Roanoke Valley-Alleghany
REGIONAL commission

RVARC RURAL TRANSIT FEASIBILITY STUDY

Final Report

Approved May 23, 2019

ACKNOWLEDGEMENT
This Plan was prepared in cooperation with the Virginia Department of Rail and Public Transportation and the Federal Transit Administration. This report also represents the collective work of the Roanoke Valley-Alleghany Regional Commission (RVARC).

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Introduction

The Roanoke Valley - Alleghany Regional Commission (RVARC) is located in southwest Virginia, which is situated between the Blue Ridge and Alleghany Mountains. This study will focus on the rural portions of RVARC, including Alleghany, Botetourt, and Franklin Counties, towns of Rocky Mount and Clifton Forge, and the City of Covington.

Spatially this area covers approximately 1700 square miles with a total population of 111,272 individuals according to the 2011-2015 American Community Survey (ACS) 5-Year Estimates. While this area is mainly rural or suburban, population is expected to grow 5% to 9% overall within the coming decades. However, this growth is expected to be uneven across the landscape.

Demographically, the population of the study area is generally older, with an average age of 45 years old. In addition, preliminary research has concluded that there are several small concentrations of likely transit users within the study area. This includes concentrations of individuals who are elderly, poor, disabled, youth, and/or who do not own an automobile. Local government stakeholders within the study area have expressed interest in understanding regional transit needs and opportunities to better connect their citizens to points of employment, shopping, medical care, education, and leisure. As part of this endeavor, rural stakeholders and transit providers together with staff from the Roanoke Valley - Alleghany Regional Commission explored the feasibility of transit service in the study area. This study focused on providing transit services for current and future residents in the project study area, and did not consider potential tourists to the region. This report presents the findings of this effort.

Transit Feasibility

The purpose of a transit feasibility study is to determine what type of transit service might be appropriate for the local community. Assessing the feasibility of service includes evaluating existing transit needs and determining the types of service that may best meet unmet needs. By understanding demand and matching it to different service types, it is possible to estimate the advantages associated with different actions. The main tasks of the Rural Transit Feasibility Study, therefore, involve:

- Evaluating the need for transit services and the particular service characteristics associated with that need;
- Developing different options for how the service need can be met;
- Estimating the costs and benefits associated with providing a service; and
- Identifying potential funding sources to support any of the recommended services.

1.0 Existing Conditions Analysis

As part of understanding the need and feasibility of public transportation services in the Rural Roanoke Valley, the study team prepared a community profile that evaluates community characteristics in terms of their ability to support transit service. A key aspect to assessing the demand and potential for public transportation services is developing a clear understanding of community demographics, existing travel flows, and points of interest. This analysis is largely quantitative and was prepared using data collected by the U.S. Census Bureau from their American Community Survey. The Census Bureau's urban-rural classification is a delineation of geographical areas, identifying both individual urban areas and the rural areas of the nation. The Census Bureau identifies two types of urban areas: (1) Urbanized Areas (UAs) of 50,000 or more people or (2) Urban Clusters of at least 2,500 and less than 50,000 people. "Rural" encompasses all population, housing, and territory not included within an urban area.[1]

1.1 Population and Employment Centers

According to the 2011-2015 American Community Survey (ACS) 5-Year Estimates, 111,272 individuals live in independent rural localities within the Roanoke Valley PDC outside of Roanoke County. Alleghany County's population was 16,066; Botetourt County's population was 33,155, Franklin County's population was 56,315, and the City of Covington's population was 5,736. Additionally, there are 45,359 households in the rural area, of which 31,977 are family households. The Census data also indicates there is an average density of approximately 66 people per square mile across these four localities.

Population in the study area is projected to grow in the next 20 years. The Demographics Research Group of the University of Virginia Weldon Cooper Center for Public Services projects a total population of 121,759 by the year 2040. These projections were determined using a combination of exponential growth (rate of growth as a percentage), linear extrapolation (change in population over a period of time), and the Hamilton-Perry method (age distribution of a population at two points in time).

Table 1.1 - 1: Population Projections

	2020	2030	2040
Alleghany County/Town of Clifton Forge	14,851	13,622	12,231
Botetourt County	33,732	35,477	36,696
City of Covington	6,409	6,294	6,096
Franklin County/Town of Rocky Mount	56,462	62,085	66,736

[1] https://www.census.gov/geo/reference/urban-rural.html

There are several incorporated/ Census Designated Places, and towns along the U.S. Highway 220 corridor, including: Low Moor, Clifton Forge, and Iron Gate in Alleghany County; Eagle Rock, Fincastle, Daleville, and Cloverdale in Botetourt County; and Boones Mill and Rocky Mount in Franklin County. Approximately 17% of the RVARC rural area population lives in these subareas.

Generally, the rural RVARC region is aging. Alleghany County has the most senior population with an average age of 48 years, followed by Botetourt County at 47 years of age; and Franklin County at 45 years. The City of Covington is the youngest locality, with an average age of 43 years. Within every independent locality, populations aged 50 and up represent over 30 percent of the population with populations aged 75 and up representing at least seven to 10 percent of the total population.

Figure 1.1 - 1: Total Population by Census Block

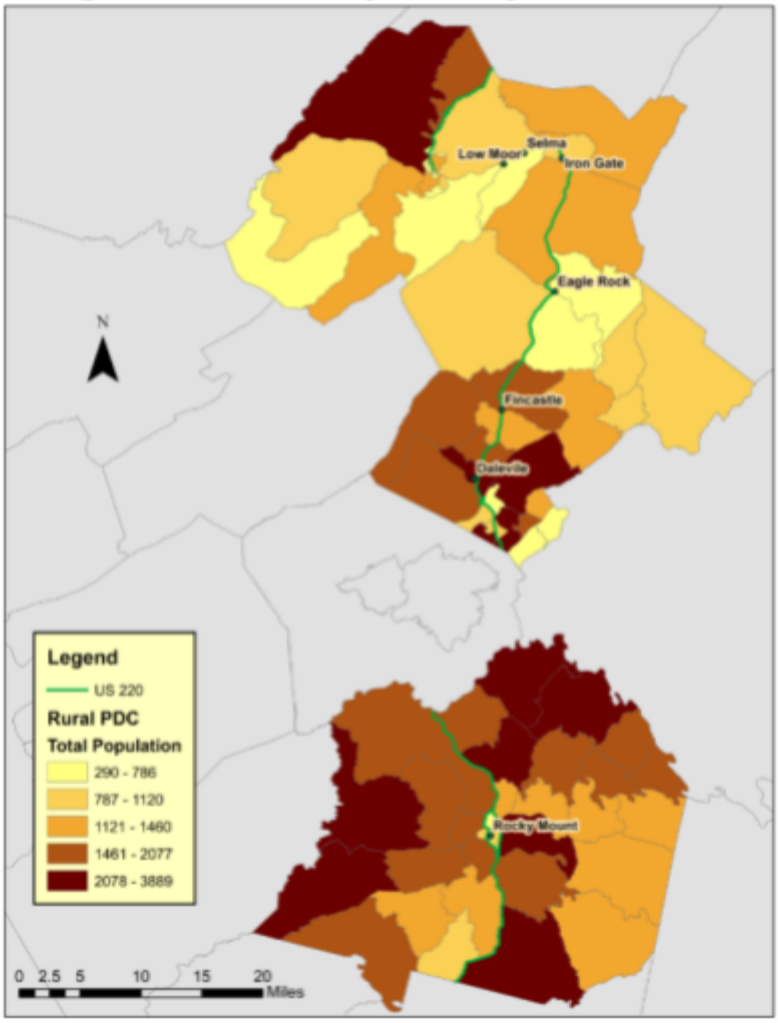


Table 1.1 - 2: Age Distribution					
	0-24	**25-49**	**50-74**	**>75**	**Avg. Age**
Alleghany County/Town of Clifton Forge	26.7%	27.5%	36.2%	9.6%	48
Botetourt County	28.0%	27.8%	36.5%	7.6%	47
City of Covington	30.7%	28.9%	31.1%	9.4%	43
Franklin County/Town of Rocky Mount	28.2%	28.5%	35.7%	7.4%	45

Table 1.1 - 3: Distribution of Elderly Populations by Locality	
Locality	**Percent of Pop. Age 60>**
Alleghany County/Town of Clifton Forge	30.6%
Botetourt County	26.9%
City of Covington	25.9%
Franklin County/ Town of Rocky Mount	27.9%
Virginia	**19%**

According to the Census Bureau's 2011-2015 American Community Survey 5-Year Estimates, the median household income of the study area is lower than the statewide median household income. The average median household income among the four localities is $46,769, approximately $18,000 less than the average income in the State of Virginia. However, this is likely indicative of a national trend where, generally, compared with households in urban areas, rural households have lower median household incomes.[2] In addition, 18,597 residents received Social Security income, 2,510 residents received Supplemental Security income, 720 residents received cash public assistance income, and 4,762 residents receives SNAP/Food Stamp benefits.

Table 1.1 - 4: Median Household Income	
Alleghany County	$45,007
Botetourt County	$60,454
City of Covington	$34,746
Franklin County	$46,870
Virginia	**$65,015**

Of the 2015 civilian labor force within rural localities, approximately 50,105 residents were employed and approximately 2,971 residents were unemployed, out of a total civilian labor force of 53,076. The unemployment rate in the study area was 5.6%, collectively.

[2] https://www.census.gov/newsroom/press-releases/2016/cb16-210.html

Table 1.1 - 5: Employment Characteristics				
Locality	**Employed**	**Unemployed**	**Civilian Labor Force**	**Unemployment Rate**
Alleghany Co./ Town of Clifton Forge	6,539	349	6,888	5.1%
Botetourt Co.	16,257	775	17,032	4.6%
Franklin Co./ Town of Rocky Mount	25,149	1,676	26,825	6.2%
City of Covington	2,160	171	2,331	7.3%
Totals	**50,105**	**2,971**	**53,076**	**5.6%**

According to the Virginia Employment Commission's Virginia Labor Market Indicators, the public school system is among the top employers in each of the localities, which serves approximately 15,390 elementary, middle, and high school students in total. In addition, city/county administration, manufacturing, and institutions of higher education (Dabney S. Lancaster and Ferrum College) are also among the top employers in each locality.

