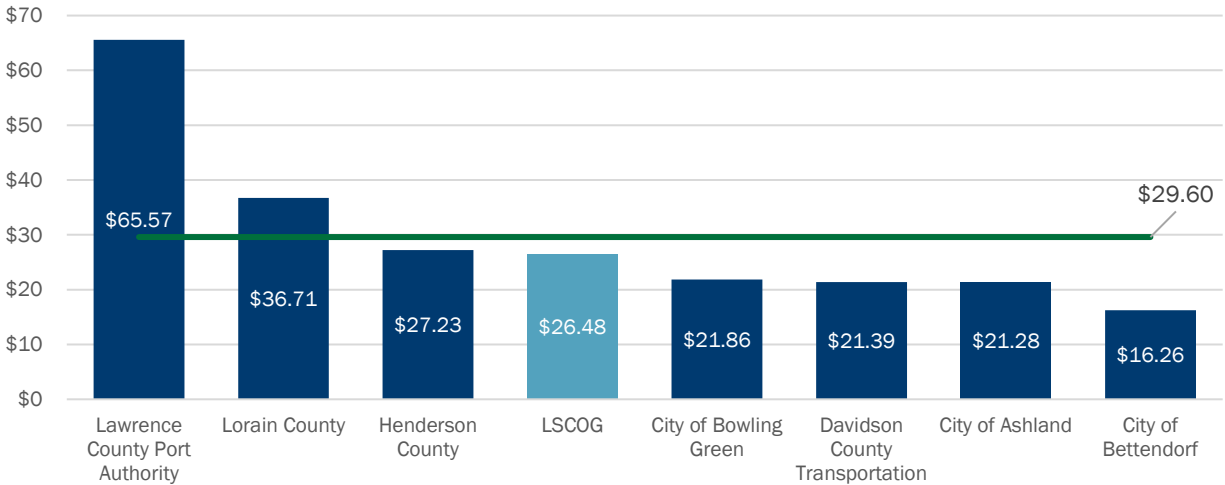
### Cost Effectiveness

Cost effectiveness addresses transit utilization (or service consumed) in relation to the level of financial resources expended. The primary measure for comparison in this category is **operating cost per passenger trip**. The lower the cost per passenger trip, the more cost effective the service.

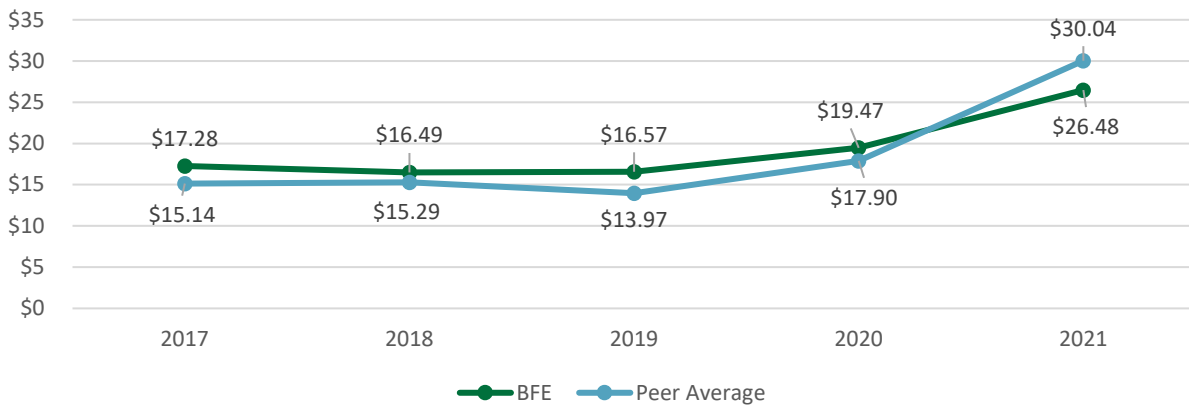
BFE is in the middle of the peer group operating costs (Table 12 and Figure 14). The 2021 costs range from \$16.26 per trip for City of Bettendorf to \$65.57 for the Lawrence County Port Authority (LCPA). The highest value is an outlier in the group. Without LCPA, the average is \$24.46, which is just below BFE's cost per passenger trip.

Though BFE's cost per passenger trip is still within the satisfactory range of the new average (marked by the dark green line in Table 12 and following 2021 data charts), it is worth exploring what factor or factors in the measure contribute to the below average performance – high operating costs or low ridership. Notably, BFE's cost per passenger trip was fairly steady since 2017 until it rose in 2021. As noted earlier, the most recent contract with Aiken Senior Life Services resulted in an increase from \$48 to \$54 per revenue hour, or 12.5 percent, between 2020 and 2021. This turnkey operating contract includes drivers, vehicle maintenance, cleaning, fuel, and insurance. Notably, peer agencies experienced the same pattern but with a more dramatic rise in cost in 2021, indicating that BFE may have been more resilient to impacts from the COVID-19 pandemic and related travel pattern changes than similar transit systems.

