Henderson County Transit Feasibility Study

Executive Summary

February, 2024

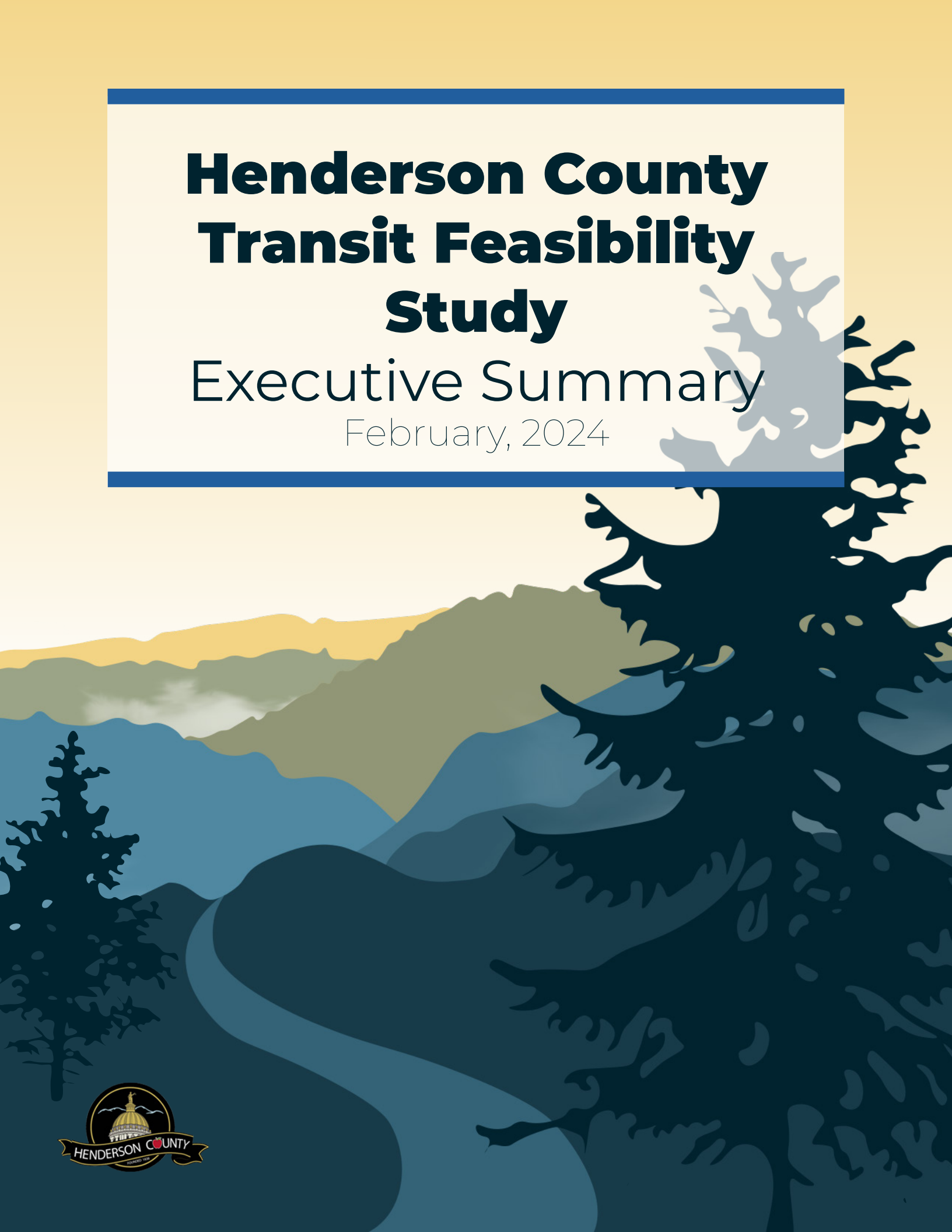


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Henderson County Transit Study
Vision & Goals

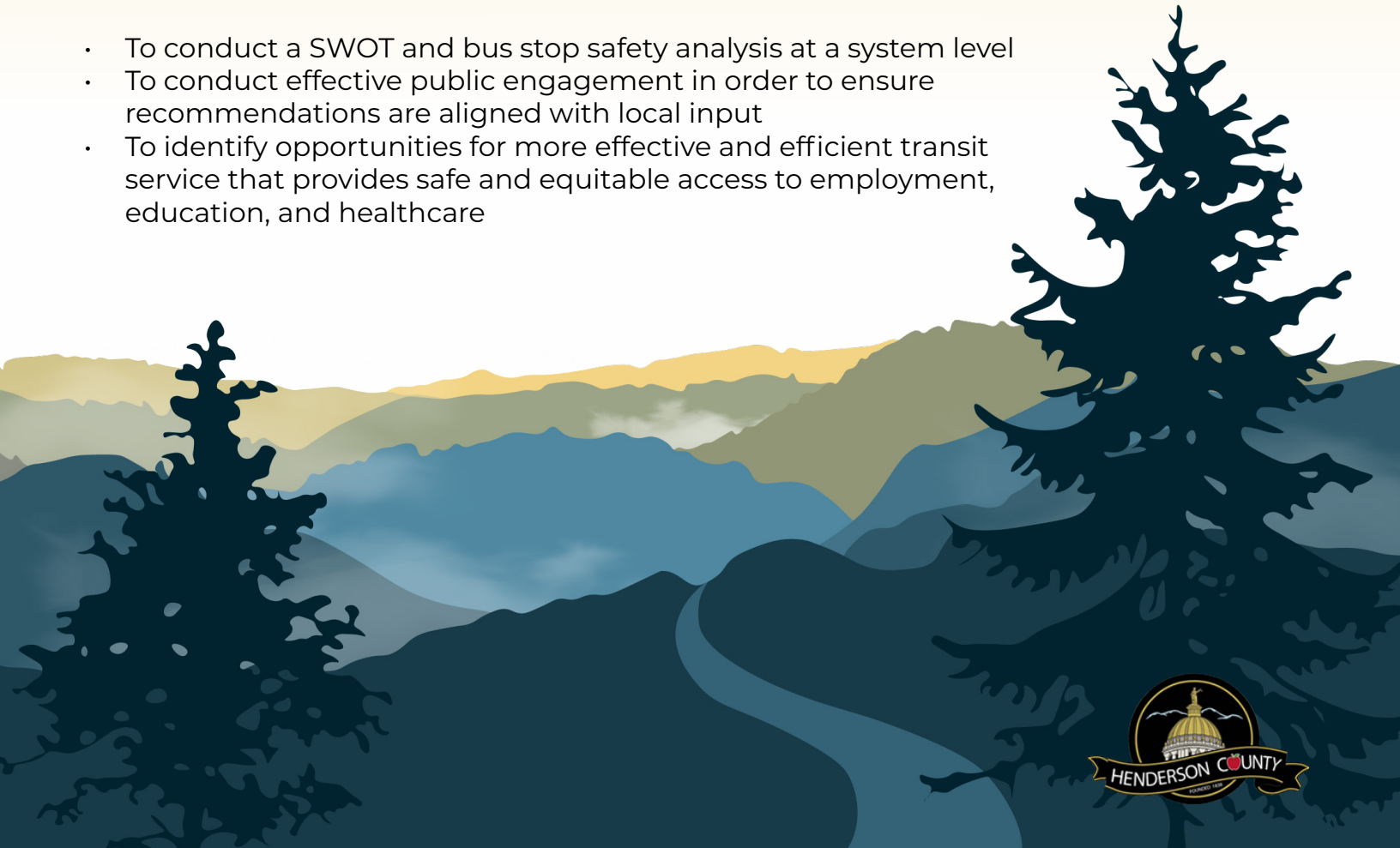
VISION:

Our vision for the future of transit within Henderson County was developed collaboratively and seeks to create a safe, connected multimodal network that provides people with greater access to opportunities and to ensure a greater level of coverage so the transit system becomes a reliable mobility asset to residents, employees, and visitors.

