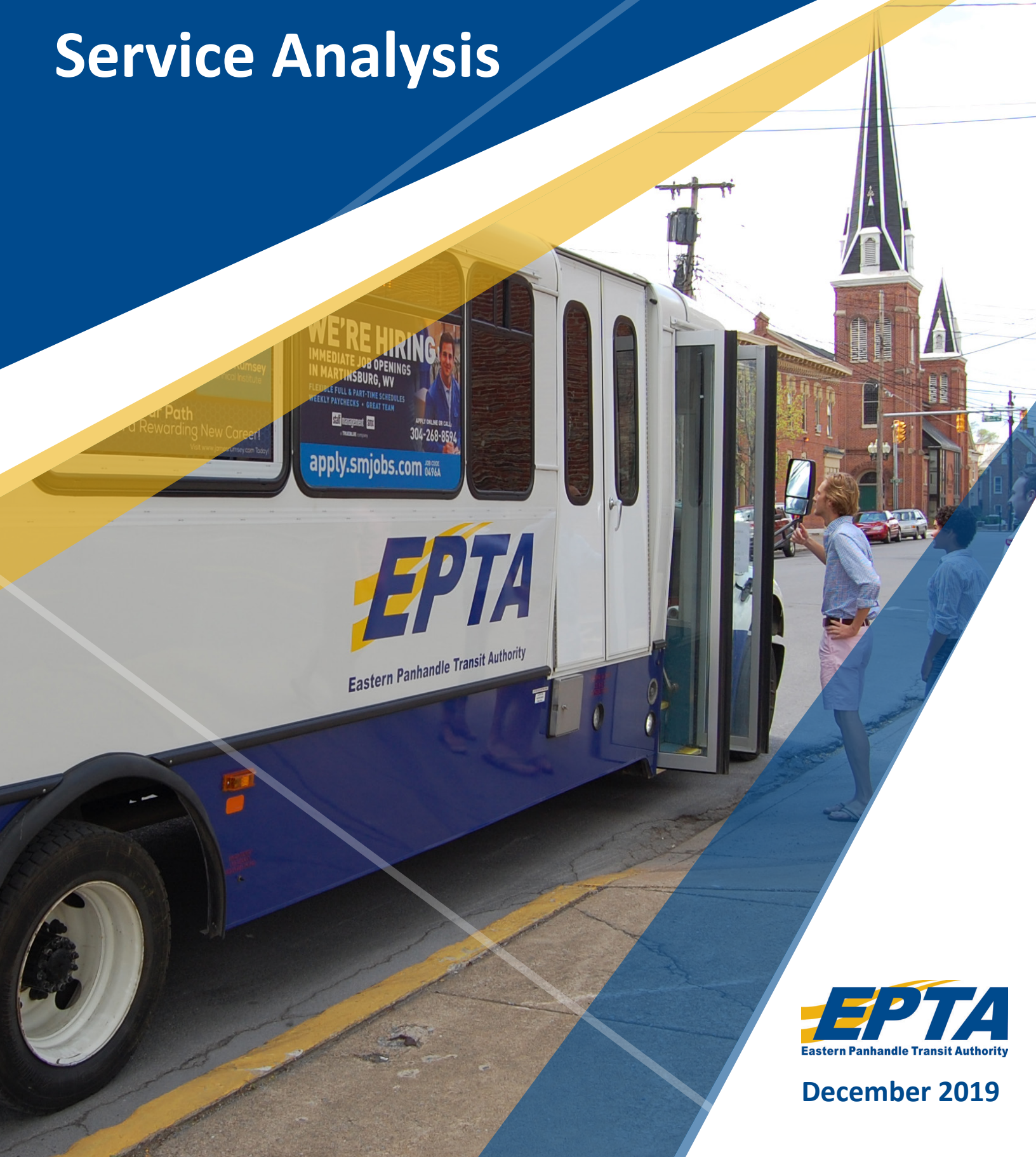


Eastern Panhandle Transit Authority

# Commuter Bus Service Analysis



**EPTA**  
Eastern Panhandle Transit Authority

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December 2019

This document was prepared for:



by:



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## Introduction

Eastern Panhandle Transit Authority (EPTA) is planning to implement commuter bus service to connect commuters from the Martinsburg and Ranson / Charles Town areas to the new Silver Line Metro Station in Ashburn, VA. Berkeley and Jefferson Counties in West Virginia's Eastern Panhandle have experienced steady population and housing growth over the last 15 years and is one of the fastest growing areas in West Virginia. As identified in the regional transportation plan, this trend is expected to continue through 2045. Overall, more than half of the workers in Jefferson and Berkeley Counties commute out of the Eastern Panhandle area. Many of the area's residents commute to Washington, DC and the technology employment centers along the Dulles Toll Road and I-270 corridors. The estimated percentage of workers commuting to the Silver Line service area in Virginia includes:

- **Jefferson County** – 20% of the workforce are employed in Loudoun and Fairfax Counties
- **Berkeley County** – 6.5% of the workforce are employed in the Loudoun and Fairfax Counties.

The demand for commuter transit service is consistently voiced by local commuters through surveys conducted for the EPTA Transit Development Plan (TDP) and HEPMPO's Long Range Transportation Plan (LRTP). Many survey respondents have identified the transit service to Virginia and Washington, DC as a local priority for EPTA. To demonstrate the potential ridership demand, this commuter service assessment identifies existing service needs, the transit market and long-term viability of the commuter service, implementation requirements and potential enhancements for expanding the service once it is proven successful.



*EPTA Bus at Caperton Train Station*

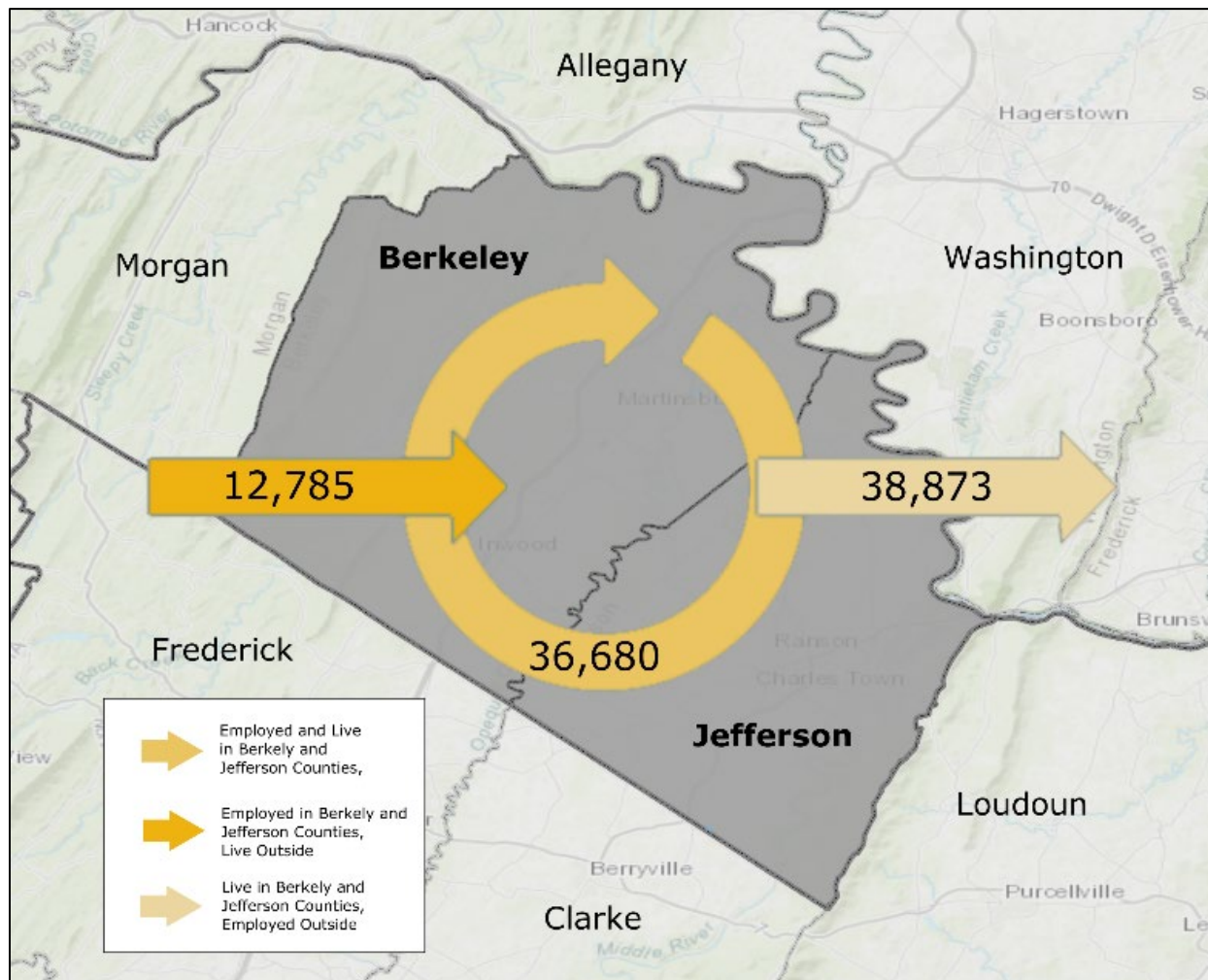
Currently, EPTA does not provide transit service to Virginia; and the MARC commuter train only provides service through Maryland to Washington, DC. This commuter service evaluation plan provides a preliminary assessment for the ridership demand into Northern Virginia. There are many capital and operational challenges for implementing a start-up commuter transit service, but EPTA has initiated the planning and procurement process. EPTA plans to purchase two new 24 passenger buses and utilize CMAQ funding to help offset some of the initial operating costs.

## Service Needs & Background

### Commuting Patterns

2015 Longitudinal Employer-Household Dynamics (LEHD) data was used to analyze the inflow and outflow of those who live and work in Jefferson and Berkeley counties. While 2017 LEHD data was available, it was determined that, at the time of the analysis, the data did not include federal employment data. According to the 2015 LEHD data and the Hagerstown-Eastern Panhandle Metropolitan Planning Organization's (HEPMPO) Long Range Transportation Plan, there are 75,553 people living and 49,465 working in Jefferson and Berkeley counties. Approximately 51 percent (38,873) of all people who live in these counties work outside the region, as shown in **Figure 1**. The remaining 49 percent, or 36,680 people, both live and work in Jefferson and Berkeley counties. In addition, 12,785 people work in Berkeley and Jefferson counties who live outside the region. While incomplete, the 2017 LEHD does continue to show that more than half of all people living in Jefferson and Berkeley counties work outside the two counties.