**Figure 13. Operating Cost Per Passenger Trip, 2021**



**Figure 14. Operating Cost Per Passenger Trip Compared to Peer Average, 2017-2021**



**Cost Efficiency**

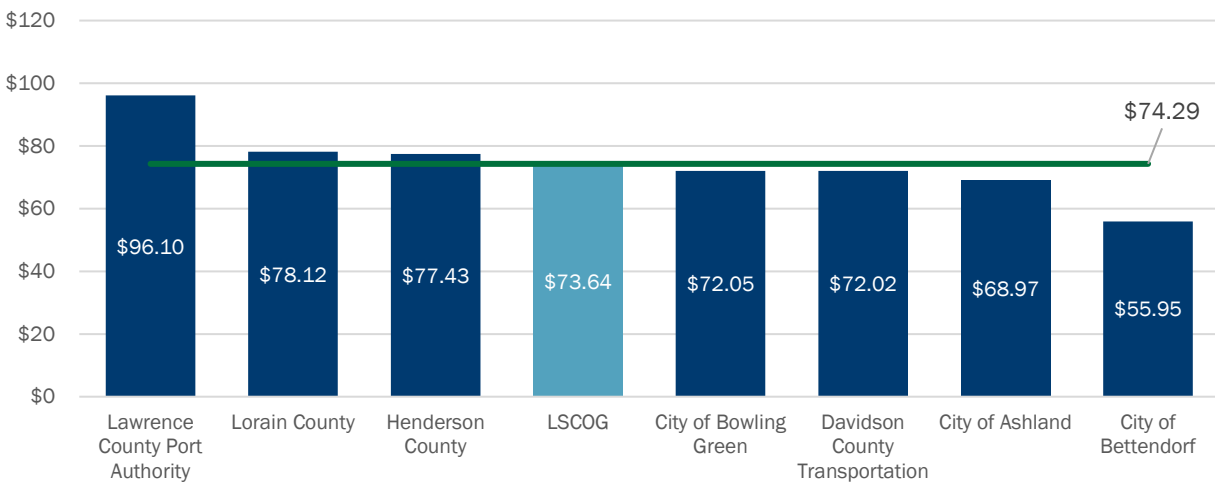
Cost efficiency examines the amount of service produced in relation to the amount of financial resources expended. **Operating cost per revenue hour** is often a primary measure of a service’s cost efficiency.

Figure 15 includes BFE’s 2021 cost per revenue hour relative to peers. At \$68.97 the BFE performed slightly better than the average among the peer group, though the range of variation was not large. The five-year trend in Figure 16 shows that BFE’s cost per revenue hour has historically been just beneath the average and both groups have very modest rising trends. In 2020 however,

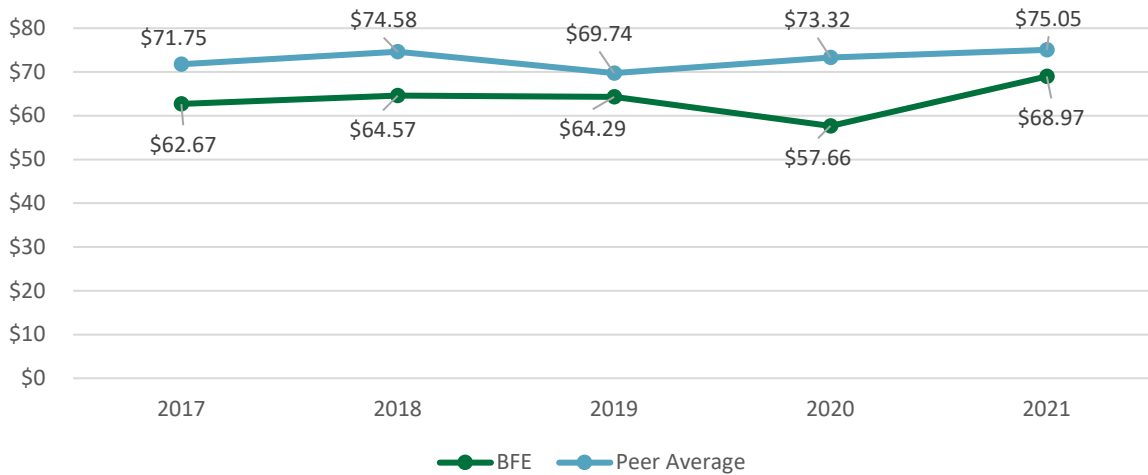
BFE showed a decrease in cost per revenue hour which differed from the peer group. This could indicated a cut in service to match a demand change due to the COVID-19 pandemic.

Most of the agencies in the peer group have similar fixed-route systems to BFE in that they have fewer than 10 routes to operate and some have to cover large areas to connect different communities together. Therefore, the similarity in operating cost per revenue mile is not entirely surprising. If the LSCOG decides to change the way it provides service, this trend could change and a new peer group should be used to compare the system too.