Figure 1.1 - 2: Employment by Locality

Top 5 Employers in Rural Localities

Alleghany County

1. Alleghany Highlands Public School Board
2. HCA Virginia Health System
3. County of Alleghany
4. Dabney S. Lancaster Community College
5. Alliance Group Rock Tenn

Franklin County

1. Franklin County School Board
2. M.W. Manufacturers
3. County of Franklin
4. Ferrum College
5. Trinity Packaging Corporation

Botetourt County

1. Botetourt County School Board
2. Action Personnel
3. Altec Industries Inc.
4. Dynax America Corporation
5. County of Botetourt

City of Covington

1. Alliance Group Rock Tenn
2. Wal Mart
3. Ingevity Virginia Corporation
4. Covington City School Board
5. Garten Trucking, LC

Table 1.1 - 6: Community Characteristics: Commuting Patterns to Work				
	Worked in State	**Worked in County**	**Work outside of County**	**Work Outside of State**
Alleghany Co./ Town of Clifton Forge	94.7%	60.9%	33.8%	5.3%
Botetourt Co.	99.4%	33.4%	66.0%	0.6%
Franklin Co./ Town of Rocky Mount	99.4%	56.3%	43.1%	0.6%
City of Covington	92.8%	29.9%	62.9%	7.2%

Although much of the employed population work in their respective locality of residence, a large amount of the rural population works in other localities. According to the American Community Survey, a total of 13,212 rural residents travel to another locality for work. Over half of these residents are from Franklin County, with 7,095 residents, 4,098 residents travel out from Botetourt County, and 2,709 travel outside of Alleghany County. The City of Covington had the only positive net in-commuting total of 690 commuters.

Table 1.1 - 7: Commuting Patterns				
	People who live and work in area	**In-Commuters**	**Out-Commuters**	**Net In-Commuters**
Alleghany Co	2,018	2,242	4,951	-2,709
Botetourt Co	3,098	7,400	11,498	-4,098
Franklin Co	8,461	6,060	13,155	-7,095
City of Covington	731	2,752	2,062	+690

According to data from the American Community Survey (2011-2015), the majority of the residents in the study area drive to work alone. The overall dependency on motor vehicles can be attributed to a number of factors specifically facing rural transportation. As interjurisdictional bus access has declined over the years, rural areas are becoming increasingly isolated from larger cities with denser populations. This causes a cycle, as there are fewer people taking public transit because there are fewer options available, so it also becomes harder to justify creating infrastructure to cater to and improve a rural population's mobility needs.[3]

[3] https://www.ecolane.com/blog/running-a-successful-transit-agency-rural-area

Table 1.1 - 8: Means of Transportation to Work %						
	Drive Alone	**Rideshare**	**Public Trans.**	**Walked**	**Taxi/Motorcycle/ Bike**	**Worked at Home**
Alleghany	85.9%	9.3%	1%	0.9%	1.3%	1.6%
Botetourt	90.1%	6.3%	0.3%	0.6%	0.4%	2.3%
Franklin	78.7%	11.3%	0.5%	3.1%	1.2%	5.2%
Covington	92.7%	4.7%	0.4%	1.1%	0.5%	0.6%

Geographical isolation of rural living, from centers of employment, education, recreation, and health care has resulted in a dependency on automobiles for a number of reasons. Long distance traveled to places of interest have made it increasingly difficult to utilize other modes of transportation. In addition these long distances that must be traveled have resulted in high costs of transportation using taxis and other ancillary forms of transportation. As a result, over half of all households in the study area have access to three or more vehicles while over 30% of households two or more vehicles, most likely to ensure appropriate travel accommodations for multiple members of a given household.

Table 1.1 - 9: Vehicles Available				
	Alleghany Co.	**Botetourt Co.**	**Franklin Co.**	**City of Covington**
No Vehicle	1.3%	0.6%	2.2%	1.1%
1 Vehicle	13%	9.2%	14.5%	24.6%
2 Vehicle	34.5%	36.2%	31.4%	32.3%
3 or more	51.2%	54%	51.9%	42%

Rural living greatly affects travel time to work. Travel time to work is the duration of the commuting trip from work to home, depending on the transportation mode used. Travel time to work is directly linked to the geographic extension of the community/labor market and serves as an indicator of the efficiency of the transportation system. It is also considered as a key element of a community's economic competitiveness, as it is an important decision factor in companies' location decisions. Indeed, it influences both the ability of their employees to get to work as well as their general well-being and quality of life.

Specifically, residents living within the study area travel, on average, between 24 to 30 minutes to work. This is comparable with the State average of 27.9 minutes, as well as the national

average commute of 25.9 minutes. However, there still remains a sizeable percentage of residents who travel 30 minutes or more to work, which poses a number of personal cost including high vehicle maintenance needs and increasing fuel costs, associated with long commutes.

Table 1.1 - 10: Travel Time to Work				
	Alleghany	**Botetourt**	**Franklin**	**Covington**
Less than 10 Minutes	15%	9.4%	12.5%	39.6%
10-14 Minutes	17.5%	9.6%	10.2%	20.5%
15-19 Minutes	17%	11.2%	11.8%	8.7%
20-24 Minutes	15.3%	18.7%	11.1%	9.4%
25-29 Minutes	5.2%	10.3%	6.6%	1.9%
30-34 Minutes	10.8%	19.6%	14.2%	3.4%
35-44 Minutes	4%	9.9%	9.1%	3%
45-59 Minutes	7.1%	6.2%	13.7%	5.4%
1 hour or more	8.2%	5.2%	10.7%	8.1%
Mean Times (Minutes)	24.3	26.6	29.8	20.8

Across the study area, an average of 34.7% of working residents travel 30 minutes or more to their place of employment. Specifically, Franklin County has the highest commute time among rural localities, of 29.8 minutes, as well as the highest percentage of working residents that travel 30 minutes or more to work, with 47.7 percent. The City of Covington had the lowest commute time with an average of 20.8 minutes. Covington also had the lowest percentage of working residents travelling over 30 minutes for work with 19.9 percent. At almost 40%, many Covington residents have a commute less than 10 minutes indicating the density and close proximity of jobs and housing within the city.

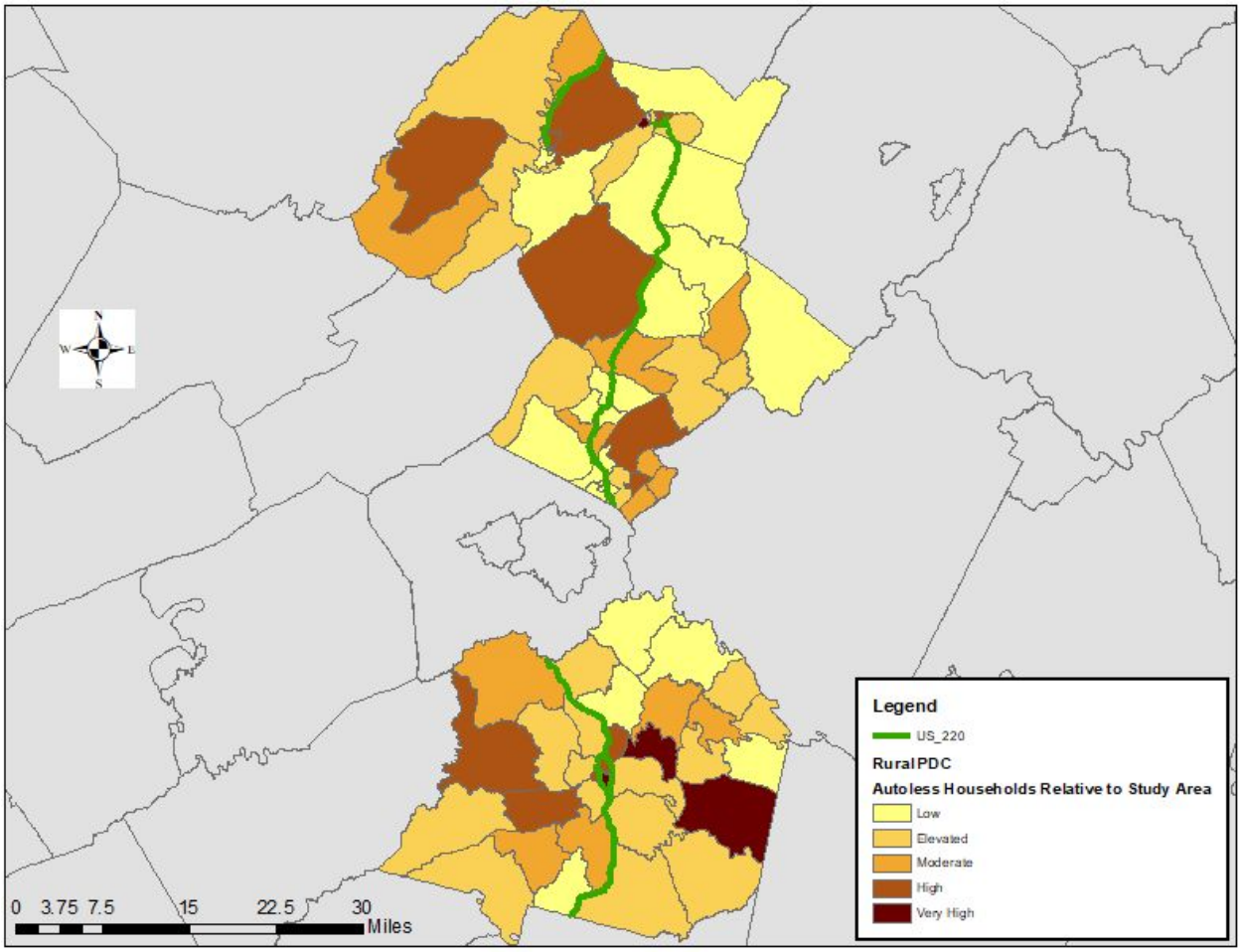
1.2 Likely Transit Users

Identifying the relative size and location of segments within the general population that are more likely to use transit service is important when defining public transportation needs. The Federal Transit Administration identifies likely transit users as people 1) without private transportation, 2) elderly (over age 65), 3) youths (under age 18), or 4) persons below poverty or median income levels defined by the U.S. Census Bureau.

