Hagerstown/Eastern Panhandle Metropolitan Planning Organization

EPTA 2025 Transit Development Plan

Final Report

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1. Introduction

The 2025 Eastern Panhandle Transit Authority (EPTA) Transit Development Plan (TDP) is an opportunity to evaluate the existing transit service provided by EPTA and reassess the market and environment in which it operates. Since the 2020 TDP effort, which aimed to build on a refreshed transit network and substantial growth in ridership, the COVID-19 pandemic decimated ridership and paused any plans for further service improvements. However, ridership has rebounded since then and EPTA recently began construction on a new Multimodal Transit Center in downtown Martinsburg. As the facility nears completion, EPTA is looking toward the future to identify a reimagined transit network that serves the Multimodal Transit Center, simplifies complex routes, aligns evening and Saturday service with weekday service, and expands coverage and frequency in both Berkeley and Jefferson Counties.

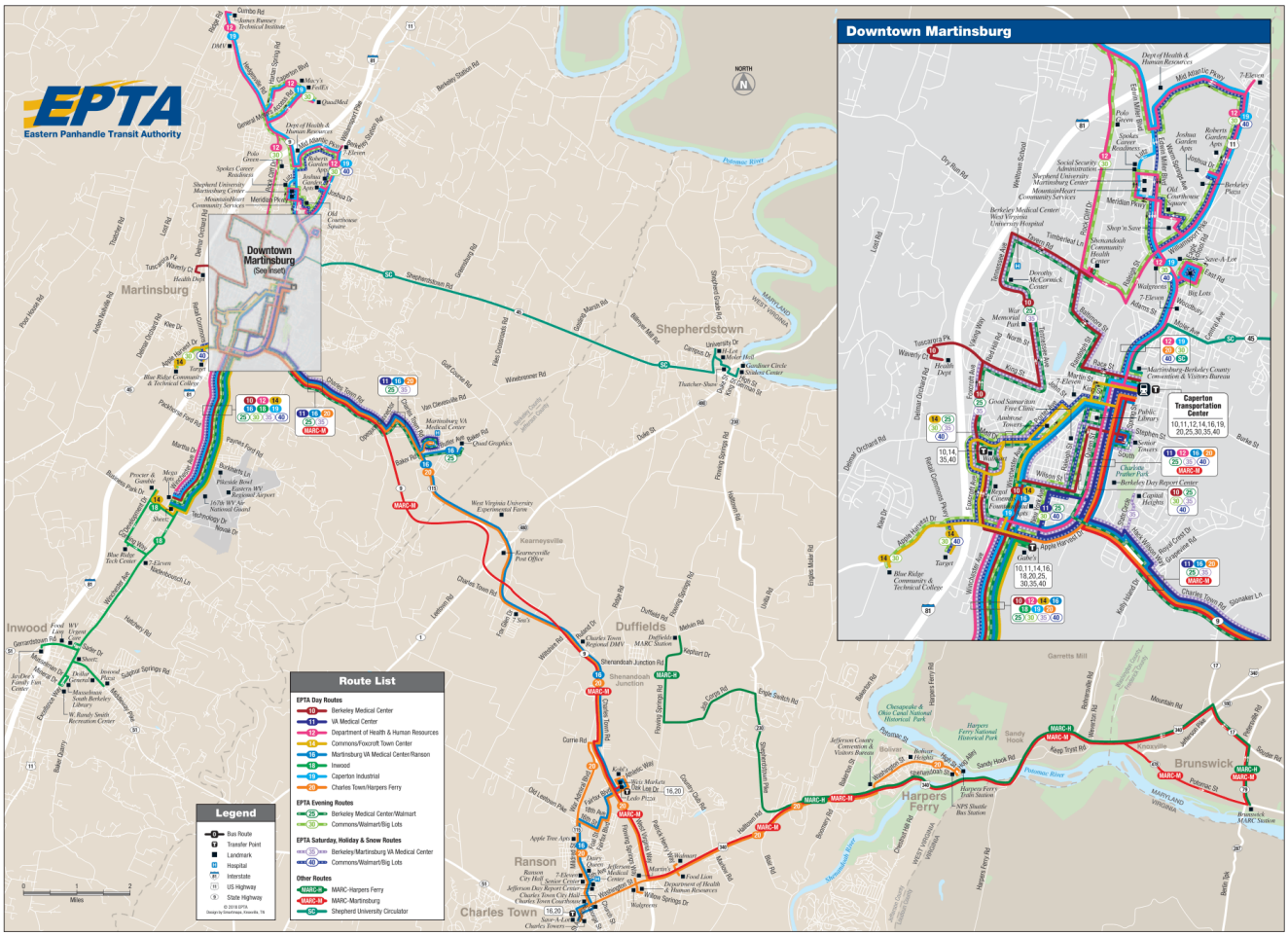
The TDP begins with service, market, and gaps analyses, which are detailed in Chapters 2 to 4. These analyses evaluate existing service, assess the regional transit market, and identify potential gaps. Chapter 5 describes the public and stakeholder engagement conducted for the TDP and summarizes the findings. Chapter 6 lists the goals and objectives of the 2025 TDP. Chapter 7 identifies service recommendations based on the findings from the service, market, and gaps analyses; public and stakeholder engagement; and goals and objectives. Included in this chapter are route profiles with the proposed alignment and operating characteristics, as well as high-level maps of the recommended weekday transit network. Chapters 8 and 9 provide further information on the capital program and implementation plan for the service recommendations.

2. Service Analysis

System Overview

The Eastern Panhandle Transit Authority (EPTA) provides fixed route and demand response transit service for residents in Berkeley and Jefferson Counties in West Virginia. Their service area includes Martinsburg, Charles Town, Ranson, Shepherdstown, Inwood, and Harpers Ferry. EPTA's mission is to enhance the quality of life for all citizens by providing safe, accessible, reliable, and affordable transit options. EPTA's vision is to implement a high-quality, sustainable, and coordinated public transportation network that promotes accessibility and economic vitality for the community. **Figure 1** illustrates the fixed route service provided by EPTA.

Figure 1 | EPTA System Map



Fixed Route Service

EPTA operates 12 fixed routes in Berkeley and Jefferson Counties, as well as two circulators for Shepherd University in Shepherdstown. There are eight routes that primarily provide daytime service on weekdays, two routes that primarily provide evening service on weekdays, and two routes that provide daytime service on weekends. Many of the fixed routes operate in and around Martinsburg. Charles Town and Ranson are served by two routes (one of which provides a connection to Harpers Ferry), and Inwood is served by one route; these routes provide limited service to Martinsburg at the beginning and end of the day. The weekday evening and weekend daytime routes only provide service to Martinsburg and its immediate surroundings. Every route allows for a limited number of off-route pickups, which must be within 0.75 miles of the published route and must be scheduled the previous day. **Table 1** provides an overview of the span, frequency, and major destinations for each route.

Table 1 | EPTA Fixed Route Services

ROUTE	SPAN	FREQUENCY	MAJOR DESTINATIONS SERVED
Weekday			
Route 10	7:00 a.m. – 5:30 p.m.	60 minutes	Caperton Transportation Station, Senior Towers, Gabe's, Foxcroft Walmart, Berkeley Medical Center
Route 11	9:20 a.m. – 4:30 p.m.	60 minutes	Caperton Transportation Station, Gabe's, VA Medical Center
Route 12	8:00 a.m. – 5:45 p.m.	60 minutes	Caperton Transportation Station, Big Lots/Save A Lot, Walgreens, Martin's
Route 14	6:00 a.m. – 7:23 p.m.	60 minutes	Caperton Transportation Station, Foxcroft Walmart, Target, Gabe's
Route 16	5:40 a.m. – 5:24 p.m.	60 minutes	VA Medical Center, Kearneysville, Downtown Ranson, Downtown Charles Town (with limited service to Caperton Transportation Station and Downtown Martinsburg)
Route 18	7:45 a.m. – 3:52 p.m.	60 minutes	Gabe's, Blue Ridge Tech Center, Inwood
Route 19	4:50 a.m. – 6:45 p.m.	Peak Only	Caperton Transportation Station, Caperton Industrial Park
Route 20	6:00 a.m. – 8:40 p.m.	60 minutes	Downtown Ranson, Downtown Charles Town, Martin's, Charles Town Walmart, Harpers Ferry (with limited service to Caperton Transportation Center and the VA Medical Center)
Weekday (Evening Only)			
Route 25	5:30 p.m. – 8:25 p.m.	N/A	Caperton Transportation Station, Senior Towers, Gabe's, Foxcroft Walmart, Berkeley Medical Center, VA Medical Center
Route 30	5:30 p.m. – 8:40 p.m.	N/A	Caperton Transportation Station, Big Lots/Save-A-Lot, Caperton Industrial Park, Gabe's, Walmart at Foxcroft Towne Center
Weekend			
Route 35	9:00 a.m. – 4:40 p.m.	90 minutes	Caperton Transportation Station, Senior Towers, VA Medical Center, Foxcroft Walmart, Berkeley Medical Center, Gabe's
Route 40	10:00 a.m. – 5:40 p.m.	90 minutes	Caperton Transportation Station, Big Lots, Martin's, Gabe's, Target, Foxcroft Walmart

ROUTE	SPAN	FREQUENCY	MAJOR DESTINATIONS SERVED
University Circulator			
Ram Force One	7:00 a.m. – 9:30 p.m.	30 minutes	Shepherd University (with limited service to Caperton Transportation Station)
Ram Express	8:00 a.m. – 3:50 p.m.	60 minutes	Shepherd University

TRANSFER CENTERS

The Caperton Transportation Station, which is owned and operated by the City of Martinsburg, is the primary transfer point for most routes, while Gabe's and the VA Medical Center act as secondary transfer points for some routes. EPTA recently broke ground on a new passenger transfer center that will be co-located with EPTA's garage, maintenance, and administrative facilities (see **Capital Inventory** for more information).

FARES AND PROGRAMS

EPTA's fixed route service follows a zone-based fare system, which means that fares are based on how far one travels. There is a base fare of $2.00 to board the bus and a $0.50 charge for each zone crossed; an off-route pickup incurs an additional $2.00 charge. Zone 1 includes Martinsburg, Zone 2 includes the VA Medical Center, Zone 3 includes Inwood, Zone 4 includes Jefferson County, and Zone 5 includes Boliver and Harpers Ferry. The maximum fare for any regular one-way trip is $3.50.

EPTA also offers a $60 monthly pass and a $5 daily pass, both of which include unlimited trips during their respective durations. Neither pass is eligible for demand response service or off-route pickups. Additionally, EPTA offers a $10 fare card as an alternative to individual ticket purchases. Riders can purchase fares and passes on the bus, through the Token Transit mobile app, or by calling the EPTA office.

EPTA offers several reduced-fare programs for different populations. EPTA offers a half-fare program for persons who are 60 years of age or older, have a Medicare card, or have a disability. The half-fare card includes a 50 percent discount on cash fares for fixed route service, as well as the monthly pass. It does not include demand response service, off-route pickups, or the daily pass.

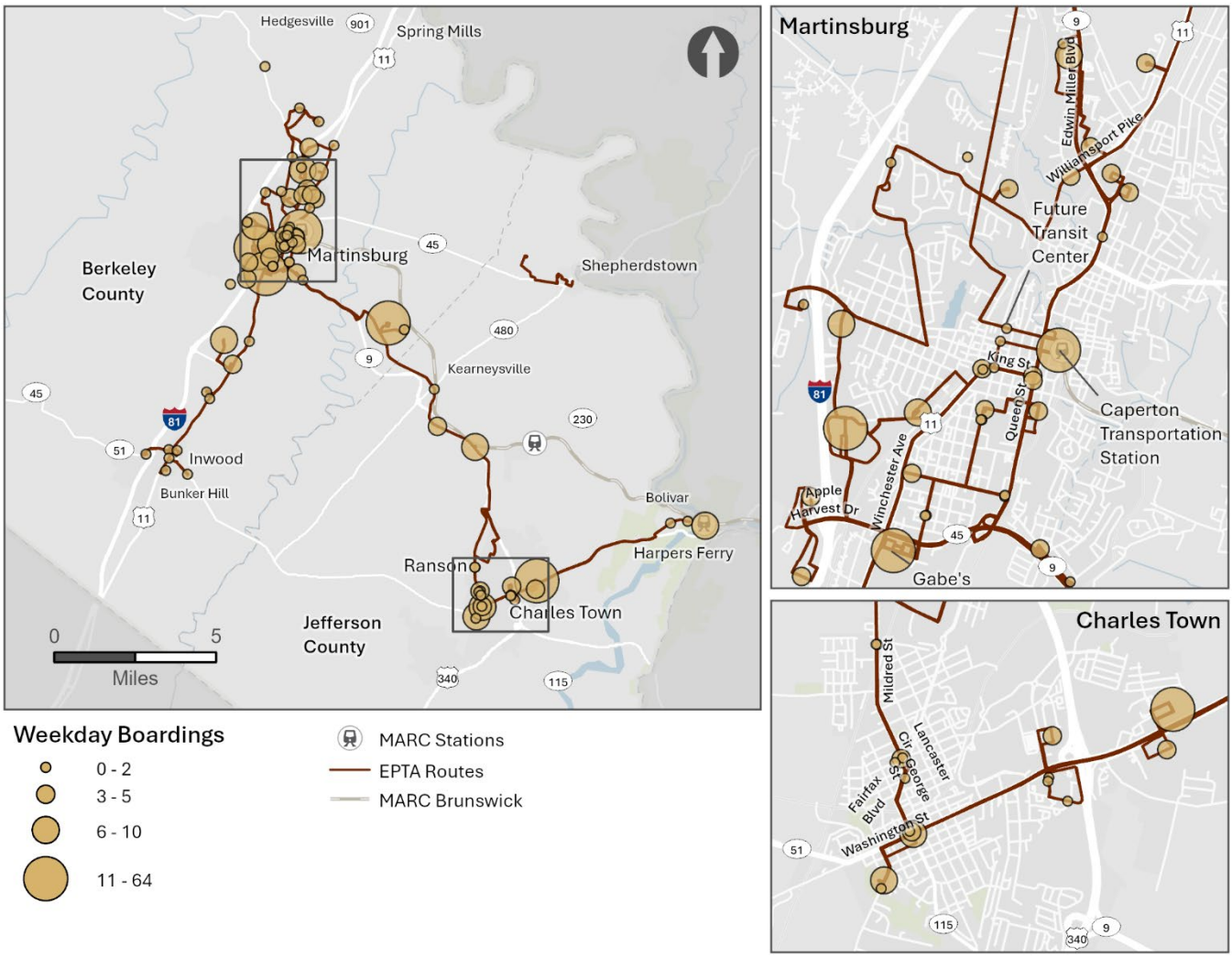
Another program EPTA offers is the "Get a Job, Get a Ride!" program, which allows new employees of EPTA corporate partners to receive 20 complimentary roundtrip rides to commute during their first month. To participate, a new employee must be a resident of West Virginia, at least 18 years old, and work at least 20 hours per week. The program is only available once per person and does not include demand response service or off-route pickups.

Lastly, students who are enrolled at a high school, college, or technical school can purchase a monthly pass at a 25 percent discount. Shepherd University students receive complementary rides on Ram Force One and Ram Express with their student identification card.

RIDERSHIP

Ridership data was obtained for May, June, and July 2024. **Figure 2** shows the average number of boardings at fixed route stops on weekdays.[1] Caperton Transportation Station sees the highest weekday ridership, with 64 boardings per day. The Walmart at Foxcroft Towne Center has the next highest ridership (27 boardings per day), followed by the VA Medical Center (20), Gabe's (13), and the Walmart in Charles Town (11). Outside of Martinsburg and Charles Town, pockets of relatively higher ridership include Berkeley Business Park, Fox Glen, and Harpers Ferry. Almost 85 percent of stops have less than five boardings on a typical weekday, with over half of those stops having less than one daily boarding on average.

Figure 2 | Fixed Route Average Weekday Ridership by Stop



[1] The average was calculated using boardings during May, June, and July 2024. Boarding data was not available for Ram Force One and Ram Express.

Figure 3 shows the average number of boardings at fixed route stops on Saturdays.[2] Sheetz/Mega Apartments sees the highest weekend ridership, with 47 boardings per day. Caperton Transportation Station has the next highest ridership (7 boardings per day), followed by the Walmart at Foxcroft Towne Center (6). The remaining stops with weekend service only average two boardings per day or fewer.

Figure 3 | Fixed Route Average Weekend Ridership by Stop

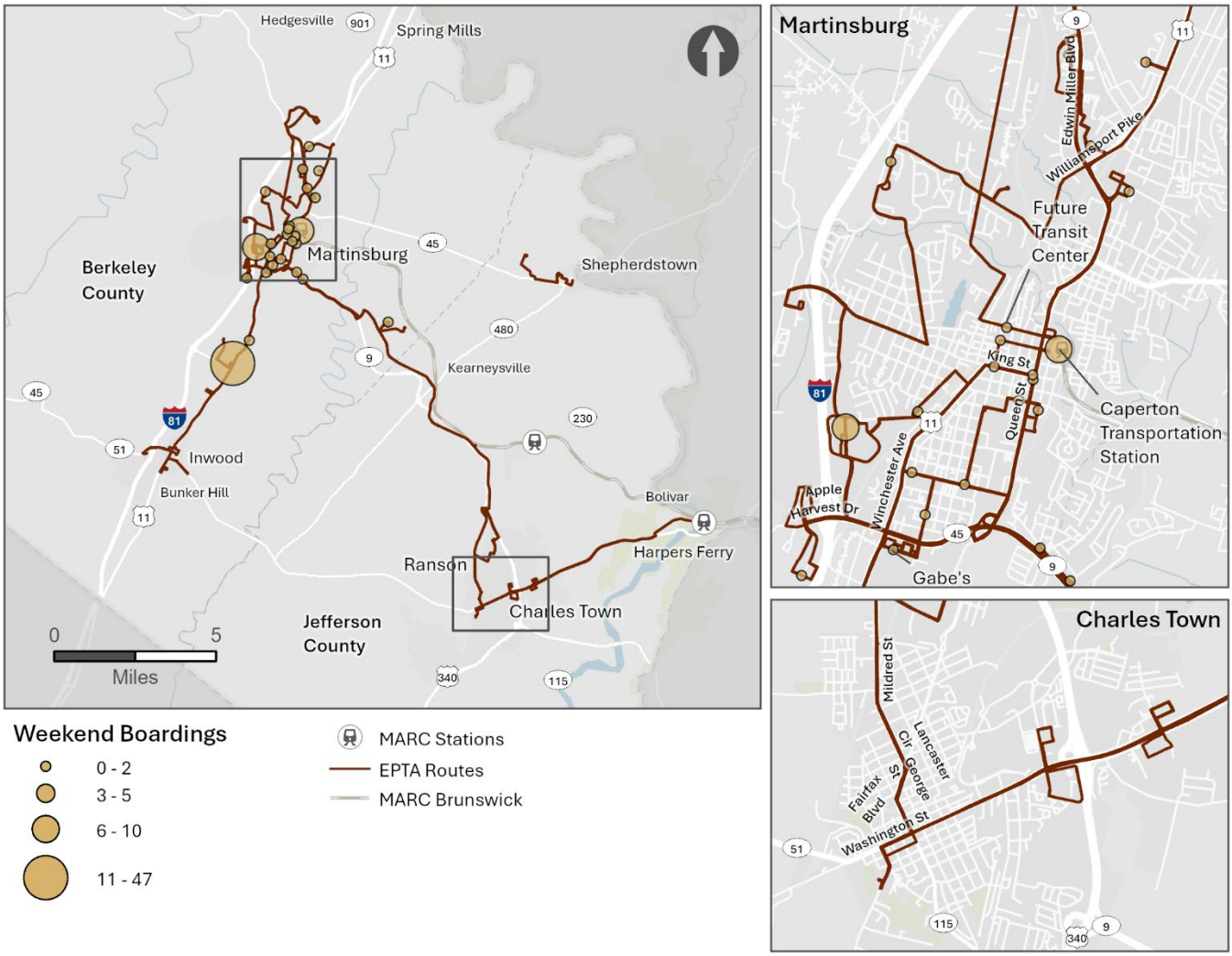


Figure 4 shows the average number of daily boardings by route during the same period. Route 20, which primarily serves Charles Town and Ranson, and Route 14, which primarily serves Foxcroft Towne Center and The Commons, have the highest ridership. Routes 25 and 30, which provide weekday evening service, have the lowest ridership, followed by Route 19, which serves Caperton Industrial Park. Routes 35 and 40, which provide weekend service, have similarly low ridership as well.

[2] The average was calculated using boardings during May, June, and July 2024. EPTA does not provide service on Sundays.

Figure 4 | Fixed Route Average Daily Ridership by Route

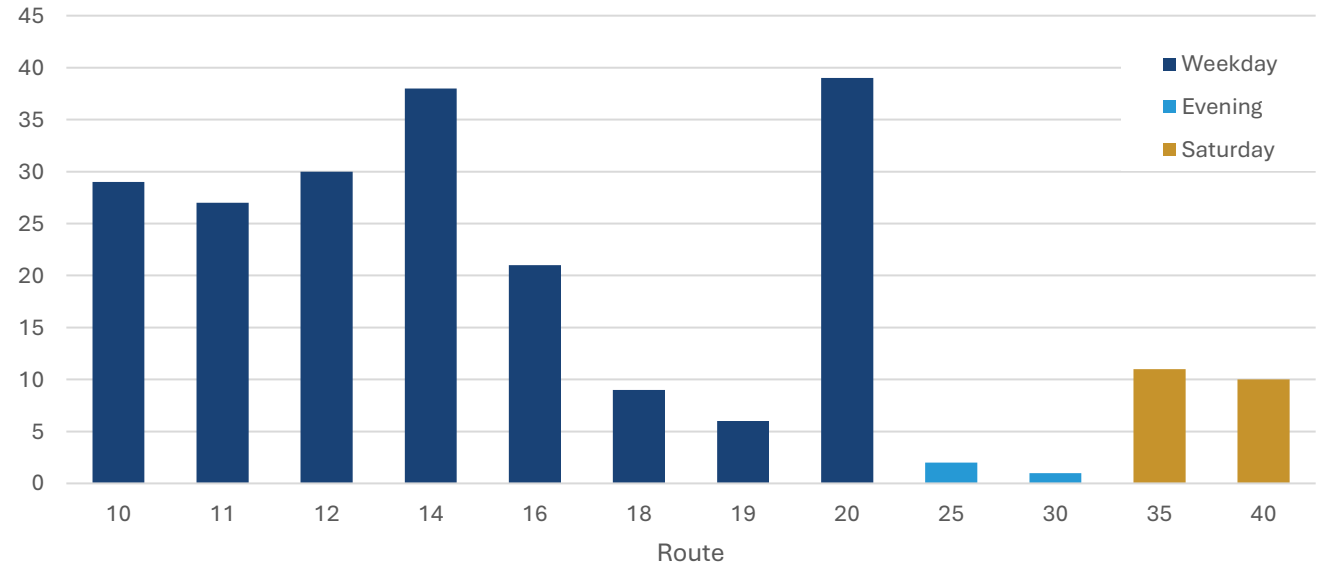
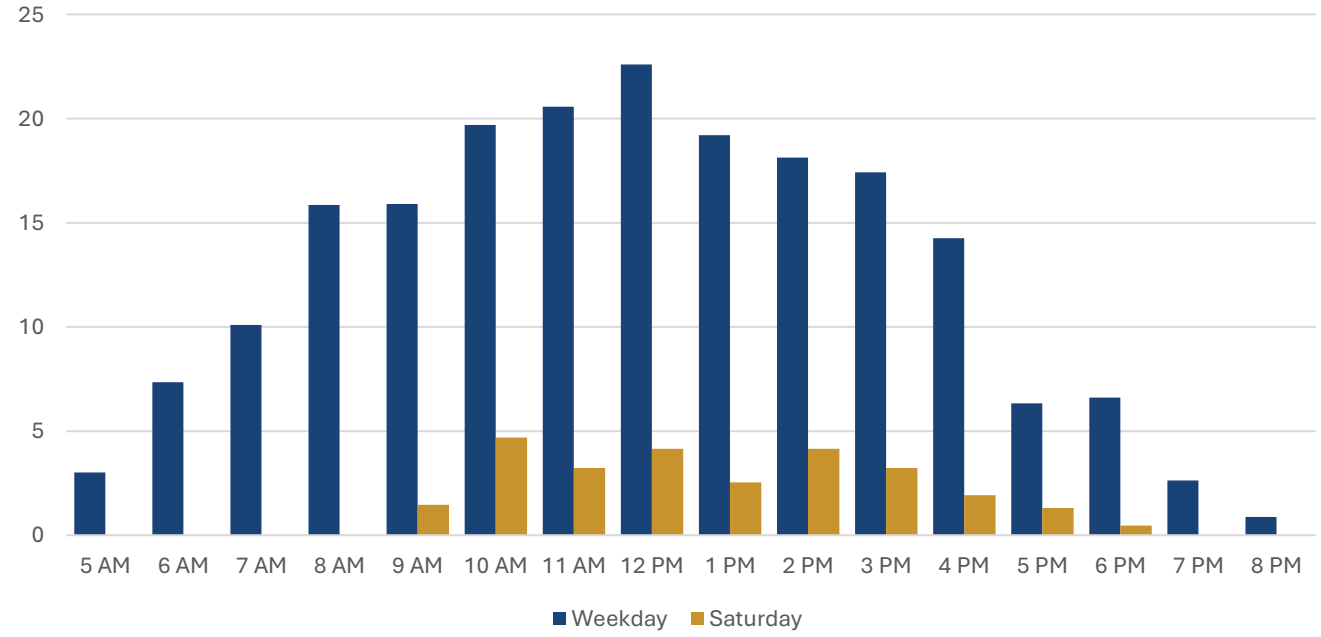


Figure 5 shows the average number of boardings by hour on weekdays and Saturday. Boardings are generally higher in the morning on weekdays, with a peak at noon. There is a noticeable drop-off after 5:00 p.m., which coincides with the transition to the evening routes. Boardings are more constant on Saturdays from 10:00 a.m. to 3:00 p.m.

Figure 5 | Fixed Route Average Boardings by Hour



Demand Response Service

EPTA offers demand response service on weekdays between 8:00 a.m. and 5:00 p.m. in select areas of Berkeley and Jefferson Counties. Trips must be scheduled on the previous day and they are limited to those who are unable to access fixed route bus stops. Demand response fares depend on the origin and destination zone, and range between four and six dollars. Half-Fare cards and other discount programs cannot be utilized for demand response trips, but an aide or caregiver can receive a complementary ride if they are assisting a passenger.

EPTA also provides non-emergency medical transportation, which is funded by Medicaid and Medicare. Additionally, individuals with a substance use disorder can receive transportation to treatment or recovery services through the State Opioid Response (SOR) program, which is funded through the West Virginia Department of Human Services.

Capital Inventory

EPTA currently has a single facility for their operational and administrative needs. The Novak Drive facility, which is located immediately south of Martinsburg, contains a garage and maintenance facility, administrative office space, and a meeting space. The garage can store 12 transit vehicles and has a supply lift, a transit lift, and a wash bay. The facility has a fueling station and secure outdoor parking for 23 additional vehicles. With the exception of transfers, all operational and administrative functions happen at the Novak Drive facility.

EPTA has an operational fleet of 26 revenue vehicles, which includes 19 cutaway buses, two transit vans, and seven minivans. The passenger capacity for the cutaway buses ranges from eight to 30, while the vans can transport five passengers. At present, eight cutaway buses are operating past their planned replacement year. EPTA has three Ford F550 Champion cutaway buses on order. **Table 2** provides an overview of EPTA's current fleet.

Table 2 | EPTA Fleet Characteristics

NUMBER	MODEL	SEATS	YEAR IN SERVICE	MILEAGE[3]	PLANNED REPLACEMENT YEAR
117	Ford E450 Cutaway	18	2017	262,770	2022
119	Ford Transit Cutaway	8	2019	187,049	2022
120	Ford F450 Challenger Cutaway	18	2020	89,722	2025
123	Ford E450 Terra Transit Cutaway	12	2023	24,010	2028
125	F550 Champion Defender Cutaway	28	2025	2,904	2031
217	Ford E450 Cutaway	18	2017	225,264	2022
220	Ford F450 Challenger Cutaway	18	2016	122,976	2025
223	Ford E450 Terra Transit Cutaway	12	2023	15,678	2028
225	F550 Champion Defender Cutaway	28	2025	4,461	2031
316	Ford E450 Cutaway	15	2016	257,536	---[4]

[3] The vehicle mileage on April 30, 2024 is reported.
[4] Vehicle 316 was transferred from the Tri-State Transit Authority and will not be replaced.

NUMBER	MODEL	SEATS	YEAR IN SERVICE	MILEAGE[3]	PLANNED REPLACEMENT YEAR
317	Ford E450 ECII Cutaway	18	2017	178,996	2022
319	Ford E450 Cutaway	12	2019	134,128	2024
325	F550 Champion Defender Cutaway	28	2025	4,123	2031
419	Ford F550 Champion Cutaway	26	2019	399,782	2026
519	Ford F550 Champion Cutaway	26	2019	82,784	2026
617	Ford Transit Cutaway	8	2017	207,324	2022
619	Ford F550 Champion Cutaway	26	2019	101,870	2026
719	Ford F550 Champion Cutaway	26	2019	100,826	2026
819	Ford F550 Champion Cutaway	26	2019	96,204	2026
DR5	Dodge Grand Caravan Van	5	2019	150,991	2024
DR6	Dodge Grand Caravan Van	5	2019	154,044	2024
DR7	Dodge Grand Caravan Van	5	2020	123,569	2025
DR8	Dodge Grand Caravan Van	5	2020	115,990	2025
DR9	Chrysler Voyager LX Van	5	2022	64,785	2027
DR10	Chrysler Voyager LX Van	5	2023	53,759	2027
DR11	Chrysler Voyager LX Van	5	2023	52,870	2027

NEW TRANSIT CENTER

In June 2024, EPTA broke ground on the Eastern Panhandle Transit Authority Multimodal Transit Center, which will include a transfer center, a maintenance and storage facility, and administrative office space. The new facility will be located at the intersection of Race Street and Raleigh Street in downtown Martinsburg, and it will replace EPTA's existing facility once complete. **Figure 6** is a rendering of the site's final design.

Figure 6 | Rendering of the EPTA Multimodal Transit Center

The new transit center will be more centrally located than Caperton Transportation Center and it will include benches, real-time information displays, bicycle parking, and platforms to enable level boarding. The maintenance facility will include a bus wash bay and wastewater reclamation station, eight electric bus chargers, and a two-pump fueling station. Additionally, there will be four electric vehicle charging stations available to the public.

The transit center played an important role in the development of the FY25 TDP since it will serve as the primary transfer point for EPTA's fixed route network in the future. As a result, the recommendations identified in the TDP include new route alignments that serve the transit center.

Service Trends

Like transit providers across the country, EPTA was heavily impacted by the COVID-19 pandemic in early 2020 and ridership has yet to fully recover. However, there have been improvements in recent years, especially in demand response service. The following section describes trends in ridership, efficiency, on-time performance, and other metrics over the past five years.

FIXED ROUTE SERVICE

While fixed route service has been slow to recover from pandemic losses, there have been signs of improvement in recent years. **Figure 7** shows the annual ridership for EPTA's fixed route service, which includes the Shepherd University circulators. Ridership decreased by over 60 percent from 2019 to 2021 before leveling off in 2022. Since then, however, ridership has steadily increased.[5]

Figure 7 | Fixed Route Annual Ridership (Fiscal Year)

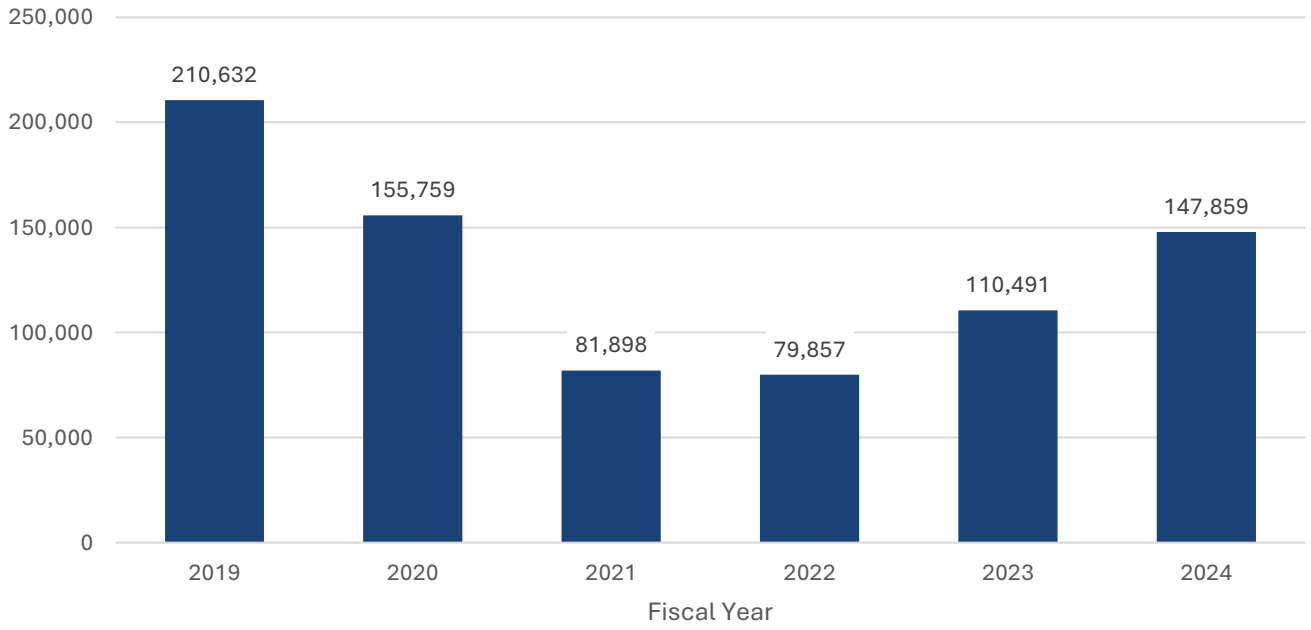


Figure 8 shows the change in annual ridership per revenue hour and mile for fixed route service. Both productivity metrics dropped substantially to less than half of pre-pandemic levels as service remained relatively constant amid ridership losses. However, recent growth in ridership has helped both metrics rebound.

[5] EPTA has submitted FY2024 data to NTD for approval.

Figure 8 | Fixed Route Annual Ridership Per Revenue Hour and Mile

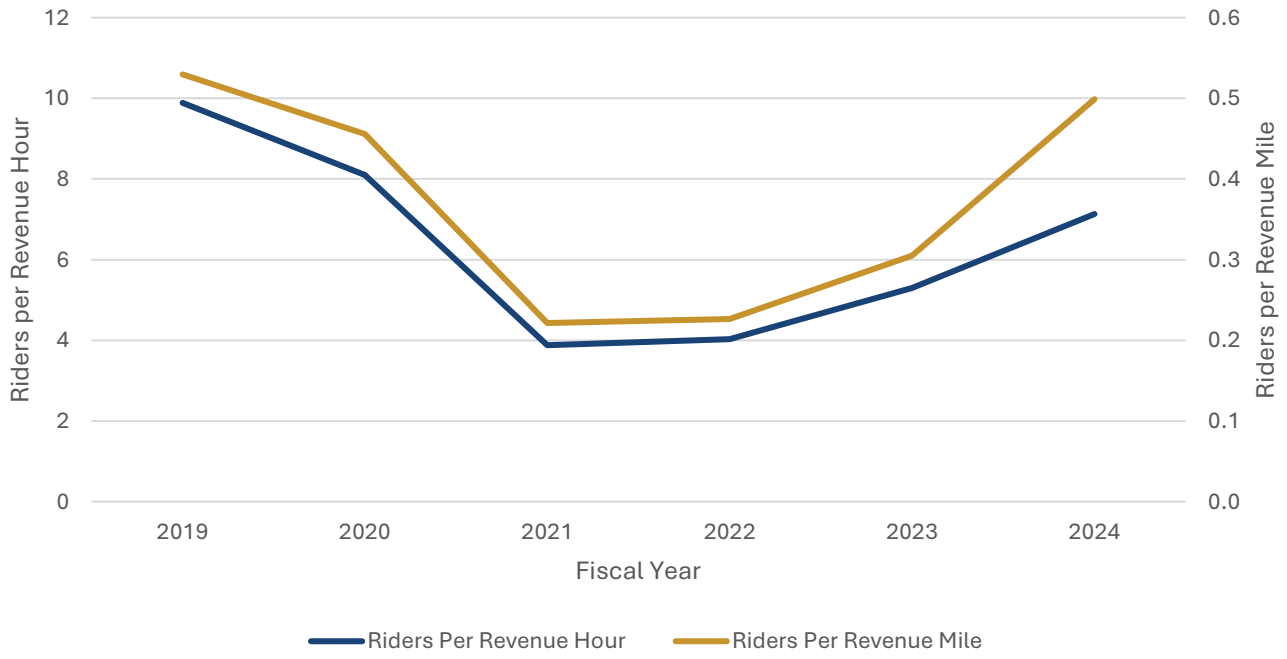


Figure 9 shows ridership per revenue hour and mile broken out by route. With the exception of Route 19, which serves Caperton Industrial Park, the weekday daytime routes outperform the weekday evening and weekend routes. The Shepherd University circulators, Ram Express (RE) and Ram Force One (RFO), have the highest productivity among all routes due to the large student base of their ridership and the more localized nature of their service.

Figure 9 | Fixed Route Ridership Per Revenue Hour and Mile by Route (2023)

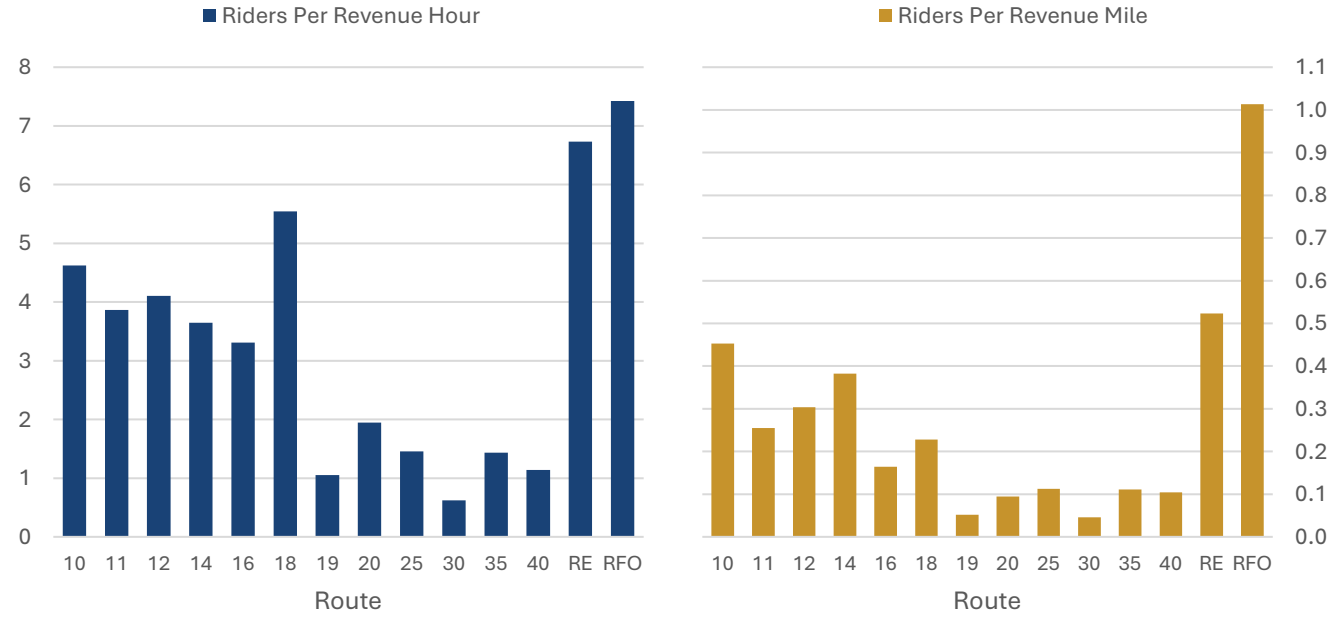
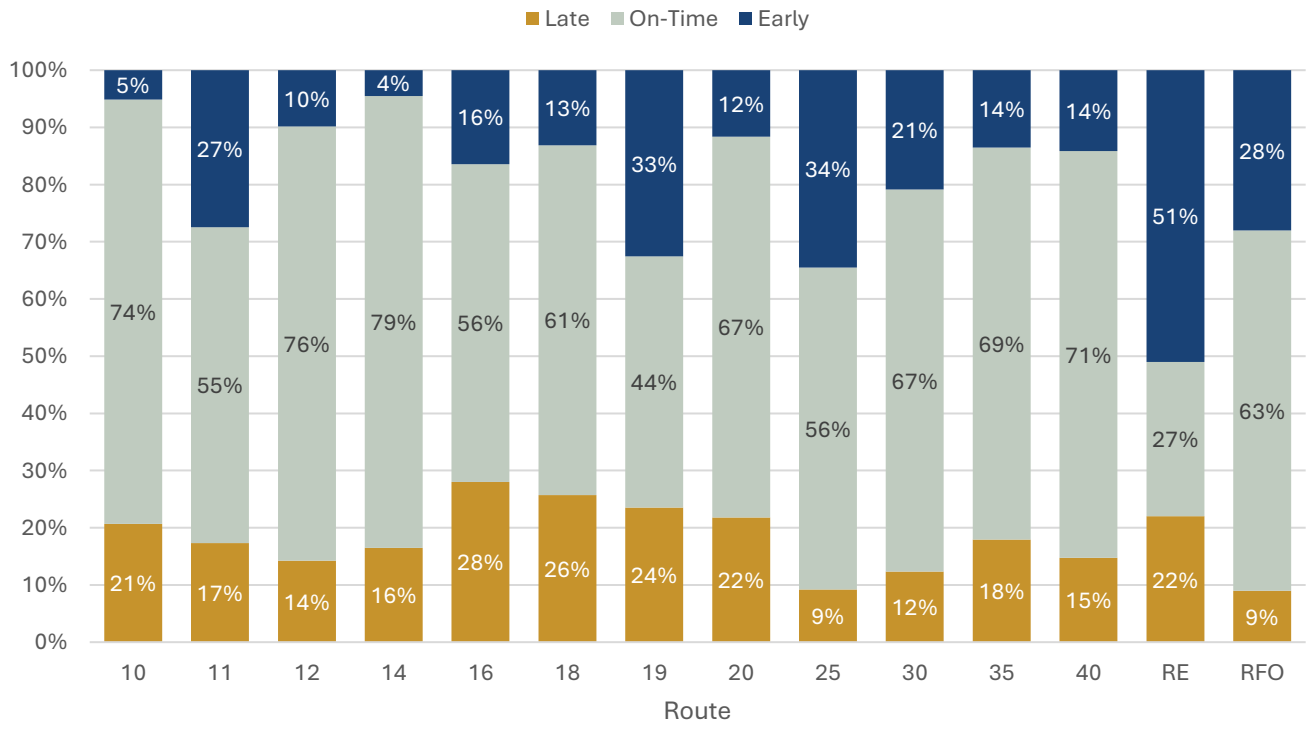


Figure 10 shows the on-time performance for each route, or how frequently the bus is early, on-time, or late.[6] A bus is considered on-time if it arrives less than two minutes after its scheduled arrival. Route 14, which provides service to southern Martinsburg, has the best on-time performance, followed by Routes 12 and 10. Route 19, which serves Caperton Industrial Park, has the worst on-time performance, with fewer than half of trips arriving on-time.

Both weekend routes tend to arrive more consistently than the weekday routes. Interestingly, there is a noticeable difference in on-time performance between the two routes that provide weekday evening service (Routes 25 and 30). Looking system-wide, 63 percent of weekday daytime trips are on-time, compared to 58 percent of weekday evening trips and 70 percent of weekend trips. If a trip is not on-time, weekday daytime trips are more likely to be late while weekday evening trips are more likely to be early.

Figure 10 | On-Time Performance by Route



DEMAND RESPONSE SERVICE

While demand response ridership decreased slightly during the pandemic, it has seen substantial growth since then. **Figure 11** shows the annual ridership for EPTA's demand response service. Ridership dipped in 2021 but grew by almost a third the following year.[7] These figures include both traditional demand response service, non-emergency medical transportation, and the State Opioid Response program. In August 2024, demand response service accounted for 38 percent of demand response trips, non-emergency medical transportation accounted for 59 percent of trips, and SOR accounted for three percent of trips.

[6] RE refers to Ram Express and RFO refers to Ram Force One.
[7] EPTA has submitted FY2024 data to NTD for approval.

Figure 11 | Demand Response Annual Ridership (Fiscal Year)

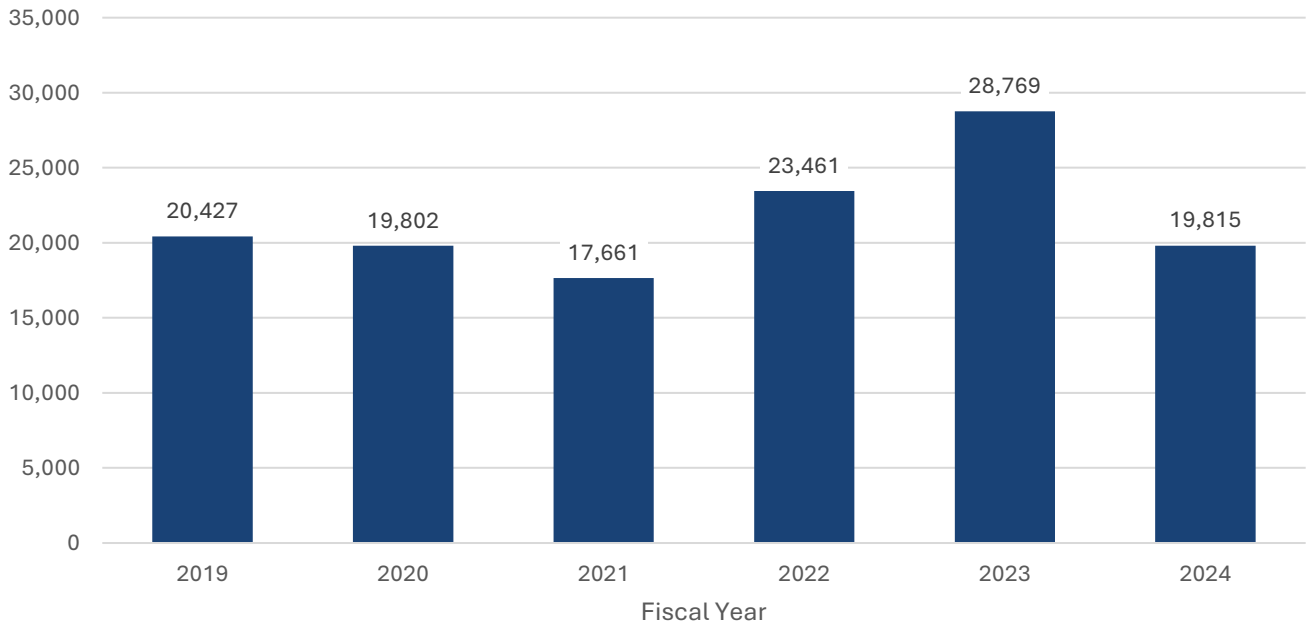
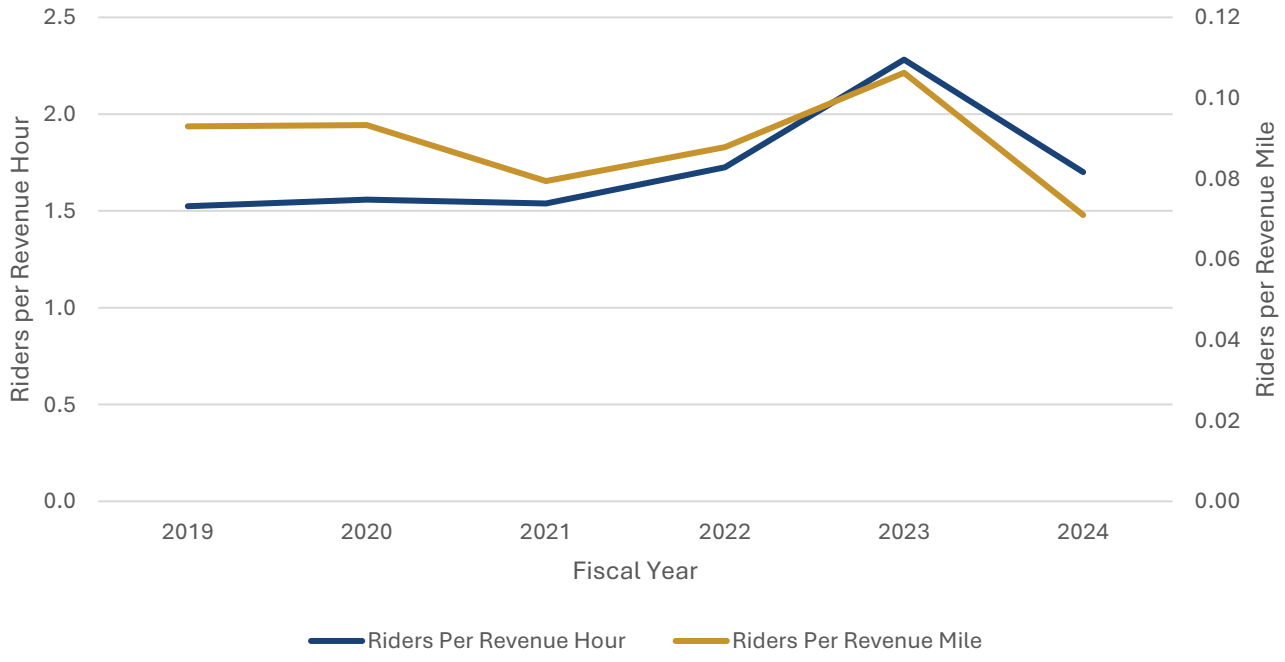


Figure 12 shows the change in annual ridership per revenue hour and mile for demand response service. Both values decreased slightly in 2021 before returning to near pre-pandemic levels in 2022. Since demand response revenue hours and miles are directly related to ridership, both rates remain relatively constant compared to fixed route service.