**Figure 15. Operating Cost per Revenue Hour, 2021**



**Figure 16. Operating Cost per Revenue Hour Compared to Peer Average, 2017-2021**

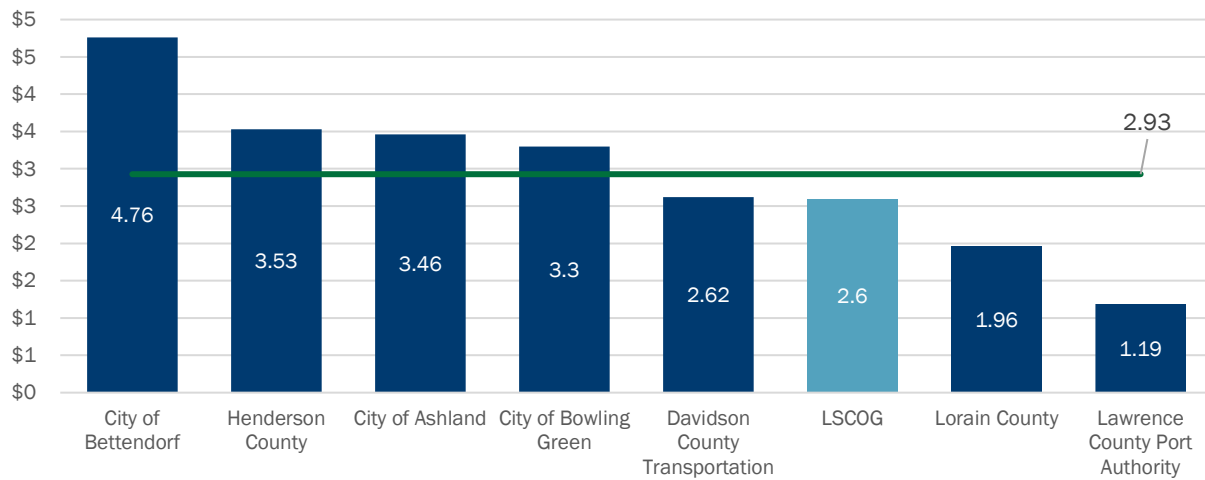


**Service Effectiveness**

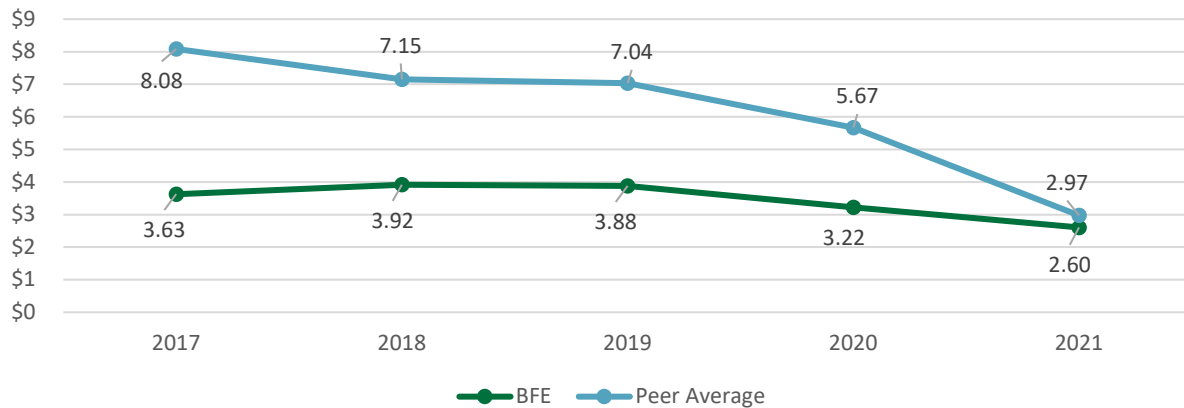
Service effectiveness is a measure of the consumption of public transportation service related to the amount of service available. **Passenger trips per revenue hour** is the measure used to assess service effectiveness.

As shown in Figure 17, BFE is below the average for 2021, but still within an acceptable range of the average and not a cause for concern in 2021. The trend from 2017 to 2021 however, tells a different story. From 2017 to 2019 BFE passenger trips per revenue hour were below average among the peer group, but in 2020 and 2021 the peer average dropped steadily to the same as BFE. This timeline lines up with the events of the COVID-19 pandemic which had significant impacts on ridership across the country. However, these impacts appear to have had less of an effect on BFE’s ridership (or the agency reduced its service hours more than peer agencies). This again indicates that BFE may have been more resilient to the pandemic’s effects or that the service was not adequately serving potential riders in the years leading up to 2020.

**Figure 17. Passenger Trips per Revenue Hour, 2021**



**Figure 18. Passenger Trips per Revenue Hour Compared to Peer Average, 2017-2021**



**Passenger Fare Revenue Effectiveness**

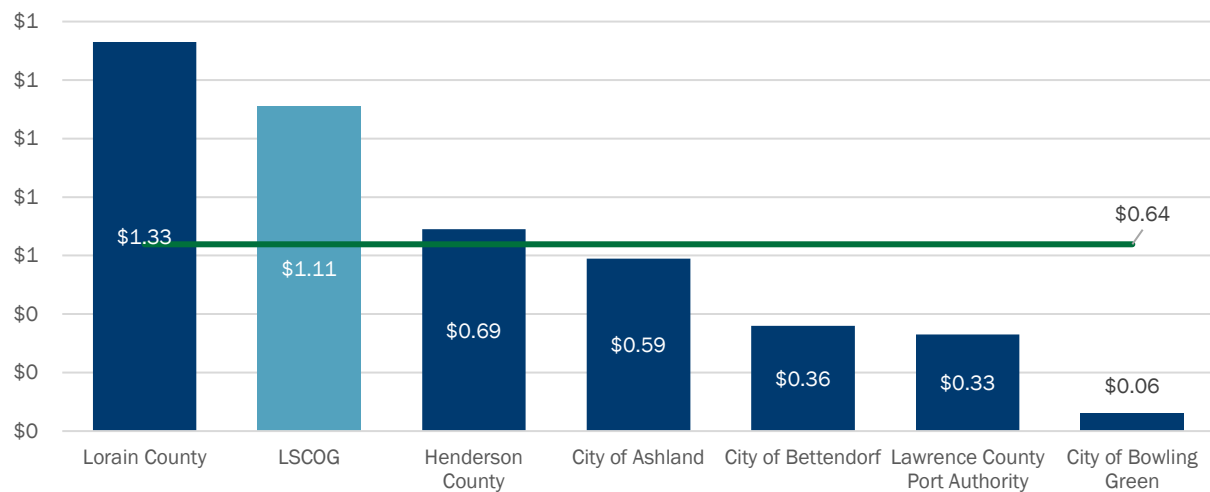
Passenger fare revenue effectiveness is measured with three metrics in this analysis: passenger revenue per passenger trip, operating ratio, and net expense (subsidy) per passenger trip.

**Average fare per passenger trip** measures the amount each passenger is paying to use the service. The higher the average fare, the more cost is being borne by the passenger.

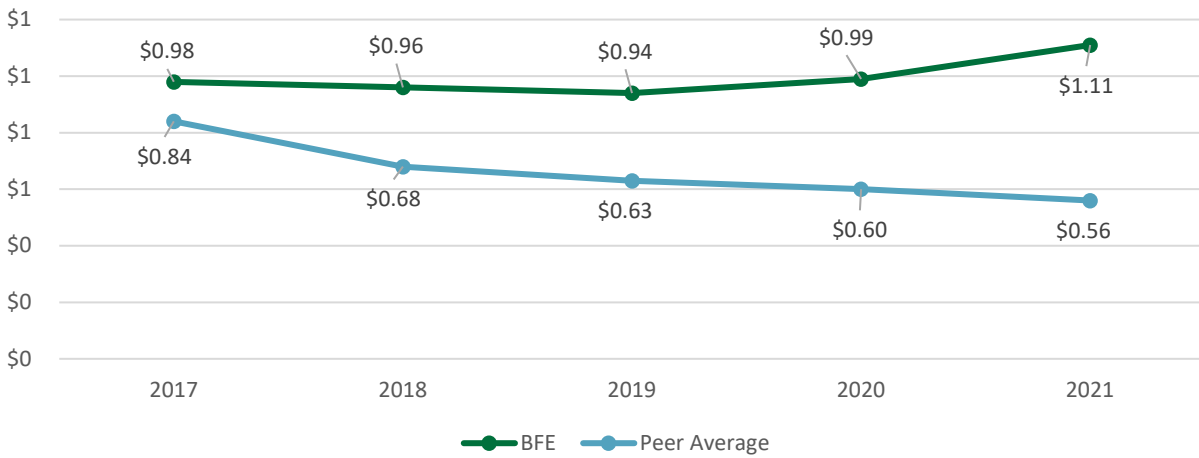
As shown in Figure 19, in 2021 fare per passenger trip for BFE had one of the highest fares per passenger trip. Only one peer agency had a higher fare; this was Lorain County Transit, which had a very high average fare. BFE's per-trip fares may be considered evidence of fiscal responsibility, as higher per-trip fares can reduce the public subsidy required for each trip. However, high fares may have impacts on populations particularly sensitive to cost.