1.2.1 Autoless Households

Households without a personal vehicle are more likely to utilize the mobility offered by public transit than households with access to a car. Displaying this segment of the population is important because many land uses in the region are at distances too far for non-motorized travel.

Figure 1.2 - 1: Autoless Households by Census Block



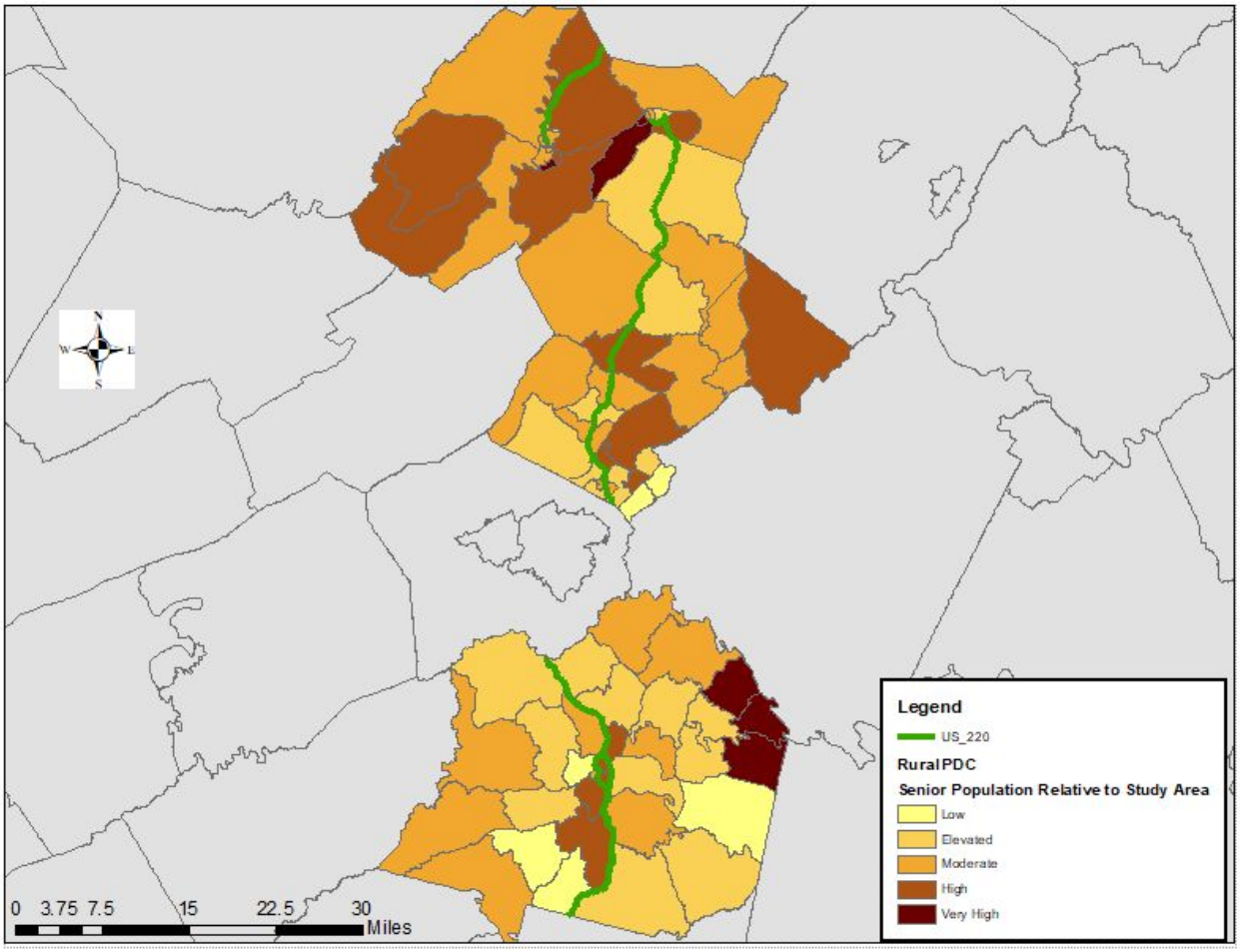
There are several places throughout the study area that have either “High” or “Very High” number of households without an automobile. Specifically within the Alleghany Highlands, these places include large areas south of Interstate 64 between Routes 311 and 159 encompassing the communities of Callaghan, Crows and Alleghany; and north of Interstate 64 and east of U.S. 220, including the City of Covington, the Town of Clifton Forge, and the community of Valley View. Botetourt County has “High” autoless households in the Fincastle District; West of U.S. 220 to the County Line, north of Route 606, and south of Route 621 encompassing the communities of Flatwoods, Oriskany, Surber, Hipes, and Strom; as well as the Mill Creek District; east of U.S. 220 and West of Buchanan including the communities of Troutville, Nace, and Spec. Franklin County has “Very High” amount of autoless household in the Union Hall district; south of Route 40, East of Route 718, north of Routes 646/890/969 and west of the

County Line including the communities of Penhook and Glade Hill. There are also “High” or “Very High” amounts of autoless homes in and around the communities of Rocky Mount, Redwood, Callaway, and Ferrum in Franklin County.

1.2.2 Senior Adult Population

Individuals age 65 years and older may scale back their use of personal vehicles as they age, leading to a greater reliance on public transportation compared to people in other age brackets.

Figure 1.2 - 2: Senior Adult Population by Census Block

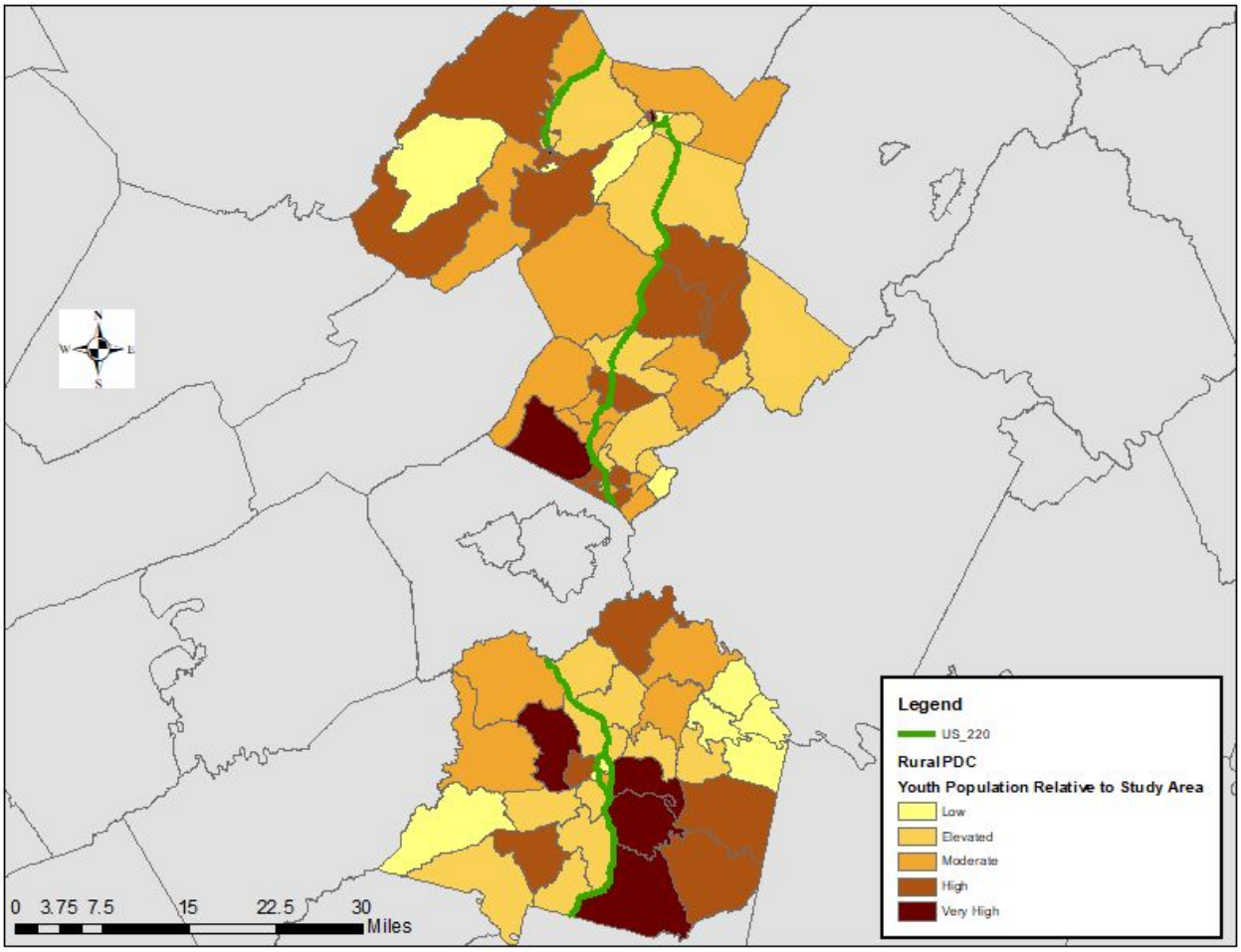


Predictable, most of the Alleghany Highlands have high or very high levels of individuals age 65 and over. This includes areas of southwest Alleghany County, including the communities of Alleghany, Crows, Boiling Spring, Potts Creek, Jordan Mines, and Sweet Chalybeate. This also includes areas in eastern Alleghany County including the communities of Falling Spring, Clearwater Park, Valley View, Mallow, Rich Patch, Rich Patch Mines, Low Moor, Selma, and the Towns of Iron Gate and Clifton Forge. Botetourt County also has high numbers of elderly individuals in the Fincastle District, the Town of Troutville, as well as the communities of Harvey, Alpine, Arcadia, Munford, Nace and Spec. Franklin County is shown to have very high concentrations of elderly in and around the Smith Mountain Lake community, as well as high concentrations around Rocky Mount, Wirtz, Henry Fork, and Sydnorsville.

1.2.3 Youth Populations

Youths and teenagers, under the age of 18, who cannot drive or are just starting to drive but do not have an automobile available appreciate the continued mobility from public transportation.