- Our vision is achieved through intentional and effective public outreach and stakeholder participation. The vision improves connectivity and safety for all residents while supporting equitable, multimodal development.
- Our county offers excellent quality of life offering mobility options that provide access to employment, healthcare, education, and recreational opportunities.
- Our transportation network is well connected, providing mobility options throughout the entirety of Henderson County, ensuring equal and equitable access for all users.
- Our transit system provides more frequent service, expanded coverage, and improved first-/last-mile connections, linking municipalities directly and reaching underserved communities.

GOALS:

- To conduct a SWOT and bus stop safety analysis at a system level
- To conduct effective public engagement in order to ensure recommendations are aligned with local input
- To identify opportunities for more effective and efficient transit service that provides safe and equitable access to employment, education, and healthcare



Introduction

The feasibility study is being conducted to assess Apple Country Public Transit (ACPT) routes and ridership at a system level, inventory and analyze bus stop safety and amenities, solicit public feedback, and provide recommendations to identify opportunities to improve and enhance existing services.

The study intends to identify opportunities to increase the ridership of ACPT's transit while optimizing the level of service for current and potential riders, and allow safe and equitable access to employment, education, healthcare, and other regular destinations. A SWOT and bus stop analysis, as well as public engagement will inform the opportunities identified.

Findings and recommendations from the study will support the vision of Henderson County of providing safe and equitable service to all members of the community.

Market Analysis

Demographics, employment centers and trip patterns were assessed across Henderson County to understand how transportation is currently used and where the most transportation disadvantaged populations reside.

Results from the demographic analysis are provided below:

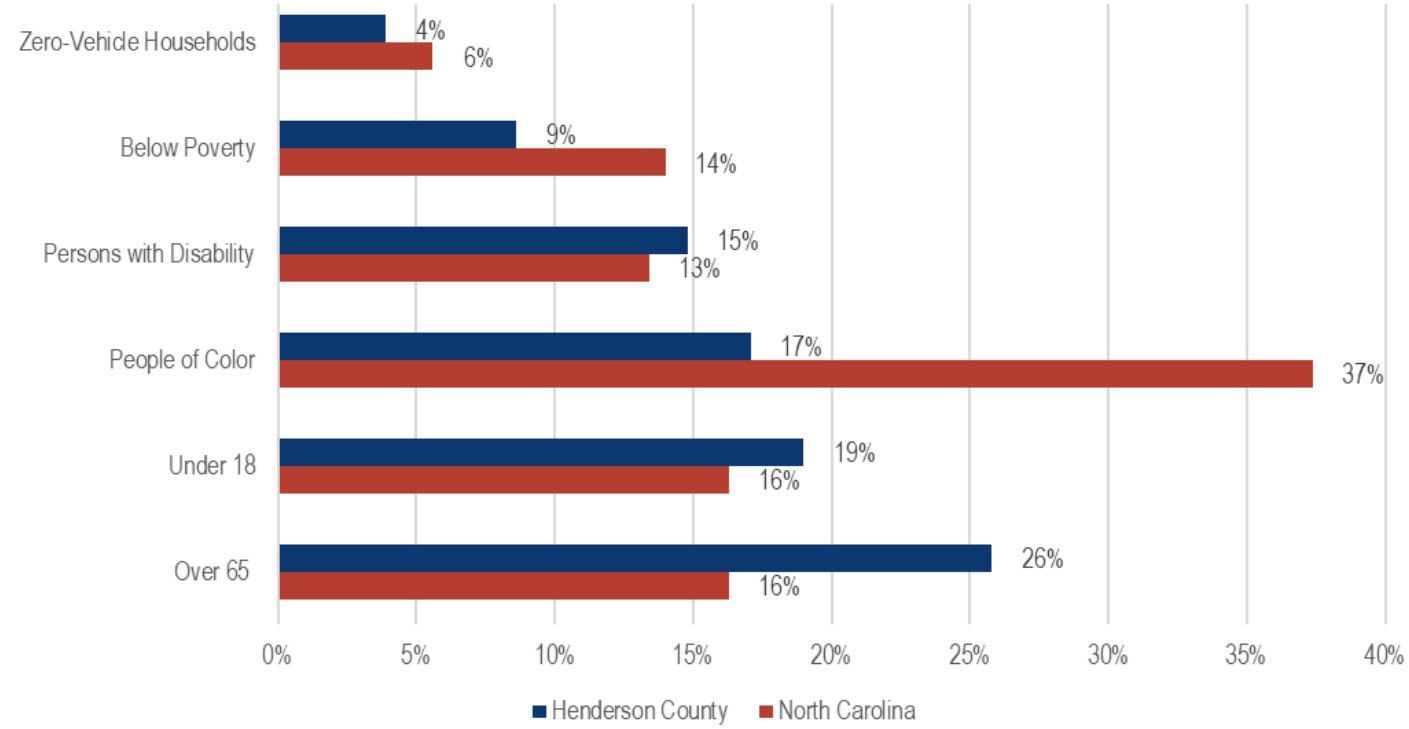


Figure 1 Comparison of Transportation Disadvantaged Demographics in Henderson County Compared to the State

The prevalence of individuals with disabilities can be a key factor in determining communities with greater reliance on public transportation for regular errands. The greatest density of Henderson County's disabled residents exists along I-26 and in downtown Hendersonville.

Another transportation disadvantaged group that exists in higher proportion within Henderson County is senior aged citizens. As a group that may rely on aids for daily tasks and may also be on fixed income, they may also have a stronger dependency on transit services. High concentrations of the elderly population live around ACPT's Route 1, along the I-26 corridor in eastern Henderson County, and in the towns of Fletcher and Flat Rock.