From 2017 to 2021, BFE's average fare per trip has risen slightly, with the steepest increase from 2020 to 2021 (Figure 20). By contrast, the peer group's average fare has decreased steadily with the biggest decrease from 2017 to 2018. While these results could indicate that BFE has higher fares on average or that ridership is higher for services with higher fares compared to peers. Note that Davidson County is not included in this measure or others that include fare as a factor because they are a fare free system.

**Figure 19. Average Fare per Passenger Trip, 2021**



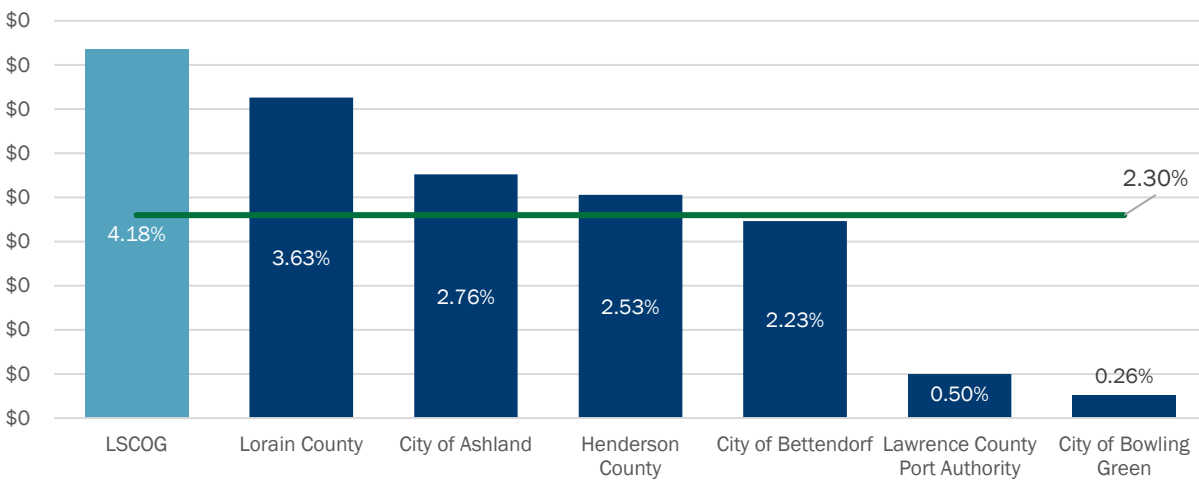
**Figure 20. Average Fare per Passenger Trip Compared to Peer Average, 2017-2021**

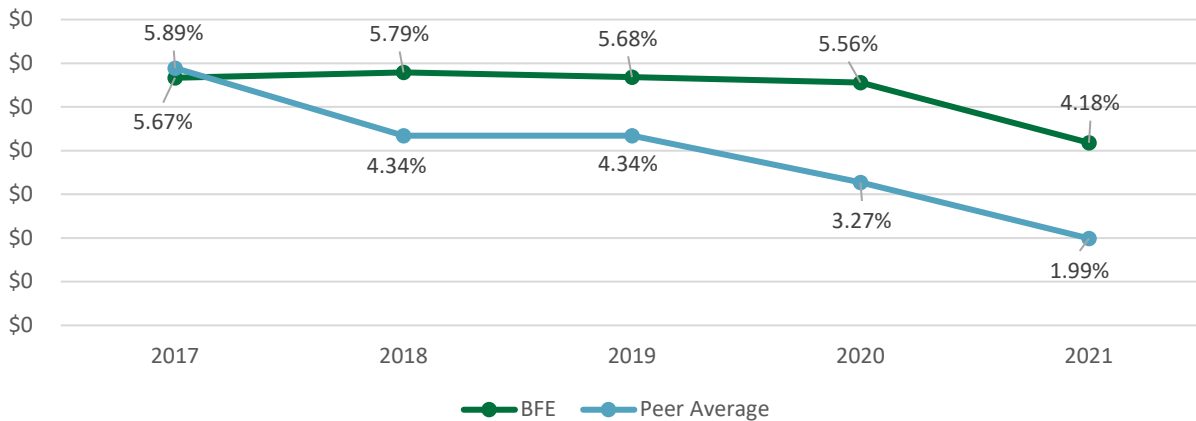


A system’s **operating ratio** is the ratio of revenues to operating expenses and measures the level of operating expenses that are recovered through passenger fare payment. This measure is also referred to as the **operating ratio or farebox recovery**. It is expressed as a percentage to represent what percent of operation expenses are recovered through fare revenue.

Among its peers, BFE’s operating ratio of 4.18% is the highest among the peer group (average 2.3%). Peer ratios for 2021 were widely spread out from 0.26% to 4.18%. From 2017-2021, the peer average and BFE’s operating ratios both decreased, but BFE’s decrease was more modest. In 2017 the operating ratio was about the same between BFE and the per group average. This trend once again shows that BFE may have been more resilient to external factors than its peers; however, the agency also has had a higher average fare per trip which would have a direct positive impact on operating ratio.

