

AFTON EXPRESS TRANSIT SERVICE PLAN

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INTRODUCTION

The I-64 corridor traverses Afton Mountain, connecting two populations that are geographically separated but tied together economically. West of Afton Mountain in the Central Shenandoah Valley are the cities of Staunton and Waynesboro and Augusta County, and east are the city of Charlottesville and Albemarle County. This plan will explore the potential for continued integration between these two areas through improved reliability of the I-64 and convenient access to travel options and job opportunities through provision of a transit alternative to single-occupancy vehicles.

In recent years a public transportation route connecting these two regions has been proposed, most recently in the I-81/I-64 Inter-Regional Public Transportation Feasibility Study. There is consensus among decision-makers and stakeholders in this region that a public transit service along the I-64 corridor would benefit residents in the region, but how this service would function, where it would go, and how it would be funded, have yet to be determined. The objective of the Afton Express Transit Service Plan is to demonstrate the feasibility of operating transit service between Staunton and Charlottesville, to best serve commuter and rural transportation needs in the region. Specifically, this plan serves as a guide for the implementation steps identified in the I-81/I-64 Inter-Regional Public Transportation Feasibility Study by continuing to assess the needs in the region, identify useful commuter and rural connections, and determine budgetary requirements and sources of federal and state funding that would allow these needs and connections to be fulfilled efficiently.

The plan is broken into five chapters. **Chapter 1** reviews the previous work completed and a synopsis of the stakeholders involved in the development of a bus route along the corridor. **Chapter 2** evaluates the performance of similar services provided by peer transit agencies, including four in Virginia and five outside the state. **Chapter 3** is a reassessment of residents' transit needs using travel pattern data, existing surveys, and input from stakeholders. **Chapter 4** identifies the proposed stops and operating schedule for the route based on the findings of the needs assessment in **Chapter 3**. The recommended schedule will be used to develop a capital and operating plan that accounts for expenses anticipated in the first three years of service. **Chapter 5** defines performance metrics and benchmarks to gauge progress in addressing the needs identified in **Chapter 3**.

CHAPTER 1: BACKGROUND INFORMATION

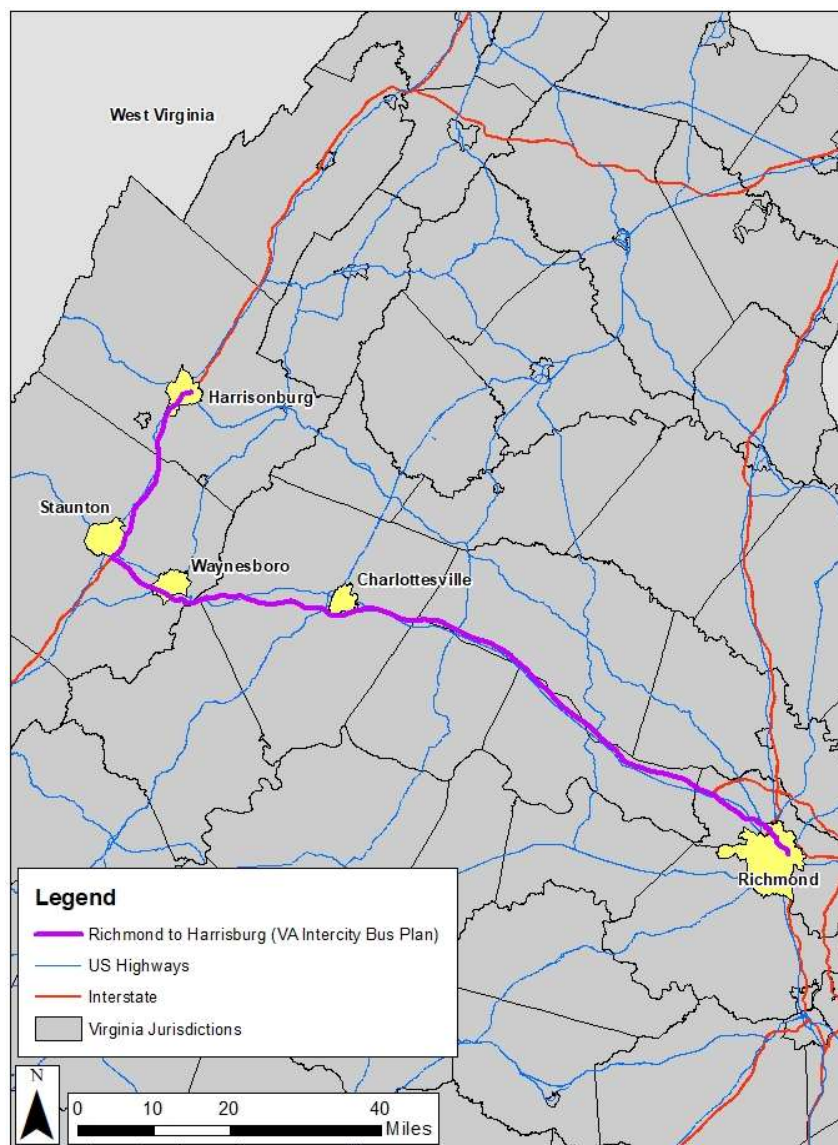
Public transportation service on the I-81 and I-64 corridors in the Central Shenandoah Valley region has been a recurring topic of interest among transportation planning agencies during the past several years and has been included in multiple planning documents. This chapter reviews the previous work done by the Department of Rail and Public Transportation (DRPT), Central Shenandoah Planning District Commission (CSPDC), and contracted consultants to plan and implement transit service on the I-64 corridor between Staunton and Charlottesville. This chapter also outlines the stakeholders who have facilitated the planning of this route over the years, and the importance of each stakeholder in the implementation of a successful transit service.

PREVIOUS PLANS AND STUDIES

VIRGINIA STATEWIDE INTERCITY BUS PLAN

The Virginia Statewide Intercity Bus Plan was completed in 2013 for DRPT and outlines the state's existing and proposed intercity bus services in the state. One of the proposed routes runs from Richmond to Harrisonburg, making stops in Charlottesville, Waynesboro, and Staunton along I-64 and I-81. The plan prioritized potential routes based on estimated annual ridership, net deficit per passenger, farebox recovery ratio, and existing level of service on the corridor. The Richmond-Harrisonburg route was one of four routes the plan recommended for initial implementation. The route was estimated to have an annual ridership of 9,350, though it is not stated how many of these trips would be to and from Richmond.

Figure 1: Richmond-Harrisonburg Route from the Virginia Statewide Intercity Bus Plan



BRITE TRANSIT DEVELOPMENT PLAN

The CSPDC administers the Blue Ridge Intercity Transit Express (BRITE) public transit system which operates in Staunton, Waynesboro, and portions of Augusta County. The BRITE Transit Development Plan (TDP), completed in 2015, is a guide for transit improvements planned over a six-year planning period. It also identifies resources needed for implementation and funding sources likely to be available. The plan discusses a survey of local stakeholders and residents indicating a desire for transit service to Charlottesville, highlighting the need for access to work, medical, and recreation resources at the University of Virginia (UVA) and medical facilities in the city. The TDP outlines the need for a feasibility study, led jointly by the three metropolitan planning organizations (MPOs), with a steering committee consisting of the CSPDC, Thomas Jefferson Planning District Commission, DRPT, the University of Virginia, and the connecting transit programs (including Harrisonburg Department of Public Transportation and Charlottesville Area Transit).

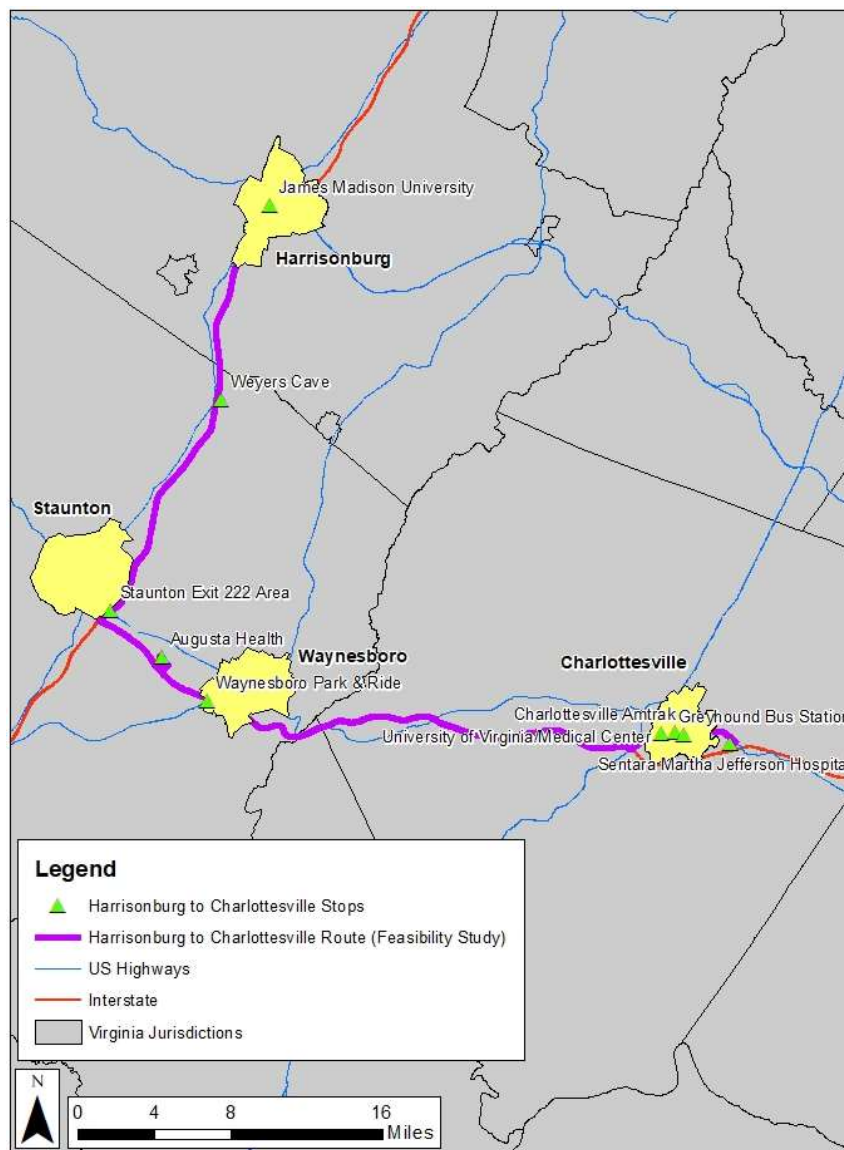
I-81/I-64 INTER-REGIONAL PUBLIC TRANSPORTATION FEASIBILITY STUDY

In 2017, the I-81/I-64 Inter-Regional Public Transportation Feasibility Study was undertaken by the Charlottesville/Albemarle MPO (CAMPO), the Harrisonburg-Rockingham MPO (HRMPO), and the Staunton-Augusta-Waynesboro MPO (SAWMPO), with support from DRPT. The study examined the viability of a public transportation service on the I-81 and I-64 corridors. This proposed transportation service would connect key urban centers in the Central Shenandoah Valley region, including the cities of Harrisonburg, Staunton, Waynesboro, and Charlottesville, while also providing mobility options for residents in Rockingham, Augusta, and Albemarle Counties.

The proposed route would have been 63 miles one-way, starting in Harrisonburg and making stops in Weyers Cave, Staunton, Fishersville, Waynesboro, and Charlottesville. The route was strategically designed to provide eastbound service from park and ride lots along the corridor to three locations in Charlottesville: University of Virginia, downtown/Greyhound/Amtrak, and the Sentara Martha Jefferson/State Farm area. Weyers Cave was included to ensure that the service route included a rural component, which was important for securing funding under the Federal Transit Administration's (FTA) Section 5311 program of assistance to rural public transportation. Westbound trips in the morning from Charlottesville to the Shenandoah Valley would also provide service to local transit hubs. The proposed service would require about 23 revenue hours per weekday, an annual total of 5,865 revenue hours, and annual revenue service miles of about 193,300. The route identified in this study was subsequently adopted as a recommendation of the SHRP II Interstate 64 Corridor Plan, completed by CAMPO and SAWMPO in 2017.

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Figure 2: Harrisonburg to Charlottesville Route from I-81/I-64 Inter-Regional Public Transportation Feasibility Study



AFTON EXPRESS INTER-REGIONAL SERVICE DEMONSTRATION GRANT APPLICATION

Following the completion of the I-81/I-64 Inter-Regional Public Transportation Feasibility Study, the Virginia Breeze service was implemented running from Blacksburg, Virginia to Washington, DC, making stops along the I-81 corridor in Staunton and Harrisonburg. In subsequent discussions with CSPDC and DRPT staff, it was suggested that the proposed route serving Staunton, Waynesboro, and Charlottesville should service a smaller portion of the corridor to serve the greatest number of riders while eliminating overlapping transit service along I-81. Therefore, the proposed route was scaled back in the CSPDC's grant application to DRPT, asking for funds to implement the first phase of the proposed service which would connect Staunton, Augusta County, Waynesboro, and Charlottesville. The proposed service in the grant application would run from 6 AM to 8 PM Monday through Friday with five eastbound and five westbound trips, all including reverse commute runs. Initial fares were estimated to be between \$3 and \$4

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one-way, with options for passes for frequent commuters. Proposed stops included the Staunton Mall, BRITE Transit Facility, Waynesboro park and ride lot, UVA campus, and Charlottesville Greyhound and Amtrak station. This service would also provide connections to the local transit systems BRITE, CAT, and JAUNT, as well as the Virginia Breeze service in Staunton.

This grant would have funded the first 12 months transit service operations, community outreach and information meetings, and a marketing program for the service. Subsequent years of service would have been funded through Section 5311 funds. To secure the matching funds from DRPT, the CSPDC sent Letters of Commitment for a three-year funding pledge to their proposed local partners, which include Staunton, Augusta County, Waynesboro, UVA, and Charlottesville. However, Letters of Commitment were not received from local partners at that time.

CORRIDOR STAKEHOLDERS

PUBLIC STAKEHOLDERS

CENTRAL SHENANDOAH PLANNING DISTRICT COMMISSION

The CSPDC serves as the coordinating agency for planning and technical assistance for jurisdictions in the Shenandoah Valley, including the counties of Augusta, Bath, Highland, Rockbridge, and Rockingham and the cities of Buena Vista, Harrisonburg, Lexington, Staunton, and Waynesboro. CSPDC also administers the Staunton-Augusta-Waynesboro Metropolitan Planning Organization. In 2014, CSPDC assumed responsibility for the transit service in the Staunton-Augusta-Waynesboro urbanized area under the brand BRITE, and in 2017 the CSPDC also became the recipient of rural (5311) funds for the SAW region. BRITE provides fixed-route service on nine routes, as well as ADA-compliant complementary paratransit service. The BRITE routes are as follows:

- **East & West 250 Connector:** Provides service between the cities of Staunton and Waynesboro via US 250. Stops along the route include Augusta Health and the Wilson Workforce and Rehabilitation Center Campus, and connects to the Staunton Trolleys, the Waynesboro Circulator, the Stuarts Draft Link, and the Blue Ridge Community College Shuttle routes.
- **Stuarts Draft Link:** Provides service to retail, residential, and employment areas in Stuarts Draft, an area located south of Waynesboro and Staunton in Augusta County. The Link connects with the Waynesboro Circulator and 250 Connector, and travels to the Augusta Health campus in Fishersville.
- **Blue Ridge Community College Shuttle:** The BRCC Shuttle offers two routes. The BRCC south shuttle provides service between Staunton and the BRCC campus in Weyers Cave making stops in Verona, Fort Defiance, and Mt. Sidney. Through the Staunton Hub, the BRCC South route connects to the 250 Connector, and the Staunton fixed-route services. The BRCC North Shuttle operates between Harrisonburg and the BRCC campus making stops in Bridgewater, Dayton, and Mt. Crawford. The BRCC North Shuttle connects to the Harrisonburg public transit service (HDPT) at James Madison University.
- **Waynesboro Circulator:** Operates within the city limits of Waynesboro, providing access to employment centers, retail, community services, medical facilities, and a Virginia Department of Transportation (VDOT) park and ride facility at the junction of I-64 and US 340.

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- **Staunton North & West Loops, Downtown Trolley, and Saturday Night Trolley:** These routes consist of three separate loops that all originate at the Staunton Hub in downtown Staunton. The North and West loops serve residential areas on the outskirts of the downtown, as well as medical and retail destinations. The Downtown Trolley provides service to destinations in the historic downtown, and the Saturday Night Trolley provides service on Saturday evenings to retail and entertainment locations, such as Walmart.

BRITE is funded by a combination of federal, state, and local funding sources, and the contribution for each varies depending on the year. According to the 2015 Transit Development Plan (TDP), the estimated operating costs and funding contributions totaled \$2,152,333 for FY 2019. Federal, state, and local funding contributions accounted for 58%, 19%, and 23% of funds, respectively. Approximately 67% (\$814,409) of the federal funds came from FTA's Urbanized Area Formula Funding Program (Section 5307 (1)), with the remaining 33% (\$402,863) coming from the Formula Grants for Rural Areas Program (Section 5311).

BRITE's fixed-route services are operated through a turnkey contract with Virginia Regional Transit (VRT). As part of the 2018 Demonstration Grant Application, BRITE was identified as the operating agency for the proposed service between Staunton, Waynesboro, and Charlottesville, with VRT providing contracted service on the corridor. While this change in existing BRITE service would require an amendment to their contract with VRT, the contract has not been amended to date.

CITY OF STAUNTON

Staunton is a city of 24,273 people and a working population of 12,365¹. The City is surrounded completely by Augusta County, and located at the junction of the I-81 and I-64 corridors. BRITE is well-connected with the rest of the Central Shenandoah region with several of the BRITE routes connecting the city to other parts of Augusta County, including the 250 Connector to Waynesboro, and the BRCC South route to BRCC and Weyers Cave. Several bus routes run exclusively in the city, including the Downtown Trolley, West Loop, North Loop, and Saturday Night Trolley. Staunton is home to Mary Baldwin University, a small liberal arts college, and hosts retail, restaurant, and entertainment amenities, such as the Black Friars Shakespeare theater, that attract visitors to the Shenandoah Valley.

Staunton is also well-connected with other parts of Virginia. Staunton has an Amtrak station located downtown, and is serviced by the Cardinal route on Sunday, Wednesday, and Friday from New York to Chicago. The Virginia Breeze intercity bus service also stops in Staunton at 10:30 AM going northbound to Washington, DC, and at 1:20 PM going southbound to Blacksburg. Additional service is available northbound on Fridays at 4:30 PM and southbound on Sundays at 9:00 PM.

CITY OF WAYNESBORO

Waynesboro is a city of 21,620 people and a working population of 10,454, surrounded completely by Augusta County.² It has a small downtown with some restaurants and retail businesses, but much of the city consists of residential land uses. The Rosser Avenue/US 340 corridor in Waynesboro serves as a regional retail center. Waynesboro also has an extensive history and continues to support industrial uses, particularly in the Delphine Avenue corridor. Waynesboro is generally well-connected with the rest of the

¹ 2013-2017 ACS 5-Year Estimates

² 2013-2017 ACS 5-Year Estimates

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region through BRITE's bus services. The Waynesboro Circulator operates in the central part of Waynesboro and provides rider connections to other BRITE routes including the 250 Connector and Stuarts Draft Link. A 120-space park and ride lot is located on US 340 south of the I-64/US 340 interchange, which will have capacity expansion and improved amenities through a SMART SCALE-funded project scheduled for 2021.

AUGUSTA COUNTY

Augusta County is situated in the Shenandoah Valley and has a population of 74,390 and a labor force of 46,458.³ BRITE's 250 Connector, the BRCC Shuttle, and Stuarts Draft Link routes provide service to portions of the county and connect county residents with the urban centers of Waynesboro and Staunton. Much of the county outside of Staunton and Waynesboro is rural with large lot farms and homes, with occasional low-density residential developments throughout such as in Stuarts Draft. The main growth area in Augusta County is located near the region's medical center, Augusta Health, in Fishersville. Most of population and employment growth in the region over the next decade is planned and anticipated to be in the Fishersville area.

THOMAS JEFFERSON PLANNING DISTRICT COMMISSION

The Thomas Jefferson Planning District Commission (TJPDC) is the coordinating agency for planning and technical assistance for six jurisdictions: City of Charlottesville and Albemarle, Fluvanna, Greene, Louisa, and Nelson Counties. TJPDC also administers the Charlottesville-Albemarle Metropolitan Planning Organization (CAMPO). The TJPDC manages a Regional Transit Partnership (RTP) created by Charlottesville, Albemarle County, University of Virginia, and JAUNT, in partnership with DRPT, to provide recommendations to decision-makers on transit issues.

The TJPDC also operates a Rural Transportation Program funded through the VDOT Transportation Mobility Planning Division. With this funding, the Rural Transportation Program provides local planning assistance to its rural member governments; maintains the region's Rural Long-Range Transportation Program; coordinates efforts between the member counties, JAUNT, and Rideshare; and assists its localities with other transportation needs. The Rural Transportation Advisory Committee provides technical recommendations to the Planning District Commission, which serves as the Program's policy board and sets program policies, approves annual work programs, and acts as a liaison with local elected boards.

JAUNT

JAUNT is a regional public transportation system providing service to the residents of the City of Charlottesville and Albemarle, Fluvanna, Louisa, Nelson, Buckingham, and Amherst Counties. JAUNT's 85 buses make over 300,000 trips annually throughout a 2,600 square mile service area. JAUNT offers fixed-route, express fixed-route, and paratransit services, funded by an array of local, state, and federal assistance grants, including FTA 5307, 5310, and 5311 funds. Fixed-route services consist of fixed stops and are designed for commuting to and from work. These typically run one direction in the morning and the other in the afternoon. Express fixed-route service operates similar to fixed-route services but are designed to serve riders at peak demand times and locations. Paratransit services are provided in designated areas. JAUNT is governed by a Board of Governors appointed by the localities the agency

³ 2013-2017 ACS 5-Year Estimates

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serves. JAUNT expanded fixed-route service to Crozet in Fall 2019, which was funded in part by a DRPT Demonstration Grant.

ALBEMARLE COUNTY

Albemarle County completely encircles the City of Charlottesville and has a population of 105,105 with a working population of 52,725.⁴ A few large employers, including Sentara Martha Jefferson Hospital and State Farm, are located immediately outside Charlottesville and serve as key destinations for commuters in the Shenandoah Valley. According to the Afton Express Inter-Regional Service Demonstration Grant Application, approximately 237 residents of the Central Shenandoah service corridor commute to Sentara Martha Jefferson Hospital and the Pantops commercial center nearby. A major shopping center, 5th Street Station, has opened in recent years near I-64 and serves as a regional retail destination in the corridor. Moreover, there are three park and ride lots located immediately on the outskirts of Charlottesville in Albemarle County along I-64, and one park and ride lot located off US 250. Together these park and ride lots total 48 parking spaces. Outside of Charlottesville, the County is rural and consists of mostly of large lot farms and homes, with residential clusters in Crozet.