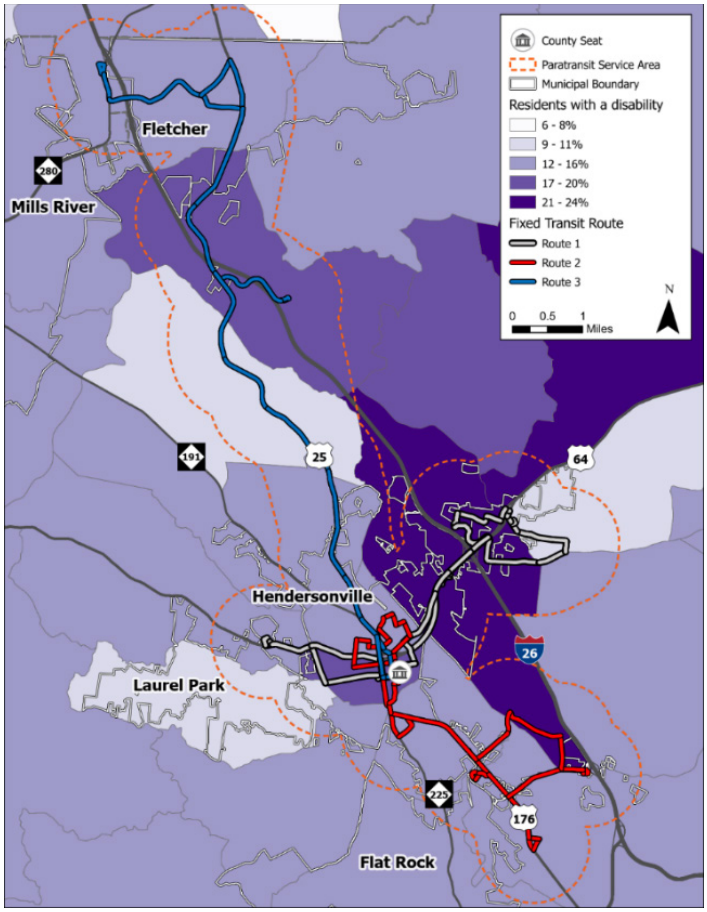


Figure 2 Population with a Disability

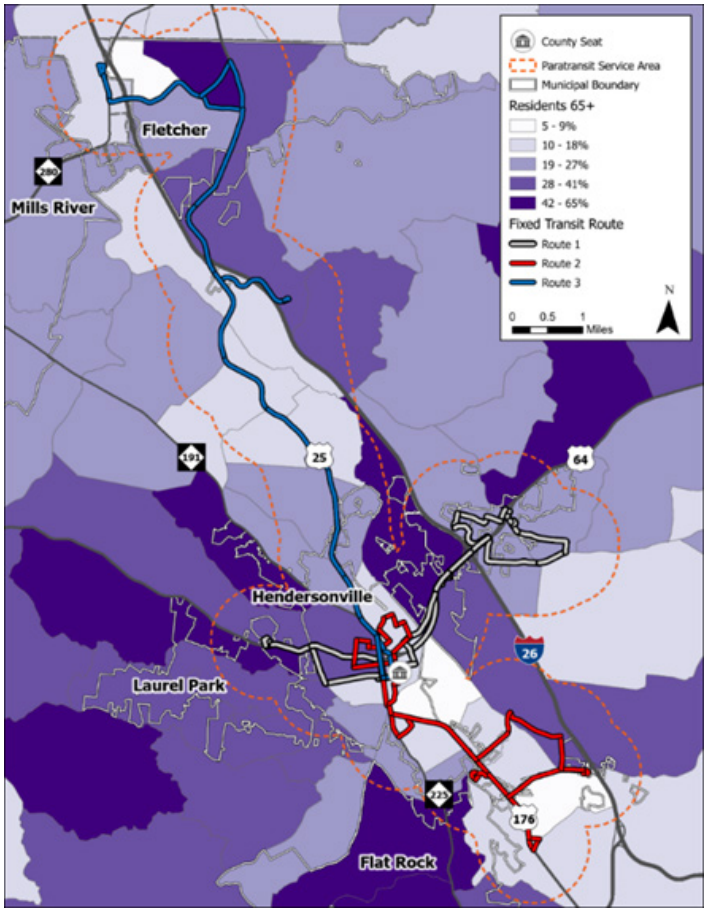


Figure 3 Population Over 65

Other transportation disadvantaged groups (minorities, impoverished individuals, and households without vehicles) are not found at a high rate in Henderson County above the state average. However, the densest populations of the latter two can be found along the I-26 corridor, and the former in Southeast Hendersonville, demonstrating the importance of reliable transit service in these areas.