**Figure 21. Operating Ratio, 2021**



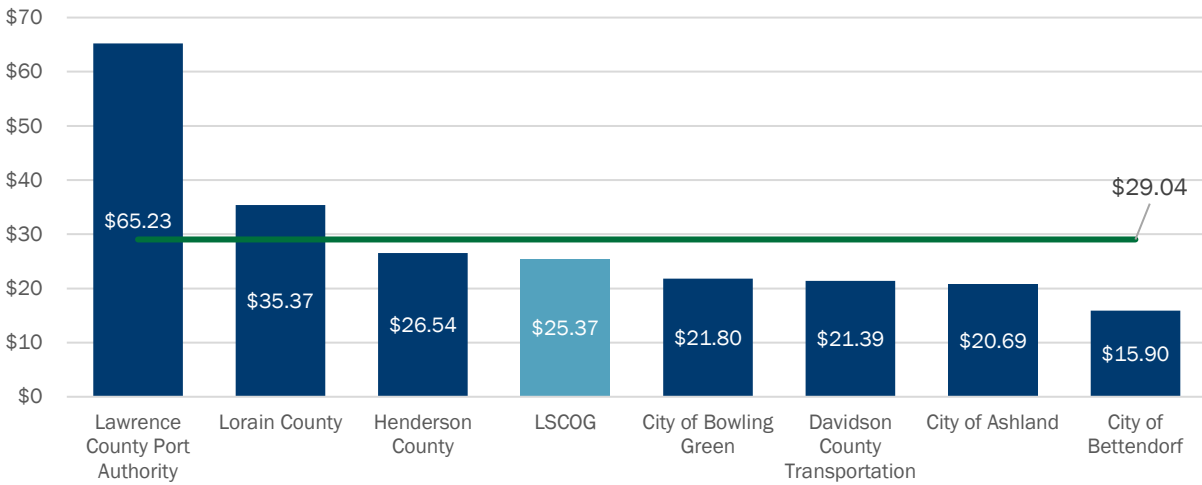
**Figure 22. Operating Ratio Compared to Peer Average, 2017-2021**

**Net expense (subsidy) per passenger trip** is used to measure the cost of each passenger trip that is paid for by public operating subsidy. Subsidy per passenger trip is calculated by subtracting passenger revenues from total operating expenses and dividing by total trips. The higher the operating subsidy, the more local, state, and federal resources are required to cover expenses.

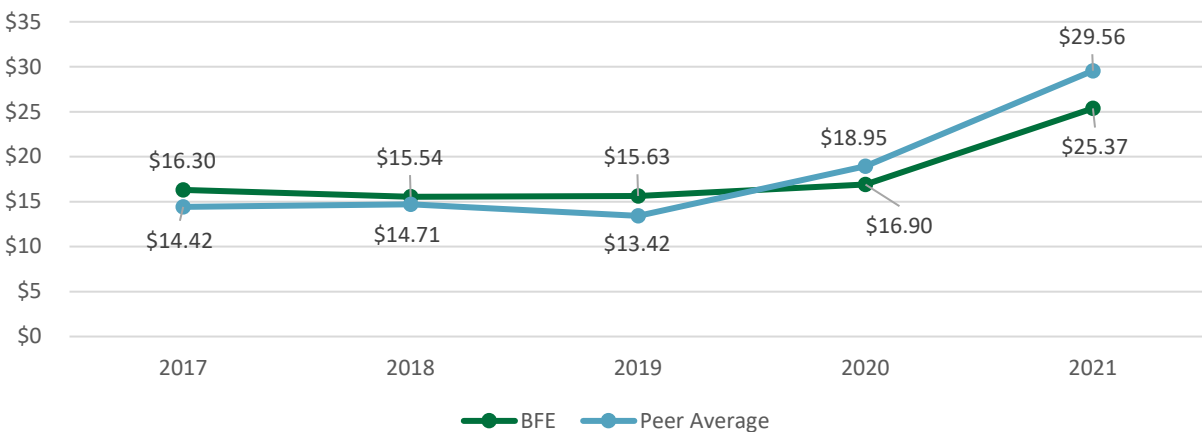
As shown in Figure 23, BFE's subsidy per trip in 2021 was slightly better than the average in the peer agency group. However, as was the case with the operating cost per passenger trip, Lawrence County Port Authority (LCPA) is a statistical outlier that raises the average subsidy. Without LCPA, the new average is \$23.87 which is just below BFE's subsidy, but BFE still remains within one standard deviation of the average. With and without LCPA in the group, BFE and the peer average subsidy have followed the same trend from 2017 to 2021 (Figure 24), remaining stable from 2017 to 2019 and increasing steadily after 2019.

Unsurprisingly, the takeaways from the subsidy trends do not differ very much from the operating cost per passenger trip (Figure 13). BFE's subsidy per passenger trip is about average. Since ridership and the cost of the system both affect this measure, and changes to the investment or services offered could affect the result. BFE has been relatively resilient to external changes (the COVID-19 pandemic), the next step may be to see how resilient its performance metrics are to internal changes to improve service.