CITY OF CHARLOTTESVILLE

The City of Charlottesville is an urban center east of the Blue Ridge Mountains and Shenandoah Valley. Despite its relatively small population of 46,487, Charlottesville has a proportionally large working population (25,488), comprising about 64% of the entire city population. Moreover, Charlottesville has several large employers that attract commuters throughout the region, most notably, the University of Virginia. According to the Afton Express Inter-Regional Service Demonstration Grant Application, about 1,257 commuters from the Central Shenandoah service corridor commute to downtown Charlottesville and the UVA Medical Center every day. Charlottesville is also well-connected in terms of regional transportation infrastructure, with I-64 running along the city's southern boundary, and Amtrak trains and Greyhound buses making stops at locations outside the downtown. The city of Charlottesville and the surrounding area is also serviced by Charlottesville Area Transit (CAT). CAT operates 12 local bus routes and one free trolley route.

UNIVERSITY OF VIRGINIA

Located in the western portion of the City of Charlottesville, the University of Virginia is a significant source of economic activity for the city and the region. As one of the largest employers in the region, UVA employs about 20,500 people at their Charlottesville campus, including 12,200 faculty and staff, and 8,300 UVA Health System employees. Of these, 705 employees live in Waynesboro, Staunton, and Harrisonburg, according to the Afton Express Inter-Regional Service Demonstration Grant Application. In addition, the University has an enrollment of approximately 24,000 students. UVA also operates and runs its own transit service, which includes 10 bus routes around the school's campus and the city.

VIRGINIA DEPARTMENT OF RAIL AND PUBLIC TRANSIT

DRPT is the state entity that advises, supports, and funds public transportation programs around the state. DRPT has encouraged transit service along I-64, originally in the Virginia Statewide Intercity Bus Study. The route between Harrisonburg and Richmond via I-64 was one of the four routes recommended for

⁴ 2013-2017 ACS 5-Year Estimates

Afton Express Transit Service Plan

initial implementation by the Study. Another route recommended for initial implementation was the Virginia Breeze, which has since been implemented, and service is expected to be expanded in Fall 2019 to include US 29.

DRPT has also supported the local MPOs and the CSPDC in their efforts to implement transit service on the corridor with advisory and support services. In January 2018, the CSPDC submitted a grant application to DRPT to fund the first year of service for the proposed Staunton to Charlottesville bus route, operated by BRITE. While DRPT recognized the need for inter-regional transit service and expressed support for the proposed Staunton to Charlottesville route, it determined the service could benefit from additional analysis and planning prior to implementation.

PRIVATE STAKEHOLDERS

SENTARA MARTHA JEFFERSON HOSPITAL

Sentara Martha Jefferson Hospital is east of Charlottesville at the junction of US 250 and I-64. While smaller than the UVA Medical Center in Charlottesville, Sentara Martha Jefferson Hospital employs about 2,000 employees. The hospital is currently serviced by CAT's Route 10, which runs between the hospital and downtown Charlottesville, and JAUNT's Buckingham Connect Route (BUCK), which provides connections to Buckingham County.

STATE FARM

State Farm Insurance Corporation maintains a large corporate office in Albemarle County east of Charlottesville, adjacent to Sentara Martha Jefferson Hospital. With well over 1,000 employees, State Farm is one of the largest employers in Albemarle County. CAT's Route 10 and JAUNT's Buckingham Connect Route (BUCK) make stops at the Sentara Martha Jefferson Hospital, which is within one mile of the State Farm building. State Farm has indicated support for commuting alternatives to single-occupancy vehicles previously, including vanpools and carpools.

INTERCITY BUS SERVICES

There are several intercity bus services that currently operate out of Charlottesville and Staunton. These bus routes and their service routes are enumerated in the following table. In addition to these services, Virginia Breeze will begin operating a new service in 2020 along US 29, connecting Danville to Washington, D.C., with a stop in Charlottesville.

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Table 1: Existing Intercity Bus Services

Greyhound Bus			
<u>Direction</u>	<u>Days of Operation</u>	<u>Bus Number</u>	<u>Departure Time</u>
Charlottesville to Lynchburg and Roanoke	Daily	1511	6:55 AM
		1529	1:30 PM
		1539	9:40 PM
Charlottesville to Richmond	Daily	1510	4:30 AM
		1514	8:40 AM
		1508	4:10 PM
Charlottesville to Washington, DC via Fredericksburg and Springfield	Daily	3926	8:45 AM
		3924	4:50 PM
Charlottesville to Washington, DC	Daily	7491	5:00 PM
Megabus			
Charlottesville to Washington, DC via Dulles Airport	Thursday - Monday	N/A	1:00 PM
James River Bus Lines			
Charlottesville to Richmond	Daily	6020	7:55 AM
		6197	7:40 PM
	Sunday, Wednesday, Friday	4050	3:30 PM
Virginia Breeze (Staunton)			
Staunton to Washington, DC	Daily	N/A	10:30 AM
	Friday Only		4:30 PM
Washington, DC to Staunton	Daily	N/A	1:20 PM
	Sunday Only		9:00 PM

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AMTRAK

Three Amtrak routes make stops in Charlottesville's train station: Cardinal, Crescent, and Northeast Regional routes. The Cardinal route also stops in Staunton's train station. The schedules for these trains are outlined in the following table.⁵

Table 2: Existing Amtrak Service

Cardinal			
Direction	Days of Operation	Train Number	Departure Time
New York to Chicago	Sunday, Wednesday, Friday	51	1:52 PM 2:54 PM*
Chicago to New York	Wednesday, Friday, Sunday	50	3:19 PM 2:03 PM*
Crescent			
New York to New Orleans	Daily	19	8:52 PM
New Orleans to New York	Daily	20	7:09 AM
Northeast Regional			
Boston to Roanoke	Saturday	147	7:01 PM
	Sunday	145	7:16 PM
	Monday-Friday	171	7:23 PM
Roanoke to Boston	Monday-Friday	176	8:52 AM
	Saturday-Sunday	156	11:13 AM
Newport News to Boston (Connecting Bus Route)	Daily	66	5:00 PM

* Denotes departures from Staunton.

⁵ Amtrak Trains Schedules & Timetables <https://www.amtrak.com/train-schedules-timetables>

CHAPTER 2: REVIEW OF PEER TRANSIT SERVICES

The Afton Express route is intended to provide a transit connection between populations and economies along the I-64 corridor. **Chapter 2** evaluates similar services provided by peer transit agencies, examining ridership data, scheduling, and funding information to provide an assessment of peer transit service performance and best practices. Transit agencies both within and outside Virginia were considered for this evaluation. Peer services were selected through review of similar route lengths, economic drivers such as education and health centers, and populations served. In addition to publicly available documents, such as transit development plans, annual budgets, and National Transit Database (NTD) data, interviews were held with most transit agencies to collect qualitative information on the purpose and performance of the peer services.

Applicable peer services included:

- Within Virginia:
 - Valley Metro: Smart Way
 - JAUNT: Crozet CONNECT
- Outside of Virginia:
 - Green Mountain Transit (VT): Montpelier Link Express
 - Kanawha Valley Regional Transportation Authority (WV): Route 22M
 - TransFort (CO): FLEX Boulder Express
 - Piedmont Authority for Regional Transportation (NC): Alamance Burlington Express
 - Capital District Transportation Authority (NY): Northway Express

Peer services were reviewed for vehicle type, schedule, ridership, funding sources, fare types, and populations and destinations served, as well as any information received through interviews with agencies. An additional analysis was performed in each peer service corridor to determine the mode share of transit in the area.

WITHIN VIRGINIA

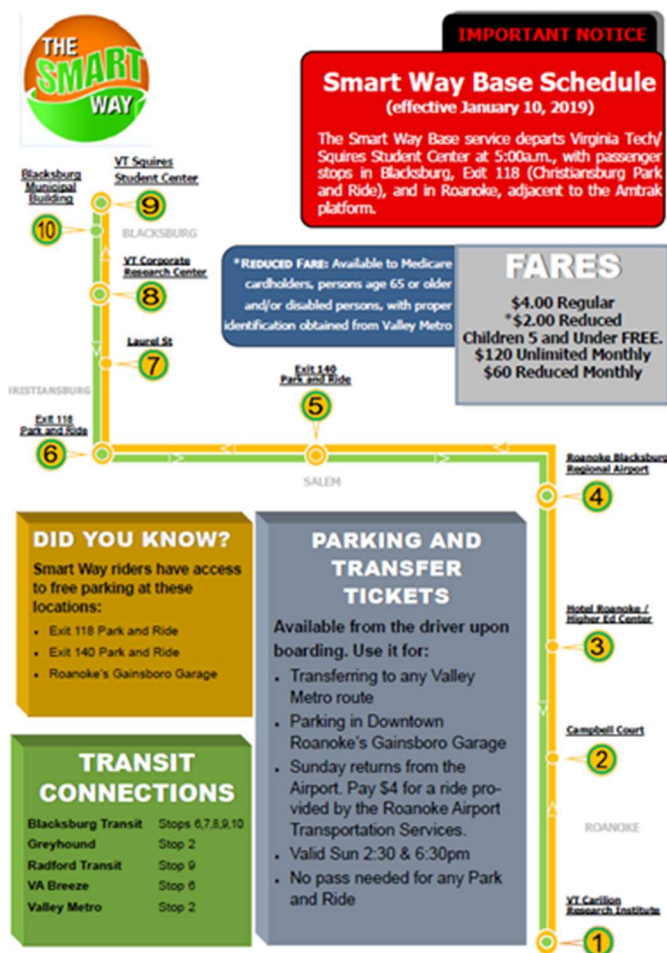
VALLEY METRO: SMART WAY

Valley Metro operates 24 fixed service bus routes in the cities of Roanoke and Salem. Valley Metro also operates the Smart Way Bus, which links the Roanoke Valley with the New River Valley to the South along I-81. Smart Way makes nine stops between Roanoke and Blacksburg, starting at the VT Carilion Research Institute in Roanoke and ending at the Virginia Tech Squires Student Center in Blacksburg. The bus also stops at the Roanoke-Blacksburg Regional Airport, and two park and ride lots off I-81 (Exits 118 and 140). It connects riders with Valley Metro, Virginia Breeze, Radford Transit, Greyhound, and Blacksburg Transit services.

Smart Way's schedule varies for service provided Monday through Friday, Saturday, and Sunday. The bus begins operations Monday through Friday at 5:00 AM and runs until 9:40 PM, running 14 times throughout the day. The bus begins operations on Saturday at 6:20 AM and runs 11 times throughout the day with the last bus leaving at 10:00 PM. On Sunday, the operates on a limited schedule, leaving VT Squires Student Center and arriving in Roanoke at 7:45 AM. In the evening, the bus leaves Roanoke at 10:00 PM and arrives back at Blacksburg Municipal Building at 11:15 PM.

Afton Express Transit Service Plan

Smart Way first began operation in 2004 to serve individuals commuting between Blacksburg and Roanoke, as well as students commuting to Virginia Tech's campus in Blacksburg. Initially, the City of Roanoke, the New River Valley MPO, and Virginia Tech University identified the need for public transportation service between Roanoke and Blacksburg and pushed for the implementation of a bus route connecting the two cities. According to agency staff, the route design has not experienced any major changes since it was first implemented and has benefited from consistent ridership each year. Smart Way also has an advisory committee, consisting of representatives from the City of Roanoke, New River Valley MPO, and Virginia Tech, that meets quarterly to discuss issues related to the service. The route averages about 3,500 riders per month, with ridership increasing during Virginia Tech's academic year. Unlike most commuter services in which riders travel one direction in the morning and the opposite direction in the afternoon, Smart Way ridership is relatively balanced in both directions, according to agency staff.



To cater to commuter needs and desires, Valley Metro runs a 45-foot Motor Coach Industries (MCI) coach bus with free Wi-Fi, high-backed seats, and TV monitors on the Smart Way's 94-mile round trip route. This model of bus also has luggage storage space for riders going to the Blacksburg/Roanoke Regional Airport and the Amtrak train station and Greyhound bus bay in Roanoke.

To operate Smart Way, Valley Metro receives FTA Section 5311(f) Intercity Bus Program funding, as well as a 50/50 match from local funding partners including the New River Valley MPO, City of Roanoke, and Virginia Tech. Fares for the route are \$4.00 one way, with options for \$120 unlimited monthly passes, and discounted fares for Medicare cardholders, persons age 65 or older, and individuals with disabilities. Individuals with a valid ID from Virginia Tech, Carilion Clinic, Virginia Tech Carilion School of Medicine and Research Institute, and Jefferson College of Health sciences can ride Smart Way for free.

Valley Metro also operates a Smart Way Express routes that makes four at Virginia Tech's campus in Blacksburg, one stop at the Exit 118 park and ride lot off I-81, and the Virginia Tech Carilion Research Center. This service was designed to supplement the original Smart Way bus by providing an express service route between the Virginia Tech campuses.

JAUNT: CROZET CONNECT

The Crozet CONNECT is a bus service operated by JAUNT that connects the east and west sides of Crozet to UVA, the UVA Health System, and Downtown Charlottesville. Crozet CONNECT consists of two routes: Crozet West and Crozet East. Both routes have three buses running from Crozet into Charlottesville, and three buses in the afternoon from Charlottesville to Crozet. Both routes run Monday through Friday and consist of eight stops, with the final three destinations being UVA, UVA Health System, and Downtown Charlottesville. The other five stops are in Crozet. Buses for Crozet West run at 6:10 AM, 7:10 AM, and 7:24 AM in the morning, and 4:10 PM, 5:27 PM, and 6:27 PM in the afternoon. Buses on the Crozet East route run at 6:15 AM, 7:15 AM, and 8:15 AM in the morning, and 4:10 PM, 5:10 PM and 5:44 PM in the afternoon. The average duration of each route is about 40 minutes each way, and the one-way fare costs \$2.00.

The Crozet CONNECT first began service on August 5, 2019. In just three weeks of operation, the CONNECT served 700 trips, with buses operating just under 50% capacity. According to JAUNT staff, there has been demand for such a route between Crozet and Charlottesville, particularly



Source: Crozet Gazette

for transit service during peak commuting times to downtown Charlottesville, UVA, and UVA Health System. Results from two surveys conducted by JAUNT and UVA showed that 70% and 61% of survey respondents, respectively, would ride a Crozet shuttle to Charlottesville several times per week or more. As a result, most of the CONNECT's riders are estimated to be commuters to Charlottesville, and the route's scheduling reflects general commuting patterns for the area. JAUNT runs a 23-passenger ARBOC model bus on the route, equipped with USB charging docks, free Wi-Fi, TV monitors, and a bike rack.⁶ Fares are currently payable by cash only, but a mobile ticketing app will be launched in Fall 2019, along with weekly and monthly pass options. Even though the route is new to the JAUNT network, the agency hopes to expand the service in Crozet in the future. Feedback from passengers and Crozet community members indicate that more people would use the service if it operated at different times or stopped in different locations.

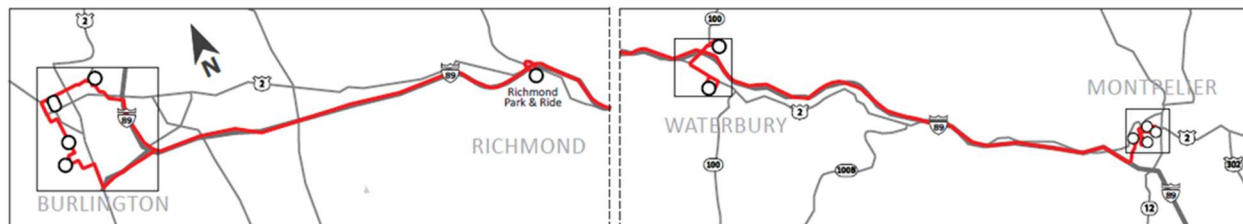
JAUNT was awarded a DRPT Demonstration Grant of \$211,371 in 2019 to fund the implementation of the Crozet CONNECT. In future years, JAUNT anticipates federal funding will replace the grant amount through FTA Section 5311 Rural Area Formula Grant funds. Albemarle County is paying the entirety of the 20% local match, totaling \$52,843.

⁶ According to JAUNT staff, the agency already owned ARBOC buses, and purchased additional buses with the passenger amenities to meet the route's scheduling needs. The older buses were retrofitted with the newer amenities.

OUTSIDE OF VIRGINIA

GREEN MOUNTAIN TRANSIT (VERMONT): MONTPELIER LINK EXPRESS

Green Mountain Transit provides public transportation services to Chittenden, Washington, Lamoille, Franklin, and Grand Isle Counties. The Montpelier Link Express is a commuter bus service, operated jointly with the Chittenden County Transportation Authority (CCTA), connecting the cities of Montpelier and Burlington on a 39-mile route along I-89. The bus makes 11 stops along the route, four of which are park and ride lots located in Burlington and along I-89. It operates four times in the morning and five times in the afternoon Monday through Friday. Westbound service to Burlington operates nine times during the day, with the first bus leaving at 5:42 AM and the last at 5:58 PM. Eastbound service to Montpelier operates nine times as well, with the first bus leaving at 6:05 AM and the last at 6:15 PM. The number of stops for each bus depends on the time the bus leaves, meaning some buses make more stops than others. Depending on departure times and number of stops made, the trip duration for each bus runs



Source: Green Mountain Transit

between 1 hour 10 minutes and 1 hour 20 minutes. One-way fares for the Montpelier Link Express are \$4.00.

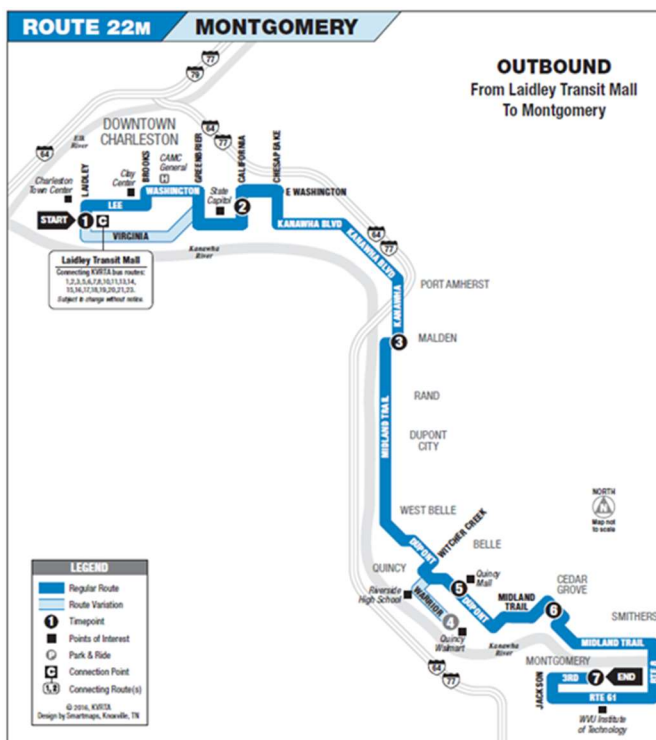
According to the 2012 Green Mountain Transit Agency TDP, there is excessive demand at park and ride lots along the Montpelier Express Link route, leading to overcrowding of the lots and large numbers of riders on the bus. In FY 2012, the Montpelier Link Express and US 2 Commuter Routes carried over 120,000 passengers combined, using 40-foot Gillig transit buses on the Montpelier Express Link route. Survey results indicate that Vermont residents want service expanded, specifically for service on Saturdays for tourists and seasonal employees to Burlington from Montpelier, Waterbury, and Stowe. Moreover, the 2012 TDP indicates that the Montpelier Link Express has been successful because riders travel both directions during both peak periods.

Specific funding information for the Montpelier Link Express Route was not readily available. However, according to the GMTA's Urban Area Annual Report Summary for FY 2017, 48%, 17%, and 20% of revenue came from federal, state and local funding sources, respectively. No specific federal grants, state programs, or local funding matches are identified, and the remaining 15.3% of revenue came from passenger fares and miscellaneous revenue sources. The 2012 GMTA TDP indicates that the agency is limited by available funding, with only modest increases in federal and state assistance despite system growth. New GMTA transit service is typically funded through Congestion Mitigation/Air Quality (CMAQ) grants, which are three-year Demonstration Grants that provide 80% federal funding and require a 20% local match. Typically, the GMTA is responsible for providing the 20% local match while Vermont Agency of Transportation provides the 80% federal funds using FTA funds, but it is not specified from which programs these FTA funds are disbursed.

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KANAWHA VALLEY REGIONAL TRANSPORTATION AUTHORITY (WEST VIRGINIA): ROUTE 22M

The Kanawha Valley Regional Transportation Authority (KVRTA) provides fixed route services for Kanawha County, and portions of Fayette and Putnam Counties. KVRTA's Route 22M service provides service between Downtown Charleston and Montgomery, making seven stops along the 28-mile route. Route 22M's riders mainly consist of workers in the service industry, including restaurant servers, hospital staff, and retail employees. The route schedule has been adjusted over its lifetime to better serve the needs of the population. The bus operates 15 trips daily Monday through Friday. The first bus leaves from Charleston going southbound at 4:30 AM, and the last leaves at 9:20 PM. The first bus leaves from Montgomery going northbound at 5:35 AM, and the last bus leaves at 10:15 PM. The Charleston Town Center Mall is a major hub for shopping in the City and closes at 9:00 PM. The last Route 22M bus leaves from the Mall at 9:20 PM.



Source: Kanawha Valley Regional Transportation Authority

The 22M operates limited Saturday and Sunday services as well. On Saturday, 12 buses run on the route between 4:15 AM and 9:20 PM going southbound, and between 5:35 AM and 10:15 PM going northbound. Five buses operate on Sunday between 4:25 AM and 7:15 PM going southbound, and between 5:20 AM and 8:15 PM going northbound. Monday through Saturday, buses do not stop at the Quincy Walmart, limiting the number of stops along the route to six. Depending on the day of the week and the number of stops the bus makes, trip durations range from 55 minutes to 1 hour 15 minutes end-to-end.

Fares for Route 22M are consistent with the rest of the KVRTA. One-way trips are \$1.50, with half-price fares for senior citizens (65+), persons with disabilities, and riders with a valid Medicare card. Riders also have the option to purchase 1, 5, and 31-day passes, which allow riders unlimited trips during the duration the passes cover. The 22M Route is financed directly from the agency's budget, which consists about \$8 million collected from local communities through a County levy, \$2 million from federal funding, and between \$1.5 million and \$2 million from bus fares. Federal funding comes from FTA's Section 5307 Urbanized Area Formula Grant.

According to KVRTA staff, ridership across all routes, including Route 22M, has declined in the last several years. In FY 2018, Route 22M serviced 136,805 riders, averaging about 380 daily passengers riding on the route's 35-passenger buses. The service is likely to continue in the future due to a need for transit for low-income and service industry working populations in and around Charleston; however, decreasing activity and dwindling ridership to the last stop on the route, Montgomery, may prompt the route to be shortened.