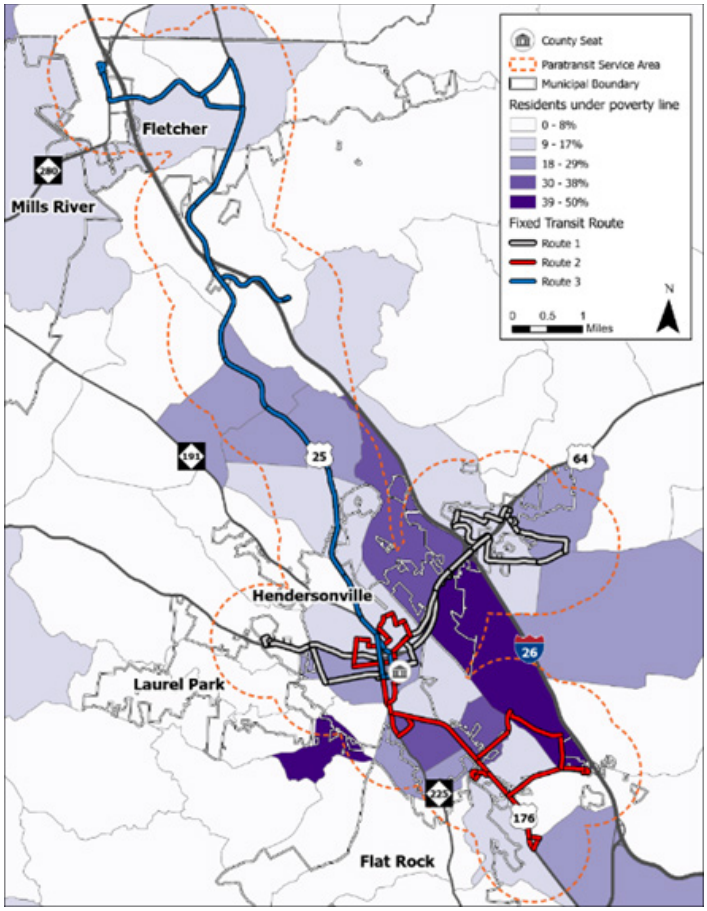


Figure 5 Population Below Poverty Line

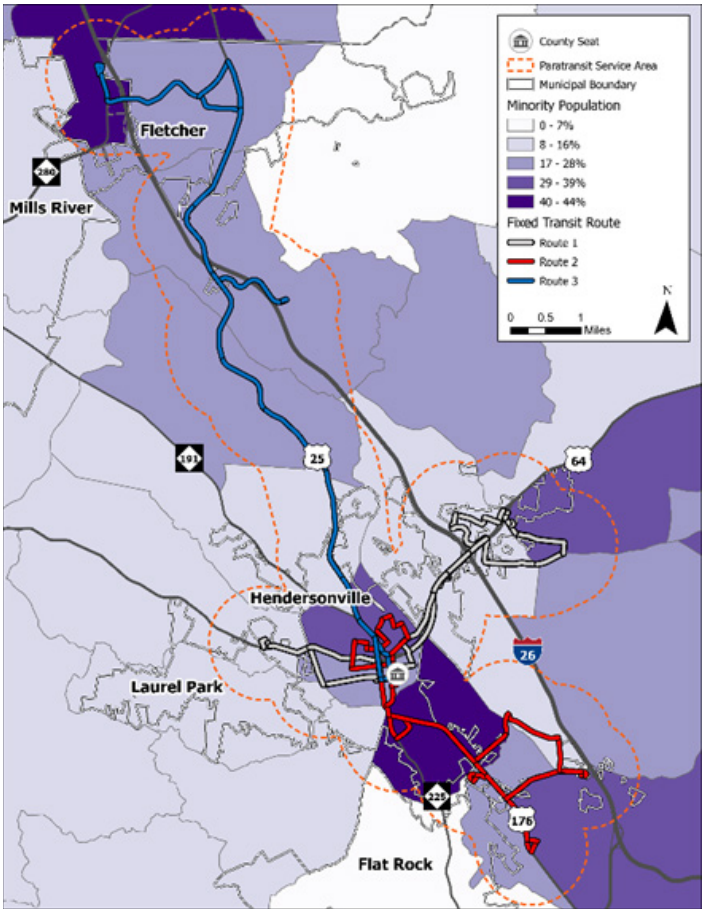


Figure 4 Distribution of Minorities

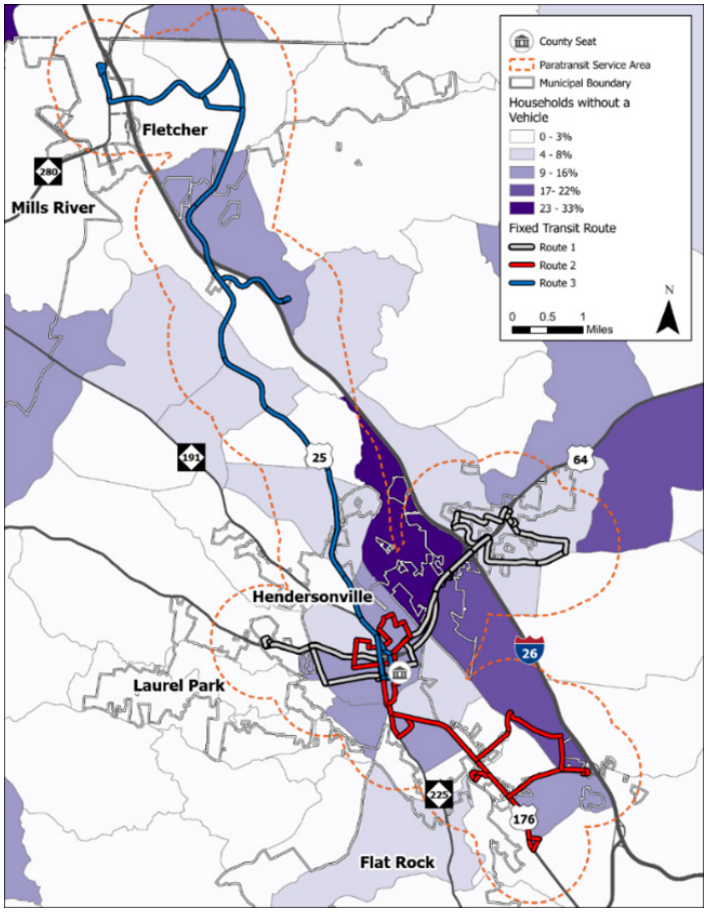


Figure 6 Zero Vehicle Households

The location of large employment centers within the county, as well as where outside of Henderson County residents are commuting, is key information to tailor potential service modifications.

The densest cores for employment in Henderson County are in proximity to the major thoroughfares of I-26 and US-64.

Henderson County brings in a near equal number of workers into the county (19,473) as native residents who stay in the county to work (19,957). The plurality of these workers commuting into Hendersonville travel from neighboring Buncombe County.

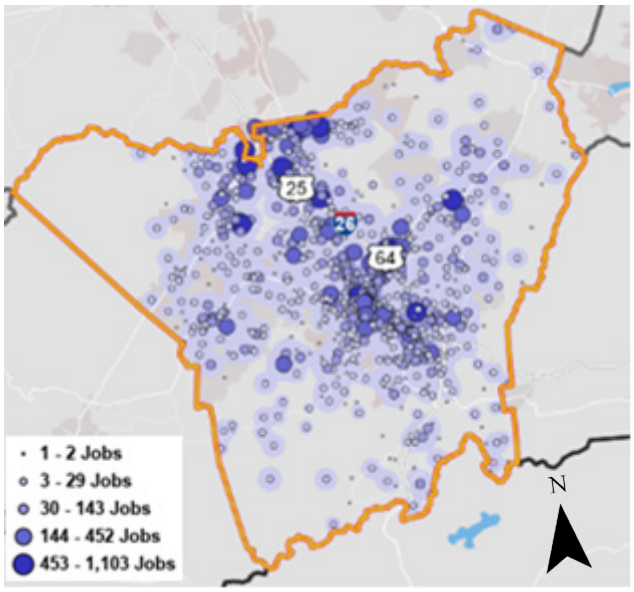


Figure 7 Employment Density

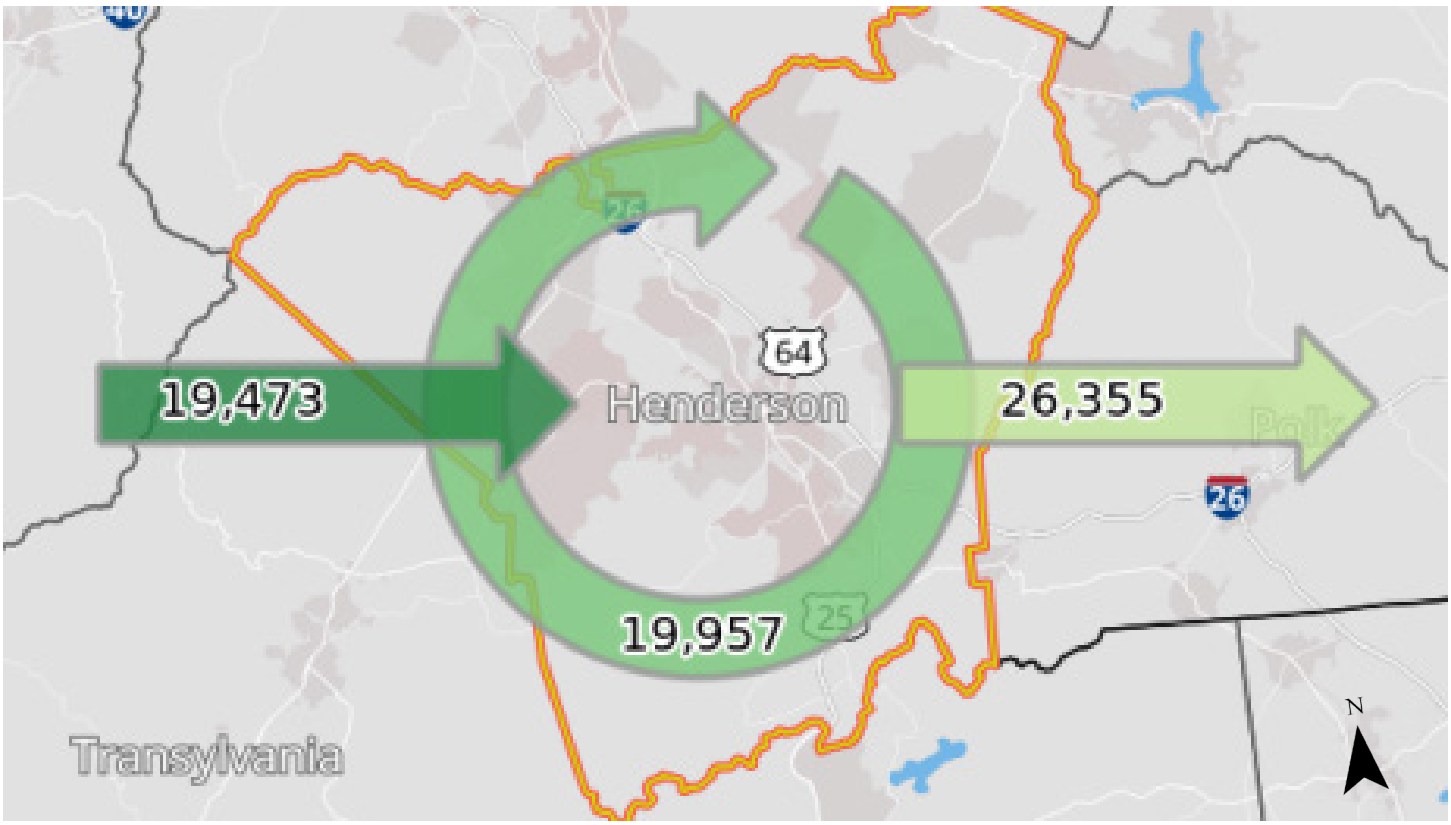


Figure 8 Inflow/Outflow Commuter Patterns

Existing transportation plans in the service area were also reviewed to affirm that the findings and recommendations of the feasibility study aligned with these plans. These plans included community plans for unincorporated communities such as Etowah-Horse Shoe, NCDOT's Complete Streets Policy, the Regional Transit Feasibility Study, and the French Broad River MPO Metropolitan Transportation Plan.