**Figure 23. Subsidy per Passenger Trip, 2021**



**Figure 24. Subsidy per Passenger Trip Compared to Peer Average, 2017-2021**

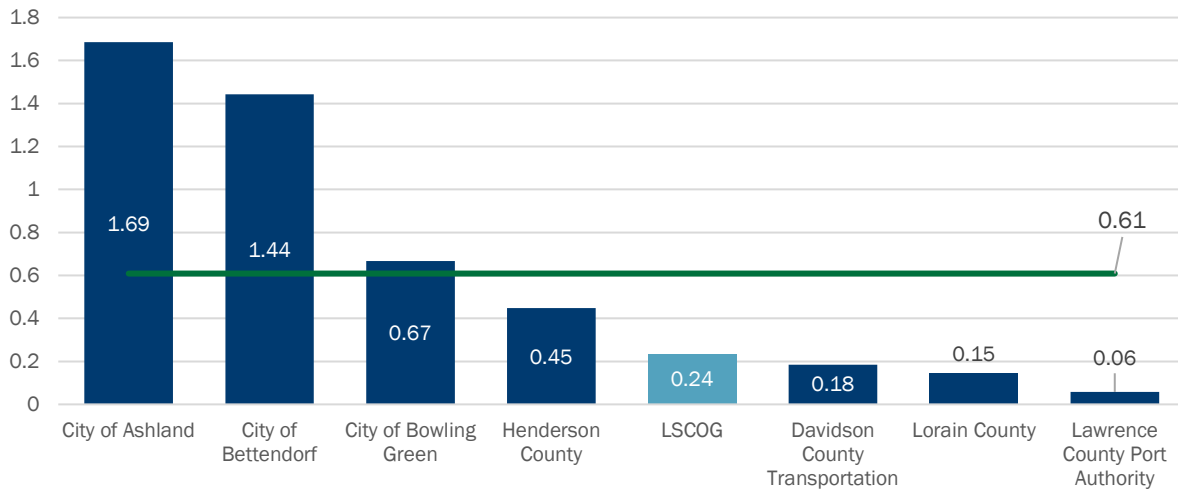
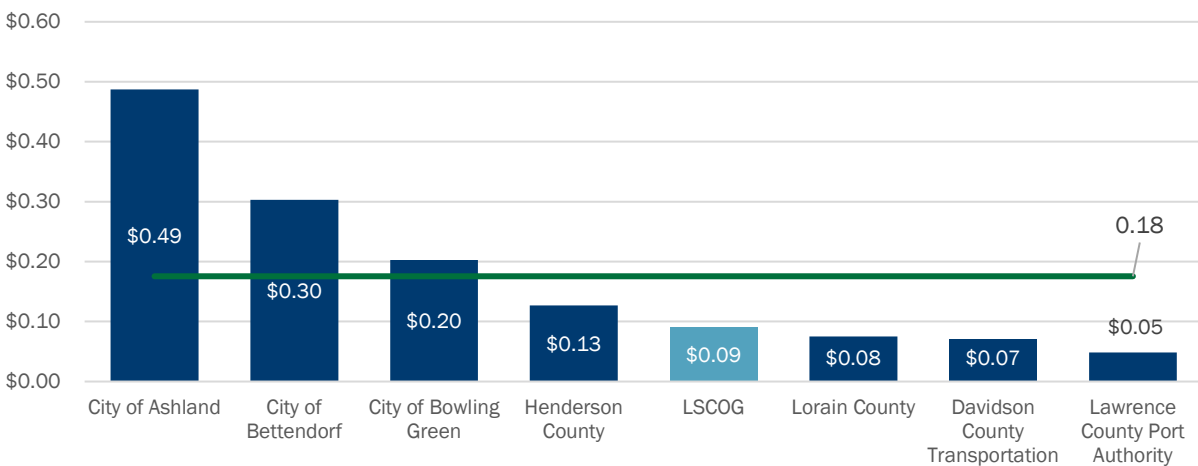


**Community Investment**

Two performance metrics use the total population of the transit service area to identify the degree to which the community is invested in public transit. This category includes market penetration, as measured by **passenger trips per capita**, but it also includes the degree of funding allocated to transit by decision-makers, as measured by **total investment per capita**.

BFE falls below the average for passenger trips per capita among most of the peer group, but still within one standard deviation. In this measure, there was a wide range of results between agencies. The results shown in Figure 25 are in line with the results seen in other measures, including the second measurement of community investment – investment per capita for fixed-route service (Figure 26). By this measure (calculated as the total fixed route operating budget divided by population) BFE is again in the middle of the peer group, but well below average, indicating that an investment of additional resources could deliver improved transit outcomes for the community.



**Figure 25. Passenger Trips Per Capita, 2021****Figure 26. Investment per Capita, 2021**

## Summary

Analyzing system performance compared to peer agencies shows not only how BFE is performing based on numbers, but also where key performance indicators may not be telling the whole story. This section summarizes the key findings of the peer analysis, including additional opportunities for investigation and improvement.

### Cost Efficiency vs. Service Effectiveness

The cost efficiency metric measure is determined by two factors that agencies have more control over – revenue hours and operating costs. This is reflected in the results that showed that the peer agencies performed at a similar standard across the board. The measure for service effectiveness, on the other hand, included passenger trips as a factor which can be difficult for agencies to influence

and therefore the results were more varied. BFE in particular underperformed in-service effectiveness compared to peers that had the same result for cost efficiency. The implication from this finding is that there may be relatively cost neutral strategies for improving service effectiveness. Further analysis of services provided by peers that had the same operating costs by higher service effectiveness may have examples for these strategies.

### **Passenger Revenue Effectiveness Measures**

The three passenger revenue effectiveness measures also indicated that BFE could have the opportunity for improvements to the system and subsidy of the system. Fare revenue per passenger is higher than peer averages, as is the operating ratio, which both indicate that the service currently provided by BFE is recovering a portion of its investment for the limited ridership the system reaches. While subsidy per passenger trip is average among peers; however, there is room for improvement for both BFE and its peers relative to national benchmarks. BFE could improve (lower) the subsidy per passenger trip by either reducing costs or increasing ridership, including potentially pursuing cost-neutral service improvements.

### **Community Investment**

The final takeaway from the peer analysis comes from the community investment measures. After establishing that BFE has been able to provide consistent service compared to its peers, the community investment measures tested whether the service was sufficient. The results showed that BFE's service may represent an investment in transit that lags behind compared to peers, as evidenced by the limited number of routes and low frequency of service (every two hours).