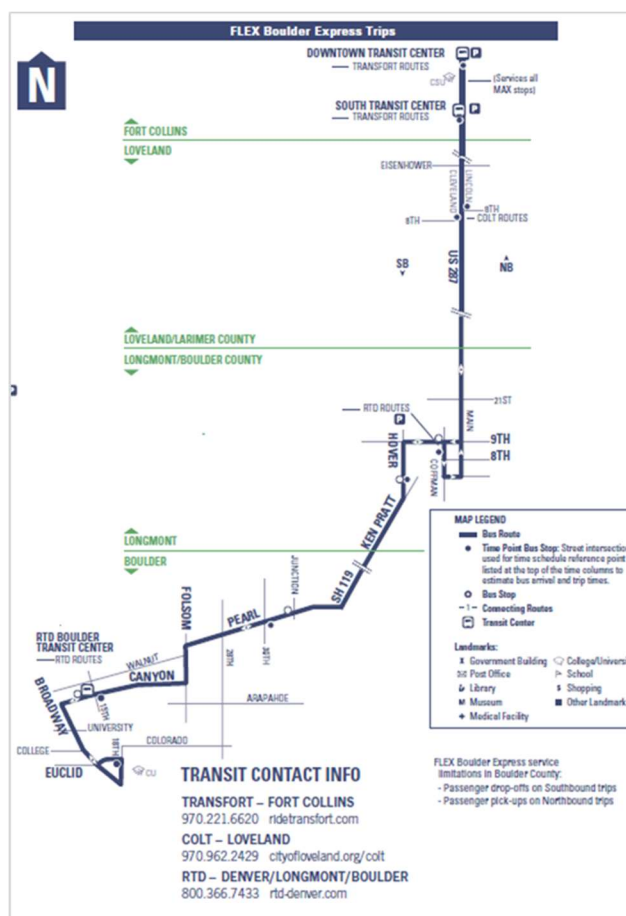
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The majority of KVRTA's funding comes from a levy tax that goes toward public safety and transportation services in the County. The levy accounts to approximately \$16 million annually, of which half of these funds are disbursed to KVRTA for operations and capital expenses. The levy has been in effect for around 30 years and is voted on by County citizens every few years. A 60% super-majority is required to extend the levy, and 85% of citizens voted in 2018 to extend the duration of the levy.

TRANSFORT (COLORADO): FLEX BOULDER EXPRESS

FLEX is a regional bus route providing service between Fort Collins, Loveland, Berthoud, Longmont, and Boulder. The route is about 47 miles one way and runs Monday through Friday with a limited schedule on Saturday. Southbound service runs 22 times Monday through Friday, with the first bus leaving from Fort Collins at 5:14 AM and the last at 6:24 PM. Northbound service runs 24 times Monday through Friday, with the first bus leaving Boulder at 6:39 AM and the last leaving at 7:20 PM. The number of stops the bus makes depends on what time it leaves, and trip durations range from 1 hour 15 minutes to 1 hour 45 minutes. The fare for a one-way trip is \$1.25 on the FLEX Boulder Express. City of Loveland Transit (COLT) passes as well as RTD EcoPass and CollegePass are also accepted on the FLEX, and service is free for Colorado State University students, faculty, and staff with a valid University ID card.

Daily ridership on the FLEX route increased from 504 daily riders in 2015 to 684 in 2018, with a total of 209,945 passenger trips in 2018. According to the TransFort website⁷, the FLEX route is locally funded by a partnership between Fort Collins, Loveland, Berthoud, Longmont, and Boulder County. Given the distance of the route, the FLEX appears to provide service mainly to commuters and students looking to travel to work or school between cities.



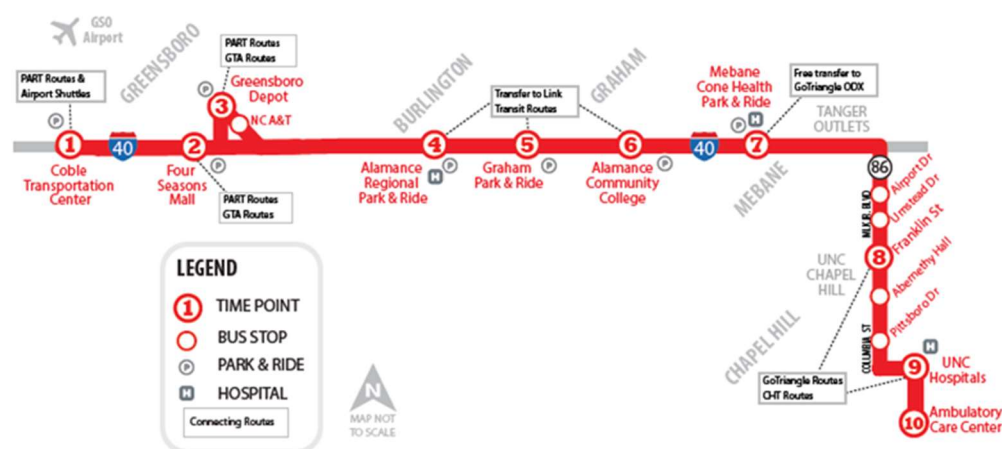
Source: TransFort

⁷ <http://www.ridettransfort.com/flex>

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PIEDMONT AUTHORITY FOR REGIONAL TRANSPORTATION (NORTH CAROLINA): ALAMANCE BURLINGTON EXPRESS

The Piedmont Authority for Regional Transportation (PART) provides public transportation services for the Piedmont Triad region, including the cities of Burlington, High Point, Greensboro, and Winston-Salem. The Route 4 Alamance-Burlington Express provides bus service to Greensboro, Burlington, Graham, Mebane, and Chapel Hill. The route is about 54 miles one way and runs Monday through Friday. The first bus leaves from Greensboro going eastbound at 5:40 AM, and the last bus leaves at 3:00 PM. Going westbound from Chapel Hill, the first bus leaves at 7:25 AM, and the last at 5:40 PM. In total, the route makes eight eastbound trips and nine westbound trips daily. The number of stops each bus makes depends on the time it leaves from its origin. Some eastbound buses also start in Mebane instead of Greensboro and run directly to Chapel Hill. Depending on when a bus leaves and the number of stops it makes, trip durations range from 1 hour 40 minutes to 1 hour 55 minutes one way. The bus stops at 15 stops between the five cities, including stops at six park and ride locations, as well as three hospitals. The bus also stops at notable commercial and retail destinations, such as the Four Seasons Mall, and key education institutions in the region in the Alamance Community College and University of North Carolina-Chapel Hill. Fares for the bus are \$2.50 one way, with half-price tickets for seniors (60+), disabled, veterans, students, and Medicare cardholders.



Source: Piedmont Authority for Regional Transportation

The Route 4 Alamance Burlington Express has been a success due to the thriving destinations it serves and is an efficient service for students and employees at UNC-Chapel Hill. According to PART staff, approximately 90% of the ridership is comprised of commuters, and ridership increases and decreases with the beginning and end of the UNC semester. Originally, the Alamance-Burlington Express route was designed to connect residents with the advanced medical facilities at UNC in Chapel Hill. However, the route was redesigned in 2015, in conjunction with the implementation of the Link Transit fixed-route services in Burlington, to cater more towards commuter needs by providing express service from Greensboro and Burlington to Chapel Hill. As part of this redesign additional stops at park and ride lots along I-40 were added, and frequency of the service was increased to have more trips during the morning and evening peak periods.

Since the redesign ridership on the corridor has increased 300%. Ridership numbers from 2015 are shown below. The route carries about 200 passengers per day, approximately 4,000 passengers per month, and is expected to grow in the future. Demand for the service has increased since being

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implemented, with service being expanded in July 2017, and again in April 2018. Agency staff have also said that the park and ride lots are at or near maximum capacity most week days.

Table 3: PART Alamance Burlington Express Annual Ridership

	2015	2016	2017	2018
Total Ridership	12,765	32,457	40,313	49,462

Agency staff indicated that the Alamance-Burlington Express has some reverse commuting. However, fleet size and available funds limit the number of stops buses can make on return trips. As a result, PART limits the number of stops on the return trip back to Greensboro to the stops with the highest ridership. For instance, the first bus leaves from Greensboro at 5:40 AM and arrives at the UNC Medical Center at 7:21 AM. At 7:25 AM, the bus leaves the UNC Medical Center and stops at the fourth stop on the route, the Mebane Cone Health Center and park and ride lot at 8:00 AM. At 8:10 AM, the bus leaves from Mebane Cone and returns to the UNC Medical Center at 8:45 AM. Since the route mostly provides service to students and commuters, each 40-foot bus equipped with Wi-Fi, reading lamps, USB ports, and high-backed reclining seats with arm rests similar to a coach bus.

This route operates with a portion of a Section 5307 Urbanized Area Formula Grant and is sustained with local funding and farebox revenue. Local funding is procured through taxing on local communities. Localities within PART's jurisdiction implemented a 5% tax on all rental car businesses to provide a local match for transit service. According to PART agency staff, only 30% of the funding comes from federal grants, with roughly 65% coming from the local match. NCDOT does have a state program for transit agencies, both urban and rural, but the funding is based on a formula NCDOT utilizes for distributing state funds to all urban providers. These state funds are then used to finance specific routes based on revenue miles of service. UNC does not provide any funding directly to PART, but subsidizes 70% of the passenger fare for all employees and students.

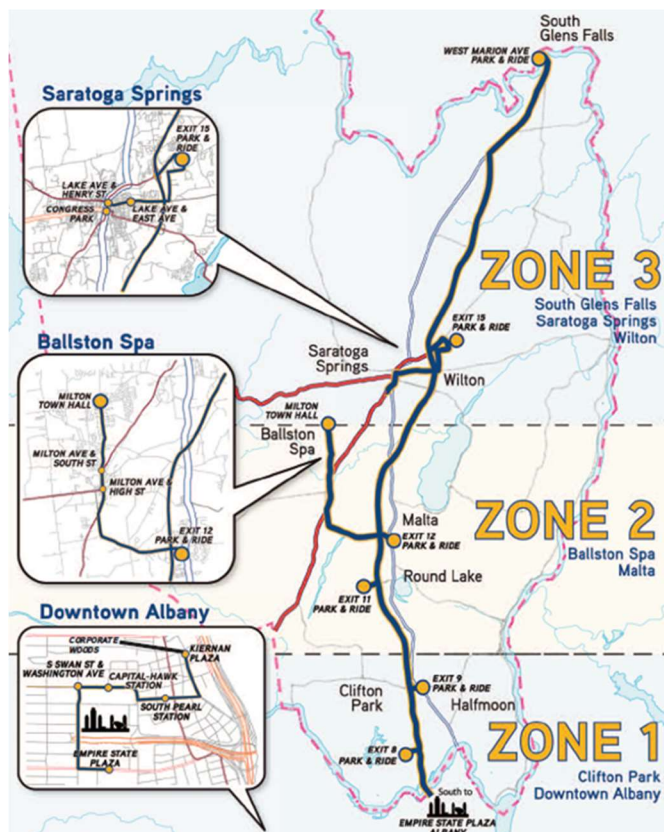
CAPITAL DISTRICT TRANSPORTATION AUTHORITY (NEW YORK): NORTHWAY EXPRESS

The Capital District Transportation Authority (CDTA) provides public transportation service in the Capital District of New York State, which includes Albany, Schenectady, Rensselaer, and Saratoga Counties. The Northway Express is a commuter service that runs from locations in Saratoga County to downtown Albany, connecting the population centers of South Glen Falls, Saratoga Springs, Ballston Spa, and Albany. The entire route includes 17 stops along the I-87 corridor, including five park and ride lots, and is roughly 65 miles in length. The bus operates Monday through Friday from 5:30 AM to 7:00 PM with eighteen trips going southbound from Saratoga County in the morning, and eighteen trips going northbound from downtown Albany in the afternoon. The first bus leaves from Saratoga County at 5:34 AM and the last leaves at 10:23 AM. The first bus leaves downtown Albany at 12:12 PM and the last leaves at 5:42 PM. Trip durations for each bus range from 1 hour 15 minutes to 1 hour 25 minutes and depend on the number of stops the bus makes along the route. The number of stops each bus makes depends on when the bus leaves its origin.

The route is broken down into three zones that dictate the fares for riding the Northway Express. Zone 1 includes Clifton Park and Downtown Albany, Zone 2 includes Malta and Ballston Spa, and Zone 3 includes

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Saratoga Springs and South Glen Falls. Fare pricing for trips in Zone 1, Zone 2, and Zone 3 is \$4.00, \$5.00, and \$7.00, respectively. There are options to purchase discounted 10-day trip passes, and a monthly swiper fare card. The consolidated 3-zone fare structure came about because of a public outreach campaign and route fare and schedule redesign in 2012. Following the route schedule redesign, in FY 2012 170,325 riders used the Northway Express. According to the 2017-2018 CDTA Route Performance Report, in FY 2017 the Northway Express had 168,910 trips, representing a slight decrease in ridership in line with national mode choice trends. CDTA utilizes MCI buses for the Northway Express. Being a coach bus, these vehicles provide free Wi-Fi, luggage compartments, restrooms, and coach seating. Specific funding information for the Northway Express route was not readily available, but government assistance comprised 70% of CDTA's total revenue for FY 2015, or a \$62.9 million, according to the Office of the New York State Comptroller. Of that \$62.9 million in government assistance, approximately \$15.8 million (25%) was federal operating assistance, but it is not specified from which programs this money was disbursed.



Source: Capital District Transportation Authority

KEY TAKEAWAYS FROM PEER TRANSIT SERVICES

UNIVERSITY TRANSPORTATION CONNECTIONS

There are several routes that provide service for to university campuses that contribute to the success of the services. Valley Metro's Smart Way, TransFort's Boulder FLEX Express, and PART's Route 4 Burlington-Alamance Express all design their respective routes to accommodate students' transportation needs. All of these routes also double as commuter routes since they serve high-density employment areas. Routes that service college populations are a strong source of ridership, but route success is tied to school schedule and enrollment. Many of these routes provide free or discounted service on the route for students, including the Smart Way, Flex Express, and Burlington-Alamance Express. Involving universities in the transit planning process is important since schools can advertise the service and reduce marketing costs for transit agencies.

COMMUTER ROUTES

Of the seven routes researched, all identified as being commuter routes and tailored their routes to meet commuter needs. Four of these seven commuter routes stop at multiple park and ride lots: Valley Metro's Smart Way, GMTA's Montpelier Link Express, PART's Alamance-Burlington Express, and CDTA's Northway Express. Commuter routes typically have higher-end bus amenities, more frequent service during peak periods, and provide service to park and ride locations.

TYPE OF VEHICLE

The evaluation shows that the type of route very much dictates the type of vehicle used to operate the route. For instance, commuter buses typically use buses 35 foot or longer in length. Several longer commuter routes and routes providing intercity transit services use coach buses with amenities and luggage storage. There are exceptions to this trend, such as the Crozet CONNECT which uses a shorter 23-passenger bus. Common commuter route bus amenities include free Wi-Fi, USB charging docks, and TV monitors. Luggage storage was a key component for the Smart Way service since it stops at the Roanoke-Blacksburg Regional Airport and the Roanoke Amtrak station with connections to Greyhound buses. Additionally, luggage storage is a key requirement to receive FTA Section 5311 (f) Intercity Bus Program Funds.

ROUTE SCHEDULES

The type of route and the target riders also heavily influence a route's schedule. Commuter routes, such as Smart Way, Crozet CONNECT, Montpelier-Link Express, Route 22M, FLEX Boulder Express, Alamance-Burlington Express, and Northway Express, tend to begin earlier in the morning, between 4:30 and 6:15 AM. Return service start times vary by route, with some routes only providing returning service in the evening, and some routes providing return service throughout the day, even in the morning. Most commuter services provided reverse commuting service but do not serve every stop location as part of the reverse commute schedule.

FUNDING

There appears to be little consistency in funding sources among the agencies surveyed. All agencies use some combination of local, state, and federal funding to finance their operations, but the amount of money coming from each funding source varies between agencies. When looking at local funding, funds are procured through various mechanisms, such as PART's private rental car tax in participating jurisdictions, or KVRTA's operating budget obtained from a local tax levy. Moreover, based on conversations with the transit agencies, it is apparent that most agencies are constantly in need of additional funds, but that intended application of the additional funding varies from agency to agency, dependent on capital and operating needs.

While all agencies relied on funds from federal grant programs, the grants used vary from agency to agency.⁸ For instance, of the six transit agencies for which federal funding information was available, one agency received FTA Section 5311 (f) Intercity Bus Program funding (Valley Metro Smart Way), one agency received 5311 Rural Area Formula Grant funding (JAUNT's Crozet CONNECT), one agency received funds from CMAQ grants (GMTA), and two agencies received funding from FTA Section 5307

⁸ Federal funding sources here apply to specific routes, as well as to agency-wide funding sources. Refer back to the peer agency route descriptions for more information on specific routes.

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Urbanized Area Formula Grant funding (PART and KVRTA). Specific federal funding information for CDTA was not readily available, and TransFort's FLEX Boulder Express route is funded entirely by local partner contributions.

TYPES OF FARE

Fares for each of the routes examined vary drastically between agencies. Most of the transit agencies offer fares between \$1.25 and \$4.00 for a one-way trip, with discounted fares for elderly, disabled, and veteran populations. Some of the routes analyzed also run through multiple jurisdictions, and the operating agency integrated the route's fare structure with other transit agencies' payment systems, such as the FLEX Boulder Express. All the routes that provided service to schools provided some sort of discount for students. Moreover, the Smart Way, Montpelier-Link Express, Route 22M, FLEX Boulder Express, Alamance-Burlington Express, and Northway Express routes all have options for discounted weekly or monthly passes for frequent riders and commuters. As part of the Demonstration Grant to DRPT in FY 2019, the CSPDC proposed a \$3.00 to \$4.00 one-way fare on the Afton Express with options for fare passes for frequent commuters. This proposed fare is comparable to the fares of the peer transit services evaluated.

MODE SHARE

Census tracts along corridors served by each peer service were reviewed for the public bus mode share, according to 2017 American Community Survey 5-year data. Mode shares for commuters in these corridors ranged from 1.26% for FLEX Boulder Express, a service which transports very few commuters, to 4.42% for KVRTA's Route 22M, which was specifically designed for service and retail employee commuting needs. A weighted average of all services was developed to establish a realistic mode share baseline for Afton Express service, with a result of 2.86%. This is slightly below the 3% mode share used in the development of the previous Demonstration Grant, which was based on typical mode shares in Virginia and those that exist in the jurisdictions to be served by the Afton Express. However, the calculated weighted average is more applicable to this new service, as it is based on similar services, rather than existing conditions in an area where this service type is not currently available.

Table 4: Means to Work Mode Shares

Peer Route	Total Commuters	Commuters Using Public Bus	Mode Share
Valley Metro: Smart Way	61,877	1,782	2.88%
JAUNT: Crozet CONNECT	12,091	523	4.33%
Green Mountain Transit (VT): Montpelier Link Express	44,608	1,008	2.26%
Kanawha Valley Regional Transportation Authority (WV): Route 22M	15,302	677	4.42%
Transfort (CO): FLEX Boulder Express	61,660	779	1.26%
Piedmont Authority for Regional Transportation (NC): Alamance Burlington Express	119,391	3,308	2.77%
Capital District Transportation Authority (NY): Northway Express	109,254	4,055	3.71%
Weighted Average	424,183	12,132	2.86%

Source: 2017 American Community Survey 5-Year Estimates

CHAPTER 3: DEFINITION OF NEEDS

The I-81/I-64 Inter-Regional Transportation Feasibility Study identified several needs for a transit service connecting Harrisonburg, Staunton, Waynesboro, and Charlottesville by evaluating population and employment data, transit-dependent populations, commuter surveys, local land use, and previous plans and studies. However, since the study was completed in 2017, some of the needs have been addressed by the Virginia Breeze inter-city bus, which travels in the I-81 corridor from Blacksburg to Union Station in Washington, DC, with a stop at Dulles Airport.

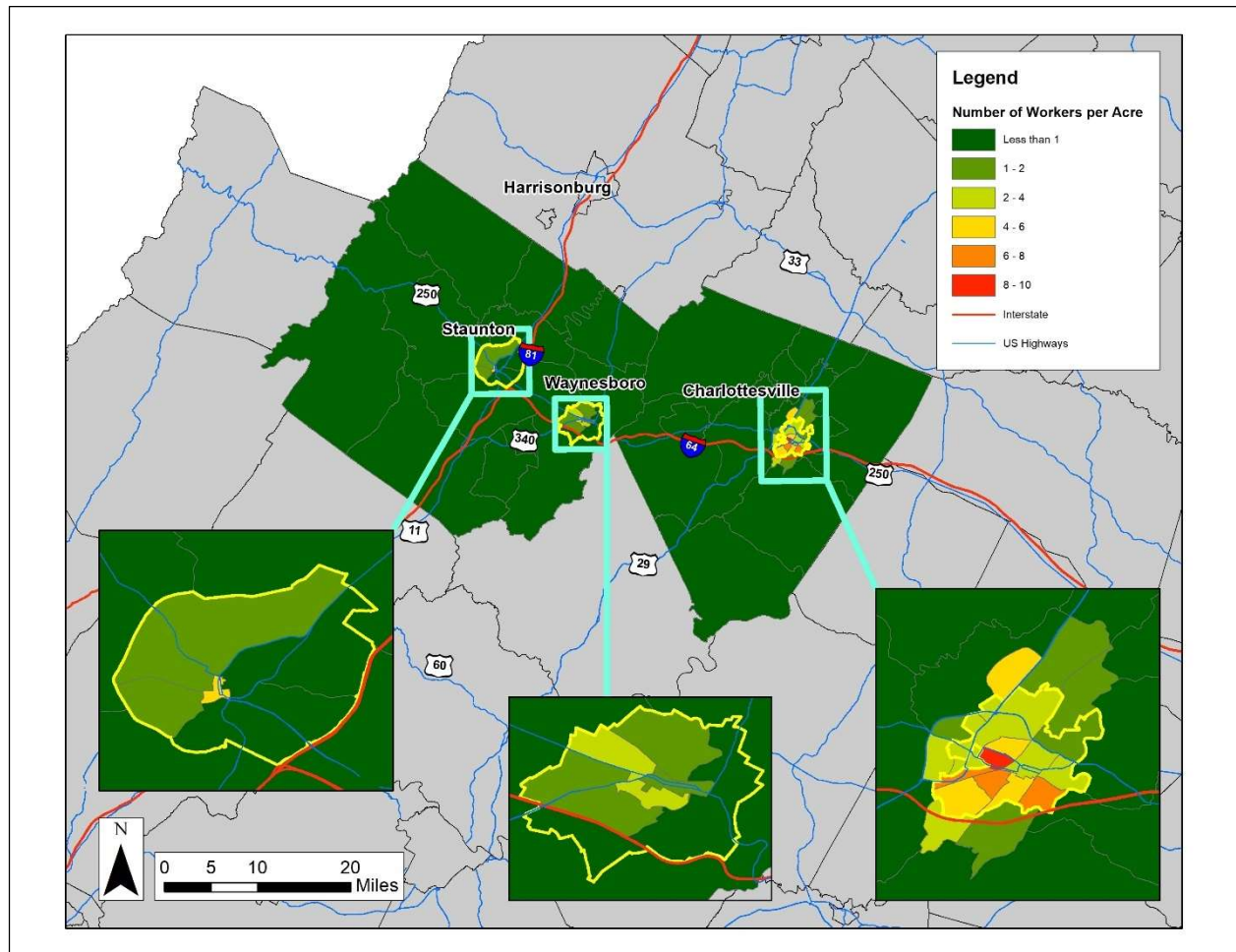
Chapter 3 of the Afton Express Transit Service Plan builds on the I-81/I-64 Inter-Regional Transportation Feasibility Study by reassessing transit needs for the Central Shenandoah Valley and Charlottesville study area. In addition to Charlottesville and Albemarle County, the study area evaluates the Central Shenandoah Valley, an area known as the Staunton-Augusta County-Waynesboro (SAW) region. Chapter 3 analyzes the geographic distribution of employment and high employment areas, environmental justice and transit-dependent populations, and existing trip patterns using Streetlight Data. This section concludes with a synopsis of potential stop locations and scheduling factors for consideration in the development of the bus service plan in **Chapter 4**.