One of the more integral plans for the area's development is the 2045 Comprehensive Plan. The feasibility study seeks to facilitate goals identified in the plan such as promotion of healthy living, public safety, and access to education.

Table 1 Where Henderson County's Workers Live

Location	Count	Share
All Counties	39,430	100%
Henderson County	19,957	50.6%
Buncombe County	7,880	20.0%
Transylvania County	1,516	3.8%
Haywood County	990	2.5%
Rutherford County	885	2.2%
Polk County	875	2.2%
Greenville County (SC)	582	1.5%
Mecklenburg County	469	1.2%
McDowell County	417	1.1%
Cleveland County	382	1.0%
All Other Locations	5,477	13.9%

Public Involvement

Public involvement is a key component of the Feasibility Study, informing community needs and gathering input about elements that are important for users and potential users of the transit system.

Several media were used to gather input from different stakeholders across the community. Steering Committee meetings were held with representatives of the county's departments and its partners, focus groups conducted with the leaders of local business and social service organizations, and interviews were held with drivers working for ACPT. Two surveys, a community survey and a rider survey, were also distributed broadly to the public to most directly inquire about service gaps and the needs of existing and potential riders. These surveys garnered almost 300 total responses with answers to select questions provided below:



Figure 10 Word Cloud from Responders who Face Transportation Challenges

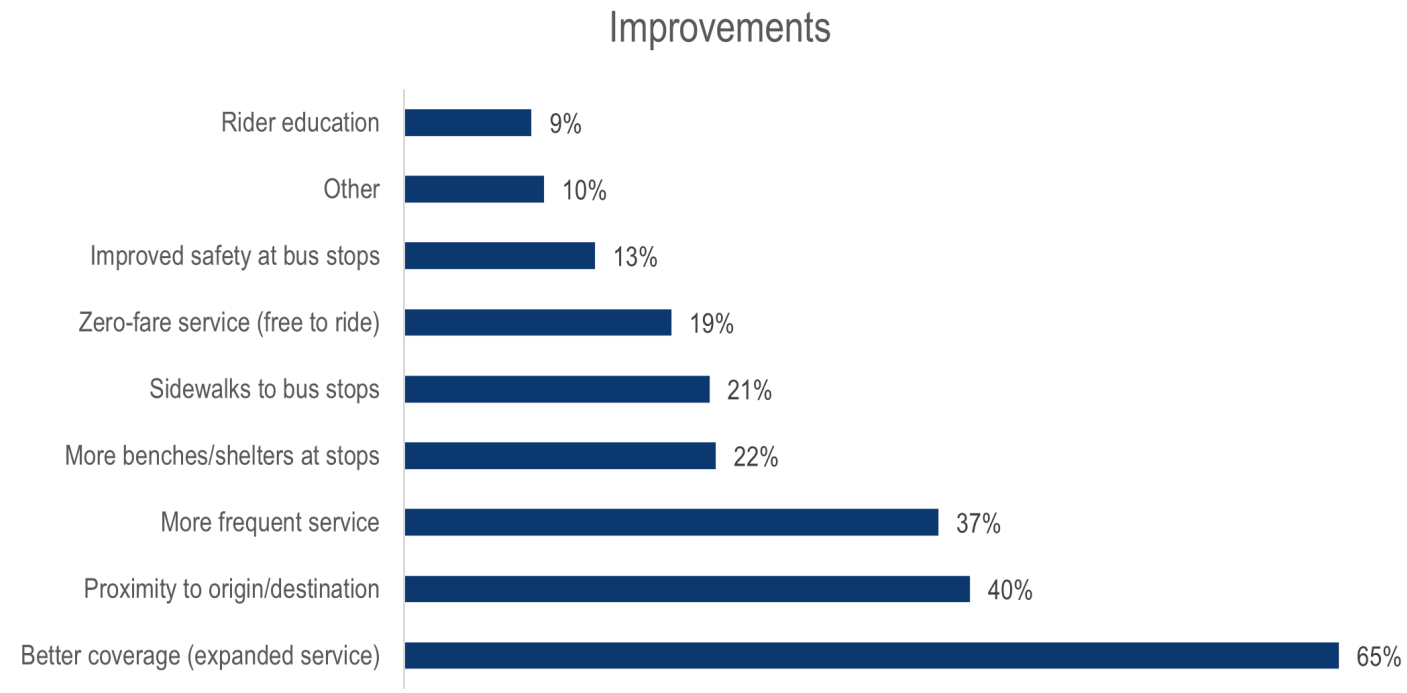


Figure 9 Preferred Improvements to ACPT

Public input indicated that it is very important for the community to expand coverage and increase reliability. For riders, the most important improvement was to provide Saturday and Sunday services (73%).