**Figure 1: Berkeley & Jefferson Counties Inflow/Outflow**



## Work Destinations

**Table 1** shows the top work destinations for those who live in Jefferson and Berkeley counties. Of the 38,873 people who work outside the Eastern Panhandle area, almost a quarter, or 18,039 people, work in the Washington-Arlington-Alexandria, DC, MD, VA, WV Metropolitan Statistical Area (MSA) with Frederick, MD and Leesburg, VA having the largest concentration of workers. Approximately 3,600 people work along the Dulles Toll Road in Virginia while 1,700 work along the I-270 Corridor in Maryland. An additional 650 people work in Washington, DC. Other major areas for employment for people living in Jefferson and Berkeley counties include Winchester, VA and Hagerstown, MD.

**Table 1: Top Work Destinations for those living in Berkeley & Jefferson Counties**

Destination	Workers	Corridor	Destination	Workers	Corridor
Martinsburg, WV	8,951		Gaithersburg, MD	487	✓
Ranson, WV	3,496		Tysons, VA	429	✓
Charles Town, WV	2,687		Purcellville, VA	423	
Winchester, VA	2,261		Robinwood, MD	384	
Hagerstown, MD	1,997		Morgantown, WV	376	
Frederick, MD	1,528	✓	Berryville, VA	368	
Leesburg, VA	1,007	✓	Charleston, WV	365	
Shepherdstown, WV	930		Halfway, MD	362	
Ballenger Creek, MD	736	✓	Fountainhead-Orchard Hills, MD	362	
Washington, DC	651	✓	Sterling, VA	305	✓
Reston, VA	636	✓	Germantown, MD	288	✓
Chantilly, VA	629	✓	Arlington, VA	275	✓
Inwood, WV	609		Dulles Town Center, VA	268	✓
Ashburn, VA	581	✓	McNair, VA	263	✓
Rockville, MD	576	✓	Keyser, WV	218	

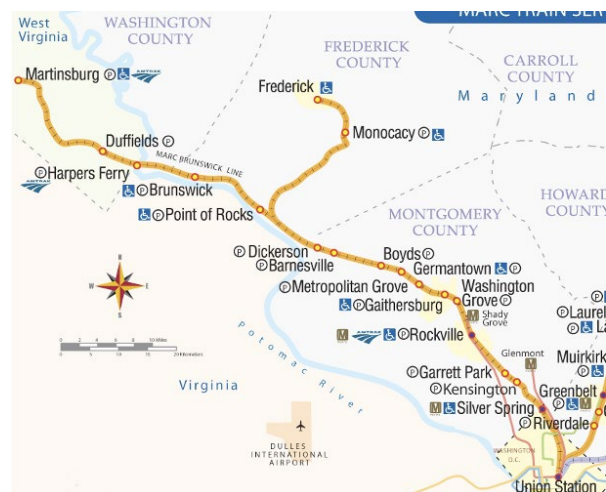
✓ Dulles Toll Road    ✓ I-270 Corridor    ✓ Washington, DC

## Existing Service

EPTA operates deviated fixed-route and demand-response service throughout Jefferson and Berkeley counties providing local transit connection for residents. However, there are limited options to connect to Washington, DC and surrounding areas using transit or other ride share opportunities.

### MARC Train

The MARC Brunswick commuter rail line operated by the Maryland Department of Transportation Maryland Transit Administration (MDOT MTA) travels the I-270 corridor to Union Station in Washington, DC and provides three morning and afternoon trains during the week with stops in



Map of the MARC Brunswick Commuter Rail Line

Martinsburg, Duffields, and Harpers Ferry. However, limited funding for MARC could jeopardize future level of service in West Virginia.

### *Commuter Buses*

There is currently no direct commuter bus service from Berkeley or Jefferson counties to the Washington, DC area; however, such service is available in adjacent counties. MDOT MTA offers three commuter buses. Bus 515 provides service from Frederick to Shady Grove/Rock Spring, Bus 204 provides service from Frederick to College Park, and Bus 505 provides service from Hagerstown to Shady Grove/Rock Spring. In Virginia, Loudoun County also offers an express commuter bus service from the Leesburg Park and Ride Lot to Washington, DC with stops in Crystal City, Rosslyn, and the Pentagon.

### *Carpool*

There are a few park and ride lots for carpooling throughout the region, but they are not serviced by EPTA and do not provide bus transit connections for commuters to Washington, DC. WVDOT maintains six park and ride lots in the two counties and there are two along I-81 in Berkeley County at Exit 8 and Exit 23. In Jefferson County, the four park and ride lots include:

- Duffields MARC Station parking lot
- Currie Street at Route 9 in Ranson
- Junction of US 340, WV115 and WV 9 in Charles Town
- Bolivar Visitor Center in Harpers Ferry

Once completed, the EPTA transit center will have a park and ride lot for commuters in downtown Martinsburg.

## Commuter Bus Service Implementation

The commuter bus service will be an expansion of the current EPTA transit service and therefore, does not have dedicated buses for the service within their existing fleet. To implement the service EPTA is planning four daily weekday trips to and from the Ashburn Metro Station with two dedicated buses. EPTA is procuring six new buses that have been approved and two of these buses will be designated for the commuter service. The 24-passenger buses will allow for EPTA to provide commuter service for up to 48 commuters daily or a total of 96 round trips.

This analysis provides the proposed routes, sample schedules to the morning and evening commutes, cost estimates for the service, and performance measures to evaluate the commuter service.

### Silver Line Station in Ashburn, VA

The new Ashburn station is part of the Dulles Corridor Metrorail Project that extends the Silver Line into Loudoun County, VA and serves Northern Virginia and Washington, DC. The station is expected to open in the Summer of 2020. Trains are expected to run every six minutes during weekday peak



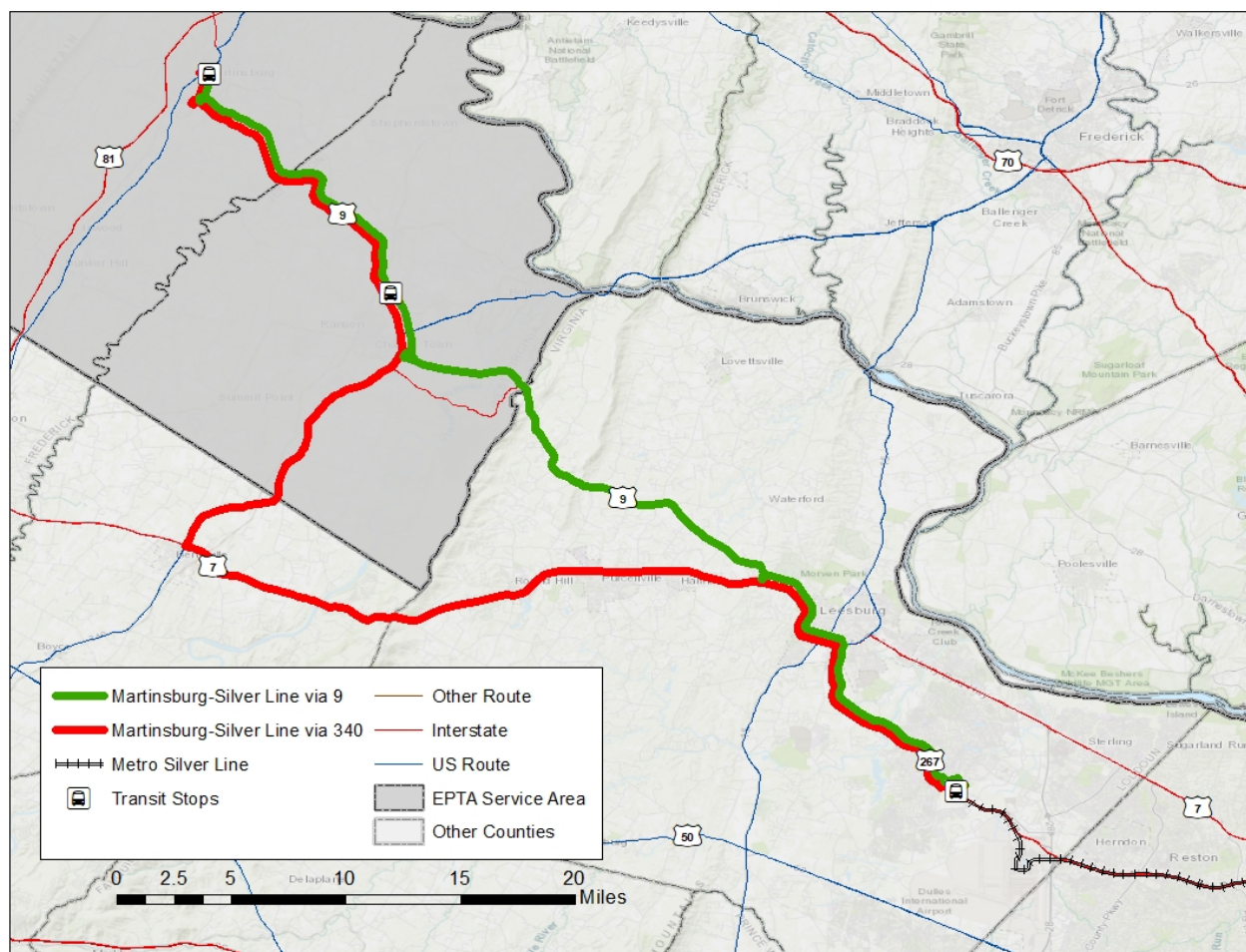
*Construction at the Ashburn Metro Station*

periods to Northern VA and DC locations.

After the Silver Line passes through Dulles Airport, it comes to an end in Loudoun County. Two final stations will be built in the median of the Dulles Greenway at the intersections of Route 606, West Ox Road and Route 772, Ashburn Village Parkway. The Route 772 station will have two parking garages and convenient bus drop-off and pickup locations and will be the destination of the proposed commuter service.

