Graham Transit
Transit Development Plan
Fiscal Years 2021-2030

Draft Report - June 2020

Graham Transit

Prepared for

Bluefield
Virginia's Tallest Town

Prepared by

KFH GROUP

Under contract to

DRPT
Virginia Department of Rail and Public Transportation

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Chapter 1
Overview of Public Transportation in the Region

INTRODUCTION

A transit development plan (TDP) is a short-range plan that outlines services that a transit provider intends to implement during a specific planning horizon, estimating both the resources needed and funding opportunities likely to be available to implement these services. The Virginia Department of Rail and Public Transportation (DRPT) requires that any public transit operator receiving state funding prepare, adopt, and submit a TDP at least every six years. DRPT provides a set of TDP requirements that form the basis of the planning effort. The most recent DRPT guidelines for the preparation of a TDP were published in February 2017 and call for the plan to encompass a ten-year planning horizon. Graham Transit's previous TDP was completed in 2011 and covered a six-year planning horizon.

This current TDP for Graham Transit will provide DRPT with an up-to-date record of related transit capital and operating budgets and provide the Town of Bluefield with a basis for including capital and operating programs in the Six Year Improvement Program (SYIP), the Statewide Transportation Improvement Program (STIP), and the Long Range Transportation Plan (LRTP).

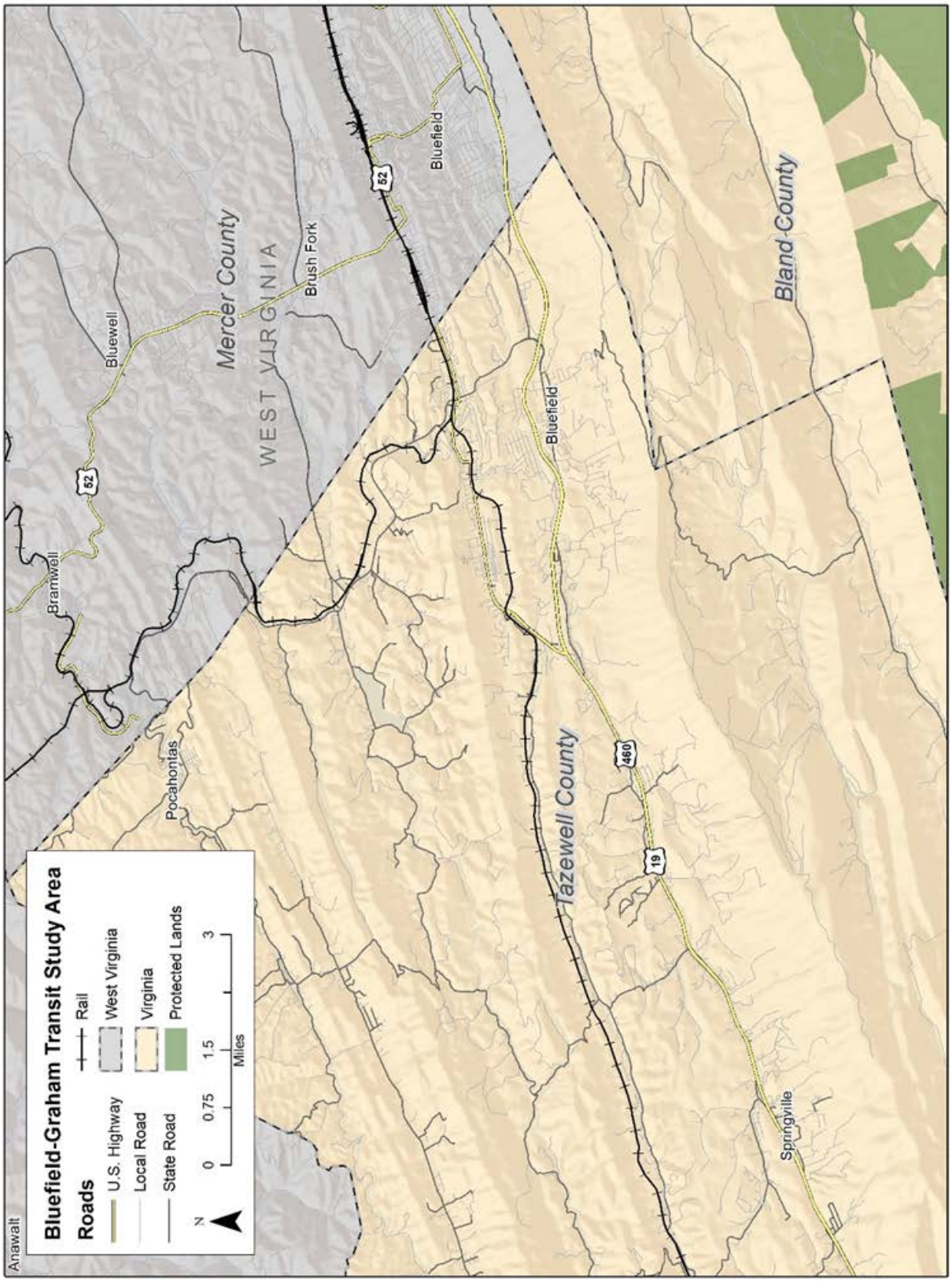
Chapter 1 of the plan provides an overview of the transit program and background information and data that were used for subsequent data collection, analysis, and recommendations for the ten-year plan.

BACKGROUND

The Town of Bluefield, Virginia, is located in Tazewell County, along the Bluestone River in southwest Virginia. It is a "sister" town to Bluefield, West Virginia, which is directly adjacent across the border. The town was previously named "Graham," which is the name of the town's transit program, Graham Transit. Together the region is called the "Bluefields." East River Mountain, at 3,400 feet, is a prominent feature of the area and, provides a natural barrier between Virginia and West Virginia. The Town of Bluefield calls itself the "Tallest Town in Virginia" for its elevation at 2,389 feet.

Transportation corridors serving Bluefield include US Highways 460, 19 and 52, Interstate 77, and the Norfolk Southern Railroad. Figure 1-1 displays a map of Bluefield and the surrounding region.

Figure 1-1: Town of Bluefield and Surrounding Area



Economy of the Service Area

Historically, railroading and mining were largely responsible for the area's economic vitality. The Greater Bluefield Chamber of Commerce highlights the coal industry as a continuing influence in the region, which is home to several coal industry-oriented equipment manufacturers. Several higher education institutions are located in the region, including Bluefield College (VA), Bluefield State College (WV), Southwest Virginia Community College (Richlands, VA), and National College (Princeton, WV). The 2013 – 2017 American Community Surveys indicated the leading industries for employment in the Town of Bluefield were health care and social assistance (20.7%), retail trade (14.4%), and educational services (13.3%). Virginia Employment Commission employment data from November 2019 indicates the unemployment rate in the Bluefield Micropolitan Area (which also includes Bluefield, WV) was 3.8%. The unemployment rate for the Commonwealth of Virginia was 2.5% and the national unemployment rate was 3.3% for the same period.

Population

Data from the 2018 U.S. Census estimates that the population of the Town of Bluefield is 4,882, which is down from the 2010 Census population of 5,444. A full population analysis is provided in Chapter 3.

PREVIOUS TDP RECOMMENDATIONS

The 2011 TDP recommended the following modest service improvements:

- Saturday service on every Saturday, not just one Saturday per month;
- Extension of service hours on the Main and Gold routes to 7:30 p.m.; and
- Extension of the Pocahontas Route service hours until 4:00 p.m.

The town has made progress toward implementing these recommendations with the FY2010 service hours totaling 6,842, as compared to the FY2017 service hours, which were 8,012.[1]

While the National Transit Database (NTD) data suggests that ridership on Graham Transit decreased by 9.8% between FY2016 and FY2017, the FY2017 ridership (40,949 annual passenger trips) is significantly higher than the FY2010 ridership cited in the previous TDP (28,392 annual passenger trips).

For this current TDP, the Saturday recommendation has been carried forward, and the recommendation regarding the Pocahontas Route has been extended to include providing the route until 6:00 p.m., similar to the Main and Gold routes. Evening service hour extensions were not implemented and are not included in the current plan.

[1] Previous TDP cited the FY2010 hours as 6,842. National Transit Database cited the FY2017 hours as 8,012.

In addition to service recommendations, the 2011 TDP also included suggested improvements to marketing, staffing, surveillance cameras, and passenger infrastructure. Graham Transit has hired an operations manager and added cameras since 2011.

HISTORY

Prior to 1993 public transportation in the region was operated through Tazewell County using a private contractor. At that time Tazewell County was the fiscal agent for state and federal transit grants, but much of the demand was in the Bluefield area. In its oversight role, DRPT asked the town if the public transit vehicles could be stored at the town's public works facility. The town agreed to house the vehicles for the transit program. Service quality concerns led DRPT to ask if the town would be interested in taking over the service entirely, which it did in 1993. Graham Transit was the only service available in Tazewell County until 1998, when the Appalachian Agency for Senior Citizens (AASC) started Four County Transit with a demonstration grant.

Graham Transit's service area is Bluefield and the surrounding area, while Four County Transit operates throughout Buchanan, Dickenson, Russell, and Tazewell counties.

GOVERNANCE AND ORGANIZATIONAL STRUCTURE

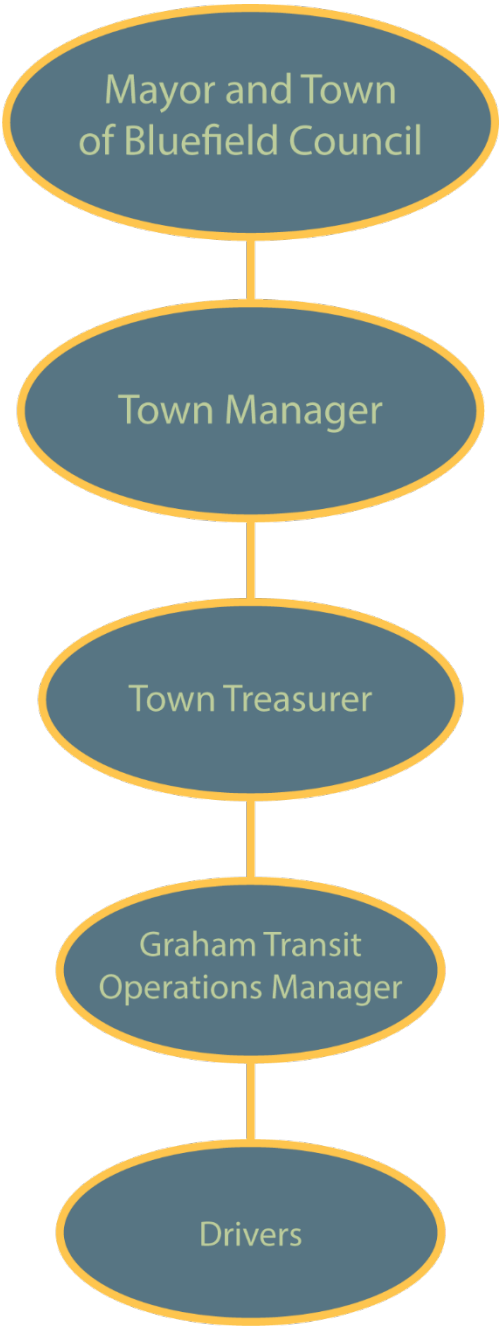
The Town of Bluefield operates Graham Transit directly, and all staff members are employees of the town. The Town Treasurer serves as the Transit Manager. Since the 2011 TDP, an operations manager has been hired who directly oversees the drivers and provides telephone customer service for Graham Transit.

The vehicles are housed and maintained by the town's Public Works Department. The Town Treasurer reports to the Town Manager and the Town Council serves as the Governing Board for the transit program. This structure is depicted in Figure 1-2. Graham Transit does not have a transit advisory committee.

Current members of the Town Council and their terms are as follows:

- Don Harris, Mayor, January 1, 2017 – December 31, 2020
- Angliss Trigg, Vice Mayor, January 1, 2019 – December 31, 2022
- Jimmy Jones, Councilmember, January 1, 2019 – December 31, 2022
- Jarrod Bailey, Councilmember, January 1, 2019 – December 31, 2022
- Ron Holt, Councilmember, January 1, 2017 – December 31, 2020
- Chuck Presley, Councilmember, January 1 2017 – December 31, 2020

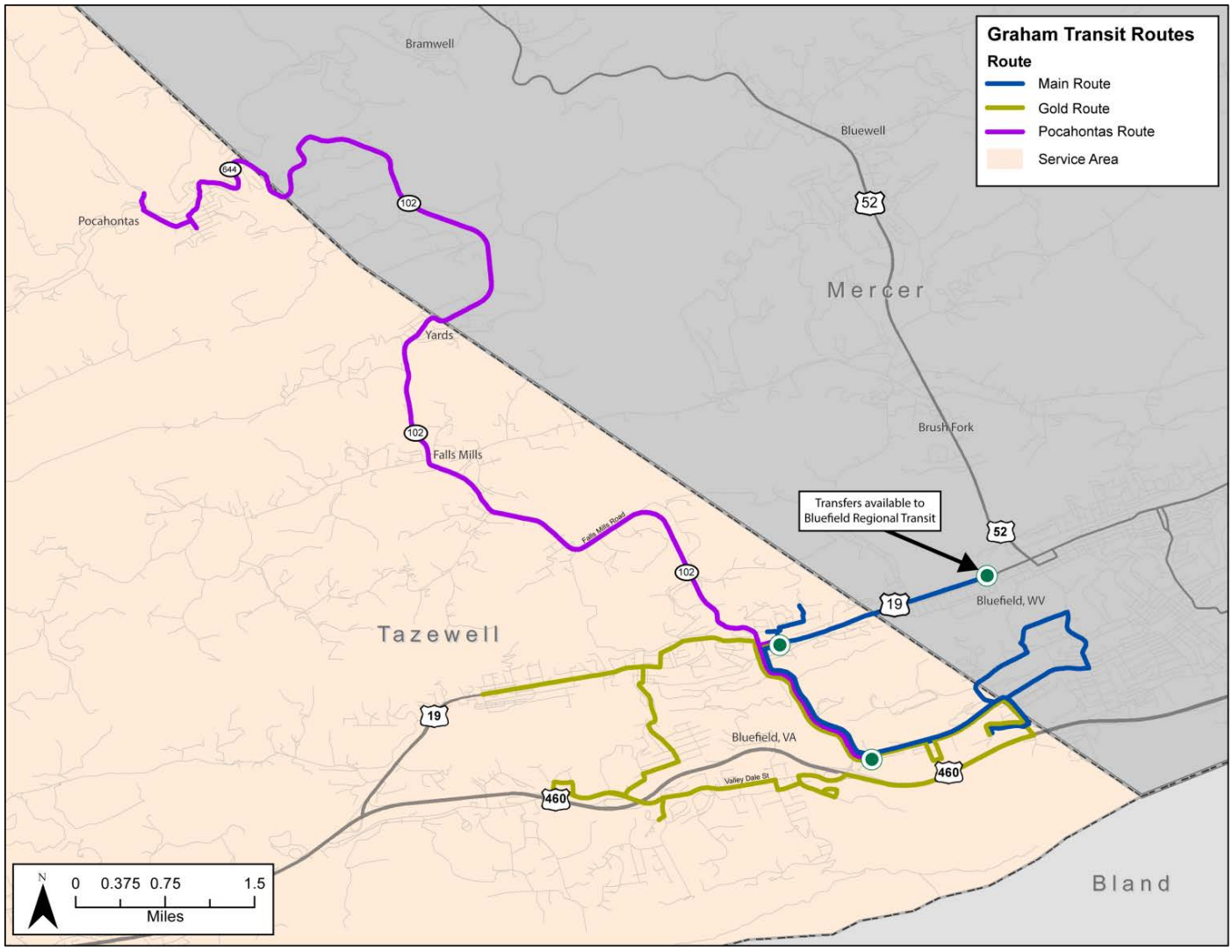
Figure 1-2: Graham Transit Organizational Chart



Transit Services Provided and Areas Served

Graham Transit operates three deviated fixed routes in Bluefield, VA and its surrounding area: the Main Route; the Gold Route; and the Pocahontas Route. Each route will deviate up to one mile and riders must submit their deviation request at least one hour in advance. The vehicles are lift-equipped to accommodate persons with disabilities. Figure 1-3 displays the three routes operated by Graham Transit. More detailed route maps and operating data are provided in Chapter 3. Graham Transit also provides the opportunity for transfers to other regional transportation providers, specifically Four County Transit and Bluefield Area Transit (WV). Passengers are able to transfer between transit providers, but are required to pay a new fare upon boarding.

Figure 1-3: Graham Transit Service Map



Bicycle and Pedestrian Connectivity

The town's 2016 Comprehensive Plan indicates that there is a need for additional sidewalks in the following neighborhoods: South College; Valley Dale; Pinehill Park; Parkview; and Double Gates. Sidewalks have recently been constructed on Mountain Lane and College Avenue. The Plan also states that there are future plans for a hiking/biking trail but details are not provided.

Fare Structure

Graham Transit charges a $0.25 fare per boarding. Children ages five years and younger ride free. The system does not utilize passes or tickets. Passengers can transfer from one route to another without paying a second fare. One initiative recommended for this TDP planning period is to eliminate the fare, as it does not generate a significant amount of revenue and is cumbersome to collect, track, and deposit.

Fleet

Graham Transit's fleet consists of five vehicles, four of which are used in revenue service. Table 1-1 provides a detailed fleet inventory.

Table 1-1: Graham Transit Vehicle Fleet

Vehicle/Equipment Description	Vehicle Number	Model Year	Purchase Date	Engine Type	Wheelchair Accessible	Mileage 6/1/2020	Condition
14 Passenger Chevrolet Starcraft Allstar	173	2016	6/8/2016	Gas	Yes	110,751	Good
14 Passenger Chevrolet Starcraft Allstar	174	2018	2/13/2018	Gas	Yes	91,160	Good
14 Passenger Chevrolet Starcraft Allstar	175	2018	2/13/2018	Gas	Yes	94,171	Good
14 Passenger Chevrolet Starcraft Allstar	176	2019	3/13/2019	Gas	Yes	39,509	Excellent
Ford Explorer (Staff Vehicle)	20	2014	3/14/2014	Gas	No	54,212	Good

Existing Facilities

Buildings

Graham Transit operations are based at the town's Public Works garage, a portion of which was funded through DRPT/FTA grants. The operations manager is based at this facility and the vehicles are maintained and stored here as well. This facility is shown in Figure 1-4.

Figure 1-4: Town of Bluefield Public Works Facility

Bus Stops and Passenger Amenities

The four most heavily used bus stops have signs and a shelter. These are located at the Treasurer's Office in downtown Bluefield, the Crescent View housing complex, Walmart, and Lowes. The other stops in the system are not signed.

TRANSIT SECURITY PROGRAM

The Graham Transit facility and the vehicles are equipped with security cameras to deter crime and to view incidents when necessary. In addition, drivers are in communication with each other and the operations manager via two-way radios.

INTELLIGENT TRANSPORTATION SYSTEMS (ITS) PROGRAM

Given the small size and simplicity of the transit program in Bluefield, Graham Transit management has not found it necessary to integrate ITS amenities into the system.

DATA / FARE COLLECTION PROCESS

Data Collection

Hours

The operating data concerning vehicle revenue hours is compiled daily by the operations manager using a spreadsheet. The transit manager reviews the hours and submits them monthly to DRPT's online grant administration system (OLGA). The monthly data are compiled to develop Graham Transit's annual National Transit Database (NTD) reports.

Miles

Graham Transit relies on the drivers to record vehicle-related data on a paper form titled the "Graham Transit Driver's Check List." This form is used to record mileage, mechanical issues, or safety defects with the vehicle. These forms are signed and turned in to the Operations Manager each shift. The Operations Manager checks these numbers by taking daily odometer readings on the vehicles. The data are entered onto a spreadsheet daily. The Transit Manager uses the spreadsheet to report mileage data to OLGA monthly. The monthly data are compiled to develop Graham Transit's annual NTD reports.

Trips

The drivers use paper forms to record transit ridership by run for each of the three routes. These forms are turned into the Operations Manager for data entry and compilation using a Microsoft Excel spreadsheet. The Transit Manager validates the data and submits the data to OLGA monthly. The monthly data are compiled to develop Graham Transit's annual NTD reports.

Fare Collection

Graham Transit buses are equipped with manual fare boxes in which passengers drop their fares. The fare boxes are pulled once a week, with the fare revenue deposited by the Treasurer's Office. The Transit Manager reconciles the farebox revenue with the ridership each week.

PUBLIC OUTREACH

Since Graham Transit is part of the town government, the main forum for public input is Town Council meetings, two of which are conducted each month and are open to the public. Graham Transit publishes brochures that include the hours, schedule, fare, and contact information.

Brochures are available at key locations in the Bluefield area, as well as on board the vehicles. Basic transit information and the schedule are also posted on the town's website.

OTHER AREA TRANSPORTATION PROVIDERS/SERVICES

Public Transit

Beyond Graham Transit, Bluefield, VA residents have access to transit services provided by Bluefield (WV) Area Transit and Four County Transit. A short description of each provider is included below. Figure 1-5 displays the routes serving Bluefield, VA for each of the area's providers.

Bluefield Area Transit (West Virginia)

Bluefield Area Transit operates three deviated fixed routes serving the cities of Bluefield and Princeton in Mercer County, West Virginia. Graham Transit's Main Route connects with Bluefield Area Transit along US-19, allowing riders to transfer between providers. Note that a new fare is required when transferring between different transit providers. Bluefield Area Transit routes are flag stop services, and deviate up to ¾ mile in each direction of the route.

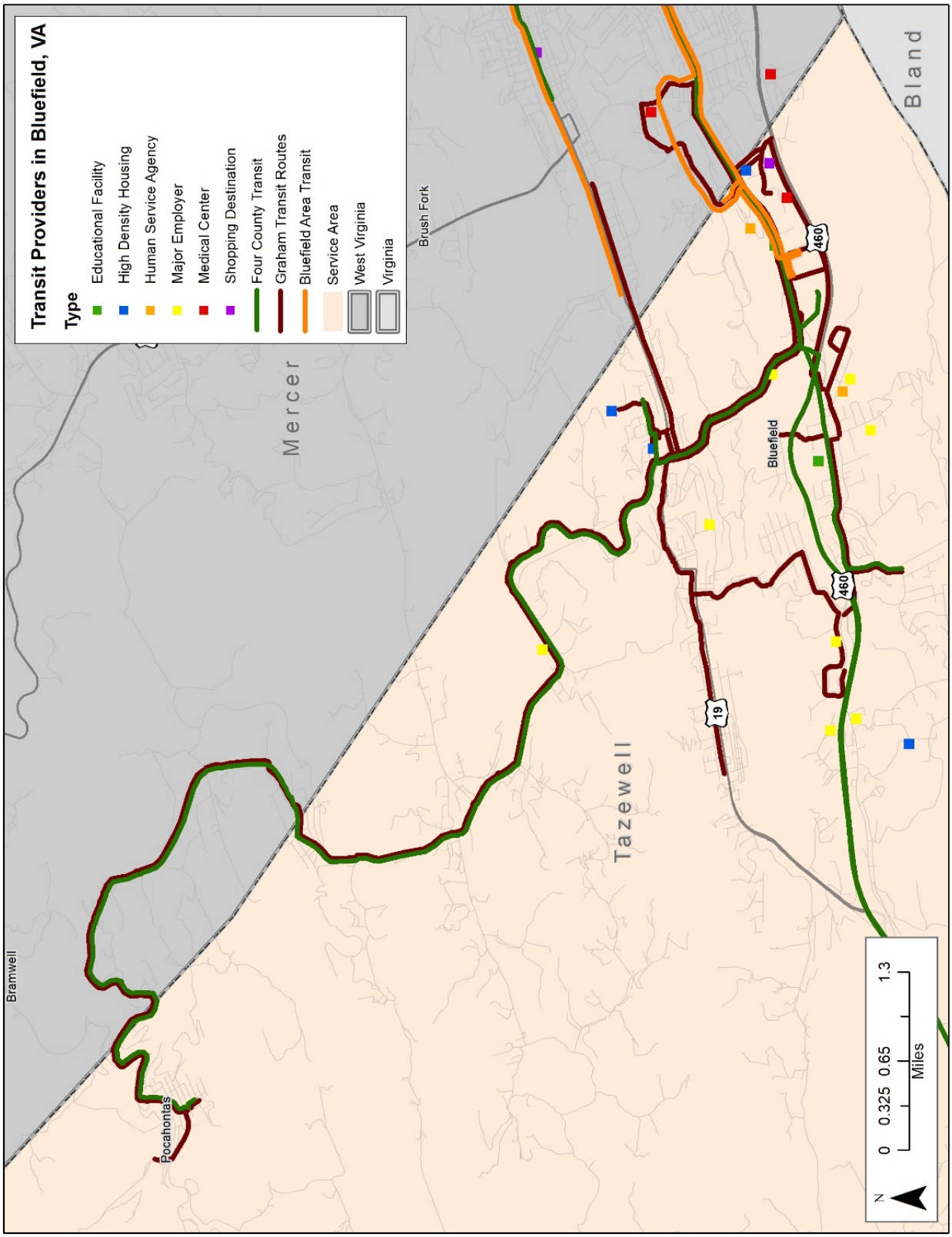
Four County Transit

Four County Transit, a service of the Appalachian Agency for Senior Citizens (AASC), provides public transportation services in the counties of Buchanan, Russell, and Tazewell. In Tazewell County, Four County Transit is also the primary transportation provider for the towns of Claypool Hill, Richlands, and Tazewell. Four County Transit connects riders in these areas to Bluefield and Pocahontas. Four County Transit routes currently operating within the Graham Transit service area include:

- Southwest Virginia Community College Route; and
- 4 Seasons Connector Intercity Transit – Tazewell/Bluefield Connector

Fares vary depending on route; the Southwest VA Community College Route is $1.00 per boarding, while the Intercity service is $0.50 per boarding.