POPULATION AND JOB LOCATIONS

REGIONAL DISTRIBUTION OF WORKING POPULATIONS AND EMPLOYMENT

The area analyzed as part of this plan encompasses Augusta and Albemarle Counties, and the cities of Staunton, Waynesboro, and Charlottesville. The three cities are the employment centers for the study area, and I-64 serves as the main artery for commuter traffic between the cities. Outside of these urban clusters, the study area is largely rural. **Figure 3** shows the geographic distribution of workers throughout the study area, shown as workers per acre by census tract. Charlottesville has the largest concentration of workers, with the majority of census tracts in the city having more than two workers per acre.

Figure 3: Geographic Distribution of Employment

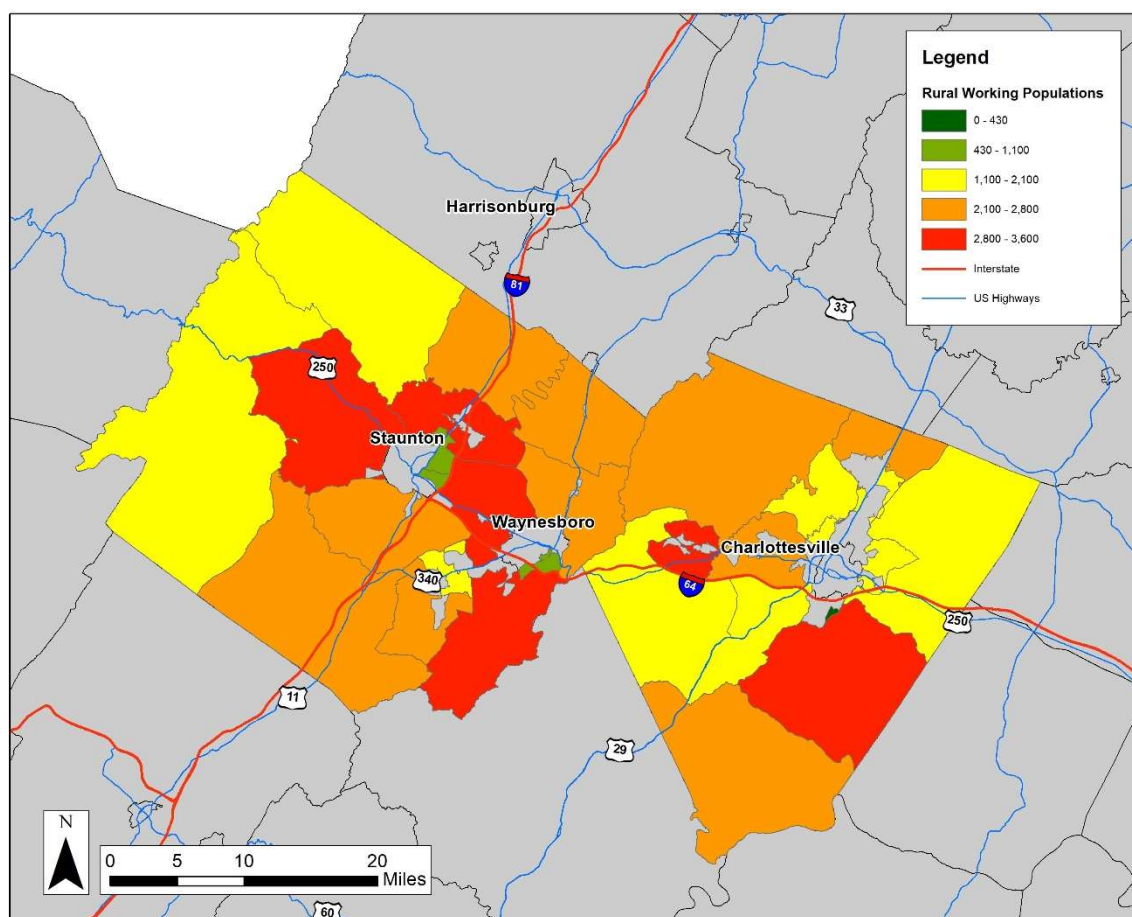


RURAL AREAS WITH WORKING POPULATIONS AND EMPLOYMENT

The United States Census Bureau defines an urbanized area as being comprised of a densely settled core of census tracts that meet the minimum population density requirements, along with adjacent territory containing non-residential urban land uses, as well as territory with low population density included to link outlying densely settled territory with the densely settled core. The Census Bureau identifies two types of urban areas: urbanized areas and urban clusters. Urbanized areas are locations of 50,000 or more people, while urban clusters are locations of at least 2,500 and less than 50,000 people. Rural areas encompass all population, housing, and land that is not included in the urban areas.⁹

Figure 4 shows the fully or partially rural census tracts within the study area. Rural census tracts include essentially all the area outside of Staunton, Waynesboro, Stuarts Draft, Crozet, and Charlottesville, excluding area within the city limits that has low density or is undeveloped, such as the census tract in Staunton that encompasses Betsy Bell Wilderness Park and the AG-Forestal Districts.

Figure 4: Rural Census Tract Working Populations



⁹ "2010 Census Urban and Rural Classification and Urban Area Criteria," United States Census Bureau Geography Program. Last Updated November 26, 2018. <https://www.census.gov/programs-surveys/geography/guidance/geo-areas/urban-rural/2010-urban-rural.html>

MAJOR EMPLOYERS IN HIGH EMPLOYMENT AREAS

The major employment hubs in the study area are Charlottesville, Waynesboro, and Staunton, as shown in **Figure 3**. The largest employers in Charlottesville and surrounding Albemarle County are detailed in **Table 5**.

Table 5: Largest Employers in Charlottesville

Employer	Number of Employees
University of Virginia	20,500
Sentara – Martha Jefferson Hospital	2,000+
State Farm Automobile Insurance	1,000+
City of Charlottesville	1,000+

UVA is the largest employer in the region and has an abundance of data on the employees' living locations and commuting patterns. Of UVA's 20,583 employees, approximately 7.2% (1,482) live in the Shenandoah Valley, including the SAW region, Rockbridge County, and Rockingham County. Approximately 65% (963) of UVA employees residing in the Shenandoah Valley live within a five-mile radius of the Waynesboro Park and Ride and City of Staunton. The number of UVA employees who live in the Shenandoah Valley has increased 14% between 2015 and 2019, indicating that UVA employees are increasingly looking for housing in the SAW region.

UVA tracks the home address zip code information of all parking permit holders. 1,262 parking permits are held by residents of zip codes in Augusta County and the Cities of Waynesboro and Staunton. Of the 1,262 permit holders, 82 hold occasional parking permits, 18 are in registered carpools, 532 have Blue or Red Commuter Parking Lot permits, 324 have close-in parking permits for the UVA Health System, and 306 have parking permits spread across the other campus locations. Some UVA employees work in leased office spaces that do not require UVA parking permits, such as the UVA Research Park.

UVA also tracks garage loads by time of day for the two hospital employee garages on 11th Street and Crispell Drive. The typical load-in occurs earlier than the typical work day and is between 6:00 AM and 9:00 AM. However, the afternoon load is more diverse and spans from 3:00 PM to 8:00 PM. UVA's high-frequency commuter bus, which serves hospital employees who park at Scott Stadium and John Paul Jones Arena, reflects these commuting patterns and runs from 5:00 AM – 9:00 AM in the morning from 2:30 PM - 8:00 PM in the evening. While most employees arrive and leave work around traditional work day hours, shift times for hospital staff vary dramatically. Typical shifts for hospital staff are detailed below:

- 7:00 AM – 7:00 PM
- 7:00 AM – 3:00 PM
- 8:00 AM – 5:00 PM
- 9:00 AM – 6:00 PM
- 11:00 AM – 7:00 PM
- 11:00 AM – 11:00 PM
- 3:00 PM – 11:00 PM
- 11:00 PM – 7:00 AM

The areas with the most employment in the SAW region are mainly concentrated in Waynesboro and Staunton, but there are some large employers located along I-64 in Augusta County. **Table 6** shows the largest employers in Waynesboro, Staunton, and Augusta County along I-64. Augusta Health and Augusta County Public Schools are the region's largest employers with over 1,000 employees. Augusta Health is located in Fishersville off of I-64, while Augusta County Schools have employees at multiple school locations throughout the county. Western State Hospital is a smaller medical facility located near I-81 and US 250 in Staunton, while Staunton City and Waynesboro City Schools have employees at locations

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dispersed throughout the cities. McKee, Hershey, and Target all have large facilities in Stuarts Draft and are significant sources of employment in the SAW region.

Table 6: Largest Employers in the SAW Region

Employer	Number of Employees
Augusta County Public Schools	1,000+
Augusta Health (Augusta County)	1,000+
Western State Hospital (Staunton)	500 – 999
Staunton City Schools (Staunton)	500 – 999
Waynesboro City Schools (Waynesboro)	500 - 999
McKee Food Corporation (Augusta County)	500 - 999
Hershey Chocolate of Virginia (Augusta County)	500 – 999

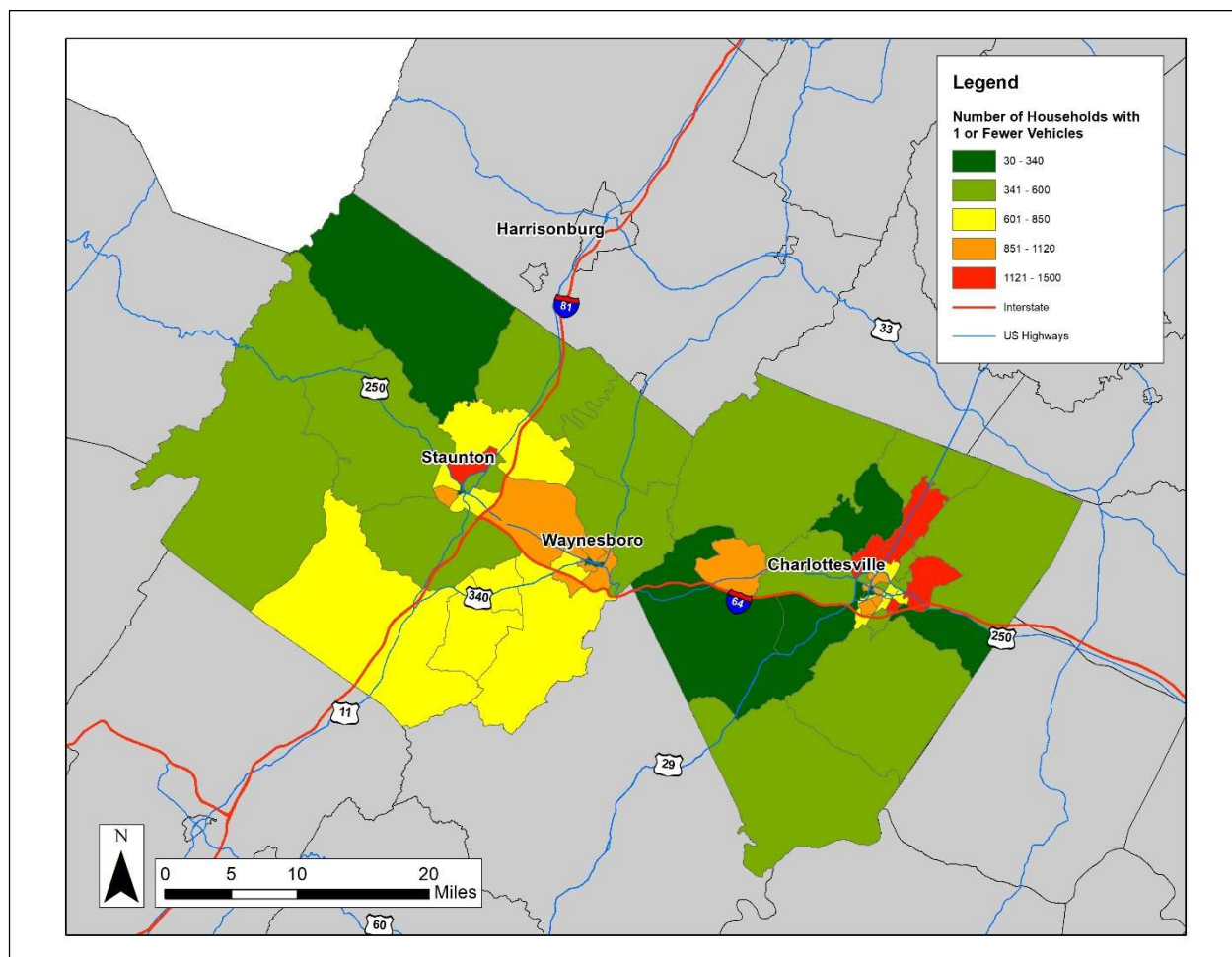
ENVIRONMENTAL JUSTICE AND TRANSIT DEPENDENT POPULATIONS

Environmental justice requires equitable provision of public services and impacts regardless of race, color, national origin, or income. Any proposed new transit service will need to be responsive to the needs of potentially vulnerable populations to ensure this equity. These populations include households with low vehicle ownership, low income households, individuals of non-white Hispanic or Latino origin, individuals with limited English proficiency, and individuals with disabilities. Data from the 2017 ACS 5-Year Estimates was used to analyze these populations and identify geographic distribution patterns within the study area.

LOW VEHICLE OWNERSHIP HOUSEHOLDS

Households identified as having low vehicle ownership have access to one or no vehicles. Identifying these households is especially important for transit planning since these households stand to benefit the most from new transit services. Of the 106,818 households in the study area, 40,930 (38.3%) own one or fewer vehicles. 6,434 (6%) of those households own no cars at all. **Figure 5** shows the geographic distribution of low vehicle ownership households in the study area. The greatest concentrations of households with low vehicle ownership are clustered in the more urbanized areas of Staunton and Charlottesville, but there are also a significant number of low vehicle ownership households in census tracts encompassing Fishersville, Waynesboro, and Crozet. Some census tracts outside of urbanized areas, such as those around Stuarts Draft and Fishersville, have a proportionally large number of households with low vehicle ownership, indicating that there is a need for rural public transportation services, or supplemental connections to transit services in the urbanized areas.

Figure 5: Geographic Distribution of Low Vehicle Ownership Households

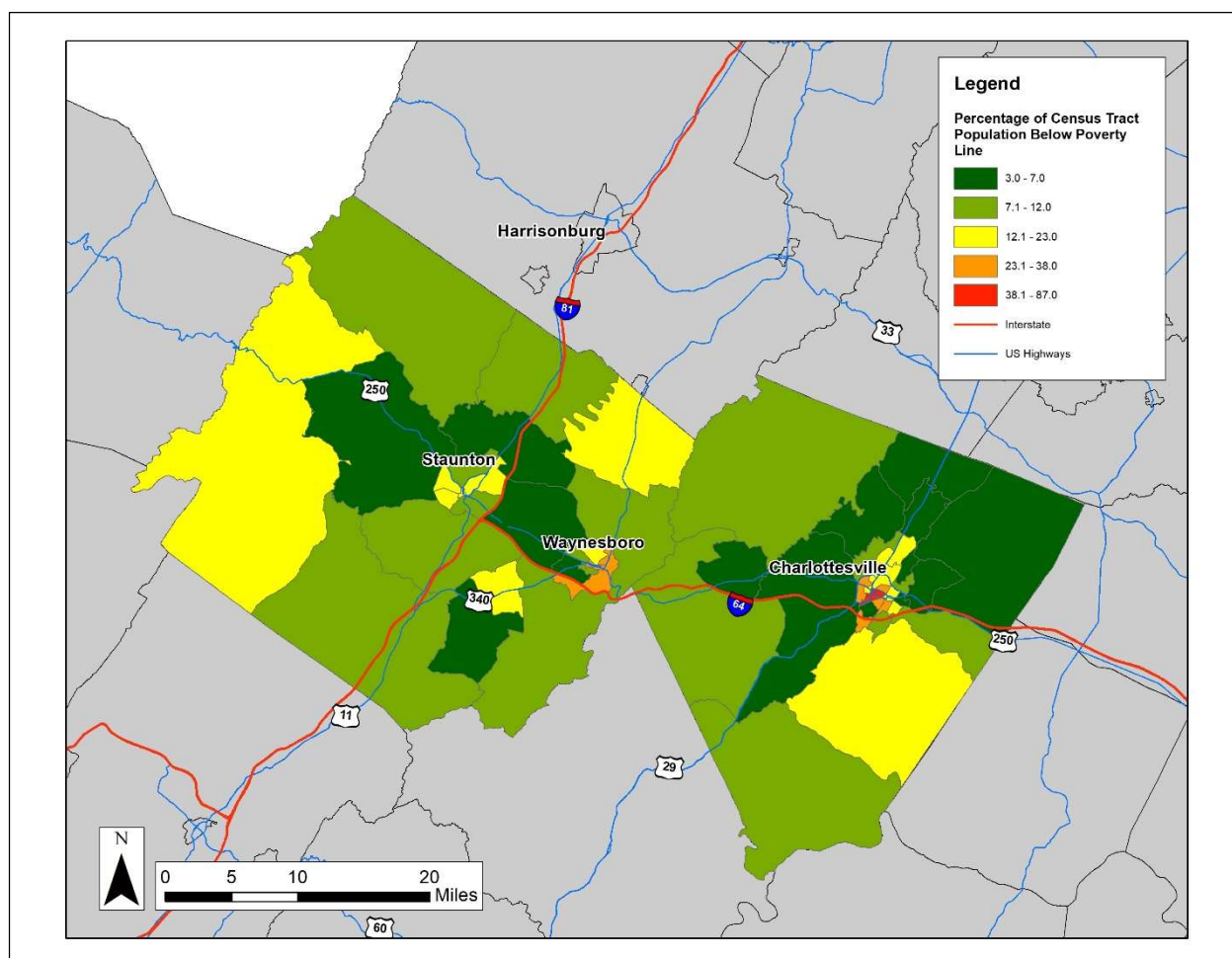


LOW INCOME HOUSEHOLDS

A trend of rising housing costs in the Charlottesville area has led some residents of the region to seek more affordable housing options in the SAW Region, and this is especially true for households below the poverty line facing rising housing costs. Of the 256,525 people living within the study area, approximately 33,341 people live below the poverty line, or approximately 13% of the entire study area population.

Figure 6 shows the percentage of the population in each census tract identified living with an income below the poverty line. The greatest numbers of people living below the poverty line are found in the Waynesboro and Charlottesville urban areas, with a smaller cluster in Staunton.

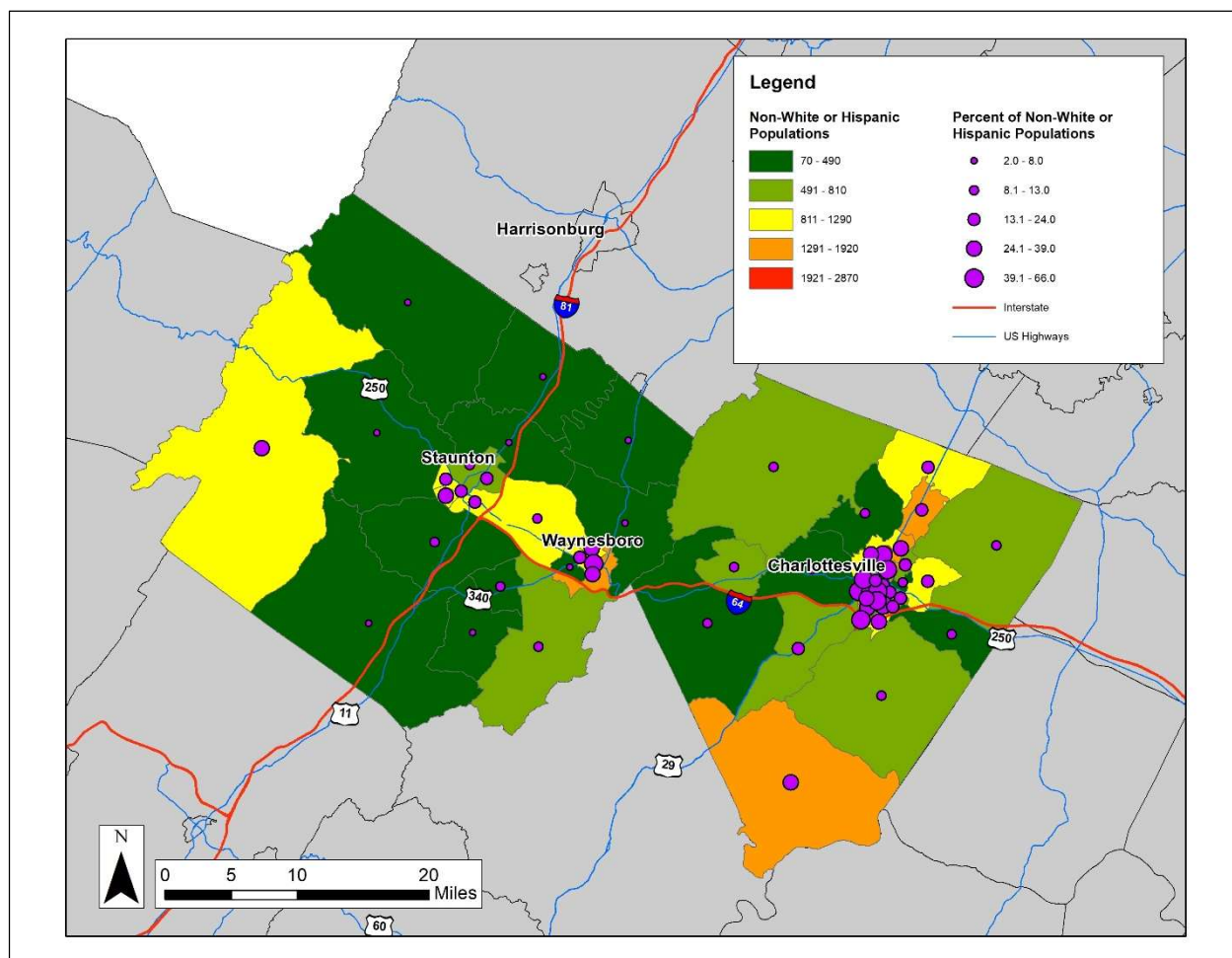
Figure 6: Geographic Distribution of Population Living Below the Poverty Line



NON-WHITE OR HISPANIC POPULATIONS

Of the 271,875 individuals for which racial and ethnic origin data was available, 55,762 (20.5%) identified as being non-white or Hispanic. **Figure 7** shows the geographic distribution of non-white populations within the study area. The highest concentrations of non-white or Hispanic populations are in Charlottesville, Staunton, and Waynesboro.