The commuter bus service will provide a transit connection for Jefferson and Berkeley County commuters to the Silver Line at the new Route 772 - Ashburn Village Parkway Station. EPTA has identified primary and alternate bus route alignments from Martinsburg to the Metro Station in Ashburn, shown in **Figure 2**. The routes begin at the EPTA Transit Center in downtown Martinsburg with a stop at the Potomac Market Place in Ranson before continuing to the Ashburn Metro Station. The primary route runs along US-340 to VA-7 and provides four lanes of travel through most of the trip. The alternate route continues on WV-9 and VA-9 and utilizes two lanes along VA-9 that is more attributable to delays.

**Figure 2: Martinsburg to Silver Line Route Alignments**





Both routes have improvement projects scheduled to begin in 2020 that will help reduce traffic congestion and increase safety. US-340 will be widened from two-lanes to four-lanes from the Virginia-West Virginia State Line to the Charles Town Bypass. It is anticipated that this project will be completed in 2025. Two roundabouts will be constructed along VA-9 in the Town of Hillsboro. This project will be completed in 2021.

The location for the commuter bus stop at Potomac Market Place will have to be coordinated with the City of Ranson. There is ample parking on the east side of Route 9 in the existing lots of Kohls and Home Depot that can be used until a formal location is established. The ideal location would be to develop a transfer stop with park and ride lot on the west side at the oval with Fairfax Blvd, shown in **Figure 3**. This site provides opportunities for walking and biking to the site without having to cross Route 9.

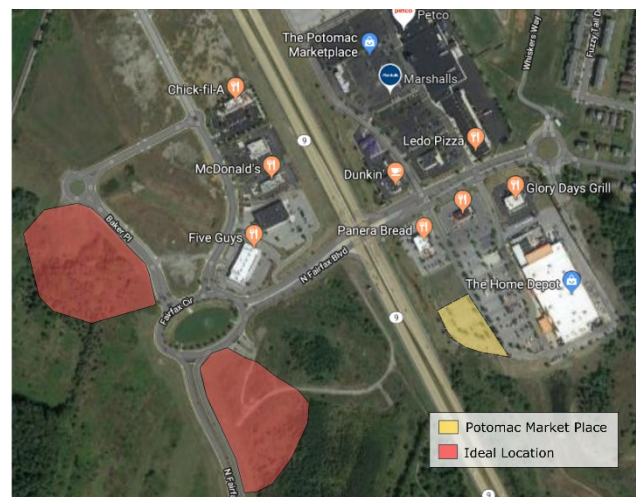
#### *Martinsburg to Silver Line Metro via US 340*

Martinsburg to the Silver Line via 340 would serve as the primary route alignment between Martinsburg and Ashburn. The service would depart from the EPTA Transit Center in downtown Martinsburg and run along WV-9, stopping at Potomac Market Place in Ranson. From Ranson, it would continue down WV-9 and down US-340 before turning on to VA-7 and arriving at the Ashburn Metro Station.

#### *Martinsburg to Silver Line Metro via VA 9*

Martinsburg to the Silver Line via 9 would serve as the alternate route alignment and provide a direct connection between Martinsburg and Ashburn. The service would depart from the EPTA Transit Center in Martinsburg and run along WV-9 to Potomac Market Place to VA-9. It would then continue onto VA-7 and VA-267 until it arrived at the Ashburn Metro Station.

**Figure 3: Commuter Bus Stop Locations in Ranson**



## Commuter Bus Schedules

EPTA will operate two peak morning buses to the Ashburn Metro Station from Martinsburg and two peak afternoon buses to Martinsburg from the Ashburn Metro Station. The schedules provide estimated travel times for the peak periods, but the exact start time can be adjusted once the service plan is finalized. Both routes have similar travel times around one hour and 20 minutes.

#### *Martinsburg to Silver Line Metro via US 340*

In the morning, inbound trips to Ashburn Metro Station would depart the EPTA Transit Center in Martinsburg at 6:00 AM and 7:00 AM and arrive at the Marketplace at Potomac Towne Center in Ranson at 6:20 AM and 7:20 AM, as show in **Table 2**. The buses would then depart Ranson at 6:22 AM and 7:22 AM and arrive at the Ashburn Metro Station at 7:20 AM and 8:20 AM. In the afternoon, the buses would depart the Ashburn Metro Station at 5:00 PM and 7:00 PM and arrive in Ranson at 6:08 PM and 7:58 PM. The buses would then depart Ranson at 6:10 PM and 8:00 PM and arrive in Martinsburg at 6:31 PM and 8:21 PM. Departure times should be adjusted to better reflect the final Silver Line train schedule and to accommodate any need for additional layover time in Ranson.

**Table 2: Martinsburg to Silver Line via 340 Bus Schedule**

Morning Service					
	Departure Time (Martinsburg)	Stop Arrival (Ranson)	Stop Departure (Ranson)	Arrival Time (Ashburn)	Route Time (One-Way)
First	6:00 AM	6:20 AM	6:22 AM	7:20 AM	1 hr, 20 min
Second	7:00 AM	7:20 AM	7:22 AM	8:20 AM	1 hr, 20 min
<b>Total Time</b>	2 hours, 40 minutes (5 hours 20 minutes – Daily Round Trip)				
Afternoon Service					
	Departure Time (Ashburn)	Stop Arrival (Ranson)	Stop Departure (Ranson)	Arrival Time (Martinsburg)	Route Time (One-Way)
First	5:00 PM	6:08 PM	6:10 PM	6:31 PM	1 hr, 31 min
Second	7:00 PM	7:58 PM	8:00 PM	8:21 PM	1 hr, 21 min
<b>Total Time</b>	2 hours, 52 minutes (5 hours 44 minutes – Daily Round Trip)				

***Martinsburg to Silver Line Metro via VA 9***

In the morning, inbound trips to Ashburn Metro Station would depart the EPTA Transit Center in Martinsburg at 6:00 AM and 7:00 AM and arrive at the Ashburn Metro Station at 7:15 AM and 8:20 AM, as shown in **Table 3**. In the afternoon, the buses would leave the Ashburn Metro Station at 5:00 PM and 7:00 PM and arrive in Martinsburg at 6:20 PM and 8:05 PM. Departure times should be adjusted to better reflect the final Silver Line train schedule.

**Table 3: Martinsburg to Silver Line via 9 Bus Schedule**

Morning Service – Inbound to Ashburn			
	Departure Time (Martinsburg)	Arrival Time (Ashburn)	Route Time (One-Way)
First	6:00 AM	7:15 AM	1 hour, 15 minutes
Second	7:00 AM	8:20 AM	1 hour, 20 minutes
<b>Total Time</b>	2 hours 35 minutes (5 hours 10 minutes- Daily Round Trip)		
Afternoon Service – Outbound from Ashburn			
	Departure Time (Ashburn)	Arrival Time (Martinsburg)	Route Time (One-Way)
First	5:00 PM	6:20 PM	1 hour, 20 minutes
Second	7:00 PM	8:05 PM	1 hour, 5 minutes
<b>Total Time</b>	2 hours 25 minutes (4 hours 50 minutes- Daily Round Trip)		

**Operating Cost**

To determine a cost estimate for EPTA's potential commuter bus service, EPTA's current fixed route schedule was used to calculate annual total miles and hours of revenue and non-revenue (deadhead) service, as shown in **Table 4**. Unfortunately, the return trips are assumed to be all deadhead miles as no demand is anticipated.

Table 4: EPTA's Annual Fixed-Route Total Miles &amp; Total Hours

Mon-Sat Service	Rev. Mi.	Rev. Hrs.	Dhd. Mi.	Dhd. Hrs.	Tot. Mi.	Tot. Hrs
Weekday	900	64	80	3	1,076	70
Saturday	112	13	8	0	120	13
Weekly	5,094	348	408	14	5,022	362
Annually	265,602	18,150	21,274	713	<b>286,876</b>	<b>18,863</b>

Since EPTA will be the operator of service, fixed route service costs for their current system were detailed for fiscal year 2018-19, as shown in Table 5. Each cost was allocated to one of three categories (Miles, Hours, and Administration) based on which category the cost is most directly associated with.

Table 5: EPTA's FY 2018-19 Fixed Route Service Cost

	Accrued by Miles	Accrued by Hours	General Admin
Operators Salaries & Wages		\$ 792,676.74	
Other Salaries & Wages		\$ 152,230.35	\$ 388,458.36
Fringe Benefits		\$ 24,545.58	\$ 11,739.25
Services			\$ 102,770.77
Fuel & Lubricants	\$ 214,806.70		
Tires & Tubes	\$ 16,499.00		
Other Materials & Supplies	\$ 114,507.65		
Utilities			
Casualty & Liability Costs			
Miscellaneous Expenses	\$ 351,014.06		
<b>Annual Expenses:</b>	\$ 696,827.41	\$ 969,452.67	\$ 502,968.38
<b>Actual Vehicle Miles or Hours:</b>	680,072	35,157	
<b>\$/Mi. or \$/Hr.:</b>	\$ 1.02	\$ 27.57	

The determined cost factors of \$1.02 per mile and \$27.57 per hour were combined with estimated total miles and hours for the two proposed Martinsburg to Silver Line route alignments. Annually, proposed service is estimated to cost \$185,974 for the Martinsburg to Silver Line via US 340 and \$162,803 for the Martinsburg to Silver Line via 9, as shown in Table 6.

Table 6: Martinsburg to Silver Line Proposed Annual Cost

Martinsburg to Silver Line via 340					
	Total Miles	Total Hours	Mileage Based Cost	Hourly Based Cost	Total Cost
Per Day	424.0	11.06	\$432.48	\$304.92	\$737.40
Weekly	2,120.0	55.30	\$2,162.40	\$1,414.02	\$3,576.42
Annually	110,240.0	2,875.60	\$112,444.80	\$73,529.09	\$185,973.89
Martinsburg to Silver Line via 9					
	Total Miles	Total Hours	Mileage Based Cost	Hourly Based Cost	Total Cost
Per Day	363.2	10.0	\$370.46	\$275.70	\$646.16
Weekly	1,816.0	50.0	\$1,852.32	\$1,278.50	\$3,130.82
Annually	94,432.0	2,600.0	\$96,320.64	\$66,482.00	\$162,802.64

## Performance Evaluation

Ridership targets have been developed to aid EPTA in evaluating their commuter service. The targets, shown in **Table 7**, assume that 70% of ridership will be met in their first year of operation, 90% of ridership will be met in the second year, and full ridership by the third year.