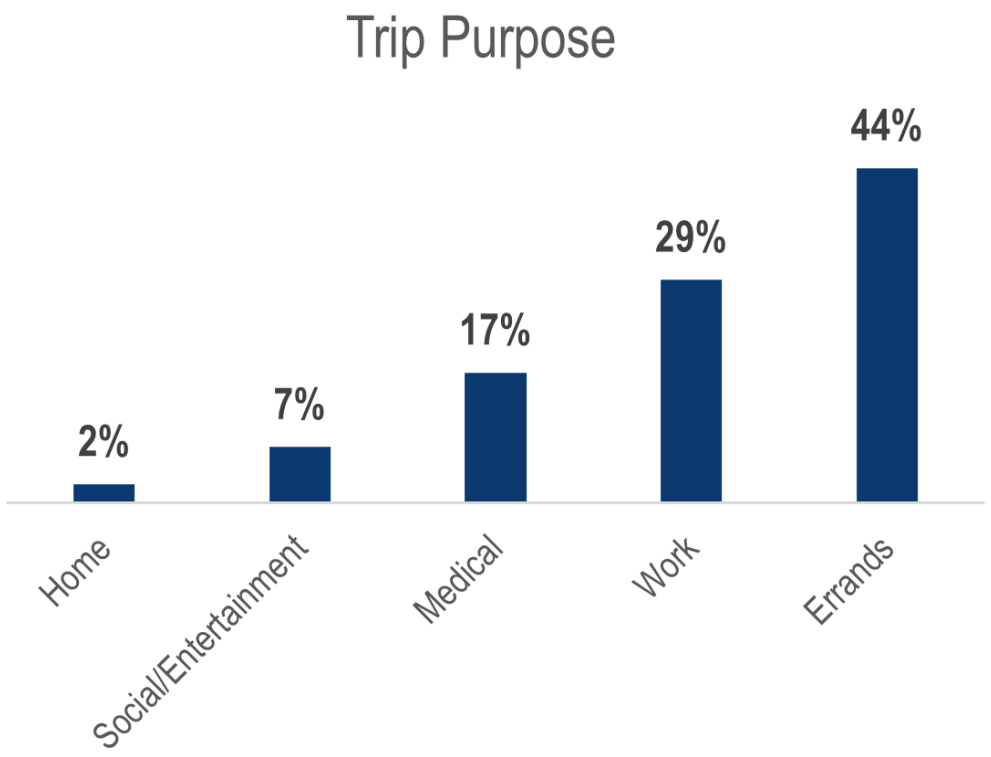


Figure 11 Primary Trip Purpose for ACPT Riders

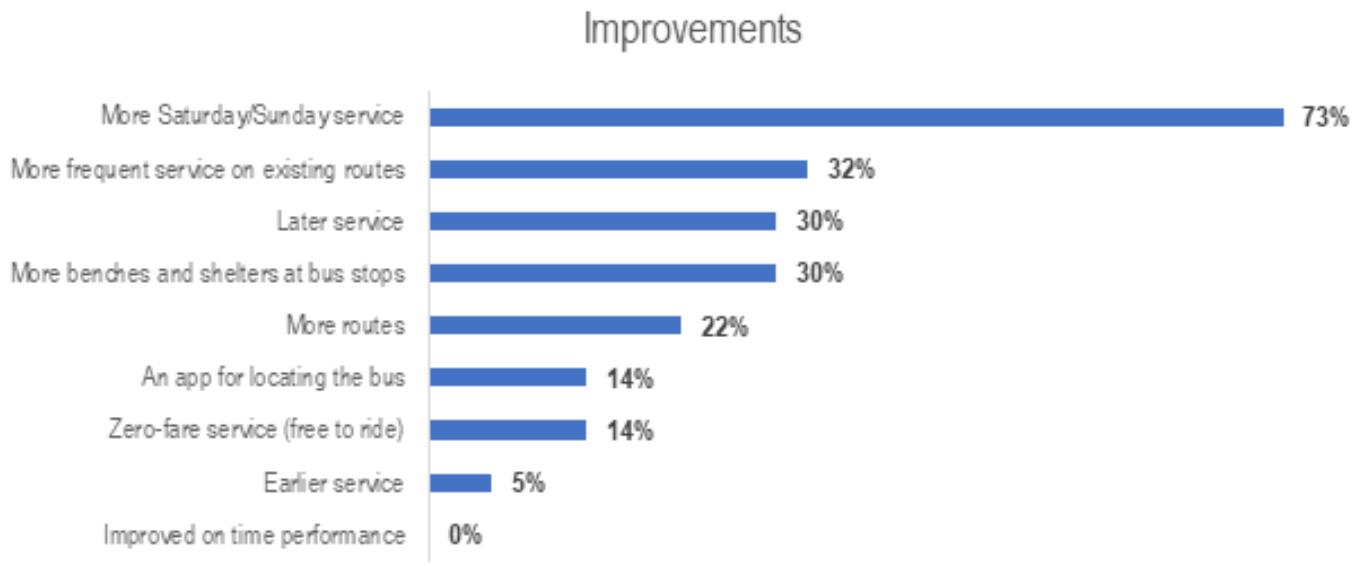


Figure 12 Rider's preferred improvements

SWOT Analysis

A Strengths, Weaknesses, Opportunities, and Threats (SWOT) analysis was performed using the data and information collected through previous tasks. The analysis considers existing service, organization and policies, facilities, fleet, and technology to integrate new mobility options to expand and enhance ACPT's system.

The SWOT model is useful in its flexibility and its ability to bring systemic opportunities and challenges to the surface for further scrutiny. This assessment analyzes, in detail, all aspects of the bus service from how the service is overseen and operated, to how customers use and perceive the service, to the fixed assets that make operating and accessing the service possible.

The assessment will be used to identify improvements to the existing service and different modes that may be more appropriate in certain circumstances such as on-demand modes of transit services in areas of lower demand.

With emerging mobility options and new technology, there are a lot of possibilities for ACPT, and the previous analyses and assessments will help determine potential solutions for the County.

The SWOT analysis was conducted by the consultant team following the conclusion of public outreach, focus groups, driver interviews, and operational and resource assessments. Key findings from the SWOT analysis are listed below.

Strengths

The strengths for the SWOT analysis are broken down into focus areas: Services, resources, multimodal connectivity, and stakeholder perception. Several factors contributing to or affecting service were also discussed: service area, demographics, ridership, and operations. Strengths are those available and valuable assets of Henderson County's existing conditions that should be preserved or improved upon.

Henderson County is a prime location for individuals who seek a quieter lifestyle with access to urban amenities in the city.

General:

- Quieter lifestyle with proximity to regional employment opportunities.
- Ease of access to healthcare facilities.
- Henderson County is a growing destination for visitors.

Services:

- Routes serve important destinations, including the Asheville Regional Airport, Walmart, Blue Ridge Community College, and major manufacturers.

Resources:

- Cooperative and positive relationships amongst partners.
- Henderson County is a member government in the French Broad River MPO, which is a strong advocate for transit.
- Leadership and staff are invested and proactive in addressing community needs. The leadership knows challenges that exist and attempt to mitigate those challenges to improve service for the community.
- Transit Advisory Board represents a good cross-section of the community.
- ACPT has a well-maintained bus fleet, and

the organization continues to pay attention to emerging technologies that could enhance service.

- Strong history of data collection and independent program evaluation.

Multimodal Connectivity:

- There is a clear interest in expanding multimodal connectivity, as evidenced in goals within planning documents on the county and regional level.
- The transfer station is located downtown with easy access to services.

Stakeholder Perception:

- ACPT serves residents who cannot drive or do not have a driver's license.
- Fares for ACPT remain affordable.

Weaknesses

The weaknesses are the drawbacks or short-term challenges of Henderson County's existing conditions that need to be addressed so they do not cause long-term problems for the viability of the transit system. Henderson County spans 375 sq. miles, 21% of which is considered urbanized per the 2020 Census urban area definition. Expanding service to outlying places was identified as a transportation need by different stakeholders through public engagement. It is also important to note that the ridership on ACPT has been steadily declining since 2017, which pre-dates COVID ridership declines. The other weaknesses are listed below.

General:

- Public transit investment levels have remained the same over time.
- Lack of sidewalks and pedestrian facilities throughout the County.
- There is a distinct lack of awareness from general public regarding services provided by ACPT. Six percent of respondents to the Community Survey explained their lack of awareness by answering that they "don't know anything about it."

Service:

- Fixed routes contain loops that make certain types of trips more difficult to make.
- Route 3 is very long and contains a dial a ride service that affects the on-time performance. Heavy traffic along the route prevents consistent on-time arrivals at each stop.
- ACPT does not offer service on Saturday/Sunday, and this improvement was a top priority for riders and community members according to the survey.
- Passenger trips have been declining since 2017, which highlights the need to revisit the current service model.
- Infrequent service makes choosing transit a difficult choice for average Henderson County residents.
- Transfer Station doesn't have any amenities for riders to wait comfortably or buy tickets. This station is also not listed on Google Maps, nor is a picture of the station present on the ACPT site. If the person is unfamiliar with ACPT, it's difficult to find the transfer station.

Funding:

- Operating and Capital funds are limited to the Urbanized Area Formula Grants—5307 funding from the FTA. This limits options for

the system.

Multimodal Connectivity:

- Transit service is hindered by Henderson County's limited number of walkable, transit-oriented destinations.
- Limited access to sidewalks and greenways through the county.

Opportunities

Opportunities are the long-range positive trends affecting Henderson County's transit as well as positive paths it might follow. Among those opportunities are the population growth in Henderson County, traffic volumes, and interest in multimodal connectivity throughout the County. The expansion of existing transit services in the vicinity of proposed trails and major employers supports several outcomes outlined in the 2045 Henderson County Comprehensive Plan in its bolstering of multimodal connectivity and facilitating access between housing and centers of economic opportunity.

Henderson County and the ACPT system will likely benefit from regional transit plans as well as long as future efforts are done in coordination.

General:

- The growing population of Henderson County and increasing employment density as well as congestion on major routes might improve transit interest and viability in Henderson County.
- Increased transportation funding opportunities following The Infrastructure Investment and Jobs Act (IIJA).
- Opportunity to increase marketing and advertising of transit services to increase ridership.

Service:

- Partnerships among employers and ACPT might better serve Henderson County residents and workers.
- There is a potential for automatic passenger counting systems to facilitate driver responsibilities. Implementing a different APC system will be critical in the data collection process to better evaluate efficiency and effectiveness of service.
- ACPT could investigate alternative service options like on-demand services that could provide more coverage and help streamline the fixed-route system. ACPT could assess a hybrid system with both fixed-route and on-demand services.
- The current transfer station has potential for additional amenities.