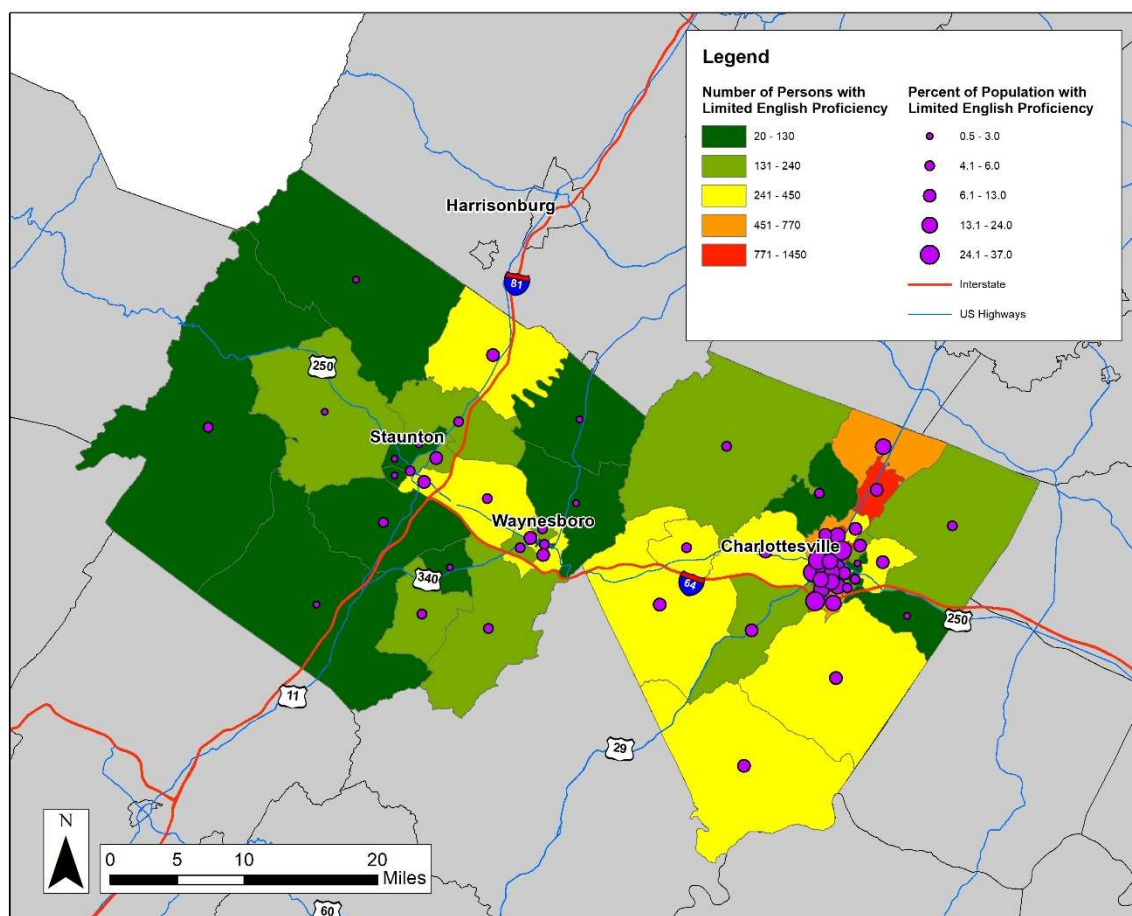
Figure 7: Geographic Distribution of Non-White or Hispanic Populations



POPULATIONS WITH LIMITED ENGLISH PROFICIENCY

Persons with limited English proficiency are those who speak a language other than English at home and identify as speaking English less than “very well.” The geographic distribution of persons with limited English proficiency is shown in **Figure 8**. Within the study, the majority of the limited English proficiency population resides in the City of Charlottesville and Augusta County. However, a higher percentage of Charlottesville’s population has limited English proficiency compared to Augusta County. Of the 257,360 individuals in the study area for which language information was available, approximately 3% (7,780) identified as having limited English proficiency. Charlottesville and Albemarle County comprise 6,268 of the 7,780 individuals with limited English proficiency (80.6%).

Figure 8: Geographic Distribution of Individuals with Limited English Proficiency

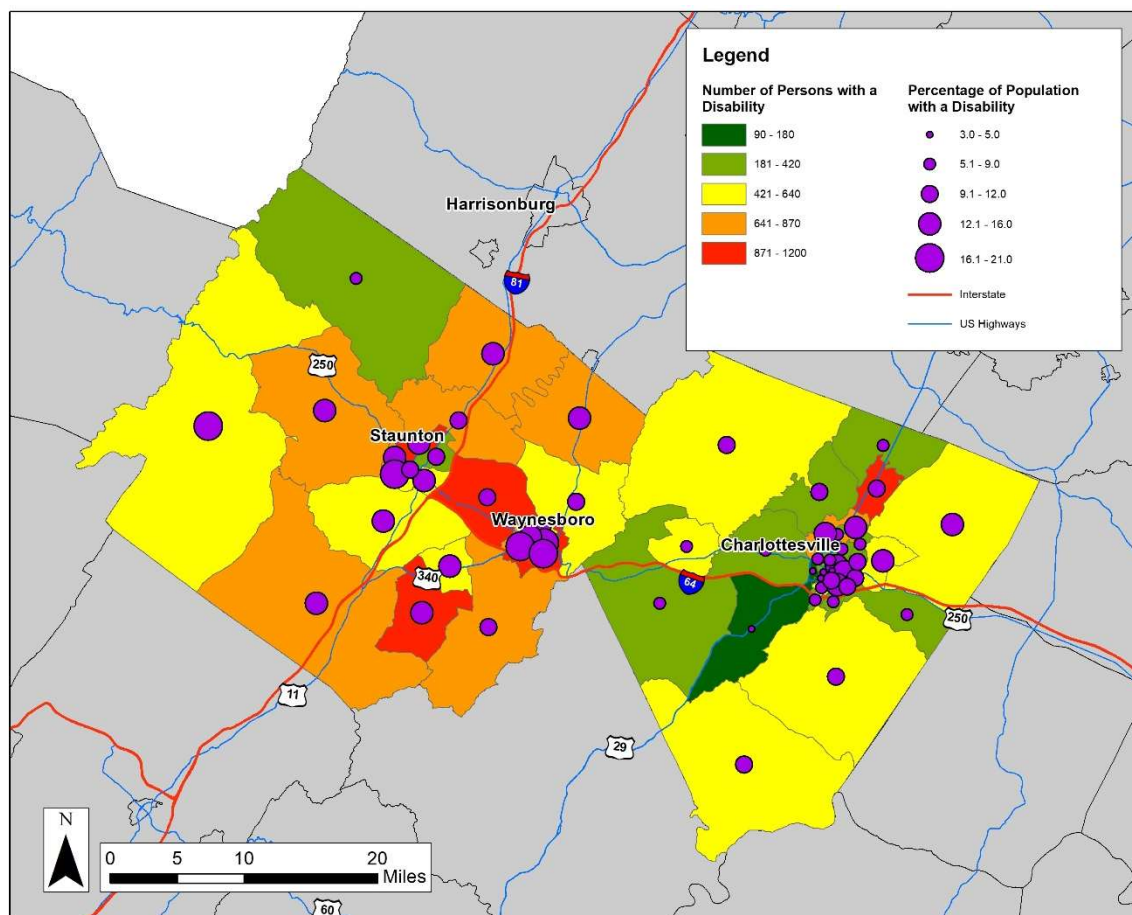


POPULATIONS WITH DISABILITIES

Of the nearly 2 million people with disabilities in the United States, approximately 560,000 of these people never leave home because of transportation difficulties.¹⁰ Existing transit services in the region, namely BRITE and JAUNT, provide paratransit services specifically designed to provide transportation services for people with disabilities. Future transit service should also be designed with respect to populations with disabilities and limited mobility to provide more effective and reliable transportation options. This problem is especially pertinent to the SAW region, which is mostly rural outside of the more developed Staunton and Waynesboro urban areas, with long travel times and limited transportation options to the advanced medical facilities and UVA Health System in Charlottesville. **Figure 9** shows the total number of persons with disabilities in each census tract, as well as the percentage of people with disabilities in each census tract relative to the entire population. The highest concentrations of persons with disabilities are found in census tracts encompassing Staunton, Fishersville, Waynesboro, and Charlottesville. Of the 265,624 people for which disability data was available, approximately 29,387 (11%) have a disability. 116,008 of these people live in census tracts in the SAW region, of which 16,085 (13.9%) have a disability, a slightly higher percentage than the study area as a whole. The main difference in the geographic distribution of individuals with a disability between Charlottesville/ Albemarle County and the SAW region is that rural census tracts in the SAW region have a significantly higher number and percentage of the total population with a disability than census tracts in Augusta County and Charlottesville, indicating that the concentration of persons with disabilities is an important issue for rural areas as well as urban areas, particularly in the SAW region.

¹⁰ Oberlink, Maria. 2008. "Opportunity for Creating Liveable Community," Center for Home Care Policy and Research, AARP.

Figure 9: Geographic Distribution of Individuals with Disabilities



EXISTING TRIP PATTERNS

Origin and destination data as well as travel time information was analyzed to identify more specific transit needs within the study area. Evaluating origin and destination pairs and travel time patterns will assist in the identification of potential routes and planning of schedules for the new bus service connecting the SAW region and Charlottesville. To determine potential benefits of service to identified origins and destinations, costs of trips between major pairs were developed to compare the benefits of transit for travelers to their existing travel costs.

DISTRIBUTION OF ORIGINS AND DESTINATIONS

Trip patterns were analyzed using origin and destination data obtained from StreetLight to understand regional transportation flows in the study area. The peak AM and PM peak times were analyzed to determine trip patterns during the morning and evening commutes. The data presented in this section reflects the trips to and from census tracts within the study area. Census tracts were used as the geographic unit for this analysis, rather than a smaller unit like census block or block group, due to concerns that the limited sample sizes of cell phone and GPS data on which StreetLight data relies may produce imprecise results in smaller geographic units, particularly in rural areas. While the census tract-based results provided a more easily verifiable picture of travel distribution in the region, the size of the tracts does limit the ability for this analysis to identify specific destinations.

Figure 10 shows the AM peak origin and destination data for travelers within the study area. Most AM trips originated in Waynesboro (1184), followed by Stuarts Draft/Lyndhurst (702), Staunton (424), and Fishersville (331). Significantly fewer trips begin in Albemarle County and Charlottesville during the AM peak period, with all origins having fewer than 500 trips. The AM peak destinations are more evenly distributed between the SAW region and Charlottesville/Albemarle County. Waynesboro was the destination with the most trips with 520, but Western and Southern Albemarle (442), Downtown Charlottesville (410), and Pantops/Shadwell (346) followed closely behind. Staunton and the rest of Augusta County did not receive many trips during the AM peak period. This data indicates that traffic flows in the AM peak are mostly one-directional with residents in the SAW region travelling via I-64 to several locations in the Charlottesville area.

Figure 10: AM Peak Period Origins and Destinations

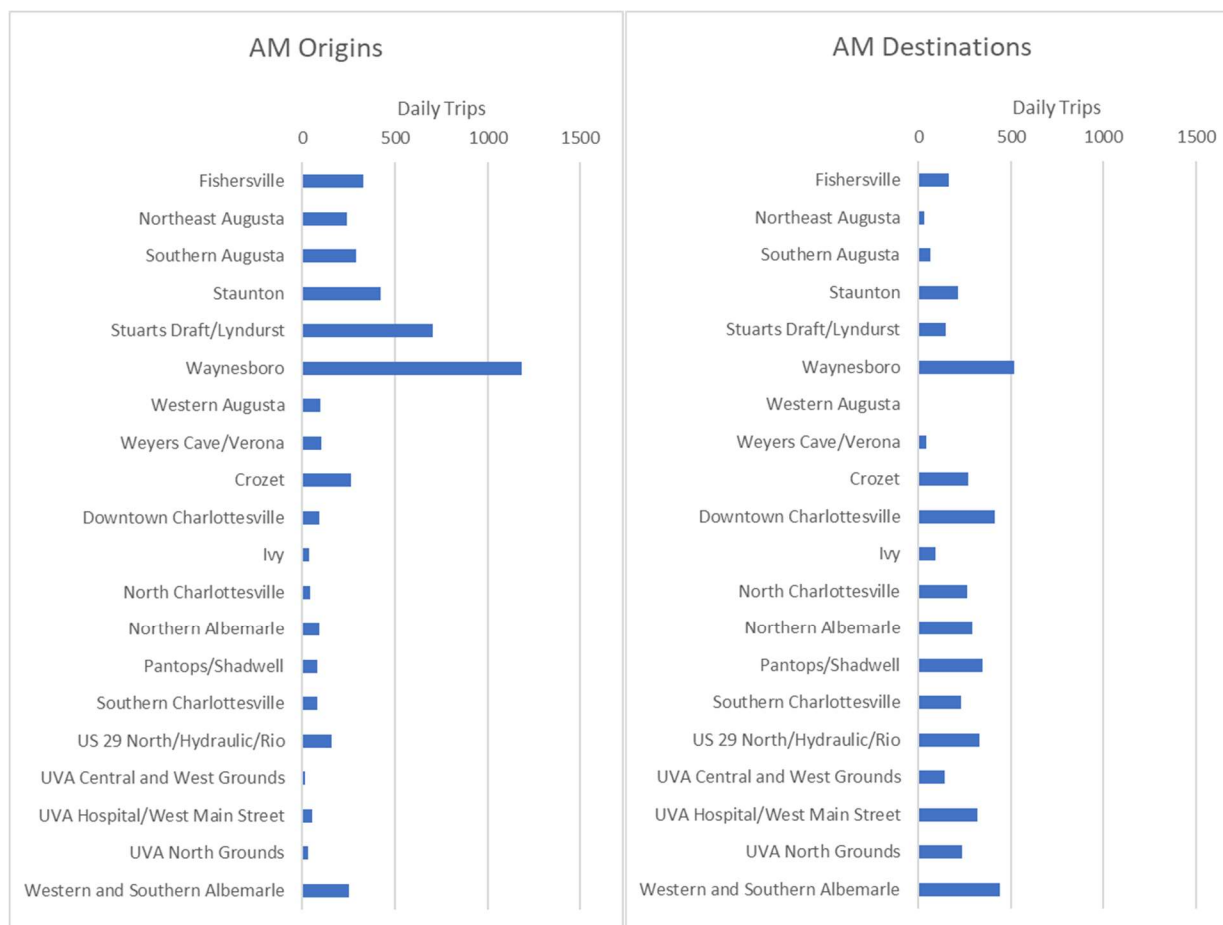
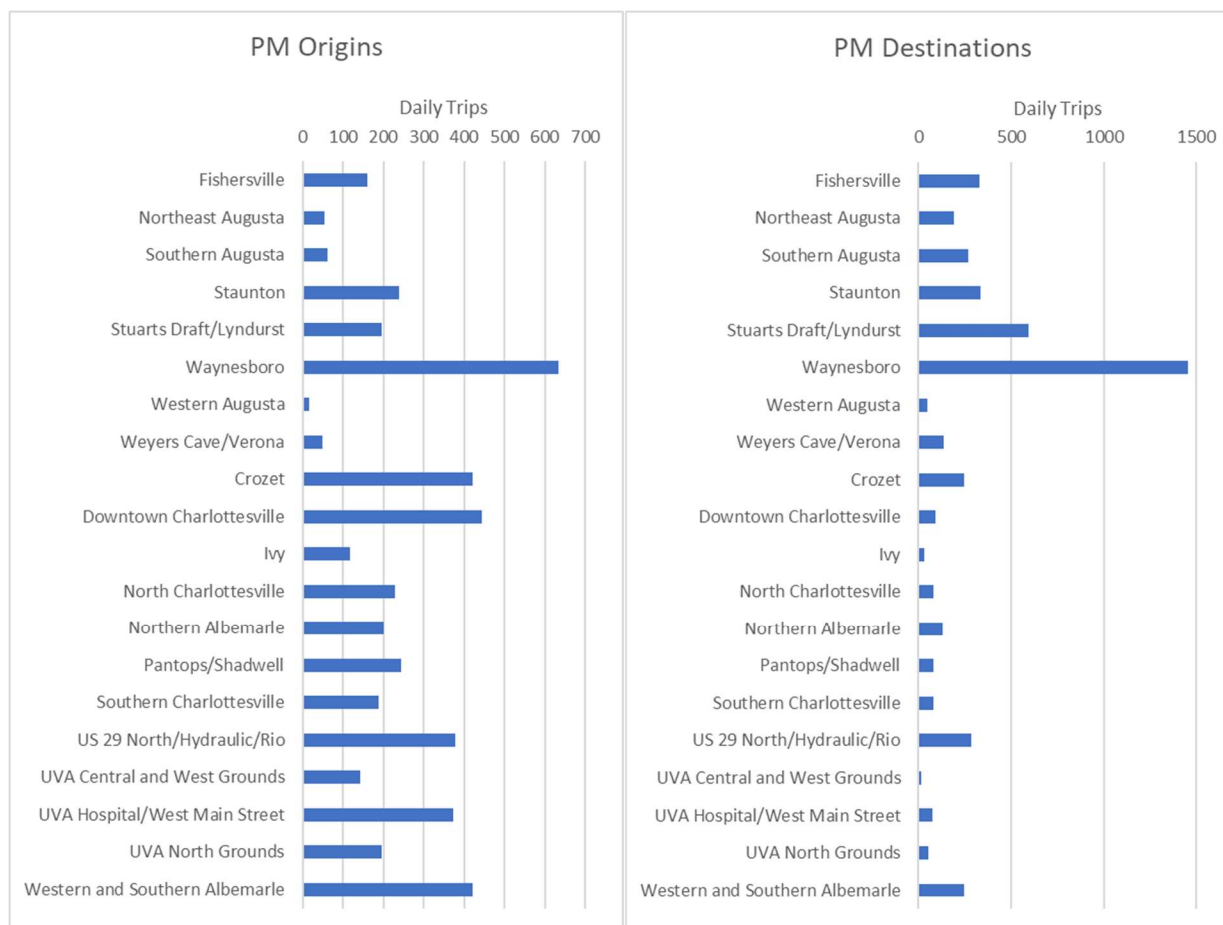


Figure 11 shows the PM period origins and destinations for the study area. In contrast to the AM peak period, the locations with the most PM origins were in Charlottesville and Albemarle County. Downtown Charlottesville (444), Western and Southern Albemarle (422), Crozet (421), and US 29 North/Hydraulic Road/Rio Road (379) had the most trip origins during the PM peak. Waynesboro still had the highest number of PM peak period origins (634), but the share of PM origins in the SAW region is proportionally less than the AM peak origins for the region. However, locations in the SAW region were the main PM peak destinations with Waynesboro (1,457), Stuarts Draft/Lyndhurst (592), and Staunton (332) having the most PM peak trip destinations. Locations in Charlottesville and Albemarle County had proportionally less PM peak trip destinations compared to AM trip destinations. This data indicates that traffic flows in the PM peak are one-directional, with the majority of commuters travelling on I-64 from Albemarle County and Charlottesville to locations in the SAW region.

Figure 11: PM Peak Period Origins and Destinations



ORIGIN AND DESTINATION PAIRS

Based on the AM and PM peak period origin-destination data presented above, it is evident that traffic typically flows from the SAW region to the Charlottesville-Albemarle County area in the morning hours and flows in the opposite direction in the evening. Analyzing the top origin and destination pairs for these peak periods provides further information about where people are travelling in the region. **Table 7** and **Table 8** show the eastbound and westbound origin destination pairs with the most trips during the AM and PM peak periods. These two tables reflect the regional transportation patterns observed in the AM and PM peak period origin and destination data but identify even more specific commuting patterns that could be useful for the development of a bus service plan.

Table 7: Top Eastbound Origin and Destination Pairs

AM Peak Period		PM Peak Period	
Trip Pair	Number of Daily Trips	Trip Pair	Number of Daily Trips
Waynesboro to UVA Hospital	179	Waynesboro to US 29 North/Hydraulic Road/Rio Road	166
Waynesboro to Crozet	156	Waynesboro to Crozet	145
Waynesboro to US 29 North/Hydraulic Road/Rio Road	147	Waynesboro to Western and Southern Albemarle	98
Waynesboro to Western and Southern Albemarle	147	Staunton to US 29 North/Hydraulic Road/Rio Road	66
Stuarts Draft to US 29 North/Hydraulic Road/Rio Road	142	Staunton to Western and Southern Albemarle	63
Waynesboro to Downtown Charlottesville	127	Fishersville to Crozet	61
Southern Augusta (Mint Spring/Jolivue) to US 29 North/Hydraulic Road/Rio Road	123	Waynesboro to Pantops/Shadwell	50
Staunton to Pantops/Shadwell	105	Waynesboro to UVA Hospital	49
Waynesboro to Northern Albemarle	105	Stuarts Draft to US 29 North/Hydraulic Road/Rio Road	48
Waynesboro to Pantops/Shadwell	99	Waynesboro to Southern Charlottesville	40
Stuarts Draft to UVA Hospital	94		

Going eastbound during AM peak period, the three pairs with the highest number of trips are Waynesboro to UVA Hospital, Waynesboro to Crozet, and Waynesboro to US 29 North/Hydraulic Road/Rio Road. These top three pairs reflect the regional transportation flows observed looking at number of trips travelled during the AM peak period, but these pairs also indicate that while the majority of commuters are coming from the densest areas in the SAW region, namely Waynesboro, Staunton, and Stuarts Draft, they are going to a greater variety of places in Charlottesville and Albemarle County. Significantly fewer trips are made going eastbound during the PM peak period, further reinforcing that traffic in the study area is mostly one-directional. Only 786 eastbound trips are made during the PM peak period, compared to the 1,424 trips during the AM peak period. Waynesboro is the top origin for trips in the PM peak period going to US 29 North/Hydraulic Road/Rio road, Crozet, and Western and Southern Albemarle.

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Table 8: Top Westbound Origin and Destination Pairs

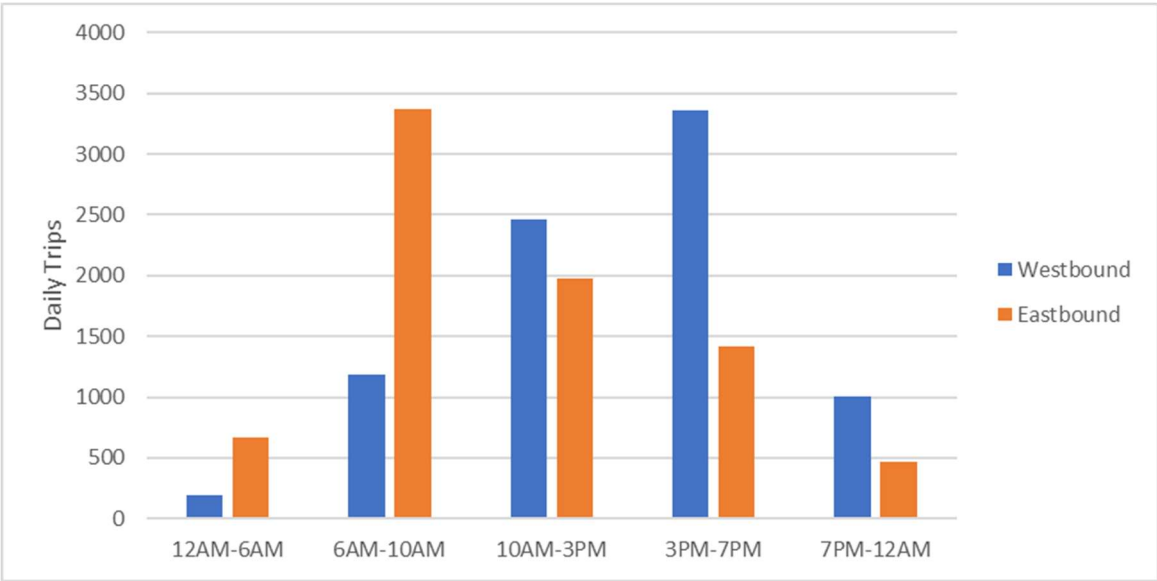
AM Peak Period		PM Peak Period	
Trip Pair	Number of Daily Trips	Trip Pair	Number of Daily Trips
US 29 North/Hydraulic Road/Rio Road to Waynesboro	140	Crozet to Waynesboro	288
Crozet to Waynesboro	108	Western and Southern Albemarle to Waynesboro	232
Western and Southern Albemarle to Staunton	83	UVA Hospital to Waynesboro	216
Crozet to Fishersville	72	US 29 North/Hydraulic Road/Rio Road to Waynesboro	159
Pantops/Shadwell to Waynesboro	61	Downtown Charlottesville to Waynesboro	150
Crozet to Staunton	61	US 29 North/Hydraulic Road/Rio Road to Stuarts Draft	141
Western and Southern Albemarle to Waynesboro	59	UVA Hospital to Stuarts Draft	111
Southern Charlottesville to Stuarts Draft	44	US 29 North/Hydraulic Road/Rio Road to Southern Augusta	96
Western and Southern Albemarle to Stuarts Draft	35	UVA Central Grounds to Waynesboro	88
UVA Hospital to Waynesboro	34	US 29 North/Hydraulic Road/Rio Road to Staunton	88
Downtown Charlottesville to Waynesboro	33	Pantops/Shadwell to Waynesboro	81

There are fewer westbound trips than eastbound trips during the AM peak period. Specifically, there are 1,424 eastbound AM trips and just 730 westbound AM trips. Going westbound during the AM peak period, the most common origin-destination pairs are US 29 North/Hydraulic Road/Rio Road to Waynesboro, Crozet to Waynesboro, and Western and Southern Albemarle to Staunton. However, there are many more westbound trips than eastbound trips during the PM peak period. Specifically, there are 786 eastbound trips during the PM peak period, and 1650 westbound trips during the PM peak period. Origin-destination pairs with the most trips going westbound during the PM peak period are Crozet to Waynesboro, Western and Southern Albemarle to Waynesboro, and UVA Hospital to Waynesboro.