**Table 7: Three-Year Ridership Targets**

	Year 1	Year 2	Year 3
Total Riders per Bus	17	22	24
Total Riders in Morning/Afternoon Period	34	44	48
Total Daily Riders	68	87	96

If the service meets the established ridership standards, EPTA could consider increasing the service by the number of daily trips offered during peak times by adding additional buses to their current scheduled times or expanding their current service time offerings to include additional peak service times. There may also be a demand for weekend service. If the service does not meet the established ridership standards, EPTA should consider eliminating service times when ridership is under performing its targets or adjusting its service times to better fit the needs of the public.

## Transit Market Analysis

The Transit Market Analysis used various forms of data analysis to determine where pockets of ridership may still remain unmet. The analysis used 2015 U.S. Census data from the American Community Survey (ACS) and LEHD programs to perform multiple analyses including origin transit propensity, peak potential ridership, and comparative assessments of potential alignments.

To determine Transit Propensity, *Transit Cooperative Research Program (TCRP) Report 28: Transit Markets of the Future* data along with a custom-developed weighted index model was used to show the likelihood of residents within an area to consider transit as a viable option for travel. After the initial assessment, LEHD data was coupled with Transit Propensity values to determine areas with high concentrations of workers commuting from Jefferson and Berkeley Counties. As part of this analysis, burdens on both potential transit commuters and potential single occupancy vehicle (SOV) commuters were calculated and weighted to reflect an increase or decrease in potential ridership based on commuter stresses. These burdens included transit fares, commute times, and number of transfers for transit users, and gas costs, toll rates, and commute times for SOV commuters. The transit fare used in the analysis was \$5.00 each way based on feedback from EPTA and similar fares from other commuter services.

## Potential Ridership Analysis

To determine the total number of potential riders along a route, 2015 LEHD commuter flow data was used to identify the total number of workers who commute between the EPTA service area and every station or potential stop destination along the Silver Line. Transit propensity values were then factored in to find reasonable estimates in each of the tracts for total potential riders who would use transit if certain factors, such as schedules or costs, aligned perfectly with their needs.

A Potential Ridership Analysis was completed for the proposed Martinsburg to Silver Line route. Based on the analysis, there are excessive potential riders that would exceed the capacity of the planned commuter bus service to the Ashburn Silver Line Metro Station. The potential ridership analysis was

also performed for the MARC Brunswick Line to compare and validate the results to the estimated ridership numbers. Current MARC ridership estimates are approximately 300 daily riders based on MTA counts, but if the MARC service into West Virginia is reduced or eliminated, there would be critical demand for commuter bus service. **Table 8** shows the total potential number of riders for the proposed Martinsburg to Silver Line route and current MARC Brunswick Line from Martinsburg.

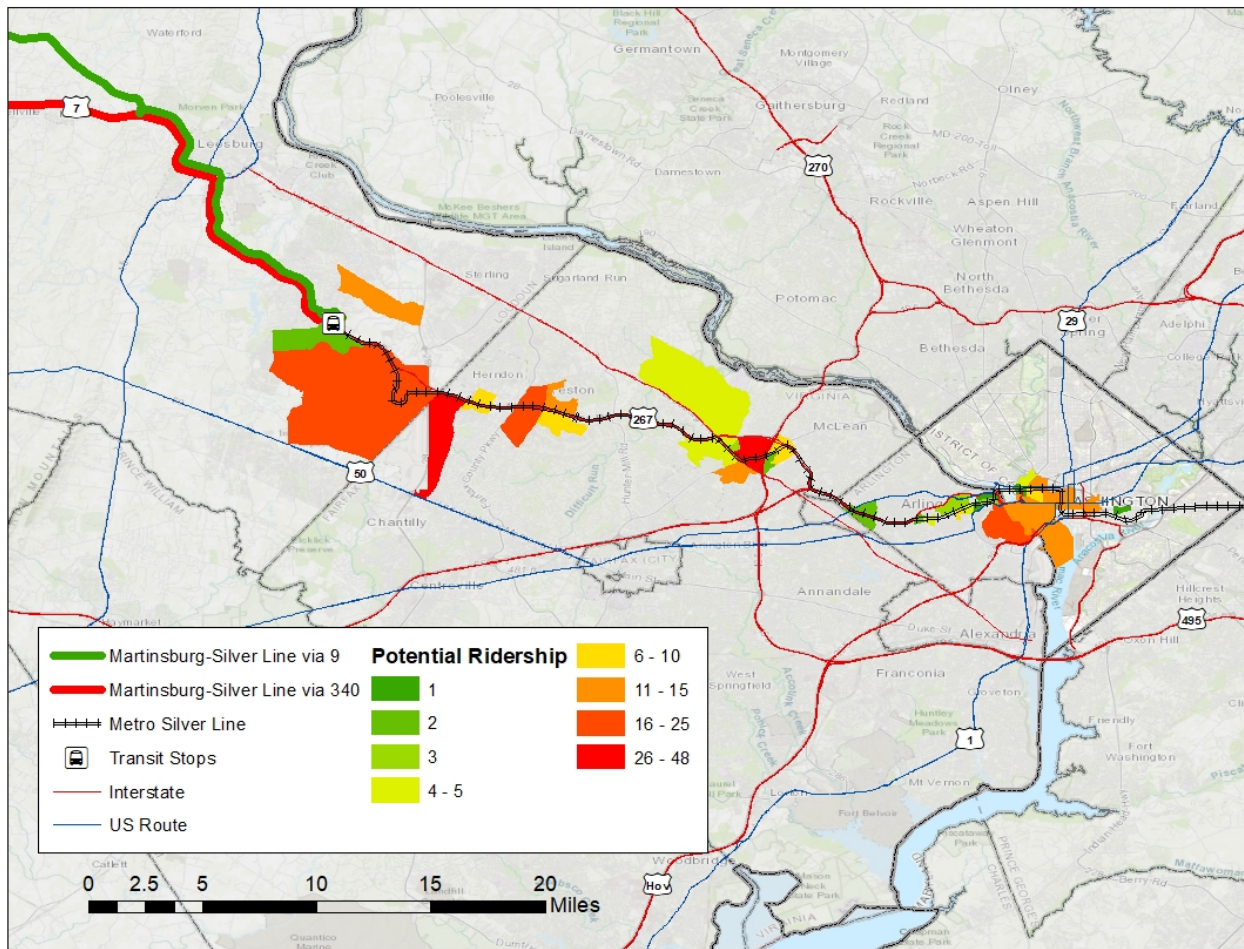
**Table 8: Total Potential Number of Riders**

Route Alignment	Total Workers	Total Potential Riders	Cycles Needed (24 pax/veh)	Miles per Cycle
Martinsburg-Silver Line	2,306	343	15	106
MARC Martinsburg	2,148	467	NA	0

#### *Martinsburg to Silver Line*

The analysis identified that, if certain factors aligned perfectly with their needs, a total of 343 riders would likely utilize the commuter service out of the 2,306 total workers commuting to destinations serviced by this bus and the Silver Line. Fifteen 24-passenger buses or a combination of 40-passenger buses would be needed to meet this potential demand. **Figure 4** shows the total number of potential riders who work in the census tracts adjacent to each of the stations stops. Almost half of all potential riders for this service would commute to census tracts adjacent to the Innovation Center, Tysons Corner, Reston Town Center, and Dulles International Airport station stops.

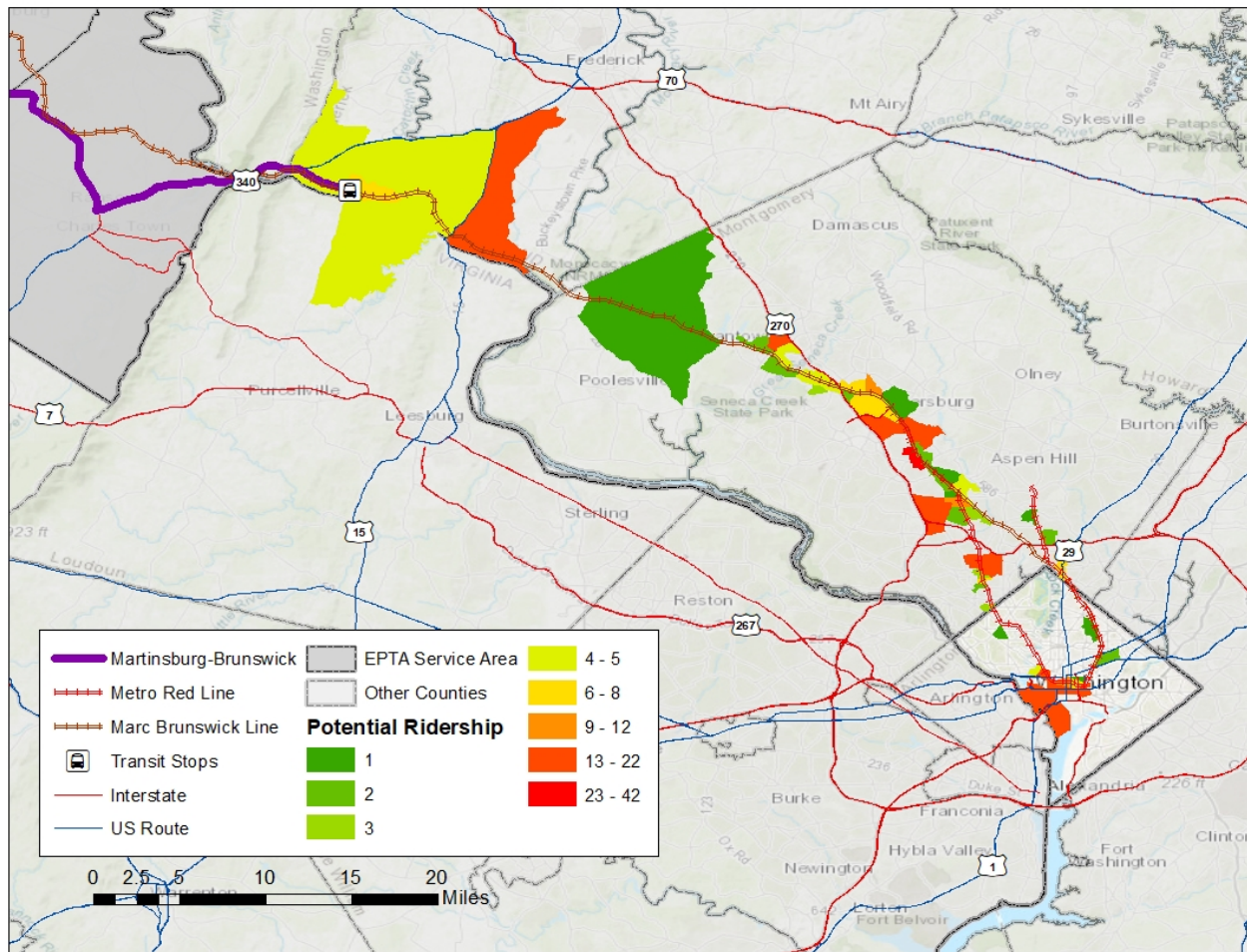
Figure 4: Martinsburg to Silver Line Total Potential Number of Riders by Census Tract



**MARC Brunswick Line**

The analysis identified that there are 467 total potential riders from Berkeley and Jefferson Counties who would likely commute to destinations served by the MARC Brunswick Line and Red Line if certain factors aligned perfectly with their needs. **Figure 4** shows the total number of potential riders who work in the census tracts adjacent to each of the station stops. More than half of all potential riders for this service would commute to census tracts adjacent to the Rockville, Shady Grove, Union Station, Point of Rocks, White Flint, and Germantown station stops.