Figure 1-5: Transit Providers in Bluefield, VA



Taxi and Private Transportation Providers

The following taxi and private transportation providers operate in the region:

- ***Medicaid Taxi***, Honaker
- ***Mullin's Cab***, Tazewell
- ***Skeens Cab***, Nora
- ***2 Brothers Taxi,*** Claypool Hill
- ***Darlene Jackson Taxi Inc.***, Cedar Bluff

Human Service Transportation

As a service of AASC, human service transportation in the region is provided primarily by Four County Transit through agreements to provide service to area congregate nutrition sites and adult day care.

The Commission on Aging program operated by Community Action Southeastern West Virginia (CASEWV) provides transportation to health care, shopping, exercises, and activities to adults ages 60 and older living in Mercer County, West Virginia.

Medicaid Transportation

Medicaid transportation is arranged by Logisticare for this region of Virginia.

Intercity Bus

Greyhound provides intercity bus service to Bluefield, West Virginia. The Greyhound station is located at 1152 Bland Street in Bluefield, and is served by the Detroit-Jacksonville Route. It operates southbound trips from Bluefield traveling to Wytheville, VA; Winston-Salem, North Carolina; and Charlotte, North Carolina and also stops in South Carolina, Georgia, and Jacksonville, Florida. Northbound trips leave Bluefield with service to Beckley and Charleston, West Virginia where transfers to the broader intercity bus network are available.

Amtrak

The closest Amtrak service to Bluefield is along the Cardinal Route, which travels from New York to Chicago; traveling through Philadelphia, Baltimore, and Washington D.C., with multiple stops in West Virginia. The closest station is in Hinton, West Virginia.

Chapter 2
Goals, Objectives, and Standards

INTRODUCTION

This chapter discusses unmet needs and gaps in transit services identified at the outset of the project. It presents goals and objectives for Graham Transit as well as performance and service standards. Identifying unmet needs and gaps was an important first step in the development of the Graham Transit TDP as it identifies issues that were explored within the planning process. The unmet needs and gaps in service were further informed by input from the rider survey and results of the demographic analysis (discussed in Chapter 3).

ISSUES AND UNMET NEEDS IDENTIFIED BY GRAHAM TRANSIT

An important first step in development of the TDP was to learn from Graham Transit staff about community transportation issues and unmet needs that they are aware of through their contact with customers. The project team conducted a kick-off meeting with DRPT and Graham Transit in October 2019 to discuss the TDP process as well as transportation issues, constraints, and unmet needs. They are summarized by topic in the following sections (though not prioritized).

Hours of Service

- Customers have indicated a need for the Pocahontas Route to operate on a schedule similar to the Main and Gold routes, which is approximately 7:00 a.m. to 6:00 p.m., Monday through Friday. The Pocahontas Route currently ends service at 3:00 p.m.

Days of Service

- Graham Transit operates Saturday service only on the first Saturday of each month, and every Saturday in between Thanksgiving and Christmas. Customers have indicated a need to operate transit service every Saturday.

Infrastructure Improvements

- A signed stop with a shelter has been discussed for Bluefield College.
- Additional signs throughout the route network are needed.

Examination of Fare-Free Service

The current Graham Transit fare is only $0.25, which generates about $11,000 per year. The concept of operating fare-free is included as a TDP alternative, including a discussion of the possible effects on ridership, transient usage, and the reduction of effort on the part of the town with regard to tracking and safeguarding cash.

STAKEHOLDER INPUT

Subsequent to the kick-off meeting with Graham Transit staff, telephone interviews were conducted with stakeholders in the Town of Bluefield and the surrounding area. These interviews provided the ability to gain an understanding of transportation needs, challenges, and opportunities relating to public transit in the Town of Bluefield and the surrounding area. The study team had difficulty following up with additional stakeholder outreach during the TDP process, as some stakeholders were not available for interviews during the COVID-19 quarantine. Unsuccessful efforts were made to reach representatives from Bluefield College, the Tazewell County Department of Social Services, and the Crescent View Apartments.

Mike Watson, Bluefield Town Manager

Mike Watson is currently the town manager for Bluefield, Virginia and oversees the town's daily municipal activities, including Graham Transit. Mr. Watson was asked about community awareness of transit as well as unmet transit needs and future developments that may impact the transit services currently being provided by Graham Transit.

Awareness of Service

The Town of Bluefield indicated that Bluefield residents were very aware of the bus service provided by Graham Transit. Mr. Watson did, however, make a distinction between Bluefield residents and the student body at Bluefield College. Students may be less aware of Graham Transit because there are no on-campus stops. He indicated that there have been ongoing attempts to place a regular stop at Bluefield College to increase awareness.

Unmet Needs

When asked about whether there were any obvious unmet needs in the community, Mr. Watson indicated that Graham Transit was serving the community's needs. Similar to the discussion on community awareness, Mr. Watson emphasized that Bluefield College students could better utilize Graham Transit services, and a stop at the college could help empower the community to ride Graham Transit.

Future Opportunities

Mr. Watson mentioned that there is a plan to build a new Adult Day Care in Falls Mills, a town currently served by the Pocahontas Route. The Adult Day Care center, which will also provide medical services to area residents, will likely increase the demand to go to Falls Mills. Increased demand would likely necessitate increased collaboration with Four County Transit, Bluefield Area Transit, and other area transportation providers. This could necessitate the expansion of service hours for the Pocahontas Route, which runs from 7:00 a.m. to 3:00 p.m.

Four County Transit

As the primary transit provider for Tazewell County, Four County Transit provides service into and out of Bluefield for county residents. This regional service helps connect a large swath of southwest Virginia to important community landmarks including Southwest Virginia Community College, and regional medical and shopping centers. As one of the three service providers operating in Bluefield, Four County Transit was able to provide valuable input about transit in Bluefield and Tazewell County.

Awareness of Service

Four County Transit meets with Graham Transit in Bluefield at Walmart and at the College Plaza bus shelter every two hours, which provides an opportunity for riders to transfer between services. Four County Transit said that most travelers transferring from Graham to Four County were traveling to the Tazewell County Department of Social Services, the courthouse, or the community college. Four County riders going into Bluefield are often going to Walmart or to medical appointments in both Bluefields.

Unmet Needs

Four County Transit thought that the three regional transit systems already linked together very well, and indicated there were few unmet service needs in the area. The only service improvement mentioned was an expanded service to Pocahontas, which is served by a Graham Transit route with a shorter service day. Transit amenities were mentioned by Four County Transit riders, specifically benches; some riders expressed the desire for more benches at stops.

Future Opportunities

Similarly to the Town of Bluefield, the Four County Transit manager indicated that the Adult Day Care in Falls Mills could be a large enough trip generator to impact the service operated by each provider. Since it is not yet built, there were few concrete service proposals for this area.

Another service highlighted as an area need was re-introducing intercity bus service to the region. An intercity bus line currently runs on I-81 from Bristol to Roanoke, but there are limited connections in Bluefield and Tazewell County. Four County Transit believes additional

service to Wytheville and the I-81 line would provide area residents the opportunity to attend medical appointments in Virginia's larger cities. The Commonwealth of Virginia has recently dedicated funding to expand its intercity bus program through implementation of the Virginia Breeze service from Blacksburg to Washington, D.C., and there may be opportunities to collaborate with this program to bring intercity bus back to the region.

TRANSIT PROGRAM MISSION AND GOALS

As documented in the 2011 TDP, the mission of Graham Transit is to link the residents of Bluefield with surrounding communities, shopping areas, medical parks, and hospitals. During the 2011 TDP process, a set of goals and objectives were developed for the program. These are outlined below.

Goals and Objectives

Goal 1

Offer convenient access to medical facilities, employment areas, shopping centers, schools, and community agencies.

Objectives

- Provide deviated fixed route service to major medical facilities, employment areas, shopping centers, schools, and community agencies in the town of Bluefield.
- Operate transit services during a span of service that allows riders to access key community destinations.
- Offer hourly service throughout Bluefield.
- Offer public transportation Monday through Saturday.

Goal 2

Provide adequate mobility options that enable area residents to maintain personal independence and be engaged in civic and social life.

Objectives

- Offer wheelchair-accessible, deviated fixed routes so that people with mobility limitations can use Graham Transit.

- Provide service to areas of Bluefield where there are concentrations of older adults and/or people with disabilities.

- Ensure that information regarding Graham Transit is readily available within the community for older adults and people with disabilities.

Goal 3

Provide cost effective service.

Objectives

- Monitor costs on a monthly basis to ensure they are in keeping with the annual operating budget.

- Monitor productivity on a monthly basis to ensure that Graham Transit is maintaining or improving upon the number of trips per revenue hour provided. Adjust routes if needed to maintain a cost-effective service.

Goal 4

Coordinate services with Four County Transit and Bluefield Area Transit to ensure effective service delivery to the community.

Objectives

- Meet with Four County Transit and Bluefield Area Transit at least twice a year to discuss transit needs, as well as current and planned services for the community.

- Share information concerning transit needs and initiatives, as appropriate.

- Add references to Four County Transit and Bluefield Area Transit on the Graham Transit schedule and encourage similar references on Four County and Bluefield Area schedules.

Goal 5

Manage, maintain, and enhance the existing public transportation system to ensure safe and reliable transportation services.

Objectives

- Continue to maintain the fleet in accordance with the manufacturer's recommended maintenance schedules.

- Replace vehicles and equipment as recommended by DRPT's useful life criteria.
- Monitor system safety and take corrective actions if necessary.

These goals and objectives were reviewed with Graham Transit to ensure they continue to reflect Graham Transit's priorities.

PERFORMANCE, SAFETY AND SERVICE STANDARDS

The 2011 TDP developed a set of several service standards that also included safety and performance standards. Given the growing importance of five specific performance metrics used by DRPT for funding allocation purposes, KFH Group has separated the performance standards from the service and safety standards. Both sets of standards are outlined below.

DRPT Performance-Based Allocation Metrics

In FY2020, DRPT implemented a new performance-based methodology for allocating operating assistance funding pursuant to the Code of Virginia and Commonwealth Transportation Board (CTB) policy. The methodology was developed through coordination with Virginia's Transit Service Delivery Advisory Committee (TSDAC) and the CTB, which resulted from a 2018 legislative mandate to base grant amounts on agency performance.[1] The methodology developed considers sizing and performance metrics.

The sizing metrics are intended to base allocations on the size of the agency so that grant funding is proportionate to the level of service operated. The sizing metrics and weights for FY2020 are:

Operating cost	60%
Ridership	20%
Revenue vehicle hours	10%
Revenue vehicle miles	10%

The sizing metrics and weights for FY2021 and beyond will be:

Operating cost	50%
Ridership	30%
Revenue vehicle hours	10%
Revenue vehicle miles	10%

[1] DRPT, Development of Performance-Based Operating Assistance Methodology, Fiscal Year 2020.

The five performance metrics and weights are:

Passengers per revenue vehicle hour (20%)
Passengers per revenue vehicle mile (20%)
Operating cost per revenue vehicle hour (20%)
Operating cost per revenue vehicle mile (20%)
Operating cost per passenger trip (20%)

Graham Transit Performance Metrics

Table 2-1 provides the Graham Transit values for these metrics for FY2019.

Table 2-1: Graham Transit Performance Metrics, FY2019

Graham Transit Performance Metrics - FY2019				
Passenger Trips/ Revenue Hour	Passenger Trips/ Revenue Mile	Cost/ Revenue Hour	Cost/ Revenue Mile	Cost/Trip
5.56	0.34	$37.77	$2.29	$6.80

Given that these five metrics are being used by DRPT to allocate funding, it is recommended that Graham Transit adopt these metrics internally when reviewing performance.

Service Standards

Service standards are benchmarks by which service performance is evaluated. Service standards are typically developed in several categories of service, such as service coverage, passenger convenience, and passenger comfort. The most effective service standards are straightforward and relatively easy to calculate and understand. The standards outlined in Table 2-2 were included in the 2011 TDP.

Table 2-2: Graham Transit Service Standards

Category	Standard
	Service Coverage
Availability *Service availability is a direct reflection of the level of financial resources available for the transit program. Service coverage, frequency, and span of service are considered under the category of "availability."*	Residential areas • Areas with concentrations of transit dependent people • Multi-family housing complexes with over 25 units Major activity centers • Employers or employment concentrations of 200+ • Health centers • Middle and high schools • Colleges/universities • Shopping centers of over 10 stores or 100,000 sq.ft. • Social service/government centers
	Frequency
Frequency is currently hourly on the deviated fixed routes.	• 60-minute headways on weekdays • 60-minute headways on Saturdays
	Span
	7:00 a.m. to 6:00 p.m. on weekdays
	Patron Convenience
Bus Stop Spacing	4 to 5 per mile, as needed based on land uses. At major origins and destinations for rural routes.
Dependability	No missed trips - 95% on-time service (0 to 5 minutes late) No trips leaving early
	Passenger Comfort
Waiting Shelters	10 or more boardings per day
	Public Image
Bus Stop Signs	Should have the system name, contact information, and route
Public Information	Timetable, maps, and website current and accurate
Revenue Equipment	Clean and good condition

Category	Standard
	Safety
Incidents Per 100,000 Revenue Miles	0.0 "reportable incidents" per 100,000 miles, as defined by the National Transit Database. A reportable incident is when one or more of the following conditions apply: • A fatality • Injuries requiring medical attention away from the scene for one or more persons • Property damage equal to or exceeding $25,000.[2]

PROCESS FOR UPDATING GOALS, OBJECTIVES, AND STANDARDS

As part of the TDP process the proposed performance standards were reviewed and adjusted as needed to reflect what is feasible for Graham Transit to monitor through appropriate data collection efforts. It is recommended that Graham Transit use these standards to gauge route and service performance and adjust services as warranted and feasible. It is also recommended that an annual review of service standards take place as part of the grant preparation cycle to ensure that performance standards are relevant and reasonable. Any changes for these measurement tools can be included in the annual TDP update.

[2] National Transit Database, 2010 Rural Reporting Manual.

Chapter 3
Service and System Evaluation and Transit Needs Analysis

INTRODUCTION

This chapter of the TDP focuses on two primary analyses. The first focus is a description and analysis of the recent performance of Graham Transit, including analyses of trends, peers, recent ridership, and a passenger survey. The second area of focus provides an analysis of transit needs, a demographic and land use analysis, and a review of relevant studies and plans.

Overall, this chapter has twelve components which are presented in the following order:

1. System Evaluation - including profiles of the three Graham Transit routes
2. Financial Information
3. Peer Analysis
4. Recent Compliance Results
5. Graham Transit Passenger Survey
6. Population Analysis
7. Transit Dependent Populations
8. Title VI Demographic Analysis
9. Land Use Profile
10. Summary of Demographic Analyses
11. Review of Previous Plans and Studies
12. Chapter Summary

SYSTEM EVALUATION

Operating Data

Table 3-1 provides operating statistics for Graham Transit for FY2017 through FY2019. A review of this data reveals the following:

- Passenger trips have increased by over 4,000 since FY2017.
- Productivity, as measured by passenger trips per revenue hour, has gone up.
- Cost per trip has gone down.
- Farebox revenue has increased while cost per trip has decreased.
- Farebox recovery increased one percent.

Table 3-1: Graham Transit - System-Wide Performance and Trend Data

Year	Passenger Trips	Rev. Hours	Rev. Miles	Operating Expenses	Farebox Revenue	Passenger Trips/Rev. Hour	Cost/Rev. Hour	Farebox Recovery	Cost/ Trip	MPH
FY2019	45,092	8,115	133,672	$306,544	$11,276	5.56	$37.77	4%	$6.80	16.5
FY2018	42,374	7,814	129,996	$311,045	$10,595	5.42	$39.81	3%	$7.34	16.6
FY2017	40,949	8,012	130,454	$297,226	$10,239	5.11	$37.10	3%	$7.26	16.3

As noted in the system performance data, Graham Transit provided just over 45,000 passenger trips in FY2019. Table 3-2 provides the operating statistics per route for calendar year 2019. These data were compiled from Graham Transit's daily spreadsheet, which keeps the lunch run separate. The study team split the lunch data among the three routes in proportion to the base route data.

Table 3-2: Graham Transit Operating Date by Route, Calendar Year 2019

Route	Hours	Miles	Trips	Estimated Cost	Trips/ Hour	MPH	Cost Per Trip
Gold	3,017	48,148	12,361	$ 115,528	4.1	16.0	$ 9.35
Main	3,163	41,751	26,337	$ 121,122	8.3	13.2	$ 4.60
Pocahontas	2,361	46,904	6,734	$ 90,400	2.9	19.9	$ 13.42
Total/Average	**8,541**	**136,803**	**45,432**	**$ 327,050**	**5.3**	**16.0**	**$ 7.20**

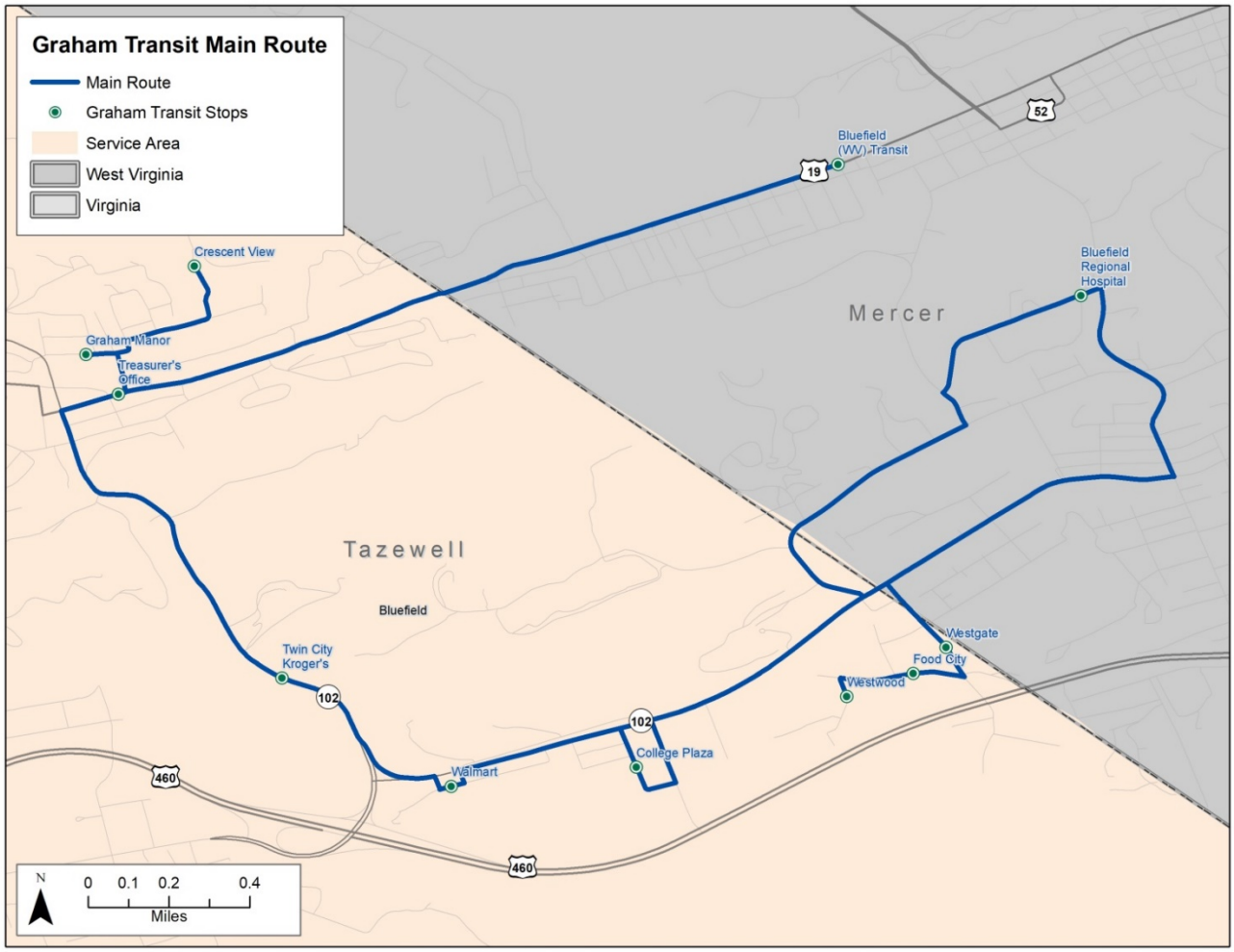
These data show that the Main Route is the busiest and most productive of the three, providing over twice as many passenger trips as the Gold Route, and almost four times as many passenger trips as the Pocahontas Route. The cost per trip ranges from a low of $4.60 for the Main Route to a high of $13.42 on the Pocahontas Route.

Route Profiles

Main Route

The Main Route serves Bluefield, VA and provides key connections to Bluefield Area Transit and the Bluefield Regional Medical Center in West Virginia. This route operates hourly Monday-Friday, as well as the first Saturday of each month, from 7:25 a.m. to 5:55 p.m. It provides eleven daily round trips. This route serves as the main transit connection from Bluefield, WV to Bluefield, VA. The route currently provides transfer opportunities to Bluefield Area Transit at 1801 Bluefield Avenue in West Virginia. The bus then returns to Virginia and serves local shopping destinations at Twin City Plaza, Ridgeview Plaza (Walmart), and College Plaza. After serving these destinations, the route again crosses into West Virginia and serves the Bluefield Regional Medical Center. Productivity on the Main Route was 8.3 passenger trips per revenue hour in calendar year 2019, which is the highest of the three routes. A detailed route map can be found in Figure 3-1.