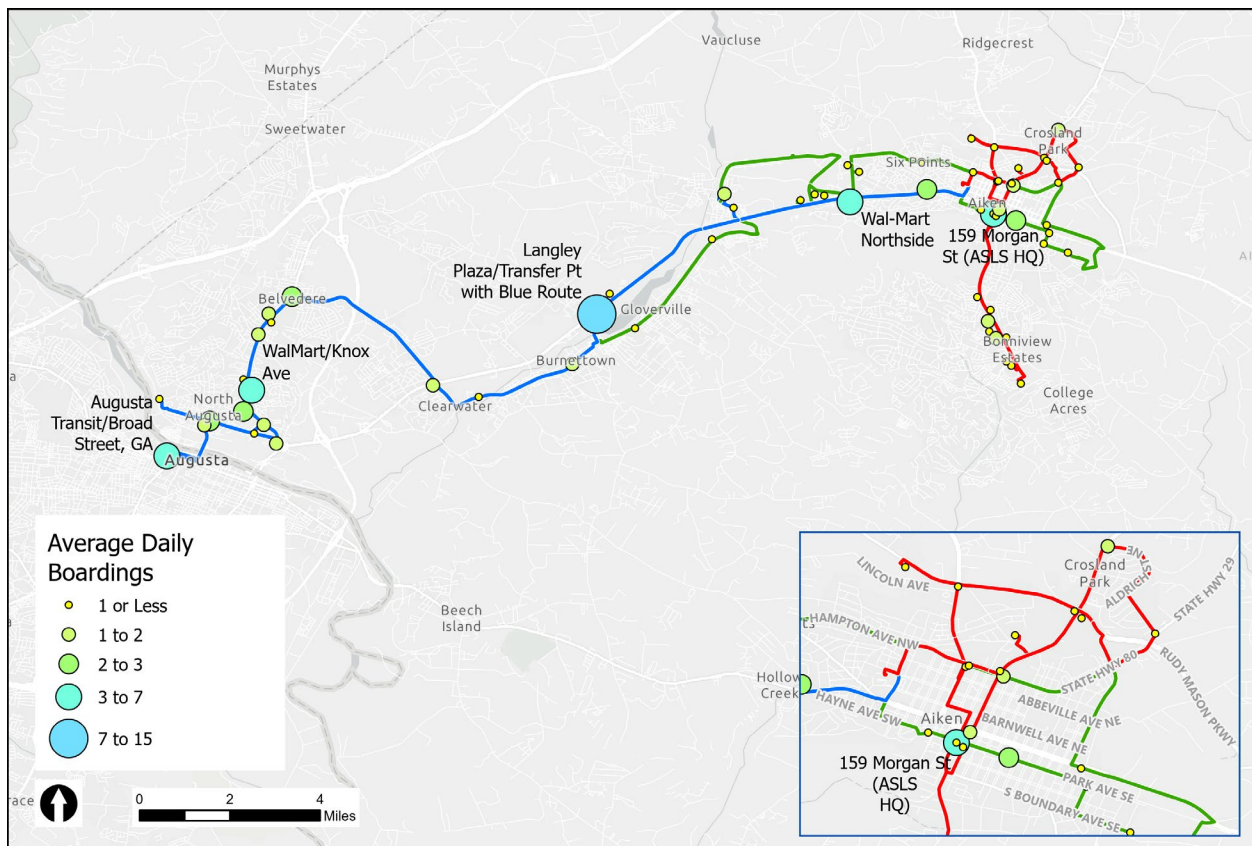
The two measures: passenger trips per capita and investment per capita can both be improved – the former with service improvements and/or financial investment and the latter through financial investment. If cost neutral improvements are the most feasible option to start with, then BFE could start there by adjusting service to better serve more riders. When and if ridership does increase, opportunities to fund and provide additional service could present themselves in the long term.

# Ridership and On-Time Performance

## Systemwide Ridership

Figure 27 shows the average daily boardings by system timepoint for the month of July 2023, with those over 3 daily boardings labelled by name. The greatest number of boardings occurs at Langley Plaza, which is a necessary transfer point in the afternoon for those returning from North Augusta to Aiken. The next most popular timepoints are Augusta Transit Center in downtown Augusta, two Walmarts, one in North Augusta and one near Aiken, and 159 Morgan Street which is roughly the center of downtown Aiken and a transfer point between Red and Green routes. Other centers of ridership are the southern end of the Red Route and most of North Augusta along the Blue Route. Northern Aiken along the Red Route shows little ridership, save for 1-2 daily boardings at Crosland Park.

Figure 27. BFE Stops by Average Daily Boardings

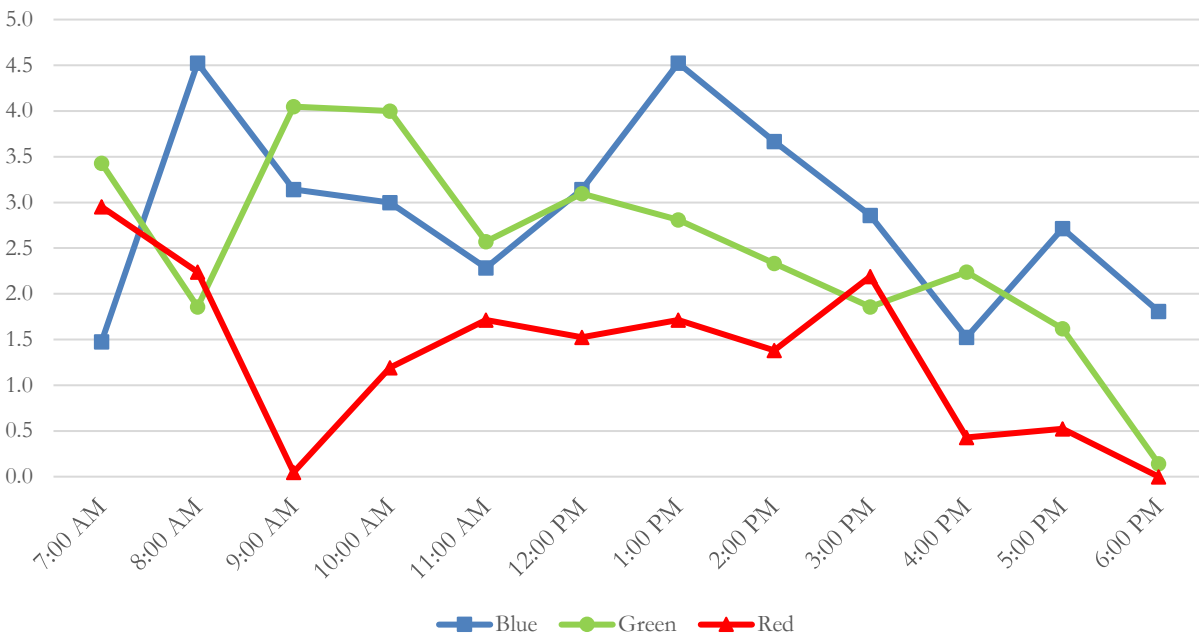


## Average Daily Ridership

In July 2023, daily ridership averaged 81 boardings, including 32 on the Blue Route, 30 on the Green Route, and 16 on the Red Route. Figure 28 shows the distribution of daily average boardings by hour of the day for all three routes. The Blue Route notably has peaks at 8:00 AM and 1:00 PM, as