Figure 5: MARC Brunswick Line Total Potential Number of Riders by Census Tract



## Marketing Outreach

Marketing outreach is a key component in the successful roll-out and implementation of the Martinsburg to Silver Line Commuter Service. Marketing will:

- Build awareness and support for the new commuter bus service by targeting existing and potential riders
- Educate potential riders about the service and the benefits of using the service
- Promote ridership before the launch of the commuter bus service
- Retain riders and attract new riders after the service is launched

Several strategies have been identified for marketing the new commuter service. Strategies include:

**Printed Materials** – EPTA should develop brochures and signs highlighting the new commuter bus service. The materials should be clear and concise in presenting information about the service and reflect EPTA's current branding. Brochures should be distributed to various locations in EPTA's service area such as retail and social service locations. Signs should be placed at EPTA bus stops as well as other visible locations in their service area.

**Website** – Because many riders obtain information about EPTA’s current service and schedules from EPTA’s website, EPTA should ensure that their website provides riders with up to date information about the commuter service, including a PDF brochure highlighting the route, schedules, and stops.

**Social Media** – EPTA should continue to use their social media accounts to promote and provide up to date information about the commuter bus service.

**Ads** - EPTA should develop ads for the radio, their buses, print, or social media that target potential users of the new service. The ads should be clear and concise in presenting information about the service and reflect EPTA’s current branding.

**Press Releases & Interviews** – EPTA should leverage its relationships with the local media to provide press releases and interviews that will provide positive stories and updates on the new service.

**Community Outreach** – To increase visibility of the new service, EPTA should partner with local organizations and agencies to provide presentations on the new commuter bus service. EPTA should also have information tables at local community events in Berkeley and Jefferson Counties. The presentations and tables allow for EPTA to provide specific details as well as answer questions related to the commuter service. EPTA could distribute brochures and other materials that provide more information about the service to interested persons.

EPTA’s marketing efforts should be reviewed and updated as necessary to ensure the strategies are effective.

## Travel Demand Management (TDM) Strategies

To assist the comfort level of new commuters, there are existing TDM programs in place that would be useful if their service connection is missed. Beyond traditional independent and privately-owned options for “last mile” transportation needs, Commuter Connections provides additional options for transit users. Coordinated through the Metropolitan Washington Council of Governments (MWCOG), Commuter Connections created Guaranteed Ride Home (GRH) as a service for commuters working and living within the Metropolitan Washington, DC area. The program offers four free rides throughout the year to participants who need a ride home when unexpected emergencies or circumstances arise. Commuter Connections also provides other programs like carpool/vanpool matching, as well as information regarding transit routes and schedules, park-and-ride lot information, HOV lane information, bicycle to work information, and employer services.

## CMAQ Funding and Analysis

Congestion Mitigation and Air Quality (CMAQ) Program provides federal funding to qualifying transportation projects in air quality nonattainment and maintenance areas that provide an air quality benefit. The Martinsburg, WV-Hagerstown, MD area is a maintenance area for the 1997 annual PM<sub>2.5</sub> National Ambient Air Quality Standards (NAAQS). The maintenance area consists of Berkeley and Washington Counties and was previously nonattainment for PM<sub>2.5</sub> but has demonstrated and EPA approved the State Implementation Plan (SIP) that the areas meets the standard. With the implementation of the 2012 PM<sub>2.5</sub> NAAQS (81 FR 58009), the 1997 annual PM<sub>2.5</sub> NAAQS was revoked in



October 2016 for attainment and maintenance areas. Therefore, the Martinsburg, WV/Hagerstown, MD area is considered a former PM<sub>2.5</sub> nonattainment / maintenance area and is eligible for CMAQ funding.

Transportation projects that qualify for CMAQ funding include traffic flow improvements, signalization coordination, most transit projects, new replacement vehicles and buses, and other travel demand management strategies. CMAQ also provides limited operating assistance for new transit service to attract new riders.

The EPTA commuter service would qualify for the CMAQ operating assistance funding as a new viable transit service but is limited to start-up operating costs. The operating assistance includes costs of providing new services to include labor, fuel, administrative costs, and maintenance. There is a local match requirement that is typically 80/20 percent. West Virginia Department of Transportation (WVDOT) is responsible for distribution CMAQ funds and the project must be identified on the HEPMPO transportation plan and Transportation Improvement Program (TIP).

With the focus of the CMAQ funding on start-up operating assistance, the commuter service project is eligible for three years of operating assistance with the option of spreading the funding over five years.

To demonstrate the new commuter bus service provides an air quality benefit, the FHWA CMAQ Emissions Calculator Toolkit ([https://www.fhwa.dot.gov/environment/air\\_quality/cmaq/toolkit/](https://www.fhwa.dot.gov/environment/air_quality/cmaq/toolkit/)) provides technical support through a series of tools for various project types. For this analysis, the *Transit Bus Service and Fleet Expansion* worksheet was used and the assumptions and air quality benefits for the commuter bus service to the Silver Line in Ashburn, VA are provided below:

- Two new 24 passenger gasoline buses with 80 percent capacity
- New service will eliminate personal vehicles traveling to Northern VA
- Assumes 18 percent of existing commuters using ride share opportunities
- Change in Annual Transit Bus Miles Traveled = 62,920
- Change in Annual Passenger Vehicle Miles Traveled = -1,062,880

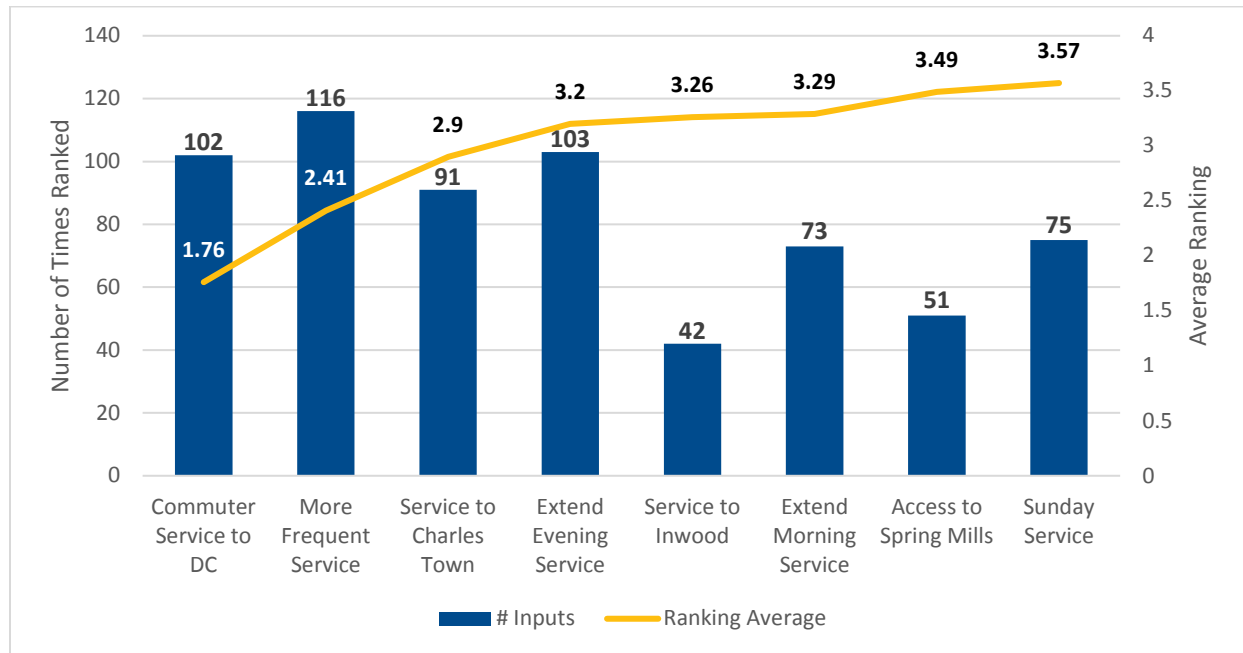
**Table 9: Commuter Bus Service to Ashburn, VA Air Quality Benefits**

Pollutant	Total Emissions Benefit kg/day
Carbon Monoxide (CO)	-12.837
Particulate Matter <2.5 μm (PM <sub>2.5</sub> )	-0.037
Particulate Matter <10 μm (PM <sub>10</sub> )	-0.127
Nitrogen Oxide (NO <sub>x</sub> )	-0.989
Volatile Organic Compounds (VOC)	-0.496

## EPTA Transit Improvement Survey

A MetroQuest survey was performed for EPTA's TDP as part the public outreach effort to identify transit needs and priorities. As part of the survey, the public was asked to rank their top 5 priorities for transit service. "Commuter Service to DC" received the highest average ranking and was the third ranked priority only behind "More Frequent Service" and "Extend Evening Service", as shown in **Figure 5**.