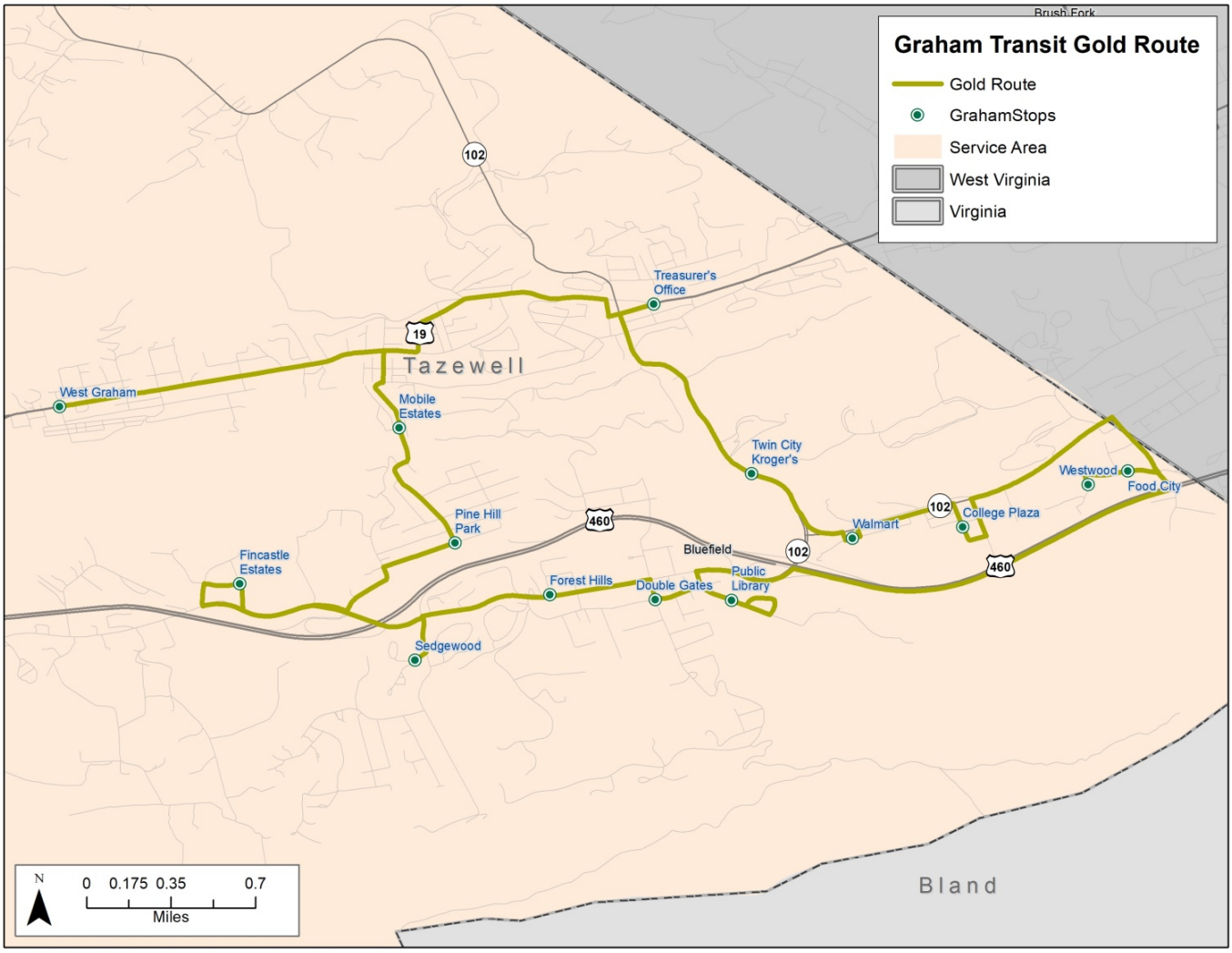
Figure 3-1: Main Route Profile



Gold Route

The Gold Route operates hourly Monday-Friday and every first Saturday of the month, from 6:55 a.m. to 5:55 p.m. It provides eleven daily trips. The Gold Route operates entirely within the Town of Bluefield, VA and connects the residential areas of West Graham and Fincastle Estates to the shopping destinations on College Avenue. Transfers to other Graham Transit services are available at the Treasurer's Office, Food City, College Plaza, Walmart, and Twin City Plaza. Four County Transit also stops at Walmart. Frequent deviations include the Westwood Medical Center, which is also served by the Main Route. Productivity on the Gold Route in calendar year 2019 was 4.1 passenger trips per revenue hour. Figure 3-2 displays a detailed profile of the Gold Route.

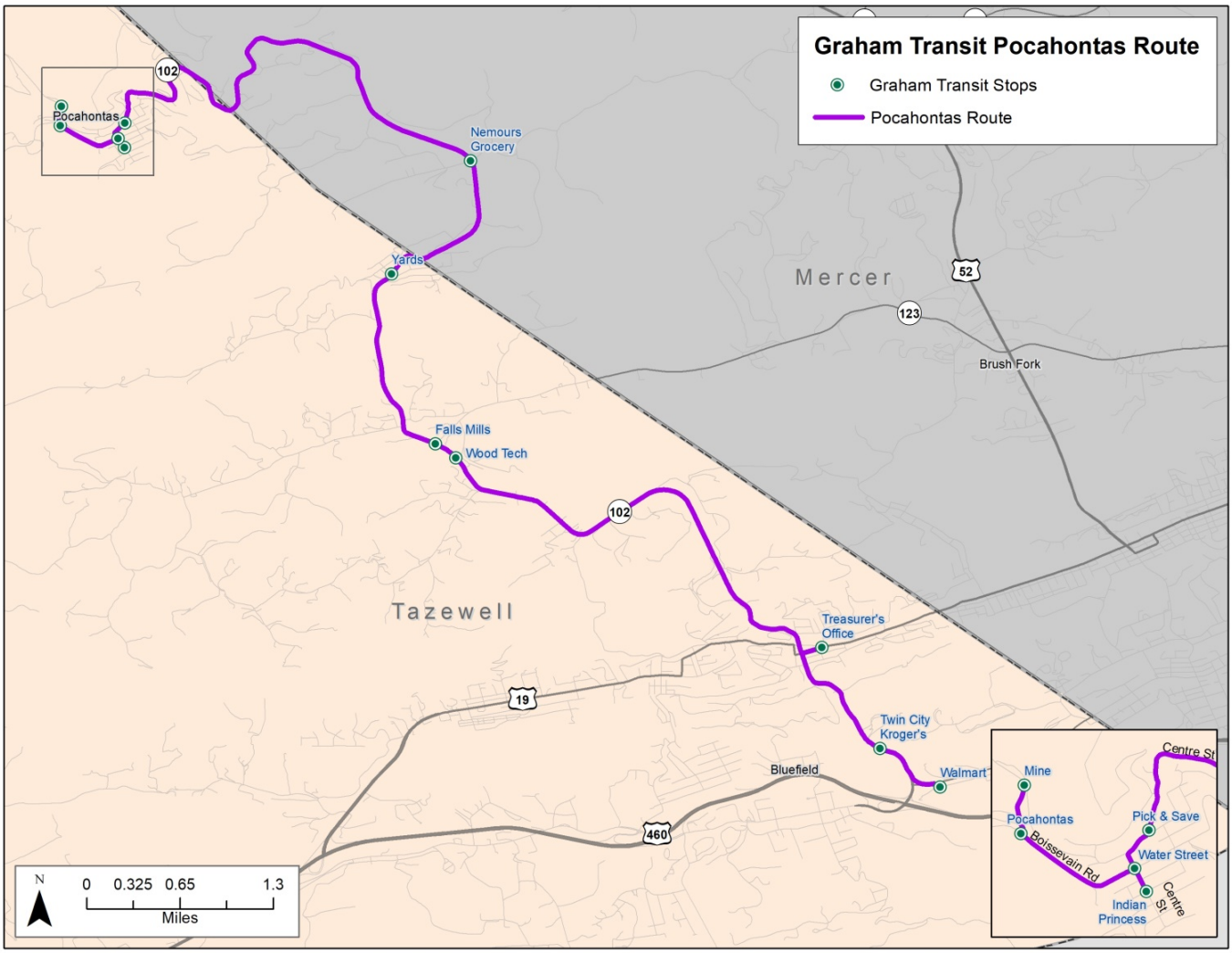
Figure 3-2: Gold Route Profile



Pocahontas Route

The Pocahontas Route operates hourly Monday-Friday as well as the first Saturday of each month, from 7:00 a.m.- to 3:00 p.m. It provides nine daily trips. This route provides Pocahontas residents a connection to the shopping opportunities in Bluefield. This route also stops in West Virginia at Nemours Market. Transfers to other Graham Transit services and Four County Transit are available at Walmart. As would be expected, given the low-density areas between Bluefield and Pocahontas, this route is the least productive of the three, providing 2.9 passenger trips per revenue hour in calendar year 2019. Figure 3-3 displays a detailed profile of the Pocahontas Route.

Figure 3-3: Pocahontas Route Profile



FINANCIAL INFORMATION

Operating Budget

The operating budget for Graham Transit for FY2020 is $327,050. Salaries and wages account for the largest share of the budget. After applying the fare revenue of $11,000, Graham Transit's net deficit is $316,050. Nearly half of Graham Transit's total operating budget is funded through the FTA Section 5311 funding program. Table 3-3 provides the individual line item expenses, while Table 3-4 provides funding information.

Table 3-3: Graham Transit Fiscal Year 2020 Operating Budget

Graham Transit FY2020 Operating Budget	
Expense Categories	**Amount**
Salaries and Wages	$179,700
Fringe Benefits	$64,200
Cleaning Supplies	$1,300
Motor Fuels and Lubricants	$47,000
Parts	$8,000
Office Supplies/Computer	$2,500
Travel	$5,160
Communication Services	$6,000
Utilities	$7,990
Advertising	$3,000
Drug Testing Expenses	$300
Insurance and Bonding	$1,900
Total Expenses	**$327,050**
Fare Revenue	$11,000
Net Deficit	**$316,050**

Table 3-4: Fiscal Year 2020 Funding Sources

Graham Transit FY2020 Funding Sources	
Funding Sources	
Federal Section 5311	$158,025
State Operating Assistance	$84,827
Local Funds	$73,198

Capital Budget

In FY2020, Graham Transit did not make any substantial capital purchases.

PEER ANALYSIS

While it is most relevant for a transit agency to examine its own performance over time, it is valuable to know the operating statistics for transit programs that could be considered "peers," either by virtue of location, service area characteristics, or size to see if local transit data is "in the ballpark" of typical peer operating data.

The following Virginia programs were used as peers based on their similarity in operating data:

- Town of Altavista
- City of Bristol
- Town of Chincoteague

There are several other programs that operate geographically closer to Bluefield than the peers chosen, but each are large, multi-county programs with many more vehicles and operating hours. Bluefield, West Virginia operates a transit program that Graham Transit connects with, but that program is also much larger than Graham Transit.

The peer comparison data are presented in Table 3-5. As indicated in this table, Graham Transit operates a program that is larger than the mean in terms of revenue hours, revenue miles, passenger trips, and operating expenses. Graham Transit's productivity is slightly below the mean, reflecting the larger number of revenue miles operated in comparison to the other three programs. Graham Transit's operating cost per hour is lower than the mean and its cost per trip is higher than the mean.

While each of the peers chosen operates a similar number of vehicles and are operated in a town or small city, they do have different operating environments. The City of Bristol operates in a small urbanized area and the Town of Chincoteague operates seasonal service.

Table 3-5: Selected Peer Comparison

Feature	Graham Transit	Town of Altavista	City of Bristol	Town of Chincoteague	Mean
Vehicles	3	2	4	3	3
Revenue Hours	7,814	3,021	8,910	1,723	5,367
Revenue Miles	129,996	47,993	88,475	11,873	69,584
Passenger Trips	42,374	19,584	55,254	14,728	32,985
Operating Costs	$311,045	$98,698	$428,163	$90,603	$232,127
Passenger Trips per Hour	5.42	6.48	6.20	8.55	6.15
Passenger Trips per Mile	0.33	0.41	0.62	1.24	0.47
Operating Cost per Mile	$2.39	$2.06	$4.84	$7.63	$3.34
Operating Cost per Trip	$7.34	$5.04	$7.75	$6.15	$7.04
Operating Cost per Hour	$39.81	$32.67	$48.05	$52.58	$43.25

Source: National Transit Database, 2018

RECENT COMPLIANCE RESULTS

A rural public transit compliance review of Graham Transit was conducted by DRPT in 2014. There were findings in following areas:

- Program Administration/Grant Administration
  - Grant management procedures were not in place.
- Financial Management
  - A cost allocation plan was not in place.
  - A vehicle disposition policy was not in place.
- Personnel
  - An EEO poster was not displayed in the driver break area.
  - Drivers needed to complete additional training in the areas of CPR, defensive driving, PASS, and substance abuse.
- Operations and Service Requirements
  - The preventive maintenance schedule was not being adhered to sufficiently.
- Planning and Coordination
  - Notices concerning route deviation policy and Title VI statements needed to be advertised more broadly.

Follow-up with DRPT indicated that Graham Transit successfully addressed all of these findings in 2015.

GRAHAM TRANSIT PASSENGER SURVEY

An important task for the TDP was to gather opinions from current customers concerning Graham Transit services, as well as to develop a passenger profile. With input from Graham Transit staff, an onboard survey was prepared. The survey was administered on board vehicles by Graham Transit staff in December 2019. This section includes infographics of customer feedback and travel habits (Figure 3-4) and the rider profile (Figure 3-5). A total of 133 surveys were collected during the survey period. A copy of the onboard survey is provided in Appendix A.

Customer Feedback and Travel Habits

Customer Satisfaction

Customers were asked about their satisfaction with a multitude of Graham Transit service components, including hours of service, on-time performance, fare prices, and marketing materials. Overwhelmingly, customers indicated they were satisfied with Graham Transit; 98 percent of respondents indicated they were "satisfied" or "very satisfied" with Graham Transit's overall service. Of the thirteen service elements, only two, "days and hours of service" and "Graham Transit website" had satisfaction levels under 90 percent.

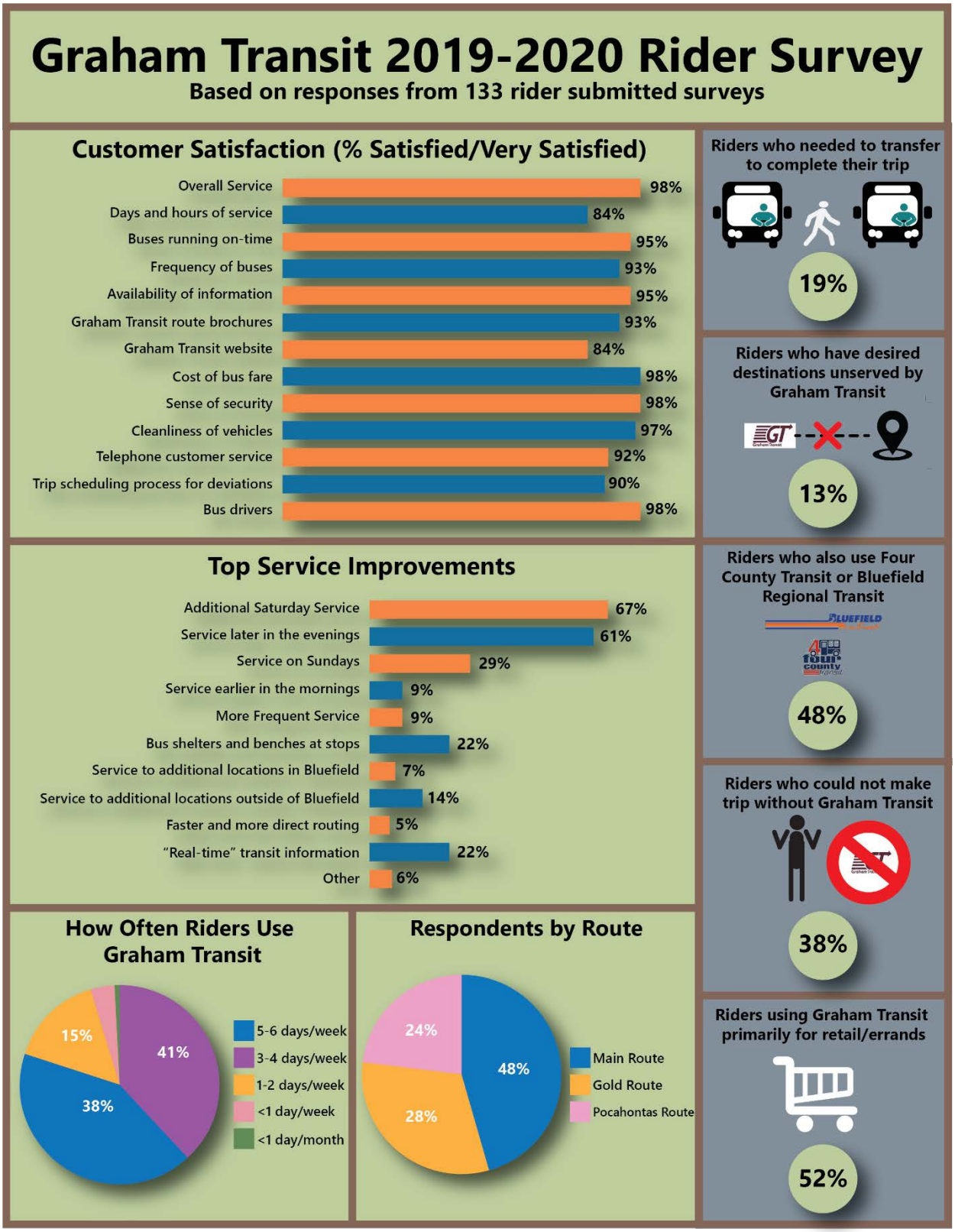
Desired Service Improvements

The three most desired service improvements for Graham Transit Riders revolved around expanding days and hours of service. The most desired improvement was additional Saturday service with 67 percent of riders marking it as a top improvement. The next most desired improvements were service later in the evenings (61%) and service on Sundays (29%). The two most desired improvements that were unrelated to extending service days or hours were bus shelters and benches at stops (22%) and real-time transit information (22%).

Travel Habits

Nearly half (48%) of respondents were on board the Main Route. Respondents were very reliant on regional transit for mobility; 79 percent of riders used Graham Transit at least three times a week, while 48 percent of riders also used Four County Transit or Bluefield (WV) Regional Transit. Without Graham Transit, 38 percent of respondents' trips would not be possible.

Figure 3-4: Rider Survey Feedback Infographic



Comments

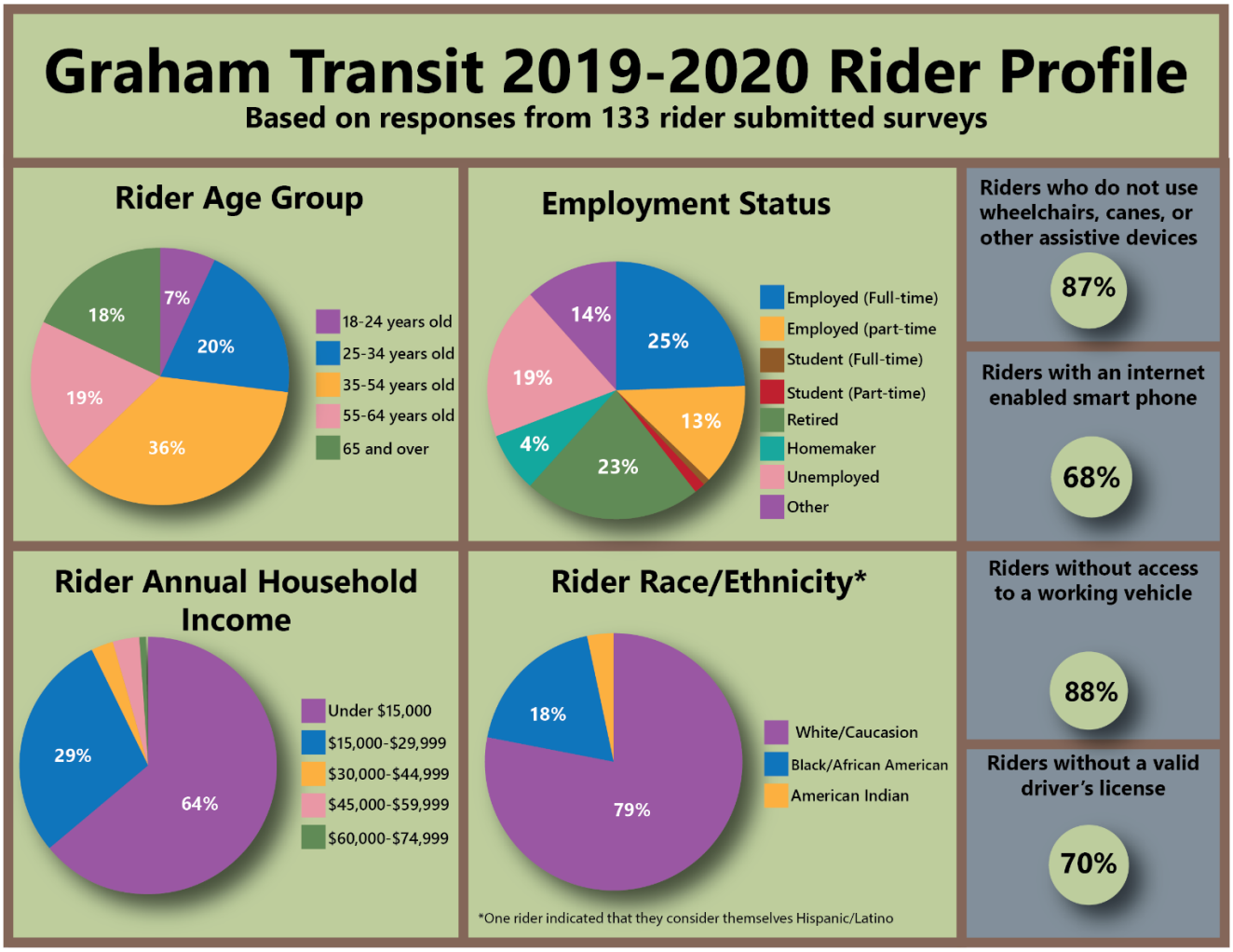
Graham Transit riders were afforded an opportunity to provide open-ended comments on the survey form. These comments were mostly positive, expressing gratitude that the service is available. There were also requests for longer hours on the Pocahontas Route, additional weekend service, and comments concerning fellow passengers. The rider comments are provided in Appendix B.

Rider Profile

After providing feedback on Graham Transit, riders were asked a series of demographic questions to get a better understanding of who Graham Transit is serving. A majority (87%) of respondents did not use a wheelchair, cane, or other assistive device to aid their mobility. Sixty-eight percent of respondents had an internet-enabled smart phone. Many respondents either could not drive (70% did not have a valid driver's license) or did not have access to a working vehicle (88%), further indicating a high reliance on Graham Transit services among riders.

Thirty-six percent of riders were between the ages of 35 and 54, and no riders were under age 18. Eighteen percent of riders were over the age of 65. While 25 percent of riders had full-time employment, 19 percent indicated they were currently unemployed. Sixty-four percent of riders had an annual household income of less than $15,000. Ninety-three percent of respondents had an annual household income of less than $30,000. A majority (79%) of respondents identified as White/Caucasian.

Figure 3-5: Rider Profile Overview



POPULATION ANALYSIS

This section provides a general population profile for the study area. For this analysis, the study area consisted of Tazewell County and the Town of Bluefield. This analysis includes data sources from the 2010 U.S. Census and the American Community Survey (ACS) 5-year estimates.

Population

Table 3-6 shows U.S. Census population counts for the study area from 1990 to 2018. Since 1990, the population of both Tazewell County and Bluefield have consistently decreased while the Commonwealth of Virginia's population has steadily increased.