Figure 12 | Demand Response Annual Ridership Per Revenue Hour and Mile



3. Market Analysis

Density and Transit Potential

More than any other factor, density determines the effectiveness and efficiency of public transportation. Places with higher concentrations of people and/or jobs tend to have higher transit ridership. The demand for transit in an area can be assessed by examining both the population and employment densities of an area individually and as a combined measure. The transit potential analysis combines population and employment density and it is assumed that a minimum of three households (or approximately six people) per acre or four jobs per acre are necessary to support a minimum of hourly fixed route transit service.[8] The following maps show population density, employment density, and combined population and employment density (transit potential) for Berkeley and Jefferson Counties. Higher densities indicate potential demand for higher levels of transit service.

[8] Transit Capacity and Quality of Service Manual—2nd Edition. https://onlinepubs.trb.org/onlinepubs/tcrp/docs/tcrp100/Part3.pdf

Figure 13 shows the 2022 population density across Berkeley and Jefferson Counties. Pockets of higher population density (10 or more people per acre) are primarily seen in Martinsburg. The highest population density is approximately 30 people per acre along King Street in Martinsburg, followed by 20 people per acre along Faulkner Avenue. Moderately dense areas (five or more people per acre) in Martinsburg are primarily along Queen Street. In Jefferson County, moderately dense areas are found along Mildred Street in Ranson.

Figure 13 | 2022 Population Density

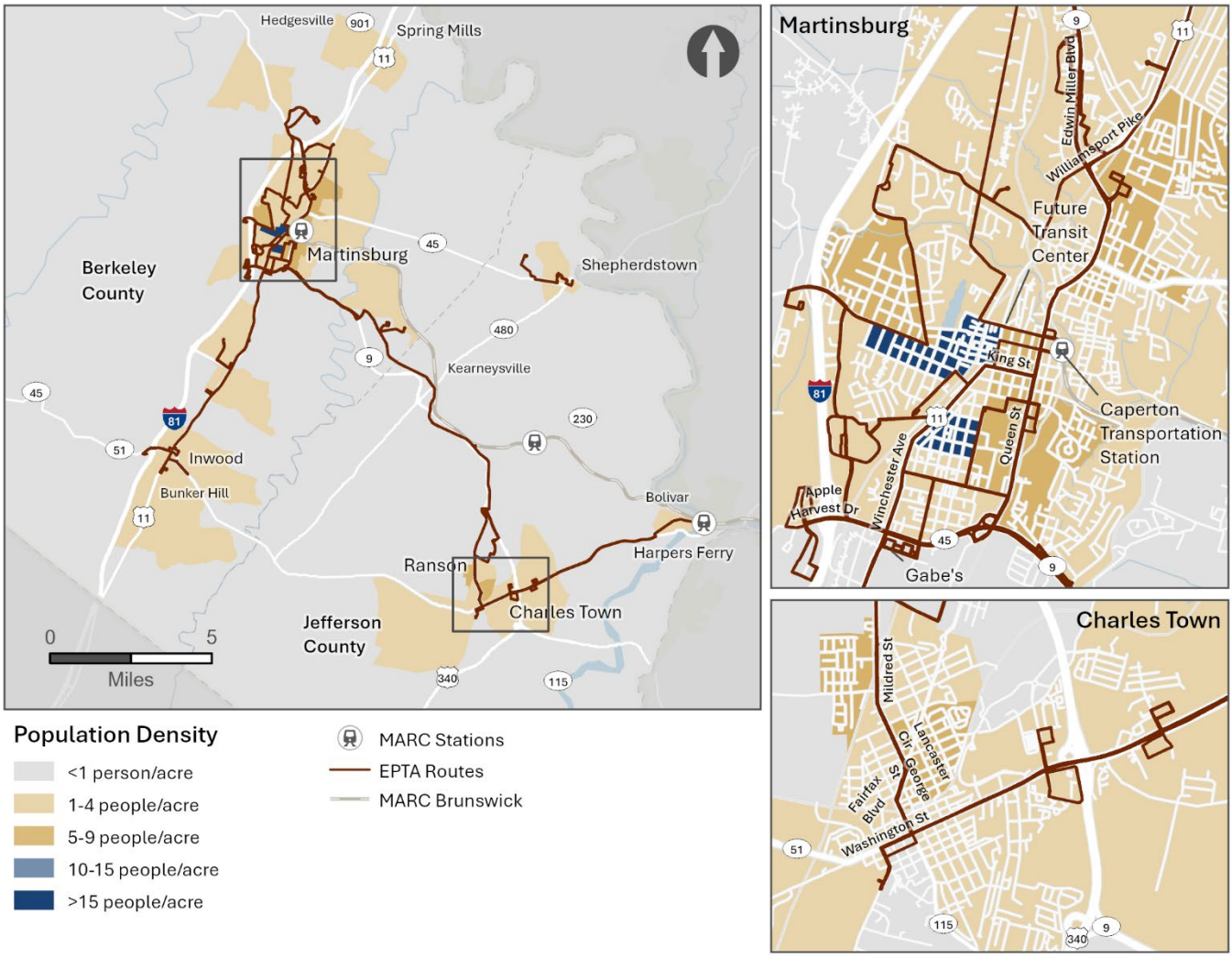


Figure 14 shows the 2022 employment density across Berkeley and Jefferson Counties. Pockets of moderate-to-high employment density (five or more jobs per acre) are found in Martinsburg and Charles Town. The highest employment density is approximately 26 jobs per acre in downtown Martinsburg. Employment is primarily concentrated along Queen Street, with moderate densities in Foxcroft Towne Center. In Jefferson County, the employment density is highest along Washington Street in Charles Town, which includes Charles Town Races.

Figure 14 | 2022 Job Density

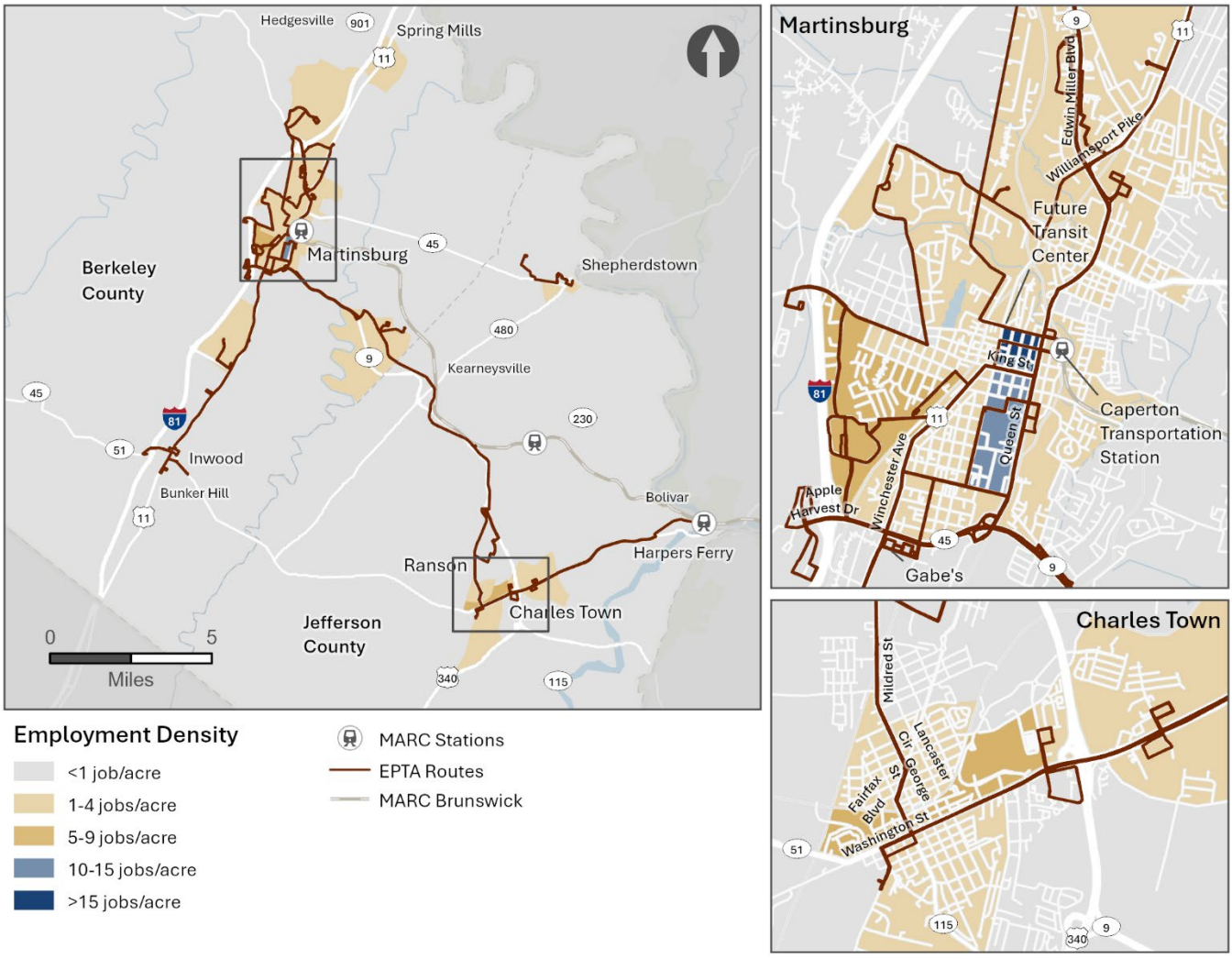
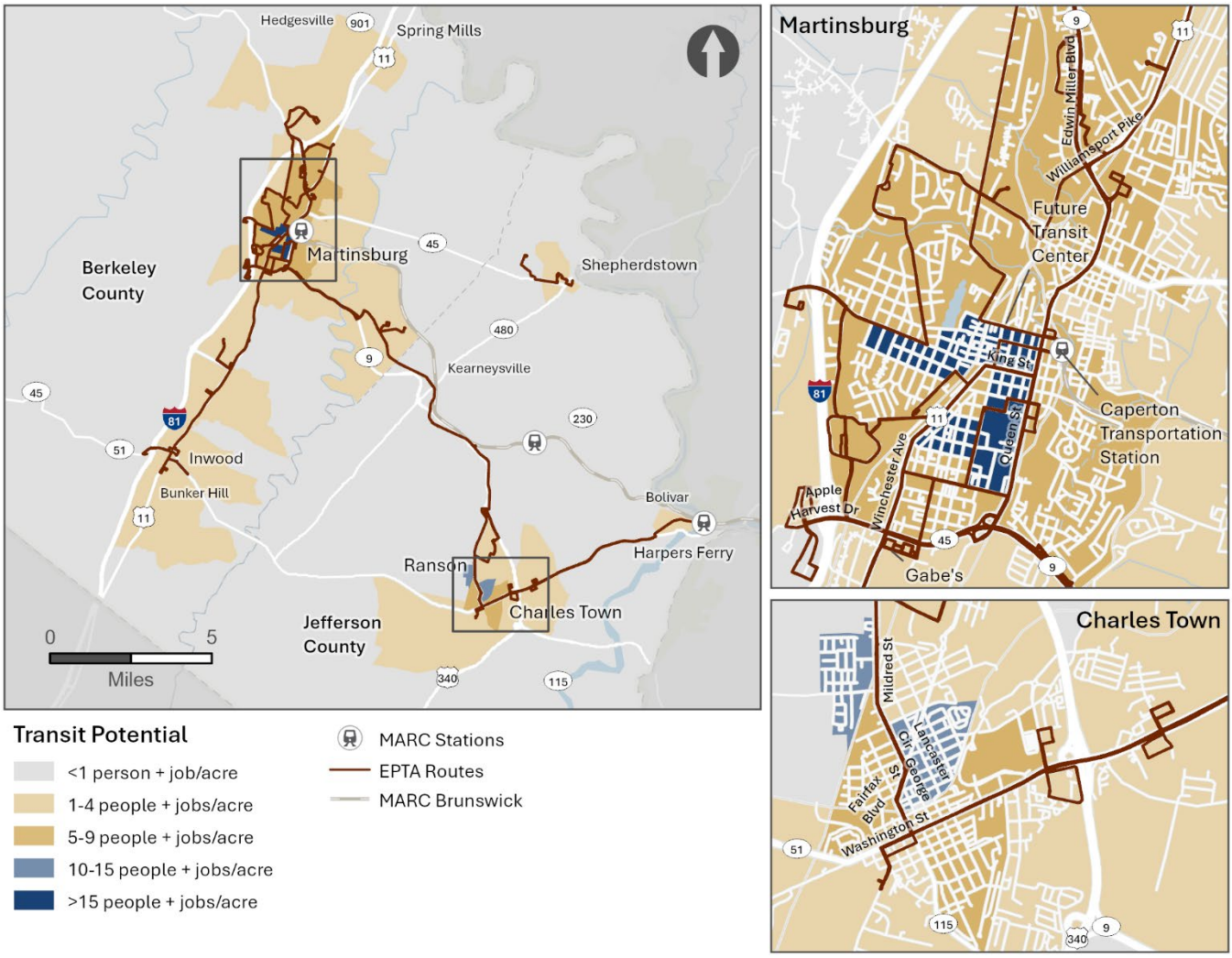


Figure 15 shows the 2022 transit potential (a combined measure of population and jobs per acre) across Berkeley and Jefferson Counties. Pockets of higher transit potential (10 or more people or jobs per acre) are found in Martinsburg, Ranson, and Charles Town. In Martinsburg, the areas with the highest transit potential are located downtown along Queen Street and King Street. Most of Martinsburg and its immediate surroundings have moderate transit potential (five or more people or jobs per acre). In Jefferson County, areas with higher transit potential are along Mildred Street in Ranson.

Figure 15 | 2022 Transit Potential



Growth Projections

The Eastern Panhandle is growing rapidly as families seek more affordable options to the Baltimore and Washington metropolitan areas and employees adopt hybrid or remote work schedules. While the Transit Development Plan focuses on near-term service changes, growth projections can help to identify broader trends that may impact service in the future. The Hagerstown/Eastern Panhandle Metropolitan Planning Organization (HEPMPO) forecasts household and employment growth to support its long-range planning efforts. Their most recent projections estimated the number of households and jobs by traffic analysis zone (TAZ) for 2020 and 2050.

Figure 16 shows the projected growth in households by TAZ from 2020 to 2050. While the largest increases are expected north of Martinsburg, modest to significant growth will occur across the region. The number of households is projected to increase from 71,800 to 105,900 by 2050, with growth rates of 54 percent and 35 percent in Berkeley and Jefferson Counties, respectively.

Figure 16 | Projected Household Growth from 2020 to 2050

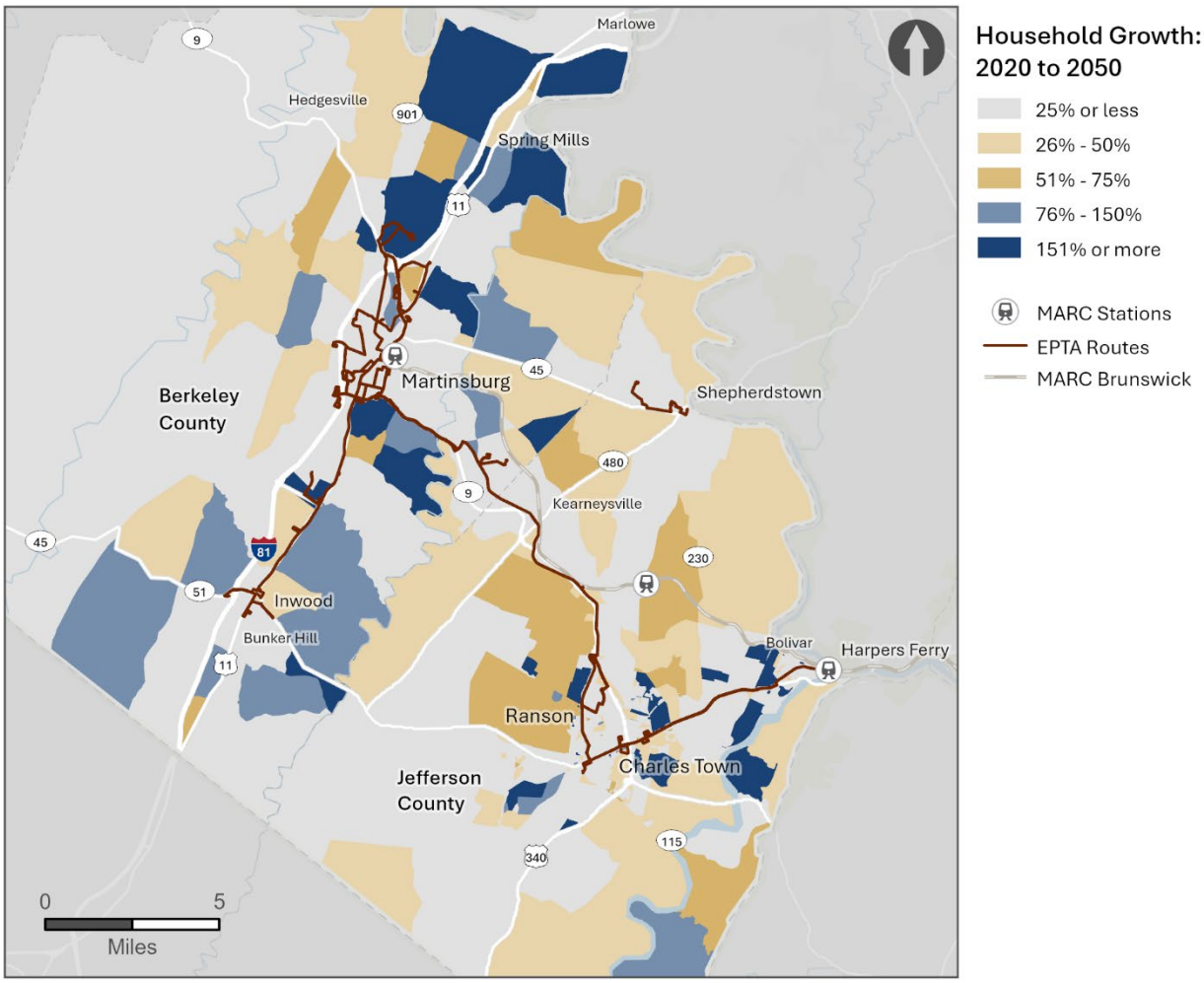
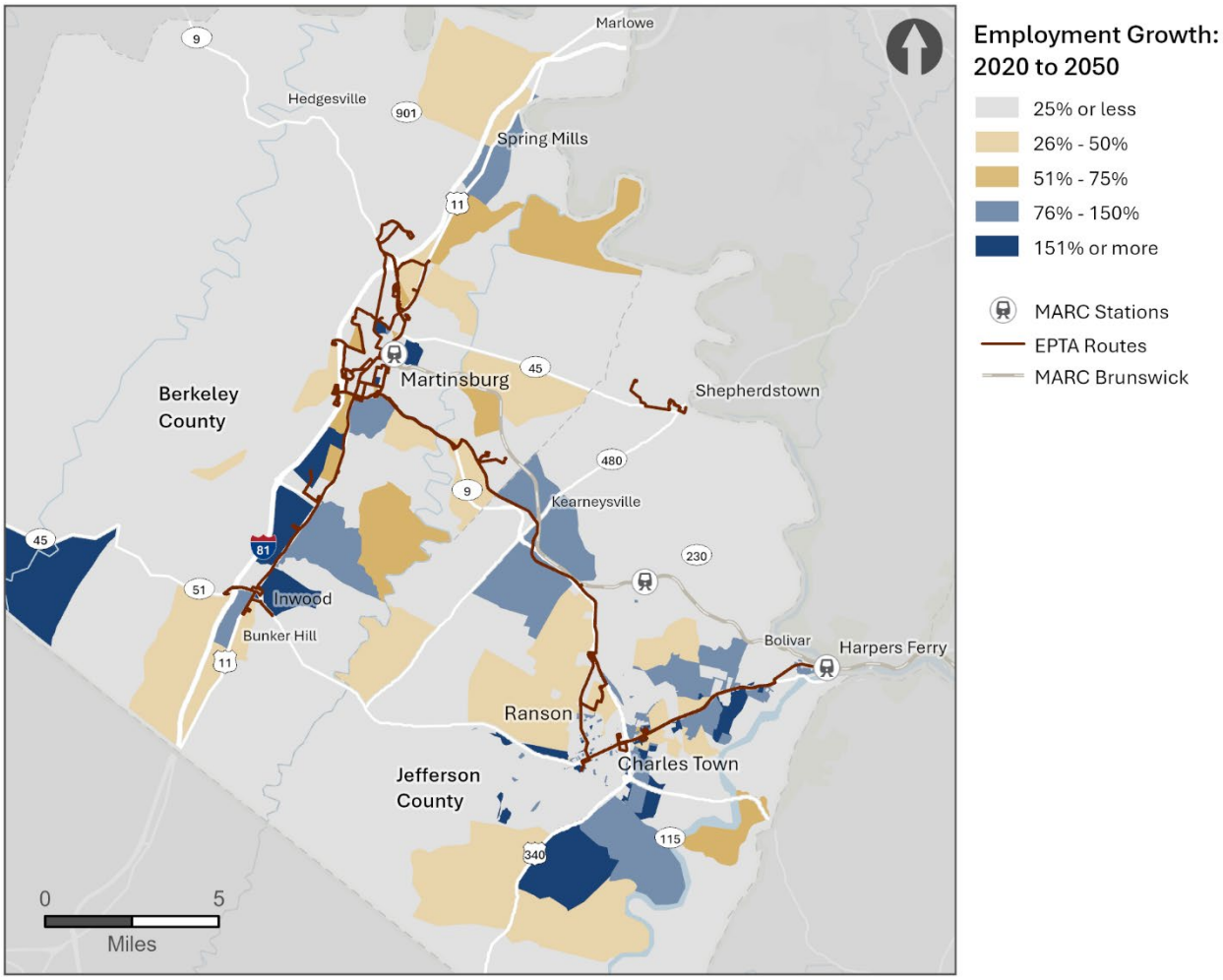


Figure 17 shows the projected growth in jobs per TAZ from 2020 to 2050. While the largest increases are expected south of Martinsburg and south and northeast of Charles Town, modest growth will occur across the region. The number of jobs is projected to increase from 94,000 to 121,700 by 2050, with growth rates of 32 percent and 24 percent in Berkeley and Jefferson Counties, respectively.

Figure 17 | Projected Employment Growth from 2020 to 2050



Transit Propensity

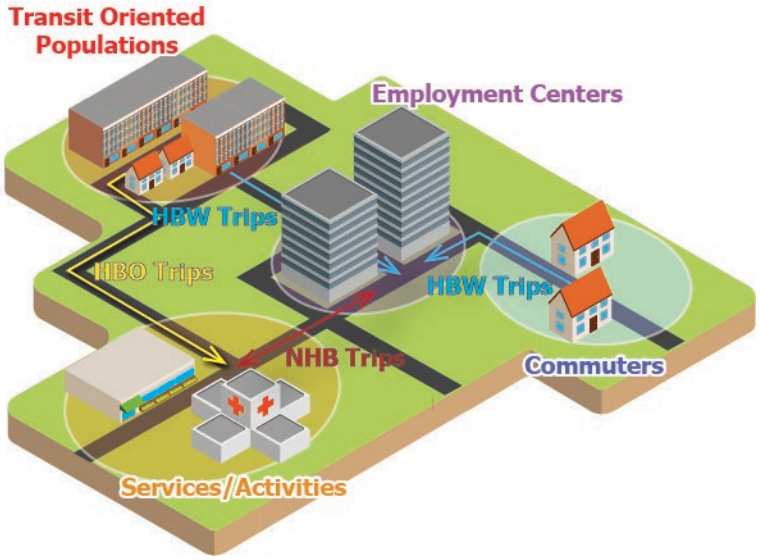
OVERVIEW

A key component in understanding EPTA's service area is knowing where potential transit users are and where they want to go. The transit propensity analysis uses a variety of demographic factors to identify areas with high propensity for transit use. The analysis consists of four indices:

- Transit-Oriented Populations (TOP) Index
- Commuter Origins Index
- Employment Destinations Index
- Activity Destinations Index

These indices can be used to identify potential origins and destinations that should be connected via transit. The Transit-Oriented Populations index can be indicative of the origins of trips to areas highlighted in the Employment Destinations index (home-based work trips) and the Activity Destinations Index (home-based other trips). The Commuter Origins index can be indicative of the origins of trips to areas highlighted in the Employment Destinations index (home-based work trips). **Figure 18** illustrates this relationship.

Figure 18 | Illustrative Diagram of Transit Propensity



Each index is comprised of one or more analysis factors that are weighted and combined to produce a score by which every block group in Berkeley and Jefferson Counties is ranked. These factors are shown in **Table 3**. Since the analysis is limited to EPTA's service area, the scores represent relative propensity for transit use in the two-county region. The indexes use 2018-2022 American Community Survey (ACS) 5-year estimates for the demographic factors and 2021 Longitudinal Employer-Household Dynamics (LEHD) data for the employment factors.

Table 3 | Analysis Factors and Datasets in Transit Propensity Indices

INDEX	ANALYSIS FACTOR	DATASET
Transit-Oriented Populations	Population	Total Population
		Non-White or Hispanic Population
	Age	Senior
		Youth
	Income	Households at or below 150 Percent of the Poverty Line per Acre
	Vehicle Ownership	Zero-Car Households
		One-Car Households
	Disability Status	Population with a Disability
Commuter Origins	Labor Force	Labor Force Size
		Employed Persons
		Commuters
	Non-Single Occupancy Vehicle (SOV) Commute Mode	Non-SOV Commuters
Employment Destinations	Employment	Jobs
Activity Destinations	Retail & Restaurant	Retail Jobs
		Restaurant Jobs
	Recreation	Entertainment/Recreation Jobs
	Healthcare & Social Assistance	Healthcare & Social Assistance Jobs
	Education	Education Jobs
	Government	Public Administration Jobs

TRANSIT-ORIENTED POPULATIONS (TOP) INDEX

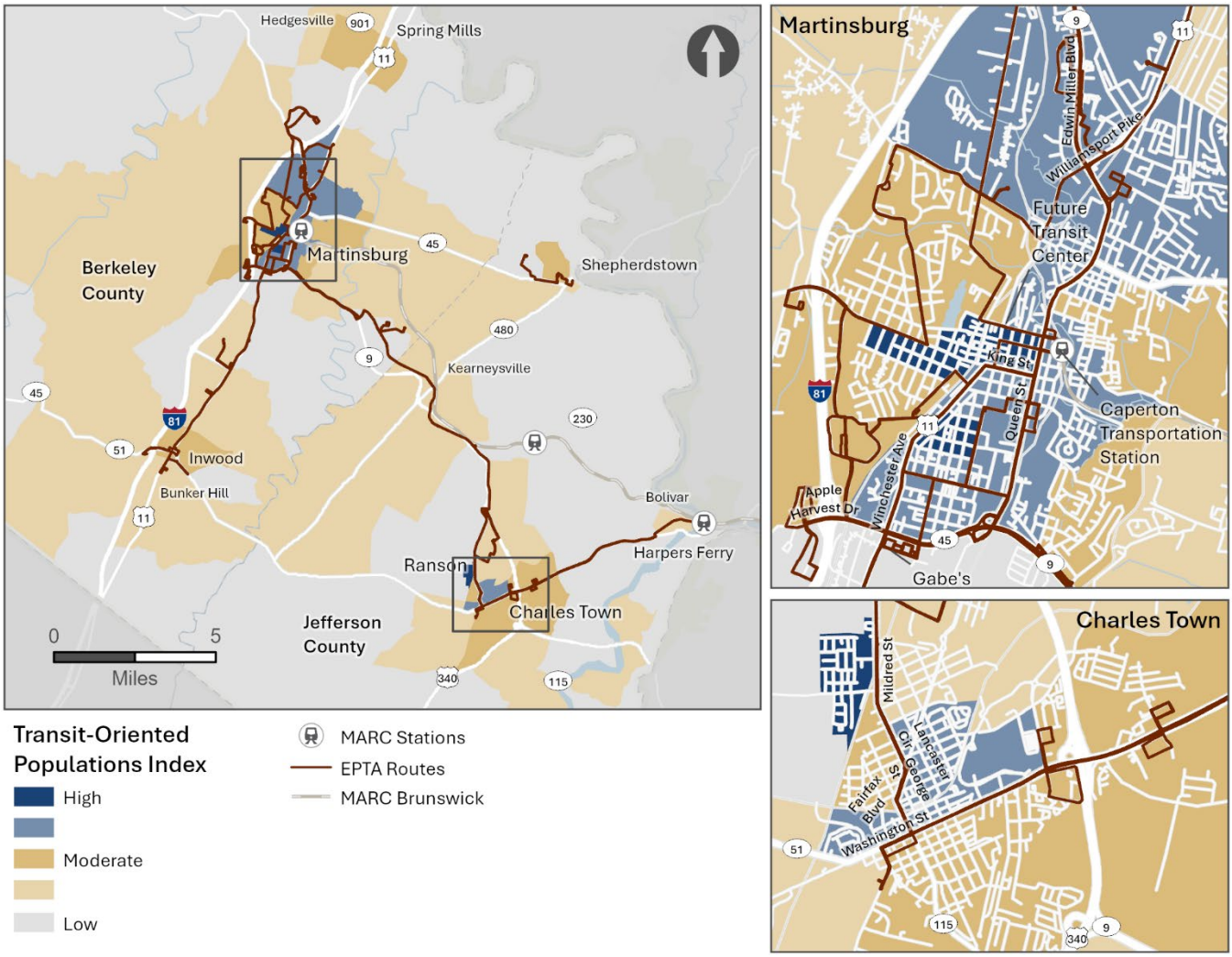
The Transit-Oriented Population index consists of five factors: total population, vehicle ownership, income, disability status, and age. **Table 4** lists the variables included in this index. Previous studies have found that these factors are indicative of populations that are more likely to be reliant on transit; the weights of the factors are based on their relative importance in identifying these populations. Since the datasets are geographically linked, the index can be used to identify where transit-oriented populations live.

Table 4 | Transit-Oriented Populations Index Variables

ANALYSIS FACTOR	VARIABLE
Population	Population Density
	Non-White and Hispanic Population Density
Age	Senior (65+) Population Density
	Seniors as Percentage of Total Population
	Youth (18-24) Population Density
	Youths as Percentage of Total Population
Households	Total Households
	Households Density
Income	Low-Income Households as Percentage of Total Number of Households
	Low-Income Household Density
Vehicle Ownership	Zero-Car Household Density
	Percentage of Zero-Car Households as Percentage of Total Number of Households
	One-Car Household Density
	Percentage of One-Car Households as Percentage of Total Number of Households
Disability Status	Disabled Population Density
	Persons with Disabilities as Percentage of Entire Population

Figure 19 shows transit-oriented populations in Berkeley and Jefferson Counties. The largest concentration is found in downtown Martinsburg, with moderately high concentrations immediately north of the city. Ranson and Charles Town have moderately high concentrations as well. Moderate concentrations of transit-oriented populations are located in Inwood and near Spring Mills and Falling Waters.

Figure 19 | Transit-Oriented Populations Index



COMMUTER ORIGINS INDEX

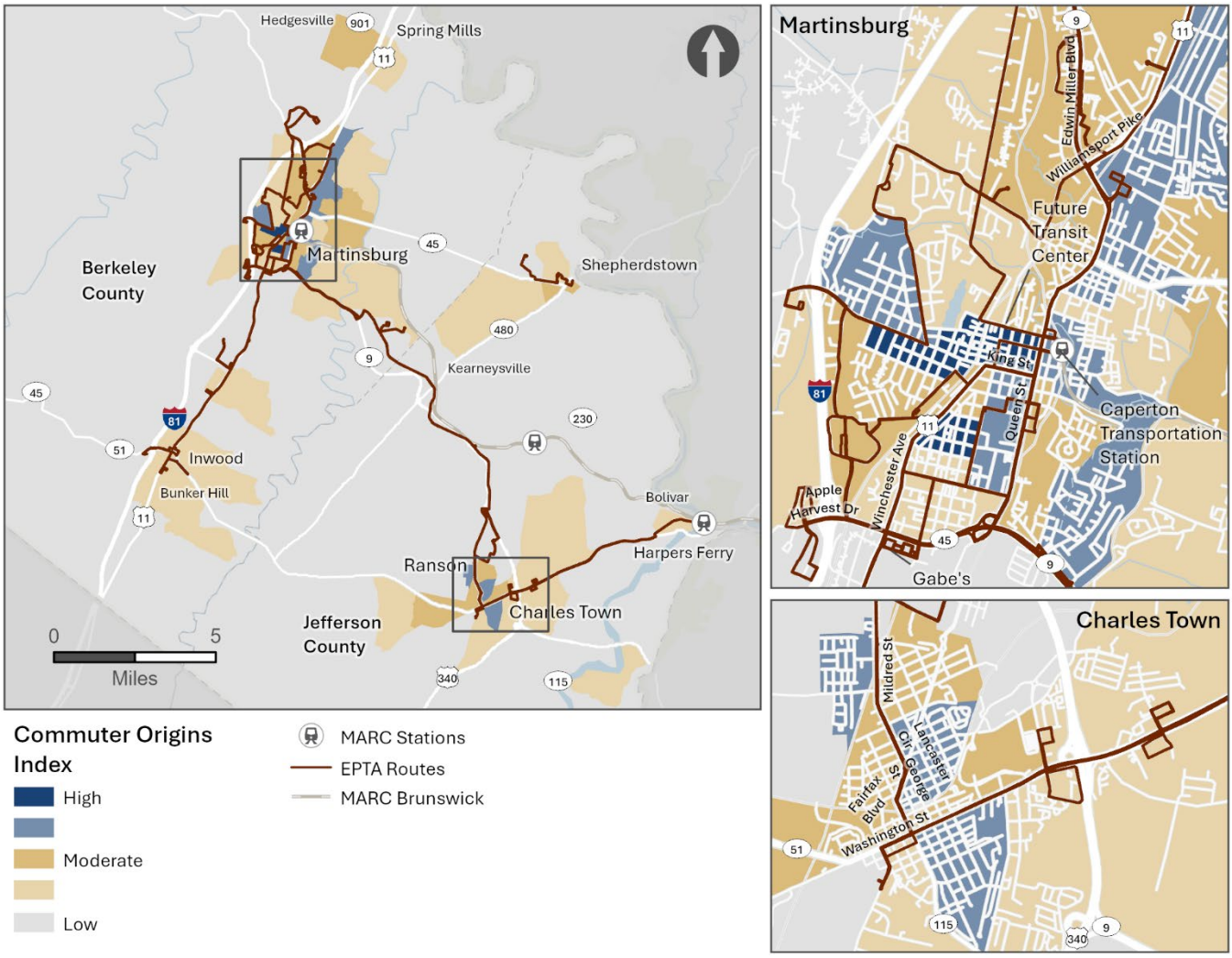
The Commuter Origins index combines four factors: those in the labor force, those employed, those who commute, and those with non-single occupancy vehicle (non-SOV) commutes. **Table 5** lists the variables included in this index. Since transit use in the service area is relatively low, non-SOV commuters who walk, bike, take transit, or carpool approximate those who may decide to commute by transit. The index can be used to identify where traditional peak hour commuters live, as well as those who use transit to commute.

Table 5 | Commuter Origins Index Variables

ANALYSIS FACTOR	VARIABLE
Labor Force	Labor Force Density
	Employed Person Density
	Employed Persons as Percentage of Total Population
	Commuter Density
Commute Mode	Non-SOV Commuter Density
	Non-SOV Commuters as Percentage of Total Commuters

Figure 20 shows concentrations of commuters in Berkeley and Jefferson Counties. The highest concentration is found in downtown Martinsburg, with moderately high concentrations in the surrounding neighborhoods, particularly along Queen Street and Williamsport Pike (US 11). Ranson and Charles Town have moderately high concentrations as well. Moderate concentrations of commuters can be found in residential developments outside of those three cities, as well as Spring Mills, Marlowe, Shepherdstown, and Inwood.

Figure 20 | Commuter Origins Index



EMPLOYMENT DESTINATIONS INDEX

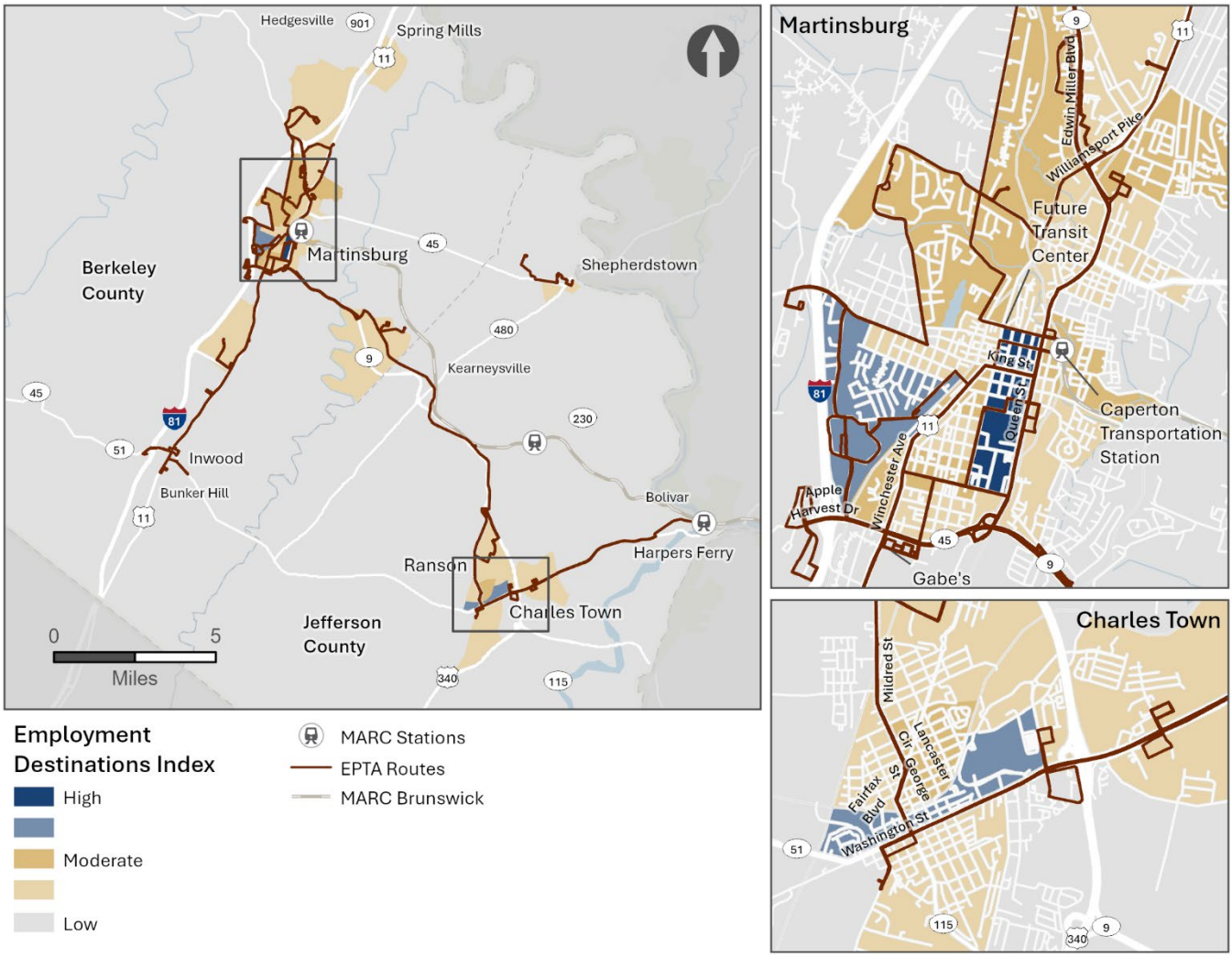
The Employment Destinations index combines two factors: total jobs and job density. **Table 6** lists the variables included in this index. The index can be used to identify where people commute for work purposes.

Table 6 | Employment Destinations Index Variables

ANALYSIS FACTOR	VARIABLE
Employment	Total Employment
	Employment Density

Figure 21 shows concentrations of jobs in Berkeley and Jefferson Counties. Compared to the commuter population, employment is much more highly concentrated around Martinsburg and Charles Town. The highest concentration of jobs is found in downtown Martinsburg, with moderately high concentrations found at Foxcroft Towne Center and downtown Charles Town. Moderate concentrations are found immediately north of Martinsburg along Tavern Road and around the intersection of Edwin Miller Boulevard (WV 9) and Williamsport Pike (US 11). The Procter & Gamble Plant and the VA Medical Center are two notable employment sites as well.

Figure 21 | Employment Destinations Index



ACTIVITY DESTINATIONS INDEX

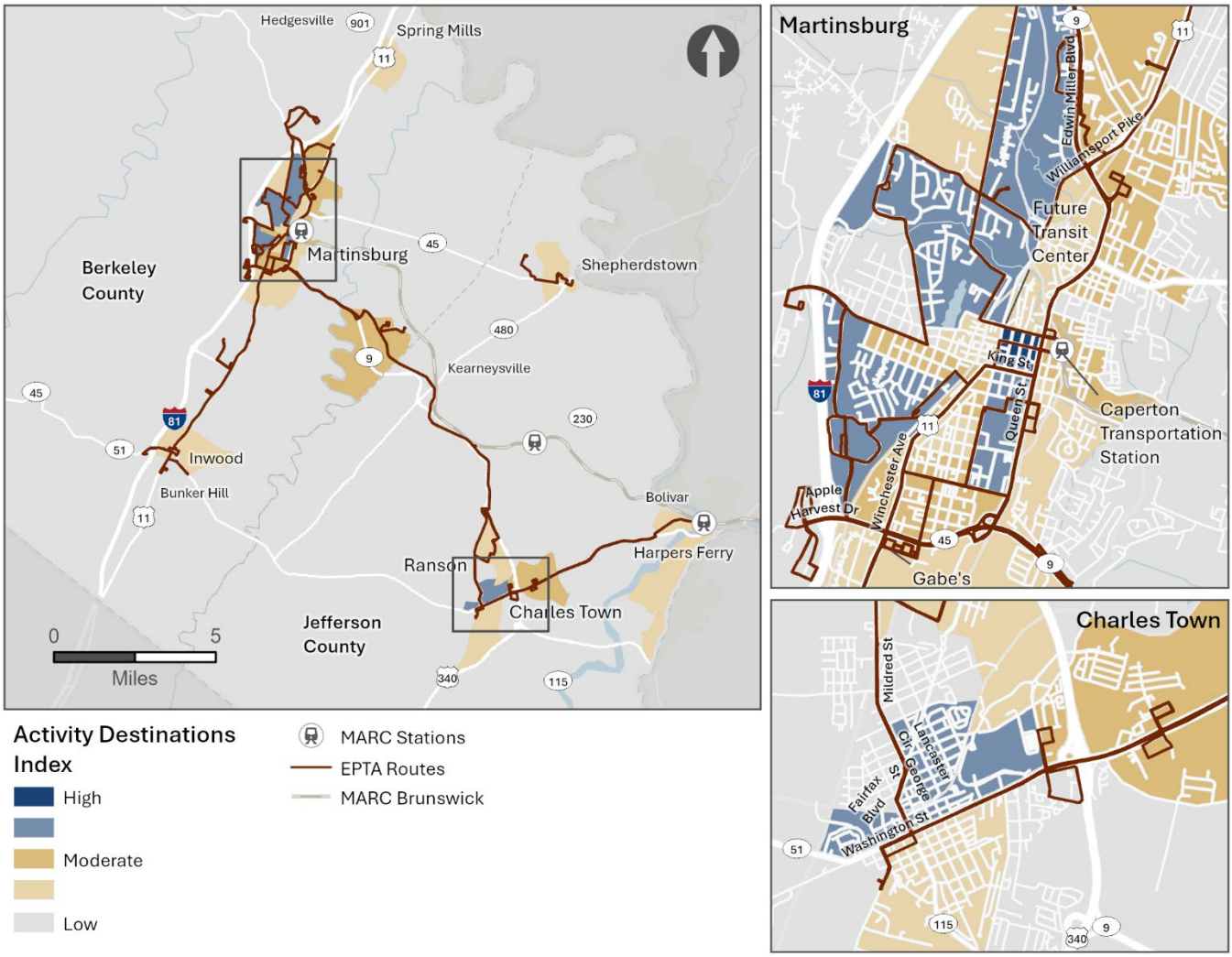
The Activity Destinations index consists of five factors: retail and restaurant, recreation, healthcare and social assistance, education, and government. These factors are weighted based on the typical proportion of trip types taken by transit users. The value of each factor is determined by the employment of that sector, which acts as a proxy for how much travel demand is produced. **Table 7** lists the variables included in this index. The index can be used to identify where people make non-work trips.

Table 7 | Activity Destinations Index Variables

ANALYSIS FACTOR	VARIABLE
Retail and Restaurant	Retail Jobs Density
	Restaurant Jobs Density
Recreation	Entertainment and Recreation Jobs Density
Healthcare & Social Assistance	Healthcare & Social Assistance Jobs Density
Education	Education Jobs Density
Government	Government Jobs Density

Figure 22 shows concentrations of non-work destinations in Berkeley and Jefferson Counties. The highest concentration is found in downtown Martinsburg, with moderately high concentrations at Foxcroft Towne Center and along Edwin Miller Boulevard (WV 9) and Tavern Road near Berkeley Medical Center. There are similarly high concentrations of potential destinations in downtown Ranson and Charles Town, as well as Charles Town Races. The VA Medical Center and the Harpers Ferry and Spring Mills commercial areas have moderate concentrations as well. While The Commons shopping complex outside of Martinsburg does not show up, this is likely because the development is within a much larger block group.

Figure 22 | Activity Destinations Index



Travel Flow Analysis

While the transit propensity analysis is helpful in identifying where potential transit users may wish to go, the travel flow analysis identifies actual travel patterns within EPTA's service area. Understanding these patterns is crucial for evaluating the existing fixed route network and identifying opportunities to enhance existing services or introduce new services. It is important to ensure that the transit network efficiently accommodates the most common travel patterns, since transit users share common destinations with those who use other transportation modes.

The travel flow analysis uses trip data from Replica, a platform that synthesizes mobile location data and other data sources to create an activity-based travel demand model. Given a particular set of parameters, Replica can provide detailed travel flow data between various trip origins and destinations. This analysis uses data from Replica's Fall 2023 model, which generates a representative dataset of trips on a typical weekday. In Berkeley and Jefferson Counties, this amounts to approximately 530,000 trips made by 142,000 individuals.

Trip origins and destinations were identified at the census block group level and then aggregated into travel zones that represent EPTA's service area. The travel zones were developed by the project team and defined based on factors such as community boundaries, roadways, and physical features. The analysis focused on two travel zone classifications, which are shown in **Figure 23** and **Figure 24**. The first looked at flows within Berkeley and Jefferson Counties as a whole, while the second looked at flows within Martinsburg specifically. Since EPTA's fixed route service is concentrated in Martinsburg but also provides connections to neighboring communities, it is important to consider both types of travel flows.

Figure 23 shows the travel zones for the regional analysis, which covers Berkeley and Jefferson Counties as well as four key regional centers. Some zones within the two-county region are anchored by cities or towns, while others are entirely rural. Zones are defined by features such as mountain ranges or administrative boundaries. Frederick, Hagerstown, Northern Virginia, and Winchester are included so that the magnitude of travel to regional centers can be compared to the magnitude of travel within EPTA's existing service area.

Figure 23 | Regional Travel Flow Analysis Zones

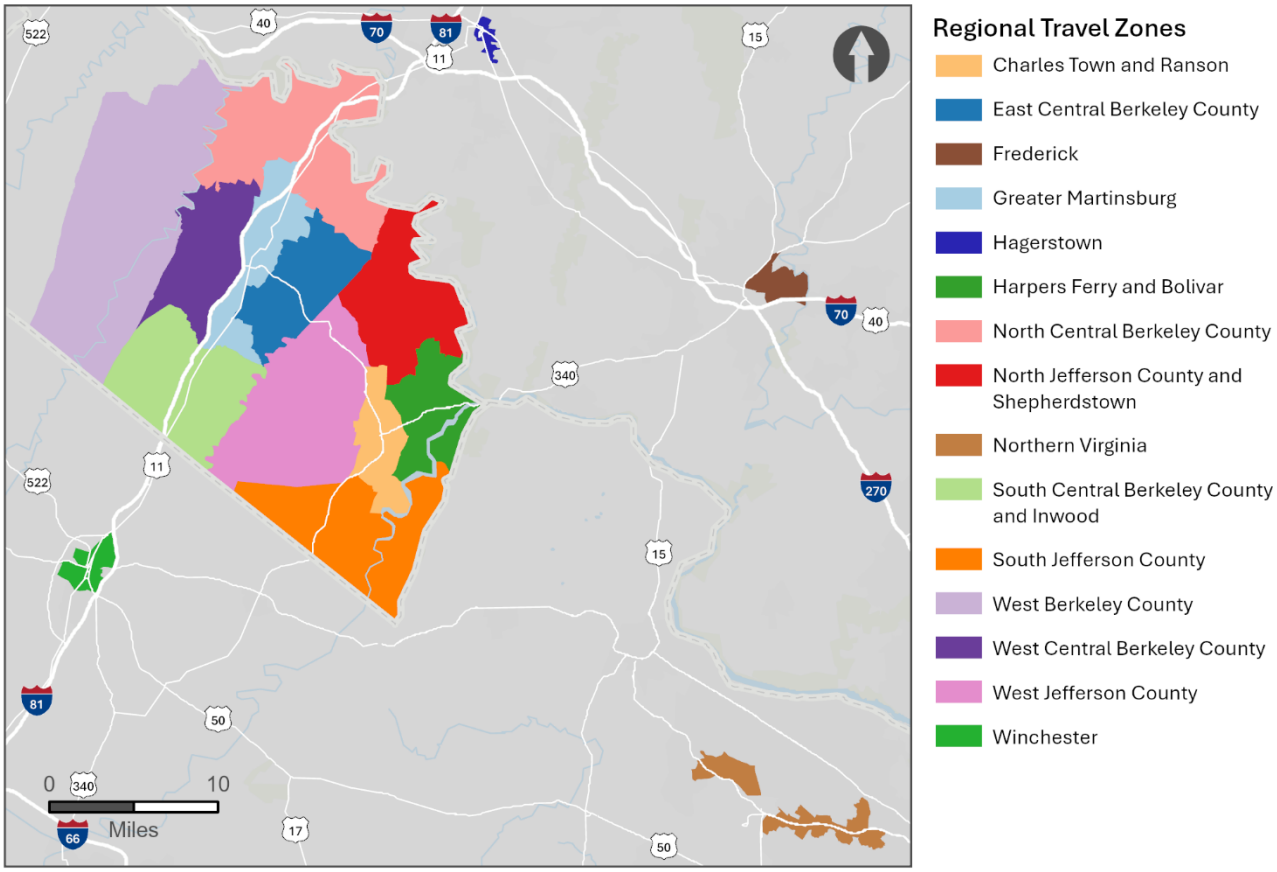


Figure 24 shows the travel zones for the Martinsburg analysis. Zones are defined by features such as roadways and land uses. Similar land uses are generally grouped together to capture similar travel behaviors; the primary uses are residential, commercial, and industrial.