Figure 1.2 - 3: Youth Populations by Census Block

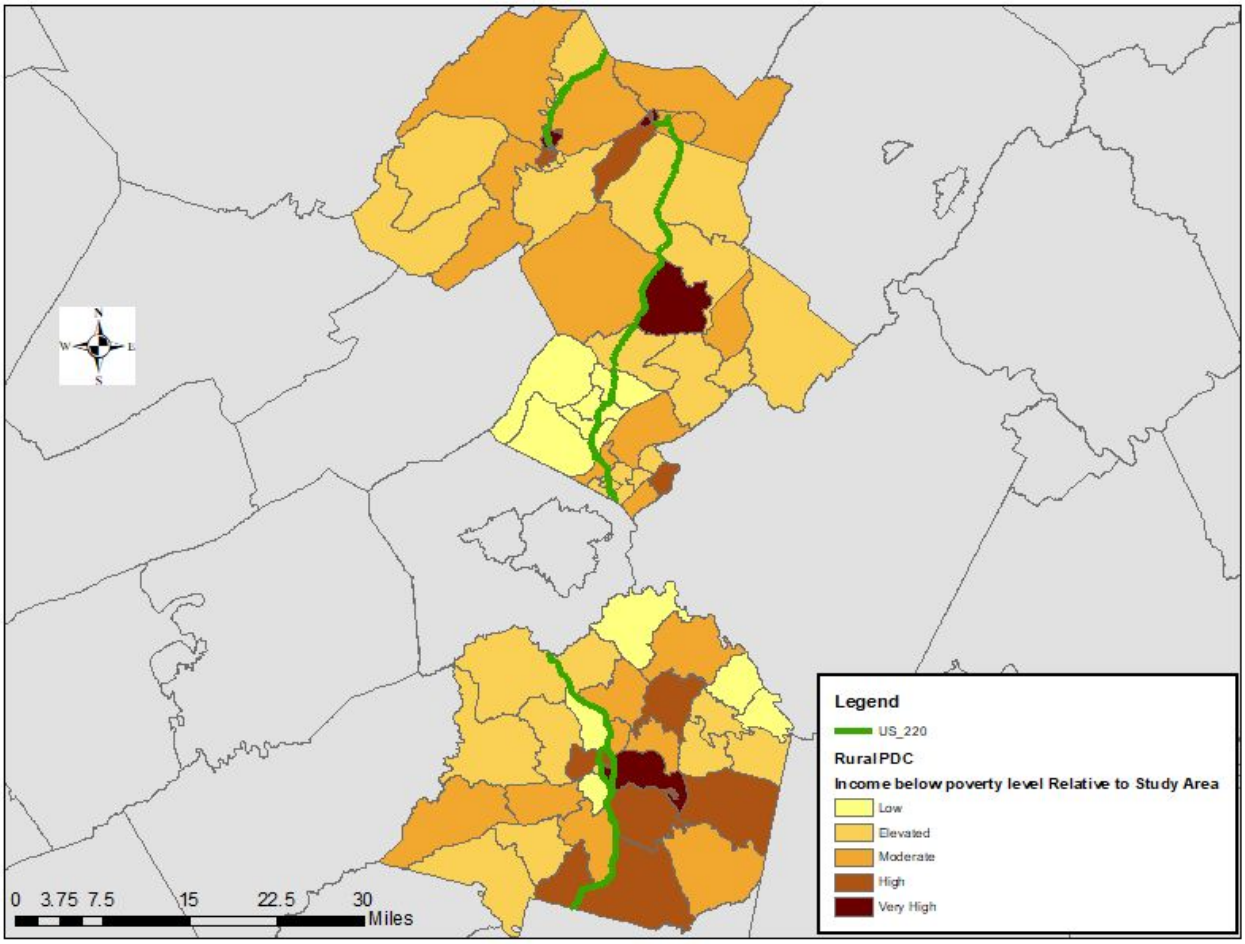


Large swaths of areas in northwest, southwest, and southeast Alleghany County have high youth populations. Eastern Botetourt County adjacent to U.S. 220, west of I-81, and south of 635 have high levels of youth populations including the communities of Springwood, Buchanan, Salisbury, and Eagle Rock, while southern Botetourt County has high to very high densities of youth populations, including the communities of Daleville, Mt. Union, Cloverdale, Oldfields, Trinity, and Laymantown. Franklin County's southeast quadrant, south of Route 40 and east of US 220, including the communities of Redwood, Glade Hill, Henry Fork and Penhook have high to very high concentrations of youth populations. In addition, areas surrounding Ferrum College, as well as northern Franklin County just south of the Roanoke River, and unincorporated areas of Western Franklin County between Rocky Mount and Callaway have high to very high concentrations of youth populations.

1.2.4 Populations below the Poverty Level

This socioeconomic group represents individuals who earn less than the federal poverty level. Low income individuals face financial hardships that make owning and providing the necessary maintenance of a personal vehicle difficult.

Figure 1.2 - 4: Populations Below the Poverty Line by Census Block



There are a number of areas within the Rural PDC that have “high” or “very high” concentrations of individuals with income under the poverty line. These areas include the City of Covington, the Town of Iron Gate, and the communities of Clifton Forge, Selma, Rich Patch Mines, and Rich Patch in Alleghany County; unincorporated areas of Botetourt County, north of Route 635/ 630, east of US 220, and West of the James River in Botetourt County; and areas of eastern and southern Franklin County including Rocky Mount, Redwood, Glade Hill, and Burnt Chimney.

1.3 Transit Need Aggregate

Identifying the relative size and location of segments within the general population that are more likely to use transit service is important when defining public transportation needs. Populations include individuals who may not have access to a personal vehicle or may be unable to drive

due to reasons such as age or income status. Determining the locations of populations likely to use transit helps to focus planning efforts for public transportation services. To provide an objective measure when mapping population groups a relative measurement was used based on the study area's average for each demographic characteristic. The thresholds of low, elevated, moderate, high, and very high was used for each demographic group. The low threshold consists of block groups with below average concentrations of a particular demographic group; while the very high threshold consists of block groups with more than twice the average concentration. The thresholds elevated, moderate, and high make up the middle ground between the average and twice the average.

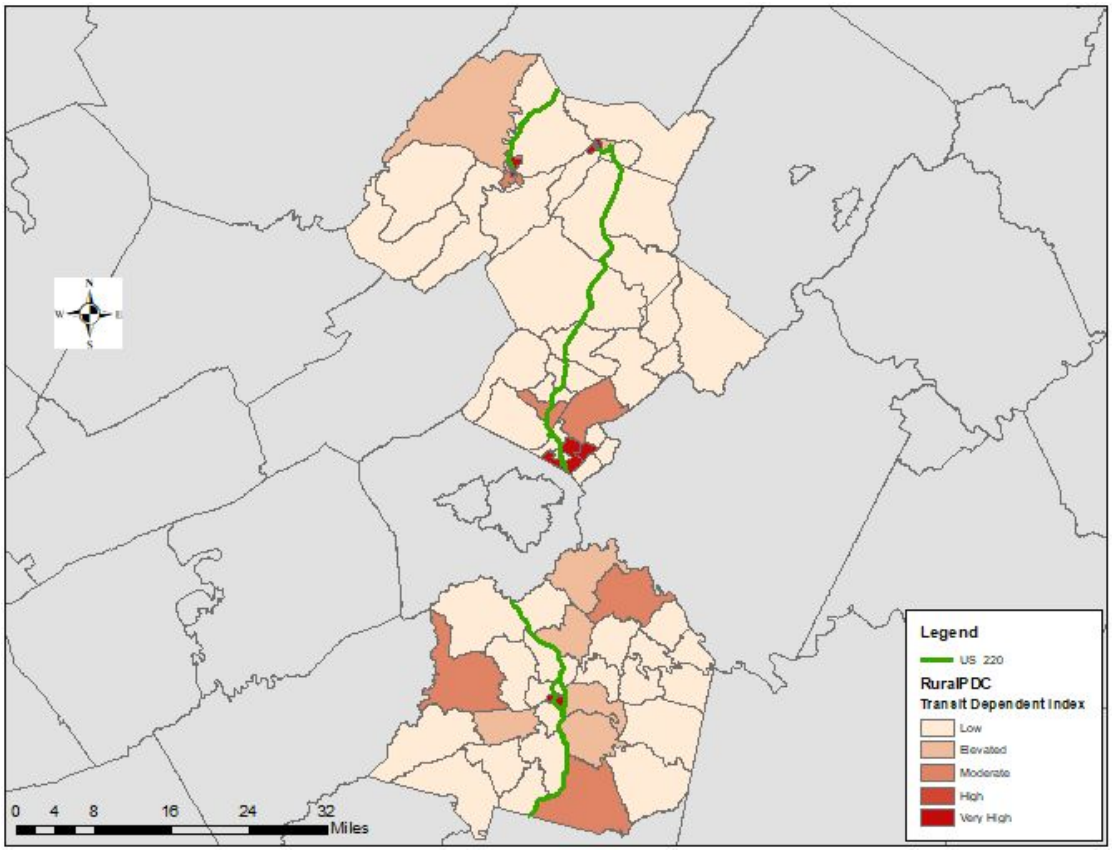
1.3.1 Transit Need Index

The Transit Need Index (TNI) is an aggregate measure that utilizes recent data from the American Community Survey (ACS) five-year estimates and the United States Decennial Census to display relative concentrations of transit dependent populations. Five factors make up the TNI calculation: Population density per square mile, Zero vehicle households, Elderly population, Youth population, and Below poverty population.

For each factor, individual block groups were classified according to the prevalence of the vulnerable population relative to the study area average. The factors were then plugged into the TNI equation to determine the relative transit need of each block group (low, elevated, moderate, high, or very high). While some block groups show low need, they may include major destinations that should be served by transit.

Figure 1.3 - 1 shows the results of the Transit Need Index analysis. As the map illustrates, the majority of the study area has low to elevated transit need based on density. However, 27 of the 78 census block groups in the rural area had an above average (Avg TNI Score = 12.59) TNI score. This includes 11 total block groups with either "High" to "Very High" TNI score, including three block groups in the City of Covington, three block groups encompassing the towns of Clifton Forge and Selma in Alleghany County, three block groups surrounding the communities of Cloverdale, Laymantown, and Blue Ridge in Botetourt County, and two block groups in Franklin County, including southside Rocky Mount, and unincorporated area just west of the Town.