well as a secondary peak at 5:00 PM. The latter likely comprises commuters working in Augusta, while those boarding at 1:00 PM are likely those returning from non-work trips, with boardings at 8:00 AM comprising a mix of both. The Green Route has the most consistent boardings throughout the day, averaging about 2.5 boardings per hour, with a small peak from 9:00 AM to 11:00 AM and the rest being distributed somewhat equally throughout the day. Red Route also has somewhat consistent boardings, save for peaks at 7:00 AM and 3:00 PM. No boardings are observed from 9:00 AM to 10:00 AM, as there is no Red Route service operating in the time period.

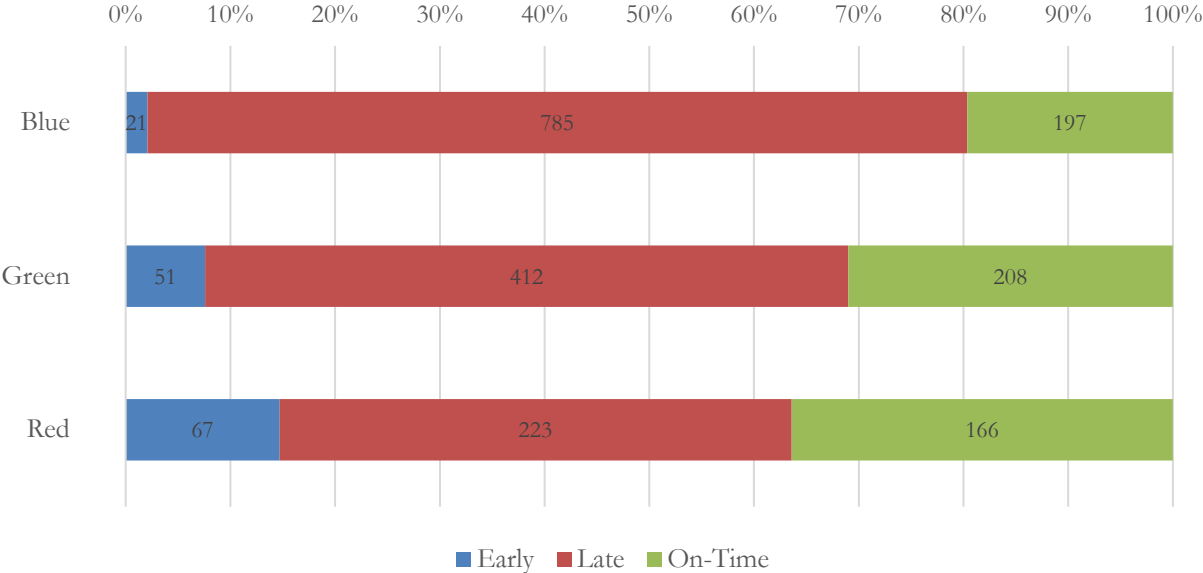
**Figure 28. Average Boardings by Hour**



### On-Time Performance

Figure 29 describes each route's on-time performance, defined in BFE's Title VI plan as the percentage of arrivals within ten minutes in either direction of the scheduled arrival time. Generally on-time performance appears to have some correlation with route length, as the Blue Route has the lowest on-time performance at 65%, followed by the Green Route at 78%, and then the Red Route at 91%. Very few instances of early arrival were observed in any of the routes.

Figure 29. On-Time Performance by Route



## Opportunities and Challenges

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The literature review notes several key priorities identified by LSCOG and other BFE stakeholders:

- Increasing frequency of service
- Expanding service span and weekend service
- Serving new economic and infrastructural developments
- New physical amenities such as shelters
- Improving public awareness of transit service

Several key issues were also identified in this review, including:

- Low service effectiveness compared to peers of similar cost effectiveness, indicating an opportunity to leverage cost-neutral strategies to increase ridership and service efficiency
- Lack of public awareness of available transit services
- ‘First/Full’ route structure forces inconvenient transfers for those commuting between Aiken and North Augusta and complicates service
- Flag-stop system adds operational complexity

In consideration of these factors, the following opportunities for improvement have been identified:

**Creating more direct and linear routes** for all three BFE lines would involve strategically focusing service to serve high-performance areas, creating a sensible sequence of stops to be made each trip, and minimizing diversions off of main streets. These changes address several issues, namely the low observed passengers per revenue hour and corresponding high passenger subsidy, as well as increasing service frequency by reducing overall run times.

**Converting from a flag stop system to fixed stop system** would not only simplify the passenger experience and make clear where service does and does not exist, but would also facilitate a more efficient investment in physical assets like shelters and benches, improve on-time performance, and ensure passenger safety on alighting.

**Coordinating with development** comprises planning BFE transit service in conjunction with prospective economic development and infrastructure projects, as well as ensuring sufficient levels of service to existing higher-density residential and employment complexes in an efficient manner. Examples include the newer residential developments around Aiken Technical College and the planned pedestrian and bike improvements around Highway 421. This additionally includes the consideration of new transit service in areas of high travel demand not currently served by BFE’s three routes (e.g. the areas southwest of downtown Aiken along Pine Log Road/Hitchcock Parkway and Silver Bluff Road) and prioritized service to high-demand locations already served (e.g. University of South Carolina - Aiken), as discussed in both the service area demographics and travel demand sections.

**Improving public awareness of available transit** has been identified as a high priority for LSCOG, and may include marketing campaigns through physical and online media. Awareness may also be inherently improved by improvements in service frequency and the conversion of the system to a fixed-stop system, as both these increase the chances that a given person will see a BFE vehicle or transit stop and thus find out about the service.