Figure 24 | Martinsburg Travel Flow Analysis Zones

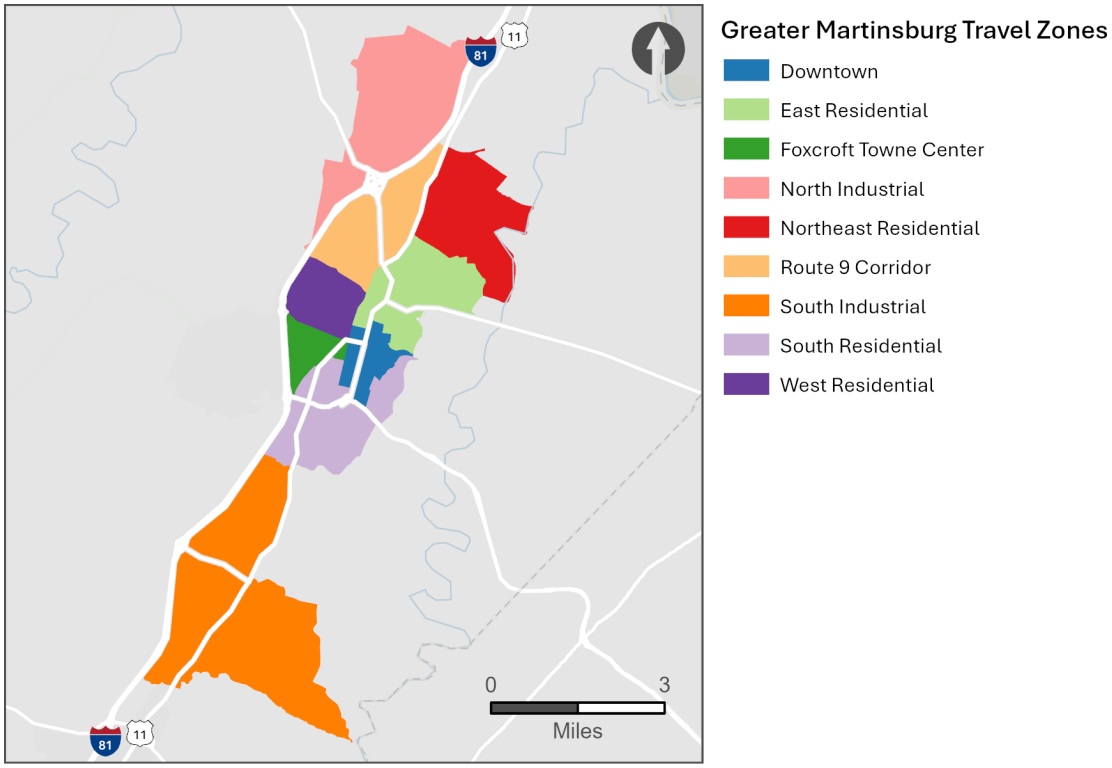
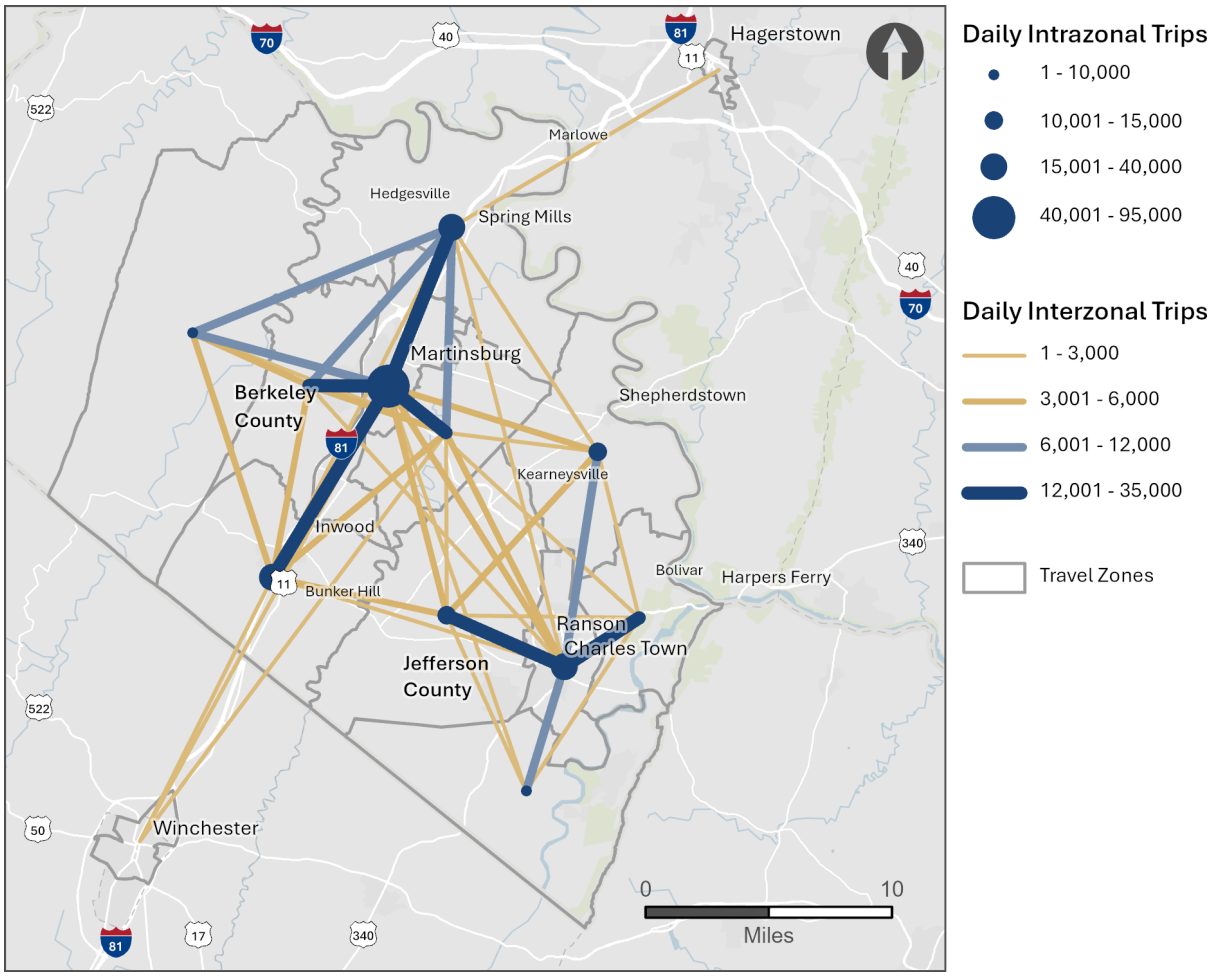


Figure 25 shows the number of trips taken on a typical weekday between different travel zones across the region.[9] The strongest travel flows occur between Martinsburg and its immediate surroundings in Berkeley County, as well as between Charles Town and Ranson and their immediate surroundings in Jefferson County. These flows experience anywhere from 10,000 to 35,000 trips on a typical weekday. Additionally, there are generally more trips within zones than between zones. Over 90,000 trips are taken within Martinsburg on a typical weekday, along with roughly 40,000 trips in North Central Berkeley County and Charles Town and Ranson.

There are relatively few trips between the two-county region and the four nearest regional centers. Most flows have fewer than 500 trips on a typical weekday, with the strongest flow being 3,000 trips between Winchester and South Central Berkeley County. These findings indicate that many trips within EPTA's service area are shorter in distance and happen within the same zone or between adjacent zones.

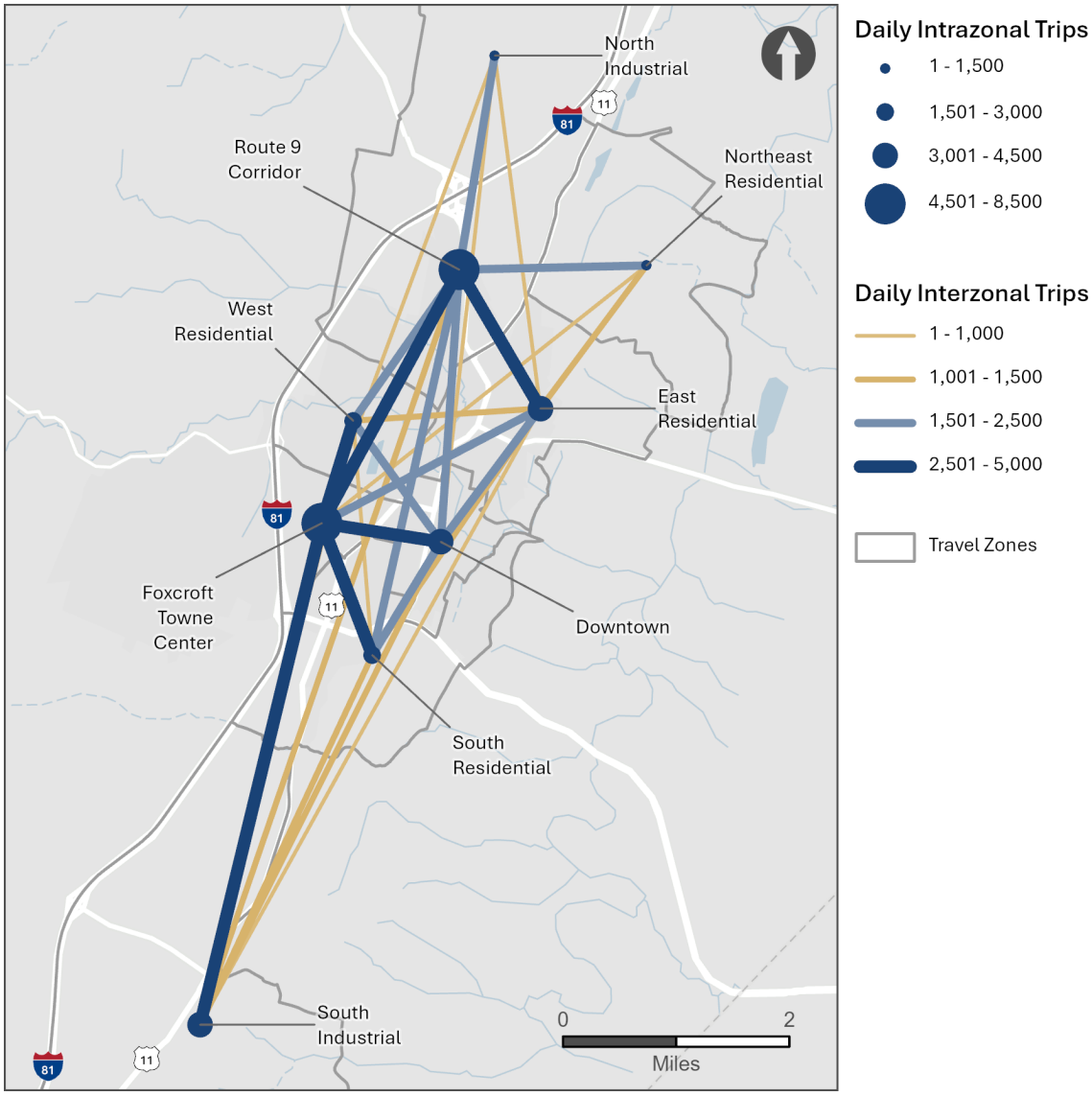
Figure 25 | Weekday Regional Travel Flows



[9] Flows with fewer than 1,000 trips were excluded.

Figure 26 shows the number of trips taken on a typical weekday between different travel zones with the greater Martinsburg area.[10] The strongest travel flows occur between the Foxcroft Towne Center zone and its surrounding zones, the southern US-11 corridor and southwest Martinsburg, as well as between the Route 9 corridor and its surrounding zones. These flows experience anywhere from 2,500 to 5,000 trips on a typical weekday. Similar to regional travel, there are generally more trips within zones than between zones. Over 8,000 trips are taken within the Foxcroft Towne Center, along with almost 7,00 trips within the Route 9 corridor.

Figure 26 | Weekday Martinsburg Travel Flows



[10] Flows with fewer than 500 trips were excluded.

Service Optimization Analysis

While the transit potential, transit propensity, and travel flow analyses are helpful for identifying where potential transit users are and where they want to go within EPTA's service area, the service optimization analysis identifies specific corridors that have the highest demand for transit service. The analysis applies an optimization algorithm to origin-destination flow data for the two-county region to identify the highest-demand corridors in the service area.

The service optimization analysis uses origin-destination flows from Replica's Fall 2023 model, which generates a representative dataset of trips on a typical weekday. Any commercial or freight trips were removed, leaving only multimodal passenger trips. Additionally, trips under one mile were removed to ensure that the identified corridors represent regional travel patterns that would benefit most from transit optimization. Hexagons were used to summarize the flows since block group geometries vary significantly across the service area, and equal weight was given across trips regardless of purpose or demographic.

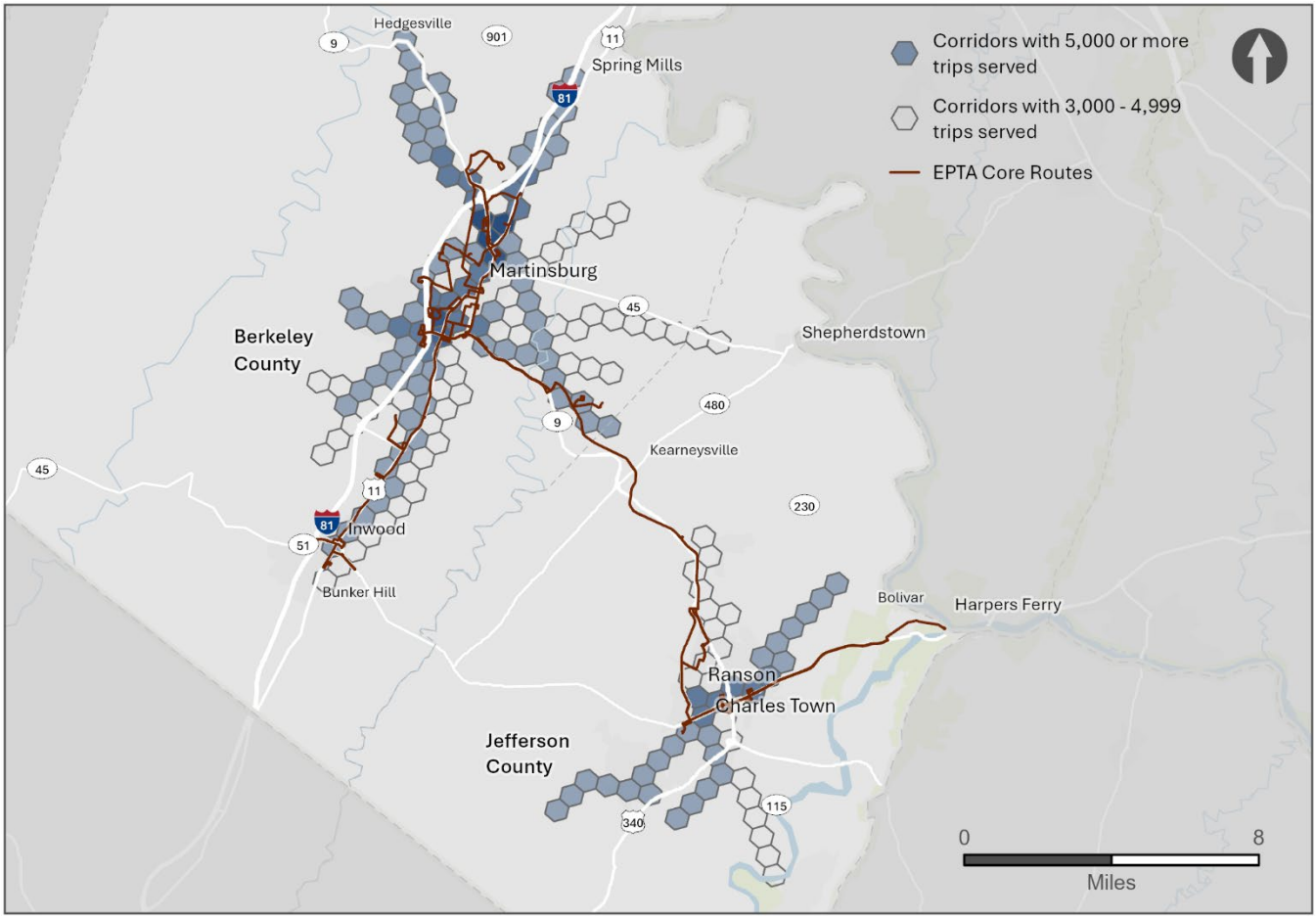
The optimization algorithm then identified high-demand corridors based on this trip data. Because the corridors are ultimately used to help determine how to optimize service, they were configured with similar characteristics to a typical bus route. The algorithm used a circuity factor of 1.25 (defined as the ratio of the corridor's alignment length to the direct distance between its endpoints), which encouraged direct corridors with limited deviations to serve high-volume flows, and corridors were limited to 10 miles in length.

The results of the service optimization analysis are shown in **Figure 27** and **Table 8**. The analysis generated sixteen corridors that serve 3,000 or more trips, including nine corridors that serve at least 5,000 trips. While these results are useful for identifying places with high transit demand, they are particularly useful for identifying how routes should be configured or aligned to serve common trip pairs.

Figure 27 shows the corridors generated by the service optimization analysis, with darker hexes indicating multiple overlapping corridors. The highest-ranked corridor stretches from Foxcroft Towne Center to Spring Mills along Winchester Avenue and Williamsport Pike, serving close to 14,000 daily trips. The next highest-ranked corridor has a similar span but is more closely aligned with I-81, serving over 10,000 daily trips. The remaining corridors serve between 3,000 and 7,000 daily trips. In both Martinsburg and Charles Town and Ranson, corridors traveling southwest to northeast are generally higher ranked than those traveling northwest to southeast.

The results of this analysis are one of many variables considered when developing service recommendations. They are high-level results that do not take into account roadway infrastructure, points of interest, or other elements that are inputs to transit service planning.

Figure 27 | Service Optimization Analysis Corridors[11]



[11] Legend shows only two hexagon classes; darker shades on the map indicate the overlap of multiple 5,000 trip or more features, indicating that the area is in more than one corridor

Table 8 lists the number of trips served and the percentage of total trips served by the corridors. **Appendix A** includes an individual map of each corridor.

Table 8 | Trip Volumes by Corridor

CORRIDOR	TRIPS SERVED	PERCENTAGE OF TRIPS SERVED
1	13,685	3.11%
2	10,301	2.34%
3	6,791	1.54%
4	6,645	1.51%
5	6,403	1.45%
6	6,218	1.41%
7	5,596	1.27%
8	5,481	1.24%
9	5,053	1.15%
10	4,860	1.10%
11	4,674	1.06%
12	3,948	0.90%
13	3,872	0.88%
14	3,860	0.88%
15	3,182	0.72%
16	3,094	0.70%

4. Service Gaps Analysis

Using the findings from previous analyses, two gaps analyses were conducted to identify potential gaps in EPTA's fixed route transit service. The analyses compared the number of trips serving a given location or flow to different measures of travel demand for that location. The first analysis considered transit potential and transit-oriented populations, while the second considered travel flows.

Transit Potential Gaps

Figure 28 compares the number of weekday trips that are accessible to a particular block group with its transit potential, or the number of people and jobs per acre. More purple areas, including much of Martinsburg, have higher transit potential and a higher number of trips, indicating that existing service is relatively well matched with demand. More blue areas have higher transit potential and a lower number of trips, indicating a possible gap in service. Spring Mills, which includes the Hammond's Mill neighborhood and Walmart, may be able to support transit service. Some neighborhoods surrounding Martinsburg may be able to support greater service, such as the Williamsport Pike corridor.

Figure 28 | Existing Weekday Trips vs. Transit Potential

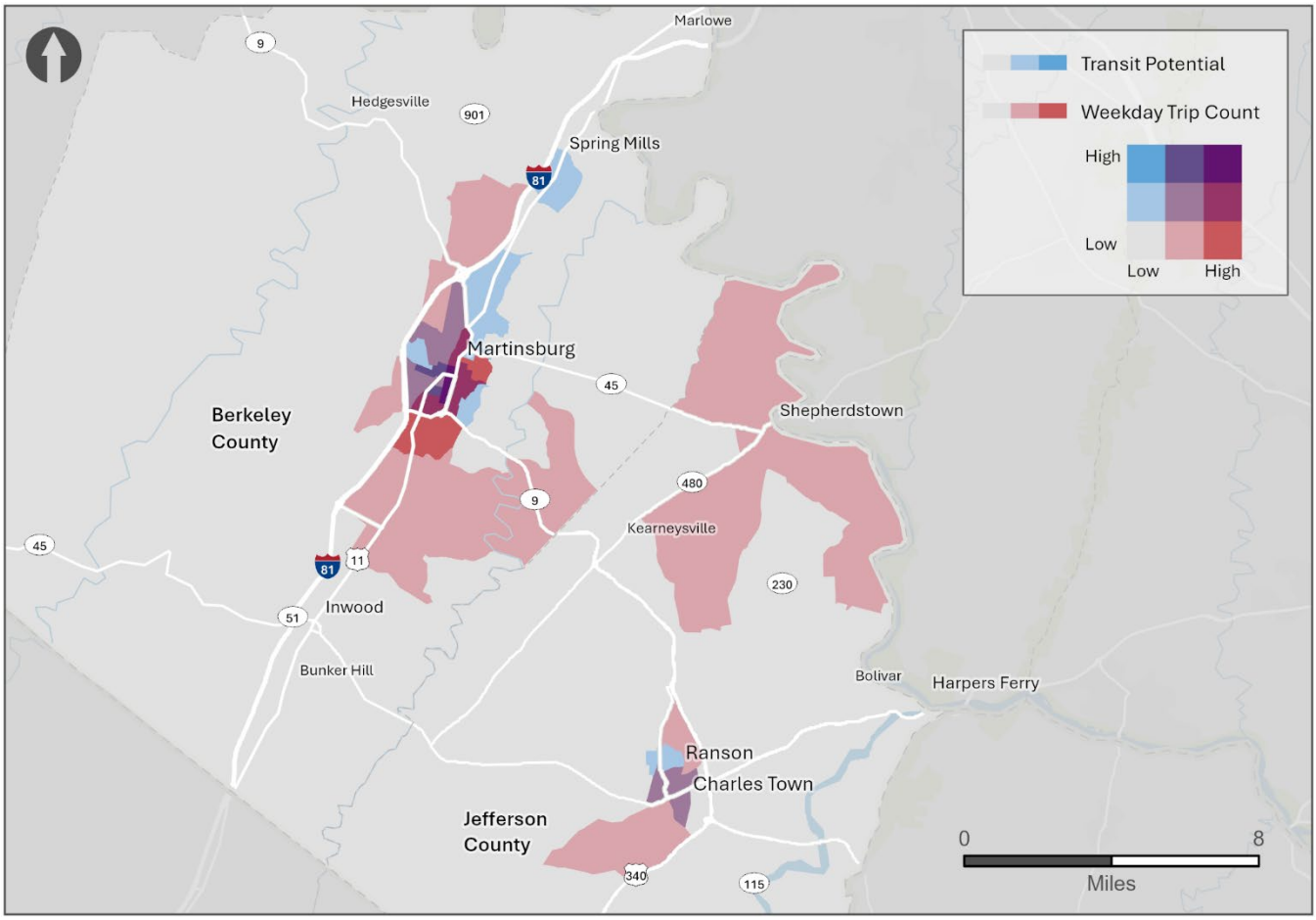
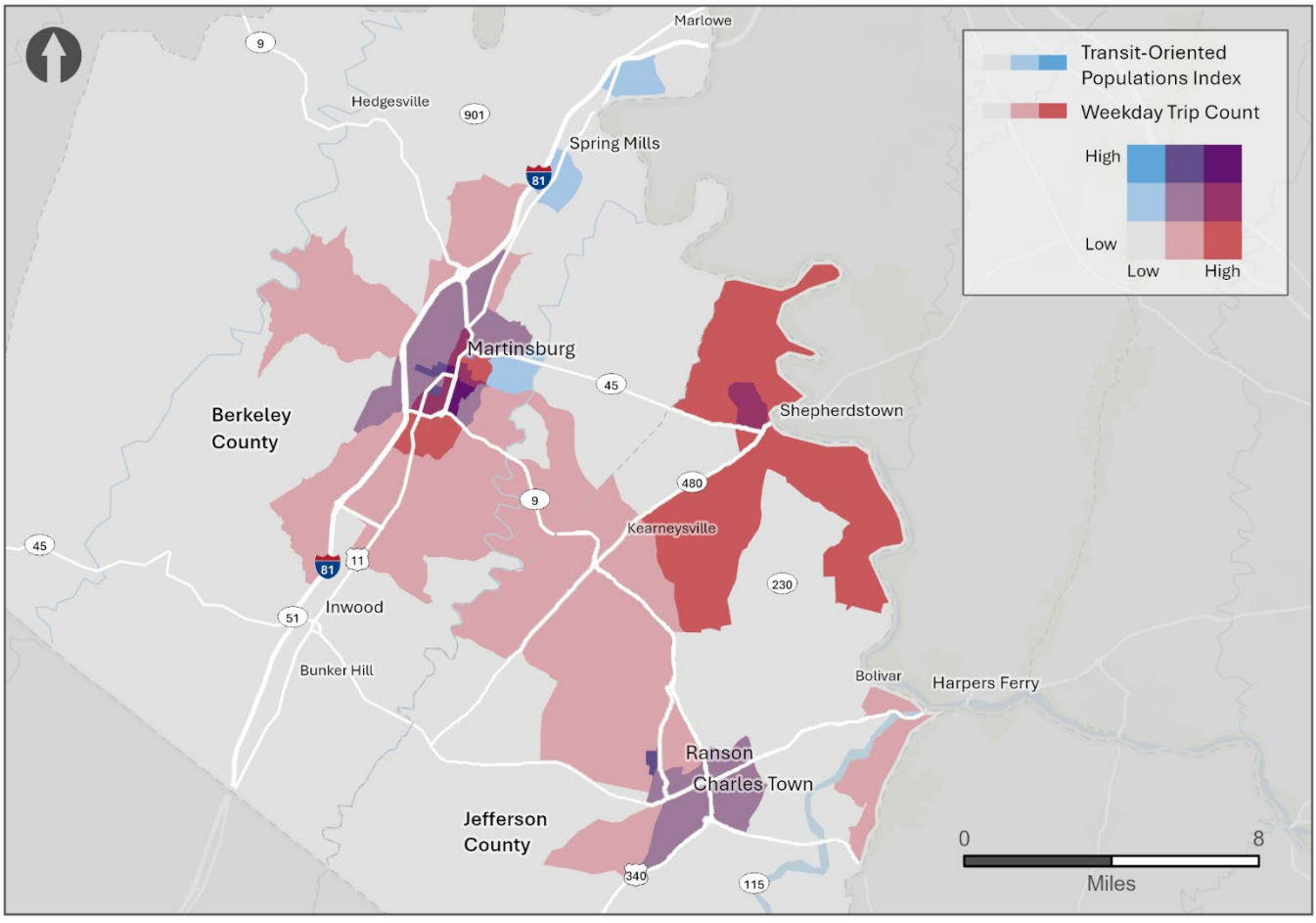


Figure 29 compares the number of weekday trips that are accessible to a particular block group with its transit-oriented population index. Like the previous figure, more purple areas indicate similar levels of service and potential demand, while more blue areas indicate possible gaps in service. The Shepherdstown area appears bright red due to the high frequency of trips made by Shepherd University's two circulator routes.

When looking at transit-oriented populations, which include seniors, low-income households, zero-car households, and other populations who are more likely to use or rely on transit, several areas may be able to support transit service. To the north of Martinsburg, parts of Spring Mills and Marlowe have transit-oriented populations that may be able to support transit service. This includes the Hammond's Mill neighborhoods and Walmart in Spring Mills and the Riverside Villages, Overlook at Riverside, and Homeplace at Riverside neighborhoods outside of Marlowe. On the east side of Martinsburg, the Wildflower Creek and Wildflower Ridge neighborhoods may be able to support transit service as well.

Figure 29 | Existing Weekday Trips vs. Transit-Oriented Populations Index



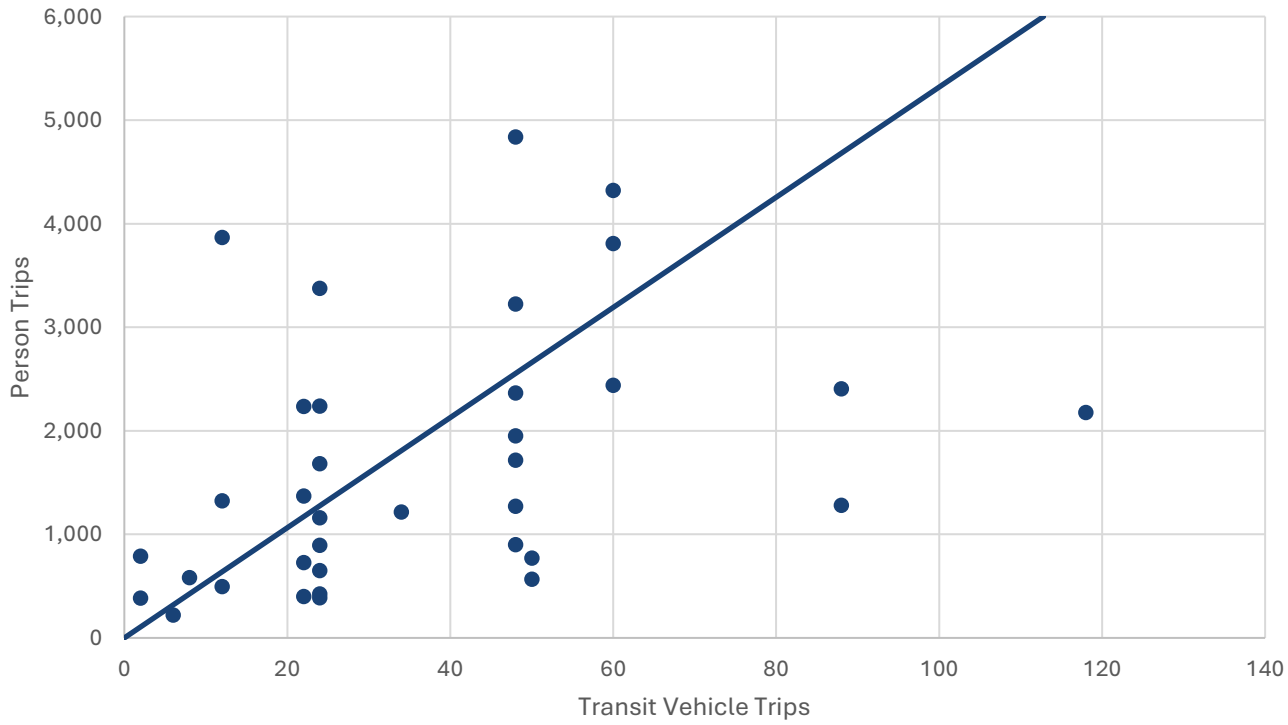
Travel Flow Gaps

The travel flow gaps analysis compares transit service between travel zones with observed trip patterns. The first measure is defined as the number of transit vehicle trips made between a set of zones on a typical weekday, while the second measure is defined as the number of person trips made.[12] The latter is the output of the travel flow analysis, which used trip data from Replica. This analysis was conducted first on the greater Martinsburg area and then on the EPTA region as a whole.

GREATER MARTINSBURG

Figure 30 shows the distribution of travel pairs for the greater Martinsburg area, with the diagonal line representing the median ratio of transit vehicle trips to person trips. Points above the line represent travel pairs where there are relatively more person trips and relatively fewer transit trips. This indicates a possible gap in transit service since there may be unmet transit demand.

Figure 30 | Transit Vehicle and Person Trip Distribution for Martinsburg



[12] The analysis does not include internal trips, or those that started and ended in the same zone. Additionally, travel pairs that lack transit service are excluded, such as Martinsburg to West Berkeley County.

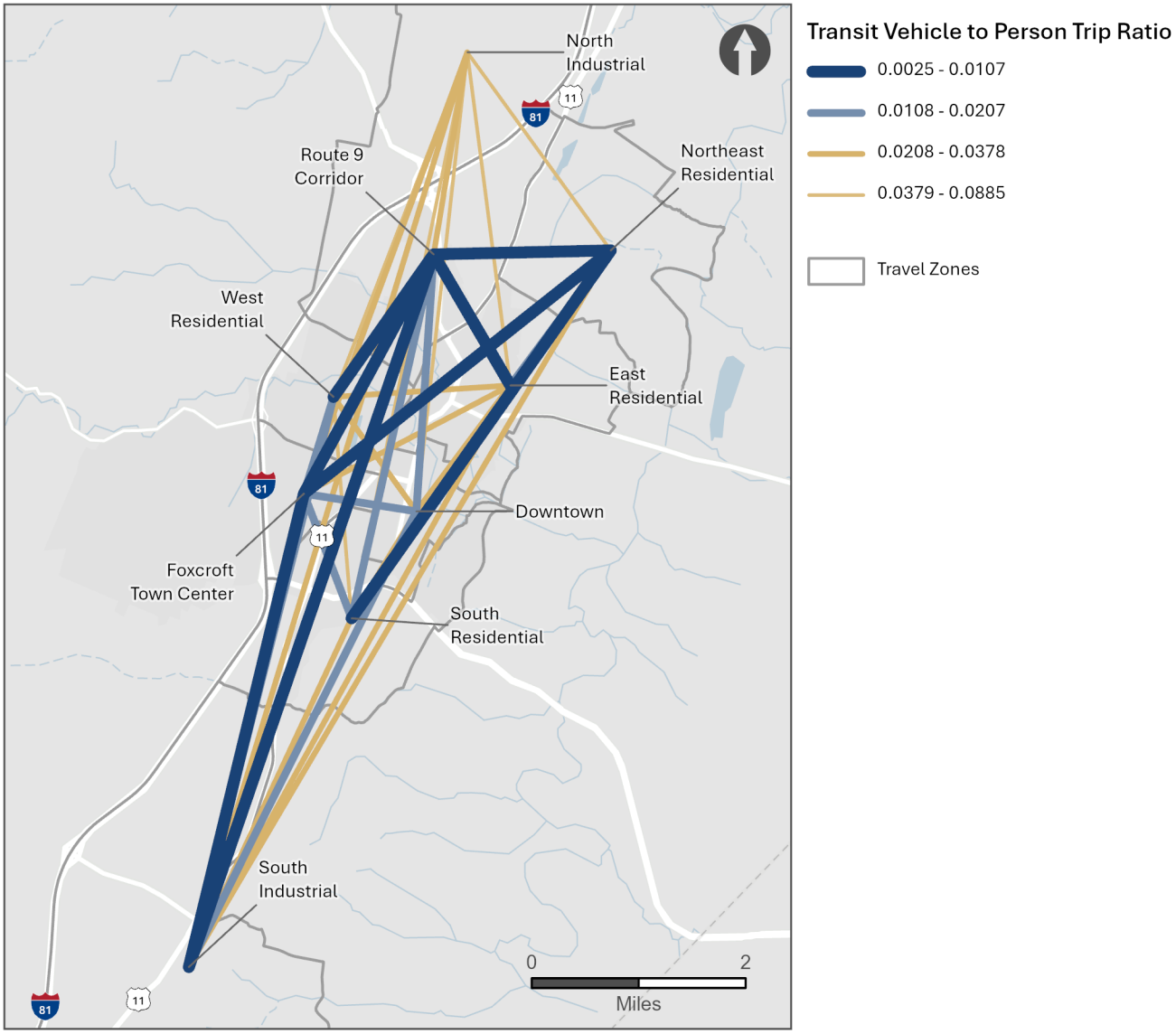
Table 9 lists the travel pairs with the lowest transit vehicle to person trip ratios, which indicate possible gaps in transit service. The median ratio for Martinsburg is 0.019, which means that there is one transit vehicle trip for every 50 person trips. The ratio for the lowest travel pair is more than seven times lower than the median. This suggests that increased transit service should be considered between the Northeast Residential zone and the Foxcroft Towne Center zone, and likewise for the other pairs listed on the table.

Table 9 | Lowest Transit Vehicle to Person Trip Ratios for Martinsburg

TRAVEL PAIR	TRIP RATIO
Northeast Residential – Foxcroft Towne Center	0.0025
South Industrial – Foxcroft Towne Center	0.0031
South Residential – Northeast Residential	0.0052
Route 9 Corridor – Foxcroft Towne Center	0.0071
South Industrial – Route 9 Corridor	0.0091
West Residential – Route 9 Corridor	0.0099
East Residential – Route 9 Corridor	0.0099
Northeast Residential – Route 9 Corridor	0.0107

The full results are shown in **Figure 31**, which symbolizes the travel flows based on their trip ratios. Flows with lower trip ratios, or those with possible gaps in transit service, are illustrated with thicker blue lines. Flows that are relatively well-served by transit are illustrated with thinner gold lines. Flows with the lowest trip ratios generally occur between residential zones and the more commercial Foxcroft Towne Center and US-11 corridor zones.

Figure 31 | Trip Ratios for Martinsburg Travel Flows



REGIONAL

Figure 32 shows the distribution of travel pairs for the two-county region, with the diagonal line representing the median ratio of transit vehicle trips to person trips. Like the previous figure, points above the line represent travel pairs where there are relatively more person trips and relatively fewer transit trips. This indicates a possible gap in transit service since there may be unmet transit demand.

Figure 32 | Transit Vehicle and Person Trip Distribution for the Region

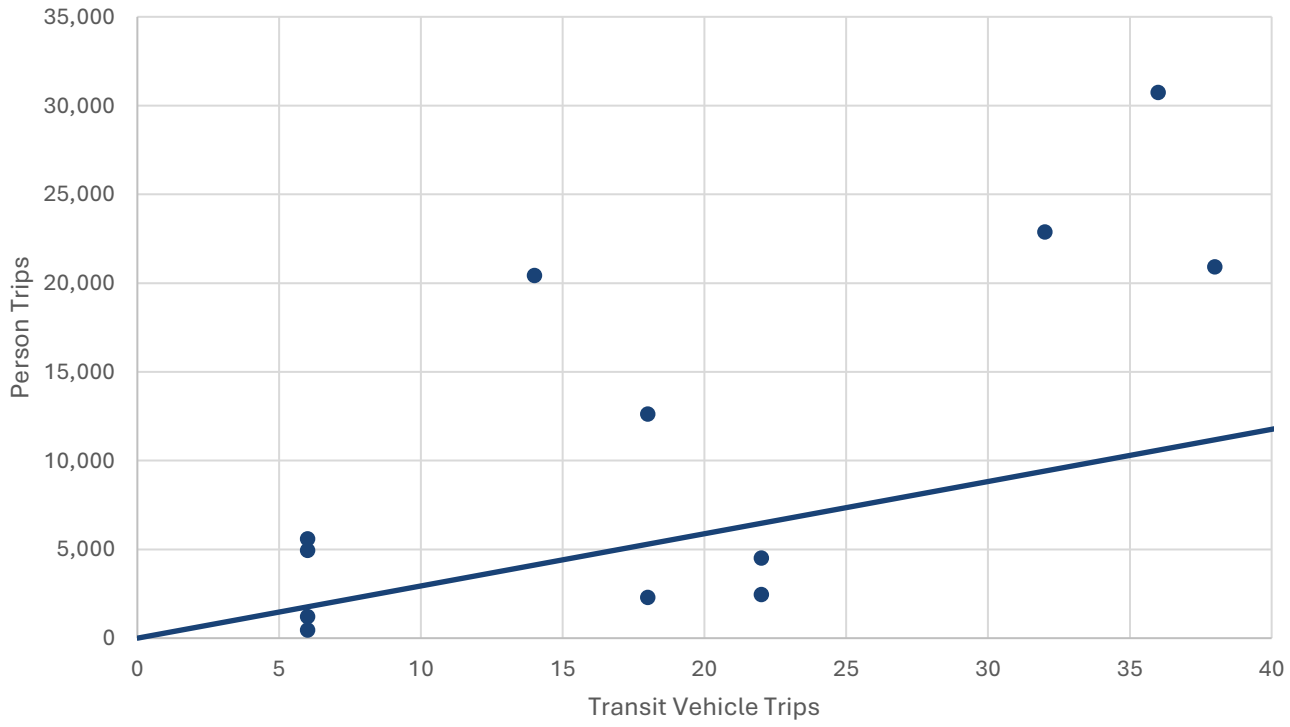


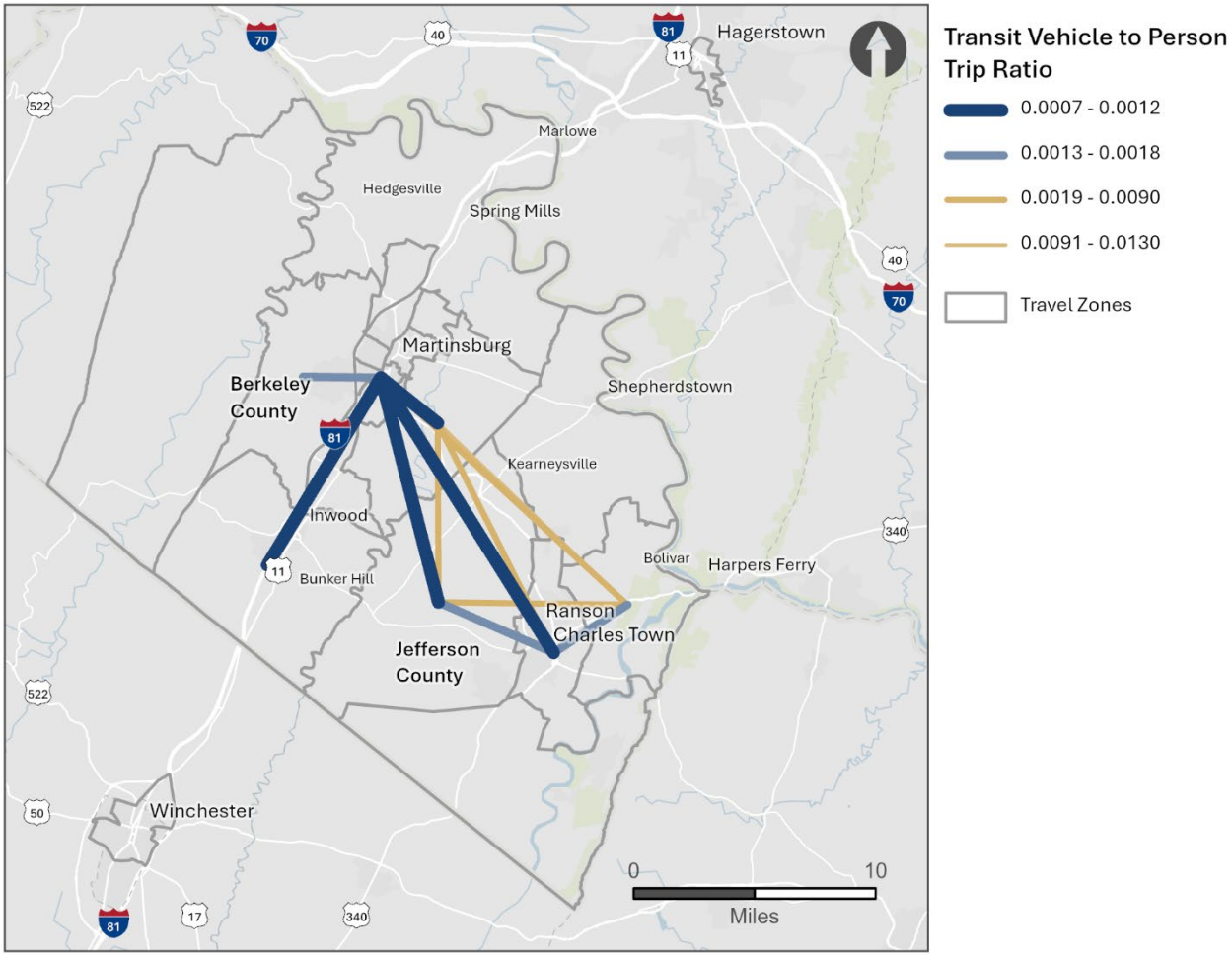
Table 10 lists the travel pairs with the lowest transit vehicle to person trip ratios, which indicate possible gaps in transit service. The median ratio for the region is 0.003, which means that there is one transit vehicle trip for every 300 person trips. The ratio for the lowest travel pair is nearly five times lower than the median. This suggests that increased transit service should be considered between the Martinsburg zone and the Inwood zone, and likewise for the other pairs listed on the table.

Table 10 | Lowest Transit Vehicle to Person Trip Ratios for the Region

TRAVEL PAIR	TRIP RATIO
Greater Martinsburg – South Central Berkeley County and Inwood	0.0007
Greater Martinsburg – Charles Town and Ranson	0.0011
Greater Martinsburg – East Central Berkeley County	0.0012
Greater Martinsburg – West Jefferson County	0.0012
Charles Town and Ranson – Harpers Ferry and Bolivar	0.0014
Greater Martinsburg – West Central Berkeley County	0.0014
Charles Town and Ranson – West Jefferson County	0.0018

The full results are shown in **Figure 33**, which symbolizes the travel flows based on their trip ratios. Flows with lower trip ratios, or those with possible gaps in transit service, are illustrated with thicker blue lines. Flows that are relatively well-served by transit are illustrated with thinner gold lines. Flows with the lowest trip ratios generally occur between Martinsburg and Inwood, Martinsburg and Charles Town, and Martinsburg and southwest Jefferson County.

Figure 33 | Trip Ratios for Regional Travel Flows



5. Public and Stakeholder Engagement

The service, market, and gaps analyses were complimented by extensive public engagement at different stages in the development of the TDP. The first stage consisted of a public survey and two stakeholder focus groups to gather feedback on the needs and desires of the community. The second stage involved a public survey and public meetings to gather feedback on the proposed service recommendations. The third stage involved a public survey to gather feedback on the draft TDP. This chapter summarizes the first stage of public engagement; feedback from the second and third stages is addressed in the **Service Recommendations** chapter.

Public Survey

SURVEY DESIGN

The survey for the 2025 TDP was based on the survey used for the 2020 TDP. Most questions remained the same or received only minor copyedits to improve clarity for respondents. The multiple-choice options for the household income and information source questions were updated to reflect current conditions, and the work location question was converted from multiple choice to text response. Additionally, three questions were added to the survey to identify whether the respondent was an existing rider, gauge awareness of the new transit center, and ask non-riders why they do not take EPTA service currently.

The survey was distributed to both existing riders and non-riders. The paper version was designed for existing riders, since it was distributed to riders on EPTA fixed route and demand response services. The online version was designed for both audiences; respondents were directed to different pages depending on their response to the opening question about whether they were an existing rider or not.

The online version of the survey was hosted on Google Forms, while the paper version was a single, double-sided sheet of paper. Responses for both versions were fully anonymous. The only question with a required response was the opening question about whether the respondent was an existing rider. The survey questions are listed in **Appendix B**.

SURVEY DISTRIBUTION AND PROMOTION

The survey was open from Wednesday, September 25, 2024 to Monday, November 4, 2024. The survey was distributed and promoted by EPTA and the Hagerstown/Eastern Panhandle Metropolitan Planning Organization (HEPMPO). Both EPTA and HEPMPO posted the survey link on their websites, Facebook, and LinkedIn, and EPTA provided paper copies on their buses. Additionally, *The Journal*, a daily newspaper serving Berkeley and Jefferson Counties, published a story about the survey when it opened.

The paper version and the online version were both written and distributed in English. Spanish-language instructions on both versions directed Spanish-speaking respondents to the EPTA office for assistance.

The survey received 161 responses, which were split roughly evenly between existing riders (84 respondents) and non-riders (77 respondents). Approximately 65 percent of responses were submitted using the online version of the survey.

SURVEY FINDINGS

The key takeaways from the survey are listed below. The full results can be found in **Appendix C**.

Demographics

- Existing riders are generally "car-lite," as 55 percent do not have a driver license and only 13 percent have more than one vehicle. Only three percent of non-riders do not have a driver license, and two thirds have two or more vehicles in their household.
- There is an income gap between riders and non-riders. Almost 55 percent of riders earn less than $20,000, while over 60 percent of non-riders earn more than $80,000.
- Riders have more diverse racial and ethnic backgrounds than non-riders, but both groups overwhelmingly speak English. Around 36 percent of riders identified as non-White, compared to 12 percent of non-riders.
- Riders are generally middle-aged or older. The median age is 53 years old and almost 40 percent of existing riders are aged 60 years or older.

Travel Behavior

- Most riders make only a few trips each week using EPTA service. Over half of respondents make less than five weekly trips.
- Riders generally stay informed by calling the EPTA office, looking at the EPTA website, or talking with EPTA drivers.
- Riders are choosing to make more trips by bus. Only one in ten respondents rides less than they did in the previous year.
- EPTA serves both old and new riders. Almost a third of respondents have been riding for five or more years, while a quarter have been riding for less than a year.
- Riders rely on EPTA to get them to their destination. Over half of respondents would not be able to make their trip without EPTA service, and many of those who still could would be inconvenienced.
- Around 55 percent of existing riders are aware that EPTA will be opening a new downtown transit center.
- Over half of non-riders do not use EPTA service because it does not come close enough to their home and/or destination. Almost a quarter reported that it does not come frequently enough.