Figure 1.3 - 1 Transit Need Index



1.3.2 Transit Need Index Percentage

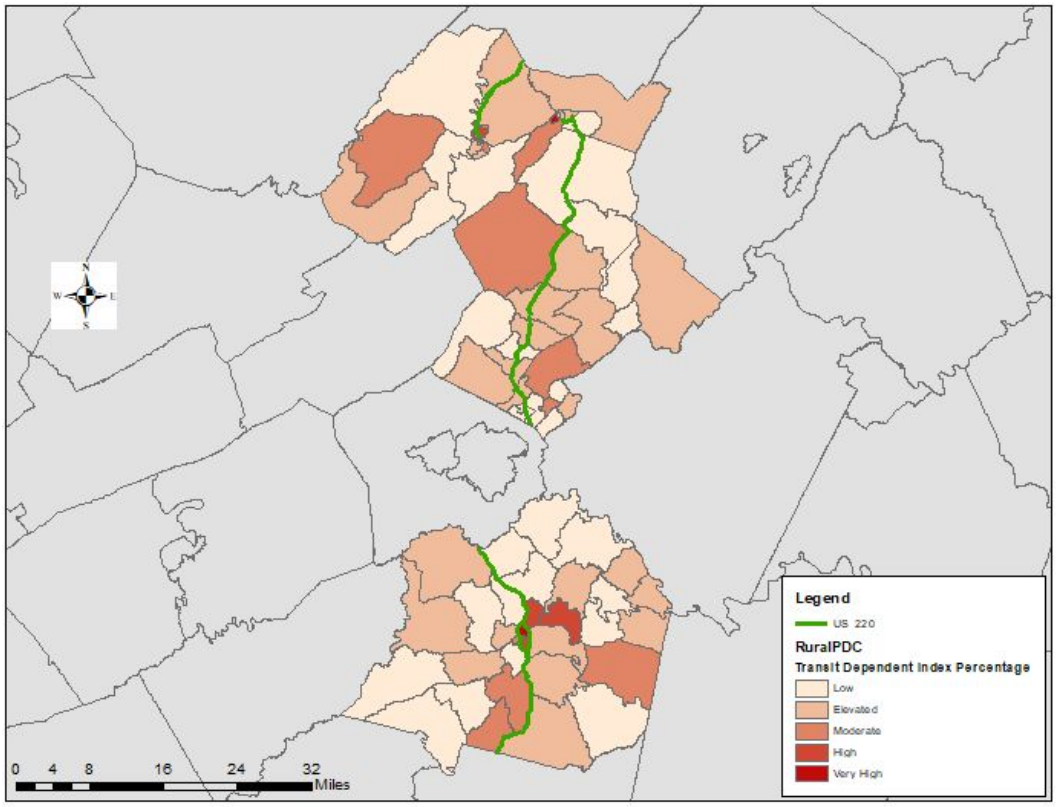
The Transit Need Index Percentage (TNIP) is similar to the TNI in data composition and function. However, slight distinctions exist between the two indices in their factor determination and range in produced scores. The TNIP measures the *degree of vulnerability*, or percentage of vulnerable persons or households per unit of analysis, while the TNI measures the *amount of vulnerability* in comparison to the average of the overall study area. In terms of final output, the cumulative TNI produces scores ranging from 0 to 30, whereas the TNIP produces scores ranging from 0 to 25 (due to the exclusion of the Population Density factor). Comparable to the TNI output, a TNIP output with a higher value represents an area where a large proportion of the population is likely to need transit.

Figure 1.3 - 2 shows the results of the Transit Need Index Percentage analysis. This complementary analysis showed that 41 of 78 (52.56%) of all census block groups throughout the region had higher than average percentage of vulnerable persons or households; 17 block groups are located in Franklin County (including communities of Boones Mill, Callaway, Ferrum, Rocky Mount, Redwood, Glade Hill, Penhook, unincorporated areas of Northwest, Eastern and Central Franklin County), 10 block groups in Alleghany County (including the communities of Alleghany Crows, Sweet Chalybeate, Boiling Springs, Jordan Mines, Poots Creek, Valley View,

Rich Patch, Rich Patch Mines, Mallow, Low Moor, Selma, Clifton Forge, Iron Gate, Nicelytown, Longdale Furnace, and unincorporated areas of Southwest and Northeast Alleghany County), nine block groups in Botetourt County (including communities of Oldfields, Cloverdale, Daleville, Troutville, Blue Ridge, Trinity, Oriskany, Surber, Hipes, Strom, Gala, Eagle Rock, Salisbury, Harvey, Greyledge, Buchanan, Alpine, Arcadia, and Munford), and five block groups in the City of Covington (North and Southeast Covington). Of these 41 block census groups, seven census block groups were ranked either “High” or “Very High” for percentage of vulnerable persons or households (four in Franklin County - Rocky Mount, Glade Hill, Redwood; one in Alleghany County - Clifton Forge; two in the City of Covington - North Covington).

There are several economic consequences if public transit is not provided to these vulnerable points within the region. The elderly, disabled, youth and individuals without a vehicle who lack mobility are forced to require more costly travel (special vehicle travel to transport a non-driver), or move to another community with better transport options.[4] Additionally, low-income households will either lack mobility or spend an excessive portion of budgets on transportation. However, each year the Virginia Department of Rail and Public Transit (DRPT) provides competitive grants for transportation improvement projects and programs that can be used to help alleviate transportation burdens from a lack of regional transportation options. This will be covered more in depth in Chapters Five and Six.

Figure 1.3 - 2 Transit Need Index Percentage



[4] https://www.apta.com/resources/reportsandpublications/Documents/APTA-Rural-Transit-2017.pdf

1.4 Existing Transit Services

Valley Metro (Greater Roanoke Transit Company, 1975) is the public transportation provider for the Roanoke Valley. Service includes fixed routes, specialized transportation for individuals with disabilities, and special event shuttles. Valley Metro also provides commuter bus service between Roanoke and the New River Valley Area via its Smart Way Bus. None of the localities in the study area are in the current Valley Metro Service Area.

RADAR (Unified Human Services Transportation Systems, Inc., 1975) is a non-profit corporation, which has provided rural public transit services and specialized transit primarily in the "Greater Roanoke Valley". RADAR provides transit services for physically, mentally disabled, or transportation disadvantaged individuals. RADAR is an independent transit service, but it is contracted by Valley Metro to provide paratransit services under the program name of STAR (Specialized Transit - Arranged Rides. STAR provides transportation to qualified, disabled individuals who are unable to ride a Valley Metro bus. STAR serves the City of Roanoke, the Town of Vinton, the City of Salem, and parts of Roanoke County within 0.75 mile of either side of a Valley Metro fixed route. RADAR also operates the CORTRAN transit service to qualified Roanoke County residents who are 60+ years old, or are ADA Paratransit Eligible. Additionally, RADAR operates the Mountain Express, which provides deviated fixed-route service in Alleghany County, Clifton Forge, Iron Gate and Covington, Virginia. Finally, RADAR also operates the Ferrum Express on Thursday and Friday, 5:00 PM to 11:00 PM between Ferrum College and Rocky Mount, and Saturday 1:00 PM to 12:00 AM between Ferrum College and Roanoke via Rocky Mount.

RIDE Solutions is a regional ridesharing program operated by the Roanoke Valley-Alleghany Regional Commission in cooperation with the New River Valley Planning District Commission. It is a grant-funded program that provides free carpool matching services for citizens of the Roanoke, New River Valley, Lynchburg regions and surrounding areas within southwestern Virginia. RIDE Solutions works with individuals to facilitate one-on-one carpool matches, and with employers to create company-wide alternative transportation programs.

Botetourt County Van Services provide transportation for Botetourt County individuals to and from essential appointments, and also offers one out-of-town trip per month per area, within an approved distance and time. Botetourt residents that qualify for this service include persons age 55 and over and individuals with a disability. Eligible trips include doctors appointments, grocery stores, pharmacies, banks and credit unions, visitation appointments, personal care appointments, and the post office.

Department of Aging Services in Franklin County offers transportation for senior citizens to and from congregate meal site, socialization and recreational activities, medical appointments, shopping and other personal trips, needed services and community agencies.

1.5 Alleghany Highlands and Franklin County Service Area Characteristics

Four rural localities in the RVARC region operate public transit services. RADAR provides two transit services in this mountainous rural area of the region: 1) The Mountain Express, which serves Alleghany County, the City of Covington, and the Town of Clifton Forge; and 2) the Ferrum Express, serving Ferrum College and surrounding Franklin County.

Additionally, RADAR serves a majority of the Roanoke Urbanized Area, where population density is high; however, coupled with rural areas of this region rural localities such as Henry and Rockbridge Counties, the resulting population per square mile is very low. As Clifton Forge and Covington are the two primary population centers in the Alleghany Highlands, it is not surprising that their population density per square mile far exceeds that of Alleghany and Franklin Counties.

Mountain Express

The Mountain Express offers a deviated fixed route service to the citizens of Alleghany County, City of Covington, and the towns of Clifton Forge and Iron Gate.

The Service is open to the public and Monday through Friday from 8:00 a.m. to 5:00 p.m. The fare of $1.00 per trip and free for children under six. Exact change is required.

Individuals who are ADA certified may request the van to deviate off its route to make pickups and drop offs. This distance may not exceed 3/4 of a mile radius off the route.