Resources:

- Transit usage may be promoted through marketing services more frequently.
- ACPT could improve bus stop amenities (benches, shelters, signs, trash cans) to support ridership trends for each route. According to Driver Interviews, the system could benefit from more shelters and signs.

Multimodal Connectivity:

- Improving crosswalks at key locations could enhance passenger and pedestrian safety and experience by making it safer for pedestrians to access bus stops.
- Improving multimodal transportation options in Henderson County would contribute to improved livability and spur economic

development.

- Development of the planned Ecusta Trail. The trail will be in proximity to a stop on Route 1 (Prof Park) and a stop on Route 2 (Beacon Commons).
- 88% of sidewalks fall within a quarter mile of bus stops. Constructing double sided sidewalks, conducting a prioritization study of missing sidewalks, and connecting gaps in the sidewalk network could improve pedestrian mobility throughout the County.

Threats

Threats are long-term weaknesses that can undermine attempts to meet the County's established transit goals. Threats to Henderson County's transit system include gaps in infrastructure, the continued exurban sprawl, and varying levels of transit demand based on where people live. These threats and others are explained below:

General:

- Varying levels of transit demand and support throughout the county may complicate the pursuit of transit improvements. Limitations in funding affect the level of service.
- Infrastructure gaps and continued growth in difficult-to-reach areas may limit the ability to provide transit services in Henderson County.
- Continued dependency on single occupancy vehicles and limited multimodal connections threatens Henderson county's livability and economic vitality.
- The population is growing as well as exurban sprawl, which complicates the potential for effective fixed-route service.

Resources:

- Current ACPT's automated passenger count technology is unreliable and the drivers still have to use clipboards to track boardings and alightings.

Stakeholder Perceptions:

- The bus drivers noted that there are issues with crosswalks at certain stops where the destination of passengers is across a busy or unsafe road.
- There is a lack of awareness of service or a misunderstanding that ACPT serves elderly and disabled Henderson County residents only.

Recommendations

A market and SWOT analysis and public engagement responses informed the recommendations for ACPT. Route service modifications would take place over the course of four two-year phases. These modifications intend to increase ridership by increasing the system' s convenience, through both increased frequency and longer service windows primarily in urban Hendersonville. Seven vehicles would be necessary to provide service for ACPT during peak periods by the conclusion of Phase 4 in Year 8.

Additionally, the Asheville Express Route, a service previously described in the French Broad River Metropolitan Planning Organization Regional Transit Plan, was defined within the feasibility study. The Express would run between central Hendersonville and the Asheville Regional Transit (ART) transfer center in central Asheville, operating during morning (6 to 9 AM) and afternoon (4 to 7 PM) peak periods on weekdays.