Trip Characteristics

- Roughly three quarters of respondents were picked up at their home or walked to the bus. Similarly, roughly two thirds of respondents were dropped off at their destination or walked from the bus. The walk was less than five minutes for the majority of riders.
- Common destinations included downtown Martinsburg, VA Medical Center, Caperton Station, the Foxcroft Towne Center Walmart, and riders' residences. Common trip purposes (in order from most to least) included work, shopping, medical or dental appointments, and personal business.

Service Feedback

- Roughly 97 percent of respondents believe that EPTA service is about the same or has gotten better since last year.

- Over 85 percent of respondents were very satisfied or satisfied with EPTA service.
- Riders rated driver courtesy highest among eight service-related areas, followed by system safety, value received for fare, and bus cleanliness. EPTA's hours of operation received the lowest rating, followed by bus frequency and places served.

Open-Ended Feedback

- The most common recommendations included increasing bus frequency, lengthening hours of operation, improving schedule consistency, and adding stops.
- Respondents would like to see EPTA's weekend service operate on Sundays and expand to include Charles Town.
- The most commonly requested new destination was Spring Mills.
- Several respondents commented positively about EPTA's drivers.
- Respondents were interested in keeping Caperton Station as a stop once the new transit center opens and adding direct service between Martinsburg and Charles Town.

Stakeholder Focus Groups

The stakeholder meetings convened representatives from Berkeley and Jefferson Counties to gather local insights and guidance to inform the development of the TDP. Each focus group consisted of approximately two dozen individuals who represent government and social agencies, civic groups, hospitals and medical facilities, business groups, educational entities, and other relevant local organizations.

The Consultant Team prepared a PowerPoint presentation to provide a progress update on the development of the TDP and guide the group discussion. The presentation began with a review of the goals and recommendations from the 2020 TDP. The middle of the presentation focused on sharing findings from the service and market analyses, which included ridership trends, transit potential, transit propensity, travel flows, service corridor optimization, market gaps, and travel flow gaps. This was followed by a brief look at the initial responses to the public survey.

Once the progress update was completed, the Consultant Team guided each focus group through an interactive polling exercise to gather feedback on goals and objectives for the 2025 TDP. Finally, the Consultant Team led a group discussion based on the following questions:

- Are there any locations where transit service expansion should be considered?
- How should EPTA respond to increasing operating costs and inflation and unchanged revenue?
- How does EPTA attract drivers?

BERKELEY COUNTY STAKEHOLDER MEETING

The Berkeley County stakeholder meeting was held on October 29, 2024 at the Berkeley County Development Authority; a virtual option was available for remote attendees. **Table 11** lists the stakeholders who participated.

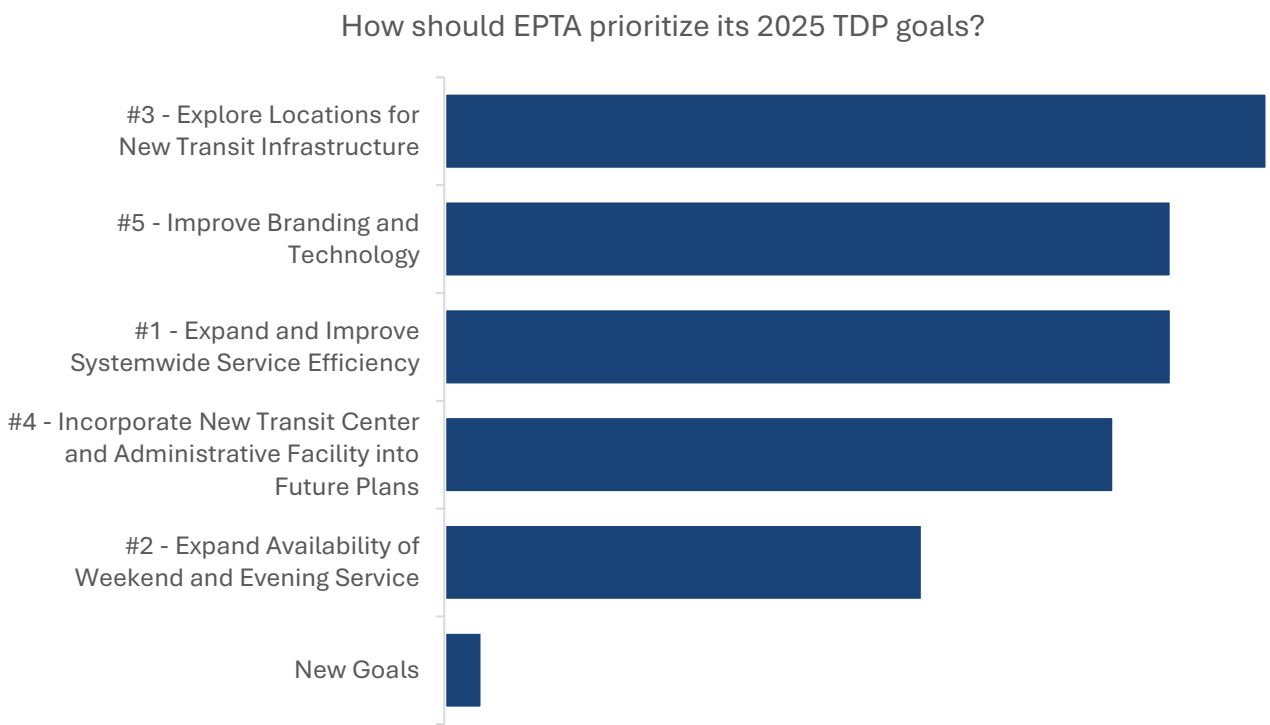
Table 11 | Berkeley County Stakeholder Focus Group Attendees

NAME	ORGANIZATION	NAME	ORGANIZATION
Brenda Al-akhras	Quad	Bill Robinson	WV Division of Public Transit
Kimberly Foore	EPTA Board of Directors	Jennifer Smith	Berkeley County Development Authority
Charlie Hall	EPTA Board of Directors	Chris Strovel	Resident, Senator Shelley Moore Capito
Traci Hodges	EPTA Rider	Stephanie Stout	Berkeley County Recovery Resource Center
Christina Johnson	Panhandle Home Health	Lynn Walker	Martinsburg-Berkeley Co. Public Library
Yannick Mundy	Telamon	Jennifer Wishmyer	Eastern Panhandle Regional Planning and Development Council (Region 9)

Polling Exercise

The interactive polling exercise was conducted using Mentimeter and consisted of four questions. The first question asked participants to prioritize goals for the 2025 TDP. The goals were drawn from the 2020 TDP, with an option to include a new goal. **Figure 34** shows the relative priority of each goal for the Berkeley County focus group.

Figure 34 | Goal Prioritization (Berkeley County)



The second question asked participants to share what goals they had for EPTA. Berkeley County participants shared the following:

- Consider adding staff to assist with marketing.
- Continue ridership rebound post-COVID.
- Create rideshare stops on [Interstate] 81.

- Expand marketing for transit and way finding.
- Marketing that appeals to younger people?
- Partnerships with local businesses and large companies.

The third question asked participants to rank how well EPTA accomplishes four objectives. The scale for the areas ranged from "Poorly (1)" to "Outstandingly (5)." **Figure 35** shows the average rating for each objective, while **Figure 36** shows the rating breakdown.

Figure 35 | Average Rating of EPTA Objectives (Berkeley County)

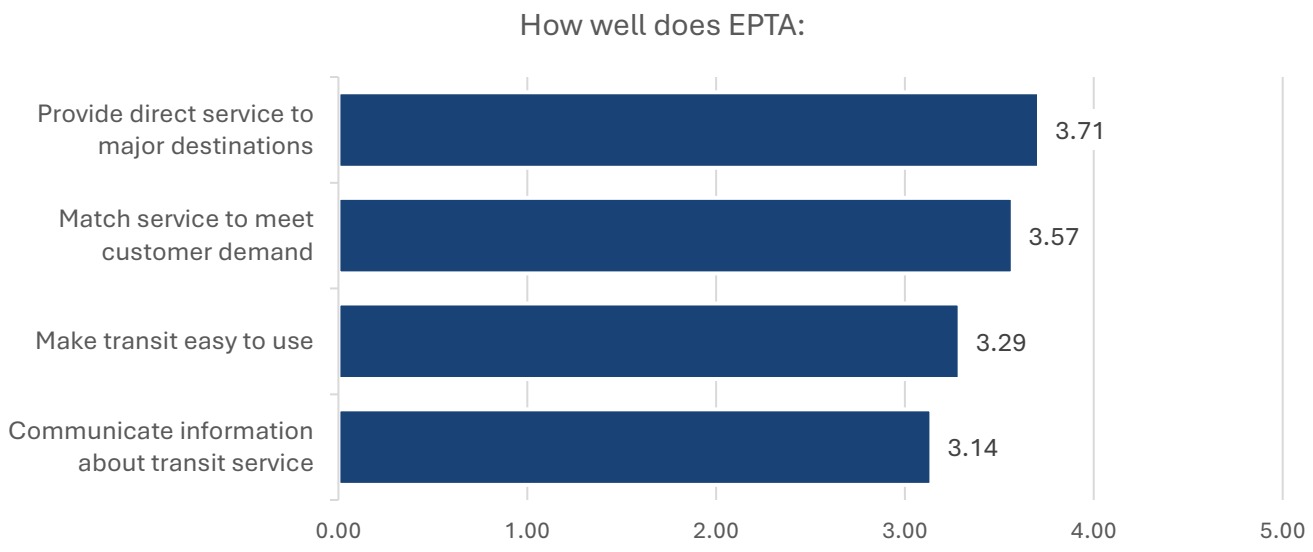
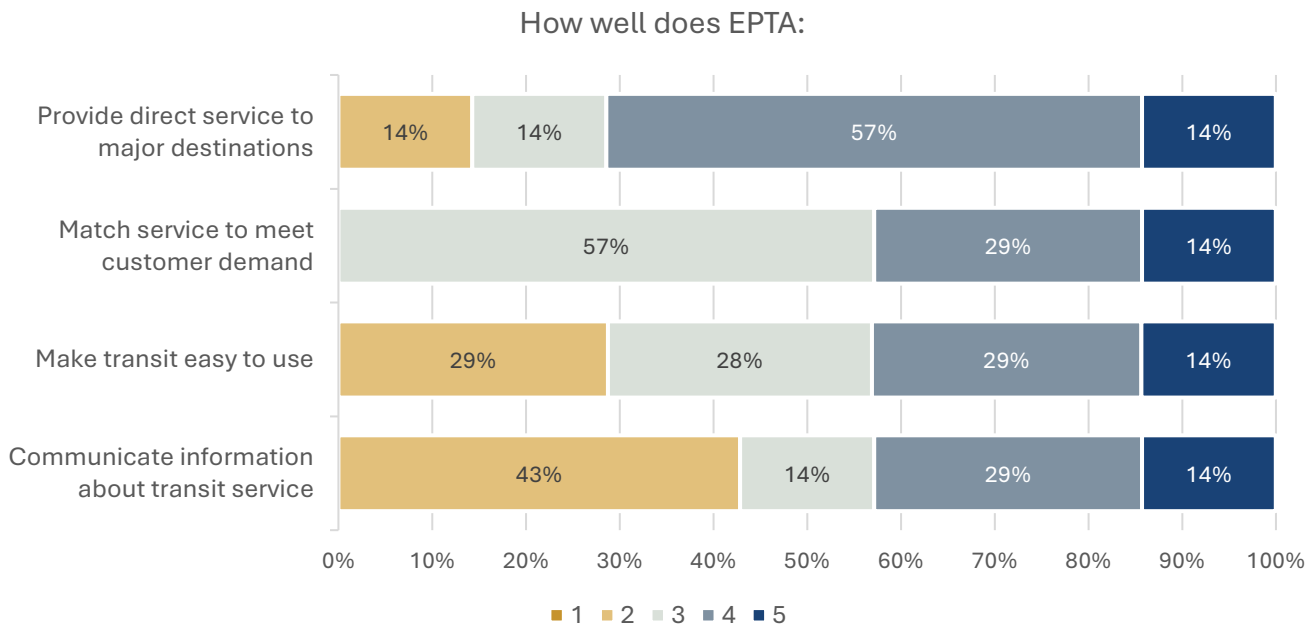
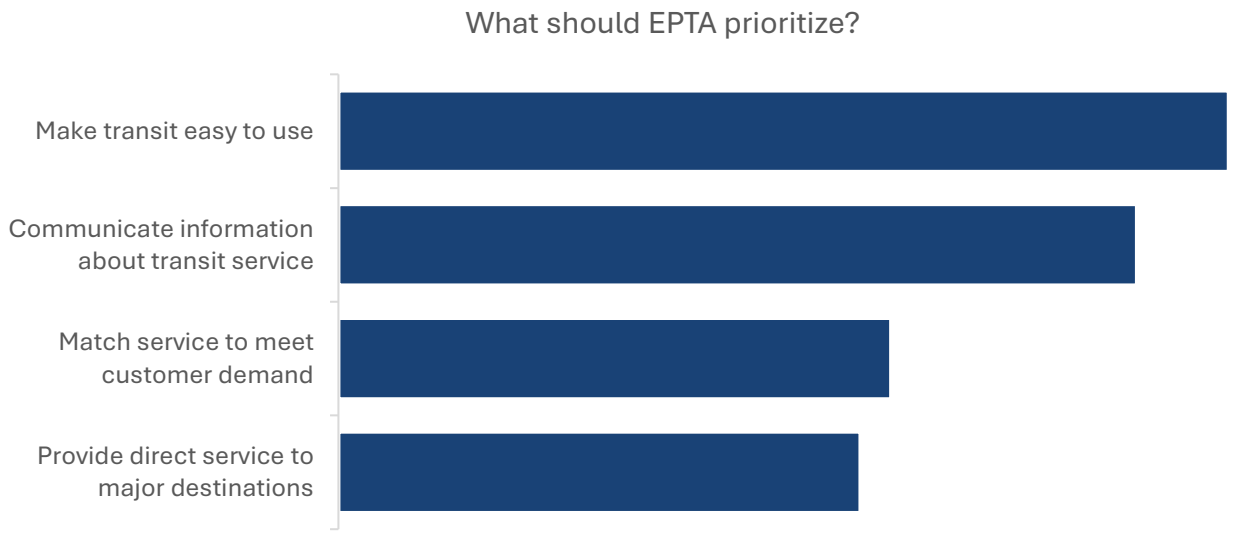


Figure 36 | Individual Ratings of EPTA Objectives (Berkeley County)



The fourth question asked participants to prioritize the objectives from the previous question. **Figure 37** shows the relative priority of each goal for the Berkeley County focus group.

Figure 37 | Objective Prioritization (Berkeley County)



Discussion

The discussion at the Berkeley County stakeholder meeting focused on driver recruitment and retention, funding sources, and changes in demand across the region. Participants had a variety of suggestions for recruiting drivers, including offering CDL training and certification; targeting immigrant, veteran, retirement, and rehabilitation communities; and bringing on Berkeley County School District bus drivers for split schedules. EPTA staff discussed the challenges they face with recruitment and retention, as well as how some of the participants' suggestions have already been implemented or attempted. Several participants offered to connect different job-seeking communities with EPTA staff.

Participants mainly asked questions about different funding sources, including federal matching funds, compensation from MARC for delivering riders, and local tax levies. EPTA has worked hard to maximize the federal match, but it has been challenging to secure local funding from local municipalities. Participants were curious about the feasibility of implementing a business tax or collaborating with new companies. There may be opportunities to utilize impact fees, but that money would go to the county first before being apportioned to EPTA. A participant from Quad invited EPTA staff to attend a standing meeting between the local manufacturing plants.

Some participants noted that local perceptions of growth were not necessarily reflected in the data presented during the meeting. A participant shared that it feels like there is explosive growth happening in Berkeley County. In Inwood in particular, development opportunities around the new traffic circles could create more transit demand. Another participant recommended that growth forecasts be taken into account. Several participants emphasized the need for marketing EPTA service as the region grows, especially among employees of large employers.

JEFFERSON COUNTY STAKEHOLDER MEETING

The Jefferson County stakeholder meeting was held on October 30, 2024 at Ranson City Hall; a virtual option was available for remote attendees. **Table 12** lists the stakeholders who participated.

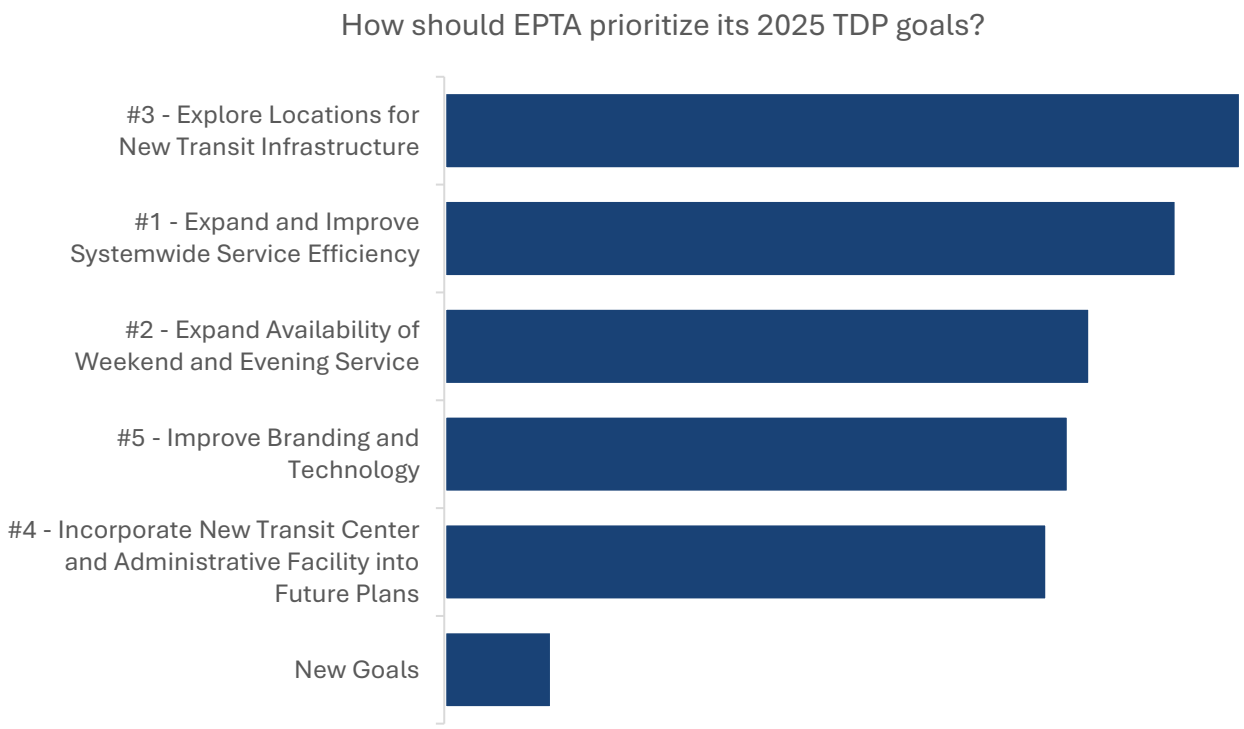
Table 12 | Jefferson County Stakeholder Focus Group Attendees

NAME	ORGANIZATION	NAME	ORGANIZATION
Jennie Brockman	Jefferson County Commission	Amanda Stroud	Ranson City Council
Joy Lewis	EPTA Board of Directors	Todd Wilt	City of Ranson
Elizabeth Rickets	Charles Town City Council	Ken Suits	Randon City Council
Bill Robinson	West Virginia Division of Public Transit	Heather McIntyre	Jefferson County Chamber of Commerce

Polling Exercise

The interactive polling exercise was conducted using Mentimeter and consisted of four questions. The first question asked participants to prioritize goals for the 2025 TDP. The goals were drawn from the 2020 TDP, with an option to include a new goal. **Figure 38** shows the relative priority of each goal for the Jefferson County focus group.

Figure 38 | Goal Prioritization (Jefferson County)



The second question asked participants to share what goals they had for EPTA. Jefferson County participants shared the following:

- Expand marketing.
- Expand service to those who NEED transit as well as making it attractive to those who may CHOOSE to take public transit.
- Improve visibility of services on the street level. The inability to access info easily and assess if the bus will suffice for travel needs will diminish ridership.
- Increase ridership to employers such as the hospitals.
- Transit to and from Shepherdstown for work, shopping, or medical appointments.
- Utilize Shepherd University for possible interns.

The third question asked participants to rank how well EPTA accomplishes four objectives. The scale for the areas ranged from "Poorly (1)" to "Outstandingly (5)." **Figure 39** shows the average rating for each objective, while **Figure 40** shows the rating breakdown.

Figure 39 | Average Rating of EPTA Objectives (Jefferson County)

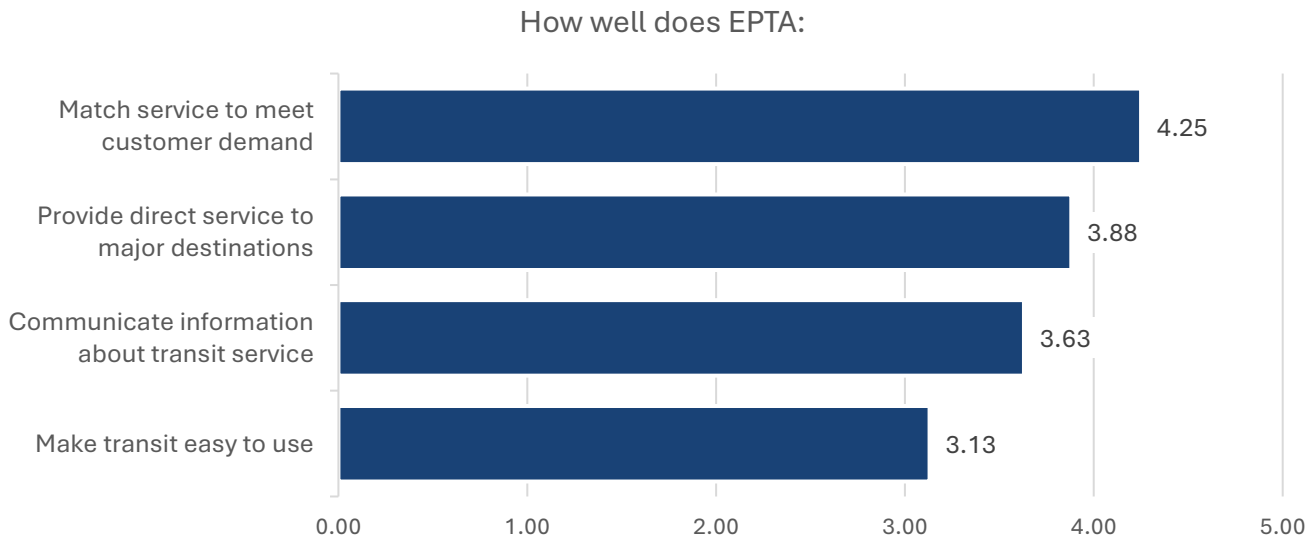
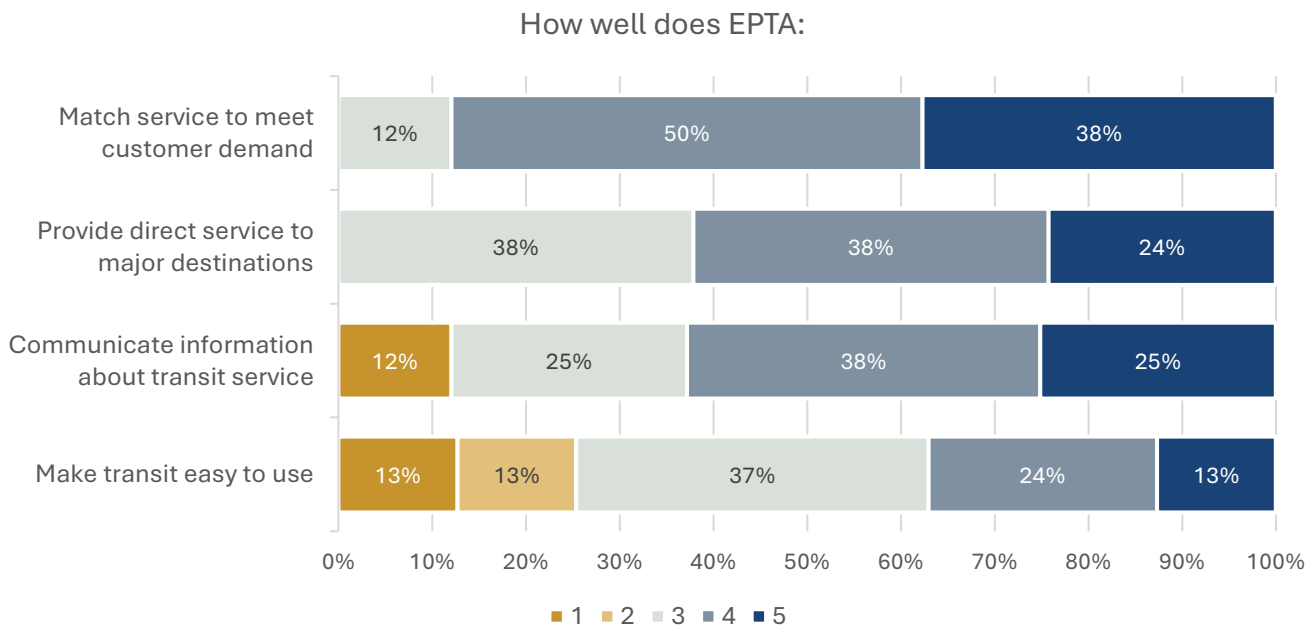
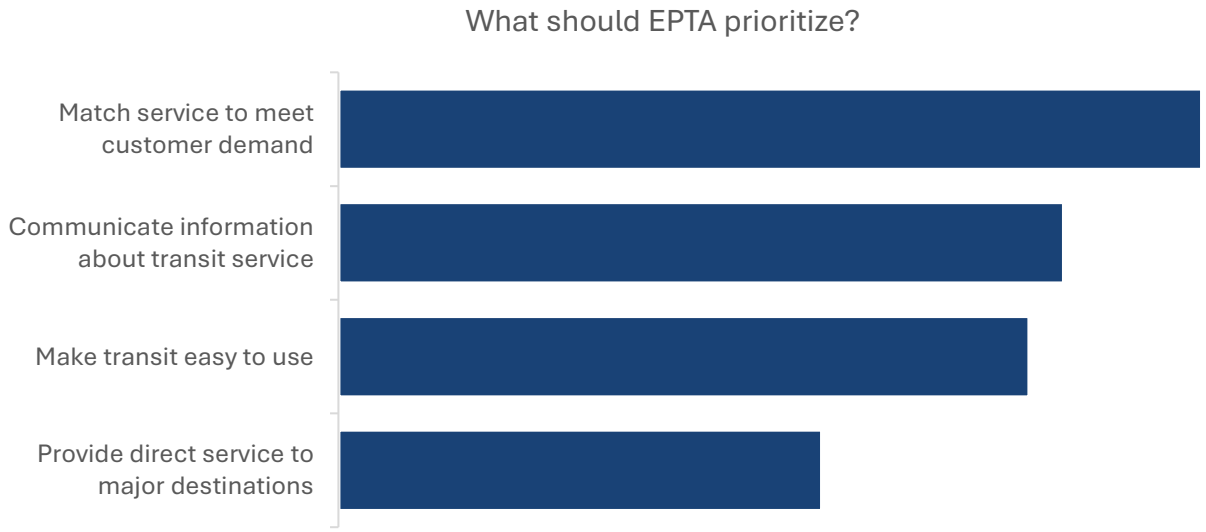


Figure 40 | Individual Ratings of EPTA Objectives (Jefferson County)



The fourth question asked participants to prioritize the objectives from the previous question. **Figure 41** shows the relative priority of each goal for the Jefferson County focus group.

Figure 41 | Objective Prioritization (Jefferson County)



Discussion

The discussion at the Jefferson County stakeholder meeting focused on how to increase awareness of EPTA service and grow ridership. Participants felt that EPTA could improve how they advertise in the community, since some people are not aware of recent service expansions or even that transit service

exists. A participant noted that it can be challenging to know where buses stop, while another referenced Washington, DC as an example of a place where signage is prominent. EPTA staff shared that bus stop signs and shelters will be deployed in the near future.

Participants discussed the differences between service in Jefferson and Berkeley Counties as well. Despite interest among the community in late night and Saturday service, there generally is not enough ridership to support additional EPTA service. Some participants suggested focusing on tourists and tourism-related destinations to support Saturday service. However, a limited budget forces EPTA to prioritize need-based trips. A Charles Town city councilmember noted that she has to advocate for the city to include EPTA in the budget every year.

Additionally, there were questions about adding a commuter route to northern Virginia or serving Census-designated places like Shannondale. However, these service changes would be too costly or not feasible with EPTA's current fleet.

6. Goals and Objectives

The goals and objectives for the 2025 TDP were drawn from the 2020 TDP's goals and objectives and updated based on input from stakeholders in Berkeley and Jefferson Counties, as well as the current state of EPTA's transit service. The goals, objectives, and vision (below) are key for guiding the development and prioritization of recommendations from the TDP.

EPTA's vision is to implement a high quality, sustainable, coordinated public transportation network that promotes accessibility and economic vitality for the community.

2020 TDP Goals and Objectives

The 2020 TDP identified five primary goals with 17 objectives to guide its service and system improvement, which are summarized in **Table 13**. The plan also identified systemwide service opportunities and goals from other planning initiatives, including those of Hagerstown/Eastern Panhandle Metropolitan Planning Organization (HEPMPO), Berkeley and Jefferson Counties, and local municipalities.

Table 13 | 2020 TDP Goals and Objectives

GOALS		OBJECTIVES	
1	**Expand and Improve Systemwide Service Efficiency**	1	Provide more direct service to major trip generators (i.e., shopping centers and hospitals)
		2	Identify opportunities for expanding service to emerging trip generators (i.e., employment locations)
		3	Match appropriate level of service and coverage with the transit demand for specific areas
		4	Coordinate trip patterns with commuter needs (e.g., time schedules)
		5	Encourage major employers to sponsor transit for employees
2	**Expand Availability of Weekend and Evening Service**	1	Provide more direct service to major trip generators (i.e. shopping centers and hospitals)
		2	Eliminate confusing nighttime and weekend patterns and replace with extended service on existing routes
		3	Add weekend service between Berkeley and Jefferson Counties
3	**Explore Locations for New Transit Infrastructure**	1	Identify new locations for shelters, benches, bike racks, and other infrastructure
		2	Identify locations to share transit-related information
		3	Explore interest from jurisdictions in the EPTA service area for making transit capital investments
4	**Incorporate New Transit Center**	1	Develop specific set of recommendations to redesign EPTA transit around new Transit Center

GOALS		OBJECTIVES	
	and Administrative Facility into Future Plans	2	Realign existing and planned routes to utilize new Transit Center
		3	Incorporate stakeholder feedback into plans for future uses
5	**Improve Branding and Technology**	1	Ensure that schedules published online are up-to-date with most recent operating characteristics
		2	Identify locations to share transit-related information
		3	Advertise mobile ticketing service and host workshops or training opportunities to educate riders on available resources

2025 TDP Workshops

In October of 2024, the project team met with stakeholder focus groups from Berkeley and Jefferson Counties. The meetings included an overview of the TDP process, a presentation of the findings from the market and service analyses, and interactive exercises to solicit stakeholder feedback on how the TDP goals and objectives should be modified for 2025.

The following sections summarize the responses to three questions related to the goals and objectives:

- How should EPTA prioritize its 2025 TDP goals?
- What goals do you have for EPTA?
- What should EPTA prioritize?

GOAL PRIORITIZATION

Focus group members were asked to rank the five existing goals from most important (first place) to least important (fifth place). Members also had the option to rank a sixth "new" goal. The number of members who ranked each goal in each ranking category is shown in **Table 14** and **Table 15**.

Table 14 | Results of Stakeholder Goal Prioritization Exercise (Berkeley County)

Goal	1st place	2nd place	3rd place	4th place	5th place	6th place	Weighted Average Rank
Expand and Improve Systemwide Service Efficiency	3	2	1	1	1	1	2.78
Expand Availability of Weekend and Evening Service	0	0	1	5	3	0	4.22
Explore Locations for New Transit Infrastructure	2	4	2	1	0	0	2.22
Incorporate New Transit Center and Administrative Facility into Future Plans	2	1	2	2	2	0	3.11
Improve Branding and Technology	2	2	3	0	2	0	2.78
New Goals	0	0	0	0	1	0	5.00

Based on the weighted average rank of the Berkely County stakeholders, the goals would be prioritized in the following order:

1. Explore Locations for New Transit Infrastructure.
2. **TIE:** Expand and Improve Systemwide Service Efficiency *AND* Improve Branding and Technology.
3. Incorporate New Transit Center and Administrative Facility into Future Plans.
4. Expand Availability of Weekend and Evening Plans.
5. New Goals.

Table 15 | Results of Stakeholder Goal Prioritization Exercise (Jefferson County)

Goal	1st place	2nd place	3rd place	4th place	5th place	6th place	Weighted Average Rank
Expand and Improve Systemwide Service Efficiency	2	1	2	3	0	0	2.75
Expand Availability of Weekend and Evening Service	1	2	2	0	3	0	3.25
Explore Locations for New Transit Infrastructure	2	2	3	1	0	0	2.38
Incorporate New Transit Center and Administrative Facility into Future Plans	2	0	1	2	3	0	3.50
Improve Branding and Technology	1	3	0	1	2	1	3.58
New Goals	0	0	0	1	0	2	5.33

Based on the weighted average rank of the Jefferson County stakeholders, the goals would be prioritized in the following order:

1. Explore Locations for New Transit Infrastructure.
2. Expand and Improve Systemwide Service Efficiency.
3. Expand Availability of Weekend and Evening Service.
4. Improve Branding and Technology.
5. Incorporate New Transit Center and Administrative Facility into Future Plans.
6. New Goals.

If the two stakeholder groups' responses are combined and the weighted average rank recalculated, then the goals would be prioritized in the following order:

1. Explore Locations for New Transit Infrastructure.
2. Expand and Improve Systemwide Service Efficiency.
3. Improve Branding and Technology.
4. Incorporate New Transit Center and Administrative Facility into Future Plans.
5. Expand Availability of Weekend and Evening Service.
6. New Goals.

GOALS FOR EPTA

After ranking the existing goals, focus group members were given the opportunity to suggest any additional goals that EPTA should consider incorporating into the 2025 TDP. The suggestions ranged from more generalized goals (i.e. expand marketing) to more specific planning and policy requests (i.e. create rideshare stops on I-81). The responses from both focus groups are documented in **Table 16**.

Table 16 | Suggestions for Additional Goals

STAKEHOLDER MEETING	RESPONSE
Berkeley County	Create rideshare stops on [Interstate] 81.
	Continue ridership rebound post-COVID.
	Partnerships with local business and large companies.
	Marketing that appeals to younger people?
	Expand marketing for transit and way finding.
	Consider adding staff to assist with marketing.
Jefferson County	Expand marketing.
	Transit to and from Shepherdstown for work, shopping, or medical appointments.
	Expand service to those who NEED transit as well as making it attractive to those who may CHOOSE to take public transit.
	Increase ridership to employers such as the hospitals.
	Improve visibility of services on the street level. The inability to access info easily and assess if the bus will suffice for travel needs will diminish ridership.
	Utilize Shepherd University for possible interns.

EPTA PRIORITIES

Focus group members were asked to rank four priorities from most important (first place) to least important (fourth place). The number of members who ranked each priority in each category is shown in **Table 17** and **Table 18**.

Table 17 | Results of Stakeholder Priority Ranking Exercise (Berkeley County)

PRIORITY	1ST PLACE	2ND PLACE	3RD PLACE	4TH PLACE	WEIGHTED AVERAGE RANK
Provide direct service to major destinations	0	2	4	3	3.1
Match service to meet customer demand	1	1	4	3	3.0
Communicate information about transit service	5	1	0	3	2.1
Make transit easy to use	3	5	1	0	1.8

Based on the weighted average rank of the Berkeley County stakeholders, the themes would be prioritized in the following order:

1. Make transit easy to use.
2. Communication information about transit service.
3. Match service to meet customer demand.
4. Provide direct service to major destinations.

Table 18 | Results of Stakeholder Priority Ranking Exercise (Jefferson County, 8 respondents)

PRIORITY	1ST PLACE	2ND PLACE	3RD PLACE	4TH PLACE	WEIGHTED AVERAGE RANK
Provide direct service to major destinations	0	3	0	5	3.3
Match service to meet customer demand	4	1	3	0	1.9
Communicate information about transit service	3	1	2	2	2.4
Make transit easy to use	1	3	3	1	2.5

Based on the weighted average rank of the Jefferson County stakeholders, the themes would be prioritized in the following order:

1. Match service to meet customer demand.
2. Communicate information about transit service.
3. Make transit easy to use.
4. Provide direct service to major destinations.

If the two stakeholder groups' responses are combined and the weighted average rank recalculated, then the themes would be prioritized in the following order:

1. Make transit easy to use.
2. Communication information about transit service.
3. Match service to meet customer demand.
4. Provide direct service to major destinations.

The results of this exercise indicate that stakeholders believe that more emphasis needs to be placed on promoting EPTA service and public awareness, rather than changing existing service.

2025 TDP Goals and Objectives

The goals and objectives for the 2025 TDP are summarized in **Table 19**. Some goals and objectives were modified or reordered to better reflect stakeholder input and EPTA priorities for the next five years. Realigning routes to serve the new Transit Center will be a key objective once the facility begins operation. The changes will be coupled with other adjustments to improve service efficiency, frequency, and coverage, which remain ongoing priorities for EPTA. As these changes go into effect, communicating them to existing riders and marketing transit to new riders will be a top priority.

Table 19 | 2025 TDP Goals and Objectives

GOALS		OBJECTIVES		COMMENTS
1	**Incorporate New Transit Center and Administrative Facility into Future Service**	1	Develop specific set of recommendations to redesign EPTA service to utilize new Transit Center	Construction of the new Transit Center began in June 2024 and is expected to be completed in 2026. As a result, adjusting service to serve the new Transit Center is top priority for the near future.

GOALS		OBJECTIVES		COMMENTS
		2	Realign EPTA service to utilize new Transit Center	*Change from 2020 TDP: This goal was shifted to the top to reflect its increased importance, and the phrase "Future Plans" was replaced with "Future Service" since the new Transit Center will begin to serve riders in the near future. Similarly, the wording of the first and second objectives was modified slightly to align with the goal.*
		3	Incorporate stakeholder feedback into plans for future uses	
2	**Improve Marketing, Communication, and Technology**	1	Ensure that schedules published online are up-to-date with most recent operating characteristics	Stakeholders frequently identified marketing and communication as a priority, especially as existing routes change to serve the new Transit Center (Goal 1) and improve frequency and coverage (Goals 4 and 5). *Change from 2020 TDP: This goal was moved up to reflect its increased importance. The word "Branding" was replaced with "Marketing and Communication" to more accurately reflect stakeholder and agency priorities. Similarly, the third objective was reworded to emphasize service-related communication.*
		2	Identify locations to share transit-related information	
		3	Advertise transit service to potential riders and provide education on mobile ticketing and other resources	
3	**Explore Locations for New Transit Infrastructure**	1	Identify new locations for shelters, benches, bike racks, and other infrastructure	Potential route changes will present an opportunity to reevaluate existing transit infrastructure. Stakeholders emphasized the importance of bus stop signage in marketing and improving the rider experience. *Change from 2020 TDP: This goal was moved up to reflect feedback from stakeholder.*
		2	Identify locations to share transit-related information	
		3	Explore interest from jurisdictions in the EPTA service area for making transit capital investments	
4	**Expand and Improve Systemwide Service Efficiency**	1	Provide more direct service to major trip generators (i.e., shopping centers and hospitals)	Improving service remains an important and ongoing priority for EPTA. *Change from 2020 TDP: This goal was moved down to reflect feedback from stakeholders.*
		2	Identify opportunities for expanding service to emerging trip generators (i.e., employment locations)	
		3	Match appropriate level of service and coverage with transit demand for specific areas	
		4	Coordinate trip patterns with commuter needs (e.g., time schedules)	
		5	Encourage major employers to sponsor transit for employees	
5	**Expand Availability of Weekend and Evening Service**	1	Provide more direct service to major trip generators (i.e. shopping centers and hospitals)	Improving service remains an important priority for EPTA. *Change from 2020 TDP: This goal was moved down to reflect feedback from stakeholders.*
		2	Eliminate confusing nighttime and weekend patterns and replace with extended service on existing routes	
		3	Add weekend service between Berkeley and Jefferson Counties	

7. Service Recommendations

The recommendations propose a realigned network that serves the new Multimodal Transit Center (TC), simplifies complex routes, aligns evening and Saturday service with weekday service, and expands coverage. The following sections describe the service planning process and the recommended service.

Service Planning Process

The service planning process was guided at a high level by the goals and objectives for the 2025 TDP, which identify EPTA's priorities for the next five years. Specific recommendations were based on service and market analyses, as well as feedback from stakeholders and the public.

GOALS AND OBJECTIVES

The goals and objectives for the 2025 TDP are summarized in **Table 19**, and the relationship between the recommendation themes and the goals is shown in **Table 20.** Routes were realigned to serve the new Multimodal Transit Center, which will now act as a primary transfer point where all Berkeley County routes will have centralized, timed transfers. Patterns were simplified to make service easier for the public to understand and use. Separate evening and Saturday routes were replaced with routes that extend or mirror weekday service. Finally, coverage was expanded to serve new destinations, such as Spring Mills and Hedgesville, and service was increased in Jefferson County.

Table 20 | Recommendation-Goal Crosswalk

RECOMMENDATION THEMES	GOAL #1: NEW TRANSIT CENTER	GOAL #2 IMPROVE MARKETING & COMMUNICATION	GOAL #3 NEW TRANSIT INFRASTRUCTURE	GOAL #4: SYSTEMWIDE SERVICE EFFICIENCY	GOAL #5: WEEKEND AND EVENING SERVICE
Realigned routes to serve new transit center	●	●	●		
Simplified routes with consistent service patterns throughout the day		●		●	
Eliminated major differences between weekday, evening, and Saturday service		●		●	●
Expanded coverage to new destinations		●	●		
Facilitated timed transfers at new transit facility	●			●	

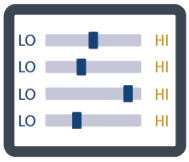
SERVICE PLANNING INPUTS

A range of inputs were used during the service planning process. These inputs are briefly described below; more details can be found in the **Service Analysis**, **Market Analysis**, **Service Gaps Analysis**, and **Public and Stakeholder Engagement** chapters.

Population and Job Density

Density is a major determinant of transit service effectiveness and efficiency for a given service area. The transit potential analysis combines population and employment density to identify areas that can support fixed route transit service. Pockets of higher transit potential are found in Martinsburg, Ranson, and Charles Town. Most of Martinsburg and its immediate surroundings have moderate transit potential, as well as parts of Ranson and Charles Town.

Transit Propensity



The transit propensity analysis uses a variety of demographic factors to identify areas with populations that have high propensity for transit use. The analysis consists of four indices: transit-oriented populations, commuter origins, employment destinations, and activity destinations. Similar to transit potential, areas with high transit propensity are generally found in downtown Martinsburg, Ranson, and Charles Town. Areas with moderate propensity can be found around the three municipalities.

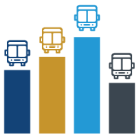
Travel Flows

The travel flow analysis uses trip-level data from a synthetic travel demand model to identify travel patterns within both Martinsburg and the broader study area. There are generally more trips within zones than between zones, as well as more trips between adjacent zones than between separated zones. The strongest travel flows at a regional level are between the three major cities – Martinsburg, Charles Town, and Ranson – and their surroundings. The strongest travel flows at the local level are between the Foxcroft Towne Center and Route 9 Corridor zone and their respective surroundings.

Corridor Optimization

An optimization algorithm was applied to the trip-level data to identify specific corridors with high trip demand. The analysis identified nine corridors that serve at least 5,000 daily trips. The two highest-demand corridors stretch from Foxcroft Towne Center to Spring Mills. In both counties, corridors traveling southwest to northeast are generally ranked higher than those traveling northwest to southeast.

Existing Network & Performance



The performance analyses use transit ridership and service data to identify potential strengths or weaknesses in the existing network. Routes 14 and 20 have the highest average daily ridership, and the weekday routes are generally more productive than the evening and Saturday routes. Caperton Transportation Station is the highest ridership stop, followed by the Walmart at Foxcroft Towne Center, the VA Medical Center, Gabe's, and the Walmart in Charles Town. Over 50 percent of stops have less than one daily boarding on average. This section also indicates where the proposed recommendations have high overlap and similarity with the existing EPTA network.

Gaps Analyses

The gaps analyses compare the number of fixed-route vehicle trips serving a given location or travel flow to different measures of travel demand to identify potential gaps in transit service. The first analysis, which compared vehicle trips to transit potential and propensity, identified Spring Mills as a place with a notable gap in service compared to the rest of the study area. The second analysis, which compared vehicle trips to travel flows, identified the linkage between the Northeast Residential and Foxcroft Towne Center zones and the linkage between Martinsburg and Inwood as possible gaps.

Stakeholder Input

The Consultant Team held two focus groups with representatives from Berkeley and Jefferson Counties to gather local insights and guidance to inform the development of the TDP. Stakeholders emphasized the need for transit coverage in rapidly growing areas, including Spring Mills, and for better marketing and communication of transit services to potential customers. Additionally, stakeholders discussed driver recruitmeent and retention and potential funding sources.

Public Survey

The Consultant Team distributed a survey to riders and non-riders to gather feedback on their interests and concerns. Riders were asked about their transit usage and perception of existing transit service, while non-riders were asked about their reasons for not using transit. Over 150 responses were received, with a roughly even distribution between riders and non-riders. Key themes included increasing bus frequency, lengthening hours of operation, improving schedule consistency, adding weekday service to Spring Mills, and adding Saturday service in Jefferson County.

New Transit Center

The EPTA Multimodal Transit Center is under construction and will be completed in Spring 2026. Once opened, the facility will serve as the primary transfer point for all Berkeley County routes.

Weekday Service Recommendations

ROUTE A: SPRING MILLS

Route A provides service between Spring Mills, Martinsburg, and The Commons. Service would begin at the Multimodal Transit Center, go to Spring Mills, return to the Multimodal Transit Center, go to The Commons, and return to the Transit Center. Both legs would be served on each trip, with an opportunity to transfer to a different route in the middle of the trip.

Figure 42 | Proposed Alignment and Stops for Route A

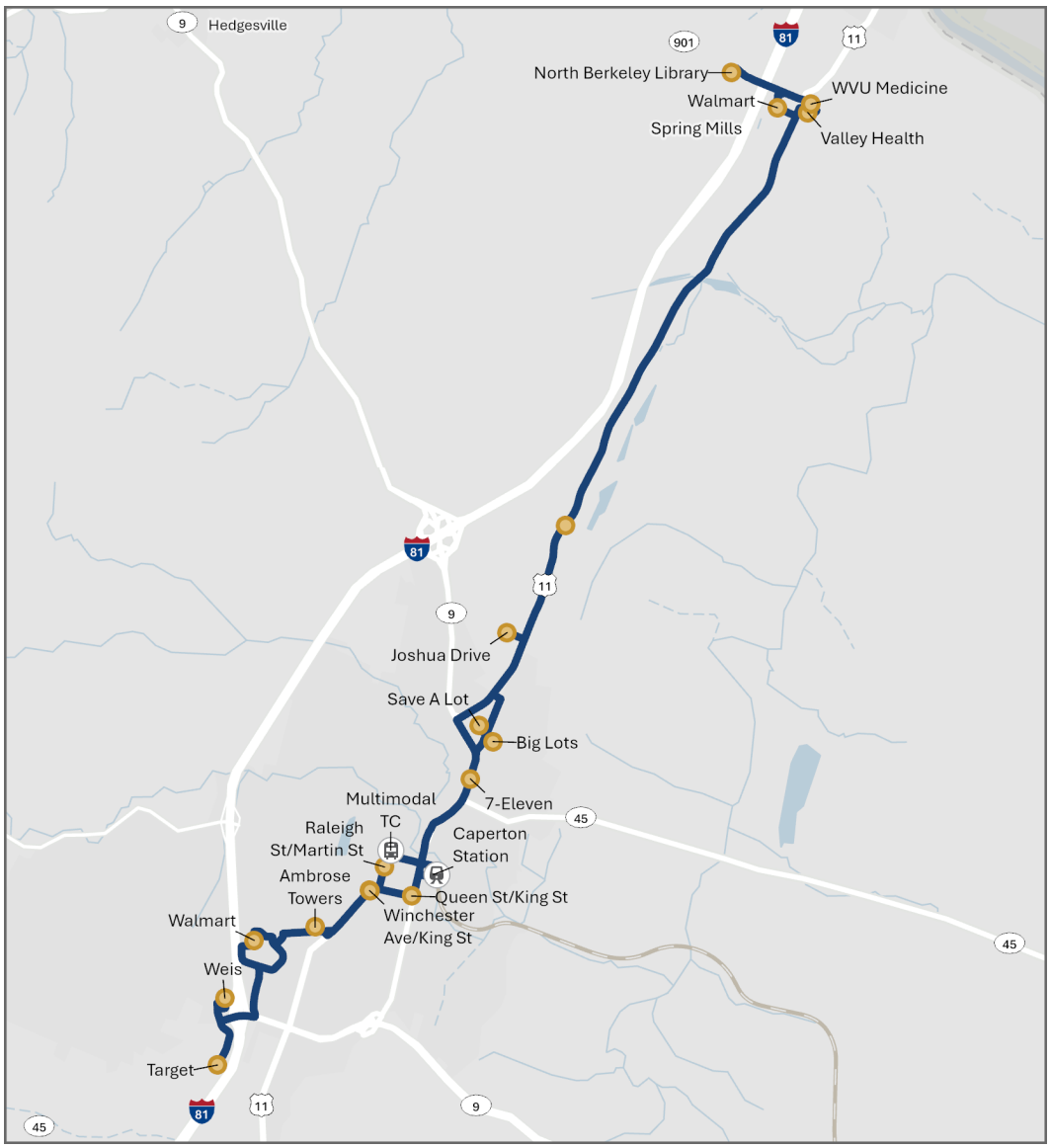


Table 21 | Service Characteristics for Route A

SERVICE CHARACTERISTIC	PATTERN 1
Existing Analogue	Route 14
Approximate Timespan	9:00 AM – 5:00 PM
Daily Trips	5 trips per day
Headway	90 minutes
Estimated Distance	23.8 miles (roundtrip)
Estimated Runtime	76 minutes (without stops)

Table 22 | Service Planning Factors for Route A

SERVICE PLANNING INPUT	ROUTE-SPECIFIC FACTORS
Population and Job Density	There are high densities in downtown Martinsburg and medium-to-low densities in Spring Mills.
Transit Propensity	There are moderate concentrations of transit-oriented populations in Spring Mills and high concentrations of multiple propensity indices in downtown Martinsburg.
Travel Flows	There are high regional flows between Martinsburg and Spring Mills and high local flows between the Downtown and South Industrial zones.
Corridor Optimization	The route is aligned entirely with Corridor 1 and partially with Corridors 2 and 6.
Existing Network & Performance	The route provides additional service for downtown Martinsburg and high ridership stops like the Walmart at Foxcroft Towne Center.
Gaps Analyses	There are gaps in density and propensity compared to transit service in Spring Mills and northern Martinsburg, as well as gaps in travel flows compared to transit service between the Foxcroft Towne Center and Northeast Residential zones.
Stakeholder Input	Stakeholders identified new residential and economic growth in Spring Mills.
Public Survey	Respondents requested service to Spring Mills, as well as more direct service to Foxcroft Towne Center.
New Transit Center	The primary transfer point would be the new Multimodal TC.