Table 3-6: Historical Populations in Virginia, Tazewell County, and Bluefield

	1990 Population	Growth Rate	2000 Population	Growth Rate	2010 Population	Growth Rate	2018 Population	Growth Rate
Virginia	6,187,358	--	7,078,515	14%	8,001,024	13%	8,413,774	5%
Tazewell County	46,034	N/A	46,000	0%	45,078	-2%	42,080	-7%
Bluefield, VA	5,363	N/A	5,078	-5%	5,444	7%	4,984	-8%

Source: U.S. Census, American Factfinder

Table 3-7 shows the recent population trends in the study area. Since 2010, Virginia has seen population growth while Tazewell County has experienced a slight population loss. The population of Bluefield rose between 2010 and 2012, and has declined each year since 2012.

Table 3-7: Recent Population Trends in Virginia, Tazewell County, and Bluefield

	2010	2011	2012	2013	2014	2015	2016	2017	2018	% Change
Virginia	8,001,024	7,926,192	8,014,955	8,100,653	8,185,131	8,256,630	8,310,301	8,365,952	8,413,774	**5.2%**
Tazewell County	46,034	44,807	44,846	44,664	44,331	43,870	43,367	42,689	42,080	**-8.6%**
Bluefield Virginia	5,363	5,439	5,451	5,424	5,375	5,350	5,254	5,058	4,984	**-7.1%**

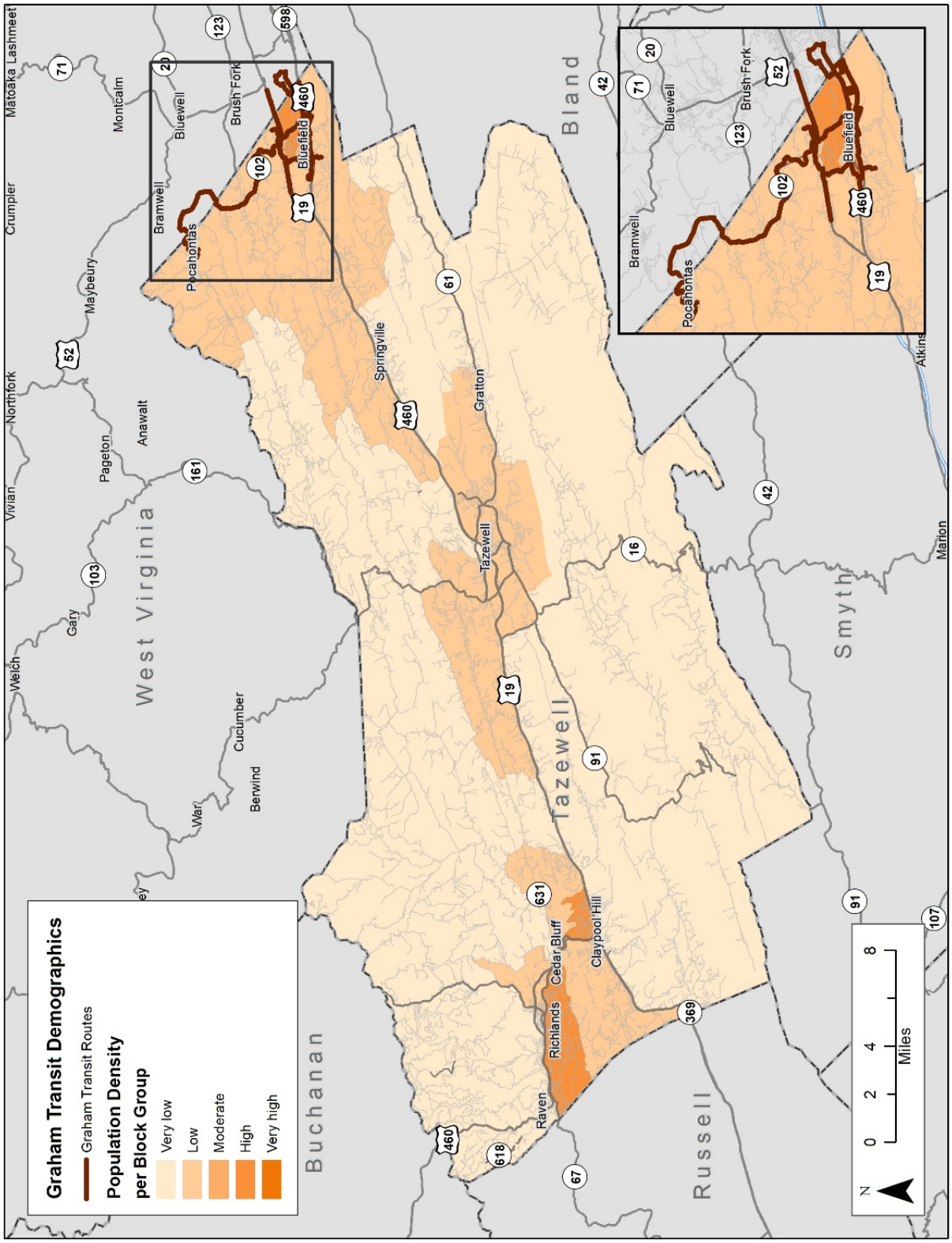
Source: U.S. Census Annual Estimates of the Resident Population: ACS 5-year Estimates

Population Density

Population density is one of the most important factors in determining the appropriate transportation service in a community. It is often used as an indicator for the type of public transit services that are feasible within a study area. Typically, an area with a density of 2,000 persons per square mile will be able to sustain daily fixed route transit service. An area with a population density below 2,000 but above 1,000 persons per square mile may be a better candidate for deviated fixed route or demand response services.

This analysis looked at the population density of the study area at the block group level. Within Tazewell County, Bluefield had the only block groups with over 2,000 people per square mile. The next densest parts of Tazewell County are in the west, around the towns of Richlands and Claypool Hill. Figure 3-6 shows the study area's population density.

Figure 3-6: Population Density in Bluefield and Tazewell County



Source: U.S. Census and American Community Survey

Population Forecast

Table 3-8 provides general population projections for Virginia and Tazewell County. In keeping with observed population trends since 1990, the total population of Tazewell County is expected to decrease as Virginia's population increases. From 2020-2030, the population of persons ages 0-19 and 20-64 is projected to decrease in Tazewell County while the older adult population is expected to increase by 2.1 percent. The 65 and older population is expected to decrease by 11.1 percent between 2030 and 2040. These projections were not available for smaller municipalities, such as Bluefield.

Table 3-8: General Population Forecast for Virginia and Tazewell County

Age Group (Years)	2020 Population		2030 Projection		2040 Projection	
	Population	Percent	Population	10-year Change	Population	10-year Change
Virginia	**8,655,021**	**100.0%**	**9,331,666**	**7.8%**	**9,876,728**	**5.8%**
0-19	2,152,495	24.9%	2,298,450	6.8%	2,452,625	6.7%
20-64	5,150,078	59.5%	5,309,834	3.1%	5,614,317	5.7%
65+	1,352,448	15.6%	1,723,382	27.4%	1,809,787	5.0%
Tazewell County	**41,428**	**100.0%**	**39,450**	**-4.8%**	**37,038**	**-6.1%**
0-19	8,993	21.7%	8,506	-5.4%	8,060	-5.2%
20-64	22,911	55.3%	21,215	-7.4%	20,330	-4.2%
65+	9,524	23.0%	9,728	2.1%	8,647	-11.1%

Source: University of Virginia Weldon Cooper Center for Public Service, 2019

TRANSIT DEPENDENT POPULATIONS

Public transportation needs are defined in part by identifying the relative size and location of segments within the general population that are most likely to be dependent on transit services. This includes individuals who may not have access to a personal vehicle due to income status or unable to drive due to age or disability. The results of this demographic analysis highlight areas within the study area with the greatest transportation needs.

For the purpose of developing a relative process of ranking socioeconomic need, block groups are classified relative to the entire study area by using a five-tiered scale of "very low" to "very high." A block group classified as "very low" can still have a significant number of potential transit dependent persons, as "very low" only means below the study area's average. At the other end of the spectrum, "very high" means greater than twice the study area's average. The exact specifications for each score are summarized in Table 3-9.

Table 3-9: Relative Ranking Definitions for Transit Dependent Populations

Number of Vulnerable Persons or Households	Score
Less than and equal to the study area's average	Very Low
Above the average and up to 1.33 times the average	Low
Above 1.33 times the average and up to 1.67 times the average	Moderate
Above 1.67 times the average and up to two times the average	High
Above two times the average	Very High

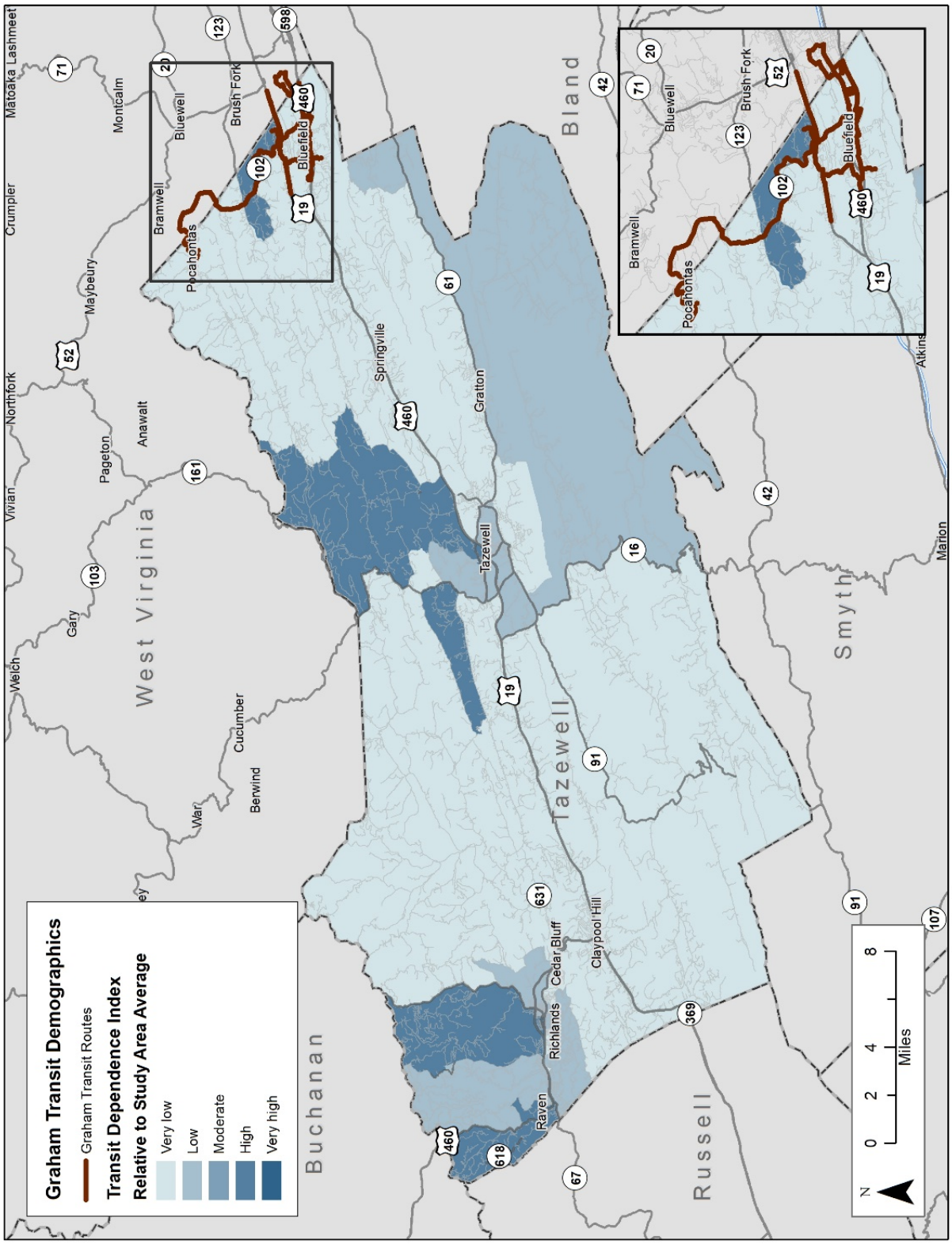
Figure 3-7 displays Transit Dependence Index (TDI) rankings for the study area. According to the TDI, areas with higher transit need are found in the block groups immediately north of Bluefield, as well as block groups surrounding the towns of Tazewell, Richlands, and Raven.

The Transit Dependence Index Percent (TDIP) is similar to the TDI measure except that it excludes the population density factor. The TDIP uses the average percentage of all transit dependent groups within the study area, aggregating autoless households, older adults (ages 65+), youth (ages 10-17), individuals with disabilities, and below poverty individuals to create this metric.

By removing the population density factor, the TDIP can measure the degree of vulnerability. It represents the percentage of population within the block group with the above socioeconomic characteristics, and it follows the TDI's five-tiered categorization of very low to very high. It does not highlight block groups that are likely to have higher concentrations of vulnerable populations only because of their population density.

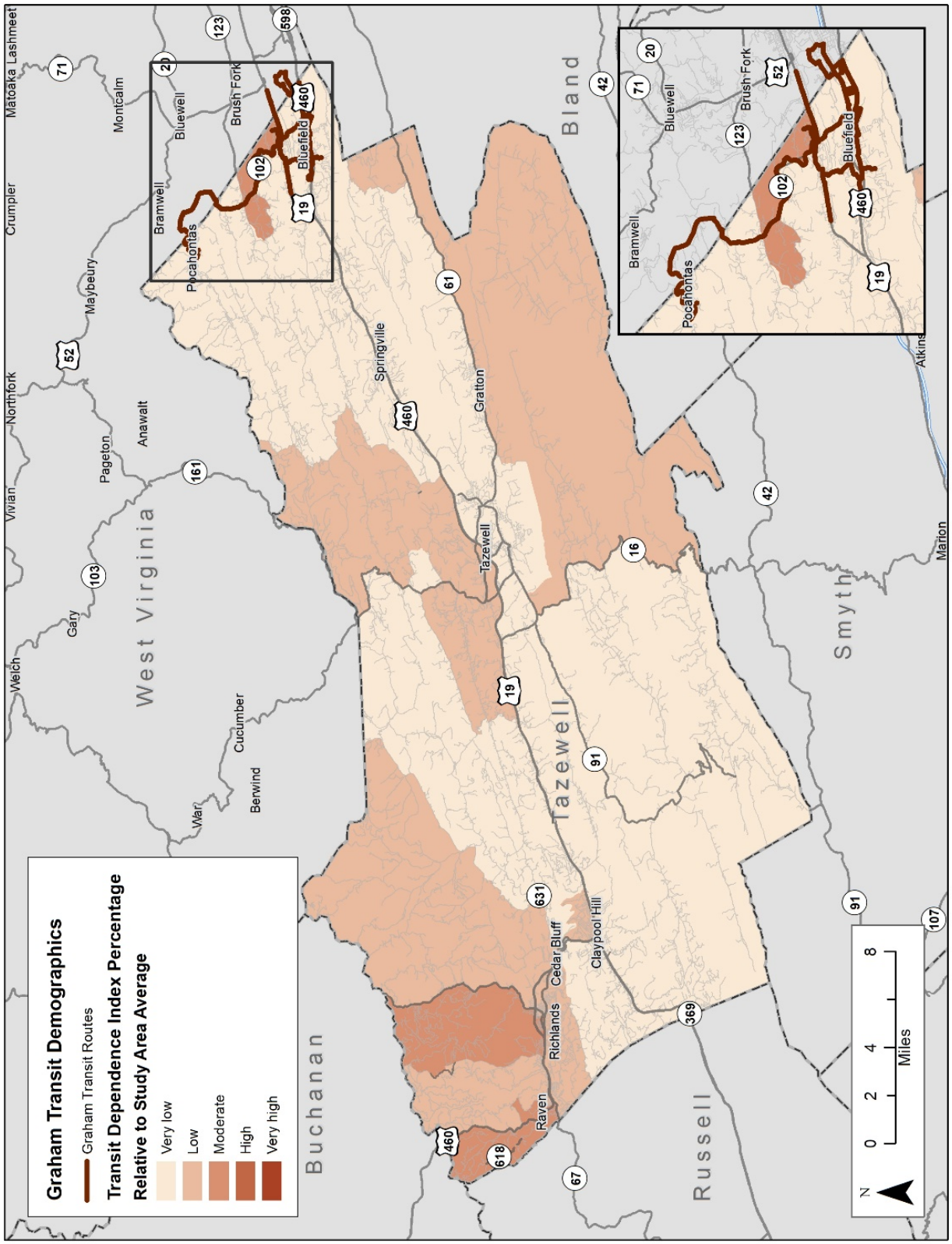
Figure 3-8 shows transit need based on percentage. According to the TDIP, higher percentages of transit dependent persons are in the block groups immediately north of Bluefield and around the towns of Richlands and Raven.

Figure 3-7: Transit Dependence Index for Bluefield and Tazewell County



Source: U.S. Census and American Community Survey

Figure 3-8: Transit Dependence Index Percentage for Bluefield and Tazewell County



Source: U.S. Census and American Community Survey

Autoless Households

Households without access to at least one personal vehicle are more likely to depend on the mobility offered by public transit. Although autoless households are reflected in both the TDI and TDIP measures, displaying this segment of the population separately is still important. Very high percentages of autoless households can be found throughout Tazewell County. In the Bluefield area, block groups north of Bluefield proper have a very high percentage of autoless households. Figure 3-9 displays the relative number of autoless households.

Older Adult Population

One of the socioeconomic groups analyzed by the TDI and TDIP indices is the older adult population, which is individuals ages 65 and older. Persons in this age group may begin to decrease their use of a personal vehicle and rely more heavily on public transit. Block groups that contain very high percentages of older adults are in the West Graham area. Figure 3-10 illustrates the older adult population in the study area.

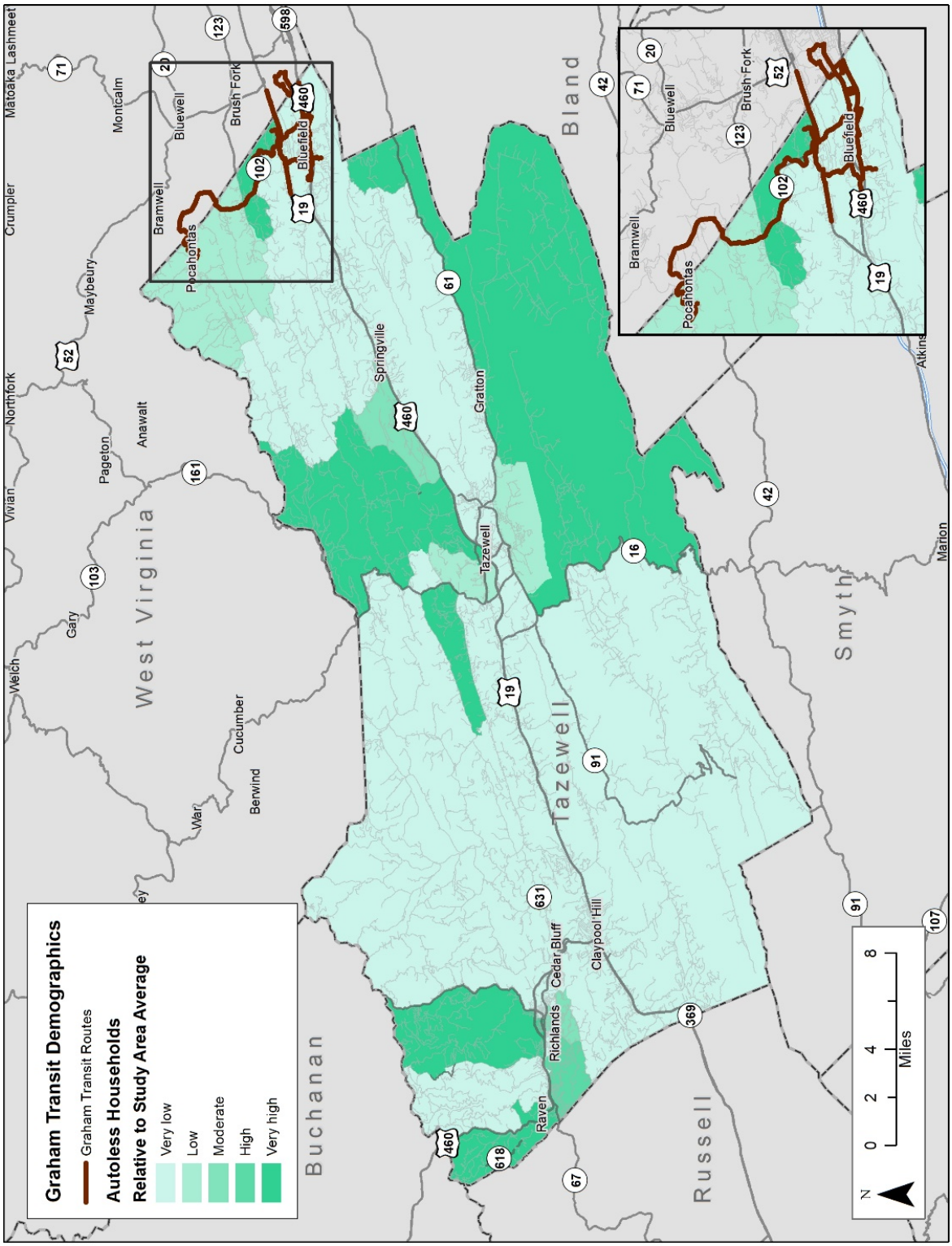
Youth Population

The youth population is often used as an identifier of transit dependent population. Persons ages 10 to 17 either cannot drive or are just beginning to drive and often do not have a personal automobile consistently available to them. For this population, public transit is a crucial mobility option. Very high youth populations are seen in Southern Tazewell County. In the Bluefield area, higher percentage youth populations are found in the West Graham area. Figure 3-11 illustrates the concentrations of youth populations relative to the study area.