Figure 1.5 - 1: Mountain Express Service Area

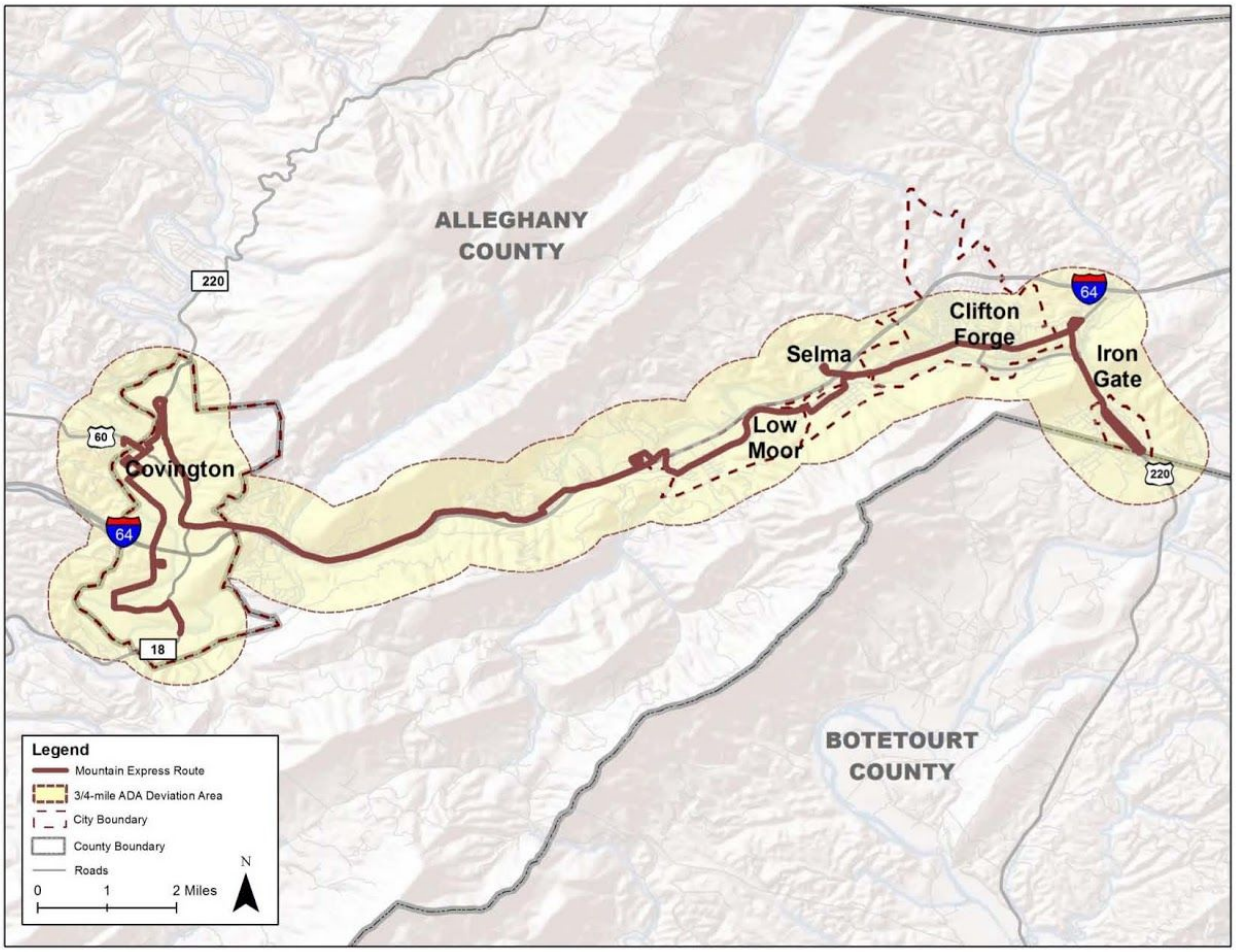


Table 1.5 - 1 shows the Mountain Express routes to Covington and Iron Gate. Both routes begin and end in the parking lot of the Highland Centre and DMV, in Covington and have 90 -minute round-trip routes (headways).

Table 1.5 -1: Mountain Express Routes			
TIme	**To Covington**	**Time**	**To Iron Gate**
:00	Highland Centre/DMV	**:00**	Highland Centre/DMV
:07	Dolly Ann Apartments	**:07**	Dialysis
:13	Alleghany Highlands Community Services	**:12**	YMCA
:16	East Fir Street	**:15**	Lewis-Gale Hospital Alleghany
:22	Department of Social Services	**:17**	Low Moor/Post Office

:26	Main Street/Covington	**:21**	Selma/Post Office
:29	Alleghany Highlands Regional Library	**:23**	Dabney S. Lancaster Community College
:31	Virginia Workforce Center	**:27**	Scott Hill Apartments
:35	Food Lion	**:30**	Main Street/Clifton Forge
:38	Goodwill	**:31**	Clifton Forge Town Hall
:42	Walmart	**:34**	Kroger
:48	West Jackson Street/South Rayon Drive	**:36**	Clifton Woods Apartments
:52	Walmart	**:37**	Cliftondale Exxon
:57	Goodwill	**:43**	10th Street/Route 220
:58	Food Lion	**:46**	Town Hall/Iron Gate
1:01	Salvation Army	**:50**	Clifton Woods Apartments
1:03	Alleghany Highlands Regional Library	**:52**	Kroger
1:06	Covington/Post Office	**:55**	Clifton Forge Town Hall
1:09	Department of Social Services	**:57**	Masonic Theatre
1:17	Alleghany Highlands Community Services	**1:01**	Scott Hill Apartments
1:22	Dolly Ann Apartments	**1:04**	Dabney S. Lancaster Community College
1:30	Highland Center/DMV	**1:07**	Selma/Post Office
		1:11	Low Moor/Post Office
		1:13	Lewis-Gale Hospital Alleghany
		1:17	YMCA
		1:22	Dialysis
		1:30	Highland Center

Ferrum Express

The Ferrum Express is one-half of the RADAR-operated College Express service. This is an express fixed-route service, free for Ferrum students and children, and open to the public for a fare of $2.00 per trip for adults.

The Ferrum Express operates Thursday and Friday 5:00 p.m. to 11:00 p.m. between Ferrum College and Rocky Mount, and Saturday 1:00 p.m. to 12:00 a.m. between Ferrum College and Roanoke via Rocky Mount. Both routes operate within the City of Roanoke and Roanoke County, providing service to Hollins University Figure 1.5 - 2.

Figure 1.5 - 2: Ferrum Express Service Area

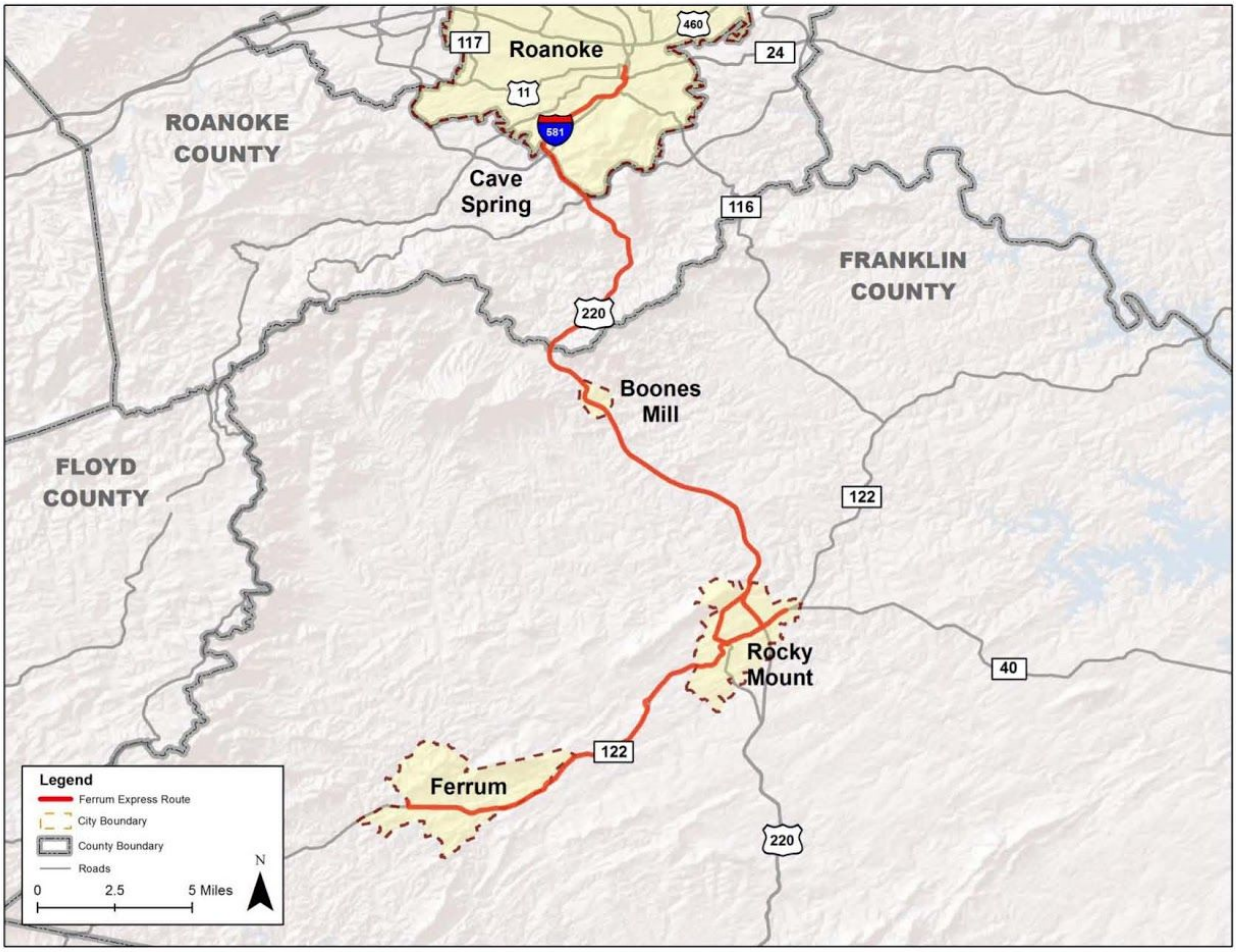


Table 1.5 - 2 shows the Ferrum Express routes to Rocky Mount and Roanoke. Both routes begin and end at Ferrum College. The Rocky Mount route, on Thursdays and Fridays, has a 60-minute headway, while the Saturday-only Roanoke route has a two-hour headway..