Public Comments

No comments specific to this route were provided during the April 2025 or June 2025 public comment periods.

ROUTE B: INWOOD

Route B provides service between Martinsburg, Procter & Gamble, and Inwood. The first two and last two trips of the day would operate on a short pattern that turns at Procter & Gamble, while the trips in the middle of the day would operate on the full route. Trips would be timed to serve Procter & Gamble at shift changes.

Figure 43 | Proposed Alignment and Stops for Route B

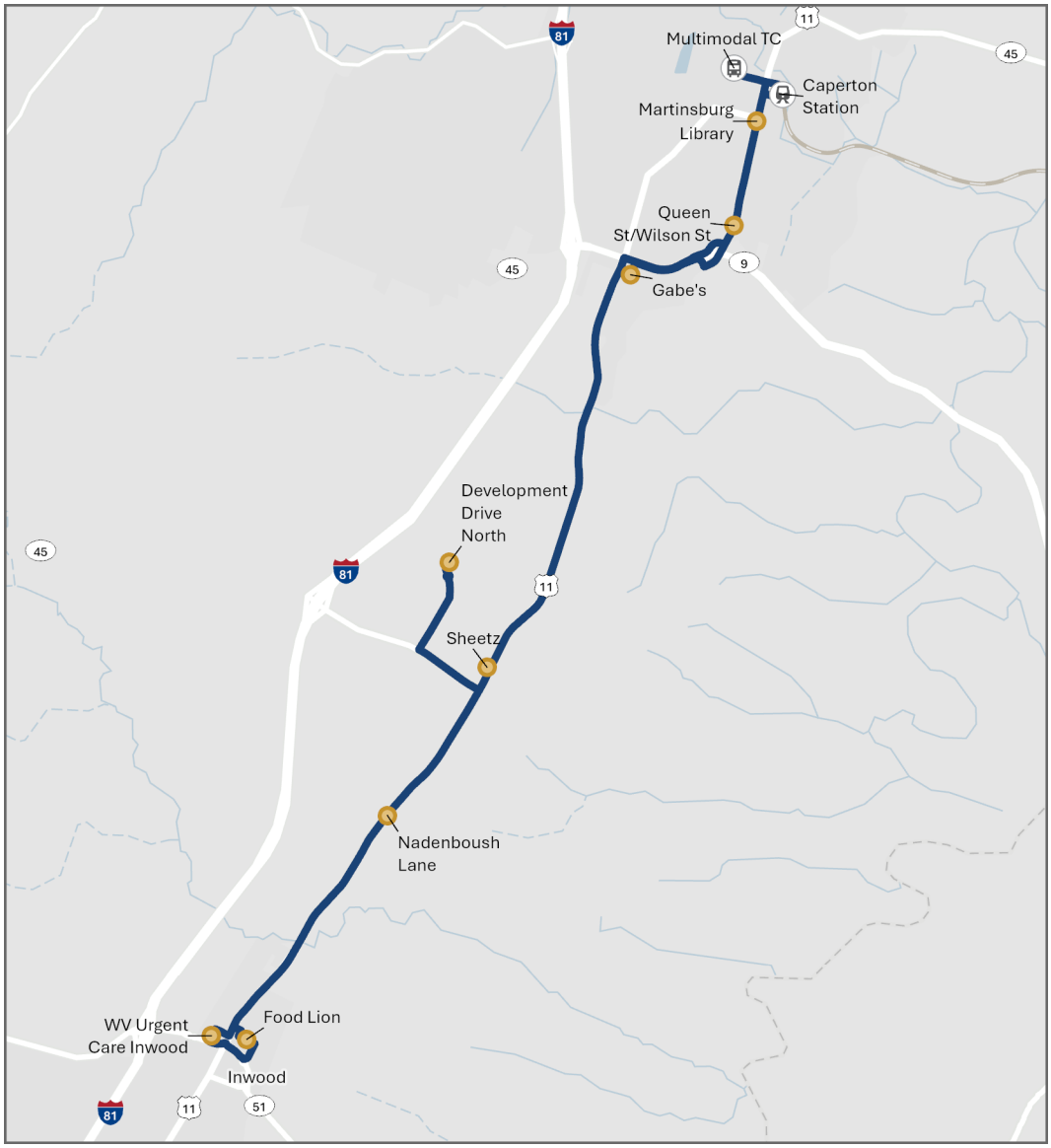


Table 23 | Service Characteristics for Route B

SERVICE CHARACTERISTIC	PATTERN 1	PATTERN 2
Pattern Description	Full route	Turns at P&G
Existing Analogue	Route 18	
Approximate Timespan	6:00 AM – 8:00 PM	
Daily Trips	5 trips per day	4 trips per day
Headway[13]	90 minutes	60 minutes
Estimated Distance	24.2 miles (roundtrip)	14.8 miles (roundtrip)
Estimated Runtime	65 minutes (without stops)	43 minutes (without stops)

Table 24 | Service Planning Factors for Route B

SERVICE PLANNING INPUT	ROUTE-SPECIFIC FACTORS
Population and Job Density	There are high densities in downtown Martinsburg and medium-to-low densities in Inwood.
Transit Propensity	There are moderate concentrations of transit-oriented populations in Inwood and high concentrations of multiple propensity indices in downtown Martinsburg.
Travel Flows	There are high regional flows between Martinsburg and Inwood and moderate local flows between the Downtown and East Residential zones.
Corridor Optimization	The route is aligned entirely with Corridor 5 and partially with Corridor 16.
Existing Network & Performance	The route maintains Route 18's Inwood coverage while increasing ridership potential through Queen Street service and creating a one-seat trip between Inwood and Martinsburg.
Gaps Analyses	There are gaps in travel flows compared to transit service between Martinsburg and Inwood.
Stakeholder Input	Stakeholders identified new commercial growth in Inwood.
Public Survey	Respondents requested extended hours for Route 18.
New Transit Center	The primary transfer point would be the new Multimodal TC.

Public Comments

No comments specific to this route were provided during the April 2025 or June 2025 public comment periods.

[13] Headways between patterns is contingent on shift change needs at Procter and Gamble and will be finalized during final scheduling

ROUTE C: HEDGESVILLE / INDUSTRIAL PARK

Route C provides service between Martinsburg, Caperton Industrial Park, and Hedgesville. The first three and last three trips of the day would operate on a short pattern that turns at Caperton Industrial Park, while the trips in the middle of the day would operate on the full route. There would be a three-hour period in the morning and a two-hour period in the afternoon when the route does not operate due to school drop-off/pick-up and resource constraints. Trips would be timed to serve Caperton Industrial Park at shift changes.

Figure 44 | Proposed Alignment and Stops for Route C

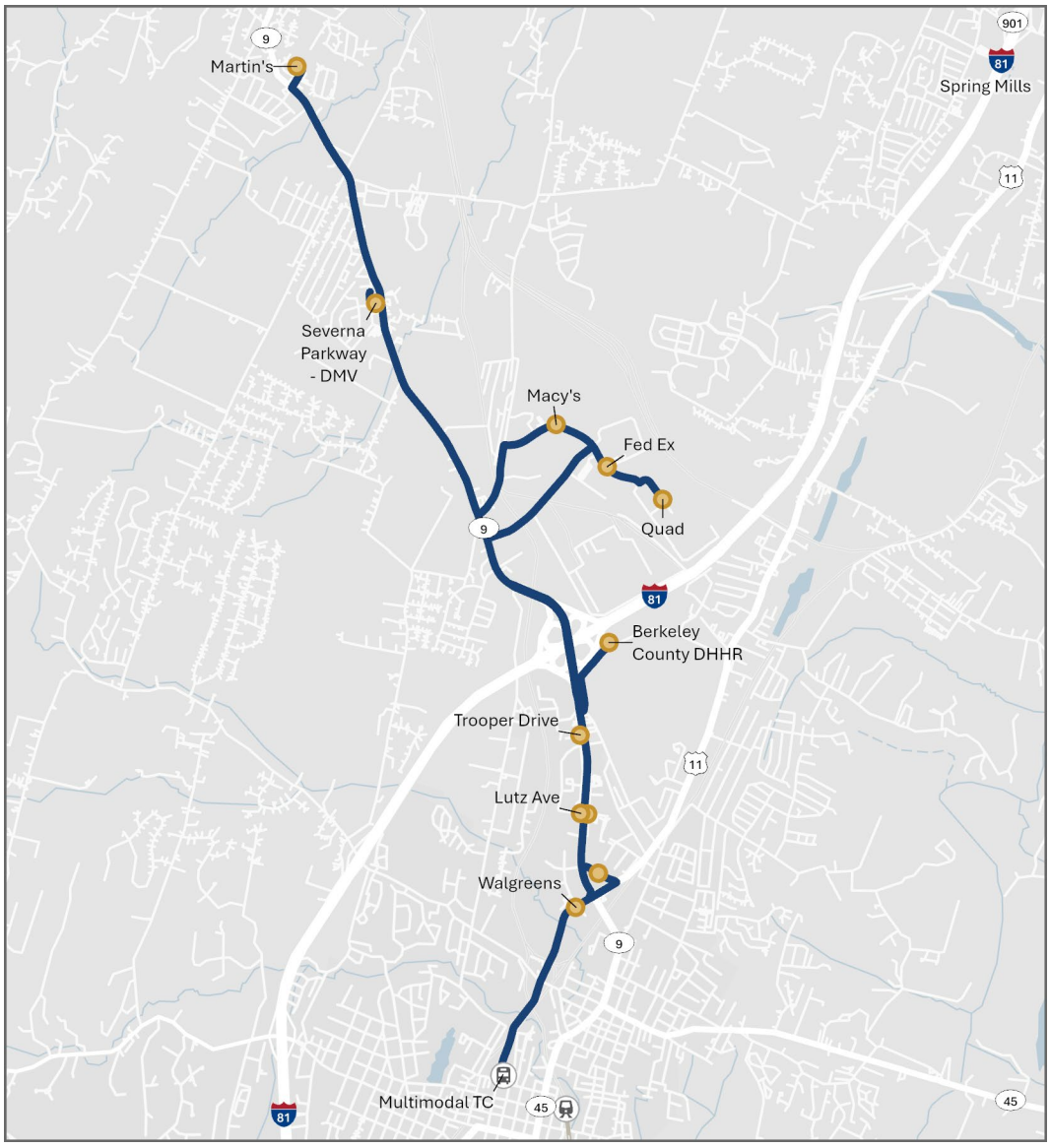


Table 25 | Service Characteristics for Route C

SERVICE CHARACTERISTIC	PATTERN 1	PATTERN 2
Pattern Description	Turns at Caperton Industrial Park	Full Route
Existing Analogue	Routes 12 and 19	
Approximate Timespan	5:30 AM – 7:00 PM	
Daily Trips	6 trips per day	5 trips per day
Headway[14]	30 minutes	60 minutes
Estimated Distance	10.0 miles (roundtrip)	18.2 miles (roundtrip)
Estimated Runtime	24 minutes (without stops)	45 minutes (without stops)

Table 26 | Service Planning Factors for Route C

SERVICE PLANNING INPUT	ROUTE-SPECIFIC FACTORS
Population and Job Density	There are high densities in downtown Martinsburg and medium-to-low densities in Hedgesville.
Transit Propensity	There are high concentrations of multiple propensity indices in downtown Martinsburg. There are low concentrations of transit-oriented populations in Hedgesville but increasing retail and housing development.
Travel Flows	There are moderate local flows between the Downtown, Route 9 Corridor, and North Industrial zones.
Corridor Optimization	The route is aligned entirely with Corridor 9 and partially with Corridor 8.
Existing Network & Performance	The route streamlines Route 14 coverage and creates all-day service for Route 19.
Gaps Analyses	There are gaps in density and propensity compared to transit service in northern Martinsburg.
Public Survey	Respondents requested service to Hedgesville and more frequent service to Caperton Industrial Park.

Public Comments

No comments specific to this route were provided during the April 2025 public comment period. Feedback from the Berkeley County Sheriff's Office on the location of stops along Edwin Miller Boulevard was recorded during the June 2025 public comment period.

[14] Headways between patterns is contingent on shift change needs at Caperton Industrial Park and will be finalized during final scheduling

ROUTE D: MARTINSBURG CIRCULATOR

Route D provides clockwise circulator service to key destinations in Martinsburg. A similar alignment operates on Saturdays as well.

Figure 45 | Proposed Alignment and Stops for Route D

Table 27 | Service Characteristics for Route D

SERVICE CHARACTERISTIC	PATTERN 1
Existing Analogue	Route 10
Approximate Timespan	6:00 AM – 9:00 PM
Daily Trips	15 trips per day
Headway	60 minutes
Estimated Distance	11.3 miles (roundtrip)
Estimated Runtime	46 minutes (without stops)

Table 28 | Service Planning Factors for Route D

SERVICE PLANNING INPUT	ROUTE-SPECIFIC FACTORS
Population and Job Density	There are high densities in downtown Martinsburg and the surrounding neighborhoods.
Transit Propensity	There are high concentrations of multiple propensity indices in downtown Martinsburg and the surrounding neighborhoods.
Travel Flows	There are high internal flows in Martinsburg, including Foxcroft Towne Center and its surroundings.
Corridor Optimization	The route is aligned partially with Corridors 2, 6, and 14.
Existing Network & Performance	The route maintains a similar alignment to Route 10, which is a high ridership route. Additionally, Foxcroft Towne Center is a high ridership stop.
Public Survey	Respondents requested more direct service to Berkeley Medical Center and maintaining Caperton Transportation Station as a stop.
New Transit Center	The primary transfer point would be the new Multimodal TC.

Public Comments

No comments specific to this route were provided during the April 2025 public comment period. One comment requesting service along King Street and Tennessee Avenue was recorded during the June 2025 public comment period.

ROUTE E: VA MEDICAL CENTER NORTH

Route E provides service between Martinsburg and the VA Medical Center. Riders traveling between Berkeley and Jefferson Counties can transfer between Routes E and F at the VAMC.

Figure 46 | Proposed Alignment and Stops for Route E

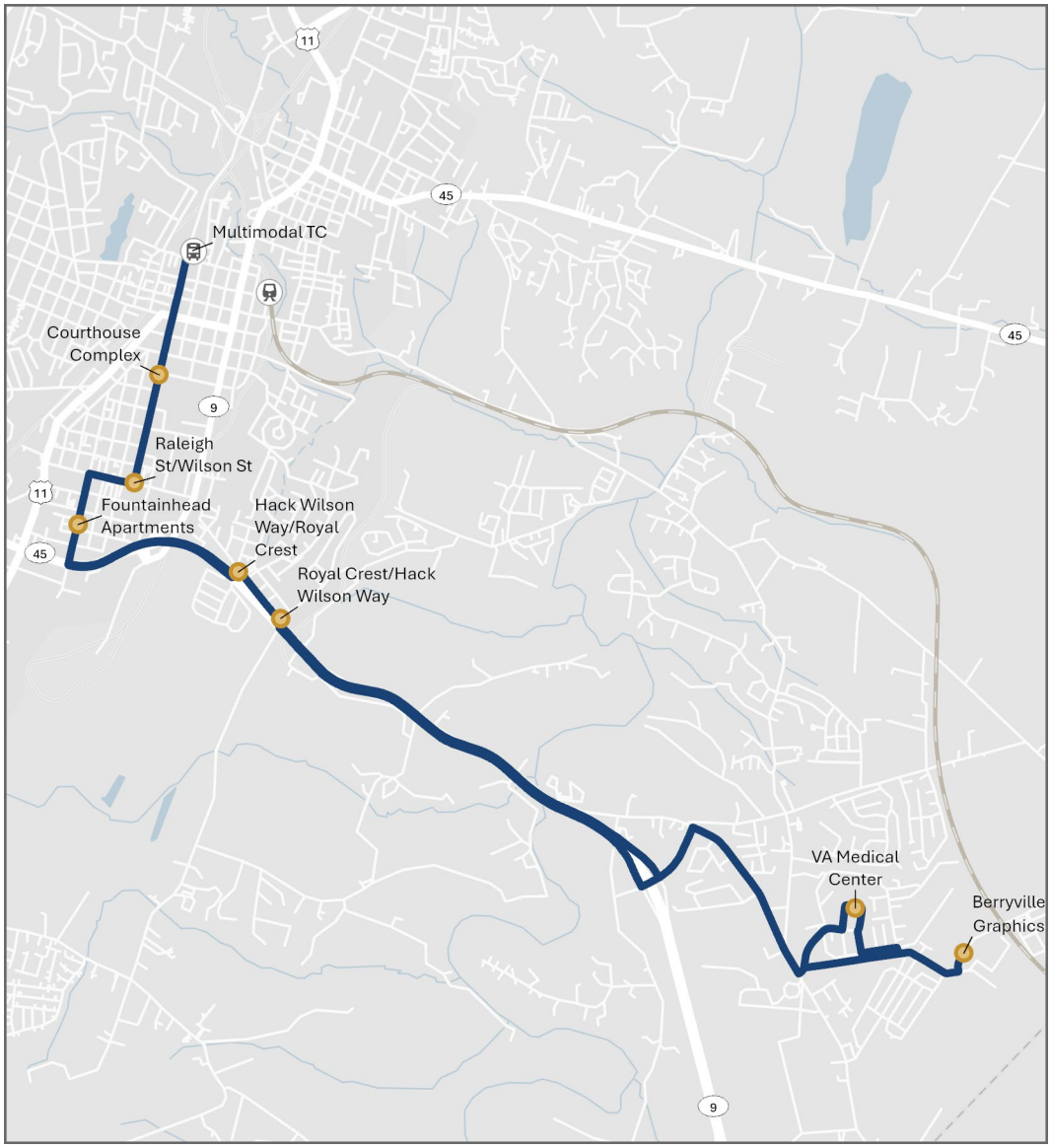


Table 29 | Service Characteristics for Route E

SERVICE CHARACTERISTIC	PATTERN 1
Existing Analogue	Route 11
Approximate Timespan	8:00 AM – 6:00 PM
Daily Trips	10 trips per day
Headway	60 minutes
Estimated Distance	14.7 miles (roundtrip)
Estimated Runtime	38 minutes (without stops)

Table 30 | Service Planning Factors for Route E

SERVICE PLANNING INPUT	ROUTE-SPECIFIC FACTORS
Population and Job Density	There are high densities in downtown Martinsburg.
Transit Propensity	There are high concentrations of multiple propensity indices in downtown Martinsburg.
Travel Flows	There are high regional flows between Martinsburg and eastern Berkeley County.
Corridor Optimization	The route is aligned entirely with Corridor 7.
Existing Network & Performance	The route alignment streamlines Route 11 and creates a central transfer in Martinsburg for Jefferson County riders. Additionally, the VA Medical Center is a high ridership stop.
Gaps Analyses	There are gaps in travel flows compared to transit service between Martinsburg and eastern Berkeley County.
Public Survey	Respondents requested a more direct route between Jefferson County and Martinsburg – this route connects directly with Route F to provide this cross-county connection.
New Transit Center	The primary transfer point would be the new Multimodal TC.

Public Comments

No comments specific to this route were provided during the April 2025 or June 2025 public comment periods.

ROUTE F: VA MEDICAL CENTER SOUTH

Route F provides service between Charles Town, Ranson, and the VA Medical Center. Riders traveling between Berkeley and Jefferson Counties can transfer between Routes E and F at the VAMC. Riders traveling within Jefferson County can transfer at multiple stops in Charles Town and Ranson, but transfers will be timed at Walmart. Route F operates revenue service between Martinsburg and Charles Town at the beginning of the day and between Charles Town and Martinsburg at the end of the day.

Figure 47 | Proposed Alignment and Stops for Route F

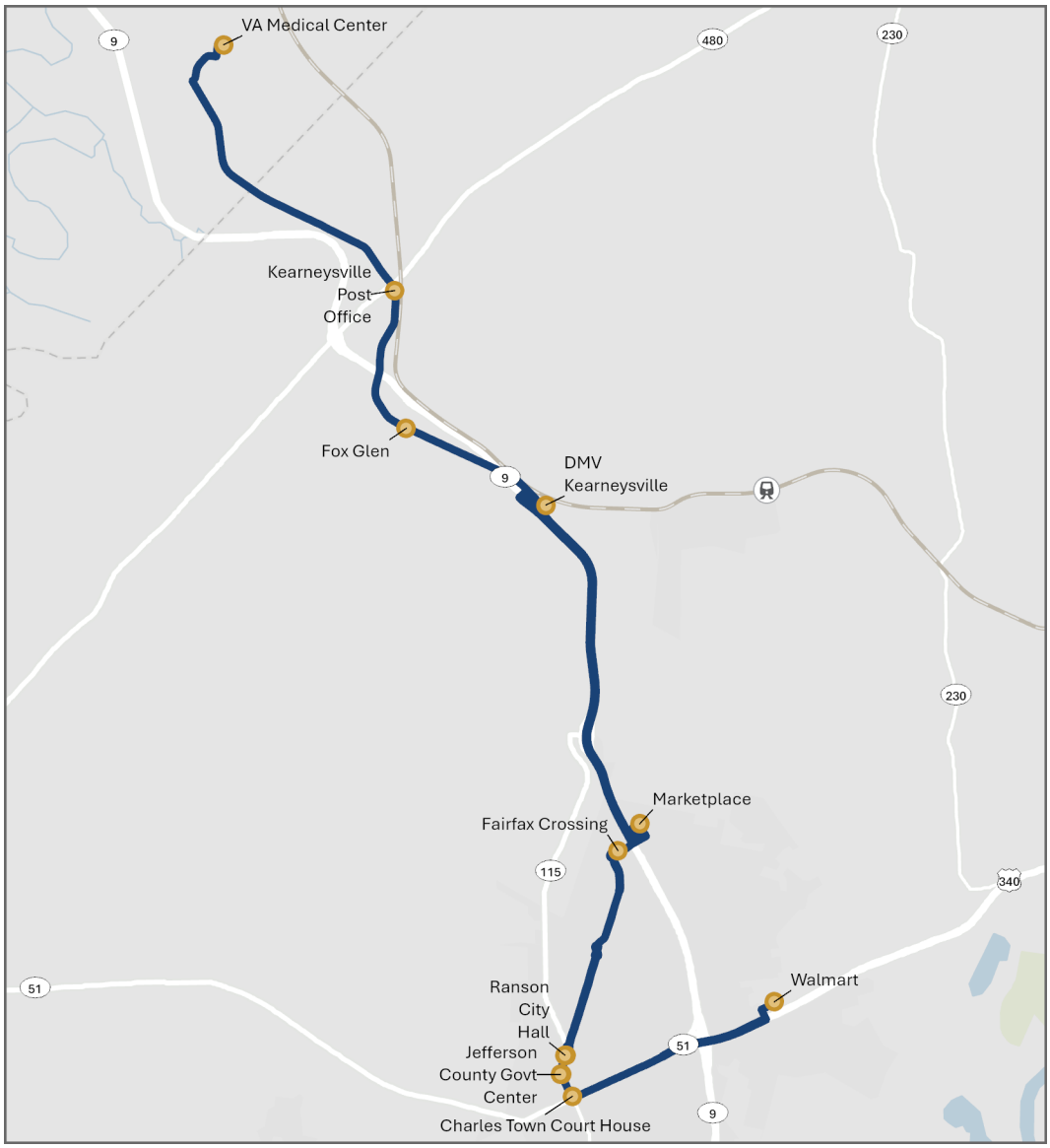


Table 31 | Service Characteristics for Route F

SERVICE CHARACTERISTIC	PATTERN 1
Existing Analogue	Route 16
Approximate Timespan	7:15 AM – 7:15 PM
Daily Trips	7 trips per day
Headway	90 minutes
Estimated Distance	28.6 miles (roundtrip)
Estimated Runtime	79 minutes (without stops)

Table 32 | Service Planning Factors for Route F

SERVICE PLANNING INPUT	ROUTE-SPECIFIC FACTORS
Population and Job Density	There are high densities in Charles Town and Ranson.
Transit Propensity	There are high concentrations of multiple propensity indices in Charles Town and Ranson.
Travel Flows	There are high internal flows in Charles town.
Corridor Optimization	The route is aligned partially with Corridors 13 and 15.
Existing Network & Performance	The route alignment modifies Route 16 to provide more coverage in Ranson and Charles Town.
Public Survey	Respondents requested a more direct route between Jefferson County and Martinsburg – this route connects directly with Route E to provide this cross-county connection.

Public Comments

No comments specific to this route were provided during the April 2025 or June 2025 public comment periods. This route's headway and span were modified in response to the introduction of Route H.

ROUTE G: HARPERS FERRY

Route G provides service between Charles Town, Ranson, and Harpers Ferry. Service would begin at Walmart, go to Harpers Ferry, return to Walmart, go to Washington Landing, go to Marketplace, and return to Walmart. All legs would be served on each trip, with an opportunity to transfer to a different route in the middle of the trip. Riders traveling within Jefferson County can transfer at multiple stops in Charles Town and Ranson, but transfers will be timed at Walmart. Route G operates revenue service between Martinsburg and Charles Town at the beginning of the day and between Charles Town and Martinsburg at the end of the day.

Figure 48 | Proposed Alignment and Stops for Route G

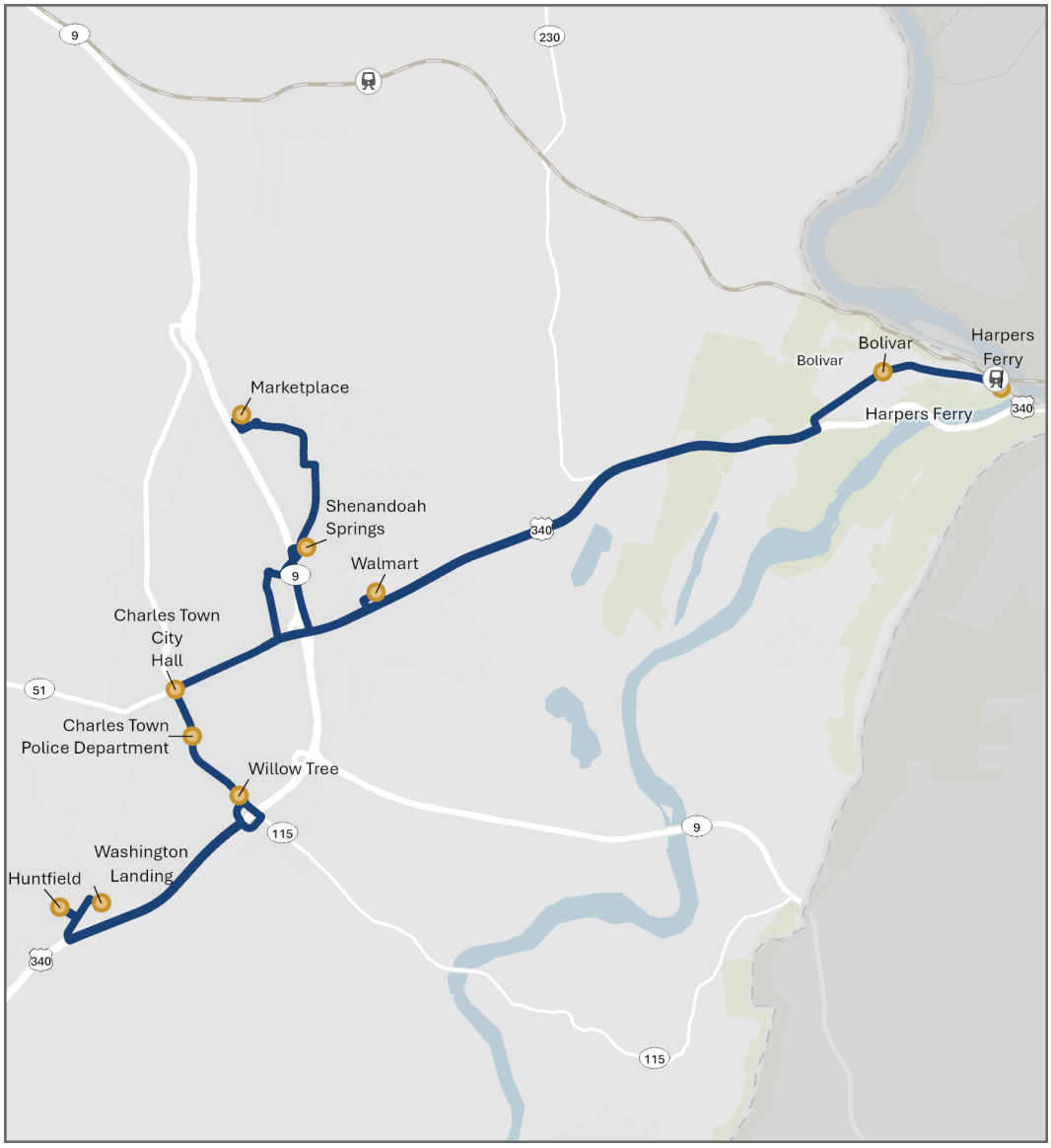


Table 33 | Service Characteristics for Route G

SERVICE CHARACTERISTIC	PATTERN 1
Existing Analogue	Route 20
Approximate Timespan	7:15 AM – 5:45 PM
Daily Trips	6 trips per day
Headway	90 minutes
Estimated Distance	30.1 miles (roundtrip)
Estimated Runtime	80 minutes (without stops)

Table 34 | Service Planning Factors for Route G

SERVICE PLANNING INPUT	ROUTE-SPECIFIC FACTORS
Population and Job Density	There are high densities in Charles Town and Ranson and medium-to-low densities in Harpers Ferry.
Transit Propensity	There are high concentrations of multiple propensity indices in Charles Town and Ranson and low concentrations of transit-oriented populations in Harpers Ferry.
Travel Flows	There are high internal flows in Charles Town and Ranson and high regional flows between Charles Town and Harpers Ferry.
Corridor Optimization	The route is aligned partially with Corridors 3, 4, and 15.
Existing Network & Performance	The route maintains part of the Route 20 alignment, which is a high ridership route.

Public Comments

No comments specific to the initial iteration of this route were provided during the April 2025 or June 2025 public comment periods. However, this route's alignment, span, and level of service were modified in response to the introduction of Route H.

ROUTE H: CHARLES TOWN / RANSON CIRCULATOR

Route H provides clockwise circulator service to key destinations in Martinsburg. Riders traveling within Jefferson County can transfer at multiple stops in Charles Town and Ranson, but transfers will be timed at Walmart. Route H operates revenue service between Martinsburg and Charles Town at the beginning of the day and between Charles Town and Martinsburg at the end of the day.

Figure 49 | Proposed Alignment and Stops for Route H

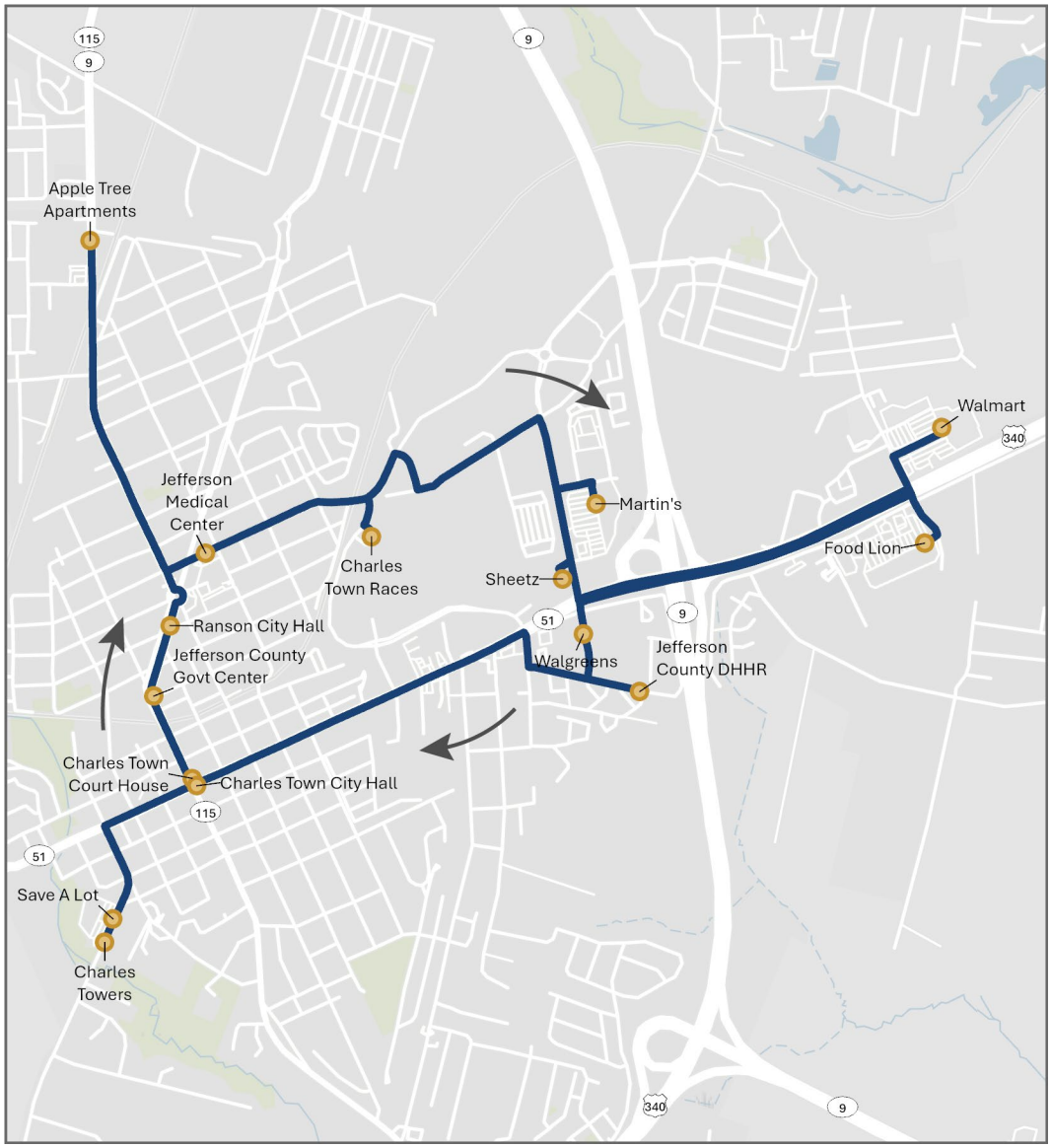


Table 35 | Service Characteristics for Route H

SERVICE CHARACTERISTIC	PATTERN 1
Existing Analogue	Route 20
Approximate Timespan	6:30 AM – 8:00 PM
Daily Trips	15 trips per day
Headway	45 minutes
Estimated Distance	9.0 miles (roundtrip)
Estimated Runtime	41 minutes (without stops)

Table 36 | Service Planning Factors for Route H

SERVICE PLANNING INPUT	ROUTE-SPECIFIC FACTORS
Population and Job Density	There are high densities in Charles Town and Ranson.
Transit Propensity	There are high concentrations of multiple propensity indices in Charles Town and Ranson.
Travel Flows	There are high internal flows in Charles Town and Ranson
Corridor Optimization	The route is aligned partially with Corridors 3, 4, and 15.
Existing Network & Performance	The route maintains part of the Route 20 alignment, which is a high ridership route.
Public Survey	Respondents requested more service in Jefferson County.

Public Comments

This route was added after the April 2025 public comment period. One comment requesting additional local service in Charles Town and Ranson was recorded, as well as feedback from the City of Ranson on providing more service. No comments specific to this route were provided during the June 2025 public comment period.

Weekend Service Recommendations

ROUTE D: SATURDAY BERKELEY CIRCULATOR

The Saturday version of Route D provides service in Martinsburg using two circulator patterns. The first pattern operates clockwise in downtown Martinsburg and the second pattern operates counterclockwise in northern Martinsburg. The patterns generally alternate throughout the day, with two extra trips for the first pattern in downtown Martinsburg.

Figure 50 | Proposed Alignment and Stops for Route D (Weekend)

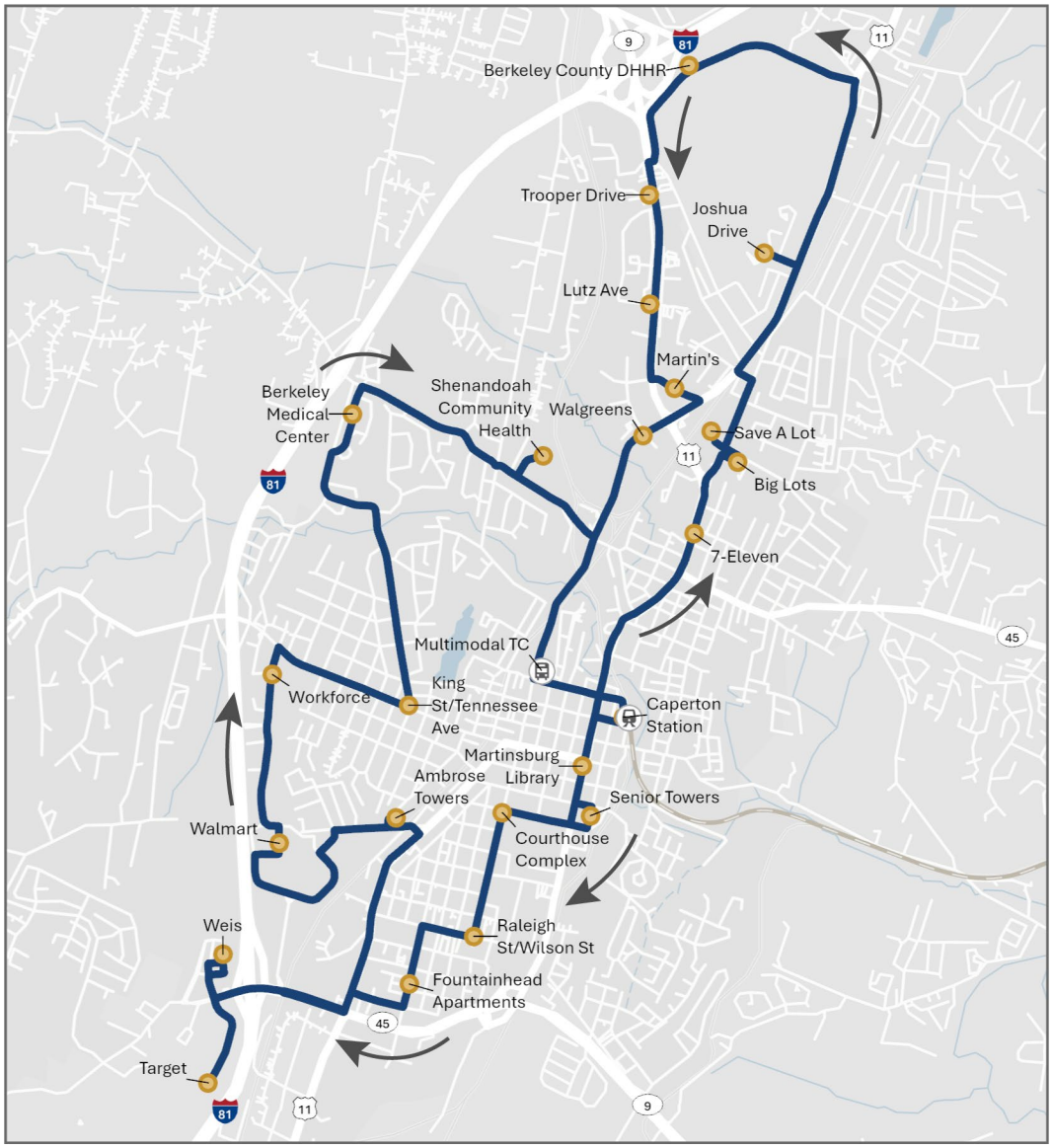


Table 37 | Service Characteristics for Route D (Weekend)

SERVICE CHARACTERISTIC	PATTERN 1	PATTERN 2
Pattern Description	Downtown Martinsburg	Northern Martinsburg
Existing Analogue	Routes 35 and 40	
Approximate Timespan	8:00 AM – 6:00 PM	
Daily Trips	7 trips per day	5 trips per day
Headway	60 minutes	30 minutes
Estimated Distance	12.5 miles (roundtrip)	7.2 miles (roundtrip)
Estimated Runtime	53 minutes (without stops)	24 minutes (without stops)

Table 38 | Service Planning Factors for Route D (Weekend)

SERVICE PLANNING INPUT	ROUTE-SPECIFIC FACTORS
Population and Job Density	There are high densities in downtown Martinsburg and the surrounding neighborhoods.
Transit Propensity	There are high concentrations of multiple propensity indices in downtown Martinsburg and the surrounding neighborhoods.
Travel Flows	There are high internal flows in Martinsburg, including Foxcroft Towne Center and its surroundings.
Corridor Optimization	The route is aligned partially with Corridors 1, 2, 5, 6, 9, and 14.
Existing Network & Performance	The route maintains a similar alignment as Route D, which creates consistency between weekday and Saturday service.
Gaps Analyses	There are gaps in density and propensity compared to transit service in northern Martinsburg.
Public Survey	Respondents requested more direct service to Berkeley Medical Center and maintaining Caperton Transportation Station as a stop.

Public Comments

No comments specific to this route were provided during the April 2025 public comment period. One comment requesting service along King Street and Tennessee Avenue was recorded during the June 2025 public comment period, as well as feedback from the Berkeley County Sheriff's Office on the location of stops along Edwin Miller Boulevard.

ROUTE H: SATURDAY JEFFERSON CIRCULATOR

The Saturday version of Route H provides service in Charles Town, Ranson, and Harpers Ferry. The route operates on a similar alignment as the weekday version with lower frequency but more coverage.

Figure 51 | Proposed Alignment and Stops for Route H (Weekend)

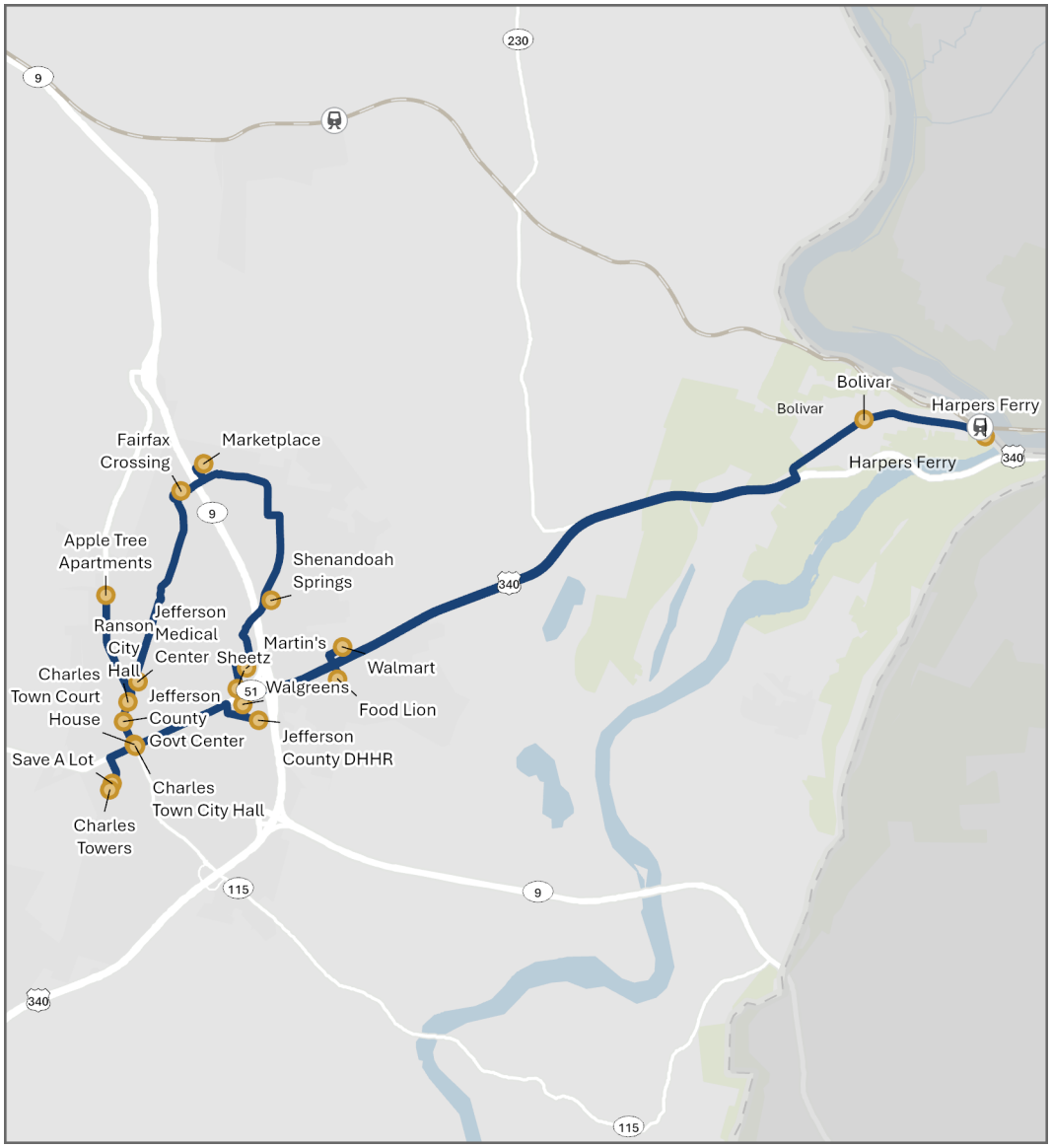


Table 39 | Service Characteristics for Route H (Weekend)

SERVICE CHARACTERISTIC	PATTERN 1
Existing Analogue	*None*
Approximate Timespan	8:00 AM – 6:00 PM
Daily Trips	6 trips per day
Headway	90 minutes
Estimated Distance	24.9 miles (roundtrip)
Estimated Runtime	82 minutes (without stops)

Table 40 | Service Planning Factors for Route H (Weekend)

SERVICE PLANNING INPUT	ROUTE-SPECIFIC FACTORS
Population and Job Density	There are high densities in Charles Town and Ranson and medium-to-low densities in Harpers Ferry.
Transit Propensity	There are high concentrations of multiple propensity indices in Charles Town and Ranson and low concentrations of transit-oriented populations in Harpers Ferry.
Travel Flows	There are high internal flows in Charles Town and Ranson and high regional flows between Charles Town and Harpers Ferry.
Corridor Optimization	The route is aligned partially with Corridors 3, 4, and 15.
Existing Network & Performance	The route maintains a similar alignment as Route H, which creates consistency between weekday and Saturday service.
Stakeholder Input	Stakeholders requested weekend service in Jefferson County.
Public Survey	Respondents requested weekend service in Jefferson County.

Public Comments

No comments specific to the initial iteration of this route were provided during the April 2025 public comment period. However, this route's alignment was modified to ensure adequate coverage on Saturdays in response to changes in the weekday network in Jefferson County.

Proposed Weekday Network

The following diagrams provide an overview of the proposed weekday network. **Figure 52** shows the proposed network for the entire study area, while **Figure 53** and **Figure 54** show the proposed network in Berkeley and Jefferson Counties, respectively.