Individuals with Disabilities

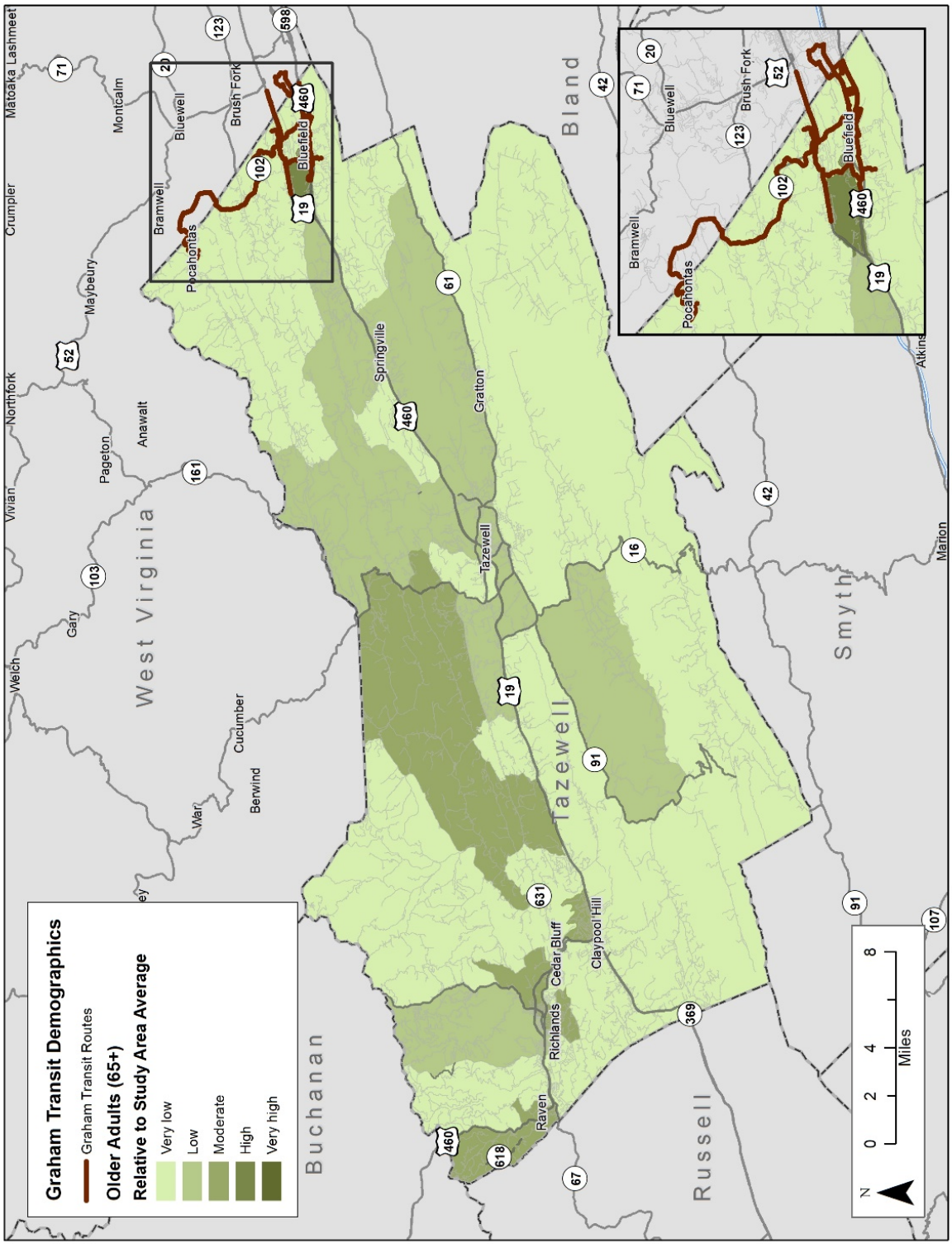
Figure 3-12 illustrates individuals with disabilities in the study area. The American Community Survey was used to obtain data for populations of individuals with disabilities. This data is only provided at the census tract level. Persons who have disabilities that prevent them from or make it more difficult to own and operate a personal vehicle often rely on public transit for their transportation needs. High percentages of individuals with disabilities can be found in Richlands and Tazewell. In the Bluefield area, there are elevated percentages of disabled persons in the block groups north and west of Bluefield.

Figure 3-9: Distribution of Autoless Households in Bluefield and Tazewell County



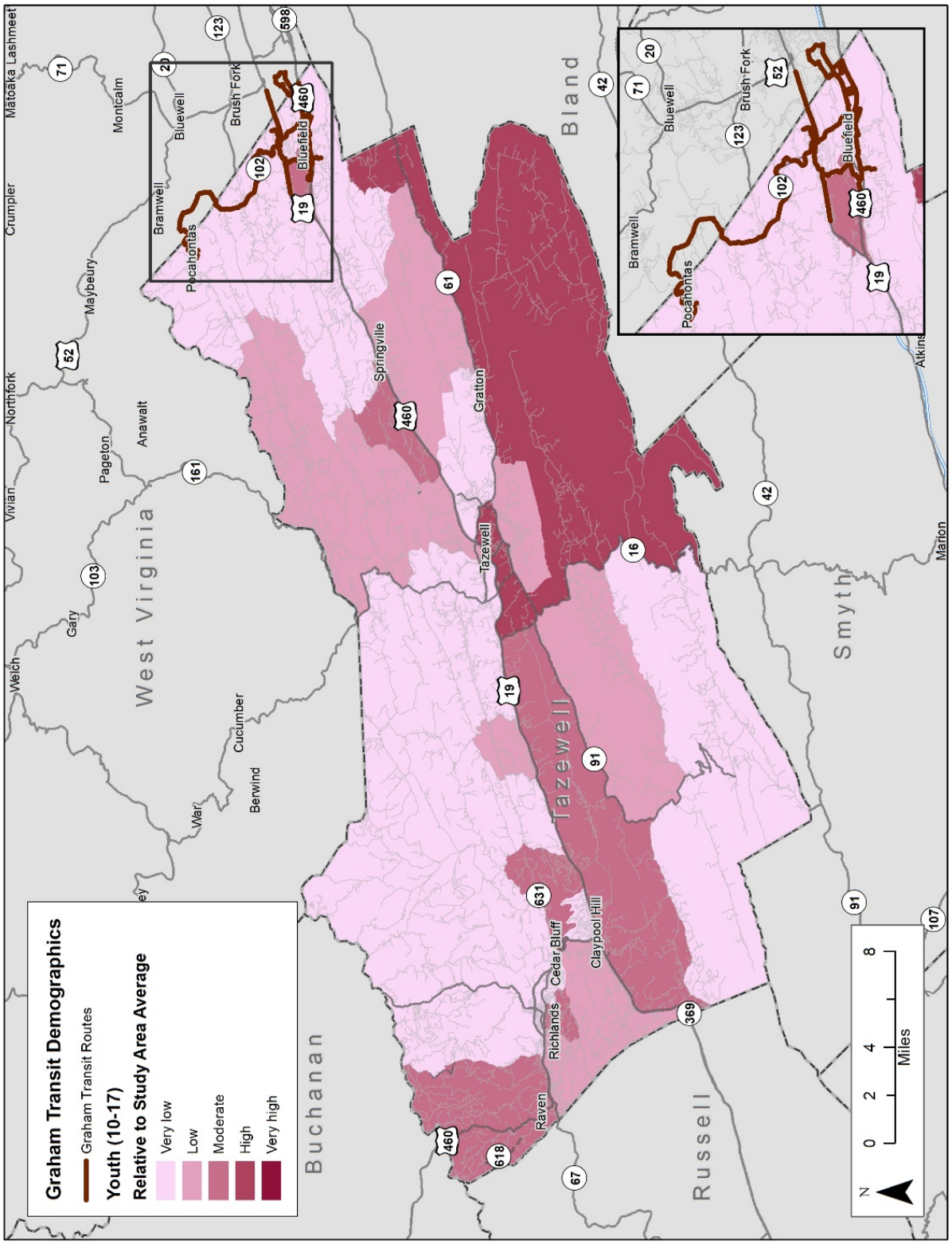
Source: U.S. Census and American Community Survey

Figure 3-10: Distribution of the Older Adult Population (Ages 65 and Above) in Bluefield and Tazewell County



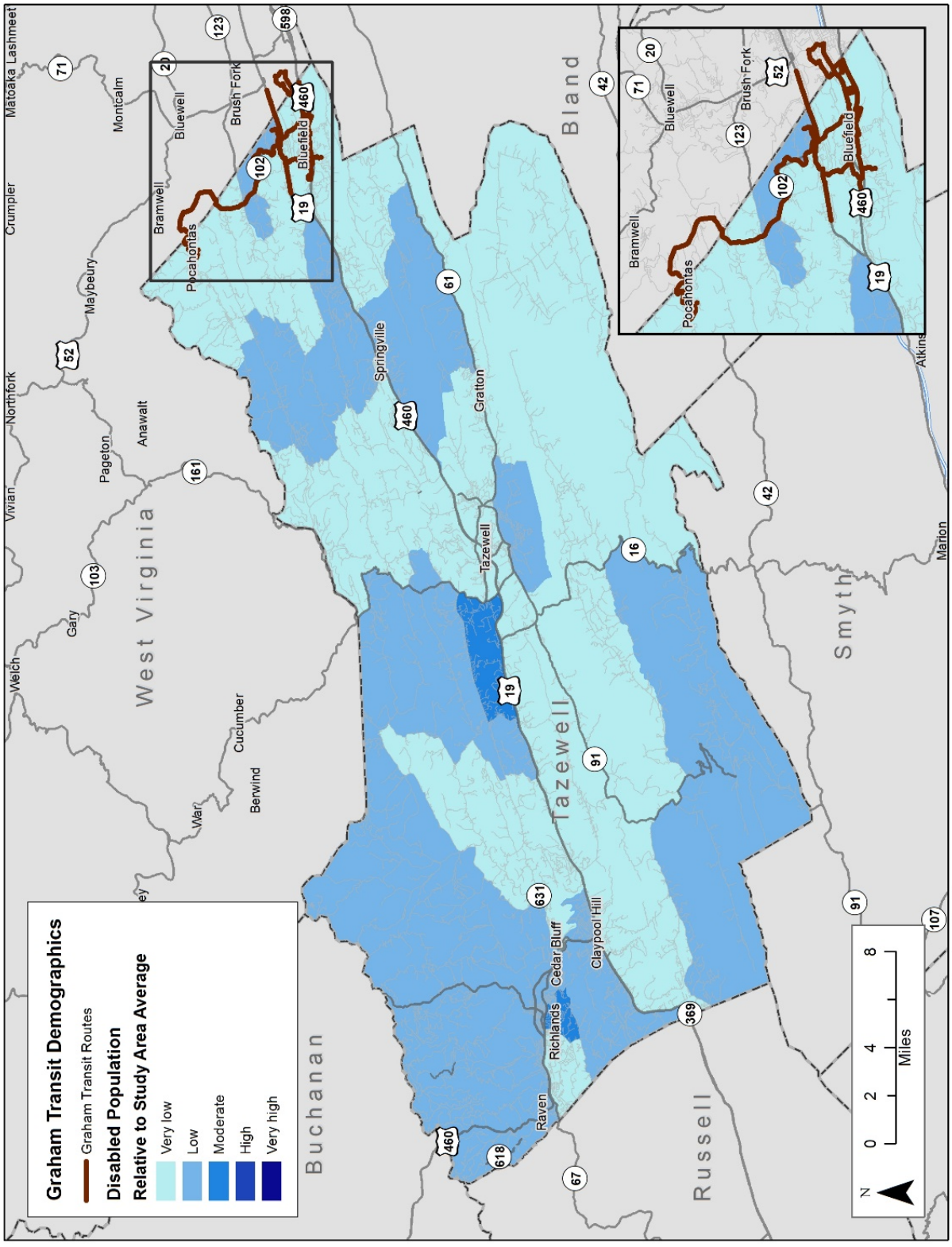
Source: U.S. Census and American Community Survey

Figure 3-11: Distribution of the Youth Population (Ages 10 to 17) in Bluefield and Tazewell County



Source: U.S. Census and American Community Survey

Figure 3-12: Distribution of Individuals with Disabilities in Bluefield and Tazewell County



Source: U.S. Census and American Community Survey

TITLE VI DEMOGRAPHIC ANALYSIS

Title VI of the Civil Rights Act of 1964 prohibits discrimination on the basis of race, color, or national origin in programs and activities receiving federal subsidies. This includes agencies that provide public transportation partially-funded by federal resources. The following section examines the minority and below poverty level populations in the study area.

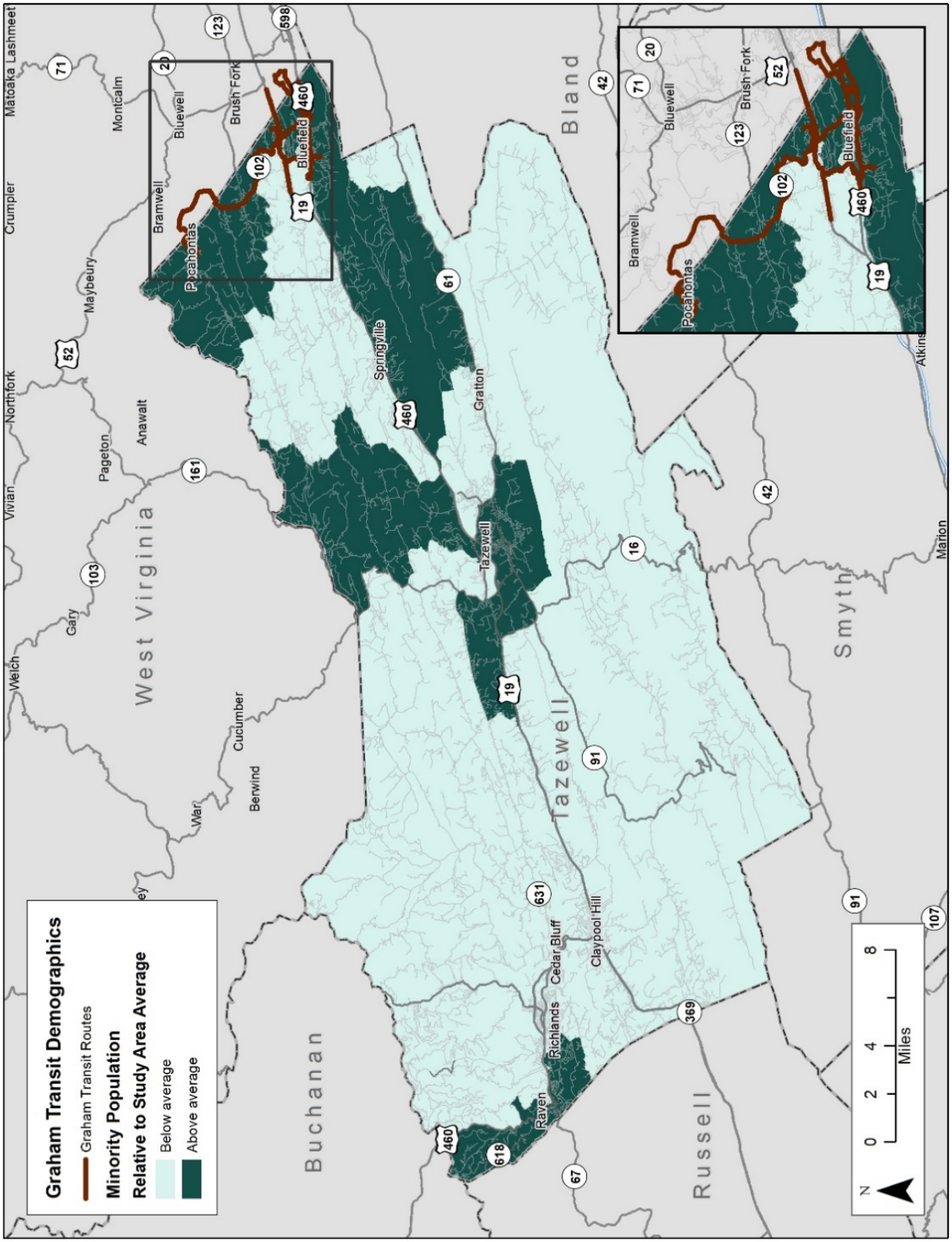
Minority Population

It is important to ensure that areas with an above average percentage of racial and/or ethnic minorities are not negativity impacted by any proposed alterations to existing public transportation services. In the study area, the average concentration of minority population is 5.3 percent. Figure 3-13 illustrates the concentration of minority populations above and below the area's average. Several block groups in and around Bluefield and Pocahontas have an above average minority population.

Below Poverty Populations

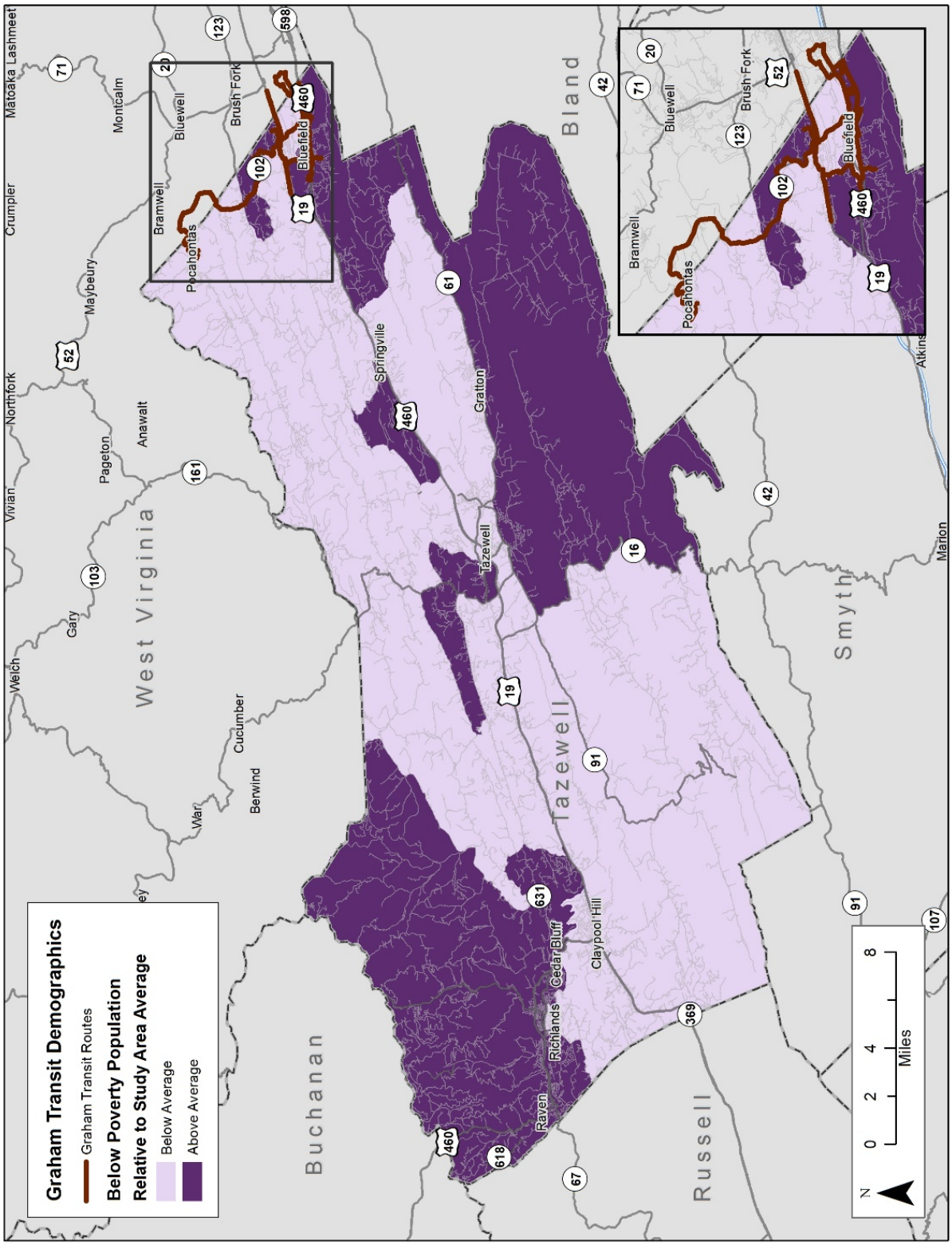
The second group included in the Title VI analysis represents those individuals who earn less than the federal poverty level. This segment of the population may find it a financial burden to own and maintain a personal vehicle, thus relying on public transit as their primary means of transportation. The average percentage of individuals living below the federal poverty level is 15.6 percent. Figure 3-14 depicts the concentration of population above or below the average percentage of individuals living below poverty.

Figure 3-13: Distribution of the Minority Population in Bluefield and Tazewell County



Source: U.S. Census and American Community Survey

Figure 3-14: Distribution of the Below Poverty Population in Bluefield and Tazewell County



Source: U.S. Census and American Community Survey

Limited-English Proficiency (LEP)

In addition to providing public transportation for a diversity of socioeconomic groups, it is also important to adequately serve and disseminate information to those of different linguistic backgrounds. According to the U.S Census Bureau, a person with limited English proficiency is any non-native English speaker who categorizes how they speak English as anything less than "very well." Tazewell County's population is predominantly English speaking, though a small percentage (0.32%) of Spanish speakers with limited English proficiency reside in the county. Table 3-10 displays the LEP persons in Tazewell County by language spoken at home. These data are not available for the Town of Bluefield alone.

Table 3-10: Limited English Proficiency in Tazewell County

Graham Transit Service Area			
Language	**Number of LEP Population**	**Percent of County Population Speaking Language**	**Percent of LEP Population Speaking Language**
Spanish or Spanish Creole	132	0.32%	57.39%
Other West Germanic languages	26	0.06%	11.30%
German	20	0.05%	8.70%
Arabic	20	0.05%	8.70%
Urdu	17	0.04%	7.39%
Armenian	5	0.01%	2.17%
African languages	4	0.01%	1.74%
Greek	3	0.01%	1.30%
Other Slavic languages	3	0.01%	1.30%
Total LEP Population	**230**	**0.55%**	
Total County Population	**41,643**		

Source: American Community Survey, Five-Year Estimates (2011-2015), Table B16001.

LAND USE PROFILE

Major Trip Generators

Identifying land uses and major trip generators in the study area complements the above demographic analysis by indicating where transit services may be most needed. Trip generators attract transit demand and include common origins and destinations, like multi-unit housing, major employers, medical facilities, educational facilities, non-profit and governmental agencies, and shopping centers. Figure 3-15 identifies major trip generators in the study area. Many trip generators are found along the West Virginia/Virginia border region. Other areas with large concentrations of trip generators include Cedar Bluff, Claypool Hill, and Tazewell. The remainder of this section provides information concerning the major trip generators in the region, categorized by land use type.

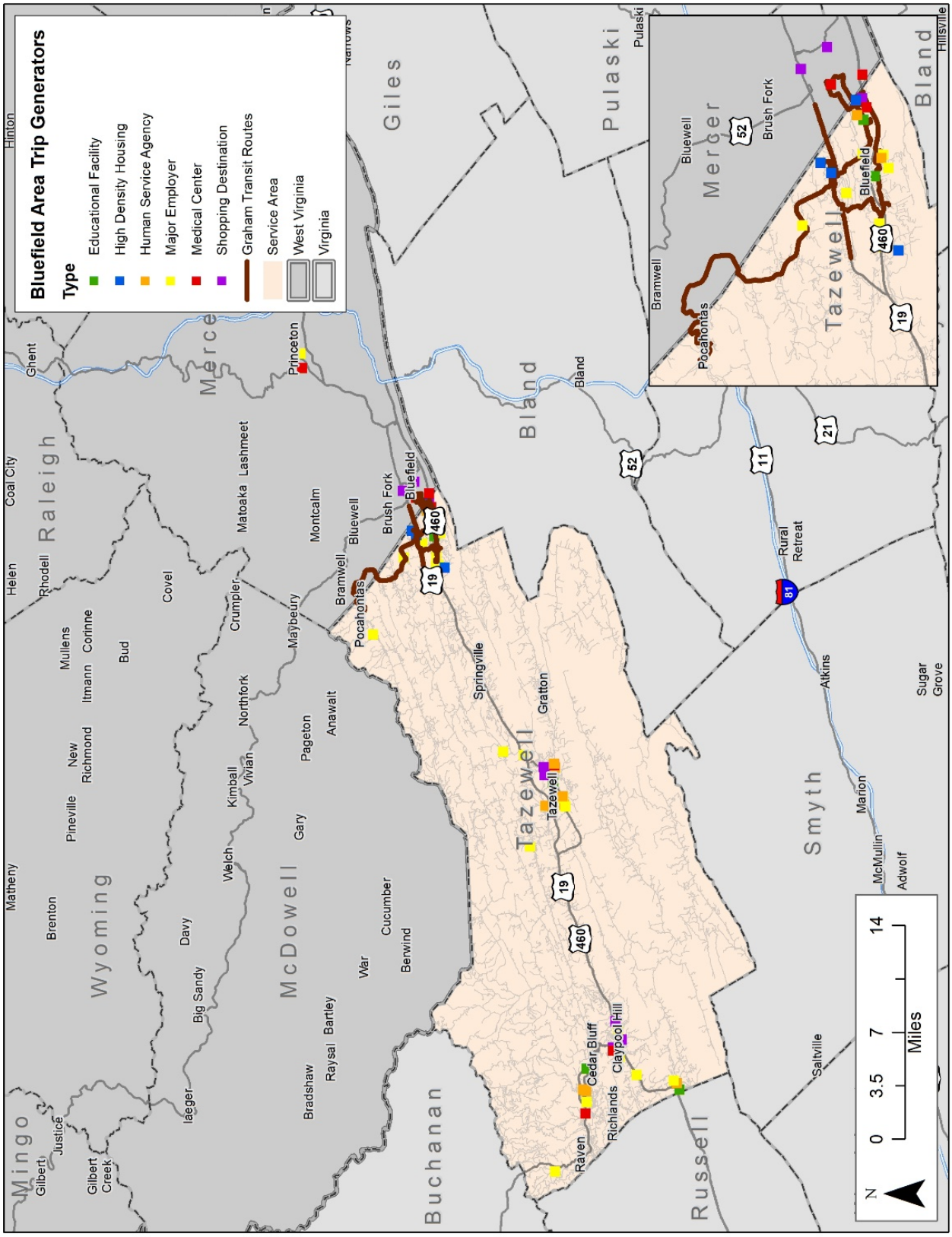
Educational Facilities

Many individuals that comprise the school age population are unable to afford or operate their own personal vehicle; therefore, it may be assumed that this segment of the population is one that is reliant upon public transportation. Additionally, many faculty and staff members are associated with these institutions as a place of employment. Educational facilities that are in the study area include Tazewell County's three public high schools, Bluefield College, and Southwest Virginia Community College which is in Cedar Bluff. The list of high schools and higher educational facilities in the region are provided in Table 3-11. There are also educational opportunities located nearby in West Virginia, including Bluefield State College and American National University in Princeton, WV.