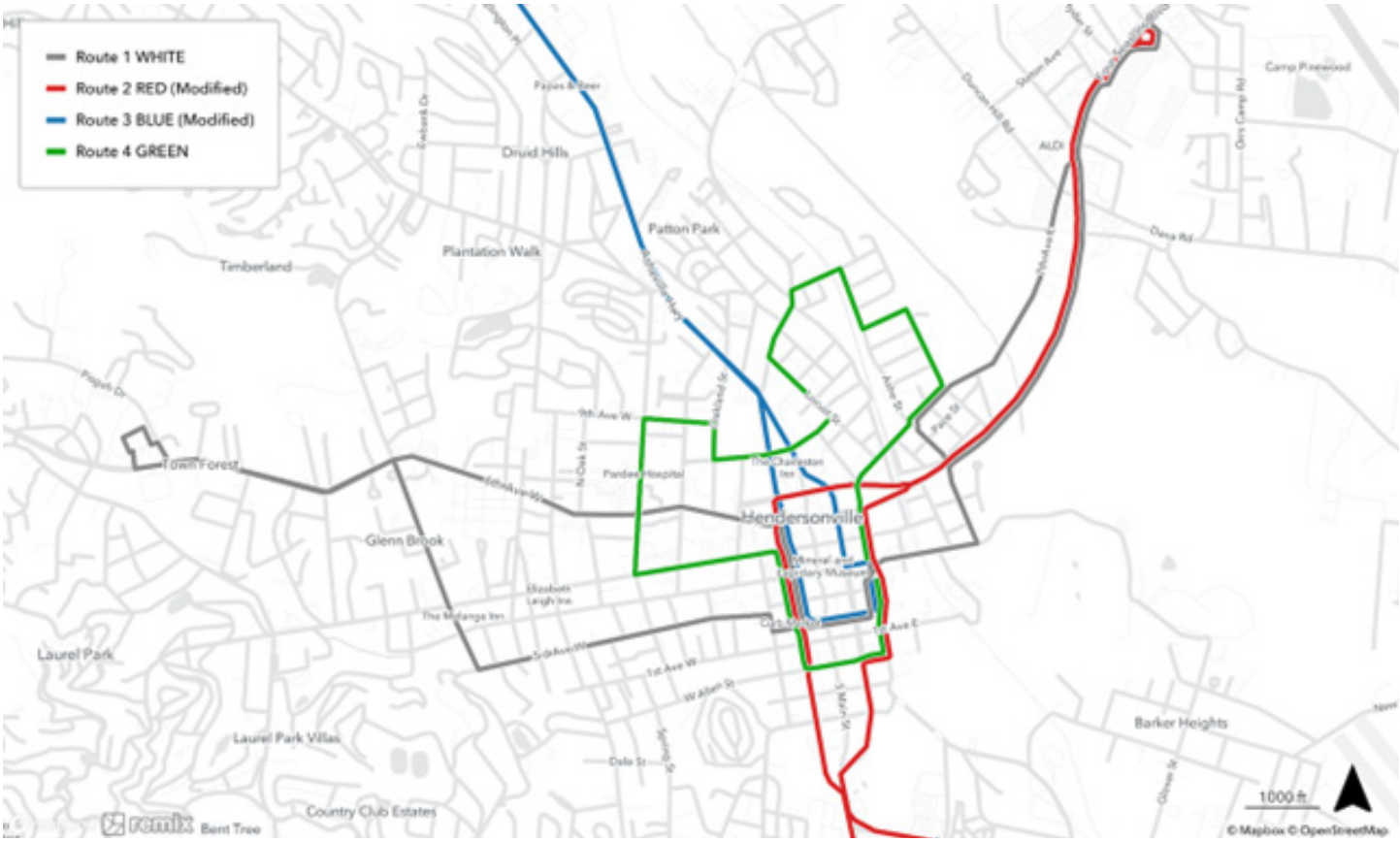


Figure 13 Route 4 and Modified Routes 1, 2 and 3 in the Hendersonville Area

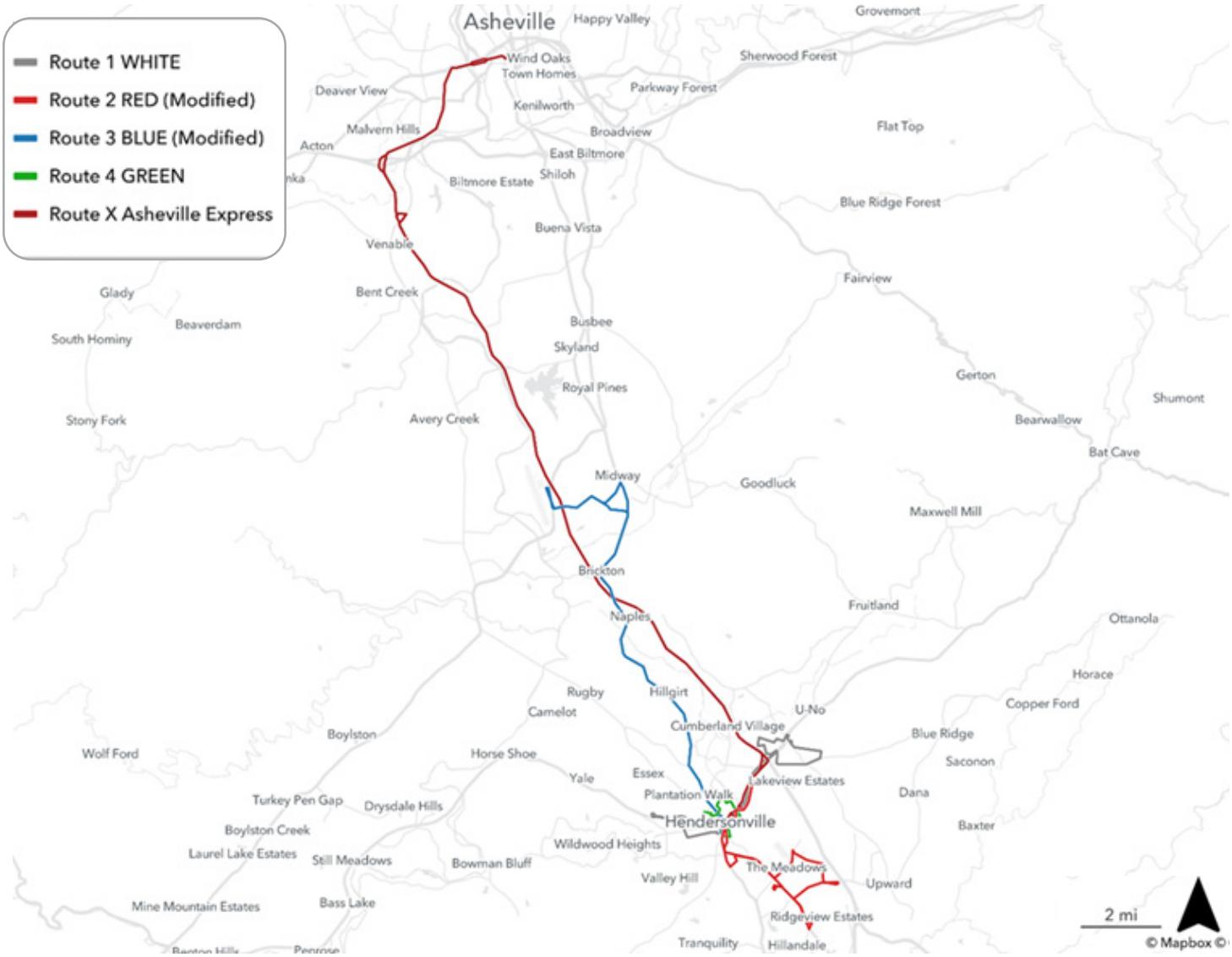


Figure 14 Asheville Express Route

Table 2 Service Recommendations by Phase

Modification	Phase 1		Phase 2		Phase 3		Phase 4*	
	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8
Weekday								
Route 1 every half hour								
Route 1 extension to 6:30 PM								
Realignment of Route 2 to Blue Ridge Mall								
Route 2 extension to 6:30 PM								
Route 4 downtown circulator shuttle implementation								
Conversion of Route 3 to commuter express route to Asheville Regional Airport								
Route 1 extension to 7:30 PM								
Route 2 extension to 7:30 PM								
Route 4 extension to 7:30 PM								
Route 2 every half hour								
Route 4 every 10 minutes								
Weekday								
Route 1 hourly service to 6:30 PM								
Route 2 hourly service to 6:30 PM								
Route 1 every half hour								
Route 1 extension to 7:30 PM								
Route 2 extension to 7:30 PM								
Route 4 extension to 7:30 PM								
Route 4 every 10 minutes								
Weekday								
Route 1 hourly service to 6:30 PM								
Route 2 hourly service to 6:30 PM								
Route 4 service every twenty minutes to 6:30 PM								
Route 1 extension to 7:30 PM								
Route 1 every half hour								
Route 2 extension to 7:30 PM								
Route 4 extension to 7:30 PM								
Route 4 every 10 minutes								

*Phase 4 should occur only if ridership has increased by the end of Phase 4 and can be implemented piecemeal.

Operating Costs

The estimated operating costs of this program are presented in Table 3. Should the program be carried out until Phase 3, it would mean an increase in the annual operating cost of the system of approximately 67 percent by the end of Phase 3 (i.e., Year 6). With Phase 4, it would mean an increase in the annual operating cost of the system of approximately 137 percent by the end of the phase (i.e., Year 8).

This assumes an annual inflation rate of approximately 2 percent, and an $80.00 per revenue hour system cost in current year dollars.

Conclusions

The ACPT Feasibility Study analyzed existing service, current demographics, and collected input from the public to determine future service improvements. The plan recommends four phases in an eight-year span, that include the creation of a new downtown shuttle, route realignments, service during the weekends and an increase in the hours of operation; it also recommends coordinating with the FBRMPO to add an express route to connect to Asheville.

Additionally, the plan assessed bus stop locations based on their characteristics and provided recommendations to improve reliability and safety across the service area. A bus stop policy was developed as part of this effort.

All these recommendations intend to improve transit service for riders and non-riders, increase ridership, and improve reliability to become a viable option for all community members.

Table 3 Estimated Costs of Recommended Service Modifications

Modification	Current	Phase 1		Phase 2		Phase 3		Phase 4*	
		Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8
Weekday									
Current service	$1,142,720.00	$1,165,574.40	$1,188,885.89	$1,212,663.61	$1,236,916.88	$1,261,655.22	$1,286,888.32	$1,312,626.09	$1,338,878.61
Modify Route 2	$ -	$24,969.60	$25,468.99	$25,978.37	$26,497.94	$27,027.90	$27,568.46	$28,119.83	$28,682.22
Implement NEW Route 4 Shuttle	$ -	$296,371.20	$302,298.62	$308,344.60	$314,511.49	$320,801.72	$327,217.75	$333,762.11	$340,437.35
Modify Route 3	$ -	$(597,475.20)	$(609,424.70)	$(621,613.20)	$(634,045.46)	$(646,726.37)	$(659,660.90)	$(672,854.12)	$(686,311.20)
Extend weekday span to 6:30PM/implement Saturday service to 6:30PM on Routes 1 & 2	$ -	$203,102.40	$207,164.45	$211,307.74	$215,533.89	$219,844.57	$224,241.46	$228,726.29	$233,300.82
Improve Route 1 weekday headway to 30 minutes	$ -	$242,596.80	$247,448.74	$252,397.71	$257,445.66	$262,594.58	$267,846.47	$273,203.40	$278,667.47
Improve Route 1 Saturday headway to 30 minutes/implement Sunday service to 6:30PM on Routes 1, 2 & 4	$ -	$ -	$ -	$228,796.44	$233,372.37	$238,039.82	$242,800.62	$247,656.63	$252,609.76
Extend weekday & weekend span on Routes 1, 2 & 4 to 7:30PM/improve Route 1 Sunday headway to 30 minutes	$ -	$ -	$ -	$ -	$ -	$182,217.50	$185,861.85	$189,579.08	$193,370.66
Improve Route 4 headway to every 10 minutes all days/improve Route 2 weekday headway to every 30 minutes	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$718,801.54	$733,177.57
TOTAL	$1,142,720.00	$1,335,139.20	$1,361,841.98	$1,617,875.27	$1,650,232.77	$1,865,454.93	$1,902,764.02	$2,659,620.85	$2,712,813.26