Figure 52 | Proposed Weekday Network (Study Area)

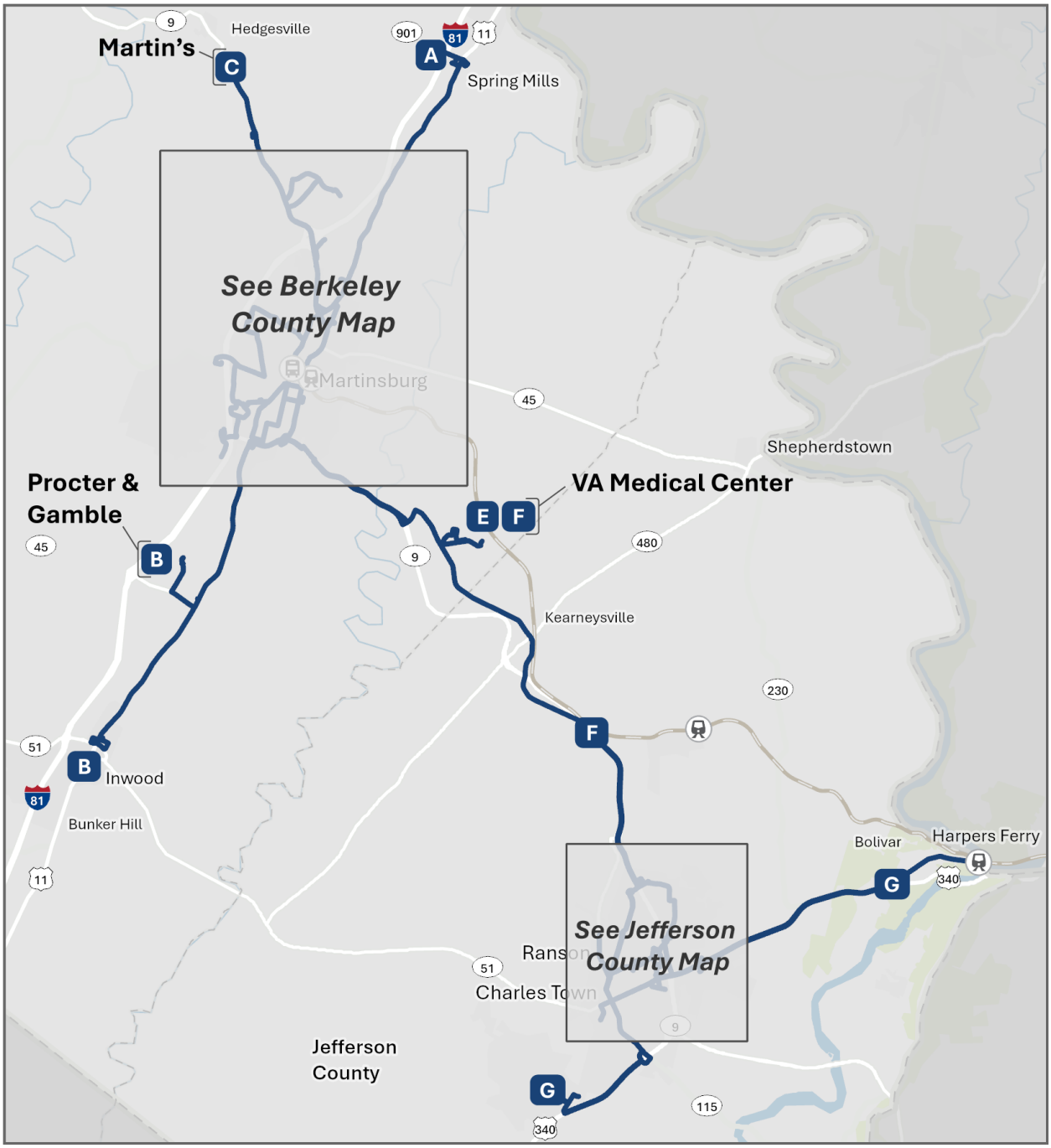


Figure 53 | Proposed Weekday Network (Berkeley County)

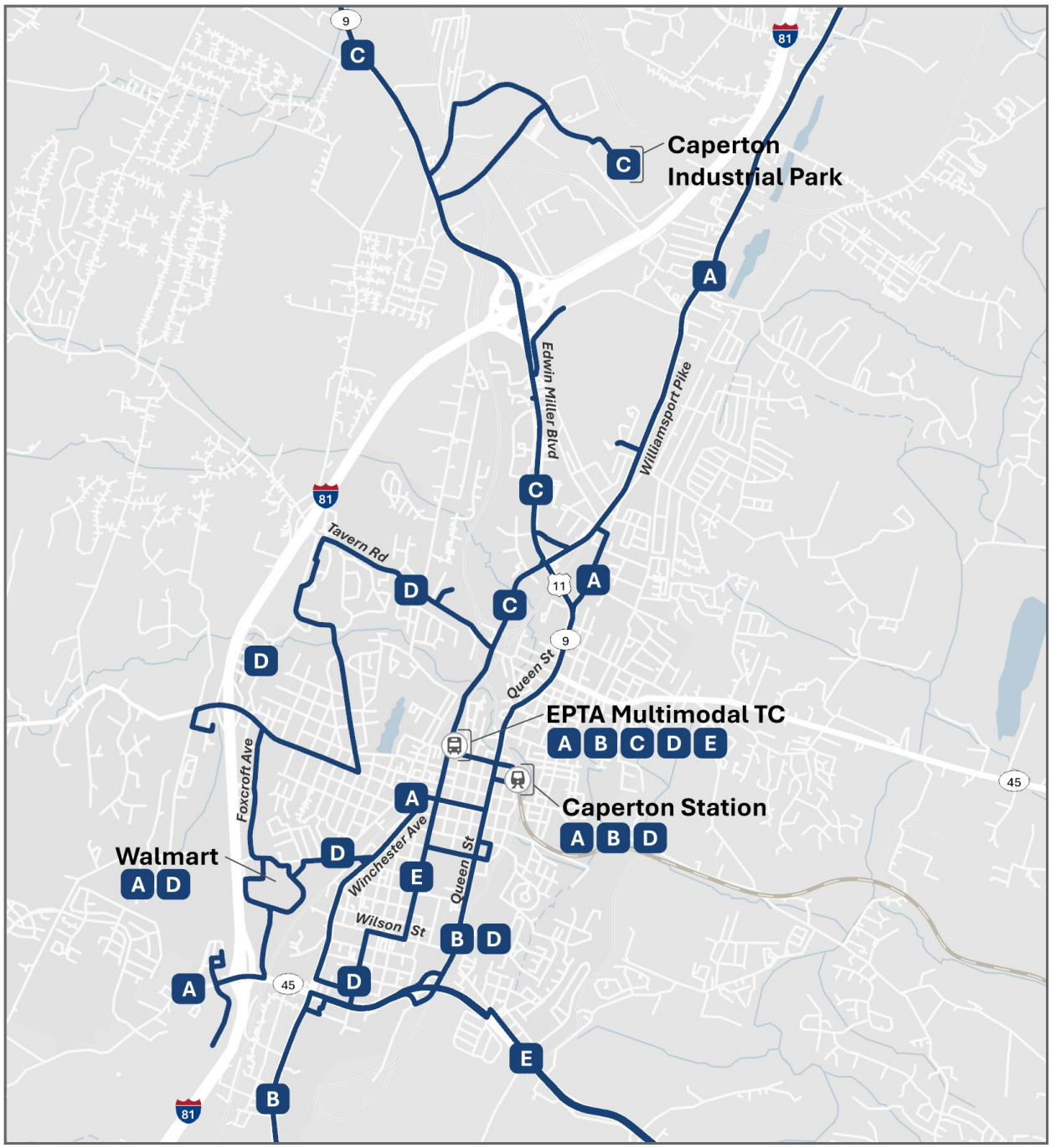
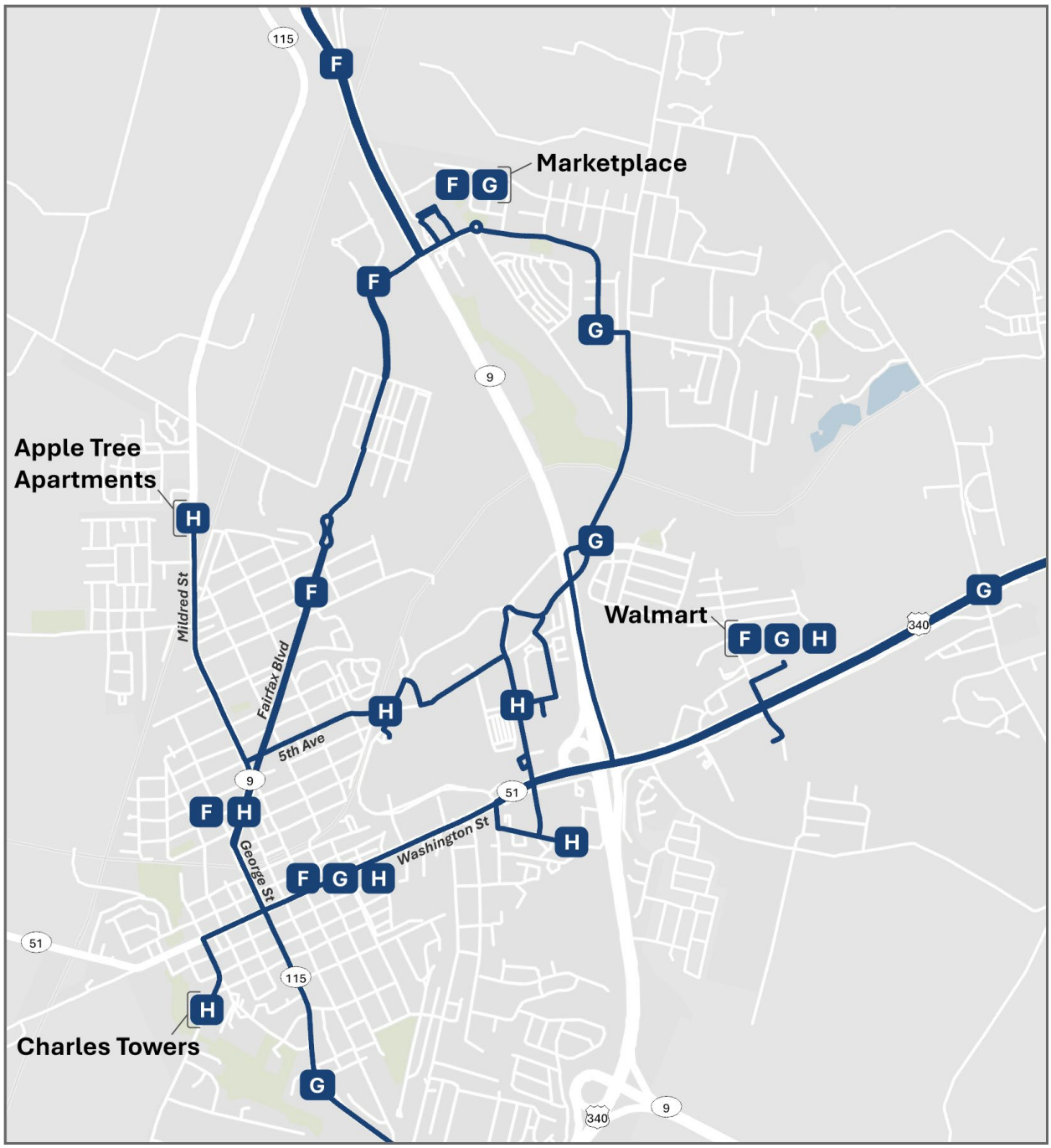


Figure 54 | Proposed Weekday Network (Jefferson County)



8. Capital Program

The service recommendations were designed to be cost-neutral, which means that the proposed service will cost approximately the same amount of money to operate as the existing service. As a result, the recommendations are not expected to require significant capital expenditures.[15] However, some capital improvements will be necessary to support the proposed service given the scope of the changes. The following sections describe the capital needs for EPTA's transit vehicles and bus stops.

Transit Vehicles

EPTA has an operational fleet of 27 revenue vehicles, which includes 20 cutaway buses and seven vans. At present, eight cutaway buses are operating past their planned replacement year. EPTA has three Ford F550 Champion cutaway buses on order.

EPTA currently operates one vehicle per route, although there may be limited times when two vehicles per route operate to accommodate driver shift changes. The service recommendations similarly assume that one vehicle will be operated per route. As a result, there is expected to be no net change in vehicle need for fixed-route service. No changes are proposed to the demand response service. **Table 41** shows the number of vehicles required to operate each route based on the proposed implementation plan.

Table 41 | Vehicle Requirements for Proposed Implementation Plan

ROUTE	2026 (FULL IMPLEMENTATION)
A – Spring Mills	1
B – Inwood	1
C – Hedgesville / Industrial Park	1
D – Martinsburg Circulator	1
E – VA Medical Center North	1
F – VA Medical Center South	1
G – Harpers Ferry	1
H – Charles Town / Ranson Circulator	1
D – Saturday Berkeley Circulator	1
G – Saturday Jefferson Circulator	1
Maximum Vehicles (Weekday)	**8**
Maximum Vehicles (Weekend)	**2**

Stop Signage and Amenities

The service recommendations include changes to route alignments that will require capital improvements for existing and proposed bus stops. EPTA has already procured and received new bus stop signs for the entire system, and the agency has ordered 10 new bus shelters as well. Approximately 25 signs will be

[15] The EPTA Multimodal Transit Center, which the proposed service is designed around, has already been funded and is under construction.

placed in the summer of 2025 at stops that are unchanged under the recommendations. The remaining signs will be placed once the recommendations go into effect. The shelters will be placed at priority stops throughout the system based on ridership, need, location, and other factors.

Table 42 identifies stops that are new or will change location. The exact position of certain stops, including stops not included in the table, may change upon implementation of the TDP. Since the recommendations represent the first major change to EPTA's bus network in almost a decade, the agency will evaluate the proposed alignments and stops to ensure that they can be served from an operational perspective. As a result, the exact position of stops may be adjusted to improve safety and customer experience.

Table 42 | Proposed Stop Changes

STOP NAME	PROPOSED CHANGE	IMPACTED ROUTES
Apple Tree Apartments	Only serve southbound stop (at the corner of N Mildred Street and Apple Tree Garden Road)	Route H
Charles Town Police Department	Add stop at Charles Town Police Department (661 S George Street)	Route G
Charles Town Races	Add stop at Hollywood Casino (750 Hollywood Drive)	Route H
DMV Severna Parkway	Add stop at Martinsburg DMV (38 Severna Parkway)	Route C
Fairfax Crossing	Add stop at Fairfax Crossing plaza; exact location will be determined based on operational considerations	Route F
Huntfield	Add stop at Huntfield subdivision (205 Butler Street)	Route G
Jefferson County Government Center	Add stop(s) at former APUS building (330 N George Street); exact location(s) will be determined based on operational considerations	Routes F, G, and H
Jefferson Medical Center	Add stop at Jefferson Medical Center (300 S Preston Street)	Route H
Luntz Avenue	Add northbound and southbound stops at Luntz Avenue and Edwin Miller Boulevard; exact locations will be determined based on operational considerations	Route C
Martin's (Hedgesville)	Add stop at Martin's in Hedgesville (147 Roaring Lion Drive)	Route C
North Berkeley Library	Add stop at North Berkeley Public Library (1255 T J Jackson Drive)	Route A
Queen Street/King Street	Move stop from westbound on Queen Street to northbound on King Street	Routes A and B
Ranson City Hall	Maintain northbound stop and add southbound stop to replace existing Dairy Queen stop	Route F
Shenandoah Springs	Add stop at Shenandoah Springs subdivision (85 Sandy Bottom Circle)	Route G
Sheetz (Charles Town)	Add stop at Sheetz in Charles Town (51 Flowing Springs Road)	Route H
Trooper Drive	Add stop at Trooper Drive and Edwin Miller Boulevard (Shenandoah Village Apartments)	Route C
Valley Health	Add stop at Valley Health (120 Campus Drive)	Route A
Walmart (Spring Mills)	Add stop at Walmart in Spring Mills (5680 Hammonds Mill Road)	Route A
Washington Landing	Add stop at Washington Landing subdivision (650 Summerchase Street)	Route G
Weis (Martinsburg)	Add stop at Weis in Martinsburg (400 Enterprise Circle)	Route A
Willow Tree	Add stop at or near Willow Tree Healthcare Center (1263 S George Street)	Route G
WVU Medicine	Add stop at WVU Medicine (61 Campus Drive)	Route A

In the future, EPTA could explore creating a small transit hub at the APUS complex, which Jefferson County intends to repurpose into a county government center. This would establish a more central

transfer point for the three Jefferson County routes. The hub could include a bus shelter, benches, and other passenger amenities.

Appendix E includes additional analysis of bus bay capacity at the Multimodal Transit Center. The facility has sufficient bays to accommodate the proposed service and could accommodate service increases or new routes in the future.

9. Implementation Plan

The proposed service recommendations are structured around a system redesign that orients service around the Multimodal Transit Center and delivers on EPTA's goals and objectives for the next five years and beyond. Since the recommendations are designed as a comprehensive package, they would be implemented at the same time in a single phase. Implementation would happen concurrently with the opening of the Multimodal Transit Center, which is expected in Spring 2026.

Table 43 details the revenue hours by route after full implementation. As currently proposed, there would be no change in service after the initial implementation phase. This initial increase in annual revenue hours (from what is operated today) is a result of additional funds being provided by the City of Ranson.

Table 43 | Revenue Hours Operated for Proposed Implementation Plan

ROUTE	2026 (FULL IMPLEMENTATION)
A – Spring Mills	1,928
B – Inwood	2,956
C – Hedgesville / Industrial Park	2,056
D – Martinsburg Circulator	3,855
E – VA Medical Center North	2,570
F – VA Medical Center South	3,084
G – Harpers Ferry	2,699
H – Charles Town / Ranson Circulator	3,277
D – Saturday Berkeley Circulator	560
G – Saturday Jefferson Circulator	560
Total Hours	**23,543**

10. Appendices

A. Service Optimization Analysis Corridor Profiles

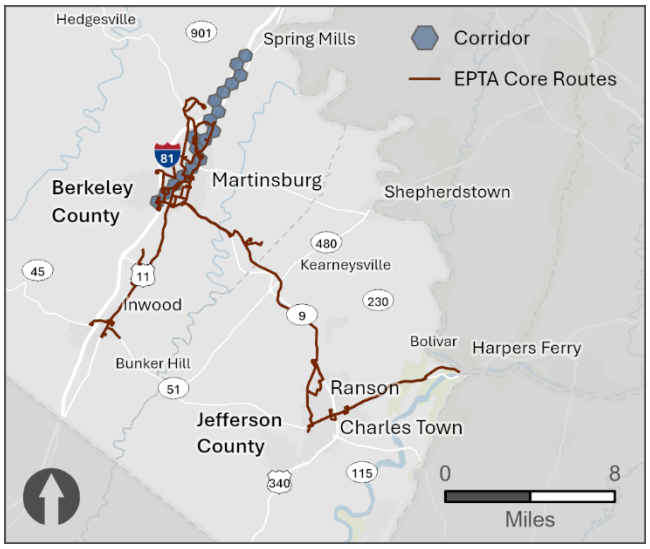


Figure 55 | Optimized Corridor #1

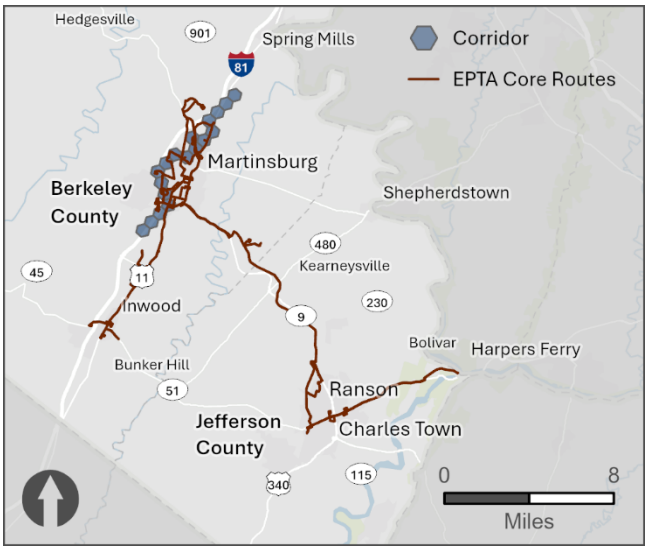


Figure 56 | Optimized Corridor #2

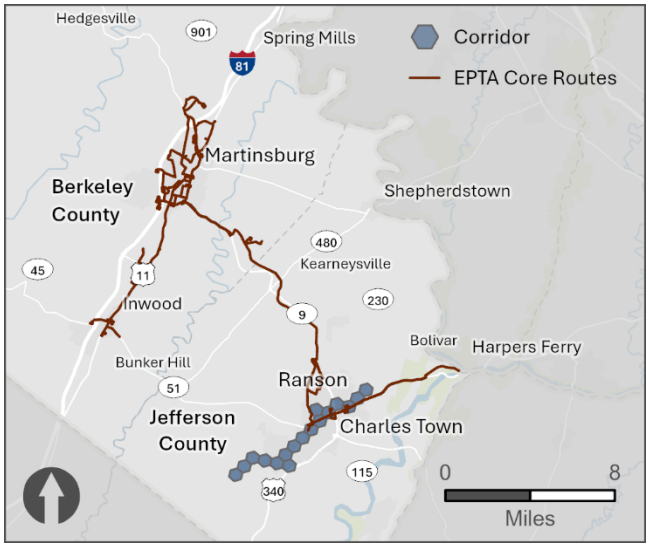


Figure 57 | Optimized Corridor #3

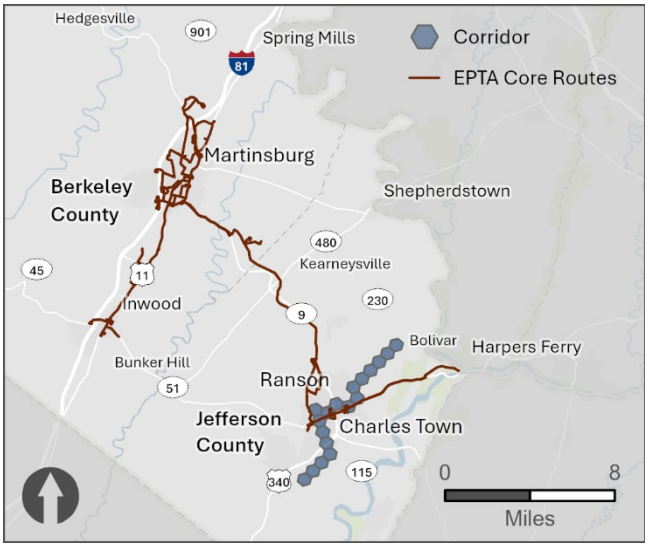


Figure 58 | Optimized Corridor #4

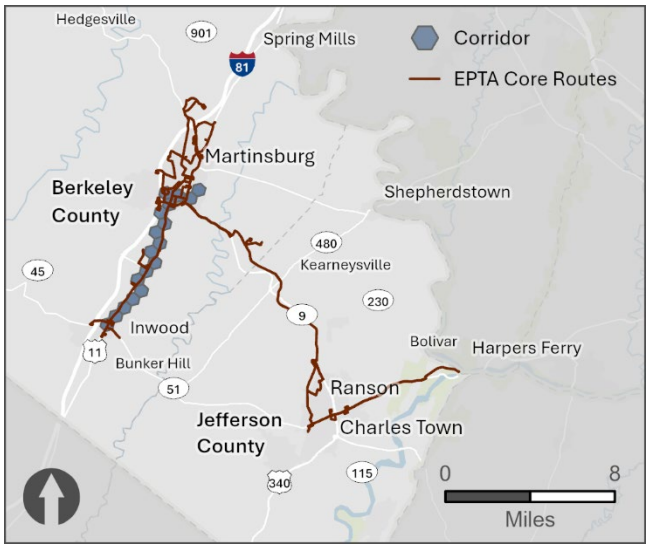


Figure 59 | Optimized Corridor #5

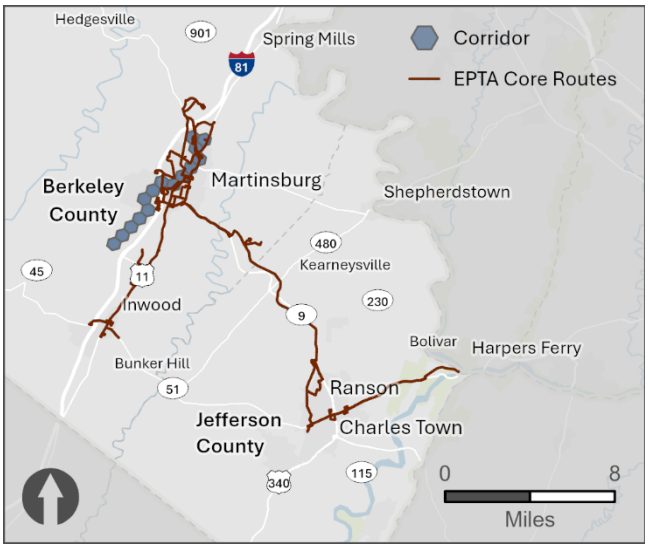


Figure 60 | Optimized Corridor #6

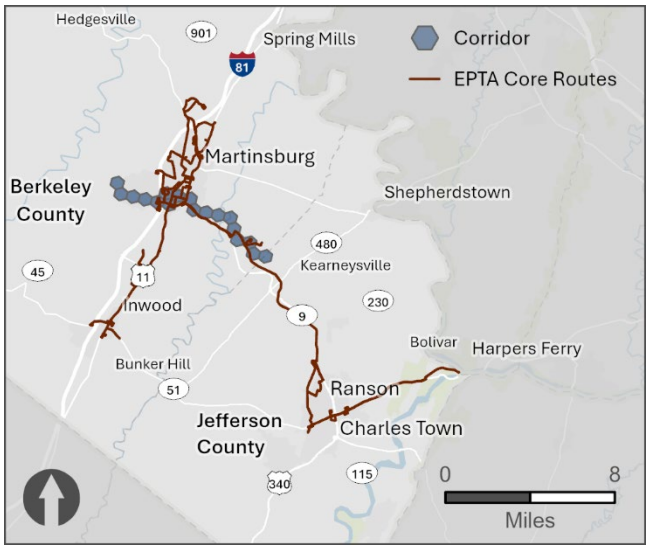


Figure 61 | Optimized Corridor #7

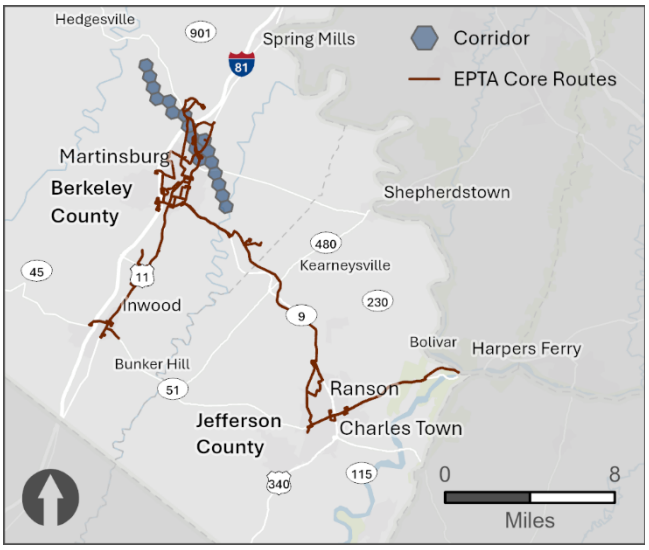


Figure 62 | Optimized Corridor #8

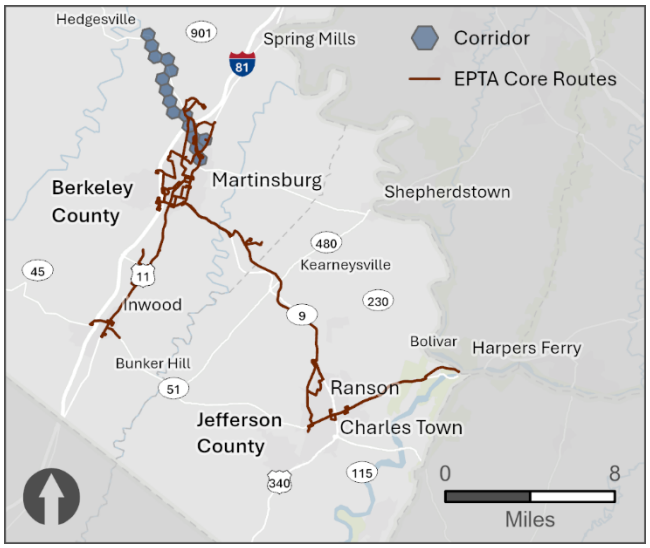


Figure 63 | Optimized Corridor #9

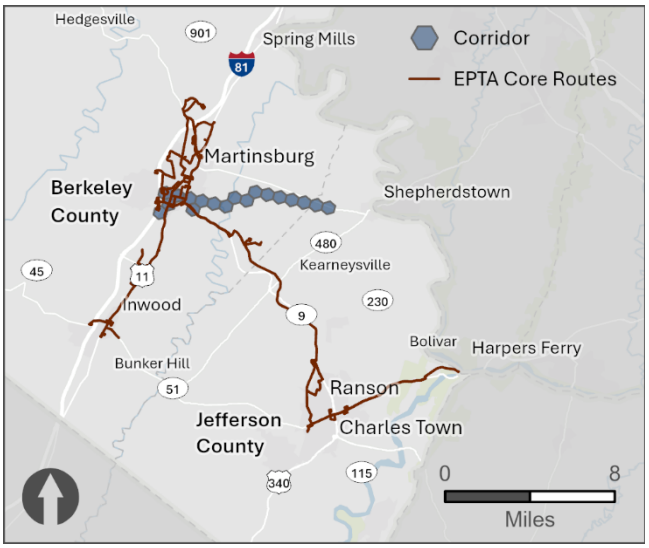


Figure 64 | Optimized Corridor #10

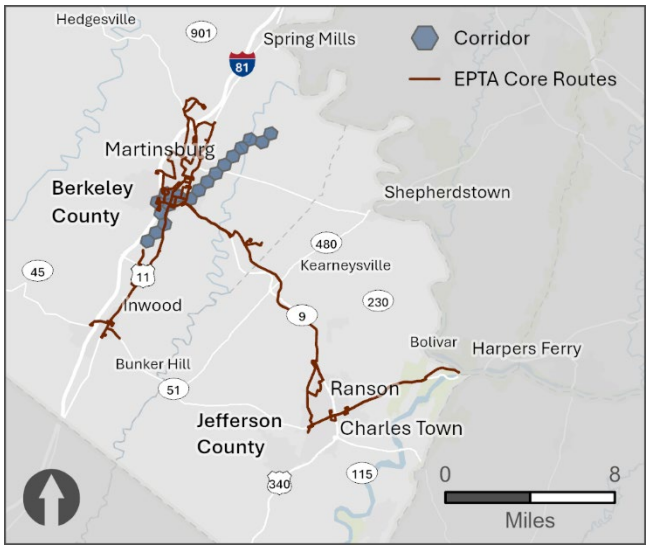


Figure 65 | Optimized Corridor #11

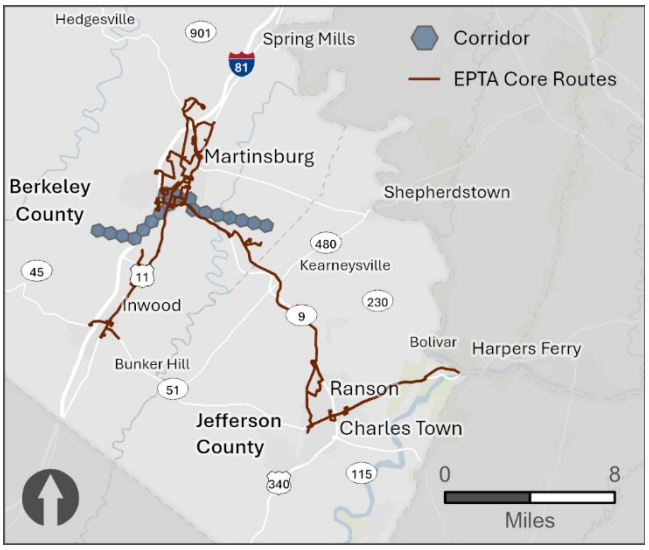


Figure 66 | Optimized Corridor #12

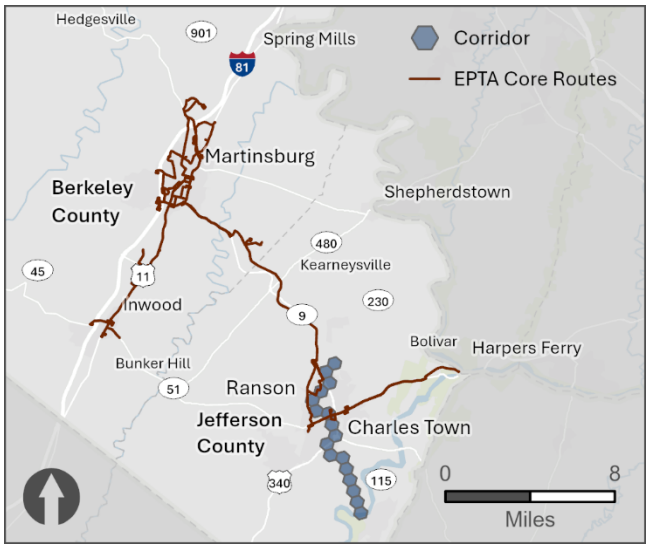


Figure 67 | Optimized Corridor #13

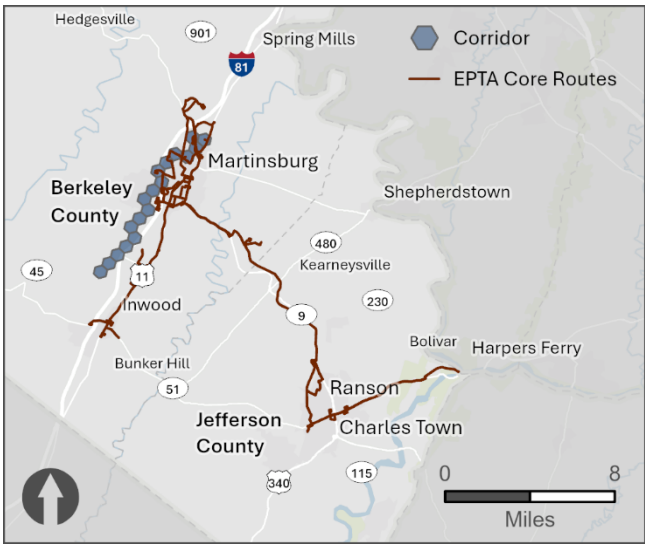


Figure 68 | Optimized Corridor #14

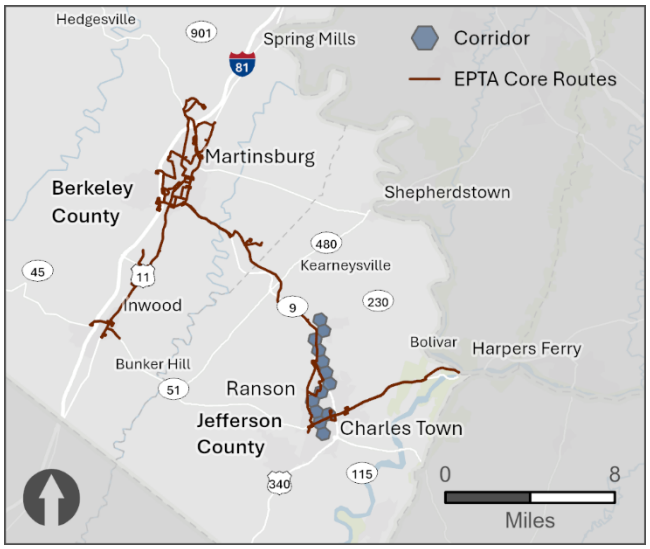


Figure 69 | Optimized Corridor #15

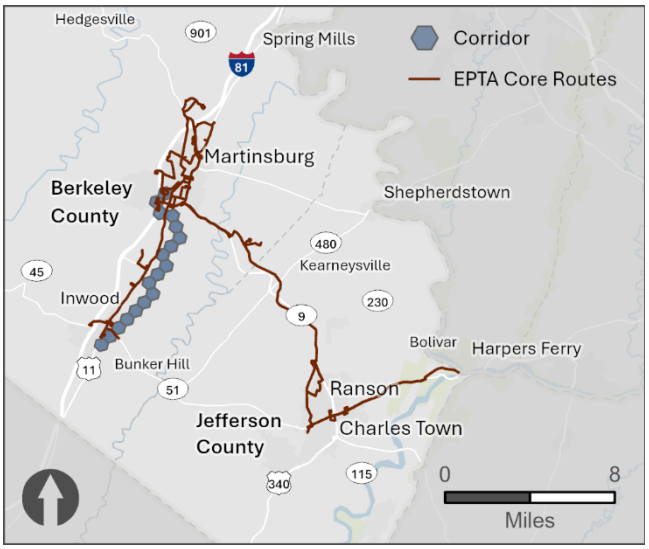


Figure 70 | Optimized Corridor #16

B. Public Survey Questions

All Respondents

1. Are you an existing EPTA rider?

    A. Yes
    B. No

2. What is your total household income in a year?

    A. Less than $20,000
    B. $20,000 – 39,999
    C. $40,000 – 79,999
    D. $80,000 and above

3. What is your race/ethnicity?

    A. American Indian or Alaska Native
    B. Asian
    C. Black or African American
    D. Hispanic or Latino (any race)
    E. Middle Eastern or North African
    F. Native Hawaiian or Pacific Islander
    G. White
    H. Two or more races
    I. Other: _____

4. How well do you speak English?

    A. Speak English well
    B. Limited English proficiency
    C. Do not speak English at all

5. What is the primary language spoken in your home?

    A. English
    B. Spanish
    C. Mandarin
    D. Korean
    E. Other: _____

Existing Riders Only

6. What route were you on when you received this survey?

    A. 10
    B. 11
    C. 12
    D. 14
    E. 16

F. 18
G. 19
H. 20
I. 25
J. 30
K. 35
L. 40
M. Demand Response
N. MARC
O. Other: _____

7. What stop did you get on at? *Please enter the name as it appears on the schedule or in 'street at street' format (e.g., Senior Towers or Spring St at Stephen St).* _____
8. How did you get to this bus?

A. Walked
B. Biked
C. Drove car
D. Dropped off in car
E. Another bus
F. Train
G. Other: _____

i. If you transferred to this bus from another route, please list it: _____
ii. If you walked to reach this bus, how long was your walk (in minutes)?: _____

9. What stop did you get off or will get off at? *Please enter the name as it appears on the schedule or in 'street at street' format (e.g., Senior Towers or Spring St at Stephen St).* _____
10. Please list your final destination:

A. Name, Address, or Intersection: _____
B. City, Town, or ZIP Code: _____

11. After leaving this bus, how will you complete your trip to your final destination?

A. Walk
B. Bike
C. Drive car
D. Picked up in car
E. Another bus
F. Train
G. Other: _____

i. If you will take another bus after this bus to reach your final destination, please list it here: _____
ii. If you will walk from this bus to your final destination, how long will your walk take (in minutes)?: _____

12. How did you pay your fare for this trip?

A. Cash

B. Ticket
C. Mobile Ticket
D. Punch Card
E. Monthly Pass
F. Monthly Student Pass
G. Other: _____

13. How much did you pay to board this bus? _____
14. Are you eligible for the half-fare discount?

A. Yes
B. No

15. How long have you been riding EPTA service?

A. Less than a year
B. 1-2 years
C. 3-4 years
D. 5 or more years

16. How many one-way trips do you make each week? *Going from home to work in the morning and from work to home in the evening is considered to be two one-way trips.* _____
17. What is the purpose of this trip today?

A. School
B. Work
C. Shopping
D. Personal Business
E. Medical/Dental
F. Social/Recreation
G. Other: _____

18. Compared to a year ago, EPTA service is:

A. Getting better
B. Staying about the same
C. Getting worse

19. Which information sources do you use to plan trips and/or stay informed about EPTA service? *Select up to 3 responses.*

A. Bus schedule
B. EPTA website
C. Bus drivers
D. Calling the office
E. Word-of-mouth
F. Notice on buses
G. Google Maps
H. Apple Maps
I. Passio GO app
J. Social media

K. Newspaper, TV, or radio
L. Phone book
M. Other: _____

20. Compared to last year, do you ride:

A. More
B. About the same
C. Less
D. I am a new rider

21. Could you make this trip if this service was not available?

A. No
B. Yes
C. Yes, but with inconvenience

22. Please rate EPTA service for each of the following areas. *Rate each item from 1 (Poor) to 5 (Excellent).*

A. Bus timeliness (bus showing up on time)
B. Bus cleanliness
C. Value received for fare
D. Driver courtesy
E. System safety
F. Places served
G. Bus frequency
H. Hours of operation

23. Overall, how satisfied are you with EPTA service? *Rate from 1 (Not Satisfied) to 5 (Very Satisfied).*

All Respondents

24. Do you have a valid driver license?

A. Yes
B. No

25. How many vehicles are there in your household?

A. 0
B. 1
C. 2
D. 3 or more

26. What is your gender?

A. Male
B. Female
C. Nonbinary

27. What is your age? _____
28. What is your occupation?

A. Student
B. Manager/Professional
C. Technical/Skilled
D. Clerical
E. Service
F. Homemaker
G. Retired
H. Unemployed
I. Other: _____

29. Where do you work? Please enter the ZIP code. _____
30. Are you aware that EPTA is opening a new downtown transit center in 2026 at Race and Raleigh?

A. Yes
B. No

31. What is the single most important improvement that you would suggest for EPTA service?
_____

Non-Riders Only

32. Why don't you take EPTA service today?

A. The service does not come frequently enough
B. The service does not come closer enough to my home and/or destination
C. I cannot afford the fare
D. I don't know how to find information about the service available
E. Other: _____

C. Public Survey Results

Figure 71 shows which routes riders were on when they received the survey. Only six respondents (seven percent of existing riders) were not riding EPTA service when they received the survey. The primary write-in response was the Ram Express.

Figure 71 | Current Route

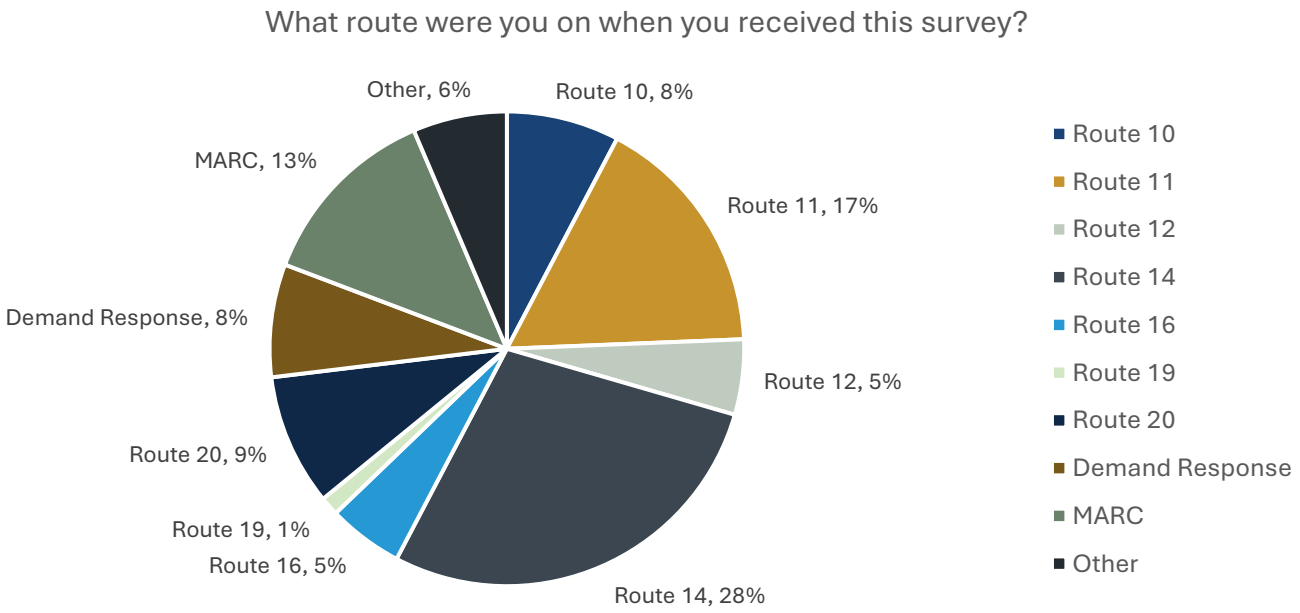


Table 44 lists the stops where riders boarded. Since the question was open-ended, some processing was required to create a clean list of stop names.

Table 44 | Stop Boarded At

STOP	RESPONSES	STOP	RESPONSES
Caperton Station	12	Save A Lot (Charles Town)	2
Home	10	Shenandoah Community Health	2
Brunswick MARC Station	7	Berkeley County Courthouse	1
7-Eleven (Winchester Ave)	5	Berkeley Medical Center	1
Shepherd University	4	Big Lots	1
Walmart (Foxcroft)	4	Charles Town City Hall	1
Walmart (unspecified)	4	Charles Town Courthouse	1
Senior Towers	3	DHHR (Martinsburg)	1
Ambrose Towers	2	Fountainhead Apartments	1
Joshua Drive	2	Ledo's (unspecified)	1
Martinsburg Library	2	Unclear	4

Figure 72 shows how riders reached the bus they were on. The primary write-in response was being picked up at home, and no respondent selected "biked."

Figure 72 | Mode for Getting to Bus[16]

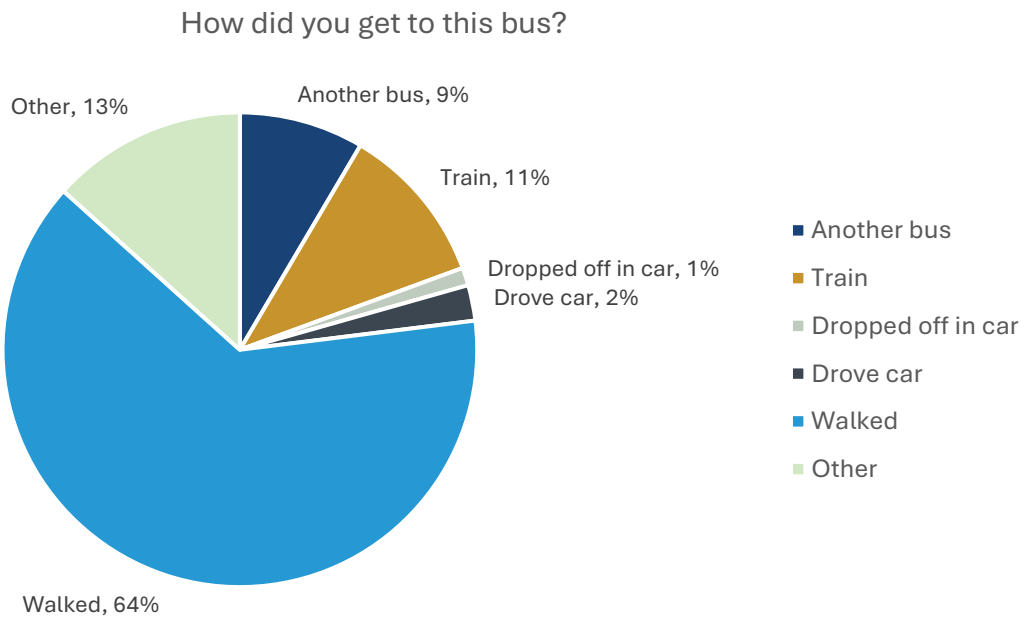


Figure 73 shows which routes riders transferred from. A majority of riders did not transfer. There were 11 unique transfer pairs, six of which had two responses each:

- **Route 10** (Berkeley Medical Center) to **Route 14** (Commons / Foxcroft Towne Center)
- **Route 11** (VA Medical Center) to **Route 14** (Commons / Foxcroft Towne Center)
- **Route 12** (DHHR) to **Route 11** (VA Medical Center)
- **Route 14** (Commons / Foxcroft Towne Center) to **Route 10** (Berkeley Medical Center)
- **Route 16** (VA Medical Center / Ranson) to **Route 14** (Commons / Foxcroft Towne Center)
- **Route 16** (VA Medical Center / Ranson) to **Route 20** (Charles Town / Harpers Ferry)

[16] Values add up to 99.9 percent due to rounding

Figure 73 | Route Transferred From

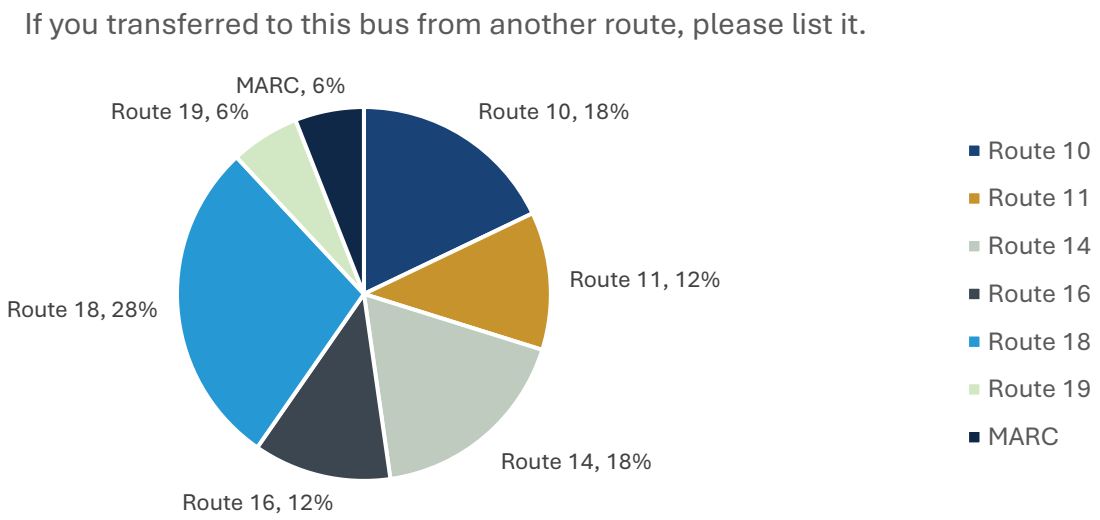


Figure 74 shows how long riders had to walk to reach the bus. Respondents were asked to enter a whole number representing minutes walked. The median length was five minutes, while the mean length was eight minutes. The longest reported walk was 40 minutes.

Figure 74 | Length of Walk to Bus (Minutes)

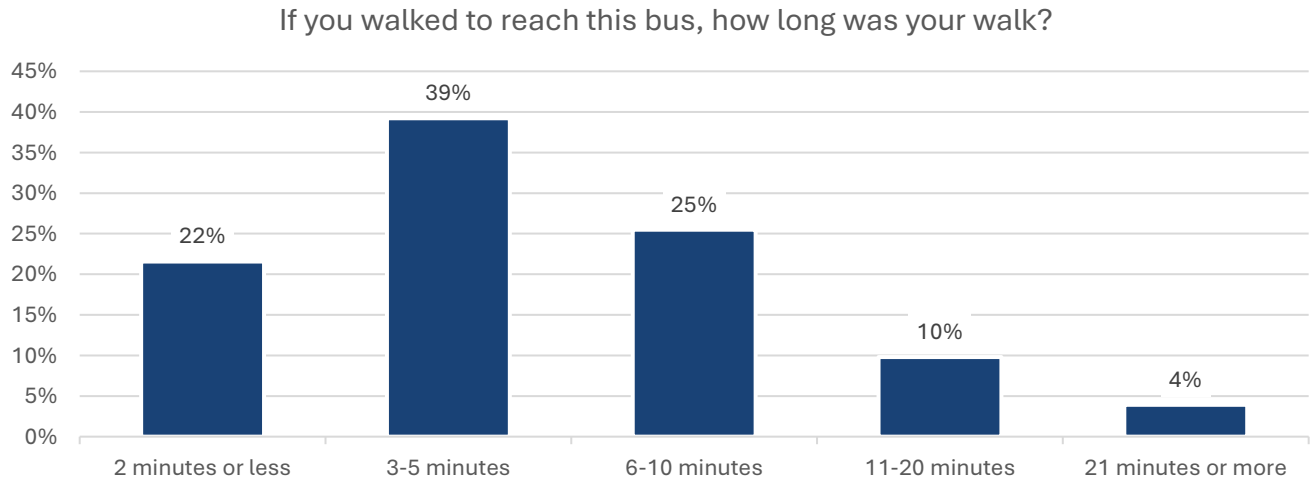


Table 45 lists the stops where riders alighted. Since the question was open-ended, some processing was required to create a clean list of stop names.