Table 3-11: Educational Facilities

Name	Address	City	Zip
American National University	421 Hilltop Drive	Princeton, WV	24740
Bluefield College	3000 College Drive	Bluefield, VA	24605
Bluefield State College	219 Rock Street	Bluefield, WV	24701
Graham High School	210 Valley Dale Street	Bluefield, VA	24605
Richlands High School	138 Tornado Alley	Richlands, VA	24641
Southwest Virginia Community College	635 Community College Road	Cedar Bluff, VA	24609
Tazewell High School	167 Cosby Lane	Tazewell, VA	24651

Figure 3-15: Major Trip Generators in Bluefield and Tazewell County



Multi-Unit/ High-Density Housing

Multifamily residents tend to drive fewer miles and use public transportation more frequently than residents of single-family housing. Multifamily housing units located within the study area are shown in Table 3-12 and include Crescent View, Leatherwood Manor, Graham Manor, Fincastle Farms, and Indian Princess Apartments. Graham Transit's deviated fixed-route network serves all of these locations.

Table 3-12: Multi-Unit/High-Density Housing

Name	Address	City	Zip
Crescent View Apartments	209 Neel Street	Bluefield, VA	24605
Fincastle Farms	130 Barnwood Drive	Bluefield, VA	24605
Graham Manor Apartments	111 Thayer Street	Bluefield, VA	24605
Indian Princess Apartments	St Clair Street	Pocahontas, VA	24635
Leatherwood Manor Apartments	1922 Leatherwood Lane	Bluefield, VA	24605

Human Service Agencies

Human service agencies help support community members by providing family support, recreation, and other services to help enrich the quality of life for area residents. Table 3-13 provides a list of human service agencies in the study area. Within the Town of Bluefield, the Bluefield Branch Library and Loving Hands Adult Day Care Center are major human service agencies and trip generators within the area. The Gold Route has a stop at the Bluefield Branch Library. For many social services, Bluefield residents must travel to the county seat of Tazewell.

Table 3-13: Human Service Agencies

Name	Address	City	Zip
Appalachian Agency for Seniors	216 College Ridge Road	Cedar Bluff, VA	24609
Bluefield Branch Library	108 Huffard Drive	Bluefield, VA	24605
Clinch Valley Community Action	1379 Tazewell Avenue	North Tazewell, VA	24630
Cumberland Mountain Community Services - Richlands	406 Suffolk Avenue	Richlands, VA	24641
Cumberland Mountain Community Services - Tazewell	578 Main Street	Tazewell, VA	24651
Four Seasons Young Men's Christian Association	106 Gratton Road	Tazewell, VA	24651
Heritage Hall	282 Ben Bolt Avenue	Tazewell, VA	24651
Loving Hands Adult Care Center	4325 Bluefield College Drive	Bluefield, VA	24605
Tazewell County DSS	253 Chamber Drive	Tazewell, VA	24651
Tazewell County Public Library	102 Suffolk Avenue	Richlands, VA	24641
Tazewell Public Library	129 Main Street	Tazewell, VA	24651
Town of Richlands	200 Washington Square	Richlands, VA	24641

Major Employers

The major employers in Tazewell County are displayed in Figure 3-14 and have at least 50 employees; some of these employers represent agencies with multiple locations (i.e., Tazewell County School Board). Local government services, and medical, social service, retail and energy industries represent a bulk of the major employers within the county. The data were researched for the entire county to reflect important local destinations for Bluefield residents.

Table 3-14: Major Employers in Tazewell County, VA

Name	Address	City	Zip
Tazewell County School Board	209 W. Fincastle Turnpike	Tazewell, VA	24651
Walmart	4001 College Avenue	Bluefield, VA	24605
Clinch Valley Medical Center	6801 Gov. George C. Peery Highway	Richlands, VA	24641
Cumberland Mountain Community Services	406 Suffolk Avenue	Richlands, VA	24641
Revelation Energy	1051 Main Street	Milton, WV	25541
Southwest Virginia Community College	635 Community College Road	Cedar Bluff, VA	24609
Pocahontas State Correctional	920 Old River Road	Pocahontas, VA	24635
Lowes' Home Centers, Inc.	515 Commerce Drive	Bluefield, VA	24605
Bluefield College	3000 College Drive	Bluefield, VA	24605
Tazewell County, Virginia	197 Main Street	Tazewell, VA	24651
Joy Technologies	1081 Hockman Pike	Bluefield, VA	24605
Appalachian Agency for Seniors	216 College Ridge Road	Cedar Bluff, VA	24609
First Community Bank	Multiple locations	Bluefield, VA	24701
Food City	1000 Leatherwood Lane	Bluefield, VA	24605
McDonald's	Multiple locations	Bluefield, VA	24605
Heritage Hall	282 Ben Bolt Avenue	Tazewell, VA	24651
Jennmar Corporation of Virginia	470 Wardell Ind Park Road	Cedar Bluff, VA	24609
Town of Bluefield	112 Huffard Drive	Bluefield, VA	24605
Tazewell Community Hospital	388 Ben Bolt Avenue	Tazewell, VA	24651
Town of Richlands	200 Washington Square	Richlands, VA	24641
Hardees	Multiple locations	Bluefield, VA	24605
Spandeck, Inc.	2680 S Front Street	Richlands, VA	24641
Phoenix Construction of Virginia	460 Front Street	Richlands, VA	24601
Clinch Valley Community Action	1379 Tazewell Avenue	North Tazewell, VA	24630
Food Lion	Multiple locations	North Tazewell, VA	24630
SpartanNash Distribution Center	2120 Falls Mills Road	Bluefield, VA	24605
Pyott Boone Electronics	1459 Wittens Mill Road	North Tazewell, VA	24630

Name	Address	City	Zip
Wendy's	Multiple locations	Bluefield, VA	24605
Town of Tazewell	211 N. Central Avenue	Tazewell, VA	24651
Tazewell County Board of Social Services	253 Chamber Drive	Tazewell, VA	24651
AMR PEMCO, Inc	1960 Valley Dale Street	Bluefield, VA	24605
Consolidated Steel, Inc.	296 River Industrial Park Road	Cedar Bluff, VA	24609
Aramark Services	712 S College Avenue	Bluefield, VA	24605
Grant's Market	Multiple locations		
Clinch River Forest Products	State Route 820	Tazewell, VA	24651
Charlatte of America	600 Mountain Lane Avenue	Bluefield, VA	24605
Westwood Medical Park Ope LLC	20 Westwood Medical Park	Bluefield, VA	24605
Dolgencorp LLC (Dollar General)	Multiple locations		
Postal Service	Multiple locations		
American Electric Power Service Corporation	2507 Washington Street	Bluefield, WV	24701
CNX Gas Company	559 W Main Street	Tazewell, VA	24651
Ramey Automotive	27992 Gov G C Peery Highway	North Tazewell, VA	24630

Source: Virginia Employment Commission

In addition to documenting the major employers on the Virginia side of the Bluefields, the study team also looked up the major employers in Mercer County, West Virginia. The top ten employers in West Virginia are shown in Table 3- 15.

Table 3-15: Major Employers in Mercer County, WV

Name	Address	City	Zip
Mercer County Board of Education	1403 Honaker Avenue	Princeton, WV	24740
Princeton Community Hospital Association	122 12th Street	Princeton, WV	24740
Echostar (Call Center for Dish Networks)	294 Majestic Place	Bluefield, WV	24701
Bluefield Regional Medical Center	500 Cherry Street	Bluefield, WV	24701
Res-Care, Inc.	Multiple locations	Princeton, WV	24740
Bluefield State College	219 Rock Street	Bluefield, WV	24701
Southern Highlands Community Mental Health Center	200 12th Street Extension	Princeton, WV	24740
Walmart	201 Greasy Ridge Road	Princeton, WV	24739
West Virginia Department of Highways	270 Hardwood Lane	Princeton, WV	24740
Conn-Weld Industries, Inc.	US 460 and SR 31	Princeton, WV	24740

Source: WorkForce West Virginia

Medical Facilities

Medical facilities represent significant destinations for users of public transportation. Older adults and persons with disabilities often rely more heavily upon services offered by medical facilities than other population segments. Major medical centers that are currently served by Graham Transit include the Bluefield Regional Medical Center in West Virginia and the Westwood Center in Bluefield, VA. Table 3-16 provides the list of medical facilities in the region.

Table 3-16: Medical Facilities

Name	Address	City	Zip
Behavioral Health Pavilion of the Virginias	1333 Southview Drive	Bluefield, WV	24701
Bluefield Family Medicine	106 Huffard Drive	Bluefield, VA	24605
Bluefield Internal Medicine	Avenue	Bluefield, VA	24605
Bluefield Regional Medical Center	500 Cherry Street	Bluefield, WV	24701
Clinch Valley Medical Center	6801 Gov George C. Peery Highway	Richlands, VA	24641
Clinch Valley Physicians Associates	1 Clinic Road	Cedar Bluff, VA	24609
MedExpress Urgent Care	4003 College Avenue	Bluefield, VA	24605
Princeton Community Hospital	122 12th Street	Princeton, WV	24740
Tazewell Community Hospital	388 Ben Bolt Avenue	Tazewell, VA	24651
Westwood Center	20 Westwood Medical Park	Bluefield, VA	24605

Shopping Destinations

Identifying major shopping destinations as trip generators is an important step in understanding the public's travel needs. For transit users, grocery stores, multi-purpose stores, and other shops that sell necessities are important destinations. Shopping destinations are also often major employers, adding another dimension to the travel patterns of a specific destination. The major shopping destinations in the region are shown in Table 3-17. The locations within the Town of Bluefield, Virginia are served by Graham Transit.

Table 3-17: Shopping Destinations

Name	Address	City	Zip
College Plaza	515 Commerce Drive	Bluefield, VA	24605
Food City - Bluefield	1000 Leatherwood Lane	Bluefield, VA	24605
Grants Supermarket - Bluefield	315 Bluefield Avenue	Bluefield, WV	24701
Grants Supermarket - Bluefield	1808 Jefferson Street	Bluefield, WV	24701
Lowe's Home Improvement Center	515 Commerce Drive	Bluefield, VA	24605
Mercer Mall	261 Mercer Mall Road	Bluefield, WV	24701
Twin City Shopping Center	717 S. College Avenue	Bluefield, VA	24605
Walmart - Ridgeview Plaza	4001 College Avenue	Bluefield, VA	24605
Westgate Shopping Center	2058 Leatherwood Lane	Bluefield, VA	24605

Employment Travel Patterns

In addition to considering locations of major employers, it is also important to account for commuting patterns of residents working inside and outside of the study area. According to ACS five-year estimates, the majority (81%) of residents in the study area work in Virginia and typically work in their county of residence (68%). Most residents travel to work by driving alone (86%). Less than one percent of Tazewell County residents use public transportation as their primary mode of travel to work. Table 3-18 illustrates commuting patterns of residents in the study area.

Table 3-18: Journey to Work Patterns for Study Area

Tazewell County		
Workers (Ages 16 +)	**15,131**	
Employment Location	**Number**	**Percent**
In State of Residence	12,185	81%
In County	10,234	68%
Outside of County	1,951	13%
Outside State of Residence	2,946	19%
Means of Transportation to Work	**Number**	**Percent**
Car, truck, or van - drove alone	12,996	86%
Car, truck, or van - carpooled	1,260	8%
Public transportation	17	0%
Walked	147	1%
Taxicab, motorcycle, bicycle, other	83	1%
Worked at Home	628	4%

Source: ACS, Five-Year Estimates (2014-2018), Table B08130

Another source of data that provides an understanding of employee travel patterns is the Census Bureau's Longitudinal Employer-Household Dynamics (LEHD) dataset. For Bluefield residents, the top work destinations are Bluefield (VA), Tazewell (VA), and Bluefield (WV). At least ten percent of Bluefield's working population commutes to these three places. Seven of the top ten work destinations are in Virginia, the remaining three are in West Virginia. Table 3-19 illustrates the results of this analysis.

Table 3-19: Top Ten Employment Destinations for Bluefield, VA Residents

Place	Number of Workers who Live in Bluefield	Percentage
Bluefield, VA	246	11.5%
Tazewell, VA	221	10.3%
Bluefield, WV	217	10.1%
Princeton, WV	113	5.3%
Wytheville, VA	38	1.8%
Richlands, VA	33	1.5%
Beckley, WV	32	1.5%
Christiansburg, VA	24	1.1%
Claypool Hill, VA	23	1.1%
Roanoke, VA	22	1.0%

Source: Census Bureau, OnTheMap Application and LEHD Origin-Destination Employment Statistics, 2017.

Employment Projections

The Virginia Employment Commission prepares employment projections for counties, cities, and regions of the Commonwealth of Virginia. For the Town of Bluefield and Tazewell County the projections are not available by jurisdiction, but are available for Local Development Area 1, which includes Lee, Scott, Wise, Buchanan, Dickenson, Russell and Tazewell counties and the City of Norton. Exhibit 3-1 shows employment projections for years 2014-2024.

Exhibit 3-1: Local Development Area 1 Employment Projections 2014-2024

	Employment			Percent	
	Estimated 2014	Projected 2024	Change	Total	Annual
Total, All Industries	61,301	64,924	3,623	5.91%	.58%
Agriculture, Forestry, Fishing and Hunting	192	201	9	4.69%	.46%
Mining, Quarrying, and Oil and Gas Extraction	4,858	4,604	-254	-5.23%	-.54%
Utilities	341	304	-37	-10.85%	-1.14%
Construction	2,589	2,947	358	13.83%	1.3%
Manufacturing	2,950	2,773	-177	-6%	-.62%
Wholesale Trade	1,351	1,384	33	2.44%	.24%
Retail Trade	8,954	9,346	392	4.38%	.43%
Transportation and Warehousing	1,436	1,502	66	4.6%	.45%
Information	716	645	-71	-9.92%	-1.04%
Finance and Insurance	1,374	1,446	72	5.24%	.51%
Real Estate and Rental and Leasing	369	379	10	2.71%	.27%
Professional, Scientific, and Technical Services	2,172	2,497	325	14.96%	1.4%
Management of Companies and Enterprises	792	818	26	3.28%	.32%
Administrative and Support and Waste Management	1,557	1,723	166	10.66%	1.02%
Educational Services	7,107	7,251	144	2.03%	.2%
Health Care and Social Assistance	8,393	9,996	1,603	19.1%	1.76%
Arts, Entertainment, and Recreation	216	237	21	9.72%	.93%
Accommodation and Food Services	4,119	4,295	176	4.27%	.42%
Other Services (except Public Administration)	1,340	1,466	126	9.4%	.9%

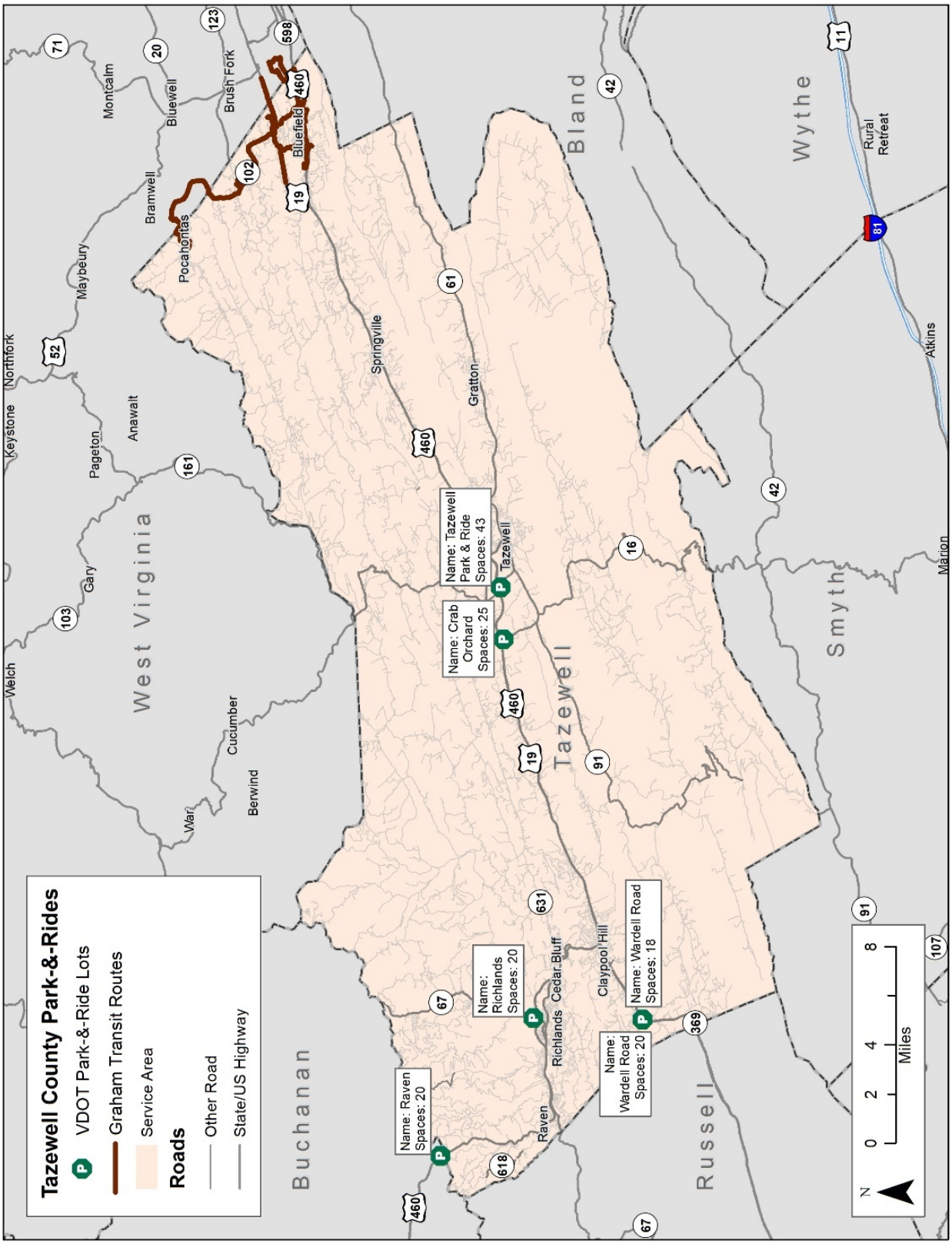
Source: Virginia Employment Commission, Economic Information and Analysis, Long Term Industry and Occupational Projections, 2014-2924

These data project modest job growth in the region (5.9% over the ten-year period). The largest employment growth sectors are expected to be: Health Care and Social Assistance (19.1%); Professional, Scientific, and Technical Services (14.96%); and Construction (13.83%). Declining sectors are expected to include: Utilities (-10.85%); Information (-9.92%); and Mining, Quarrying, and Oil and Gas Extraction (-5.23%).

Park-and-Ride Lots

Virginia DOT operates five park-and-ride lots in Tazewell County; none of them are located in the Graham Transit service area. The largest park-and-ride lot is located in Tazewell and has 43 available spaces. The VDOT Park-and-Rides are intended to facilitate carpooling, vanpooling, and other commuter modes. If Graham Transit wished to expand service further into Tazewell County, the park-and-ride lots are a viable option. Figure 3-16 displays all park-and-ride lots in Tazewell County as well as information about the number of spaces available.

Figure 3-16: Tazewell County Park-and-Ride Lots



SUMMARY OF DEMOGRAPHIC ANALYSIS

When combining demographic, land-use, and commuter trends analyzed in the previous sections the following needs and themes emerge:

- The two Bluefields are very connected; much of the travel in the region needs to cross state lines.
- For a number of social services, Bluefield (VA) residents must travel to Tazewell. Four County Transit offers this link.
- Public transportation, though important to many residents, is not a popular mode for commuters.
- In and around Bluefield, many transit dependent populations were more concentrated on the northern side of Bluefield.
- The major origins and destinations in the Town of Bluefield are served by Graham Transit.

REVIEW OF PREVIOUS PLANS AND STUDIES

Tazewell County Comprehensive Plan 2017

The Tazewell County Comprehensive Plan was adopted in 2017 and assists the county in growth and development for the next twenty years taking into consideration existing constraints and opportunities. The plan notes that within its planning district, Tazewell County has the greatest number of citizens who live and work in their home county. The Tazewell County plan addresses the shifts in transportation mode share and understands that providing carpooling opportunities and public transportation services can increase rural mobility. Tazewell County Comprehensive Plan acknowledges that given the increase in gas prices, discussion should begin regarding public and alternative modes of transportation in the county. Tazewell County identifies the following goals and strategies to guide public transportation planning over the next twenty years:

1. Increase the availability of public transit services.
    - Analyze the feasibility of commuter services to get workers to their jobs.

2. Promote ridesharing to decrease traffic congestion and improve mobility.

    - Study the feasibility of creating a park and ride lot.

    - Gauge local interest for an organized ride sharing program and promote carpooling.

Cumberland Plateau (PDC 2) Coordinated Human Service Mobility Plan (CHSM) 2013

The Cumberland Plateau (PDC 2) Coordinated Human Service Mobility Plan consists of:

- An assessment of available services that identifies current providers (public, private, and non-profit).

- An assessment of transportation needs for individuals with disabilities, older adults, and people with low incomes.

- Strategies, activities, and/or projects to address identified gaps and achieve efficiencies in service delivery.

- Relative priorities for implementation based on resources, time, and feasibility for implementing specific strategies/activities identified.

Strategies identified in the plan to help improve mobility in the region were developed based on an assessment of demographics and the unmet transportation needs that were obtained from key local stakeholders. A variety of strategies were generated through the original CHSM planning process. The following are the strategies identified:

- Continue to support capital needs of coordinated human service/public transportation providers.

- Expand availability of demand response service and specialized transportation services to provide additional trips for older adults, people with disabilities, veterans and people with lower incomes.

- Build coordination among existing public transportation and human service transportation providers.

- Provide targeted shuttle services to access employment opportunities.

- Establish a ride-sharing program for long-distance medical transportation.

- Expand outreach and information on available transportation options in the region, including establishment of a central point of access.
- Implement new public transportation services or operate existing public transit services on a more frequent basis.
- Provide flexible transportation options and more specialized transportation services or one-to-one services using volunteers.
- Expand access to taxi and other private transportation operators.
- Establish or expand programs that train customers, human service agency staff, medical facility personnel, and others in the use and availability of transportation services.
- Bring new funding partners to public transit/human service transportation.