Table 1.5 - 2: Ferrum Express Routes			
TIme	**To Rocky Mount (Thursday and Friday)**	**Time**	**To Roanoke (Saturday only)**
:00	Ferrum College	**:00**	Ferrum College
:15	Rocky Mount Farmer's Market	**:15**	Rocky Mount Farmer's Market
:20	Eagle Cinema	**:20**	Eagle Cinema
:25	Walmart	**:25**	Walmart
:35	Bowling Alley	**1:00**	Campbell Court Transportation Center (Roanoke)
:40	Rocky Mount Farmer's Market	**1:35**	Walmart
1:00	Ferrum College	**1:40**	Eagle Cinema
		1:45	Rocky Mount Farmer's Market
		2:00	Ferrum College

2.0 Peer Transit Service Research

Peer communities were selected on the basis of similarity of their service area and the potential applicability of the service provided in those areas to it. Factors contributing to communities that could be considered peers are: 1) Location of community; 2) Size; and 3) Terrain.

In August 2018, the *RADAR Transit Development Plan FY2018 - FY2027*[5] (TDP) was published. Utilizing the peer review process from RADAR's TDP, there are three rural transit services in Virginia selected for peer review:

- Blackstone Area Bus Service, Blackstone, Virginia (BABS)
- Four County Transit, Cedar Bluff, Virginia (FCT)
- Virginia Regional Transit, Culpeper County (VRT)

These three peer agencies all operate deviated fixed-route transit services in one or more localities.

[5] RADAR Transit Development Plan FY2018 - 2027. August 2018, KFH Group, Inc.

2.1 Transit Service Characteristics of Selected Peers

Table 2.1 - 1 compares RADAR transit services with its peers' transit services. The following transit service characteristics are defined as follows:

Passenger Trips: the number of times a passenger boards a bus (e.g. a round-trip to and from home would constitute two passenger trips for a single rider.

Revenue Miles: the total number of miles that a transit service is operated while it is in revenue service. By contrast, Total Vehicle Miles include all revenue mileage as well as miles when buses are operating while not allowing passengers to board.

Revenue Hours: the number of hours in which service is provided where passengers are being picked up and dropped off.

Table 2.1 - 1: Comparison of Deviated Fixed-Route Peer Services to RADAR

	RADAR[6]	BABS	FCT	VRT
Passenger Trips	**68,063**	39,128	158,516	126,236
Revenue Miles	**261,249**	393,550	885,671	688,874
Revenue Hours	**15,388**	13,549	41,574	21,687
Operating Cost	**$647,300**	$399,917	$1,691,991	$1,596,372
Fare Revenues	**$29,775**	$22,124	$18,705	$39,426
Trips per Mile	**0.26**	0.10	0.18	0.18
Trips per Hour	**4.42**	2.89	3.81	5.82
Cost per Trip	**$9.51**	$10.20	$10.67	$12.65
Cost per Mile	**$2.48**	$1.02	$1.91	$2.32
Cost per Hour	**$42.07**	$29.52	$40.70	$73.61

Source: iNTD, FY 2014

Table 2.1 - 1 also shows that RADAR services make more trips per mile, have the least cost per trip, the highest cost per mile, next to lowest operating cost, the lowest number of revenue

[6] Mountain Express, Maury Express (cities of Buena Vista, Lexington, and Rockbridge Co.), PART (Piedmont Area Rapid Transit - Martinsville and Henry County), and Ferrum Express.

miles, and the second highest fare revenues. These figures include data from two services not in the study area - The Maury Express in the Rockbridge County area, and PART, located in the Martinsville Area.

2.2 Peer System Descriptions

2.2.1 Blackstone Area Bus Service

The development of the Blackstone Area Bus System (BABS) began in 2001 when the results of a municipal survey a sufficient need
for transit in the Town of Blackstone. The Blackstone Town Council approved the formation of a public transit system with a single deviated-fixed-route (called the BABS Line), beginning operations in January 2003. Since 2003, BABS expansion has been as a result of neighboring localities either requesting new service or desiring administration of their existing service.

Photo courtesy of Blackstone Area Bus Service

BABS operates seven routes that travel through eight separate counties and the City of Petersburg. BABS provides deviated-fixed-route service of up to ¾ mile on all routes. Passengers must call 24 hours in advance to reserve a deviated stop location.

2.2.2 Four County Transit

Four County Transit (FCT) is operated by the Appalachian Agency for Senior Citizens (AASC), providing public transit services to Buchanan, Dickenson, Russell, and Tazewell Counties in southwestern Virginia. The agency serves as the designated Area Agency on Aging (AAA) for the Four County region. 2017 American Community Survey data, lists the population of the FCT service area at 108,206, 5.1% less than the 2010 Census Population of 113,976.


Image courtesy of Four County Transit

The FCT service area is primarily rural and not located within any Urbanized Area (UZA). There are a few urban clusters located in Russell and Tazewell Counties. The closest UZA is Bristol, TN-VA UZA, approximately 55 miles, southwest.

FCT's services are provided through deviated-fixed-routes. FCT also offers routes that serve local colleges in the area. The college routes are offered through a partnership with Southwestern Virginia Community College (SwVCC), Mountain Empire Community College (MECC), and University of Virginia College and Wise (UVA-Wise).

2.2.3 Virginia Regional Transit

The Virginia Regional Transit (VRT) West Central Division provides fixed and deviated-fixed route service in the towns of Culpeper, Front Royal, Orange, and Warrenton. Demand-response service is also provided in Clarke and Culpeper Counties, and the Town of Culpeper.

The region is in close proximity to the Washington, D.C. Metropolitan Area and other small-to-medium sized cities including Charlottesville and Richmond. Major regional transportation corridors include Interstates 66 and 81, and U.S. Routes 15, 17, 29, 211, and 522.

The combined population of the region according to the 2010 Census is 308,088. The region is approximately 2,197 square miles.

VRT was contacted following a 1998 congressional earmarking of $25,000 in capital funds to begin public transportation in the Town of Warrenton. In coordination with the Virginia Department of Rail and Public Transportation, VRT, and a local non-profit that provided the local match, began operating the Warrenton Circuit Rider.

Around 2002, Culpeper County requested demand-response service for the County. In 2003, faced with losing its transit service due to the non-profit providing the local match no longer able to support it, the Town of Warrenton began providing local funds and in-kind services (fuel and maintenance for vehicles).

In 2004, the County and Town of Culpeper showed mutual interest in initiating a trolley service. The fixed-route service began operations that year and made route deviations for ADA service. In 2008, a dedicated ADA paratransit service was introduced and the trolley solely became a fixed-route service.

The Town of Orange approached VRT in 2000, interested in potentially starting a public transportation service. In 2008, the Town of Orange desired a connection to the Town of Gordonsville. The service is very popular and has grown in both hours and ridership. Since 2008 service has been added based on the Town of Orange's direction.

Image courtesy of the Royal Examiner.

The Town of Front Royal requested service around 2005 and Randolph Macon Academy has provided funding for weekend service for the Royal Trolley. VRT began operating demand-response service eight hours every day in Clarke County in 2001. However, due to budget cuts, service hours have been decreased to four hours.

3.0 Stakeholder and Public Engagement

3.1 Stakeholder Group Kickoff Meeting

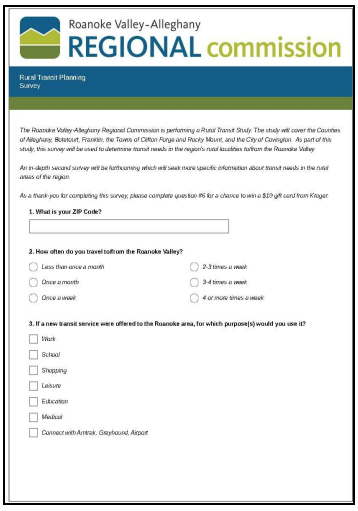
Regional Commission staff convened a stakeholder group, which held a kickoff meeting on August 21, 2017. The stakeholder group was comprised of managers, administrators, and staff from Alleghany, Botetourt and Franklin counties, the city of Covington, and the towns of Clifton Forge and Rocky Mount; and transit agency staff from Valley Metro and RADAR, who provided initial guidance for the study's content and approach.

3.2 General Public Surveys

RVARC staff developed two (2) public transit surveys for citizens in Alleghany, Botetourt, and Franklin Counties, as well as towns of Clifton Forge and Rocky Mount, and the City of Covington:

1. Rural Transit Planning Survey: An initial five-question survey to determine basic transit needs.

2. Roanoke Valley-Alleghany Rural Transit Connection Survey: A second, 27-question, in-depth survey assessing desired locations, services, and frequency.


Roanoke Valley-Alleghany
REGIONAL commission
Rural Transit Planning
Survey

The Roanoke Valley-Alleghany Regional Commission is performing a Rural Transit Study. The study will cover the Counties of Alleghany, Botetourt, Franklin, the Towns of Clifton Forge and Rocky Mount, and the City of Covington. As part of this study, this survey will be used to determine transit needs in the region's rural localities to/from the Roanoke Valley.

An in-depth second survey will be forthcoming which will seek more specific information about transit needs in the rural areas of the region.

As a thank-you for completing this survey, please complete question #6 for a chance to win a $10 gift card from Kroger.

1. What is your ZIP Code?

2. How often do you travel to/from the Roanoke Valley?

- Less than once a month
- Once a month
- Once a week
- 2-3 times a week
- 3-4 times a week
- 4 or more times a week

3. If a new transit service were offered to the Roanoke area, for which purpose(s) would you use it?

- Work
- School
- Shopping
- Leisure
- Education
- Medical
- Connect with Amtrak, Greyhound, Airport

3.2.1 Survey Process

The Rural Transit Study stakeholder group reviewed the questions for both surveys prior to distribution.

3.2.2 Survey Distribution Methods

RVARC staff developed and hosted the surveys through surveymonkey.com. All responses collected, whether through an electronic link to the survey online, or completion of a paper copy, were compiled and analyzed through SurveyMonkey.