Table 45 | Stop Alighted At

STOP	RESPONSES	STOP	RESPONSES
Caperton Station	17	Blue Ridge CTC	1
Home	8	Brunswick MARC Station	1
VA Medical Center	8	Dairy Queen (Ranson)	1
Shepherd University	4	Development Drive (P&G)	1
Walmart (Foxcroft)	4	DMV (Kearneysville)	1
Walmart (unspecified)	4	Food Lion (unspecified)	1
Gabe's	3	Raleigh Street / Wilson Street	1
Target	3	Save A Lot (Martinsburg)	1
Martinsburg Library	2	Staples	1
Senior Towers	2	Walmart (Charles Town)	1
Sheetz / Mega Apartments	2	Weis	1
7-Eleven (Winchester Avenue)	1	Unclear	7

Table 46 lists the final destinations of riders. Respondents could provide a name, address, or intersection, and/or a city, town, or ZIP code. Since the question was open-ended, some processing was required to create a clean list of destinations.

Table 46 | Final Destination

STOP	RESPONSES	STOP	RESPONSES
Martinsburg (downtown)	8	DMV (Kearneysville)	1
Martinsburg (home)	7	Fountainhead Apartments	1
VA Medical Center	5	Hardy County, WV	1
Caperton Station	4	Harpers Ferry (home)	1
Charles Town (home)	4	Harpers Ferry MARC Station	1
Martinsburg (unspecified)	4	Kearneysville (home)	1
Inwood	3	Martinsburg Library	1
Walmart (Foxcroft)	3	Olive Garden	1
Martin's (Martinsburg)	2	Ross	1
Ranson	2	Save A Lot (Charles Town)	1
Shepherd University	2	Senior Towers	1
Treplar	2	Shenandoah Community Health	1
Berkeley Medical Center	1	Tablers Station	1
Berryville Graphics	1	Telamon	1
Bunker Hill (home)	1	Walmart (Charles Town)	1
Career One Stop	1	Unclear	4
Charles Town	1		

Figure 75 shows how riders reached their destination from the bus they were on. The primary write-in response was being dropped off at their destination, and no respondent selected "drive car."

Figure 75 | Mode for Getting From Bus

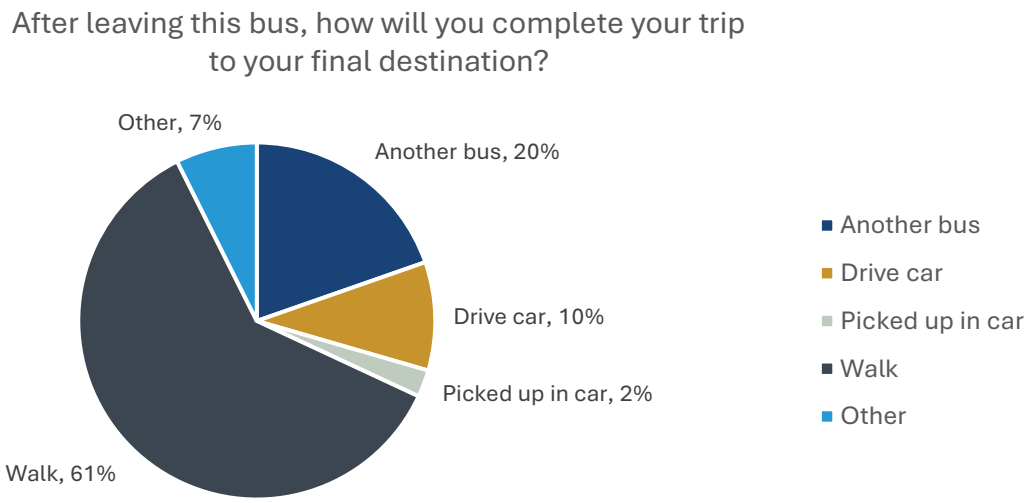


Figure 76 shows which routes riders transferred to. A majority of riders did not transfer. There were 13 unique transfer pairs, five of which had two responses each:

- **Route 11** (VA Medical Center) to **Route 12** (DHHR)
- **Route 11** (VA Medical Center) to **Route 16** (VA Medical Center / Ranson)
- **Route 14** (Commons / Foxcroft Towne Center) to **Route 10** (Berkely Medical Center)
- **Route 14** (Commons / Foxcroft Towne Center) to **Route 16** (VA Medical Center / Ranson)
- **Route 14** (Commons / Foxcroft Towne Center) to **Route 18** (Inwood)

Figure 76 | Route Transferred To

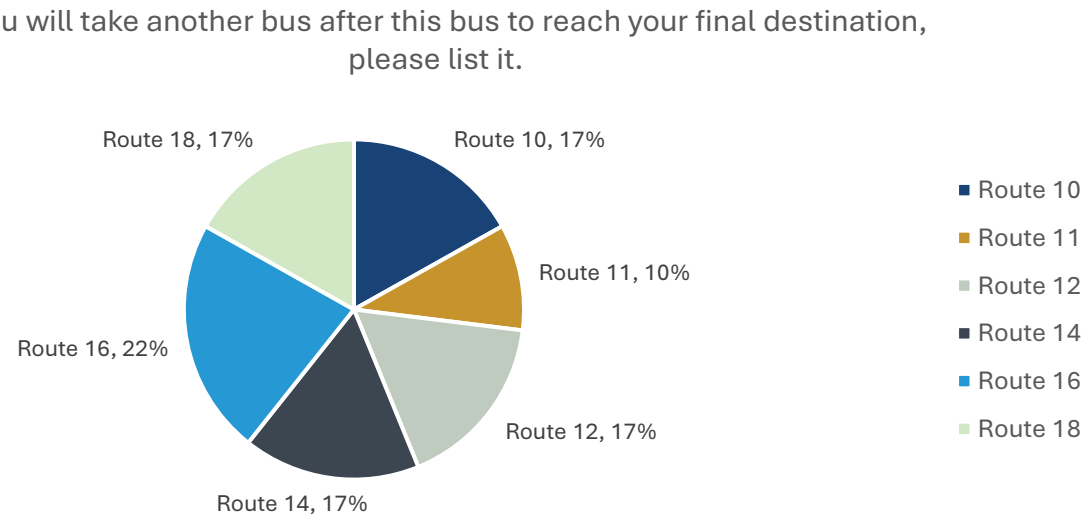


Figure 77 shows how long riders had to walk to reach their final destination from the bus. Respondents were asked to enter a whole number representing minutes walked. The median length was five minutes, while the mean length was 10 minutes. The longest reported walk was 90 minutes.

Figure 77 | Length of Walk From Bus (Minutes)

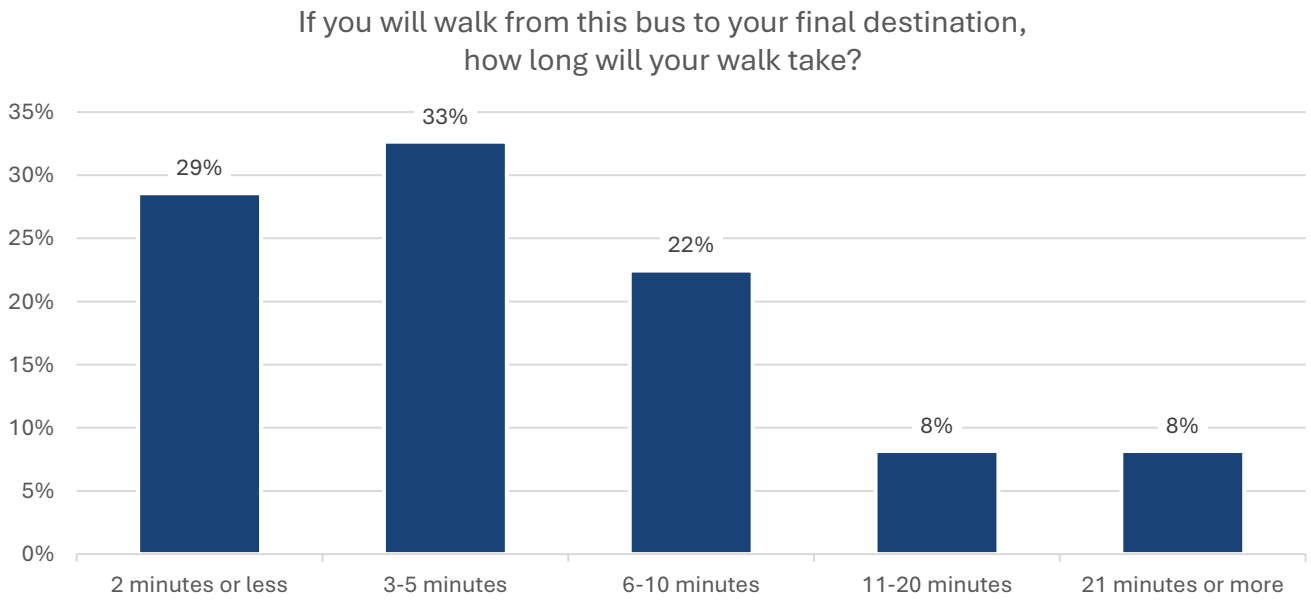


Figure 78 shows how riders paid their fare. The primary write-in responses were riding for free as a college student, riding for free by completing the survey, and Medicaid.

Figure 78 | Fare Method

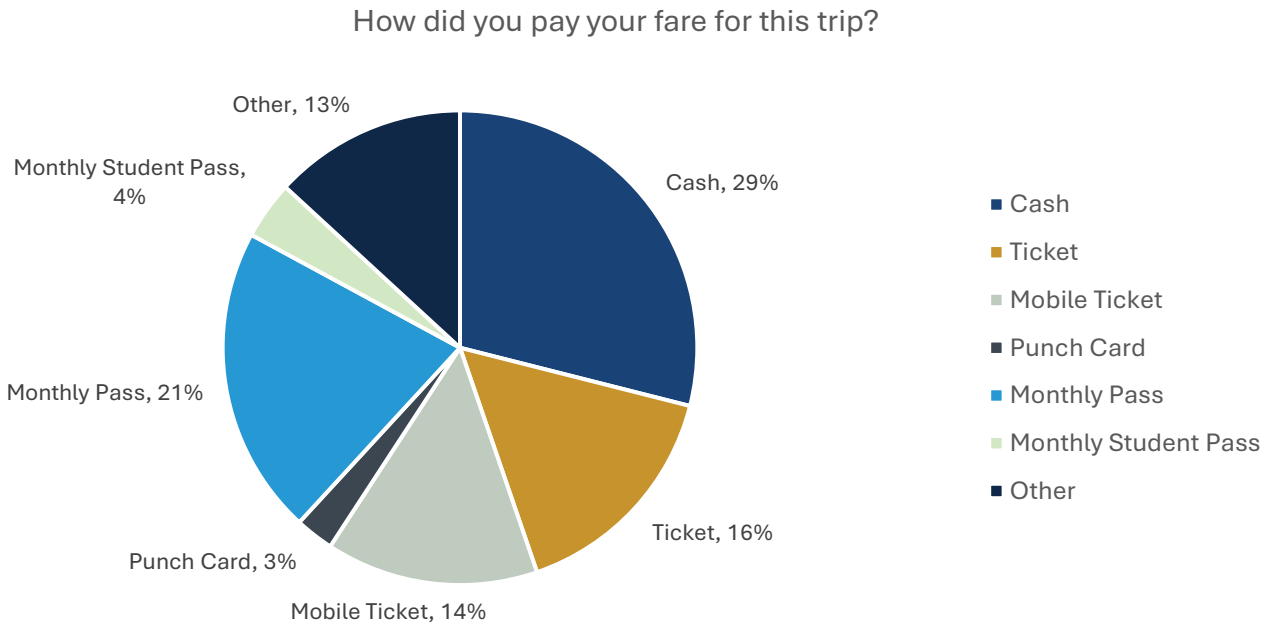


Figure 79 shows how much riders paid to board. Respondents were asked to enter a number representing the amount paid. The median fare was $1.63, while the mean fare was $10.30. The highest reported fare was $175. Some respondents appear to have entered the price of their monthly pass, while others may have mistyped their response (e.g., $175 instead of $1.75). After excluding outliers, the median fare for a single-use ticket was $1.25 and the mean fare was $1.69. The base fare is $2.00 and the maximum fare is $3.50.

Figure 79 | Fare Amount Paid

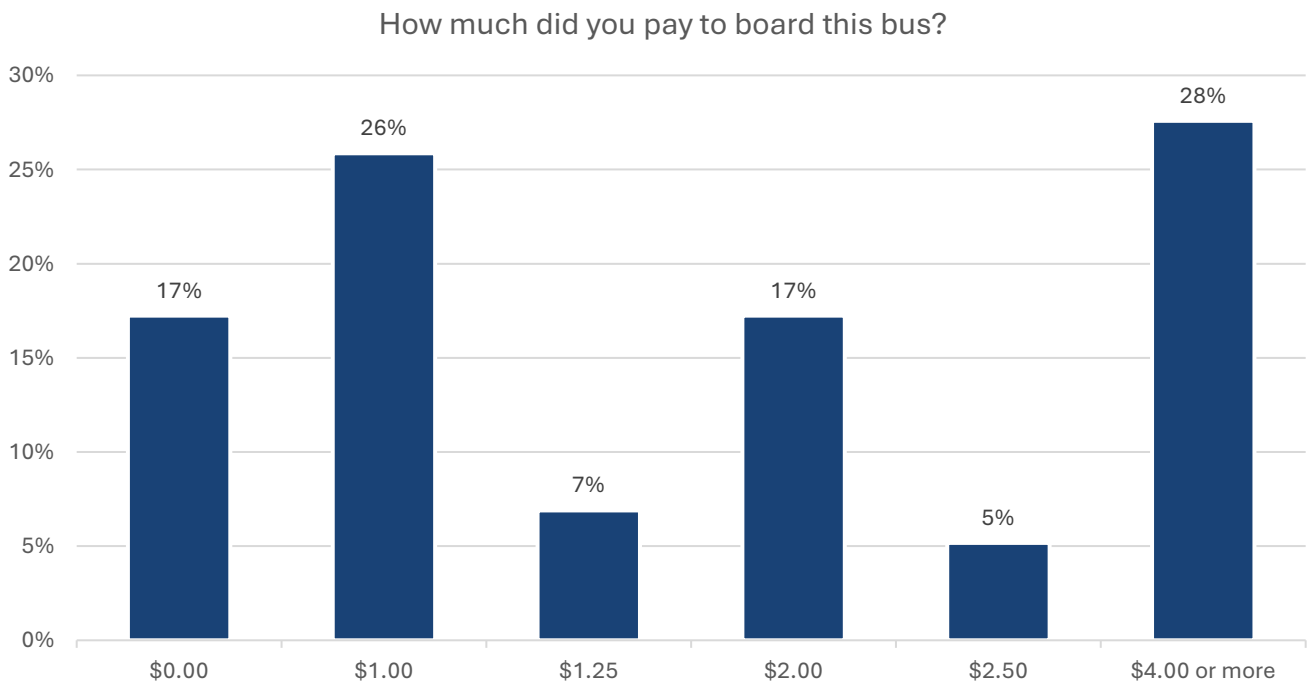


Figure 80 shows how many riders are eligible for the half-fare discount.

Figure 80 | Eligibility for Half-Fare Discount

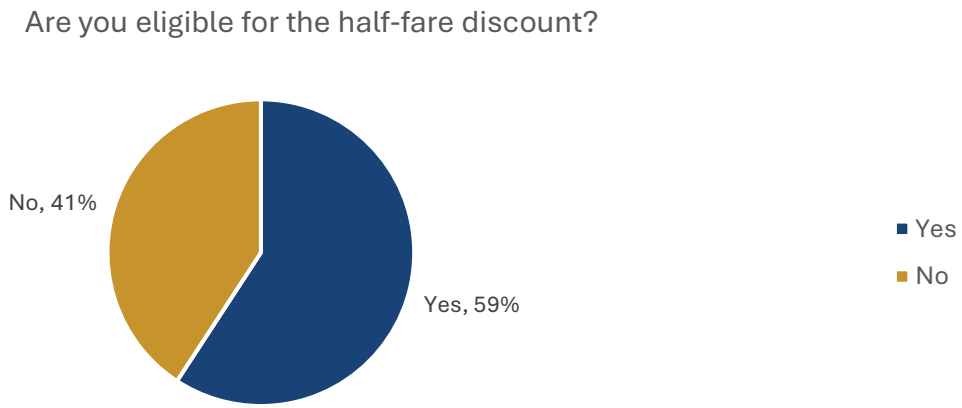


Figure 81 shows how long riders have been riding EPTA service.

Figure 81 | EPTA Ridership Tenure

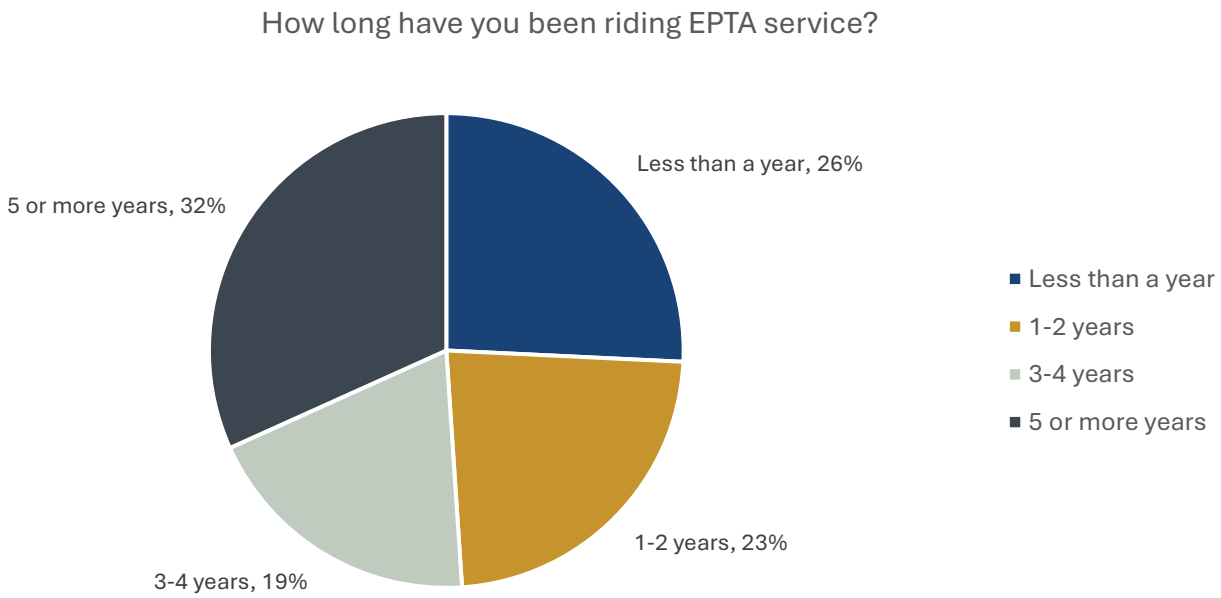


Figure 82 shows how riders' usage of EPTA service has changed since last year.

Figure 82 | Change in EPTA Ridership Frequency

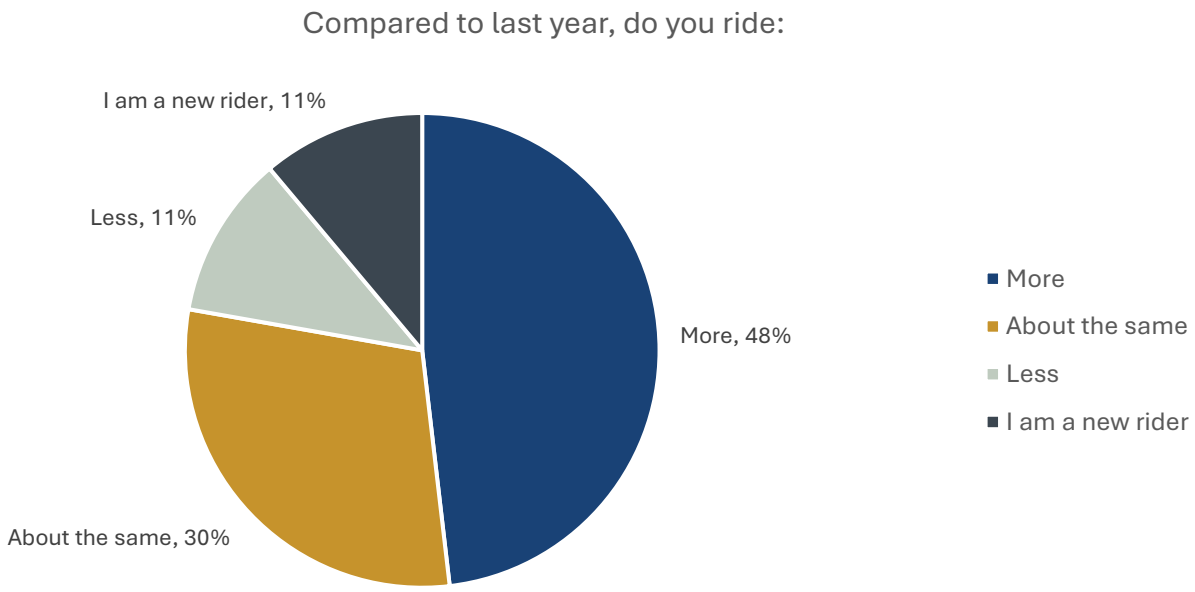


Figure 83 shows how many trips riders typically make each week. Given the relatively high percentage of respondents who wrote zero, it is possible that some riders misunderstood the question.

Figure 83 | Weekly Trips

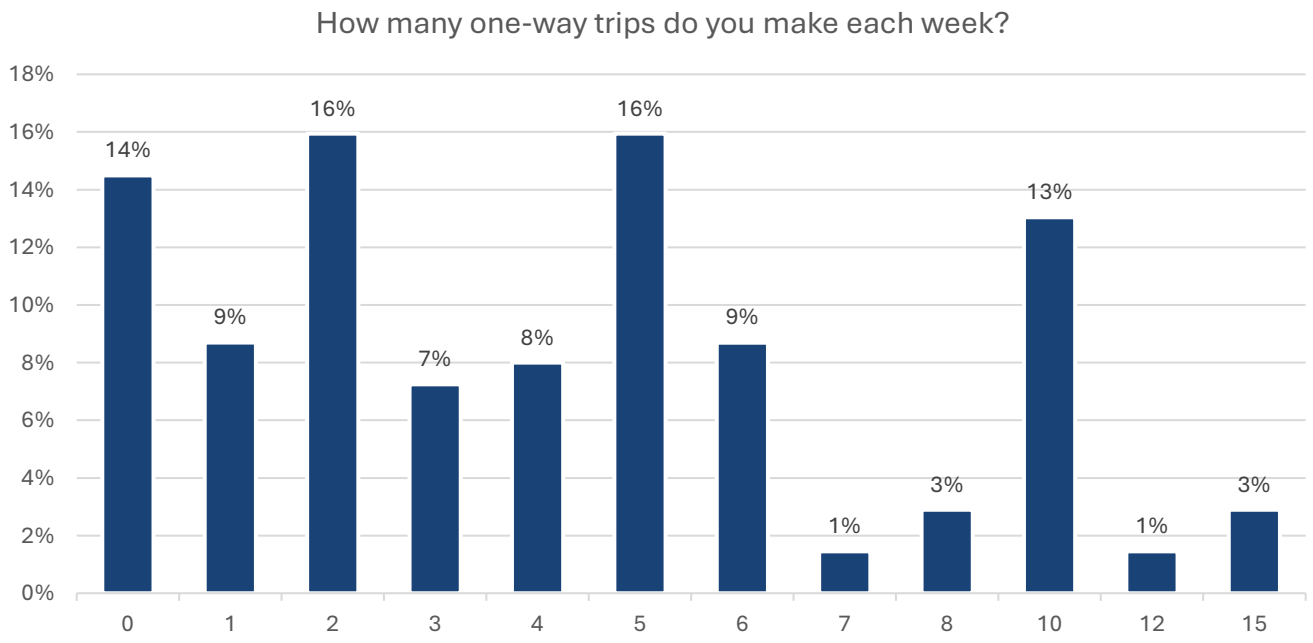


Figure 84 shows the purpose of the trip when the survey was taken. A plurality of riders use the service for work.

Figure 84 | Trip Purpose

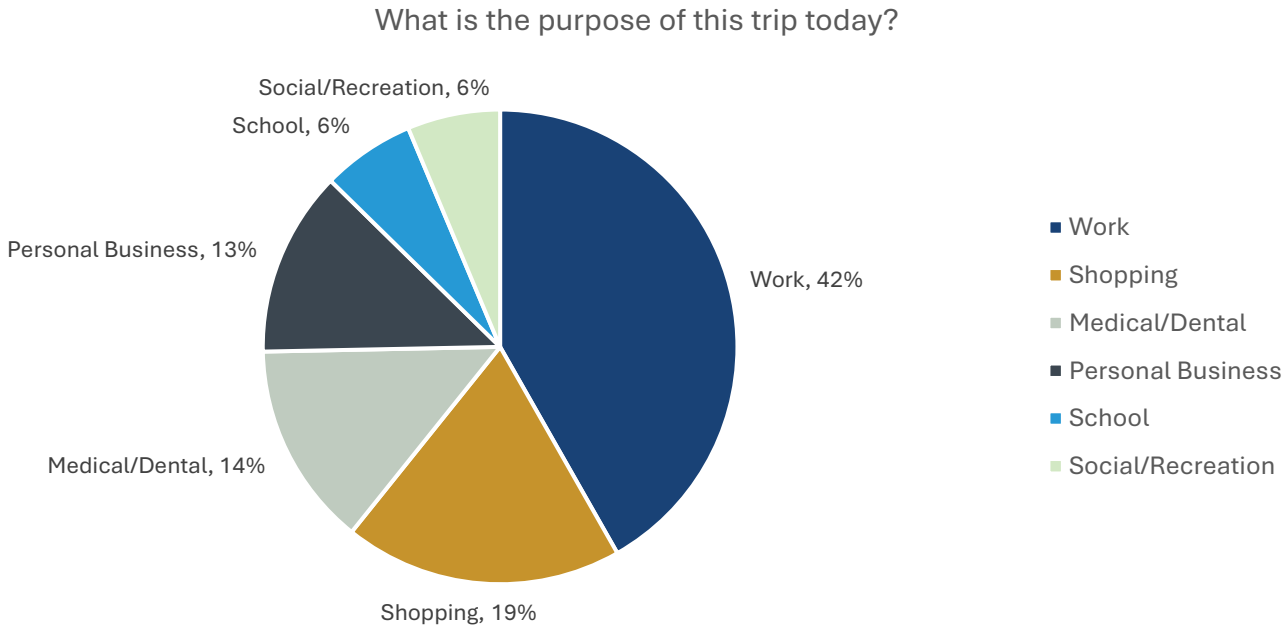


Figure 85 shows what information sources riders use to plan their trips or stay informed. Respondents could select up to three options. The write-in responses included receiving text notifications and using the MARC schedules, and no respondent selected “social media” or “phone book.”

Figure 85 | Information Sources

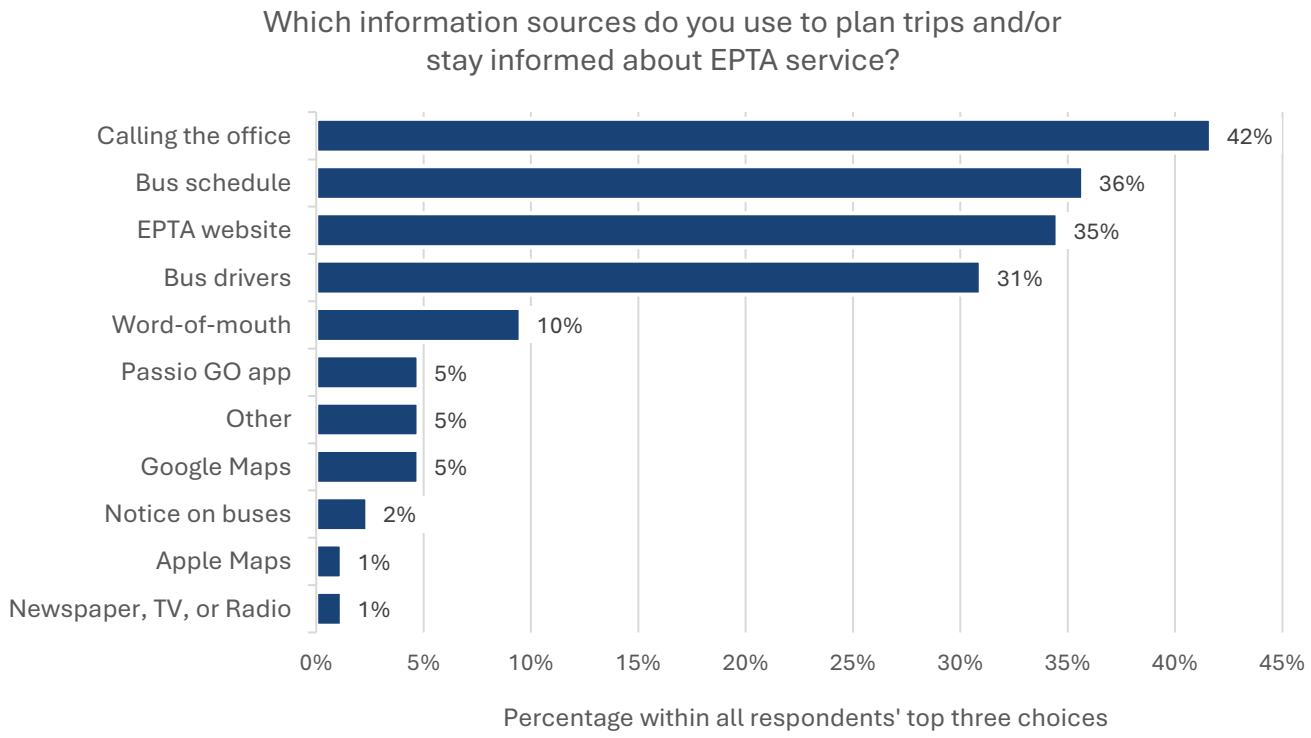


Figure 86 shows whether riders could make their trip if EPTA service was not available.

Figure 86 | Reliance on EPTA Service

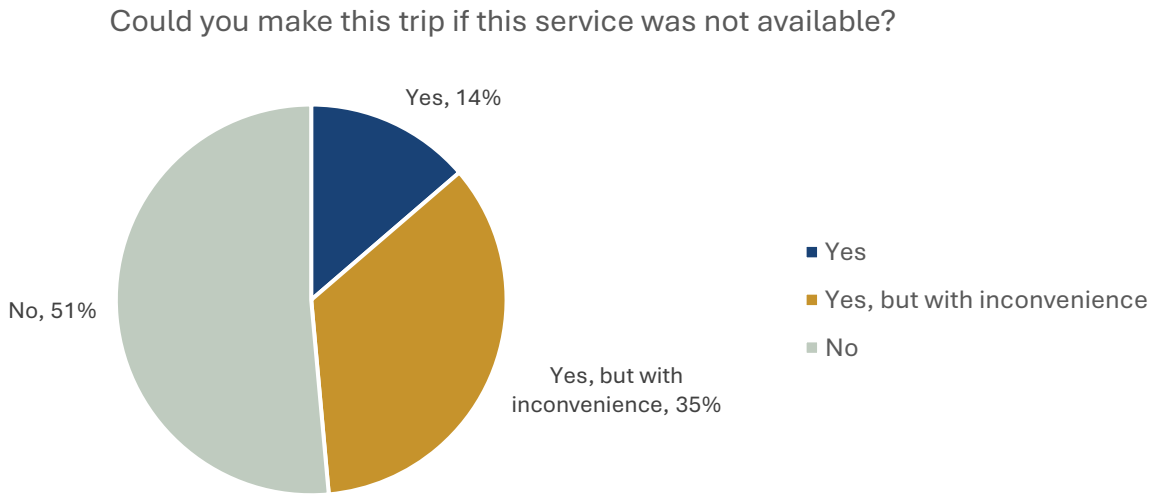


Figure 87 shows how riders rate EPTA service compared to last year.

Figure 87 | Change in EPTA Service Perception

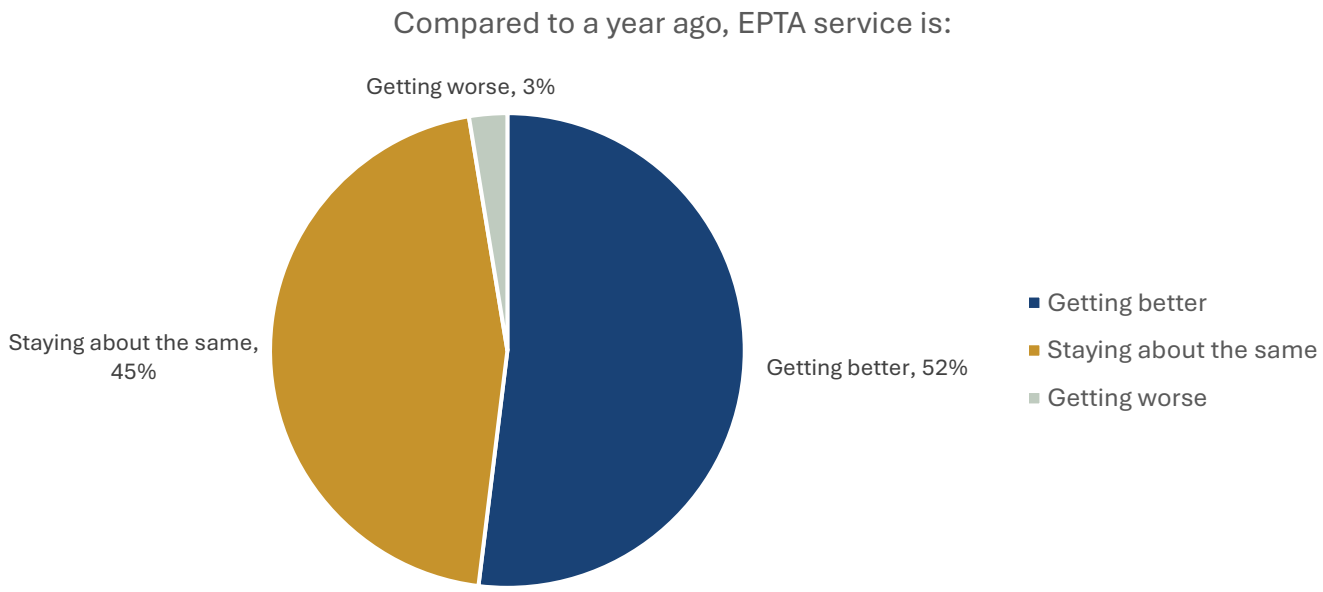


Figure 88 shows the average rating for eight different areas related to EPTA's service, as well as riders' overall satisfaction with EPTA service. Higher values indicate more favorable ratings.

Figure 88 | Average Rating of EPTA Service

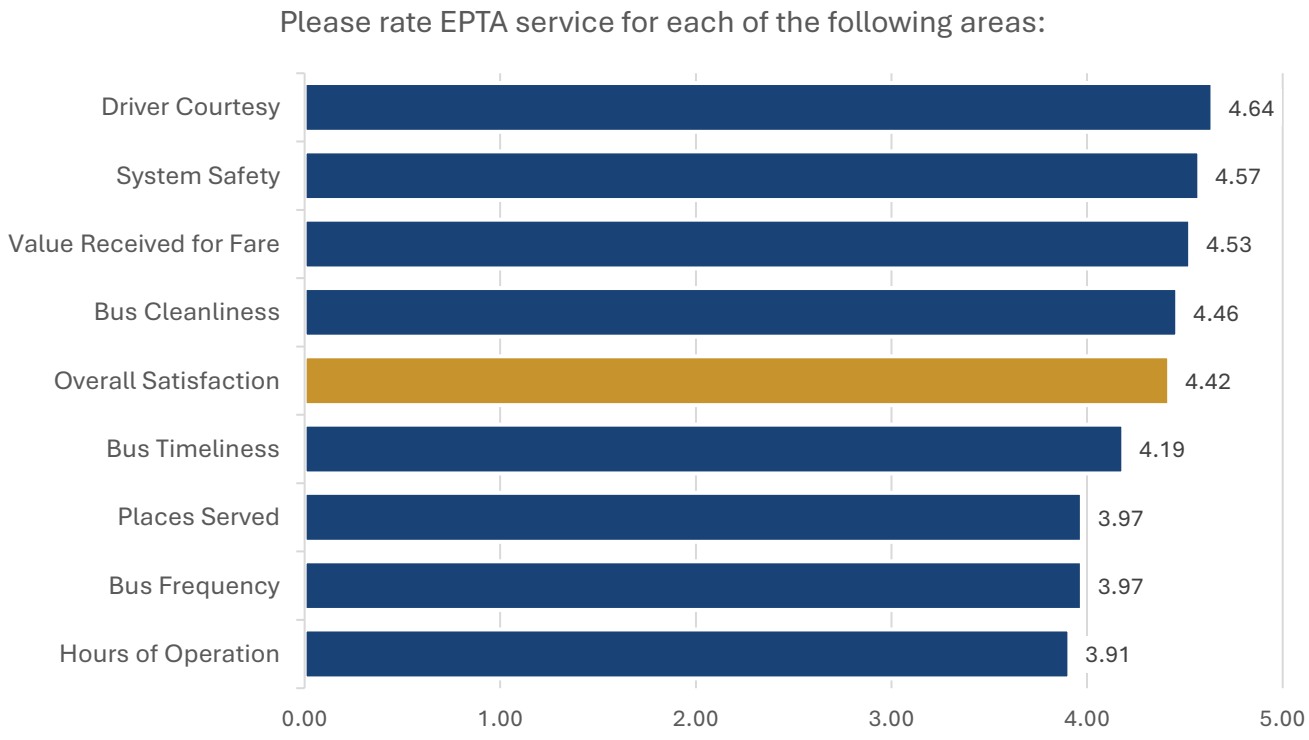


Figure 89 shows the breakdown of responses. The scale for the areas ranged from "Poor (1)" to "Excellent (5)." The scale for overall satisfaction ranged from "Not at all satisfied (1)" to "Very satisfied (5)."

Figure 89 | Individual Ratings of EPTA Service

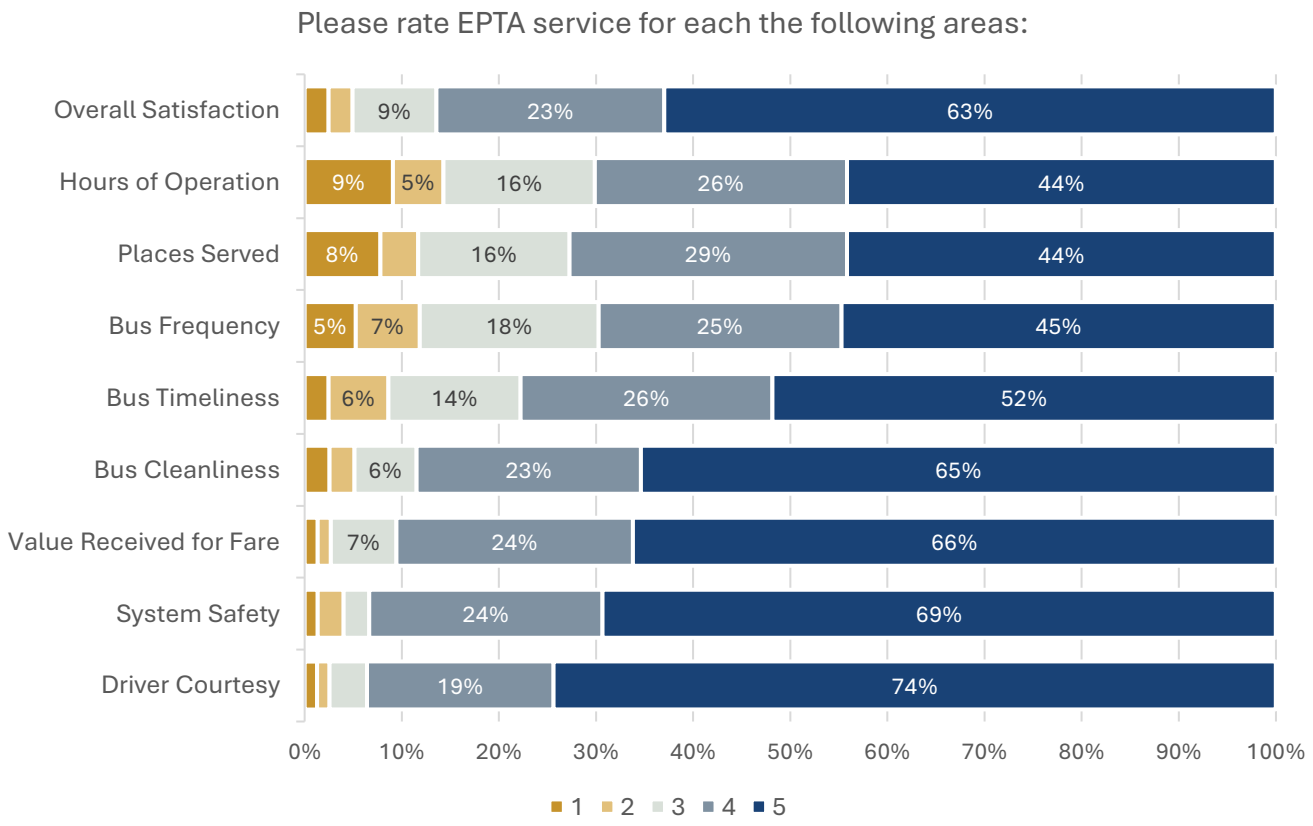


Figure 90 shows the difference in awareness of the new transit center between riders and non-riders.

Figure 90 | Awareness of New Transit Center

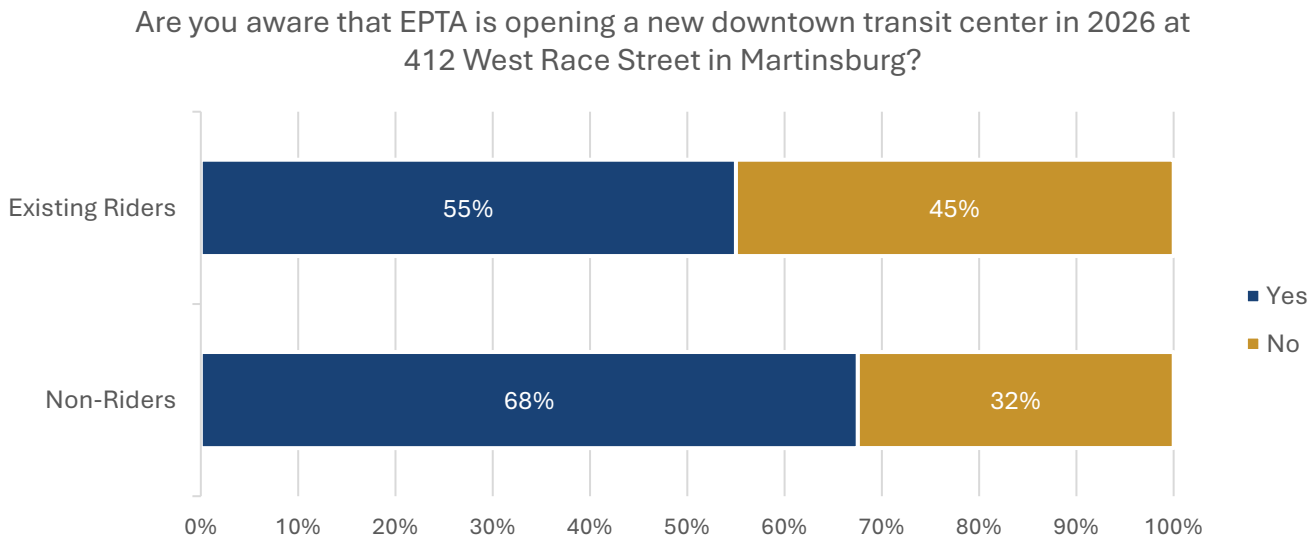


Figure 91 shows the reasons why non-riders do not currently use EPTA service. Over half of non-riders reported that the service does not come close enough to their home and/or destination. Other common responses included that the service does not come frequently enough or that they do not know how to find information about the service available. The primary write-in response was that they do not need the service.

Figure 91 | Reasons for Not Riding

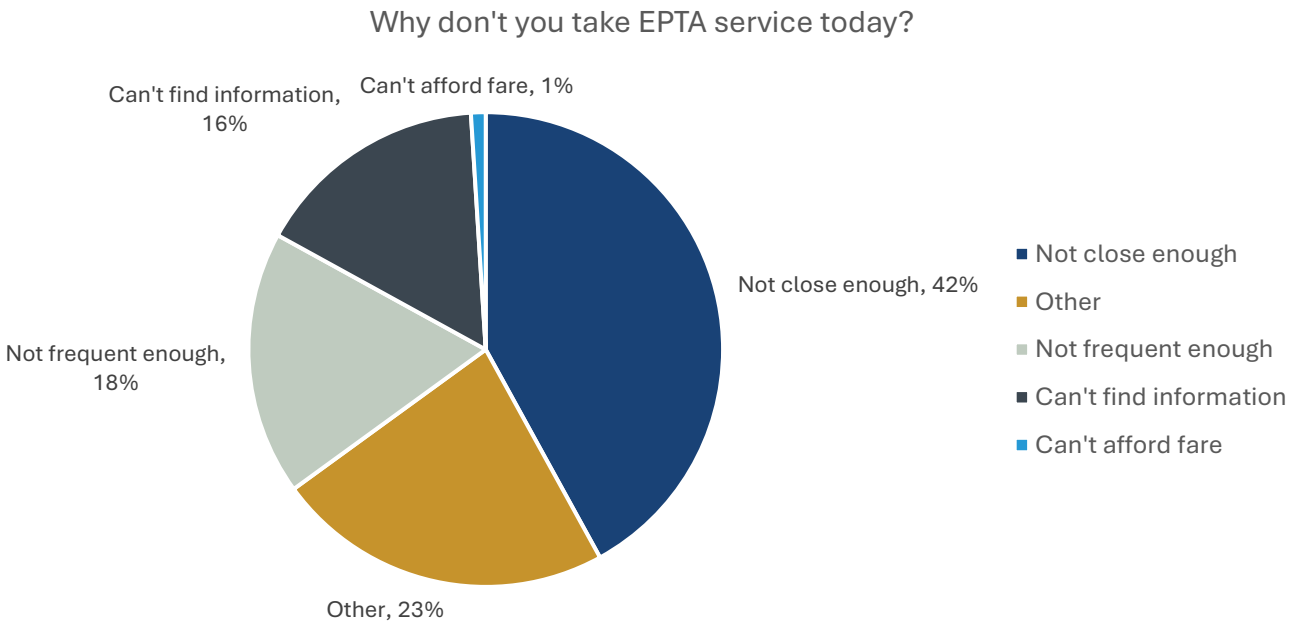


Table 47 lists the responses received to the question: "What is the single most important improvement that you would suggest for EPTA service?" The responses are presented as they were submitted.[17]

Table 47 | Recommendations for Most Important Improvement

COMMENT
30 day fare for less money. Fare not so much money.
7-days per week service, 6AM - 9PM
A medical plan would greatly help for the drivers, which are most important.
A rout that met up in the AM with Winchester VA public transit , and a PM pick up . Happy to pay more for this type of service if it ever becomes a viable . [Need] more weekend [availability] . And consistent coverage of rout 10 . Also the [colored] lines were much [easier] to navigate with pan Tran then the EPTA numbers rout type of schedule . I always have to call office now to figure out what my [availability] is and rely on drivers to help me navigate my transfer
Access to metro
Advertise more!
Advertise or have more busses. Many people do not even know public transit options even exist in our community
Advertise your services and schedule availability
Allowing customers to play music loud

[17] Text in brackets indicates that edits were made to the original comment for clarity

COMMENT
Augment MARC train service as minimize disruptions in a worse case scenario with the infrastructure and connect with Washington County Transit. Backing up MARC train in case of service breakdowns west [of] Brunswick as connect with MARC train Brunswick Line in Brunswick.
Be on time at dialysis
Better frequency - also starting service connections to Silver Line metro in VA
Better Information/marketing to lead to increased ridership to lead to increased routes
Better weekend service
Big warehouse people get off at different times and if you go only you wait hour - maybe 2
Connect the populous parts of the panhandle
Connection to rail and airport locations
Consistency
Consistent time
Dedicated City only line with more visible stops
Direct access to employers in Jefferson county
Easier to access information regarding their routes
Easy to understand website. Covered bus stop wait areas clearing colored and marked.
Employee opportunities to advance
Everything is good
Expand destinations
Expanded route destinations - direct route from Charles Town to Martinsburg
Expanded service in Jefferson County
Extended hours for Rt 18
Extended service to Hedgesville Spring Mills
Frequency
Friendliness
From what I hear, the services is good. However, people have a negative perception of the safety and accessibility of public transportation in this area.
Go into neighborhoods
Going to Charles Town on Saturdays
Good of communication with driver
Great bus drivers
Having buses consistently available for reliant customers and being timely
Hours of operation. Weekends should be longer
I have no answer. My ride was pleasant and the driver went above and beyond to accommodate us.
I suggest if EPTA could work in Charles Town on Saturday, and also holidays
I think the new facility is most important.
I was on the bus for 1.5 hours, dropping off and picking up other riders before taken home :(Q20 - Hour early
I would like if a bus went up to James Romsey, Spring Mills Walmart, and a bus to bring me back from work at 11pm
I would like to be able to use demand response and get to and from my medical appointments. It seems that although I am blind and a senior, everytime I call, the bus is already full ... and I cannot believe there are that many who truly cannot get to medical appointments, and are using it for other non-medical ... because they have Medicaid and can. This is a real problem which needs corrected.
I would like to see more coverage for Morgan co WV.
Include the north end of the county in your routes! There are people living up here!
increased MARC service

COMMENT
Keep all routes running, add Spring Mills
Keep Caperton Station as a stop (even with new transit center). Keep Hack Wilson Way as a stop. Can't attend Telamon (?) events, etc. due to hours of operation.
KEEP DOING WHAT YOU GUY'S ARE DOING IT HELPS US DAILY!!
Keeping scheduled appointments
Late night service
Later hours faster times!!!
Longer bus hours
Make a bus route on saturday, sunday, Martinsburg, Charlestown
Make sure it is safe for intellectually and physically disabled adults
Marked bus stops
More accessible stops
More accurate schedules
More availability on Saturdays
More Bus stop with shelters for people waiting for transportation. Make it known that it is a bus stop with schedule posted with bus times!
More bus stops
More buses, routes, and stops
More consistent schedule, and improved fare structure to reflect the area served
More Drivers
More drivers
More DRIVERS, more routes (Spring Mills?), longer evening hours
More frequent
More frequent, better connection between routes
More hours/frequencies , more destinations
More information
More organized in picking up patients within same area for time constraints
More Routes
More routes
More routes
More routes that go farther out
More routes throughout - Jefferson County - the entire Eastern Panhandle, or going between Berkeley and Jefferson. Once again, EPTA favors Berkeley County with the new transit center, instead of Jefferson County building a multi-modal transit facility at Northport Ave. (at the old Jefferson Orchards) where it was planned to include a MARC station, addressing REGIONAL needs.
More routes to Spring Mills
More routes, more often that go further through the Eastern Panhandle
More stops
More stops but maybe an express from downtown Martinsburg to Berkeley Medical Center?
More stops so more people can use the service.
More stops. i suggest working with business/land owners/DOH in certain areas in [Jefferson] County. Mission Road in Shannondale or anywhere east of the Shenandoah need at least 1 [route]. This might be better for a "once a day type route." A stop of the left side of Route 9 (near Five Guys/Chick Fil a). There is not a way to safely cross 9 via walking to reach the existing stop near Ledo/Weiss. A stop on this side would be good. That neighbor also has some lower income family renting and many of units are planning [to be built]. A pedestrian bridge/path safely over 9 is needed at this main area. An extra stop west of [Shepherdstown] on 45 would be good.
More time to be put on scheduled routes,
More visible bus stop signs or shelters

COMMENT
Need a pick up and drop off point on W.King with a route heading out to Foxcroft from W. King.
New route
No recommendations. They are doing great!
None
None at this time
None.
Not a thing, excellent job
Not sure
Nothing they are good
Offer routes to popular destinations during popular times. (e.g. service to downtown CT during weekend evenings to cut down on drunk driving, service to downtown Harper's Ferry, service to the River). Clearly marked bus stops that show the bus routes.
Pay driver's more so you can retain the good ones
Raise public awareness
Regular routes around the county.
Regular service to [Spring] Mills.
Reverse commute and weekend MARC service
Route to falling waters, a posted bus schedule, more frequency
Run on sunday
Running more on weekends
Safety
Saturdays and Sundays
Service north to Spring Mills/Falling Waters. Connections with Washington County Transit to continue on perhaps at Spring Mills Wal-Mart, Falling Waters or Williamsport.
Shorter wait times at stops and getting to and from quicker
Signage
Spring mills
Supplement MARC train service
Take trips to the Charles Town Race Track/Casino from Martinsburg.
That if you all are short-staffed, get some more new people in training too. Whoever is interested in driving and helping other people out.
The downtown transit center will be huge for ridership accessibility. Bravo!
The price
The ride to and from
Transit service to and from large subdivisions.
Unplug your dispatch
Various areas such as Shepherdstown need service

Figure 92 shows the distribution of household income among respondents by rider status. Riders have significantly lower household incomes than non-riders.