VTrans 2040: Virginia's Long-Range Multimodal Transportation Plan

VTrans 2040 is the Commonwealth of Virginia's long-range multimodal policy plan that sets the vision, goals, and investment priorities for Virginia's transportation systems. It was completed in 2018. The VTrans 2040 plan was drafted with the intention of outlining the goals and objectives needed to guide transportation planning within the commonwealth of Virginia. VTrans 2040 is a comprehensive plan that incorporates all modes of transportation into its analysis. VTrans 2040 builds on preceding VTrans plans by updating the vision, goals, and objectives outlined in VTrans 2035.

As part of its analysis, VTrans performed a needs assessment for each Virginia Department of Transportation region. Tazewell County and Bluefield are in the Bristol Region. The major transportation issues within Tazewell County included:

- Corridor reliability
- Bottlenecks
- Safety
- Congestion

The issues outlined in the needs assessment were then used to create a list of goals and objectives for Virginia to work towards over the next twenty years. Transit related objectives included:

- Increase the accessibility to jobs via transit, walking and driving in metropolitan areas.
- Increase percent of transit vehicles and facilities in good or fair condition.
- Reduce per-capita vehicle miles traveled.
- Reduce transportation related NOX, VOC, PM and CO emissions.

Town of Bluefield Comprehensive Plan (2016)

The Town of Bluefield Comprehensive Plan serves as a policy guide for future development and redevelopment for the Town of Bluefield. The objective of the plan is "to provide a framework and serve as a flexible guide for the health, safety, convenience, prosperity and general welfare for all the Town, its residents, and businesses."[1]

The plan includes the following elements:

- Physical characteristics
- Natural resources
- Economy
- Population
- Land use
- Housing
- Public water and public sewer systems
- Community facilities
- Transportation.

Our review of the Comprehensive Plan focused on the land use and transportation elements.

Land Use

The Town of Bluefield has defined the land uses within the town using 15 districts that incorporate residential, business, manufacturing, shopping centers, and open space. Of these uses, residential districts consume the largest use of space in Bluefield, accounting for 3,751 of the 4,493 habitable acres within the current town limits. The discussion of residential land uses poses a concern that there may be inadequate land available for the future development of multi-family housing.

Commercial zones include three business zones and two shopping center zones. The document indicates that there is a high demand for available land for new business development. Industrial districts comprise 5.7 percent of the town's land and the plan does not include any specific discussions regarding this use. The town includes 304 acres as open space, the majority of which is located in three areas: Graham Recreation Park, City of Bluefield (WV) City Park, and an area bordering the Bluestone River.

[1] Town of Bluefield, 2016 Comprehensive Plan, page 9.

Future Development

The largest future development withing the Town of Bluefield will likely be developed by the Leatherwood Company, which intends to develop 1,100 acres in the southeastern section of town, across Route 460. The master plan includes the following:

- 485.5 acres open space
- 155.5 acres commercial development
- 88.1 acres light/medium commercial/office-retail
- 58.6 acres multi-family dwellings
- 29.2 acres retirement housing facilities
- 208.2 acres single family residences

For the downtown area, the town is interested in extending the Downtown Business and Shopping District to include the outskirts, which currently are comprised of warehouses and residences. The town desires that any extensions of the downtown area will provide a pedestrian-friendly environment.

The St. Clair property, annexed into the town in 2005, also is an area of expected additional development, including several uses.

Transportation

The majority of the transportation section of the plan discusses roadways. There is a "Mass Transit" section that describes Graham Transit and other regional providers. The plan does not include a discussion of making any changes to the transit program. Other modes of transportation are briefly discussed, including bike/walkways; sidewalks; parking; rail transportation; and air transportation.

As previously mentioned in Chapter 1, the town is interested in making the town more pedestrian friendly. Specific areas that need additional sidewalks include: South College; Valley Dale; Pinehill Park; Parkview; and Double Gates. There is also mention of a new hiking/biking trail, but specifics are not included in the plan.

CHAPTER SUMMARY

The system evaluation and needs analysis involved collecting and reviewing data and input from many different sources:

- Performance data
- Passenger survey
- Demographics
- Land use and transportation plans

The results of the system evaluation and the priorities identified in this needs analysis, combined with input from stakeholders included in Chapter 2, were used in the development of service alternatives and improvements discussed in Chapter 4 of the TDP.

Chapter 4
Service and Capital Improvement Plan

INTRODUCTION

The purpose of this chapter is to present a series of service and capital improvements that Graham Transit plans to implement during the ten-year planning horizon covered by the TDP. These potential improvements were developed based on the data compiled and analyzed in Chapters 1-3, together with input from Graham Transit and DRPT staff. The projects were initially presented in a draft chapter 4, and then prioritized by Graham Transit staff. The service improvements are presented first, in priority order, followed by the capital projects.

SERVICE IMPROVEMENTS

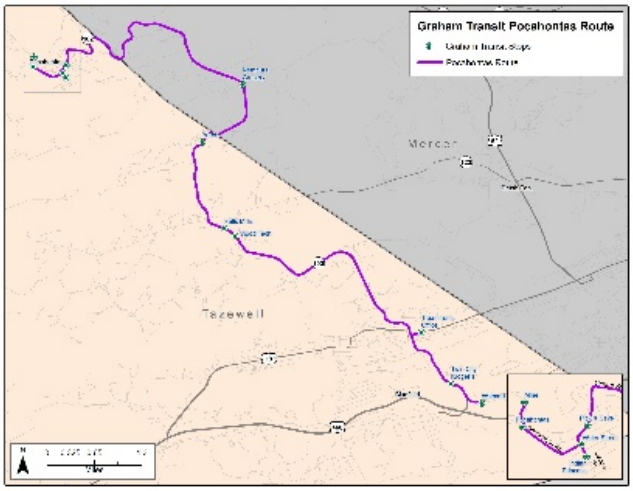
The following service improvements were developed through a review of the gaps in current services identified through input from riders and area stakeholders. Each service concept is detailed in this section and includes:

- A summary of the service concept
- Potential advantages and disadvantages
- An estimate of the operating and capital costs
- Ridership estimates (if applicable)

The cost information for these proposals is expressed as the fully allocated costs, which means all program costs on a per unit basis are considered when contemplating expansions. This overstates the incremental cost of minor service expansions, as there are likely to be some administrative expenses that would not be increased with the addition of a few service hours. The cost estimates were based on FY2020 operating expenses.

The initiatives are presented in priority order and include an extension of service hours for the Pocahontas Route; the addition of the Falls Mills Adult Day Care Center (when completed); service every Saturday; and the implementation of fare-free service.

Operate the Pocahontas Route on the Same Schedule as the Main and Gold Routes



The Pocahontas Route currently operates on the same days as the Main and Gold routes, but ends service at 3:00 p.m., rather than 6:00 p.m. Service hours on the route have already been expanded; the route only ran three days a week prior to the 2011 TDP. Customers have requested that the Pocahontas Route operate on a schedule similar to the Main and Gold routes. This service improvement will add three revenue vehicle hours per operating day, for a total of about 810 annual hours (based on 270 operating days – 255 weekdays and 15 Saturdays).

Advantages

- Responds to a need expressed by riders.
- Provides schedule continuity among the three routes.
- Provides additional mobility options for current riders, as well as new trips that may be generated by the new adult day care and medical center that is currently under construction in Falls Mills.

Disadvantages

- Adds service to the lowest performing route among the three Graham Transit routes.
- Adds operating expenses.

Expenses

- Using Graham Transit's estimated FY2020 fully allocated hourly cost of $38.90 per hour, the addition of 810 hours will cost about $31,500 annually. No additional capital is required.

Ridership

- It is estimated that ridership will increase by about 2,350 passenger trips per year, based on the current productivity of the route.

Add the New Adult Day Care Facility in Falls Mills to the Pocahontas Route

The Appalachian Agency for Senior Citizens (AASC) is building an adult day care facility in Falls Mills. The location of the site (234 Angel Lane, Falls Mills) is about 0.40 miles from Graham Transit's Pocahontas Route. It is proposed that Graham Transit add this facility as a stop on the Pocahontas Route once the facility is completed.

Whether the demand for service at this location will warrant service in both directions on each cycle will need to be determined once the facility is completed. Adding the stop both out-bound and in-bound will add about 1.6 miles to the route each cycle (0.4 each way from State Route 102 – Falls Mills Road). The location and the proposed route extension are shown in Figure 4-1.

Advantages

- Adds a trip generator to the lowest performing of the three Graham Transit routes, potentially boosting ridership.
- Provides a mobility option for people who need to go to the site for appointments, employment, or visiting.

Disadvantages

- Adds mileage to an already long route.

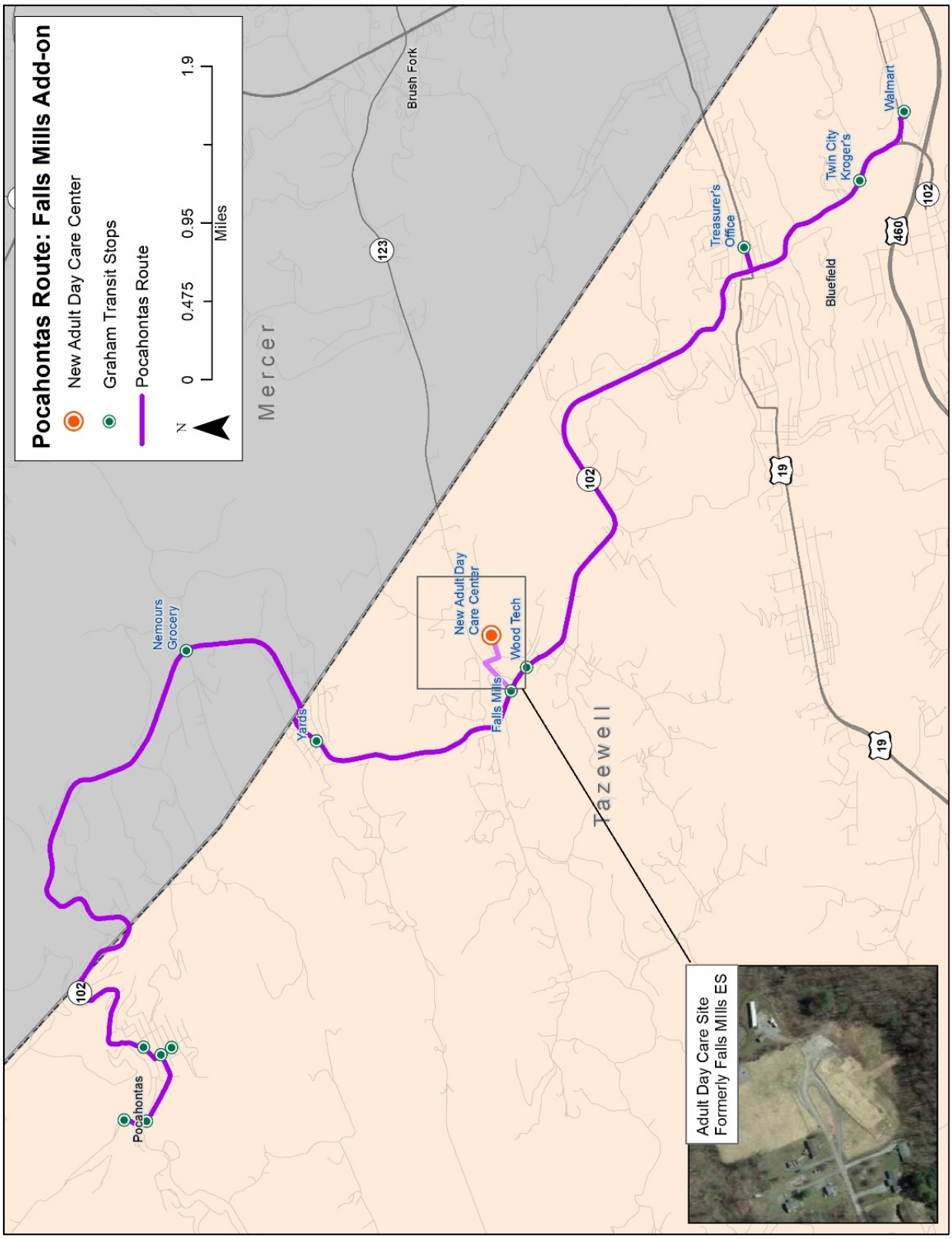
Expenses

- There will be minor incremental increases in expenses, depending on how many times per day the route travels to the site.

Ridership

- There is not enough information currently available to estimate ridership for the stop. It should be noted that Four County Transit will also likely serve this location, given its role in providing human service transportation. Four County Transit will likely bring day care participants to the site.

Figure 4-1: Proposed Pocahontas Route Addition – Falls Mills Adult Day Care Facility



Operate Service Every Saturday

The results of the rider survey conducted for the TDP indicated that the most highly desired transit improvement is additional Saturday service, with 67 percent of respondents indicating they desired this improvement. Graham Transit currently operates Saturday service only on the first Saturday of the month and on Saturdays in December. This improvement proposes that Graham Transit operate transit services for all three of the routes every Saturday. The additional annual revenue vehicle hours are estimated to be about 1,200 based on 32.5 hours per Saturday (which includes an 11-hour service day for the Pocahontas Route) and an additional 37 Saturdays. This improvement was also suggested in the 2011 TDP.

Advantages

- Addresses the priorities expressed by current riders.
- Provides mobility options for riders to use every Saturday, instead of just one Saturday per month.
- Provides scheduled continuity, operating a similar schedule each Saturday.

Disadvantages

- Will result in additional operating expenses.

Expenses

- The estimated additional operating expenses to provide Graham Transit services every Saturday is $46,777. This is based on 32.5 vehicle revenue hours per Saturday; 37 additional Saturdays; and $38.90 per hour (the estimated fully allocated cost per hour for FY2020). No additional capital is required.

Ridership

- Assuming that ridership on Saturdays is about 90 percent of Monday through Friday ridership, estimated Saturday ridership is 151 passenger trips. Adding 37 service days with 151 passenger trips each, will result in annual ridership of about 5,600 annual trips.

Eliminate the Fare

Graham Transit currently charges a $0.25 fare, which generates about $11,000 annually in revenue. This fare revenue is used to offset the expenses of operating the program. Riders pay their fares on board the vehicles using a manual farebox. The fares are counted and deposited once per week. Given the high need population that is served by the transit system, together with the work involved in the collection, securement, recordation, and deposit of the fare revenue, Graham Transit would like to explore the concept of eliminating the fare.

Transit industry research concerning the implementation of fare-free service indicates mostly positive results, particularly for small urban and rural communities where fare revenue typically comprises a small percentage of the agencies' budgets.[1] The following additional summary points from ***TCRP Synthesis #101: Implementation and Outcomes of Fare-Free Transit Systems*** are relevant to rural and small urban systems:

- For agencies that receive federal Section 5311 funding, they can potentially receive a higher federal subsidy without the subtraction of fare revenue from the total expenses to arrive at the net deficit (i.e., the net deficit is higher, so 50 percent of the net deficit is a higher amount). For Graham Transit this is true to the extent that the 5311 dollars are available. DRPT is the direct recipient of Section 5311 funding and allocates the available funds among the rural transit systems in Virginia.

- In states where performance-based funding is in place, transit programs can potentially increase their state subsidies through the increased ridership that is experienced by eliminating the fare. This is true in Virginia under the recently implemented performance-based funding scenario.

- Fare-free transit increased ridership in all of the communities that were studied. The literature search conducted for the study showed increases of between 20 percent and 60 percent. Most new trips were made by existing customers.

- Even though the public subsidy for transit services increases with fare-free service, the subsidy per passenger trip decreases because of the increase in ridership.

- Some public transit systems that have implemented fare-free service have been overwhelmed with demand or been challenged by the presence of disruptive passengers. The report suggested that local ordinances can be crafted to help eliminate this issue and also indicated that most transit managers did not report disruptive passengers as a major concern.

[1] Transit Cooperative Research Program, TCRP Synthesis 101: Implementation and Outcomes of Fare-Free Transit Systems. Joe Volinski, National Center for Transit Research, University of South Florida, 2012.

- Local communities have received positive recognition through the implementation of fare-free service.

The potential implications for Graham Transit are outlined below.

Advantages

- Will help riders financially, particularly those who make multiple trips per day.
- Eliminates all potential fare payment conflicts between passengers and drivers.
- Reduces administrative burden on drivers and management.
- Eliminates the need to purchase fareboxes.
- Will improve ridership and productivity.
- May result in higher subsidies through performance-based funding.
- Speeds boarding time.

Disadvantages

- May encourage people to ride continuously without a specific transportation purpose. This could be mitigated through enforcement.

- Eliminates $11,000 in annual revenue.

Expenses

- The expense to implement fare-free service is the lost fare revenue – about $11,000 annually.

Ridership

- Eliminating the fare will likely boost ridership, which will help Graham Transit's productivity.

CAPITAL INITIATIVES

Additional Shelters

The rider survey and staff input indicated that customers would like to have additional bus shelters and benches. Twenty-two percent of survey respondents indicated a desire for additional shelters and benches. Graham Transit currently has shelters at its four highest ridership locations: Walmart; Crescent View; College Plaza (Lowe's); and the Treasurer's Office.

Additional locations to consider include:

- Bluefield College – To boost ridership and increase awareness.
- Graham Manor – This is a relatively high ridership stop.
- Food City

Advantages

- Responds to rider requests.
- Provides a safe and sheltered location to wait for the bus.
- Increases the visibility of the transit system.

Disadvantages

- Implementation issues – It can be difficult to work out agreements with property owners to site shelters.
- There are costs associated with purchasing, installing, and maintaining shelters.

Expenses

- A concrete pad with a shelter and a bench is likely to cost between $10,000 and $15,000, depending upon the site.

Ridership

- There may be nominal increases in ridership, particularly if a shelter is installed at Bluefield College, as there is not currently a time point at the college.

Bus Stop Signs

Additional bus stop signs would help riders identify stop locations and improve the visibility of Graham Transit within the community. It is proposed that Graham Transit bus stop signs be installed at each of the stops listed as time points on the printed schedule. Some of these are already signed, but many are not; about 22 signs would be needed.

Advantages

- Eliminates confusion with regard to stop locations.
- Increases visibility of the transit system.

Disadvantages

- There are costs associated with purchasing, installing, and maintaining signs.

Expenses

- The total cost for a sign, post (if needed, depending upon location) and installation is about $150. For 22 signs, the total cost is estimated to be $3,300.

Ridership

- The higher visibility provided through the installation of bus stop signs may increase ridership incrementally.

Real-Time Transit Information

Real-time transit information refers to a system whereby the actual location of a transit vehicle can be accessed by the public as it travels along its route. Customers can typically use smart phones, tablets, computers, or information kiosks to access this information. This technology has been used by urban transit programs for many years. As the technology has become more available, small urban and rural systems are increasingly making this information available for their fixed routes and deviated fixed routes.

Real-time transit information typically relies on automatic vehicle location (AVL) devices on board the vehicles that relay the location back to an interface that displays it for either management or the public, or both. Often these systems are tied to other technology management tools used by transit programs, such as routing and scheduling software.

Image source: GCN.com

While Graham Transit may not be quite ready to implement this technology, it is reasonable to include it as an initiative to pursue for the later years of the plan.

Advantages

- Responds to rider input received via the survey.
- Allows riders to know when the next bus is coming to their stop, thus alleviating the anxiety of wondering when it will come. This is particularly relevant for a system that uses deviations, which can alter the schedule.
- Allows the operations manager to know where all of the vehicles are, which provides a way to track on-time performance.

Disadvantages

- It is expensive to procure and there are ongoing maintenance costs.
- Not all riders will have devices that will allow them to use real-time transit information.

Expenses

- Real-time transit information varies in cost depending upon the system, as well as whether or not the vehicles are already equipped with AVL technology.
- The cost is about $15,000 per vehicle (capital/technology), plus a monthly fee (typically in the $1,200 range).

Ridership

- Real-time transit information can improve ridership incrementally as customers feel more secure knowing when the vehicle will be arriving at their stop.

SUMMARY OF TDP INITIATIVES

The service and capital proposals presented in this chapter are summarized in Table 4-1.

Table 4-1: Summary of TDP Initiatives

TDP Proposals	Estimated Annual Revenue Service Hours	Estimated Ridership	Annual Operating Expenses	Capital Expenses
Operating Proposals				
Add Hours to Pocahontas Route	810	2,350	$31,500	$0
Add Falls Mills Adult Day Care	minimal	TBD	minimal	$0
Service Every Saturday	1,200	5,600	$45,777	$0
Eliminating the Fare (1)	-	6,750	$11,000	$0
Capital Proposals				
Additional Shelters	-	small increase	$0	$45,000
Bus Stop Signs		small increase	$0	$3,300
Real-Time Transit Information		small increase	$14,400	$60,000
Total	**2,010**	**14,700**	**$102,677**	**$108,300**

(1) Estimated a 15% increase as a conservative estimate. Literature suggests a higher increase.

Chapter 5
Implementation Plan

INTRODUCTION

The Implementation Plan provides a general outline of the steps required to implement the Service and Capital Improvement Plan described in Chapter 4. This first section includes a discussion of the major activities for each year of the plan, followed by a capital replacement plan for vehicles, passenger amenities, and technology systems.

TRANSIT DEVELOPMENT PLAN INITIATIVES BY YEAR

Each planning year covered by the Graham Transit 2021-2030 TDP is listed below, followed by the list of improvements scheduled for the year along with some general implementation steps. Greater detail is provided for the short-term projects than for the long-term projects. It should be noted that this schedule has been constructed using currently available information with regard to service priorities and funding constraints. Additional resources or shifting priorities may change this schedule and Graham Transit can address these changes through the annual TDP update process.

FY2021

- Work with Bluefield College, Food City, and Graham Manor to identify appropriate locations where a shelter could be provided.
- Reach out to the Appalachian Agency for Senior Citizens to plan for the timing and location of the stop to be located at the new Falls Mills Adult Day Care Center.
- Plan for additional bus stop signs and a shelter, to be purchased and installed in FY2022.

FY2022

- Implement the expanded hours for the Pocahontas Route.
- Add the Falls Mills Adult Day Care Center, if not implemented in FY2021.
- Install bus stop signs at time points and install a shelter at one of the identified locations.

FY2023

- Implement Saturday service for every Saturday.
- Install a shelter at one of the identified locations.
- Monitor ridership for the Falls Mills Adult Day Care Center stop and the expanded hours for the Pocahontas Route.

FY2024

- Implement fare-free service.
- Monitor ridership for Saturday services.
- Install a shelter at one of the identified locations.

FY2025

- Research real-time transit information options.
- Monitor new services and impact of fare-free service.

FY2026

- Implement real-time transit information.
- Prepare for a full TDP update.

FY2027

- Monitor impact of real-time transit information.
- Conduct a full TDP update.

FY2028 – FY2030

- Begin implementing projects recommended within the FY2027 TDP.

CAPITAL NEEDS

Vehicle Replacement and Expansion Plan

This section presents the details of the vehicle replacement and expansion plan, including vehicle useful life standards and estimated costs. A vehicle replacement and expansion plan is necessary to maintain a high quality fleet and to dispose of vehicles that have reached their useful life. For Graham Transit, this plan focuses on vehicle replacement only, as expansion vehicles have not been contemplated for the ten-year planning horizon. The capital program for vehicles was developed by applying FTA/DRPT vehicle replacement standards to the current vehicle fleet that was presented in Chapter 1.