Figure 6: Top Transit Service Priorities (MetroQuest Survey)



The survey also allowed the public to provide additional comments and feedback on each of the priorities as well as the other topic areas covered in the survey. Based on comments, the public indicated the need for a connection to Washington Metropolitan Area Transit Authority's (WMATA) Metrorail System to allow for better access to Washington, DC and its surrounding areas.

## Enhancement Opportunities

With the growth of employment opportunities in neighboring counties and the uncertainty surrounding the future of MARC Train Service in West Virginia, several route enhancements and route alignments were identified that would aid EPTA in meeting the transit demands of the community in the future. While this assessment provides an initial need, a formal transit analysis or study should be completed before the implementation of the enhanced opportunities. This will ensure that service provided by EPTA best reflects the needs and demands of the community.

A transit market analysis was completed for potential enhancement opportunities to determine reasonable estimates for total potential riders for each route option. **Table 10** shows the total potential number of riders for the four potential route alignments.

Table 10: Total Number of Potential Riders

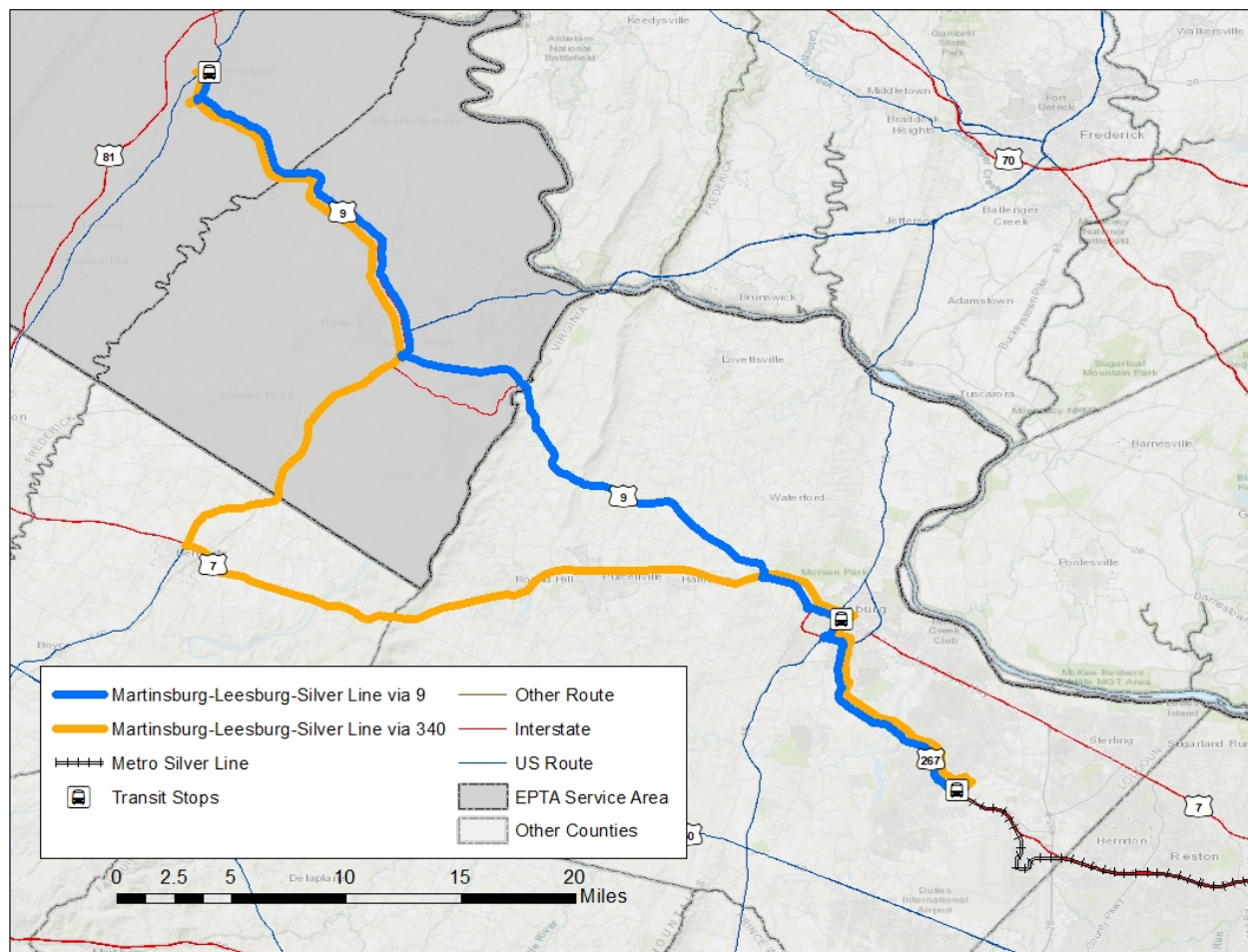
Route Alignment	Total Workers	Total Potential Riders	Cycles Needed (24 pax/veh)	Miles per Cycle
Martinsburg-Leesburg-Silver Line	2,950	407	17	106.5
Martinsburg-Brunswick	2,148	348	15	56.3
Martinsburg-Brunswick-Shady Grove	2,148	315	14	137
Martinsburg-Monocacy	2,148	384	17	85.9

## Martinsburg to Leesburg to Silver Line Route Expansion

EPTA identified Leesburg as a potential future stop along the Martinsburg to Silver Line Route. Leesburg is a major employment destination for those who live in Jefferson and Berkeley Counties.

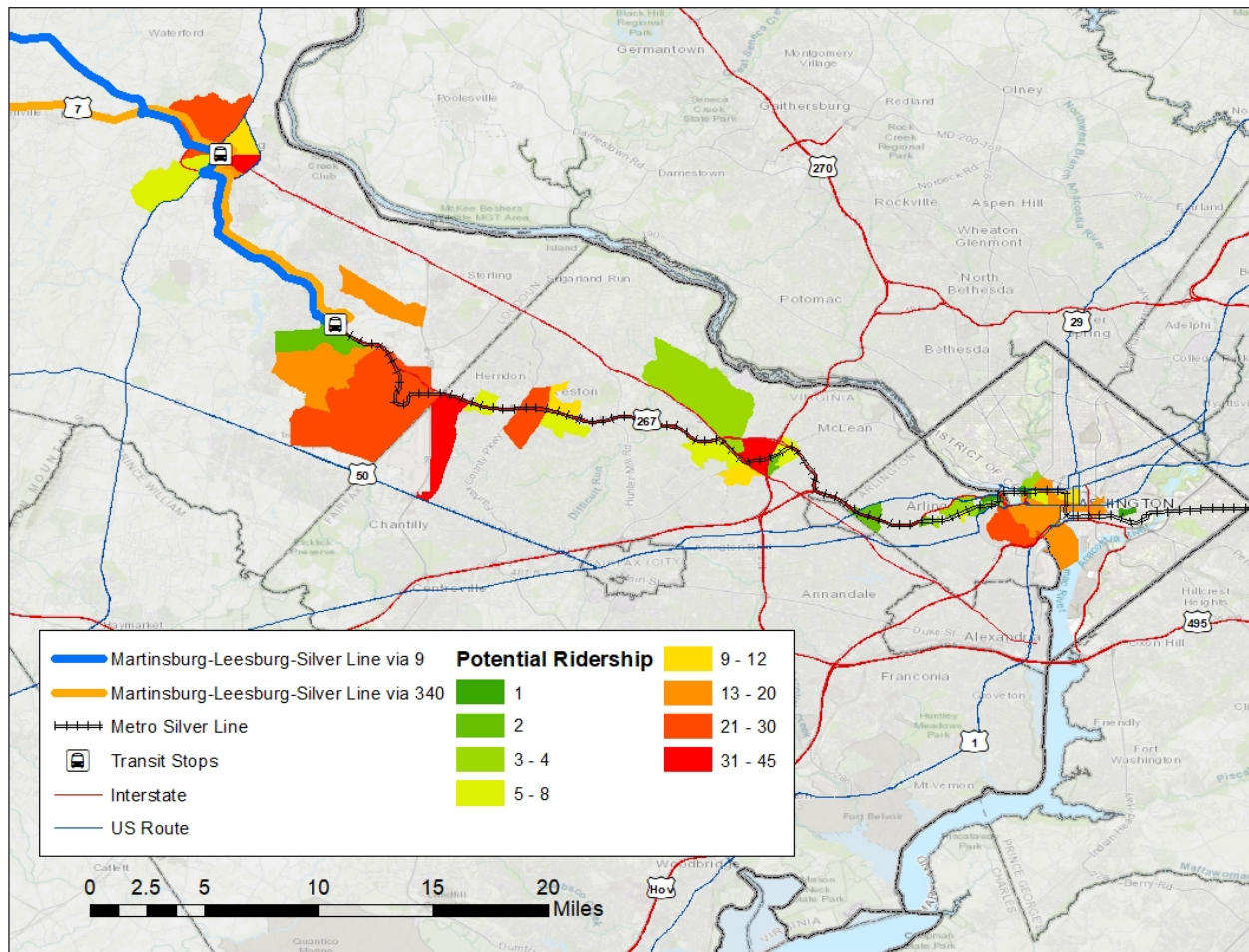
The Martinsburg to Leesburg to Silver Line Route would follow the same route as the Martinsburg to Silver Line via US 340 Route from Martinsburg to Ranson. However, following the stop at the Potomac Market Place in Ranson, the service would then stop in Leesburg at the Loudoun County Government Center, as shown in **Figure 6**. From Leesburg, the service would continue on to the Ashburn Metro Station. An additional stop at the Leesburg Park and Ride Lot may also be needed to connect to the express commuter bus to Washington, DC.

**Figure 7: Martinsburg to Leesburg to Silver Line Route Alignment**



The Martinsburg to Leesburg to Silver Line route identified 407 total potential riders from Berkeley and Jefferson Counties who would likely commute to destinations serviced by this bus and the Silver Line if certain factors aligned perfectly with their needs. This is an additional 60 riders for workers in Leesburg. Seventeen 24-passenger buses would be needed to meet this potential demand. **Figure 8** shows the total number of potential workers who work in the census tracts adjacent to each of the station stops.