Figure 92 | Household Income

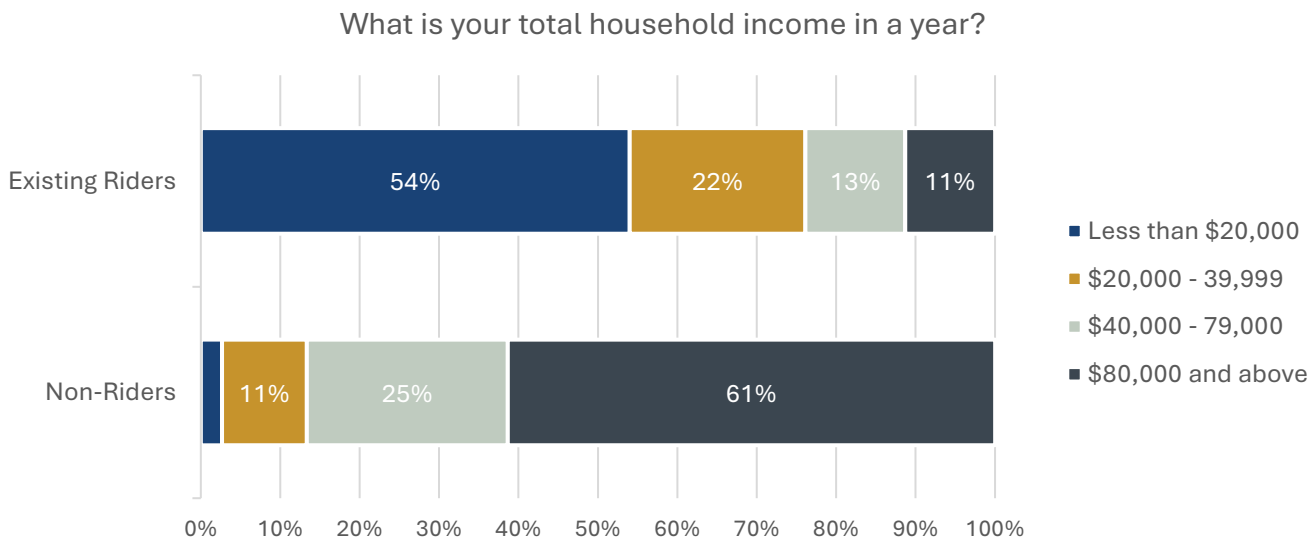


Figure 93 shows the distribution of race and ethnicity among respondents by rider status. Riders are more diverse than non-riders.

Figure 93 | Race and/or Ethnicity

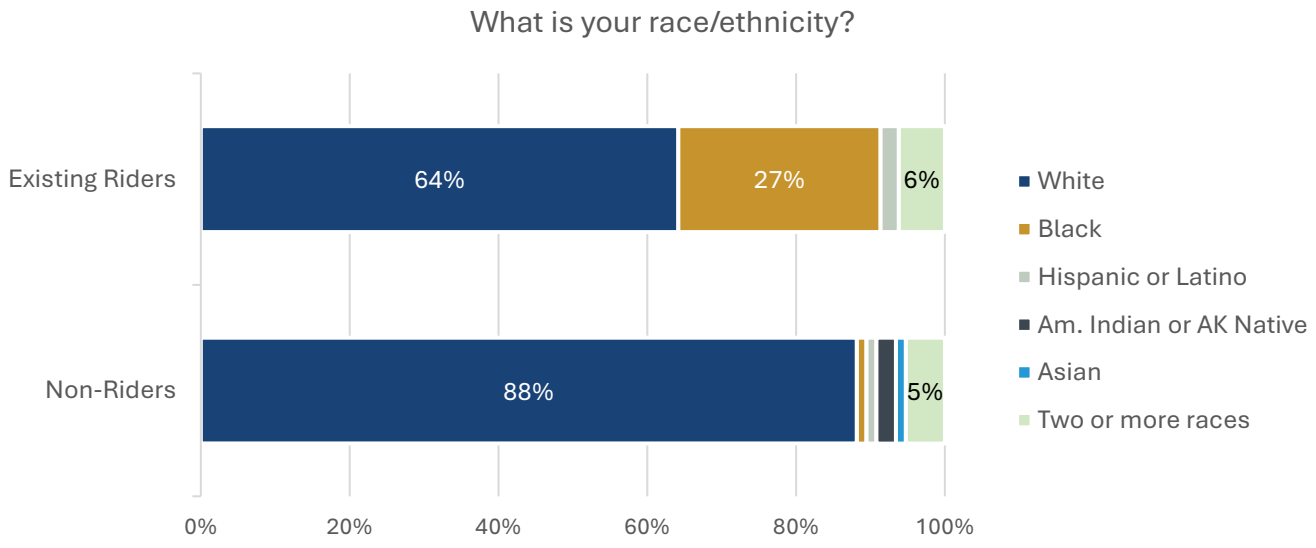


Figure 94 shows the English proficiency among respondents by rider status. Only one respondent, an existing rider, identified as having limited English proficiency and no respondents reported not speaking English at all.

Figure 94 | English Proficiency

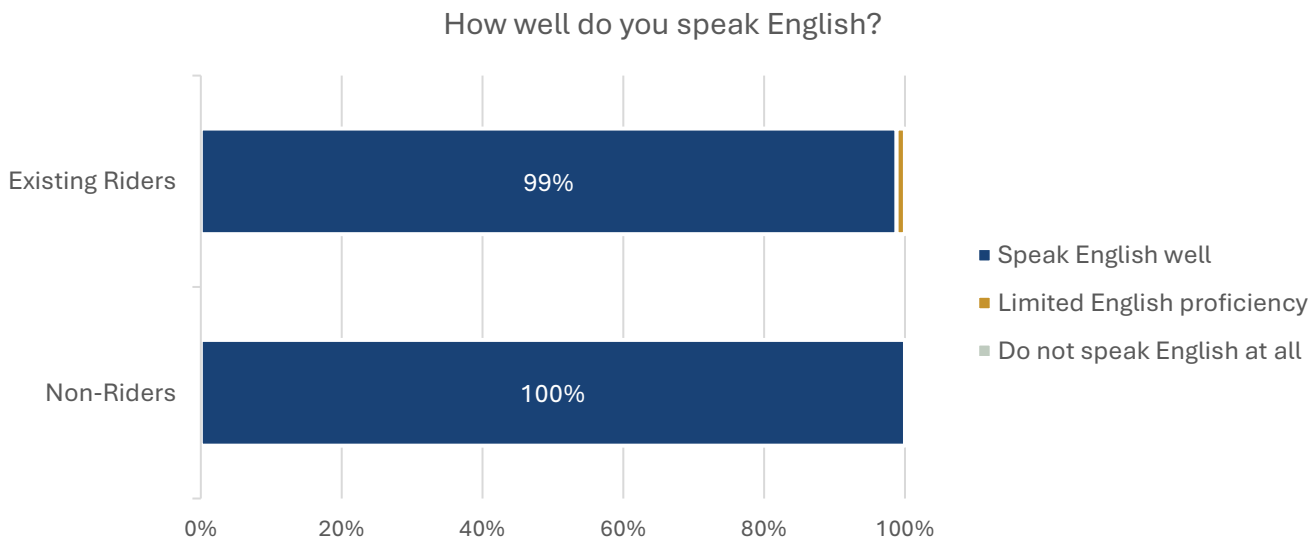


Figure 95 shows the primary languages spoken at home among respondents by rider status.

Figure 95 | Primary Language Spoken at Home

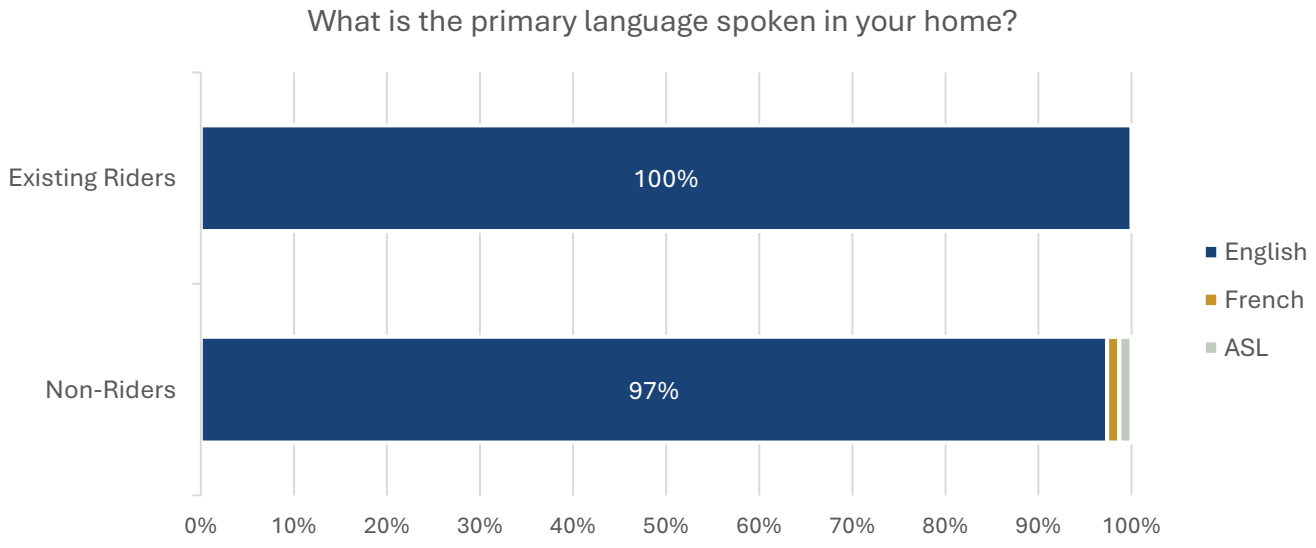


Figure 96 shows whether respondents have a driver license. Over half of existing riders do not have a valid driver license, while only two non-riders do not have a license.

Figure 96 | Driver License Status

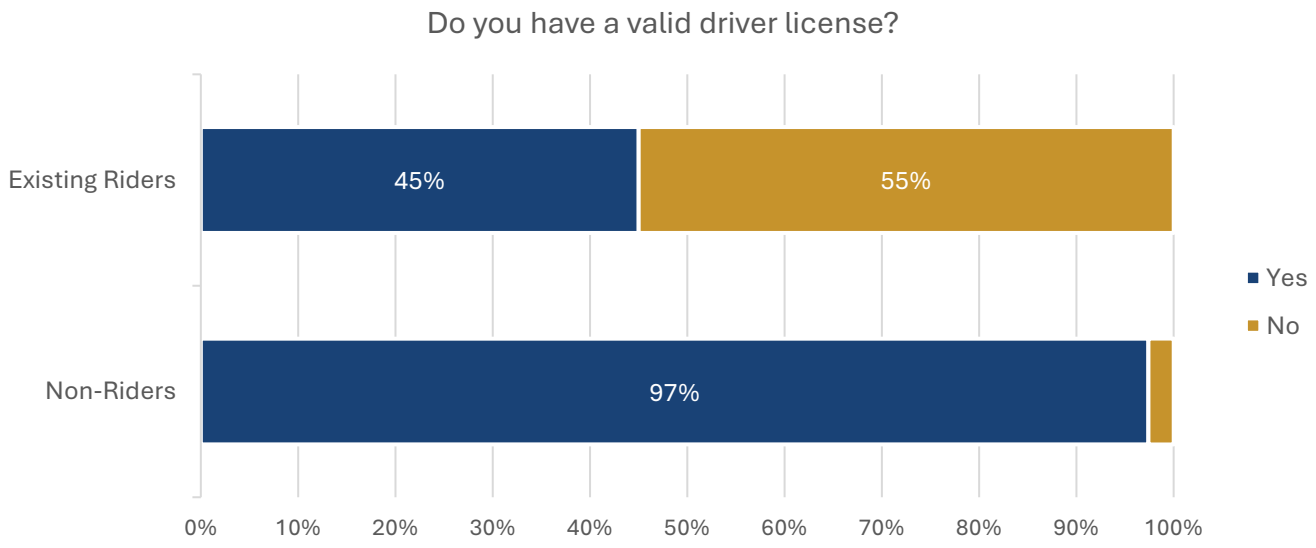


Figure 97 shows the distribution of household vehicles among respondents by rider status. Over half of riders do not have a vehicle in their household, and riders generally have fewer vehicles than non-riders.

Figure 97 | Household Vehicles

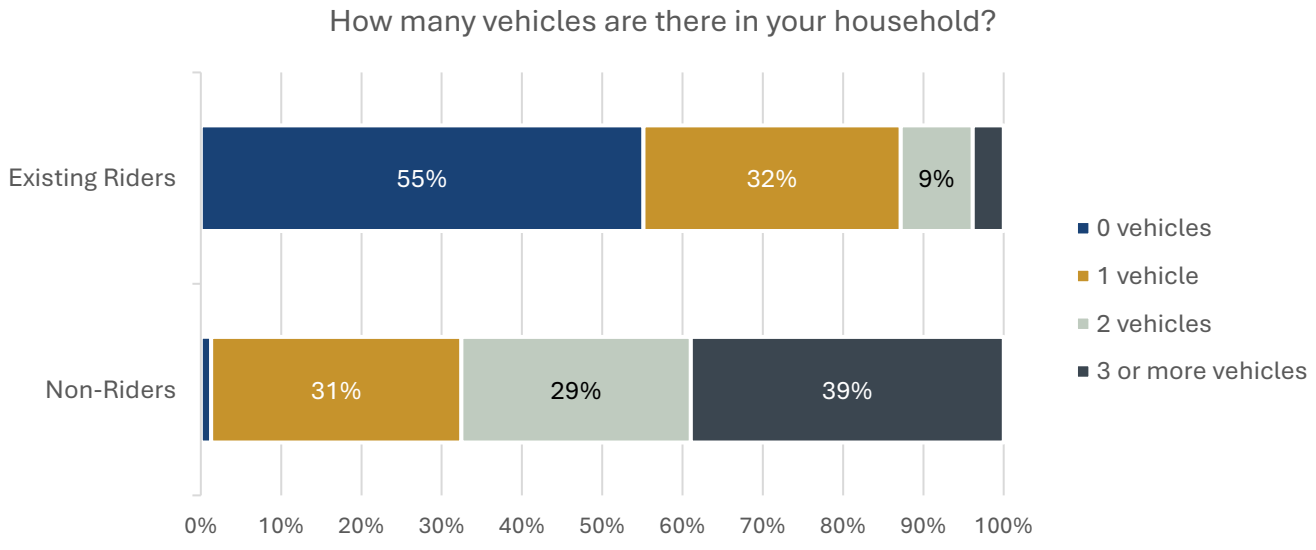


Figure 98 shows the gender distribution among respondents by rider status.

Figure 98 | Gender

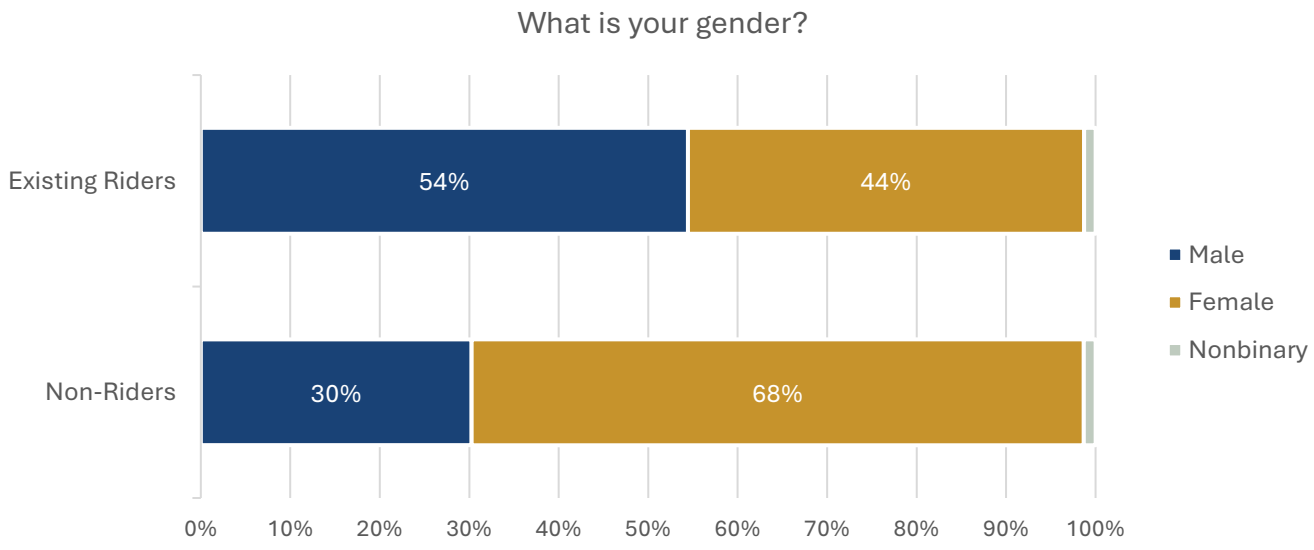


Figure 99 shows the age distribution among respondents by rider status. The median age for both riders and non-riders was 53 years. The mean ages for riders and non-riders were 51 and 50 years, respectively.

Figure 99 | Age

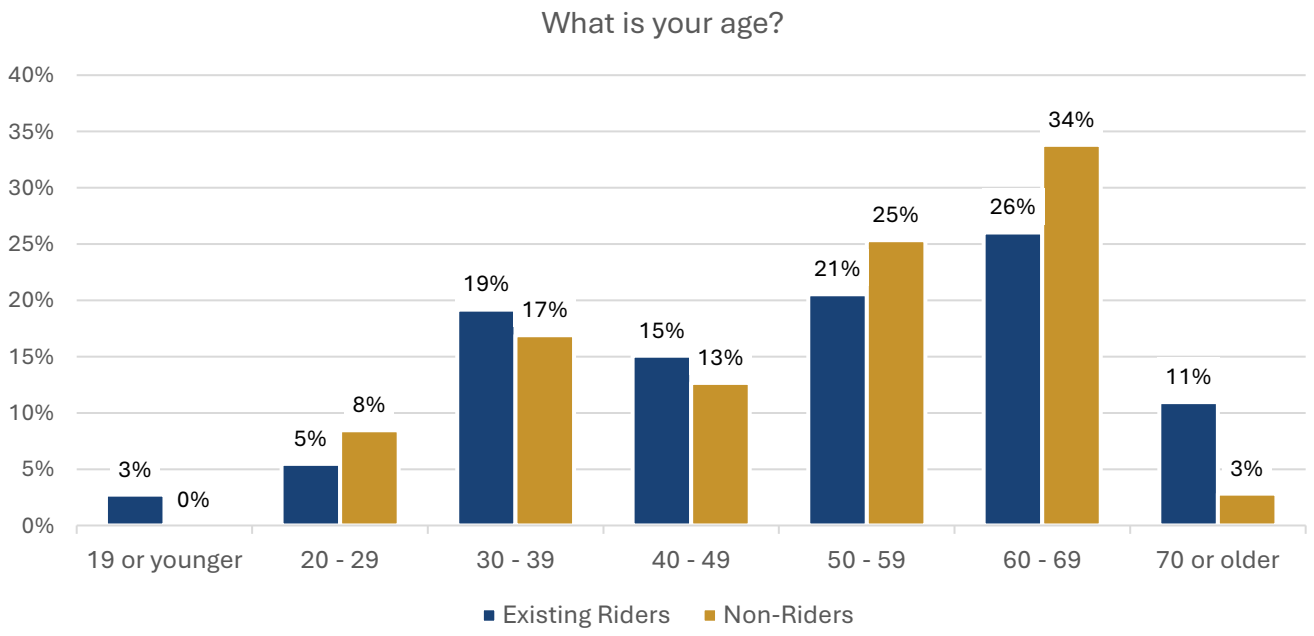


Figure 100 shows the distribution of occupations among respondents by rider status. The primary write-in response was "disability."

Figure 100 | Occupation

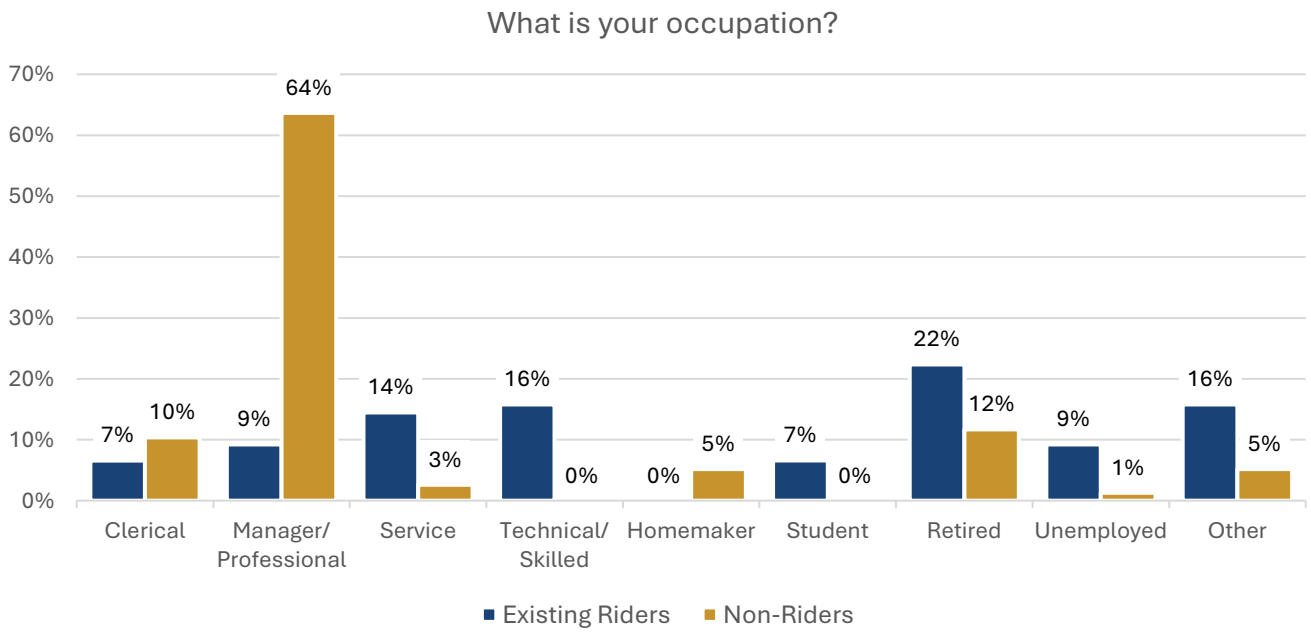


Table 48 and **Table 49** list the ZIP codes where existing riders and non-riders work. **Figure 101** shows where existing riders work geographically.

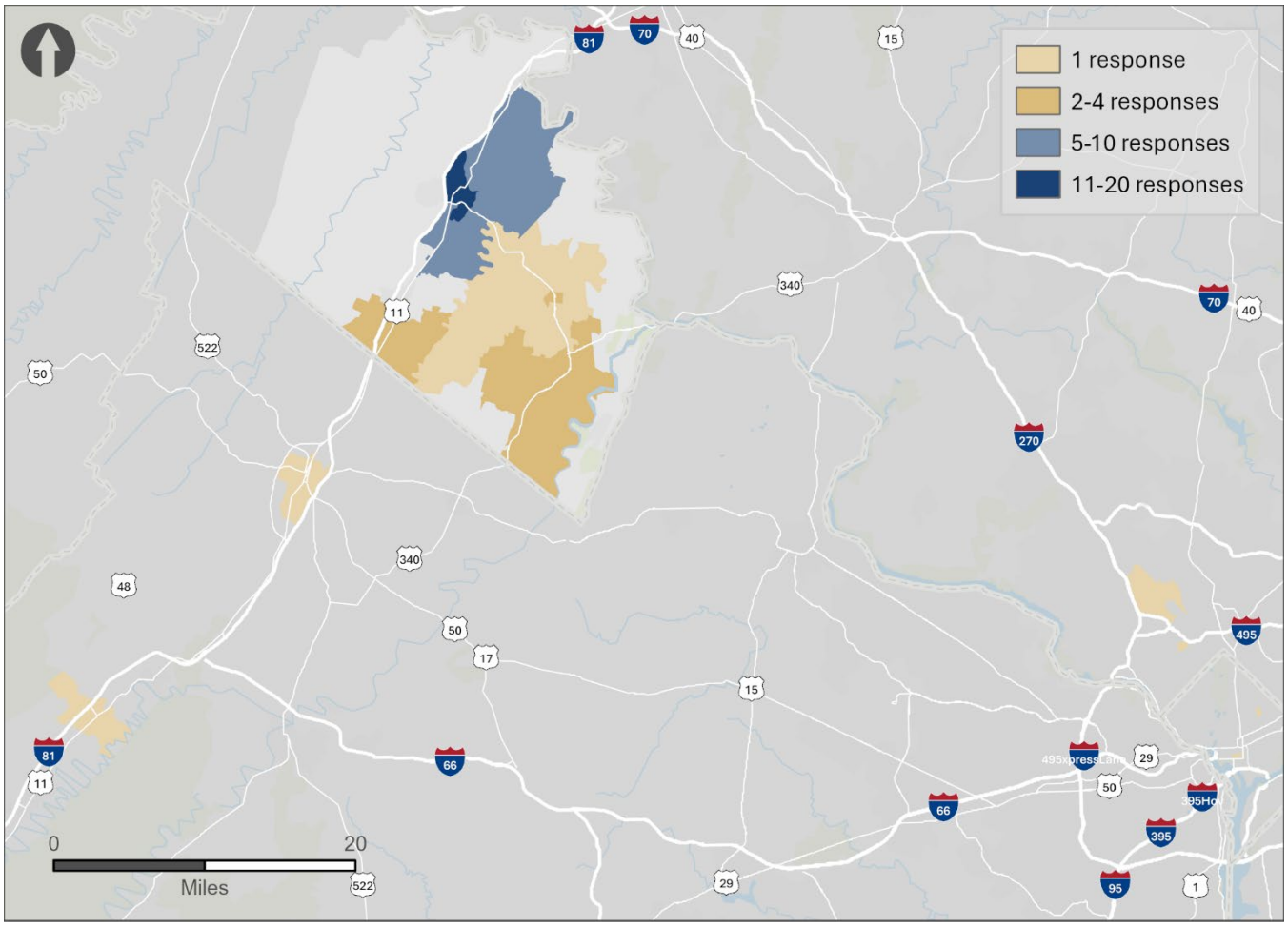
Table 48 | Workplace ZIP Code (Existing Riders)

ZIP CODE	LOCATION	RESPONSES	ZIP CODE	LOCATION	RESPONSES
25401	Martinsburg	20	20889	Bethesda, MD	1
25405	Southern Martinsburg	6	21540	Luke, MD	1
25404	Northern Martinsburg	5	22601	Winchester, VA	1
25413	Bunker Hill	2	22660	Toms Brook, VA	1
25414	Charles Town	2	24530	Callands, VA	1
20064	Washington, DC	1	25430	Kearneysville	1
20224	Washington, DC	1	25438	Ranson	1
20431	Washington, DC	1	25442	Shenandoah Junction	1
20857	Rockville, MD	1			

Table 49 | Workplace ZIP Code (Non-Riders)

ZIP CODE	LOCATION	RESPONSES	ZIP CODE	LOCATION	RESPONSES
25414	Charles Town	15	25403	Martinsburg	2
25401	Martinsburg	12	20141	Round Hill, VA	1
25404	Martinsburg	6	20175	Leesburg, VA	1
25405	Martinsburg	5	20176	Leesburg, VA	1
25425	Harpers Ferry	5	20177	Leesburg, VA	1
25443	Shepherdstown	4	21742	Hagerstown, MD	1
25430	Kearneysville	3	25419	Falling Waters	1
20910	Silver Spring, MD	2	25438	Ranson	1
22602	Winchester, VA	2			

Figure 101 | Workplace Location (Existing Riders)



D. Data Sources

Numerous analyses were conducted to support the development of the TDP. These analyses drew from a range of data sources, which are described in **Table 50**. More detailed descriptions of each source, including the specific variables used, can be found in the analysis narratives.

Table 50 | Data Sources

SOURCE	TIMESPAN	GRANULARITY	PURPOSE
Transit Ridership and Performance			
Passio (Boarding Summary)	May 2024 – July 2024	Individual boarding locations	Describe ridership by stop, route, service day, and time of day
Passio (Operational Summary)	2023	Route	Describe annual ridership, revenue hours, and revenue miles by route
Passio (Performance Summary)	January 2024 – June 2024	Route	Describe on-time performance
National Transit Database (NTD) – Agency Profiles	2019 – 2023	N/A	Describe annual ridership, revenue hours, and revenue miles by service type
EPTA GTFS Feed	2023	--	Conduct travel flow gaps analysis and stop ridership mapping
Population and Employment			
American Community Survey (ACS) 5-Year Estimates	2018-2022	Census Block Group	Conduct transit potential, transit propensity, and transit potential gaps analyses
Longitudinal Employer Household Dynamics (LEHD)	2021	Census Block Group	Conduct transit propensity analysis
Hagerstown/Eastern Panhandle Metropolitan Planning Organization (HEPMPO) Long Range Travel Demand Model (Growth Forecast)	2022	Traffic Analysis Zone (TAZ)	Describe growth projections
Travel Patterns			
Replica	Fall 2023	Census Tract	Conduct travel flow, travel flow gaps, and service optimization analyses

E. Transit Center Capacity Analysis

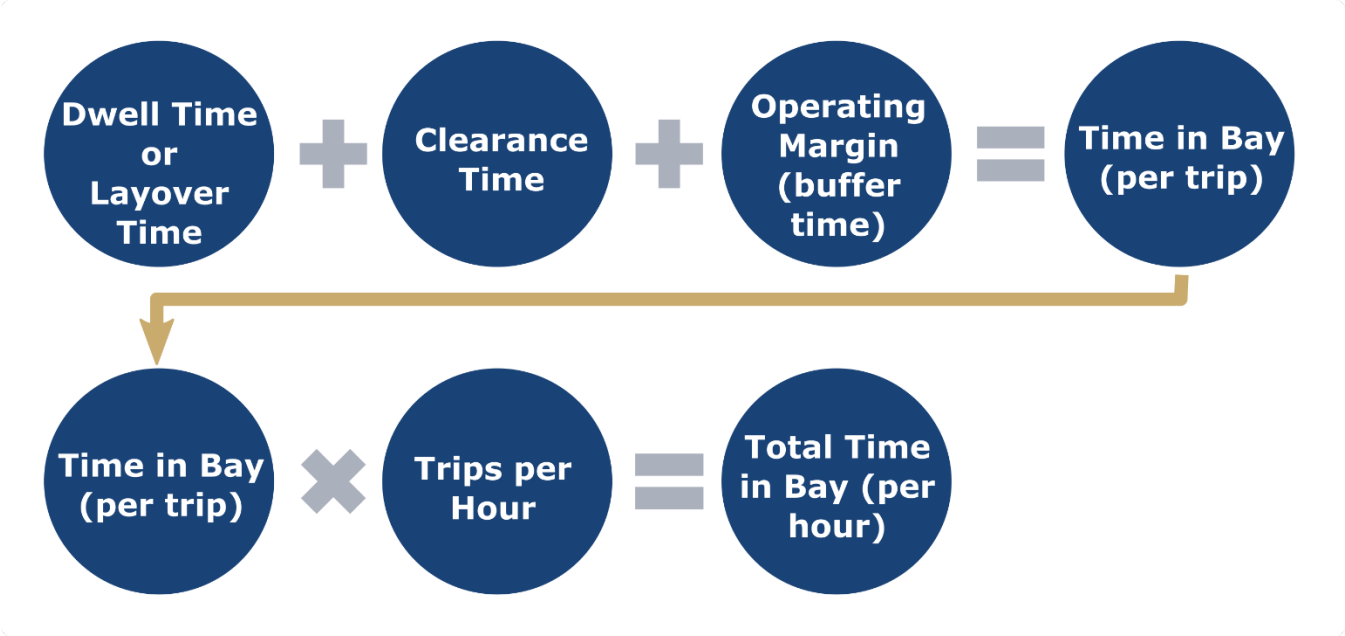
EPTA is currently constructing a new transit center in Martinsburg on Raleigh Street just north of Race Street (see **Figure 102**). Additionally, EPTA plans to implement recommendations from their FY25 Transit Development Plan (TDP) – which includes a redesign of their transit network – concurrent with the opening of the new transit center. The new network has five routes serving the transit center regularly with varying frequencies. This analysis will provide bay assignments for each route at the Multimodal Transit Center and assess its capacity for the redesigned network.

Figure 102 | New Multimodal Transit Center Location

This analysis uses Foursquare ITP's Bus Station Capacity Calculator, *Balance*, which compares the minutes a bus bay (or entire facility) is occupied by buses to the total capacity of minutes available at an individual bay (or a facility in its entirety). This tool takes service level and layover information and uses the methods described in the *Transit Capacity and Quality of Service Manual, 3rd Edition* (TCQSM) to calculate the total number of minutes in an hour that a bus will occupy a bay or facility, including additional time for buses to clear bays and a buffer time, or operating margin (see **Figure 103** and the accompanying definitions). The baseline assumption for layover is that 100 percent of a route's layover time will be spent at the station; however, some of this time can be shifted to the opposite end of a route if necessary to increase capacity.

The tool can calculate capacity for each individual bay and for a facility as a whole. For routes terminating at the facility, dwell time and layover time are considered, while for routes passing through a facility only dwell time is considered. Under the redesigned network, all five routes serving Martinsburg will be laying over at the facility.

Figure 103 | Bay Capacity Calculations and Definitions



- **Dwell Time:** *the amount of time a bus "dwells" at a stop to allow passengers to board and alight, and in some cases to ensure buses do not depart timepoints early. When routes are laying over, dwell time typically takes place during the layover time.*
- **Layover Time:** *the amount of time a bus stays at a route endpoint to accommodate driver breaks and changes and to recover from delays. Ideally, layover time should be between 10 and 20 percent of a route's runtime.*
- **Clearance Time:** *the amount of time it takes a bus to depart its bay, based on the bay length and adjacent vehicle or bus traffic.*
- **Operating Margin:** *the maximum amount of time a bus can exceed its planned time at a bus bay without creating a "failure", or an instance when the bay exceeds capacity (i.e. when a bus tries to enter a bay but is blocked by the previous bus still occupying the bay). The operating margin essentially creates a "buffer" around the scheduled time a bus should be occupying a bay.*

MULTIMODAL TRANSIT CENTER LAYOUT

The new Multimodal Transit Center bus loop will have six bus bays – two 40-foot bays and four 30-foot bays – as pictured in **Figure 104**. Buses will enter the bus loop via a driveway on Raleigh Street and then operate clockwise around a center island where passengers will board and alight. While bus bays have not been named yet, they were assigned names A through F for the purposes of this analysis.

Figure 104 | Multimodal Transit Center Bus Loop Layout

PROPOSED NETWORK

The redesigned EPTA network will comprise five routes serving the Multimodal Transit Center, as illustrated in **Figure 53**. The routes will have varying headways, as summarized in **Table 51**. Since some routes have long and short patterns, the headways represent the service operating during the peak periods. In addition, Routes E, F, and G, which serve Jefferson County, will only serve the transit center once during the AM peak and once during the PM peak.

Table 51 | Proposed Network Headways at the Multimodal Transit Center by Route

PROPOSED ROUTE	HEADWAY
Route A: Spring Mills	90
Route B: Inwood	90
Route C: Hedgesville	60
Route D: Martinsburg Circulator	60
Route E: VA Medical Center North	60
Route F: VA Medical Center South	1 AM/1 PM Trip
Route G: Harpers Ferry	1 AM/1 PM Trip
Route H: Charles Town/Ranson Circulator	1 AM/1 PM Trip

PROPOSED BAY ASSIGNMENTS

Bus bay assignments for the redesigned network are proposed in **Figure 105**. To make navigation easier for passengers and operators, each route is assigned to a single bay sharing the same name. With five routes proposed to serve Martinsburg all day, the three Jefferson County routes that serve Martinsburg once in each peak period would be assigned to Bay F.

Figure 105 | Multimodal Transit Center Layout and Proposed Bay Assignments

CAPACITY ANALYSIS

With the bus bay assignments outlined in **Figure 105**, each bay will operate well under capacity during peak periods (see **Figure 106**). Bay E will have the highest overall occupancy, being occupied for 27 minutes in the peak hour or 45 percent of the time. Overall, the facility will be at 29 percent capacity under the proposed network.

Table 52 summarizes the operating details for each route, including headways, cycle times, layover times, and time in each bay during the peak hour. The unit for each field, with the exception of *Buses per Hour*, is minutes and each field is defined below (see **Figure 103** for additional details).

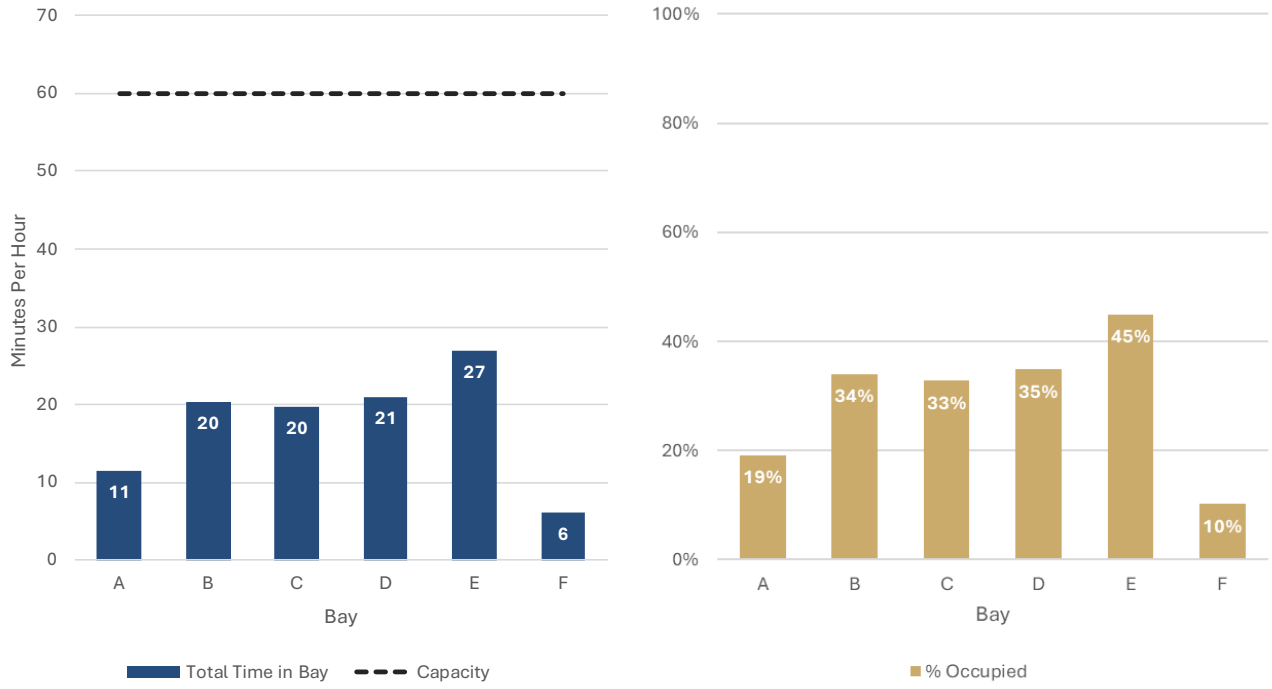
- **Headway:** the proposed headway for each route.

- **Bay:** the bay each route is assigned to.
- **Runtime:** the roundtrip runtime for each route.
- **Cycle Time:** the roundtrip runtime rounded up to a multiple of the headway, with the difference between cycle time and runtime equating to the layover time.
- **Layover Time:** the layover time for each route, which includes dwell time for passenger boarding and alighting.
- **Layover Time + Buffer**: the layover time for each route plus a buffer added based on guidance from the TCQSM. The buffer accounts for time needed to enter and exit a bay, variability in runtimes, and imperfect on-time performance.
- **Buses per Hour:** the resulting number of buses per hour based on the proposed headway.
- **Time in Bay:** the maximum amount of time each route will occupy its assigned bus bay during the peak hour: (*layover time + buffer) * buses per hour*. For Routes F, G, and H, which would not layover in their assigned bay, dwell time would substitute for layover time.

Table 52 | Capacity Analysis Details

Route	Headway	Bay	Runtime	Cycle Time	Layover Time	Layover Time + Buffer	Buses per Hour	Time in Bay (Minutes/ Hour)
Route A	90	A	76	90	14	17.2	0.7	11.5
Route B	90	B	65	90	25	30.6	0.7	20.4
Route C	60	C	44	60	16	19.7	1.0	19.7
Route D	60	D	43	60	17	20.9	1.0	20.9
Route E	60	E	38	60	22	26.9	1.0	26.9
Route F	1 trip	F	NA	NA	NA	NA	1.0	2.0
Route G	1 trip	F	NA	NA	NA	NA	1.0	2.0
Route H	1 trip	F	NA	NA	NA	NA	1.0	2.0
							Total	**105.3**
							Percent of Total Capacity	**29%**

Figure 106 | Capacity Analysis Results



FUTURE CONSIDERATIONS

Overall capacity at the Multimodal Transit Center is sufficient for certain service increases in the future. With Bay F having considerable extra capacity, new routes could be accommodated. Theoretically, four additional buses per hour with 10-minute layovers could easily fit into Bay F without capacity issues. For demonstration purposes, an additional bus and improved headways on all five proposed Martinsburg routes could also be accommodated within their assigned bays.[18]

Table 53 summarizes the operating details for each route, including the demonstration headways and resulting time in each bay during the peak hour. Additional buses and targeted improvements could be accommodated with a rearrangement of bay assignments.

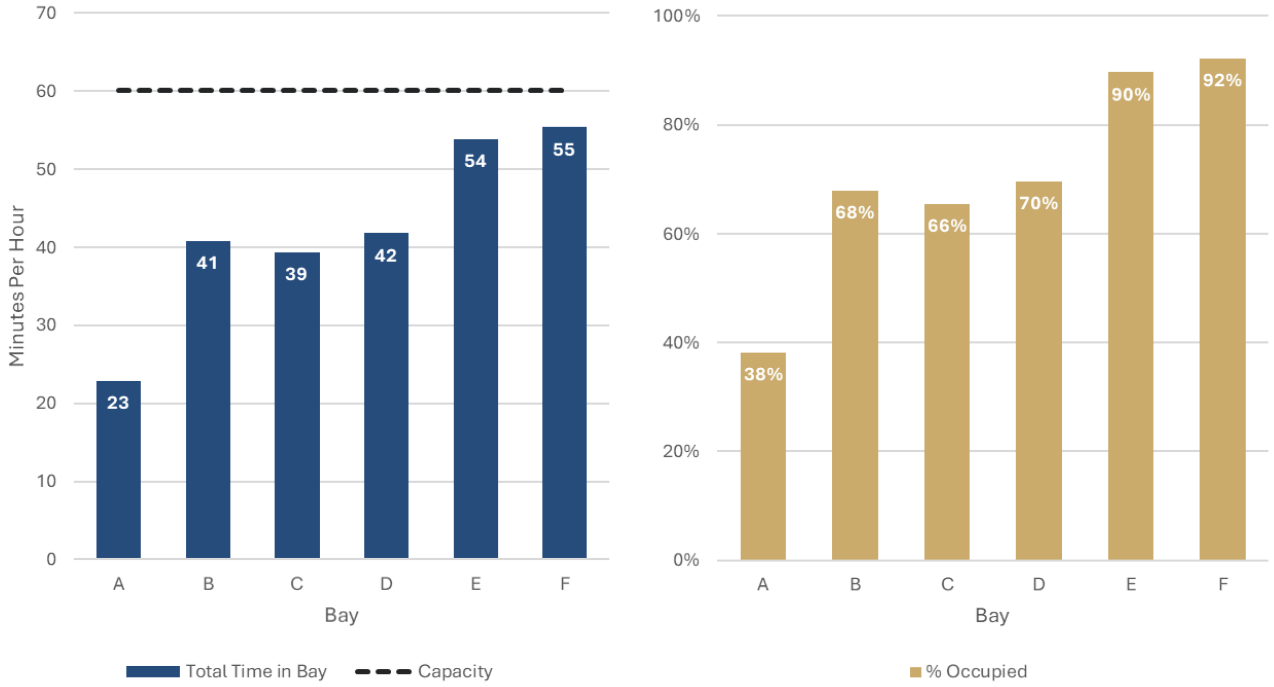
[18] This represents a theoretical scenario; currently there is no projected demand for additional service on these specific routes.

Table 53 | Capacity Analysis Details – Theoretical Future Service Increases

Route	Headway	Bay	Runtime	Cycle Time	Layover Time	Layover Time + Buffer	Buses per Hour	Time in Bay (Minutes/ Hour)
Route A	45	A	76	90	14	17.2	1.3	22.9
Route B	45	B	65	90	25	30.6	1.3	40.7
Route C	30	C	44	60	16	19.7	2.0	39.3
Route D	30	D	43	60	17	20.9	2.0	41.7
Route E	30	E	38	60	22	26.9	2.0	53.8
Route F	NA	F	NA	NA	NA	NA	1.0	2.0
Route G	NA	F	NA	NA	NA	NA	1.0	2.0
Route H	NA	F	NA	NA	NA	NA	1.0	2.0
Additional Routes	15	F	NA	NA	10	12.3	4.0	49.3
							Total	253.8
							Percent of Total Capacity	71%

Figure 107 summarizes this potential service increase. Bay F would be occupied 55 minutes out of the peak hour and all other bays would remain under capacity. In total, at least nine additional buses should be able to be accommodated at the transit center pending final layover times. Additional buses may be able to be accommodated with a rearrangement of bay assignments given that the facility will only be at 71 percent capacity overall in this future scenario.

Figure 107 | Future Capacity Analysis Results



CONCLUSIONS

Overall, the routes proposed in the redesigned network in the FY25 Transit Development Plan will comfortably fit into the new EPTA transit center in Martinsburg. In the future, the Multimodal Transit Center could accommodate an additional nine buses through the use of Bay F by future routes and service increases on other routes. Additional buses on top of these could be accommodated with a rearrangement of bay assignments and the splitting routes across multiple bays.