TIME PATTERNS OF COMMUTING

In addition to understanding where people are commuting to and from, it is equally as important to understand when people are travelling. **Figure 12** shows the number of trips occurring during various time segments throughout the day going eastbound and westbound. This data reflects the travel patterns observed in the AM/PM origin and destination data, as well as the top eastbound and westbound origin destination pairs, but shows more convincingly that commuting patterns in the region are one-directional. During the AM peak period (6:00 AM – 10:00 AM), 3,373 trips go eastbound with just over 1,190 going westbound. In contrast, during the PM peak period (3:00 PM – 7:00 PM), 3,358 trips go westbound, with just 1,413 going eastbound. The number of AM period eastbound trips and the number of PM period westbound trips are nearly identical, further reinforcing the pattern of one-directional commuting in the AM and PM peak periods.

Figure 12: Temporal Distribution of Eastbound and Westbound Trips



Based on the weighted average mode share of peer services (2.86%), transit demand is estimated to be approximately 129 trips in the AM peak period and 135 trips in the PM peak period. **Table 9** shows the estimated peak period transit demand on the Afton Express Corridor for the AM and PM peak periods.

Table 9: Estimated Peak Period Transit Demand in the Afton Express Corridor

	AM Peak	PM Peak
Eastbound	95 trips	40 trips
Westbound	34 trips	95 trips

COST OF DRIVING

Owning and maintaining a vehicle currently provides the only mode of travel between the SAW region and the Albemarle County/Charlottesville area and is becoming increasingly expensive. Reliable transit can reduce some of the costs associated with driving a vehicle such as the amount of money spent on fuel and maintenance.

The American Public Transportation Association (APTA) created a Fuel Savings Calculator that estimates the total cost of driving compared to public transportation when factoring in a vehicle's gas mileage, the price of gas per gallon, number of miles travelled on a typical commuter trip, the size of the vehicle, the cost of parking, and the round-trip cost of taking public transportation.¹¹ The size of the vehicle is sorted into five types: small car, medium car, large car, mini-van, and SUV. The size of vehicle includes the amount of money spent on maintenance and tires per mile, according to AAA's 2012 *Your Driving Costs* report.

The average commute from Staunton to Charlottesville is roughly 40 miles one way along I-64. Assuming the average commuter drives a "medium car" with a 28 MPG gas mileage at a price of \$2.35, the yearly cost of commuting by car is estimated to be \$2,657.83, according to APTA's Fuel Savings Calculator. Assuming a \$3.00 one-way fare from Staunton to Charlottesville, the estimated yearly cost of commuting by public transit is \$1,440, about \$1,218 less than the cost of driving. Note that the driving costs do not include parking, which may or may not represent an additional benefit to transit travel, depending on parking availability and employer subsidies for priced parking. Table 10 details the cost of driving compared to public transportation from a few origins in the Shenandoah Valley.

Table 10: Cost of Driving Calculator – Estimated Savings from Taking Transit

	Staunton to Charlottesville	Stuarts Draft to Charlottesville	Fishersville to Charlottesville	Waynesboro to Charlottesville
Vehicle Gas Mileage	30 MPG	30 MPG	30 MPG	30 MPG
Price of Gas per Gallon	\$2.35	\$2.35	\$2.35	\$2.35
Round Trip Length	80 Miles	70 Miles	68 Miles	56 Miles
Size of Vehicle	Medium Car	Medium Car	Medium Car	Medium Car
Daily Round Trip Cost of Public Transit	\$6.00	\$6.00	\$6.00	\$6.00
Yearly Cost of Commuting by Vehicle	\$2,657.83	\$2,325.60	\$2,259.15	\$1,860.48
Yearly Cost of Commuting by Public Transportation	\$1,440.00	\$1,440.00	\$1,440.00	\$1,440.00
Estimated Savings	\$1,217.83	\$885.60	\$819.15	\$420.48

¹¹ "Fuel Savings Calculator," American Public Transportation Association (APTA) <https://www.publictransportation.org/tools-calculators/fuel-savings-calculator/>

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In addition to the cost to the consumer, there is also an environmental cost to driving. Using the calculations above, one person could reduce their fuel consumption by 1.86 to 2.67 gallons of fuel per day (dependent on the origin and destination) by taking transit to work. According to the EPA, 8,887 grams of CO₂ are emitted for every gallon of gasoline consumed.¹² Thus, a person could reduce their carbon footprint by 15,530 to 23,728 grams of CO₂ per day by riding transit. Assuming 264 trips switch to transit during the peak period, the daily reduction in automobile CO₂ emissions of this transit service would be between 4,100 and 6,264 kilograms of CO₂. This translates to an annual reduction of automobile CO₂ emissions between 1,037,300 and 1,584,792 kilograms of CO₂ per year. While the buses providing transit service in the corridor will emit CO₂ themselves, the reduction of automobile driving will provide a net benefit to air quality and emissions impacts in the region.

NEEDS ANALYSIS SUMMARY

The employment, and demographics, and existing trips analyses presented in this chapter indicate a clear need for transit service between the SAW region and Charlottesville. Employment within the study area was clustered in the urban areas. Charlottesville, Waynesboro, and Staunton had the highest density of workers, indicating these locations as key destinations for commuters. Moreover, there were significant rural working populations in the SAW region around Stuarts Draft and Fishersville.

In addition to a need for providing access to jobs and medical services, there was a need for transit service to environmental justice and transit-dependent populations. For instance, there was a significant number of low vehicle ownership households and individuals living below the poverty line in Charlottesville and Waynesboro. There were also large concentrations of non-white ethnic and racial groups and individuals with limited English-speaking proficiency in the Charlottesville area, Waynesboro, and to a lesser extent, Staunton. The geographic distribution of individuals with disabilities proved to be more dispersed, especially in the SAW region, which included several rural census tracts with high proportions of individuals with disabilities. This demographic analysis shows that while most transit needs are in Charlottesville, Waynesboro, and Staunton, significant transit need also exists in rural areas.

The existing trip analysis indicated that most of the traffic flows from the SAW region to the Charlottesville area in the morning, and in the opposite direction in the evening. Along with this one-directional travel trend, the majority of trips during peak commuting times began and ended in a few locations. In the SAW region, most trips began or ended in Waynesboro, Staunton, or Stuarts Draft, with Waynesboro consistently being the highest trip origin and destination. Trip origins and destinations were generally more evenly distributed across several locations in the Charlottesville/Albemarle County area, but a significant proportion of all the trips began in Downtown Charlottesville and UVA.

¹² "Greenhouse Gas Emissions from a Typical Passenger Vehicle," United State Environmental Protection Agency (EPA) 2018. <https://nepis.epa.gov/Exe/ZyPDF.cgi?Dockey=P100U8YT.pdf>

IDENTIFIED NEEDS

STOP LOCATIONS

Analyzing the origin-destination data shows that there are several potential stop locations for a transit service connecting the SAW region and Charlottesville, many of which were highlighted in the I-81/I-64 Inter-Regional Public Transportation Feasibility Study. Most of the trips observed either began or ended in four key locations in the SAW region: Waynesboro, Stuarts Draft, Staunton, and Fishersville. The largest portion of trips began and ended in Waynesboro, making the City of Waynesboro (for commuters from Charlottesville) and the Waynesboro Park and Ride (for commuters traveling to Charlottesville) ideal locations for stops. Staunton was also a key origin and destination, but to a lesser extent than Waynesboro, suggesting that perhaps not all buses operating on the route would begin and end in Staunton. Trip demand in Stuarts Draft and Fishersville could be served by a proposed Park and Ride at the existing BRITE Transit facility near Exit 91, given its proximity to I-64 and central location between Stuarts Draft and Fishersville.

A significant portion of the trips to and from Charlottesville and Albemarle County began or ended at UVA and Downtown Charlottesville. The proportion of trips and their location adjacent to I-64 make the UVA academic campus, UVA Health Services, and Downtown Charlottesville ideal locations for stops. Crozet was also identified as a key origin and destination to and from the SAW region. There is currently a SmartScale application in process for a 24-space Park and Ride with transit infrastructure at Exit 107 on US 250 in Yancey Mills that could be an ideal stop location for providing service to commuters traveling to Waynesboro from Crozet. A major cluster of jobs in the Crozet area is found at local schools located between this potential Park and Ride location and downtown Crozet, which may represent a future opportunity for providing transit service to school employees commuting from Waynesboro.

SCHEDULING FACTORS

As part of the I-81/I-64 Inter-Regional Public Transportation Feasibility Study, a 35-question survey was completed by 609 commuters in the study area, which included scheduling factors as a significant component. Results from the survey indicate that about half of the respondents (48%) travel on the I-81/I-64 corridor between Harrisonburg and Charlottesville every weekday. 18% of respondents reported travelling on the corridor 3-4 weekdays per week. When asked about commute departure and arrival times, responses varied among the survey respondents. 7:01 – 7:30 AM and after 9:30 AM had the highest response rates of all the 30-minute departure time intervals with (17%) each, followed by 6:31 AM – 7:00 AM and 7:31 AM – 8:00 AM with approximately 13% and 11% of responses, respectively. Approximately 60% of all survey respondents reported leaving between 6:01 AM and 8:30 AM.

There was an equal amount of variation in the morning commute arrival time responses. The most frequent response was after 9:30 AM with 25% of the responses followed by 7:31 AM – 8:00 AM and 8:01 – 8:30 AM with 15% of commuters each. The most common afternoon commute departure time was 5:01 PM – 5:30 PM with approximately 23% of commuters, followed by 4:31 PM – 5:00 PM and after 6:30 PM with 16% of commuters each. Approximately 59% of commuters reported leaving between 4:01 PM and 6:00 PM.

Based on these results, the Feasibility Study recommended four eastbound buses in the morning beginning with the first at 5:50 AM and the last at 10:45 AM, and just one in the evening leaving at 5:15

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PM. For westbound service, the Study recommended three trips in the morning with the first bus leaving at 7:00 AM and the last at 8:45 AM. The Feasibility Study recommended four buses in the evening, with the first leaving at 2:15 PM and the last leaving at 7:40 PM.

These results generally reflect the observations made of peer transit services that accommodate commuting habits. Morning and evening departure times among routes varied, but commuter routes generally operated in the morning between 5:30 AM and 9:00 AM, and between 4:00 and 7:00 PM in the evening. A characteristic among all the schedules of the peer transit services was that not all the buses started at the same origin. For instance, the first bus may have left at the third stop along the route as opposed to the first. This should also be a consideration for the Afton Express Service since Waynesboro has been identified as a key origin for commuters and destination for reverse commuters traveling westbound in the morning, while Staunton has significantly fewer Charlottesville-bound commuters.

In addition to the survey information from the Feasibility Study and the background research on peer transit services, the commuter information provided by UVA can help understand when transit service is needed. According to UVA, parking garages typically fill between 6:00 AM and 9:00 AM in the morning and empty between 3:00 PM and 8:00 PM in the evening. Moreover, UVA's high frequency commuter bus runs from 5:00 AM to 9:00 AM in the morning and from 2:30 PM to 8:00 PM in the evening. The commuting patterns of UVA employees, the largest employer in the area, generally reflect the commuting patterns of the Feasibility Study survey respondents and the operating schedules of the peer transit agencies.

CHAPTER 4: SERVICE AND FINANCIAL PLAN

Following the I-81/I-64 Inter-Regional Transportation Feasibility Study, a service plan was developed for the initial corridor to be served between Staunton, Waynesboro, and Charlottesville. This service was to be funded in large part initially using DRPT Demonstration Grant funds. Since many of the needs identified in the I-81/I-64 Inter-Regional Transportation Feasibility Study had been addressed by recent transit developments of the Virginia Breeze and local BRITE services, DRPT funded additional study of transit needs between Staunton, Waynesboro, and Charlottesville and directed CSPDC to identify service improvements and provide a financial plan that would ensure that transit service in the corridor would be successful during and beyond the Demonstration Grant funding period.

Where **Chapter 3** of the Afton Express Transit Service Plan builds on the I-81/I-64 Inter-Regional Transportation Feasibility Study by reassessing transit needs for the Central Shenandoah Valley and Charlottesville study area, **Chapter 4** updates the service plan in response to those needs and provides a plan for operating service for three full years. The service plan identifies stop locations that are responsive to existing origins and destinations of trips crossing Afton Mountain, estimates potential ridership in corridor using StreetLight data, and provides a schedule that would be useful to commuters and employers. The financial plan considers capital and operating costs for the provision of service and funds those expenses with estimated fare income and state and federal grant assistance, while providing a framework for attaining local match commitments from partnered jurisdictions on both sides of Afton Mountain.

STOP LOCATIONS AND ESTIMATED RIDERSHIP

The needs analysis in **Chapter 3** determined that employment, demographics, and existing trips illustrated a need for transit service that connected the urban employment centers in Staunton, Waynesboro, and Charlottesville, as well as provide access to rural communities like Stuarts Draft and Fishersville. This section identifies stop locations that would serve these needs and provides an estimate for the number of daily riders who would benefit from these locations.

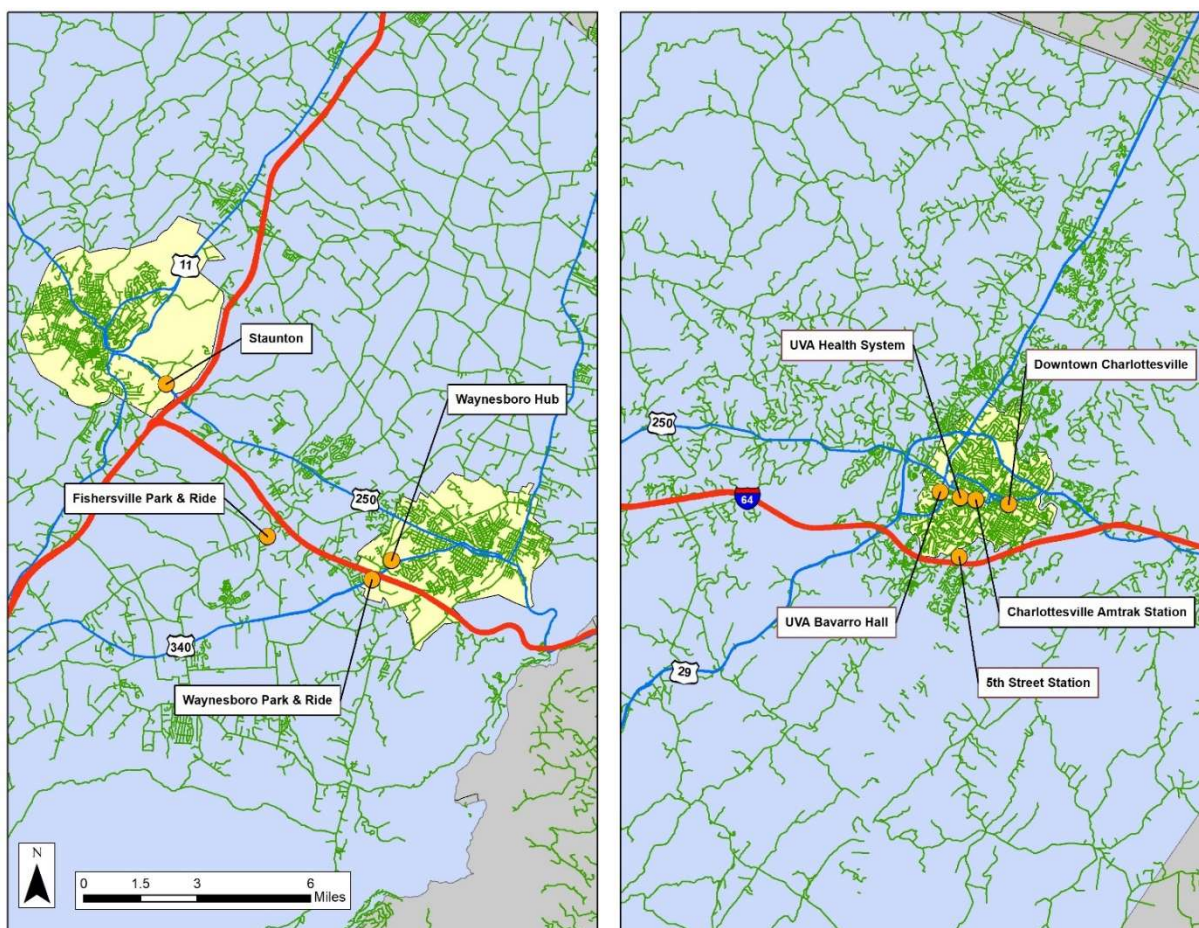
STOP LOCATIONS

Based on defined needs and stakeholder and local partner feedback, the following stop locations were selected for the initial implementation of the Afton Express transit service (listed in the order they would be served during AM service):

- Staunton - Martin's/Walmart (temporary location)
- Fishersville Park and Ride
- Waynesboro Park and Ride
- University of Virginia - Bavaro Hall
- University of Virginia - Moore Health Sciences Library
- Charlottesville - West Main at 7th St NW (Amtrak)
- Downtown Charlottesville Transit Center
- 5th Street Station
- Waynesboro Walmart - Exit 94

A map of these locations is provided in **Figure 13**.

Figure 13: Proposed Stop Locations



On the west side of Afton Mountain, Staunton, Fishersville Park and Ride, and Waynesboro Park and Ride serve as key origin locations. All three serve significant rural populations within five miles of the stop location and have the capability to handle transit vehicles. The stop in Staunton would be at the Martin's grocery store, providing a link to the Virginia Breeze service, as well as local BRITE service across the street at Walmart. This would be a temporary location, until the permanent Staunton Park and Ride is constructed at Staunton Crossing. The Staunton Park and Ride is funded through SMART SCALE and anticipated to open in 2022. The stop at the Walmart in Waynesboro at Exit 94 connects service to a key destination, allowing for reverse commute service from Charlottesville that can be available upon request.

East of Afton Mountain, two stops at University of Virginia (UVA), stops at the Charlottesville Amtrak station and Downtown Charlottesville, and a stop at the 5th Street Station shopping center in Albemarle County serve key destination locations. The stops at UVA, Bavarro Hall and Moore Health Sciences Library, provide links to employment opportunities at UVA's Central Grounds and Health System. These two stops are also served by the University Transit Service, Charlottesville Area Transit, and JAUNT's Crozet Connect service. Connections to transit and employment opportunities outside of UVA are available at the Charlottesville Amtrak and Downtown Charlottesville stops. The stop at 5th Street Station provides a regional link to a quickly developing area in Albemarle County, which has both local transit services and the potential to link rural populations south of Charlottesville to employment opportunities served by the reverse commute to Waynesboro and Staunton.

ESTIMATED RIDERSHIP

Using the selected stops, ridership was estimated through observed trips between stop locations in StreetLight travel data. An expected mode share, derived from an average of mode shares experienced by peer services (as defined in **Chapter 2**), of 2.86% was applied to the number of observed trips to determine estimated ridership. **Table 11** below provides a range of estimated ridership for AM and PM service.

Table 11: Daily Ridership Estimates

Daily Ridership Estimates	AM	PM	Total
Low	38	40	78
Average	44	46	90
High	51	51	102

To establish a low ridership estimate, the total number of trips only considered trips originating in or destined for census tracts where a stop would be located. This conservative ridership estimate assumes no additional ridership from potential riders traveling to park and ride locations.

For a higher ridership estimate, the total number of trips included trips across Afton Mountain that originated within five miles of a stop location. This estimate assumes that respondents to the 2017 I-81/I-64 Inter-Regional Public Transportation Feasibility Study survey who responded that they would travel up to five miles to reach a stop could be served with stops at park and ride facilities and local transit stops. The higher ridership estimate also captures ridership potential of more rural populations who may already be making the trip across Afton Mountain.

These high and low estimates were averaged to produce an estimate that anticipates greater usage from residents living near stop locations, while acknowledging demand from rural populations within five miles of a stop. Given the average ridership estimate's basis in existing trips and experience of peer services, it is a conservative estimate that could potentially be exceeded with changing trip patterns and successful marketing and advertising of the service. This conservative estimate will be used for purposes of determining projected vehicle requirements and fare revenues, which will need to be reviewed in future years, once ridership patterns and service performance can be established through collected operating data.

INITIAL SCHEDULE AND VEHICLE REQUIREMENTS

The Afton Express service will be able to serve the nine stop locations with two 32-passenger buses, making four trips during both the AM and PM peak periods. **Table 12** and **Table 13** show the recommended initial schedule for the AM and PM periods respectively.

The AM trips would start on the west side of Afton Mountain, with one bus starting at the Staunton stop and the other starting at the Fishersville Park and Ride. The bus serving the Staunton stop would first stop at Fishersville, starting at the BRITE facility before its first run and stopping on its return trip prior to beginning the second run beginning in Staunton. Both buses would stop at the Waynesboro Park and

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Ride before heading to the stops at UVA and Charlottesville. To serve any demand for reverse commuting to Waynesboro, buses would stop at the Walmart in Waynesboro near Exit 94.

In the PM period, both buses would serve all stops, starting at the Walmart in Waynesboro and serving Charlottesville and UVA stops in reverse order from the AM period. Leaving Charlottesville, buses will serve all stops to provide convenience to commuters regardless of when they end their workday.