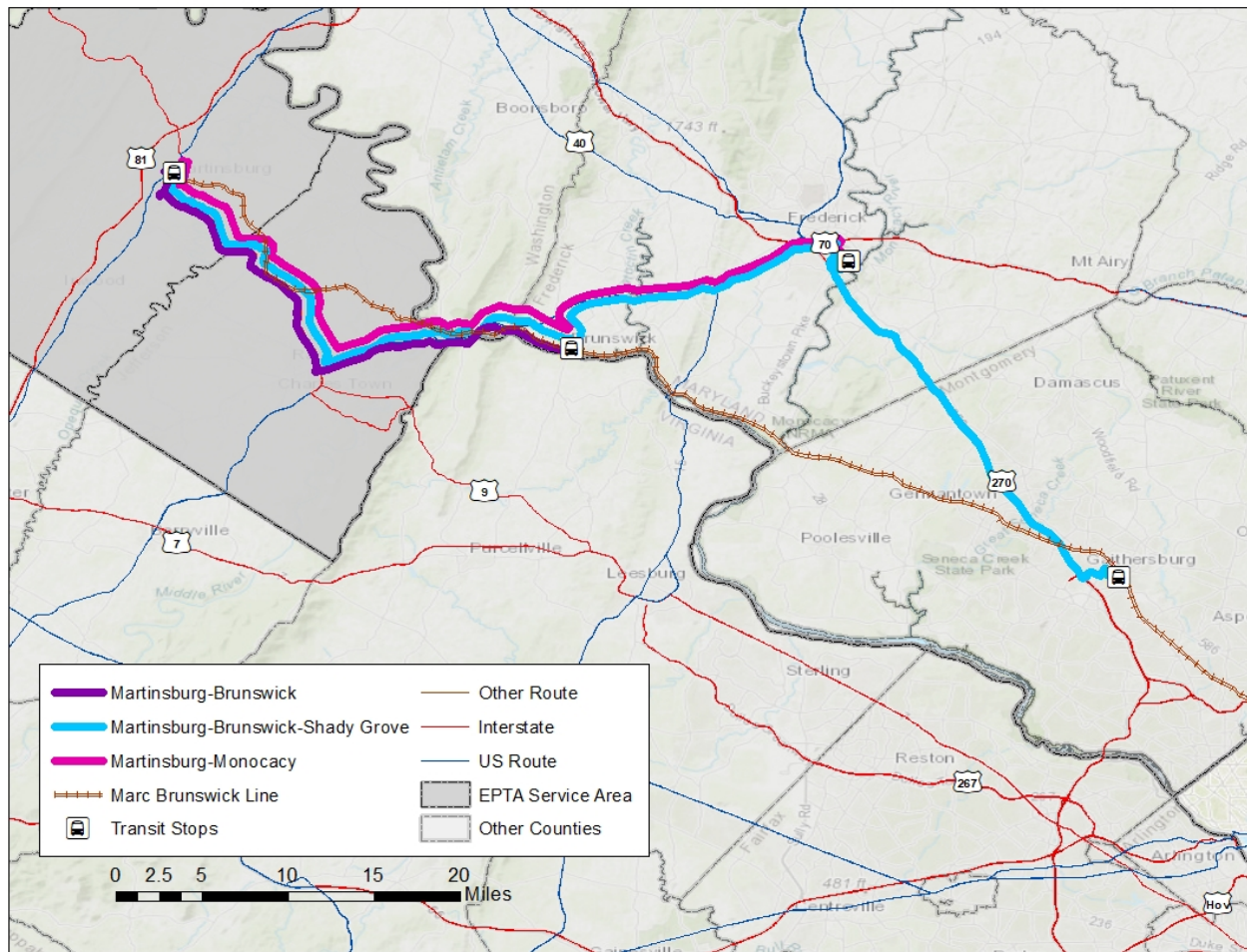
Figure 8: Martinsburg to Leesburg to Silver Line Total Potential Number Riders by Census Tract



### MARC Route Opportunities

Initially, four potential routes alignments were identified that would provide connections for commuters from Jefferson and Berkeley Counties to the MARC Brunswick Line and/or other transit options that serve the I-270 Corridor if the MARC Train service in West Virginia was discontinued. Upon completion of the transit market analysis, it was determined that only 3 of the 4 route alignments had the potential demand to support commuter bus service. The Hagerstown connection to Commuter Bus 505 did not have the demand as it would require a reverse commuter for Jefferson County workers. The demand analysis shows that the connection to Brunswick MARC station or Frederick Commuter Bus routes would better serve this demand. The three potential routes are shown in **Figure 9**.

Figure 9: Potential MARC Route Alignments

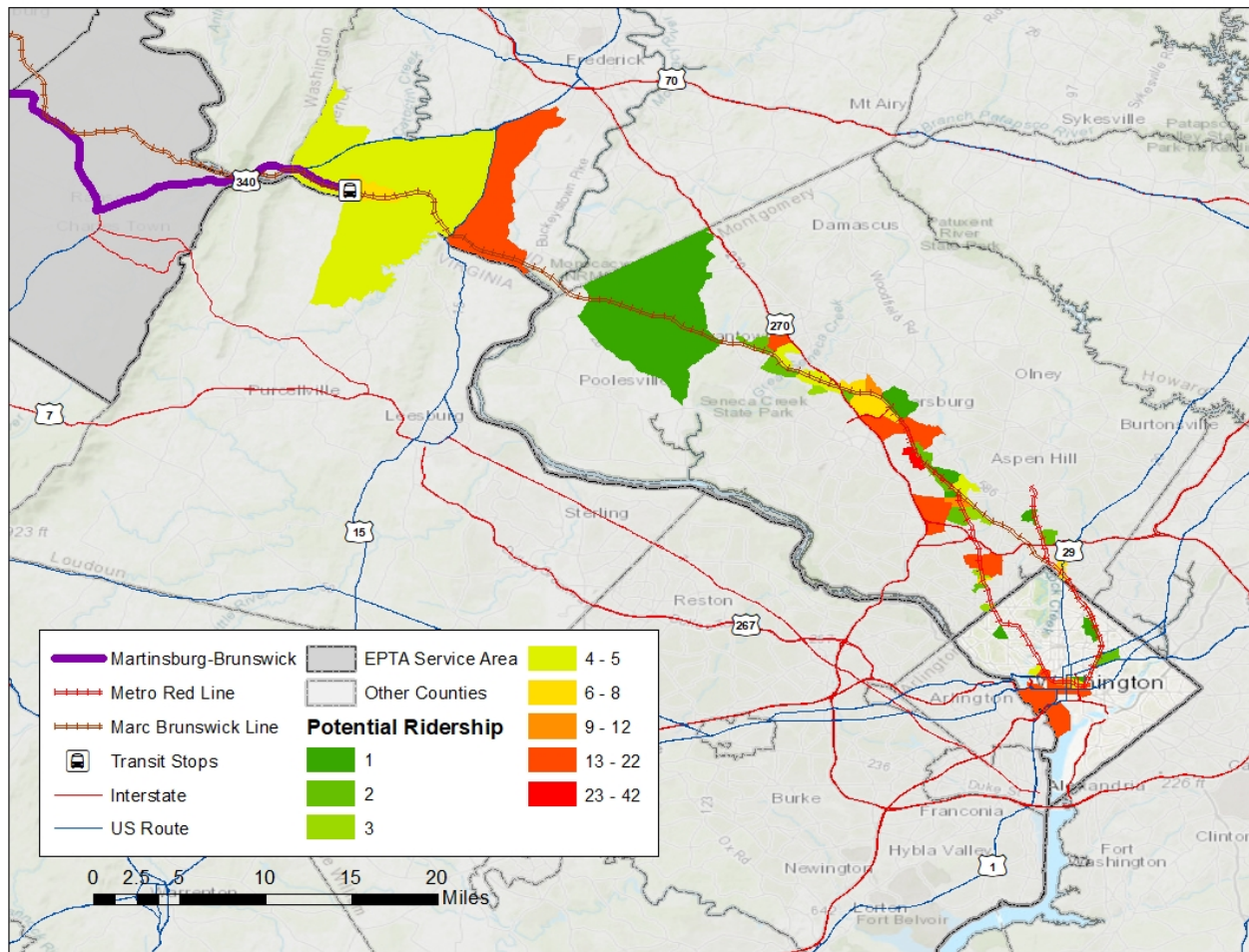


### *Martinsburg to Brunswick*

The Martinsburg to Brunswick Route would connect Martinsburg and Ranson/Charles Town to Brunswick, MD. The service would depart from the EPTA Transit Center in Martinsburg and travel down WV-9 east, stopping at the Potomac Market Place in Ranson. The service would then continue on to US 340 east until Brunswick, where commuters would be able to transfer to the MARC Brunswick Line.

The Martinsburg to Brunswick identified 348 total potential riders from Berkeley and Jefferson Counties who would likely commute to destinations served by this bus, the MARC Brunswick Line, and the Red Line if certain factors aligned perfectly with their needs. Fifteen 24-passenger buses would be needed to meet this potential demand. **Figure 10** shows the total number of potential workers who work in the census tracts adjacent to each of the stations stops.