Useful Life Standards

The useful life standards used by the FTA were developed based on the manufacturer's designated vehicle life-cycle and the results of independent FTA testing. The standards indicate the expected lifespans for different vehicle types. If vehicles are allowed to exceed their useful life they become much more susceptible to break-downs, which may increase operating costs and decrease the reliability of scheduled service. With some exceptions for defective vehicles, DRPT/FTA funds are not typically available to replace vehicles that have not yet met the useful life criteria. The FTA's vehicle useful life policy for a number of different vehicle types is shown in Table 5-1. DRPT's useful life policy mirrors the FTA's useful life policy.

Table 5-1: FTA's Rolling Stock Useful Life Policy

Vehicle Type	Useful Life
Light Duty Vans, Sedans, Light Duty Buses and All Bus Models Exempt from Testing Under 49 CFR, part 665	Minimum of 4 Years or 100,000 Miles
Medium, Light Duty Transit Bus	Minimum of 5 Years or 150,000 Miles
Medium, Medium Duty Bus	Minimum of 7 Years or 200,000 Miles
Small, Heavy Duty Transit Bus	Minimum of 10 Years or 350,000 Miles
Large, Heavy Duty Transit Bus, including over the road coaches	Minimum of 12 Years or 500,000 Miles

Source: FTA Circular 5100.1: Bus and Bus Facilities Formula Program Guidance

Vehicle Replacement Plan – Baseline Estimate

All of Graham Transit's revenue service vehicles are cutaway vehicles, with a minimum useful life of five to seven years. These vehicles have gasoline engines. Table 5-2 provides the existing fleet inventory with the estimated calendar year that each vehicle is eligible for replacement.

The operating condition of the vehicles and the availability of funding will dictate the actual replacement year.

In addition to helping Graham Transit and DRPT plan future fleet needs, this vehicle replacement plan will also feed DRPT's transit asset management plan (TAM), which is an FTA-required plan that must include an asset inventory; condition assessments of inventoried assets; and a prioritized list of investments to improve the state of good repair of its capital assets.[1] The TAM requirements establish state of good repair standards and four state of good repair performance measures.

Table 5-2: Graham Transit Vehicle Inventory and Replacement Schedule

Vehicle/Equipment Description	Vehicle #	Model Year	Purchase Date	Engine Type	Wheelchair Accessible	Mileage 6/1/2020	Condition	Estimated Replacement Year
14 Passenger Chevrolet Starcraft Allstar	173	2016	6/8/2016	Gas	Yes	110,751	Good	2023
14 Passenger Chevrolet Starcraft Allstar	174	2018	2/13/2018	Gas	Yes	91,160	Good	2025
14 Passenger Chevrolet Starcraft Allstar	175	2018	2/13/2018	Gas	Yes	94,171	Good	2025
14 Passenger Chevrolet Starcraft Allstar	176	2019	3/13/2019	Gas	Yes	39,509	Excellent	2026
Ford Explorer (Staff Vehicle)	20	2014	3/14/2014	Gas	No	54,212	Good	2024

Vehicle Replacement Plan

The annual schedule for vehicle replacement, based on the implementation schedule provided in this chapter and the FTA's vehicle useful life standards, is shown in Table 5-3. No expansion vehicles are expected.

This vehicle replacement schedule is based on estimates; actual vehicle purchases may vary depending upon service changes, funding availability, and unexpected economic shifts. Changes to this vehicle replacement schedule can be made by Graham Transit within its annual TDP update letter to DRPT, if needed.

Table 5-3: Graham Transit Vehicle Replacement Schedule

Number of Vehicles	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY2029	FY2030
Replacement			1		2	1				1
Expansion										
Non-Revenue				1						
Total Vehicles	**0**	**0**	**1**	**1**	**2**	**1**	**0**	**0**	**0**	**1**

[1] Federal Register, Volume 81, No. 143, Tuesday July 26, 2016, Rules and Regulations, DOT, FTA, 49 CFR Parts 625 and 630, Transit Asset Management; National Transit Database.

Estimated Vehicle Costs

The estimated vehicle replacement costs are presented in Table 5-4. These costs are based on vehicle costs experienced by Graham Transit in FY2019. The town did not purchase vehicles in FY2020. For FY2021 to FY2030 a 3 percent inflationary factor was applied each year. These cost estimates were used to develop the capital budget, which is included with the Financial Plan in Chapter 6. The plan includes the replacement of four revenue vehicles (one of them twice), and one non-revenue vehicle. Potential funding programs for the replacement vehicles include: Federal Appalachian Development Assistance Program; DRPT Capital Assistance Program; and local funds. All service vehicles purchased will be lift- or ramp-equipped.

Table 5-4: Estimated Costs of New Vehicles

Fiscal Year	Body-On-Chassis	Support Vehicle
2021	$70,555	$31,415
2022	$72,672	$32,357
2023	$74,852	$33,328
2024	$77,097	$34,328
2025	$79,410	$35,358
2026	$81,793	$36,419
2027	$84,246	$37,511
2028	$86,774	$38,636
2029	$89,377	$39,796
2030	$92,058	$40,989

Passenger Amenities

The plan includes the addition of bus stop signs at key time points, as well as three shelters for stops that either have high usage, or could potentially have high usage. The locations identified for shelters are: Bluefield College; Food City; and Graham Manor.

Technology and Equipment

The routine replacement of computer hardware and software is included in the plan, as are shop equipment and spare parts. We have also included the implementation of real-time transit information, which is becoming increasingly available for transit agencies and expected by customers.

Chapter 6
Financial Plan

INTRODUCTION

This chapter provides a financial plan for funding existing and proposed Graham Transit services for the TDP's ten-year planning period. The projects indicated in Years 1-3 should be considered short-term, those in Years 4-7 are considered mid-term, and those planned for years 8 through 10 should be considered long-term projects. The financial plan addresses both operations and capital budgets, focusing on the project and capital recommendations that were highlighted in Chapter 4 and the implementation schedule and capital needs highlighted in Chapter 5.

It should be noted that over the course of the ten-year period there are a number of unknown factors that could affect transit finance, including: the future economic condition of the Town of Bluefield; the availability of funding from the Federal Transit Administration; and the availability of funding from the Commonwealth Transportation Fund.

OPERATING EXPENSES AND FUNDING SOURCES

Tables 6-1 and 6-2 provide a financial plan for the operation of Graham Transit services under the ten-year plan. Table 6-1 summarizes the annual revenue hours of service for the existing transit program as well as for the service projects that are recommended. Table 6-2 provides operating cost estimates, and Table 6-3 identifies the funding sources associated with these service projects. A number of assumptions used in developing the operating cost estimates are described below.

For FY2021, the first year of the plan, the expenses and revenues are based on Graham Transit's adopted budget for the fiscal year. The projected cost per revenue hour and the operating costs to maintain the current level of service between FY2022 and FY2030 assume a 3 percent annual inflation rate. It is understood that none of the funding partners are committing to these funding levels, rather that they are planning estimates. Specific funding amounts for each year will be determined during the annual SYIP adoption and budget cycle for the commonwealth and the local funding partners.

Table 6-1: Graham TDP Financial Plan for Operations – Planned Revenue Hours

Projects	Budget FY2021	FY2022	FY2023	FY2024	FY2025	FY2026	FY2027	FY2028	FY2029	FY2030
Projected Incremental Annual Revenue Hours										
Current Level of Service	8,115	8,115	8,115	8,115	8,115	8,115	8,115	8,115	8,115	8,115
TDP Improvements										
Pocahontas Route Service Increase		810	810	810	810	810	810	810	810	810
Saturday Service - Every Saturday			1,200	1,200	1,200	1,200	1,200	1,200	1,200	1,200
Total Transit Revenue Hours	**8,115**	**8,925**	**10,125**	**10,125**	**10,125**	**10,125**	**10,125**	**10,125**	**10,125**	**10,125**

Table 6-2: Graham Transit TDP Financial Plan for Operations – Estimated Annual Operating Expenses

Projects	FY2021	FY2022	FY2023	FY2024	FY2025	FY2026	FY2027	FY2028	FY2029	FY2030
Projected Operating Expenses										
Cost Per Revenue Hour	$41.62	$42.87	$44.16	$45.48	$46.84	$48.25	$49.70	$51.19	$52.72	$54.31
Current Level of Service	$337,750	$347,883	$358,319	$369,069	$380,141	$391,545	$403,291	$415,390	$427,852	$440,687
TDP Improvements										
Pocahontas Route Service Increase		$34,724	$35,766	$36,839	$37,944	$39,082	$40,255	$41,462	$42,706	$43,987
Saturday Service - Every Saturday			$52,986	$54,576	$56,213	$57,899	$59,636	$61,425	$63,268	$65,166
Real-Time Transit Information - no change in hours. Monthly fee.						$16,692	$17,193	$17,709	$18,240	$18,787
Total Projected Operating Expenses	**$337,750**	**$382,606**	**$447,071**	**$460,483**	**$474,297**	**$505,218**	**$520,375**	**$535,986**	**$552,066**	**$568,628**
% Change Year by Year		**13%**	**17%**	**3%**	**3%**	**7%**	**3%**	**3%**	**3%**	**3%**

Table 6-3: Graham Transit Financial Plan for Operations – Estimated Annual Operating Funding and Revenue

Anticipated Revenue and Subsidies	FY2021	FY2022	FY2023	FY2024	FY2025	FY2026	FY2027	FY2028	FY2029	FY2030
Passenger Revenue (1)	$11,000	$11,330	$11,670	$0	$0	$0	$0	$0	$0	$0
Subtotal, Revenue	$11,000	$11,330	$11,670	$0	$0	$0	$0	$0	$0	$0
Net Deficit	$326,750	$371,276	$435,401	$460,483	$474,297	$505,218	$520,375	$535,986	$552,066	$568,628
Federal Funds	$163,375	$185,638	$217,700	$230,241	$237,149	$252,609	$260,187	$267,993	$276,033	$284,314
State Funds	$84,759	$96,309	$112,943	$119,449	$123,033	$131,054	$134,985	$139,035	$143,206	$147,502
Local Funds	$78,616	$89,329	$104,757	$110,792	$114,116	$121,556	$125,202	$128,958	$132,827	$136,812
Subtotal, Subsidies	$326,750	$371,276	$435,401	$460,483	$474,297	$505,218	$520,375	$535,986	$552,066	$568,628
Total Projected Operating Revenue and Subsidies	**$337,750**	**$382,606**	**$447,071**	**$460,483**	**$474,297**	**$505,218**	**$520,375**	**$535,986**	**$552,066**	**$568,628**

(1) The fare elimination proposal is planned for FY2024

CAPITAL EXPENSES AND FUNDING SOURCES

DRPT has implemented a capital assistance prioritization process that allows DRPT to allocate and assign limited resources for projects that are deemed the most critical.[1] DRPT's capital program now classifies, scores, and prioritizes projects into the following categories:

- **State of Good Repair (SGR)**. This category includes projects and programs that replace or rehabilitate existing assets.

- **Minor Enhancement (MIN).** This category includes projects and programs to add capacity, new technology, or a customer facility, and meet the following criteria:
  - Total project cost of less than $2 million; or
  - Vehicle expansion of not more than 5 vehicles or 5 percent of the existing fleet size, whichever is greater.

- **Major Expansion (MAJ)**. This category includes projects or programs that add, expand, or improve service with a cost exceeding $2 million or, for expansion vehicles, and increase of greater than 5 vehicles or 5 percent of fleet size, whichever is greater.

The following three types of projects are exempt from the prioritization scoring process:

- Capital projects that do not receive any state transit capital funding contribution.
- Debt service agreements approved in previous fiscal years.
- Track lease payments and capital cost of contracting requests.

The TDP for Graham Transit includes projects in the SGR and MIN categories, as described below.

State of Good Repair

Eligible activities for funding under State of Good Repair Include[2]:

Replacement/Rehabilitation of:

- Vehicles/rolling stock (buses, vans, rail cars, support vehicles, etc.)
- Administrative/maintenance facilities
- Customer amenities (parking facilities, bus shelters, benches, signage)

[1] DRPT, Making Efficient Responsible Investments in Transit (MERIT), Capital Assistance – Program Prioritization, FY 21 Technical Documentation.
[2] DRPT, Making Efficient Responsible Investments in Transit (MERIT), Capital Assistance – Program Prioritization, FY 21 Technical Documentation.

- Any other specific existing pieces of equipment and/or technology that **do not** fall into the Special Asset Categories**

** ***Special Asset Categories:***

- Tools: All tools needed to provide maintenance services (i.e., new/replacement tools, tool cabinets).

- Maintenance Equipment: All equipment needed to maintain vehicles, infrastructure, and/or other assets (i.e., bus lift, tire mounting device, forklifts).

- Spare Vehicle/Rail Parts: All spare vehicle and rail parts that will be used to maintain assets in working order that are not part of a larger rehabilitation project (i.e. alternators, transmissions, engines, seats, windows, gas tanks).

- Building/Facility Items and Fixtures: All individual, small facility parts and fixtures that are being replaced outside of a larger rehabilitation project (i.e., concrete floors, stairs, escalators, hand dryers, fans, lighting systems).

- Grouped Assets/Programs of Projects (less than $2 million): Includes large groups of assets that cannot be broken down into subcomponents (i.e., general SGR purchase of parks or track). Does not include grouped or program of projects for vehicle rehab or replacement.

- Other Financial Tools: Includes funds for needed capital investments that cannot be scored as a replacement/rehabilitation (i.e., capital cost of contracting, track lease payments, debt service on previously approved projects).

Federal and state matching ratios for SGR projects are currently as follows: federal – 80 percent; state – 16 percent. The estimated expenses and funding sources for the SGR projects for the TDP period are provided in Table 6-4.

Minor Enhancements

Eligible investments under the Minor Enhancement (MIN) category include:

- Fleet expansion (fewer than 5 vehicles or 5 percent of fleet).

- New customer amenities (parking facilities, bus shelters, benches, accessibility improvements, signage).

- New equipment and technology.

- New small real estate acquisition.
- Capital project development less than $2 million (engineering and design, construction management).
- All assets that fall in the Special Assets Categories (listed above).

Table 6-4: Graham Transit - State of Good Repair Projected Capital Expenses and Funding

	FY2021	FY2022	FY2023	FY2024	FY2025	FY2026	FY2027	FY2028	FY2029	FY2030
Vehicle Replacements										
Body-on-Chassis			1		2	1				1
Support Vehicles				1						
Sub-Total Replacement Vehicles	**0**	**0**	**1**	**1**	**2**	**1**	**0**	**0**	**0**	**1**
Vehicle Costs										
Replacement Vehicles	$0	$0	$74,852	$34,328	$158,820	$81,793	$0	$0	$0	$92,058
Computer/Technology Replacements	$2,000	$2,060	$2,122	$2,185	$2,251	$2,319	$2,388	$2,460	$2,534	$2,610
Total SGR Expenses	**$2,000**	**$2,060**	**$76,974**	**$36,513**	**$161,071**	**$84,112**	**$2,388**	**$2,460**	**$2,534**	**$94,668**
Anticipated Funding Sources - Current Federal/State/Local Matching Ratios										
Federal	$1,600	$1,648	$61,579	$29,211	$128,857	$67,289	$1,910	$1,968	$2,027	$75,734
State	$320	$330	$12,316	$5,842	$25,771	$13,458	$382	$394	$405	$15,147
Local	$80	$82	$3,079	$1,461	$6,443	$3,364	$96	$98	$101	$3,787
Total Funding	**$2,000**	**$2,060**	**$76,974**	**$36,513**	**$161,071**	**$84,112**	**$2,388**	**$2,460**	**$2,534**	**$94,668**

Notes: Future vehicle replacement purchases are assumed to be funded as follows: 80% federal; 16% state; and 4% local.

Vehicle prices include inflation, and are based on the vehicles described in Chapter 5.

Table 6-5: Graham Transit - Minor Enhancements Projected Capital Expenses and Funding

Capital Need	FY 2021	FY2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY2029	FY2030
Bus Stop Signs		$3,500								
Bus Shelters and Benches		$15,000	$15,000	$15,000						
Maintenance Equipment/Tools	$1,500	$1,545	$1,591	$1,639	$1,688	$1,739	$1,791	$1,845	$1,900	$1,957
Real-Time Schedule Information						$69,550				
Total MIN Expenses	**$1,500**	**$20,045**	**$16,591**	**$16,639**	**$1,688**	**$71,289**	**$1,791**	**$1,845**	**$1,900**	**$1,957**
Anticipated Funding Sources- Current Federal/State/Local Matching Ratios (1)										
Federal	$1,200	$16,036	$13,273	$13,311	$1,351	$57,031	$1,433	$1,476	$1,520	$1,566
State	$240	$3,207	$2,655	$2,662	$270	$11,406	$287	$295	$304	$313
Local	$60	$802	$664	$666	$68	$2,852	$72	$74	$76	$78
Total Funding	**$1,500**	**$20,045**	**$16,591**	**$16,639**	**$1,688**	**$71,289**	**$1,791**	**$1,845**	**$1,900**	**$1,957**

(1) Funding split assumed to remain 80% federal; 16% state; and 4% local

Total Capital Expenses over TDP Timeframe

The combined SGR and MIN budgets for the TDP period are provided in Table 6-6.

Table 6-6: Graham Transit Capital Budget- FY2021-FY2030

SGR	FY2021	FY2022	FY2023	FY2024	FY2025	FY2026	FY2027	FY2028	FY2029	FY2030
Replacement Vehicles	$0	$0	$74,852	$34,328	$158,820	$81,793	$0	$0	$0	$92,058
Computer/Technology Replacements	$2,000	$2,060	$2,122	$2,185	$2,251	$2,319	$2,388	$2,460	$2,534	$2,610
Total SGR Expenses	**$2,000**	**$2,060**	**$76,974**	**$36,513**	**$161,071**	**$84,112**	**$2,388**	**$2,460**	**$2,534**	**$94,668**
MIN										
Bus Stop Signs		$3,500								
Bus Shelters and Benches		$15,000	$15,000	$15,000						
Maintenance Equipment/Tools	$1,500	$1,545	$1,591	$1,639	$1,688	$1,739	$1,791	$1,845	$1,900	$1,957
Real-Time Schedule Information						$69,550				
Total MIN Expenses	**$1,500**	**$20,045**	**$16,591**	**$16,639**	**$1,688**	**$71,289**	**$1,791**	**$1,845**	**$1,900**	**$1,957**
TOTAL CAPITAL EXPENSES	**$3,500**	**$22,105**	**$93,565**	**$53,153**	**$162,759**	**$155,400**	**$4,179**	**$4,305**	**$4,434**	**$96,625**
Anticipated Funding Sources- Current Federal/State/Local Matching Ratios (1)										
Federal	$2,800	$17,684	$74,852	$42,522	$130,207	$124,320	$3,343	$3,444	$3,547	$77,300
State	$560	$3,537	$14,970	$8,504	$26,041	$24,864	$669	$689	$709	$15,460
Local	$140	$884	$3,743	$2,126	$6,510	$6,216	$167	$172	$177	$3,865
Total Funding	**$3,500**	**$22,105**	**$93,565**	**$53,153**	**$162,759**	**$155,400**	**$4,179**	**$4,305**	**$4,434**	**$96,625**

(1) Funding split assumed to remain 80% federal; 16% state; and 4% local

Appendix A

Graham Onboard Rider Survey

Bluefield
Virginia's Tallest Town

Tell us about your ride. Complete the survey.

1. Please rate Graham Transit in the following areas by placing an X:

	 Strongly Satisfied	 Satisfied	 Neutral	 Dissatisfied	 Strongly Dissatisfied
Overall service					
Days and hours of service					
Buses running on-time					
Frequency of buses					
Availability of information					
Graham Transit route brochure					
Graham Transit website					
Cost of bus fare					
Sense of security					
Cleanliness of vehicles					
Telephone customer service					
Trip scheduling process for deviations					
Bus drivers					

2. Which Graham Transit Route(s) are you taking for your trip today?

❑ Main Route ❑ Gold Route ❑ Pocahontas Route

3. Do you or will you TRANSFER to another bus to complete this trip?

❑ No ❑ Yes

4. Are there destinations/areas you need to go in the Bluefield Area that Graham Transit does not serve?

❑ No ❑ Yes - Describe: _____

5. What is the purpose of your trip today?

❑ Home ❑ School ❑ Retail/Errands ❑ Social/Recreation
❑ Work ❑ Medical ❑ Other: _____

6. On average, how often do you use Graham Transit?

❑ 5-6 days a week ❑ 3-4 days a week ❑ 1-2 days a week
❑ Less than once a week ❑ Less than once a month

7. Do you use any other public transportation services in the region?

❑ Bluefield Area Transit ❑ Four County Transit
❑ Other:_____ ❑ No

Continued ☛

8. If you were not taking the bus, how would you make this trip?

❑ Drive ❑ Walk/Bicycle ❑ Family/Friends ❑ Wouldn't make trip

❑ Taxi or Uber/Lyft ❑ Other: _____

9. If Graham Transit were to make service improvements, choose up to three (3) that would benefit you the most. Please choose only 3.

❑ Additional Saturday service ❑ Service later in the evenings

❑ Service on Sundays ❑ Service earlier in the mornings

❑ More frequent service ❑ Bus shelters and benches at stops

❑ Service to additional locations within the Town of Bluefield:_____

❑ Service to additional locations outside of the Town of Bluefield: _____

❑ Faster, more direct routing between origin and destination

❑ "Real-time" transit information that would allow you to see on your phone or computer the actual location of your bus when you are waiting for it to come.

❑ Other: _____

Please answer a few questions about yourself.

What is your zip code? _____

How old are you?

❑ Under 18 ❑ 18-24 ❑ 25-34 ❑ 35-54 ❑ 55-64 ❑ 65+

Do you need any of the following to help you on a daily basis? (check all that apply)

❑Wheelchair ❑Walker ❑Cane ❑Service Animal ❑Personal Care Attendant ❑No

Do you have an internet enabled "smart" phone? ❑ Yes ❑ No

Do you have a valid driver's license? ❑ Yes ❑ No

Do you have access to a working vehicle? ❑ Yes ❑ No

Do you consider yourself Hispanic/Latino? ❑ Yes ❑ No

Which one of the following best describes your race? (check all that apply)

❑ White/Caucasian ❑ African American/Black ❑ Asian ❑ Prefer not to answer

❑ American Indian/Alaskan Native ❑ Native Hawaiian/Pacific Islander

What is your employment status? (check all that apply)

❑ Employed (Full-time) ❑ Student (Full-time) ❑ Retired ❑ Unemployed

❑ Employed (Part-time) ❑ Student (part-time) ❑ Homemaker ❑ Other

What is your annual household income?

❑ $14,999 or less ❑ $15,000 - $29,999 ❑ $30,000 - $44,999

❑ $45,000 - $59,999 ❑ $60,000 - $74,999 ❑ $75,000 or higher

Graham Transit (276) 322-1468

Comments:

Appendix B

Graham Onboard Rider Survey Comments

Appendix B

Graham Onboard Rider Survey Comments

Rider Survey Comments
I think Jimmy is the best driver and always willing to help others.
Thanks for making public transportation possible
Your entire staff has saved me and my family for the last few months from hardships we have had. Everyone goes beyond than just basic service... You guys are the heart of this area.
These people are fantastic. Should be reported as everyday community heroes!! They are not just drivers! Called TV station to praise you!
Jimmy is a great bus driver and he is willing to help others
Mr. Joe excellent bus driver and overall blessing to us all
Graham Transit is a blessing for me. I wouldn't be able to shop for groceries or go to medical appointments without it. Drivers are cordial and extremely helpful to me!!
Our bus is a blessing
Pocahontas route should run longer :)
Riders on the bus need to be courteous of other riders with better hygiene
Thanks! Very nice driver!
Really needs Sat/Sun service, earlier and later service
I have no problem with any of the bus drivers, they are all nice to me. Dress code: I think if you are going to ride the bus, that you come clean and have your pants pulled up, and have some respect for the drivers.
Everybody's great
Thank you Graham Transit for your services
Service to Myrtle Beach