Table 12: Afton Express Schedule - AM Service

AM Service	Bus 1	Bus 2	Bus 1	Bus 2
Stop				
Staunton - Martin's/Walmart	5:15 AM		7:25 AM	
Fishersville Park and Ride	*5:00 AM	6:00 AM	*7:10 AM	7:50 AM
Waynesboro Park and Ride	5:35 AM	6:10 AM	7:45 AM	8:00 AM
University of Virginia - Bavaro Hall	6:07 AM	6:42 AM	8:17 AM	8:32 AM
University of Virginia - Moore Health Sciences Library	6:11 AM	6:46 AM	8:21 AM	8:36 AM
Charlottesville - West Main at 7th St NW (Amtrak)	6:15 AM	6:50 AM	8:25 AM	8:40 AM
Downtown Charlottesville Transit Center	6:25 AM	7:00 AM	8:35 AM	8:50 AM
5th Street Station	6:33 AM	7:08 AM	8:43 AM	8:58 AM
Waynesboro Walmart - Exit 94 (by Request)		7:35 AM	9:10 AM	9:25 AM

*Note: Both AM buses serving Staunton – Martin's Walmart would start at Fishersville Park and Ride on their trip to Staunton – Martin's Walmart to begin each run.

Table 13: Afton Express Schedule - PM Service

PM Service	Bus 1	Bus 2	Bus 1	Bus 2
Stop				
Waynesboro Walmart - Exit 94		3:20 PM	4:25 PM	5:20 PM
5th Street Station	2:50 PM	3:50 PM	4:55 PM	5:50 PM
Downtown Charlottesville Transit Center	3:00 PM	4:00 PM	5:05 PM	6:00 PM
Charlottesville - West Main at 8th St NW (Amtrak)	3:05 PM	4:05 PM	5:10 PM	6:05 PM
University of Virginia - Hospital West Complex	3:10 PM	4:10 PM	5:15 PM	6:10 PM
University of Virginia - Central Grounds Garage	3:15 PM	4:15 PM	5:20 PM	6:15 PM
Waynesboro Park and Ride	3:48 PM	4:48 PM	5:53 PM	6:48 PM
Fishersville Park and Ride	3:58 PM	4:58 PM	6:03 PM	6:58 PM
Staunton - Martin's/Walmart	4:10 PM	5:10 PM	6:15 PM	7:10 PM

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Table 14 provides an estimate of service hours and mileage resulting from the proposed AM and PM schedule. BRITE uses service hours as the basis for cost of contracting service from Virginia Regional Transit (VRT) and mileage to estimate the annual cost of fuel. While service hours remain the same during the AM and PM period, mileage is higher in the PM period due to the service of all western stops by both buses. Additionally, the deadhead miles are higher in the PM period due to an anticipated need to stage a replacement bus east of Afton Mountain to mitigate schedule delay for buses leaving Charlottesville in case of breakdowns or traffic incidents far from the BRITE maintenance facility.

Table 14: Estimated Daily Service Hours and Mileage

Daily Service Estimates	Service Hours	Revenue Miles	Deadhead Miles
AM	7.3	245.1	50.5
PM	7.1	274.5	87.6
<i>Daily</i>	<i>14.4</i>	<i>519.6</i>	<i>138.1</i>

ESTIMATED BUDGET

An estimated budget for the Afton Express service's expenses and revenues was developed for FY 2021 through FY 2024 to inform local, state, and federal partners of the required financial commitment from each partner to implement the service. Service is anticipated to begin in January 2021, in the middle of FY2021, so expenses and revenues for that fiscal year are split to account for planning and operations activities. Similarly, sources of state and federal funding are anticipated to shift in FY2023, due to limits of the initial Demonstration Grant for operating service, so expenses and revenues for that fiscal year are also split.

EXPENSES

The preliminary marketing and contracting activities would take place during the first six months of FY2021 and would be managed by CSPDC. Once the Afton Express service began in January 2021, midway through FY2021, expenses would be split among three categories: operating expenses incurred by CSPDC, contracted costs for services provided by VRT, and fuel costs. **Table 15** provides an overview of these expenses through FY 2024.

Table 15: Overview of Service Expenses - FY2021 to FY2024

Expenses	FY2021 - Planning	FY 2021 - Operations	FY2022	FY2023 - Q1/2	FY2023 - Q3/4	FY2024
CSPDC Operating Costs	\$ 60,400	\$ 16,003	\$ 32,005	\$ 12,453	\$ 12,453	\$ 24,905
VRT Contracted Costs	\$ -	\$ 127,695	\$ 255,389	\$ 130,248	\$ 130,248	\$ 265,707
Fuel Costs	\$ -	\$ 42,627	\$ 85,254	\$ 43,480	\$ 43,480	\$ 88,699
Total	\$ 60,400	\$ 186,324	\$ 372,648	\$ 186,181	\$ 186,181	\$ 379,310

Following the preliminary activities, CSPDC would continue to manage the service as part of the BRITE transit system and, as such, would incur expenses, such as administrative staff costs, printing for

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schedules and marketing materials, and indirect costs. CSPDC operating costs for the last six months of FY2021 assume half the expenses projected for FY2022.

The Afton Express service would be operated similar to other BRITE services, through a contract with VRT. The cost for contracted service through VRT is paid on a service hour basis. A service hour is defined as the time from scheduled first pickup to last scheduled drop-off for each operating bus. VRT has committed to a service hour cost of \$69.47 for the initial term, which is inclusive of all operating and capital costs. Estimated costs for FY 2022 through FY 2024 assume 255 days of service annually and include a 2 percent increase to account for inflation in future years. Service costs for FY2021 assume half the expenses projected for FY2022.

Fuel costs were calculated assuming 255 days of service annually and diesel-fueled buses that operate at 6 miles per gallon. A base cost of \$3.05 per gallon was used in FY 2022, which is the average cost of diesel per gallon as of 2019, and future years were increased by 2 percent to account for inflation. Fuel costs for FY2021 assume half the expenses projected for FY2022.

REVENUES

Covering the expenses of the Afton Express service will require a mix of federal, state, and local funding, in addition to income collected through passenger fares. **Table 16** provides an overview of these revenue sources estimated between FY 2021 and FY 2024.

Table 16: Overview of Service Revenues - FY2021 to FY2024

Revenues	FY2021 - Planning	FY 2021 - Operations	FY2022	FY2023 - Q1/2	FY2023 - Q3/4	FY2024
Federal Revenues	\$ -	\$ -	\$ -	\$ -	\$ 97,099	\$ 198,454
State Revenues	\$ 48,320	\$ 136,119	\$ 251,533	\$ 124,099	\$ 24,820	\$ 50,751
Local Match	\$ 12,080	\$ 34,030	\$ 62,883	\$ 31,025	\$ 33,205	\$ 67,991
Fare Income	\$ -	\$ 16,175	\$ 58,232	\$ 31,057	\$ 31,057	\$ 62,114
Total	\$ 60,400	\$ 186,324	\$ 372,648	\$ 186,181	\$ 186,181	\$ 379,310

Fares for the Afton Express service are projected to be \$3.00 per trip, with price reductions for riders purchasing monthly passes. The estimate of fare revenue anticipates 90 percent of trips will be paid for at the full fare price.

For the first year of operating service, which includes the last six months of FY2021 and the first six months of FY2022, the Afton Express is not anticipated to meet full ridership expectations but will build ridership as travelers learn about the service. The estimated fare reflects a build-up of ridership throughout FY 2022, starting with approximately half of full estimated ridership to start the year and building to full estimated ridership by the end. To encourage usage in the first month of service, the Afton Express will be fare free, so no fare income is included in the estimated fare calculation for that period.

STATE REVENUES

In FY 2019, BRITE applied for a DRPT Demonstration Grant to provide revenues for the first 18 months of service in the corridor between Staunton, Waynesboro, and Charlottesville, including 6 months of preliminary marketing and contracting activities and 12 months of operation. While DRPT concluded that the corridor would likely be a worthwhile candidate for a Demonstration Grant, it saw a benefit to

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performing additional study on the corridor to ensure stable sources of funding beyond the grant-funded period. DRPT did provide \$75,000 in Demonstration Grant funding for planning and marketing to take place prior to January 2021.

This study also has identified DRPT Demonstration Grant funding as the initial major state funding source, accounting for 80 percent of revenues after fare income from the last six months of FY2021 through the first six months of FY2023. Beginning in the last six months of FY 2023, the Afton Express will continue to rely on DRPT funding, in the form of operating and capital assistance grants, but to a lesser degree, as the service will begin to rely on federal sources as well.

VRT will provide the buses, drivers, maintenance customer service functions and supervision of the Afton Express service through contracted service. Thus, Afton Express will qualify for federal funding through the capital cost of contracting (80% FTA 5311) as well as operating assistance grants (50% FTA 5311). It is assumed (based on current levels of funding for the BRITE transit services) that the DRPT match for capital cost of contracting and for operating expenses inclusive of CSPDC project related costs would be at 16 percent. DRPT funding is determined in part by service performance and its relative performance to other transit services throughout the Commonwealth. Metrics and recommended goals for tracking the performance that are related to DRPT funding will be provided in **Chapter 5**.

Table 17 provides an annual breakdown of anticipated revenues from state sources for FY 2021 through FY 2024.

Table 17: State Service Revenues - FY2021 to FY2024

	FY2021 - Planning	FY 2021 - Operations	FY2022	FY2023 - Q1/2	FY2023 - Q3/4	FY2024
State Revenues	\$ 48,320	\$ 136,119	\$ 251,533	\$ 124,099	\$ 24,820	\$ 50,751
Demonstration Grant	\$ 48,320	\$ 136,119	\$ 251,533	\$ 124,099	\$ -	\$ -
Operating Assistance	\$ -	\$ -	\$ -	\$ -	\$ 14,400	\$ 29,495
Capital Assistance	\$ -	\$ -	\$ -	\$ -	\$ 10,420	\$ 21,257

Note: One half of the contracted costs qualifies for capital assistance funding and the remaining half plus the fuel and CSPDC staff and miscellaneous costs qualifies for operating assistance. Fare revenues are deducted from the operating expenses before the assistance formulas are calculated.

FEDERAL REVENUES

Beginning in FY 2023, revenues for the Afton Express will shift from primarily relying on the DRPT Demonstration Grant funding to a mix of state and federal operating and capital assistance. The largest source will be from Federal Transit Administration's Formula Grants for Rural Areas, known as FTA 5311 funding. Since the Afton Express will be providing a transit connection that will serve residents of rural areas outside of Waynesboro and Staunton and provide service to employment opportunities to these residents, the best candidate for a federal funding source for the service is FTA 5311 funding.

Similar to formula for state assistance, FTA 5311 funds capital and operating assistance differently and would need to account for the capital cost of contracting with VRT. Half of the contracted VRT service cost could be funded with an 80 percent match of FTA 5311 funds for capital assistance, while the FTA 5311 operating assistance funds would match 50 percent of the remaining operating expenses, after accounting for fare income.

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Table 18 shows anticipated FTA 5311 operating and capital assistance revenues that would begin funding Afton Express service in FY 2023.

Table 18: Federal Service Revenues - FY2021 to FY2024

	FY2021 - Planning	FY 2021 - Operations	FY2022	FY2023 - Q1/2	FY2023 - Q3/4	FY2024
Federal Revenues	\$ -	\$ -	\$ -	\$ -	\$ 97,099	\$ 198,454
FTA 5311 - Operating	\$ -	\$ -	\$ -	\$ -	\$ 45,000	\$ 92,172
FTA 5311 - Capital	\$ -	\$ -	\$ -	\$ -	\$ 52,099	\$ 106,283

LOCAL PARTNERS MATCH

Stakeholders to the Afton Express transit service discussed at length the best approach to allocating the local match funding requirement and determined that sharing the match evenly between partners west and east of Afton Mountain would be most appropriate. This approach is reflected in **Table 19**, and allows each region to determine the impacts the Afton Express would have within the context of their own transit needs and allows coordination with local government officials and staff resolve the local funding specifics and levels. This coordinated effort, conducted in parallel through CSPDC and Thomas Jefferson Planning District Commission (and the Regional Transit Partnership), will be important to foster in the future, even after local match commitments are secured, to ensure the continued success of the Afton Express.

Table 19: Regionally Even Local Match Split

	FY2021 - Planning	FY 2021 - Operations	FY2022	FY2023 - Q1/2	FY2023 - Q3/4	FY2024
Local Match	\$ 12,080	\$ 34,030	\$ 62,883	\$ 31,025	\$ 33,205	\$ 67,991
Charlottesville/UVA/Albemarle	\$ 6,040	\$ 17,015	\$ 31,442	\$ 15,512	\$ 16,602	\$ 33,995
Staunton/Augusta/Waynesboro	\$ 6,040	\$ 17,015	\$ 31,442	\$ 15,512	\$ 16,602	\$ 33,995

CONCLUSIONS

With coordination between local partners to provide matching funding, BRITE will be able to leverage those funds to provide the Afton Express transit service, using DRPT Demonstration Grant funds initially and then transition to a mix of federal and state grant assistance. The Afton Express service can easily provide this service connecting Staunton, Fishersville and Waynesboro and Charlottesville with two buses in the morning and afternoon peak periods and ensure access to rural populations and employment opportunities. At a conservative estimate, 90 daily riders would take advantage of this service, based on existing travel patterns.

With opportunity to improve connections between the Shenandoah Valley and Charlottesville area, the Afton Express could shift travel patterns and be a greater success than currently projected. Success could be measured by several outcomes, such as increased ridership, increased fare income, and improved performance against DPRT grant metrics. Tools for measuring that success, including performance metrics and goals, will be provided in **Chapter 5**.

CHAPTER 5: DEFINITION OF PERFORMANCE METRICS

Providing service in the Afton Express corridor will require a coordinated investment of funding from local, state, and federal partners. To demonstrate that this funding is well spent, Afton Express will need to meet or exceed the anticipated performance described in the **Chapter 4** service plan. This performance can be measured in terms of ridership, costs, mileage, vehicle requirements, and populations served.

Funding sources themselves have specific performance metrics that will need to be reported. Using these requirements, determined through state and federal guidance and regulation, this chapter explains the performance metrics that will need to be tracked and provides goals for each metric that Afton Express service and BRITE will need to meet or exceed to ensure successful provision of the previously described service and to secure funding for continued service in the future.

FEDERAL ASSISTANCE

BRITE anticipates relying on federal operating assistance through the FTA 5311 program, which is a formula grant that supports services addressing the transit needs of rural communities and intercity services. Federal operating and capital assistance under FTA 5311, unlike state assistance, are not subject to performance metrics for the allocation of funds. The Afton Express service's operating and capital expenses all meet the eligibility requirements, and its purpose and need are aligned with the goals of the FTA 5311 program, specifically in how it enhances access in rural areas to health care, shopping, education, and employment.

While no performance metrics are required to determine FTA 5311 funding levels, subrecipients are required to submit data to the National Transit Database (NTD). BRITE, as a reduced reporter to NTD, is required to submit the following metrics for the Afton Express, along with its other services that are partially funded using FTA 5307 funding:

- Revenue Vehicle Hours
- Revenue Vehicle Miles
- Unlinked Passenger Trips (Ridership)
- Vehicles Operated in Annual Maximum Service (VOMS)

Revenue vehicle hours, Revenue vehicle miles, and unlinked passenger trips align with DRPT operating assistance performance metrics. VOMS is not accounted for under DRPT's operating assistance performance metrics. Afton Express service will add two buses to the VOMS reported by the existing BRITE services.

Though meeting the goals of performance metrics are not required to qualify for FTA 5311 funding, determining the geographic origins of riders using the service can help BRITE ensure that Afton Express is providing a benefit to rural populations. This can be accomplished through origin-destination analysis through StreetLight data or through rider surveys. Out of the projected riders, around 42 out of the 90 daily trips (about 47 percent) are anticipated to begin or end their trips in rural communities. To ensure the transit benefit to rural populations, BRITE should strive to serve the same proportion of rural trips or better in the future.

STATE ASSISTANCE

From FY 2021 through FY 2023, the revenue of the Afton Express service plan will rely on three separate sources of state funding assistance allocated by the Department of Rail and Public Transportation (DRPT): Demonstration Grant assistance, operating assistance, and capital assistance. These funds are administered through a transit funding program referred to as “MERIT”- Making Efficient and Responsible Investments in Transit. MERIT was developed in response to a 2018 legislative mandate to base state grant funding on the performance of individual transit agencies in Virginia.

This section provides performance metrics used to allocate state grant funding and goals for each metric that Afton Express and BRITE will need to meet to ensure future state assistance.

DEMONSTRATION GRANT

Demonstration Grants can be used for many kinds of projects, so applicants are not scored on a strict set of performance metrics. However, the grant application does require and is reviewed based on whether a project has applicant-defined performance measures and associated performance thresholds. Since the Demonstration Grant application also requires the applicant to demonstrate the financial feasibility of the project beyond the grant period, this chapter focuses on performance metrics related to state and federal assistance that will be key to the success of the Afton Express in the long-term.

OPERATING ASSISTANCE

DRPT uses a performance-based allocation methodology to allocate operating assistance grants to transit services. Due to this, BRITE will need to be mindful of the performance of the Afton Express and its other services to ensure that sufficient operating assistance funds will be available to continue service in the future.

DRPT’s methodology for allocating operating assistance grants is performed in three steps: system sizing, performance allocation, and adjustment based on unallocated funds. The first two steps, system sizing and performance allocation, compare an individual system’s performance to statewide performance, while adjustment based on unallocated funds is dependent on the reliance on state funding by other individual agencies around the Commonwealth.

In the following sections, past performance of BRITE and state transit services is used to project how the performance of the Afton Express service might impact operating assistance funding and identify performance metric goals that should be prioritized to ensure adequate funding. These projections rely on data from the National Transit Database (NTD) from 2016 to 2018, DRPT’s Six Year-Improvement Plan (SYIP), and BRITE’s Transit Development Plan (TDP). The projections assume similar levels of service to 2018 in 2023, but with Afton Express costs, ridership, and vehicle requirements added.

SYSTEM SIZING

The first step of allocating operating funding is determining the relative size of each agency to statewide transit services, using four weighted metrics:

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- Operating Cost (50%)
- Ridership (30%)
- Revenue Vehicle Hours (10%)
- Revenue Vehicle Miles (10%)

The proportion of each metric to statewide performance is weighted by the listed percentage and the four weighted proportions are combined to determine the agency's size weight. The statewide sum of all agency size-weights should equal 100 percent, but if not, the agency size-weights are normalized. For this analysis, the size-weight of BRITE has not been normalized, since it is the only agency being analyzed.

Operating cost for BRITE service in 2018 was \$1,156,645, 0.23 percent of the statewide operating cost of approximately \$492.99 million. By adding Afton Express service to both BRITE and statewide expenses, based on projected expenses in BRITE's TDP and Afton Express expenses in 2023, BRITE's operating cost would be \$1,736,000 or 0.35 percent of statewide operating costs.

BRITE serviced approximately 259,000 passengers in 2018, 0.39 percent the statewide ridership of 66.66 million. Afton Express would add approximately 23,000 annual riders to BRITE service and would account for 0.42 percent of statewide ridership beginning in 2023.

Agencies in Virginia reported approximately 4.61 million revenue vehicle hours in 2018, of which BRITE contributed approximately 27,000 hours or 0.59 percent. Afton Express would add about 3,700 hours, bringing BRITE's share of statewide revenue vehicle hours to 0.67 percent.

Agencies in Virginia reported approximately 80.19 million revenue miles in 2018, according to NTD. BRITE accounted for about 514,000 of those revenue miles, or 0.64 percent of statewide revenue miles. Afton Express would add another 132,000 annual revenue miles, bringing BRITE's share of statewide revenue miles to 0.80 percent.

Combining these percentages for 2023 based on the metric weights, the sizing weight of BRITE with Afton Express would be 0.45 percent. This sizing weight will be adjusted by performance metrics in the following step and applied to statewide operating funding projected to be available in 2023 to determine BRITE's potential funding allocation.

PERFORMANCE ADJUSTMENTS

Trends in system performance are compared to statewide trends to adjust system sizing weight and allocate available funding. Using operating cost, ridership, revenue vehicle hours, and revenue vehicle miles data that were used to establish system size, these factors are compared against each other to determine system efficiency and effectiveness in five metrics:

- Passengers per Revenue Vehicle Hour
- Passengers per Revenue Vehicle Mile
- Operating Cost per Revenue Vehicle Hour
- Operating Cost per Revenue Vehicle Mile
- Operating Cost per Passenger

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For each metric, a trend factor is calculated that compares averages of year-over-year performance of BRITE and agencies statewide. The size weight is then applied to this trend factor for each metric and size-weighted trend factors for each metric are assigned a 20 percent weight. The result is used to determine the amount of available statewide operating assistance the agency would receive based on the system's performance for each metric. **Table 20** provides the calculations for potential 2023 allocations for each metric.

Table 20: Performance Adjustments of State Operating Assistance

		Passengers / Vehicle Revenue Hour	Passengers / Vehicle Revenue Mile	Operating Cost / Revenue Vehicle Hour	Operating Cost / Revenue Vehicle Mile	Operating Cost Per Passenger
BRITE	2016	11.81	0.80	\$38.69	\$2.63	\$3.28
	2017	10.49	0.69	\$39.01	\$2.56	\$3.72
	2018	9.58	0.50	\$42.73	\$2.25	\$4.46
	2023	9.18	0.44	\$56.49	\$2.69	\$6.15
Statewide	2016	14.74	0.93	\$95.43	\$5.99	\$6.48
	2017	14.06	0.88	\$95.28	\$5.95	\$6.78
	2018	14.46	0.83	\$106.92	\$6.15	\$7.40
	2023	14.45	0.83	\$106.96	\$6.15	\$7.40
Trend Factor		0.9260	0.8477	1.1025	1.0079	1.1873
Size-Weighted Trend		0.0042	0.0038	0.0041	0.0045	0.0038
Metric- Weighted (20%) Allocation Factor		0.0008	0.0008	0.0008	0.0009	0.0008
Performance-related Operating Assistance		\$81,532	\$74,638	\$79,865	\$87,356	\$74,157

In total, BRITE could be eligible for approximately \$398,000 of the projected \$97.8 million in available state operating assistance in 2023 based on anticipated performance and DRPT's FY 2020 Six Year Improvement Program (SYIP). In the state allocation process, state operating assistance to individual agencies is capped at 30 percent of agency net revenues. Accounting for projected fare income, net revenues for BRITE in 2023 would be approximately \$1.59 million, meaning the performance-based allocation of state operating assistance would account for about 25 percent of BRITE's net revenue. It is possible the reallocation of funds for other agencies above the 30 percent cap could result in BRITE receiving additional state operating assistance funding.

The FY 2020 SYIP designated \$368,607 in state operating assistance funds to Central Shenandoah Planning District Commission for BRITE service in FY 2020. The difference between current state operating assistance and the estimated \$398,000 allocated in 2023 would cover the estimated need of \$14,400 to operate the Afton Express service that year. In FY2024, the estimated DRPT operating

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assistance allocation would likely cover Afton Express service needs but would be dependent on other BRITE services relying on minimal additional state operating funding in the future.

CAPITAL ASSISTANCE

Capital cost of contracting is considered as a Special Asset Category under DRPT Transit Capital Program Prioritization guidance and is scored as a Minor Enhancement. Minor Enhancements are scored based on service impact, measured by four categories of metrics with 10 points assigned to each:

- Operating Efficiency
- Frequency, travel time, and/or reliability
- Accessibility and/or customer experience
- Safety and security

Each of these categories is assigned a default rating and number of points depending on the type of project being funded. Contracting with VRT for provision of revenue vehicles would result in each category receiving a High default rating, which is assigned 8 points in each category. Capital expenses for revenue vehicles result in a High default rating for each category because they have the most direct and comprehensive potential impact on service delivery out of any asset eligible for capital assistance. As a result, BRITE's capital assistance request would receive a base score of 32 out of the available 40 points. However, each category has the opportunity for additional points based on performance metrics of BRITE's service. The effectiveness of Afton Express service could impact the capital assistance rating under several of these categories, with the potential to bring the overall score for capital cost of contracting to as high as 34 out of the available 40 points. The calculation for this overall potential score is explained in greater detail in the following sections.