Figure 10: Martinsburg to Brunswick Total Potential Number of Riders by Census Tract

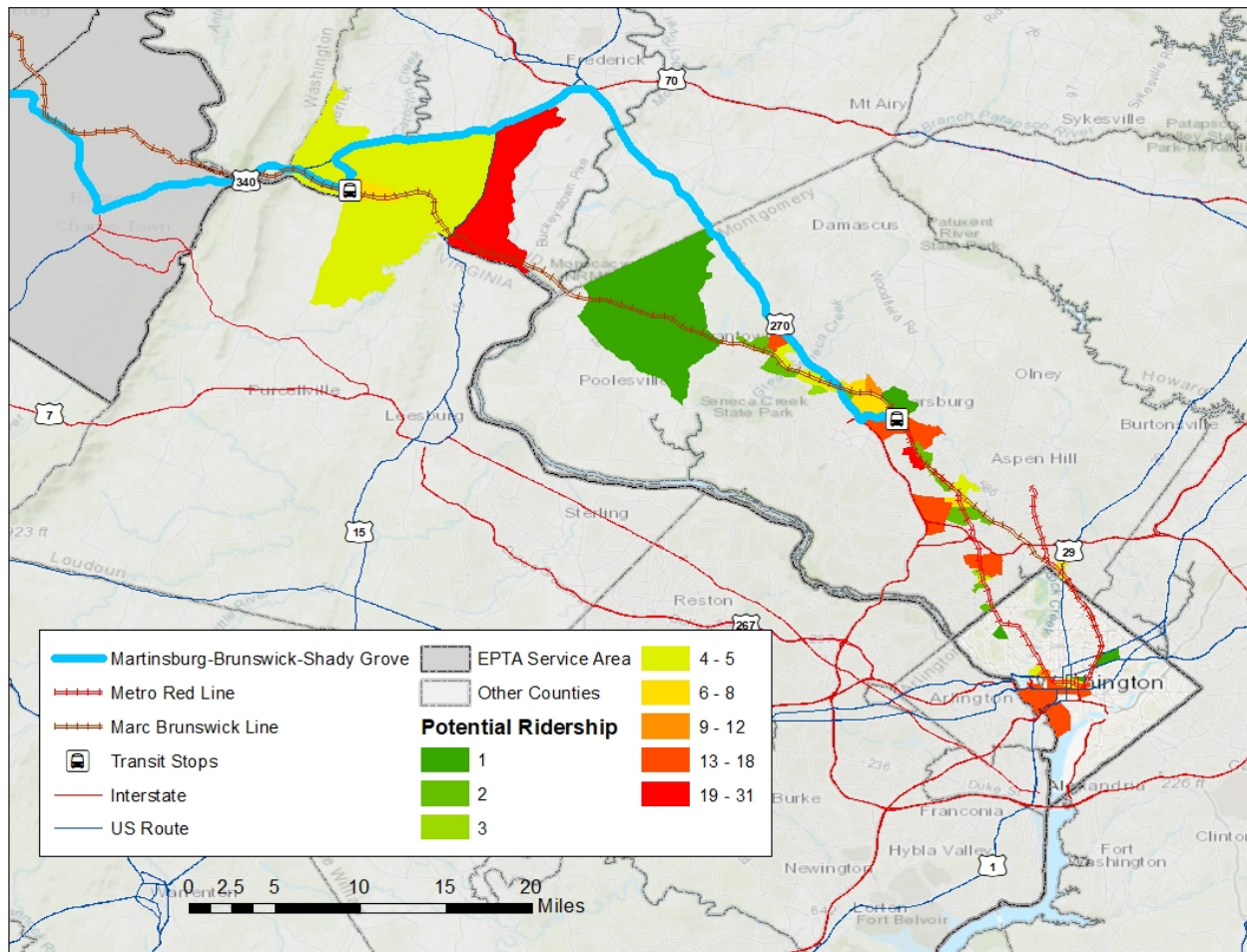


*Martinsburg to Brunswick to Shady Grove*

The Martinsburg to Brunswick to Shady Grove route would connect Martinsburg and Ranson/Charles Town to Brunswick and Shady Grove in Maryland. The service would depart from the EPTA Transit Center in Martinsburg and travel down WV-9 east, stopping at the Potomac Market Place in Ranson. The service would then continue on to US-340 east until Brunswick, where commuters would be able to transfer to the MARC Brunswick Line at the Brunswick MARC Station. From Brunswick, the service would continue on US 340 east and down I-270 south to the Shady Grove Metro Station where commuters would be able to transfer to the Red Line.

The analysis identified 315 total potential riders from Berkeley and Jefferson Counties who would likely commute to destinations served by this bus, the MARC Brunswick Line, and the Red Line if certain factors aligned perfectly with their needs. Fourteen 24-passenger buses would be needed to meet this potential demand. **Figure 11** shows the total number of potential workers who work in the census tracts adjacent each of the station stops.

Figure 11: Martinsburg to Brunswick to Shady Grove Total Potential Number of Riders by Census Tract

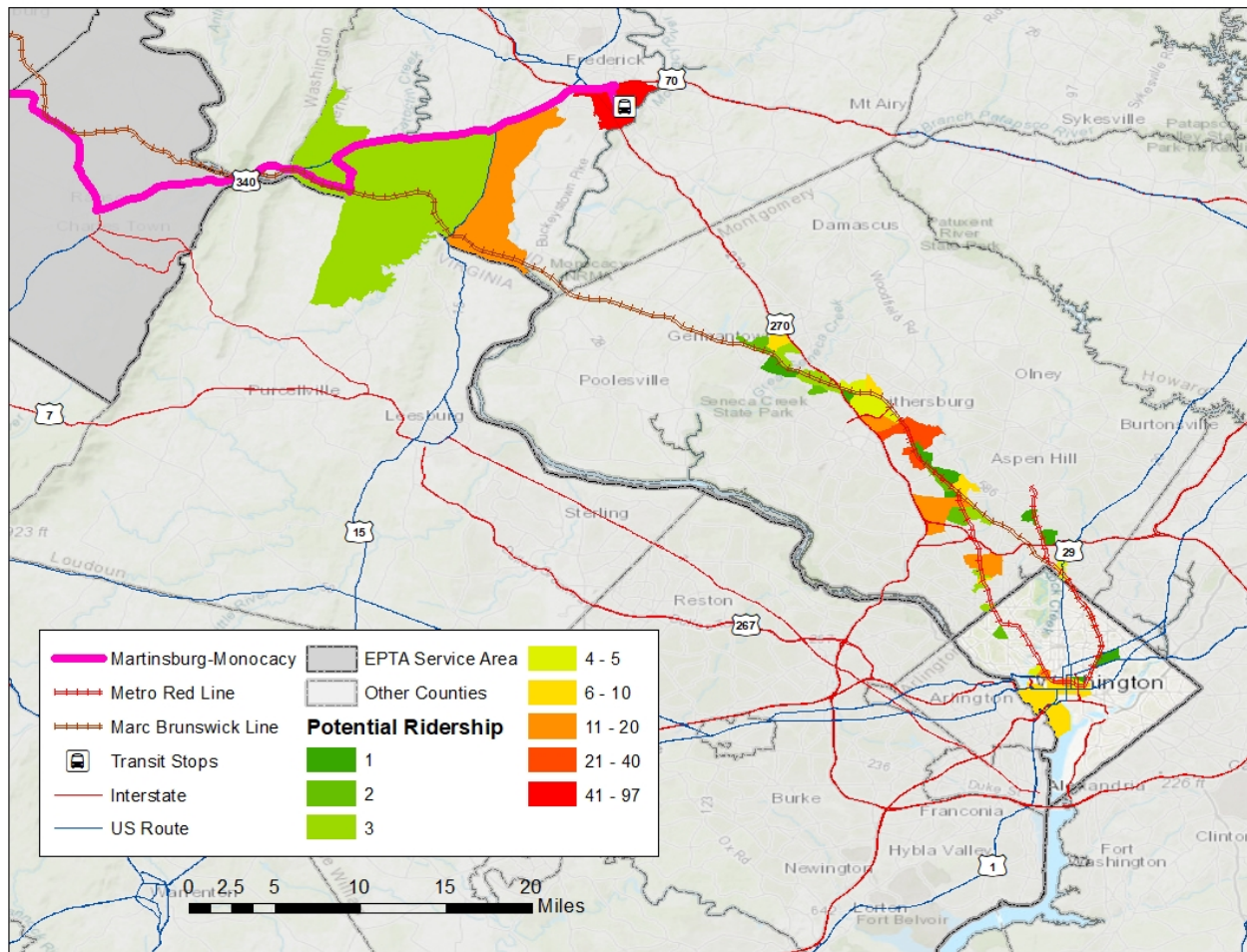


### *Martinsburg to Monocacy*

The Martinsburg to Monocacy would connect Martinsburg and Ranson/Charles Town to Frederick, MD. The service would depart the EPTA Transit Center in downtown Martinsburg and travel down WV-9 east stopping at the Potomac Market Place in Ranson. The service would continue on US-340 east until the Monocacy MARC Train Station in Frederick. Commuters can transfer to the MARC Brunswick Line or onto MTA Commuter Bus Routes 204 and 515, which provide bus service to Washington, DC and neighboring Maryland Counties.

The analysis identified 384 total potential riders from Berkeley and Jefferson Counties who would likely commute to destinations served by this bus, the MARC Brunswick Line, and the MTA Commuter Buses if certain factors aligned perfectly with their needs. Seventeen 24-passenger buses would be needed to meet this potential demand. **Figure 12** shows the total number of potential workers who work in the census tracts adjacent to each of the stations stops.

Figure 12: Martinsburg to Monocacy Total Potential Number of Riders by Census Tracts



## Potential Funding Sources

Many competitive grant programs are designed and focused on the basis of providing a specific service or for serving a particular function beyond just providing greater transit access. In order for the routes to be competitive in these programs, they would most likely need to incorporate a more involved and concentrated implementation process that would match the specifications of the grant. However, there are other formula grants that could provide matched funding for these enhancements.

### *Grants for Buses and Bus Facilities Formula Program*

Offered as both a formula (5339(a)) and competitive program, these grants allocate funding to states and transit agencies for the purpose of purchasing, rehabilitating, or replacing buses, facilities, and related equipment. These are particularly granted to states and agencies that would otherwise not be able to fund the improvements through formula grants alone. For the Fiscal Year 2019, the FTA allocated \$423.3 million for the discretionary program. The federal share is 80 percent of the net capital project costs unless a lower amount is requested. It can exceed 80 percent for certain projects related to bicycle projects, the American Disabilities Act, or the Clean Air Act.



*Metropolitan & Statewide Planning and NonMetropolitan Transportation Planning (5303, 5304, 5305)*

A formula grant program that provides funding for multimodal transportation planning in metropolitan areas. This funding would be designated towards the short-range and long-term comprehensive planning efforts in implementing the enhancements into the larger transit network. Funds are allocated based on the state's urbanized area population in proportion to the national urbanized area population. The federal share cannot exceed 80 percent of the cost of the eligible projects.

*Urbanized Area Formula Grants (5307)*

Formula grants that provide funding to public transit systems in urbanized areas to for capital, planning, job access, reverse commute projects, and some certain operating expenses. Funding is appropriated based upon the population within the service area; for populations greater than 200,000 funding is allocated depending on population, population density, and a variety of mileage totals. The federal share cannot exceed 80 percent of the net project cost except for circumstances pertaining to the American Disabilities Act and Clean Air Act. The federal share cannot exceed 50 percent of the net project cost of operating assistance.