OPERATING EFFICIENCY

The operating efficiency category provides an additional point to the default score for revenue services where the agency spare ratio is below 15 percent. Prior to BRITE's implementation of Afton Express service, the agency's spare ratio has been 25 percent, 3 out of the fleet's 12 vehicles according to the 2017 TDP. Through the contracting of service for two operating buses and one spare bus, BRITE's spare ratio would shift to 27 percent. As a result, no additional points would be available to add to the default operating efficiency, with a total score of 8 for the category.

FREQUENCY/TRAVEL TIME/RELIABILITY

The frequency, travel time, and reliability category provides two additional points for on-time performance and distance between vehicle failures. For on-time performance, agencies can add one point if agency-wide on-time performance for fixed route services is above 80 percent. According to BRITE's TDP, its own on-time performance goal is above 90 percent. BRITE's current on-time performance is 95 percent, as of 2019. Should BRITE's service continue to operate with such high on-time performance, the on-time performance of the Afton Express would not bring the systemwide on-time performance below 80 percent under any circumstances and the service would qualify for the additional point. However, to demonstrate reliability expected of a service by DRPT, the Afton Express should aim to exceed the 80 percent goal for on-time performance.

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For distance between vehicle failures, agencies can add an additional point if the mean distance between failures is greater than 10,000 miles. BRITE's mean distance between vehicle failures is 59,300 miles, as of 2019. Should BRITE's service continue to operate with such high mean distance between vehicle failures, the Afton Express is highly unlikely bring the systemwide mean distance between vehicle failures below 10,000 miles under any circumstances and the service would qualify for the additional point. However, to demonstrate reliability expected of a service by DRPT, the Afton Express should aim to exceed the minimum 10,000-mile goal for mean distance between vehicle failures.

Should the Afton Express meet these goals for on-time performance and distance between vehicle failures, two points would be available to add to the default score, with a total score of 10 for the category.

ACCESSIBILITY/CUSTOMER EXPERIENCE

Additional considerations for accessibility and customer experience are related to investments in new stops, expanded service, and provision of real-time arrival information. Since the Afton Express will be in operation through the Demonstration Grant and the capital cost of contracting is not funding new stops or software and hardware to provide real-time information, no additional points will be available to add to the default score, resulting in a total score of 8 for the category.

SAFETY AND SECURITY

Additional considerations for safety and security are related to on-board technology to enhance passenger safety, improved lighting and other crime prevention features, and pedestrian safety improvements. The capital cost of contracting for the Afton Express will not be funding these sorts of improvements. While lighting improvements and pedestrian safety features may be implemented at served park and ride lots, those improvements will rely on other funding sources. Revenue service vehicles funded through DRPT capital assistance would not have additional points available in this category, resulting in a total score of 8 for the category.

SUMMARY OF PERFORMANCE METRICS AND GOALS

BRITE will have a range of performance metrics as an agency, and for Afton Express specifically, it will need to track for reporting and funding purposes. For reporting requirements, BRITE will need to collect these metrics:

- Operating Cost
- Ridership
- Revenue Vehicle Hours
- Revenue Vehicle Miles
- Vehicles Operated in Annual Maximum Service (VOMS)

Data from most of these metrics will be used to assess performance and determine the provision of state and federal funding resources. As such, BRITE should evaluate whether the collected data is meeting specific benchmarks, based on the service plan for Afton Express, to ensure continued funding assistance and capability to provide this service. **Table 21** summarizes these performance metrics and goals and can be used as a reference for BRITE to assess the performance of Afton Express once the service becomes operational.

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Table 21: Performance Metrics and Goals for Afton Express and BRITE

Performance Metric	Goals		Relevant Funding Source
	Afton Express	BRITE Systemwide	
Rural-based Trips	> 47%	N/A	FTA 5311
Passengers per Hour	> 6.34	> 9.19	State Operating Assistance
Passengers per Mile	> 0.18	> 0.44	State Operating Assistance
Cost per Hour	< \$101.38	< \$56.41	State Operating Assistance
Cost per Mile	< \$2.85	< \$2.69	State Operating Assistance
Cost per Passenger	< \$16.00	< \$6.14	State Operating Assistance
Spare Ratio	33%	27%	State Capital Assistance
On-Time Performance	80%	90%	State Capital Assistance
Mean Distance between Vehicle Failures (in miles)	> 10,000	> 10,000	State Capital Assistance

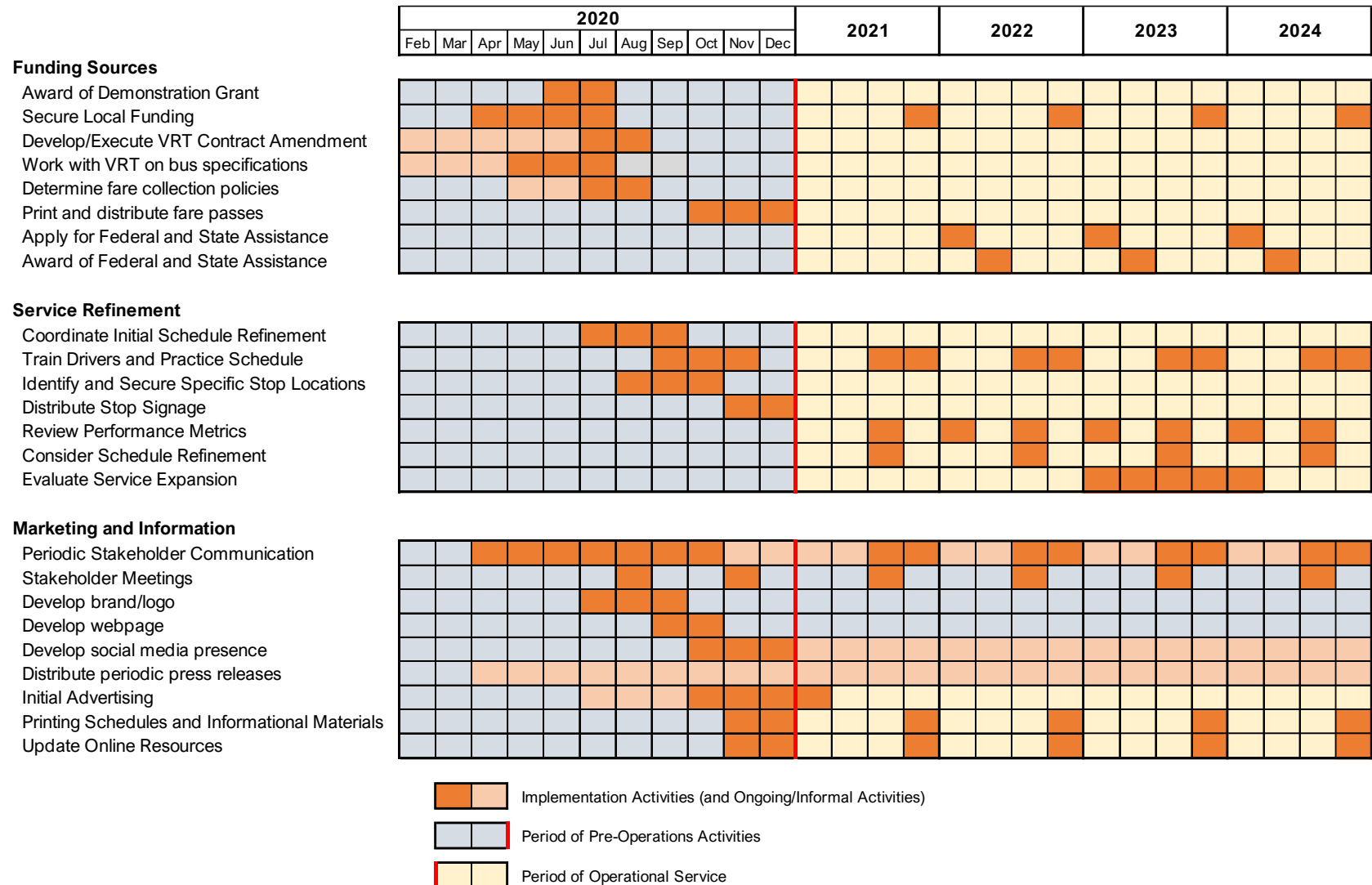
ADDENDUM: IMPLEMENTATION TIMELINE

BRITE will need to accomplish a series of implementation steps prior to and during the operation of the Afton Express to obtain necessary funding, raise awareness of the newly available link between Staunton, Fishersville, Waynesboro, and Charlottesville, and provide a useful service to residents and employers. This addendum describes these implementation activities and provides a timeline for accomplishing them as shown in **Figure 1**. The timeline for implementation assumes a January 2021 start date for operation of the Afton Express service and would need to be adjusted if that start date is delayed for any reason.

This implementation timeline anticipates that initial service will be funded through a DRPT demonstration grant. The demonstration grant application will be submitted in February 2020, but funds from a previously-awarded demonstration grant could be used by BRITE prior to the award of the current demonstration grant in June 2020, pending the availability of local funding. BRITE assumes the previously-awarded demonstration grant will fund pre-operations efforts through December 2020. The demonstration grant currently under consideration is assumed to fund two years of operations beginning in January 2021. The majority of the implementation activities occur prior to the beginning of operations, but this addendum also includes activities that will need to be continued throughout operation to ensure the success of the service.

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Figure 1: Implementation Timeline



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FUNDING SOURCES

Before any activities to coordinate and operate Afton Express service can be carried out, BRITE will need to ensure that those activities have adequate revenues to draw from. This will require responding to the time and data requirements of state and local funding sources, as well as confirming policies for collecting fare income. Since BRITE service is operated by Virginia Regional Transit (VRT), contract negotiations will also be carried out prior to operations.

While many of the implementation activities related to funding sources are critically important prior to the operation of Afton Express service, securing funding through local, state, and federal sources will continue to be perennial concerns for BRITE.

AWARD OF DEMONSTRATION GRANT

Allocation of demonstration grant funds is approved as a part of DRPT's FY 2021 Six Year Improvement Program (SYIP), which will be released in draft form in April 2020. The final FY 2021 SYIP will be approved by the Commonwealth Transportation Board (CTB) in June 2020. Once approved, BRITE will need to coordinate the definition contract and master agreement requirements for funding with DRPT.

This activity may take place once the CTB approves the final FY 2021 SYIP, starting in June 2020 and concluding in July 2020.

SECURING LOCAL PARTNER FUNDING

Demonstration grant funding can not be used until local matching funds from local partners have been allocated to the project. Though local partners have provided a written commitment to provide funding for the Afton Express, BRITE will need to work with each jurisdiction to formally obtain the committed funding once demonstration grant funding has been allocated. Since BRITE has a previously-awarded demonstration grant, this work can begin once DRPT has released its draft FY 2021 SYIP in April 2020. This activity should be done in tandem with initial outreach efforts to local stakeholders, which can help define further expectations for future implementation activities and operating service.

This activity should be concluded by July 2020 to ensure operations will be fully funded beginning in January 2021 and funding will not impact considerations made in initial service refinements. In subsequent years, BRITE should work with local jurisdictions to ensure local match funds are committed during their annual budgeting processes, which typically begin in the autumn of each year.

DEVELOP AND EXECUTE VIRGINIA REGIONAL TRANSIT CONTRACT AMENDMENT

BRITE has existing contracted service with Virginia Regional Transit (VRT) for local service. BRITE should begin discussions with VRT about amending contract terms prior to the final allocation of any local funds to ensure no additional funding will be necessary to obtain service. Finalization of this contract amendment with VRE should occur in July and August 2020, after the demonstration grant has been awarded, to allow VRE time for internal mobilization of resources, including vehicles and staff, to mitigate any risk of missing the targeted start of operations at the beginning of January 2021.

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WORK WITH VIRGINIA REGIONAL TRANSIT ON BUS SPECIFICATIONS

Afton Express service will require three additional buses for BRITE's fleet. As part of BRITE's contract with VRT, VRT currently supplies the vehicles for service, and as part of the contract amendment, VRT will need to provide new vehicles that have the capability to reliably travel across Afton Mountain, as well as provide riders with amenities they desire. As part of the contract amendment discussion and coordination immediately following the execution of that amendment, BRITE and VRT should work together to identify needed bus specifications.

Discussions of bus specifications with VRT can begin prior to demonstration grant funding being awarded in June 2020. Given that bus purchase orders can have up to a six-month lead time, this activity should be completed no later than early July 2020 to ensure that new vehicles will be available for service in January 2021.

DETERMINING FARE COLLECTION POLICIES

The Afton Express Transit Service Plan assumes that single-ride fares will cost passengers \$3.00, with reduced-fare monthly passes for frequent riders. The plan also assumes all passengers will ride the service for free in the first month of service. These assumptions will need to be confirmed or revised with local partners in coordination with outreach efforts to stakeholders and the obligation of local matching funds to ensure BRITE will have adequate funding throughout the demonstration grant-funded period and the following federal and state operating assistance-funded periods.

This activity should take begin once DRPT's draft SYIP has been published in April 2020 and should conclude by August 2020. Any fare impacts to initial service refinement should be address early in July and August 2020 to inform that effort in its earlier stages.

PRODUCING FARE PASSES

Once fare policy has been established, BRITE will should work with stakeholders and employers to identify and market to potential customers for the reduced-fare monthly passes. Prior to the beginning of operations, these passes should be designed and printed. The passes should be distributed to stakeholders who are able to serve as third-party resellers of monthly passes in advance of the service operations.

Initial design, printing, and distribution of monthly passes, as well as single-use fare passes, should take place in December 2020 at the latest. Resupply of passes will occur as needed in the future.

APPLYING FOR FEDERAL AND STATE ASSISTANCE

At the end of the demonstration grant-funded period, Afton Express will rely heavily on federal and state operating and capital assistance. This assistance requires grant applications to be submitted to DRPT and the application period begins in December of each calendar year and closes the first business day of February.

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Since BRITE anticipates employing federal and state financial assistance beginning in 2023, BRITE should submit its applications for federal and state financial assistance in January of 2022, 2023, and 2024. Federal and state assistance is approved by the CTB in June of each year and grant agreements are executed and funds are awarded in July of each year.

SERVICE REFINEMENT

The Afton Express Transit Service Plan details a representative schedule for connecting destinations in Staunton, Augusta County, Waynesboro, and Charlottesville and estimates costs and benefits that can be anticipated from transit operations in the corridor. However, the service may prove to be more popular than expected or may face some unforeseen obstacles that impact its success. The following sections describe activities that will ensure BRITE can be responsive to riders' needs and Afton Express performs effectively and reliably.

REFINING INITIAL SERVICE SCHEDULE

While the Afton Express Transit Service Plan provides a draft service schedule for the purposes of estimating ridership benefits and operating and capital costs, further refinement of scheduled times may be necessary to improve the effectiveness and benefits of the service to riders and stakeholders. During outreach to stakeholders prior to the beginning of service, BRITE should verify that the scheduled service is responsive to rider and stakeholder needs and finalize the schedule.

This activity should be completed between July and September of 2020 to allow adequate time to print informational materials prior to the beginning of operation in January 2021.

DRIVER TRAINING AND SCHEDULE PRACTICE

In coordination with schedule refinements and identification of stop locations, BRITE should work with VRT to have bus drivers run the route with transit vehicles to verify schedule and identify any potential issues. This activity should happen several times throughout September, October, and November of 2020 to ensure drivers are well acquainted with the schedule and driving conditions and any potential issues are addressed in advance of the beginning of operation in January 2021.

IDENTIFYING AND SECURING SPECIFIC STOP LOCATIONS

Stop locations in the Afton Express Transit Service Plan are typically found at existing bus stops to connect this service to transfer opportunities and to serve easily identifiable locations for transit users. At these shared transit stops, agreements will need to be coordinated with relevant stakeholders for the placement of signage and any operational considerations that will need to be accounted for to ensure the coordinated service to a given stop by multiple transit agencies. Any additional amenities that could improve the existing stops, such as trash receptacles, benches, shelters, and informational signage, should be discussed with the relevant stakeholders and agencies as well.

Some locations, such as the Fishersville Park and Ride, are not currently served by transit and do not have an identified specific stop location. The specific location of bus stops, along with signage, rider

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waiting areas, and any additional amenities will need to be identified at these locations, prior to operation of the service.

These activities should occur between August and October of 2020 to allow adequate time to purchase signage and amenities and distribute them to stop locations prior to the beginning of operation in January 2021.

DISTRIBUTING STOP SIGNAGE AND AMENITIES

Once specific stop locations have been identified and agreements with relevant stakeholders for the placement of signage and other amenities have been worked out, BRITE should acquire the necessary materials and, shortly before the start of operations, install them at each stop. Temporary signage informing potential riders of the start date of service should be installed with the permanent bus stop signage and amenities.

Installation activities should occur in November and December of 2020, prior to the beginning of operation in January 2021. Temporary signage related to the start date of service should be removed once Afton Express begins operation.

REVIEWING PERFORMANCE METRICS

BRITE should consistently review performance metrics to ensure the effective and efficient provision of Afton Express service. However, performance metrics will be particularly necessary to review in coordination with any future schedule refinements, for service expansions, and in the months leading up to the grant applications in autumn and winter of each year.

CONSIDERING SCHEDULE REFINEMENT

Barring any urgently needed changes, BRITE should begin reviewing schedule performance after six months of service, working with stakeholders to identify potential schedule improvements. Additional travel time and loading time may be necessary, dependent on traffic conditions and ridership. Schedule refinements can help ensure that Afton Express meets its on-time performance goals and provide reliable service for its riders.

Schedule refinement planning should occur in summer of each year, with updated schedules implemented in January of each year.

EVALUATING SERVICE EXPANSION

The service plan for Afton Express assumes three initial years of service, but before those initial years are over, BRITE and its partners should consider the next steps for Afton Express, including potential expansion. Afton Express will likely need at least a year of service to build its ridership numbers and study of expansion would benefit from data collected during the second year, when ridership numbers and performance metrics have begun to stabilize. However, any expansion of service beginning in 2025 would need to be included in federal and state grant applications in 2024.

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To accumulate adequate amounts of data, any evaluation of service expansion should start no earlier than January 2023, which allows review of performance metrics and schedule refinement to inform potential expansion needs. To be responsive to timing requirements for grant applications for expanded service in 2025, evaluation of service expansion will need to be completed prior to January 2024.

MARKETING AND INFORMATION

BRITE will need to work with its local partners and stakeholders to raise awareness about the Afton Express service. This improved awareness will benefit both riders, who will need access to information about schedules and fares, and BRITE itself, which will need effective feedback from riders and local partners to make changes necessary to the continued success of the Afton Express service. The following sections detail activities that will need to occur throughout the life of Afton Express to ensure this information is up-to-date, accurate, and known to potential riders and local partners.

PERIODIC STAKEHOLDER COMMUNICATION AND STAKEHOLDER MEETINGS

Communication with stakeholders, including local jurisdiction officials, major institutions, employers, and riders, will need to occur on a consistent basis throughout the life of the Afton Express, but there are several points in the next four years where this outreach will be particularly important. Prior to implementation of service, outreach to stakeholders will provide valuable information on the anticipated performance, which may inform discussions on fare policies and help BRITE obtain the committed local funds. Outreach can also help BRITE understand the best strategies to employ for advertising the service and can tailor those strategies to more specific audiences.

Following the initial implementation of the Afton Express, stakeholders should continue to be engaged, particularly when seeking local funding commitments and when reviewing performance metrics and potential schedule refinements. This will ensure stakeholders and riders can provide feedback and serve as a means for communicating the successes and future service changes of the Afton Express.

DEVELOPING A BRAND AND LOGO

Prior to developing advertising materials, the branding of Afton Express transit service should be developed, including a logo. Determinations on whether the branding will be unique to the service itself or wholly consistent with BRITE branding will need to be made in coordination with Afton Express partners. Standards for branding should be consistent and well-defined to ensure all advertising and informational materials are coordinated and reinforce the benefits and opportunities provided by the Afton Express service to potential riders and service partners. This activity should occur once local funding has been secured and should be completed no later than September 2020, in coordination with stakeholder engagement and bus specification efforts.

DEVELOPING A WEBPAGE

As brand and logo materials become finalized, BRITE should develop a webpage for the Afton Express service. The webpage can provide early access to schedules and other informational materials, as well as advertise opportunities for engagement with stakeholders and milestones in the implementation process leading to Afton Express operations. This activity can begin in September 2020 to establish web

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addresses and any technical resources that may be useful to users but should be completed by October 2020 to ensure public access to information about the service can be available in advance of other advertising efforts and sales of fare passes.

DEVELOPING SOCIAL MEDIA PRESENCE

Once BRITE and its partners have developed a brand and logo for the Afton Express service, a social media presence for the service should be developed on a variety of platforms. These platforms will allow BRITE to more easily share information and advertise updates to a wide range of audiences, some of whom may not be regularly engaged with more traditional forms of media advertisement. Social media will allow BRITE to share webpage updates, press releases, and other promotional and informational materials. Engagement with followers of Afton Express social media accounts, as well as coordination with accounts representing Afton Express partners and stakeholders, will allow BRITE to extend its ability to reach potential riders in the corridor. This activity should begin in October 2020, following the establishment of brand standards and logo, with regular updates provided throughout the life of Afton Express.

DISTRIBUTING PERIODIC PRESS RELEASES

At key milestones both in implementation and operation of Afton Express, BRITE should develop and distribute press releases to acknowledge and promote the successes experienced by the service and provide information on any changes to the service. Milestones that could warrant a press release for Afton Express include: awarding of demonstration grant funding, securement of local funding from partners, release of refined schedules, availability of fare passes and printed schedules, semi-annual reviews of performance, and planning for service expansion.

ADVERTISING INITIAL SERVICE

Once funding is secured for the Afton Express service, initial efforts to advertise the service to potential riders could begin. While some materials may not yet be available, raising awareness of the service can improve the chances of Afton Express's success starting on Day 1 of operations. Early efforts can provide an overview of service, inform riders of fare policies and when fare passes will be available, and direct customers to places where more details will be provided in the future. As schedules, informational materials, and online resources become available, this information can be incorporated into the advertising strategy.

The initial campaign for advertising Afton Express service should occur beginning in July 2020 and can intensify as more information and materials about the service become available. Advertising efforts should continue through the first three months of operation in 2021.

PRINTING SCHEDULES AND INFORMATIONAL MATERIALS

Copies of schedules and informational materials will need to be distributed to riders, employers, and partner agencies to ensure potential riders have adequate resources to access the benefits of Afton Express. These materials cannot be provided until stop location amenities, fare policies, and schedules

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have been confirmed, but will be critical to be distributed in advance of the beginning of operation of the service.

Printing and distribution of schedules and informational materials should begin no later than November 2020. In subsequent years, revision and distribution of these materials should occur in the last three months of each fiscal year, following the refinement of schedules in the summer and early autumn.

UPDATING ONLINE RESOURCES

In tandem with the printing of schedules and informational materials, online resources will need to be updated to reflect current schedule refinements. This includes both static resources for rider information, such as schedules, maps, and fare information, as well as updating GTFS feed data used by the Google Transit online service for the Trip Planner.

Updating of online resources should occur in November and December of 2020 and in subsequent years, in tandem with the printing and distribution of schedules and informational materials.