3.2.3 Survey Distribution Outlets/Locations


Virginian Review

Serving Covington, Clifton Forge, Alleghany County and Bath County Since 1914

Regional Commission Seeking Input on Rural Transit Study

Rural Transit Study press release to Virginian Review--February 9, 2018

Information about the online survey was disseminated and obtained through:

- A front-page article on the RVARC and RIDE Solutions websites
- RVARC Press Release and subsequent *Virginian Review* article on February 9, 2018
- RVARC and RIDE Solutions Facebook pages, with targeted Facebook ads to users in the rural study area
- Alleghany/Covington and Botetourt Community Health Assessment Steering Committees
- Scott Hill Retirement Community residents meeting on June 4, 2018
- Paper copies

Staff also sent emails with PDF copies of each survey to be distributed by each local government stakeholder. The email listed suggestions and strategies for local distribution, which were:

- Making paper copies available at municipal buildings, recreational centers, libraries, and other relevant public places
- Posting a link to the online survey on the locality's website and social media sites
- Including paper copies or links to survey in locality newsletters or utility bills (where applicable)
- Utilizing locality public contact lists for email blasts and larger distribution

3.2.4. Survey Collection/Analysis

All locality stakeholders were asked to collect surveys from distribution points immediately following the survey closure dates. Stakeholders were also asked to either scan and e-mail or mail responses to RVARC.

RVARC staff manually entered all paper surveys into the electronic survey at surveymonkey.com. An analysis of all responses was performed and results were presented to the stakeholder group in the fall of 2018.

3.3 Summary of Survey #1

- A total of 243 surveys were completed.
- The clear majority of residents surveyed travel regionally on a regular basis. Nearly 78% of survey respondents indicated that they travel to and from the Roanoke Valley at least once a week.
- Leisure, connection to Amtrak, Greyhound, Airport, and shopping are among the highest-ranking reasons why rural residents travel to Roanoke, with “leisure” being the highest-ranking purpose for travel. Connection to Amtrak/Greyhound/Airport was second highest voted purpose for using a potential new transit service, further justifying the need to better connect people to the Amtrak stations in Roanoke and Clifton Forge, Greyhound, and the Airport.
- Over 51% of respondents indicated that they would utilize rural transit services at least once a week, if provided.

3.3.1 Characteristics of Survey #1 Respondents

Figure 3.3 - 1 Zip Code and Locality of Residence

Zip Code	Respondent Count	Communities Within Zip Code
24015	1	SW City of Roanoke, Cave Spring
24016	1	SW City of Roanoke
24017	1	SW, NW City of Roanoke
24018	4	SW Roanoke County Cave Spring
24019	1	NW City of Roanoke, Hollins, Bonsack, Poages Mill, Alpine Hills, Willow Green, Hanging Rock, Cloverdale, Botetourt East, Applewood, Oldfield (Roanoke County)
24064	1	Montvale, Villamont, Blue Ridge (SE Botetourt County, Western Bedford County)
24065	5	Boones Mill, Wright (Central Franklin County)
24066	19	Buchanan, Arcadia, (Botetourt)
24067	4	Callaway, Algoma (Franklin)
24083	12	Daleville (Botetourt)

24085	9	Glen Wilton, Gala, Haden, Salisbury, Surber, Eagle Rock, Daggers Springs, Hipes, Baldwin, Strom (Alleghany, Botetourt)
24086	1	Eggleston (Giles)
24087	1	Shawsville, Ironto, Lafayette, Elliston (Montgomery)
24088	13	Ferrum (Franklin)
24089	1	Fieldale, Dillons Fork (Henry)
24090	16	Fincastle, Nace, Howell Mills, Flatwoods, (Botetourt)
24092	4	Glade Hill (Franklin)
24101	7	Westlake Corner, Hardy (Franklin, Bedford)
24112	2	City of Martinsville; Chatmoss, Horsepasture, Laurel Park, Leatherwood, Spencer, Villa Heights (Henry)
24121	7	Moneta, Westlake Corner, North Shore (Bedford/Franklin)
24122	1	Montvale, Western Franklin County
24128	1	Simmonsville, Newport, Huffman (Montgomery/Giles)
24137	5	Penhook (Franklin)
24151	67	Rocky Mount, Redwood, Henry Fork, Sydnorsville, Helm (Franklin)
24153	2	Glenvar, City of Salem, Westward Lakes, Bradshaw, West Salem Forest, Andrew Lewis, Wooded Acres, Cherokee Hills, Wabun, Virginia, Bennett Springs, Riverside, Mason Cove (Roanoke County)
24175	21	Troutville, Laymantown, Lone Star, Glebe Mills, Mount Union, Trinity, Haymakertown, (Botetourt)
24176	3	Union Hall (Franklin)
24179	1	Vinton, Foxfire, Stewartsville (Roanoke/Bedford)
24184	5	Westlake Corner, Burnt Chimney, North Shore, Wirtz (Franklin)
24301	1	Bella Vista, Hilton Village, Wurno (Pulaski)

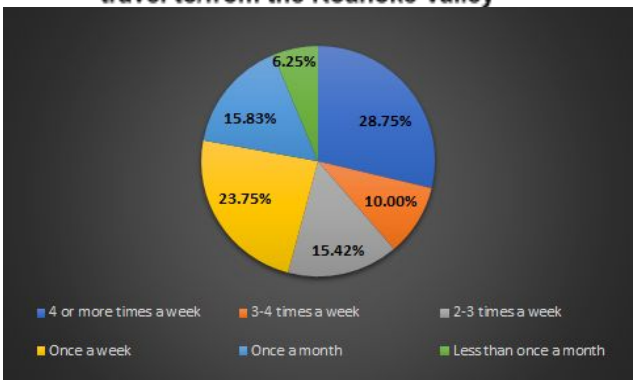
24422	15	Clifton Forge, Nicelytown, Cliftondale Park, Longdale Furnace, Griffith (Alleghany)
24426	7	Covington City, Jordan Mines, Virginia, Iron Hill Springs, Crows, Harrington, Earlehurst, Sweet Chalybeate, Clearwater Park, Backbone, Mallow, Westwood Place, Rich Patch Mines, Callaghan, Moss Run, Boiling Spring, Rich Patch, Potts Creek, VA (SW Alleghany)
24457	1	Low Moor (Alleghany)
24572	1	Madison Heights, West Briar, Westview, Brandywine (Amherst)
25151	1	other
75287	1	other
Total	**243**	

Highlighted Rows are located within the study area

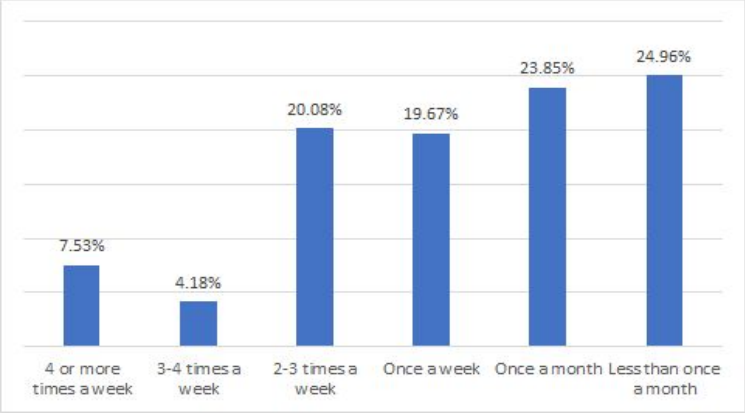
3.3.2 Travel Behaviors of Survey #1 Respondents

Survey #1 asked about demand for travel outside of their locality of residence, and the location and reasons for traveling overall. Overall, Survey #1 indicated that roughly 78% of respondents travel to the Roanoke Valley once a week or more.

Figure 3.3 - 2. How often do you travel to/from the Roanoke Valley



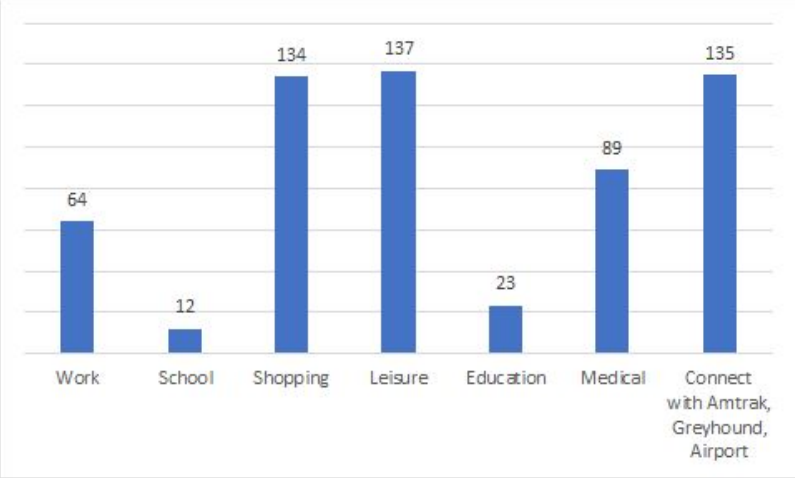
3.3 - 3. If a new transit service were offered, how often would you use it?



In addition, as shown in figure 3.3-3, over half of survey respondents indicated that they would use a new transit service at least once a week or more if offered in their area.

To gather further information on the reason for travelling to the Roanoke area, residents were asked for what purposes would they utilize a transit service to the Roanoke Valley if provided. There were 233 respondents to this question in which each respondent could pick 1 or more answers that applied. Of the 594 total answers, Figure 3.3 - 4 shows the breakdown of responses.

3.3 - 4. If a new transit service were offered to the Roanoke area, for which purpose(s) would you use it?



3.4 Summary of Survey #2

- Total of 184 surveys completed
- Majority of participants are age 45 and above, with over 34% of survey takers being retirees.
- Over half of survey respondents frequently travel to the City of Roanoke, Roanoke County and/or the City of Salem for medical appointments, shopping and other needs.
- While most survey participants own cars, around 70% of survey takers expressed interest in using a transit service for some of their trips, if provided.

3.4.1 Characteristics of Survey #2 Respondents

As indicated by the study area demographic profile in Section 1, many of the residents within the the study, generally are older. Of the 243 survey respondents, approximately 37.33% indicated that they are over the age of 65, the highest percentage of any age group in the survey.

3.4 - 1. What is your age?

Age Range	Percent of Total
18-25	4.00%
26-35	12.67%
36-45	10.67%
46-55	16.67%
56-65	18.67%
Over 65	37.33%

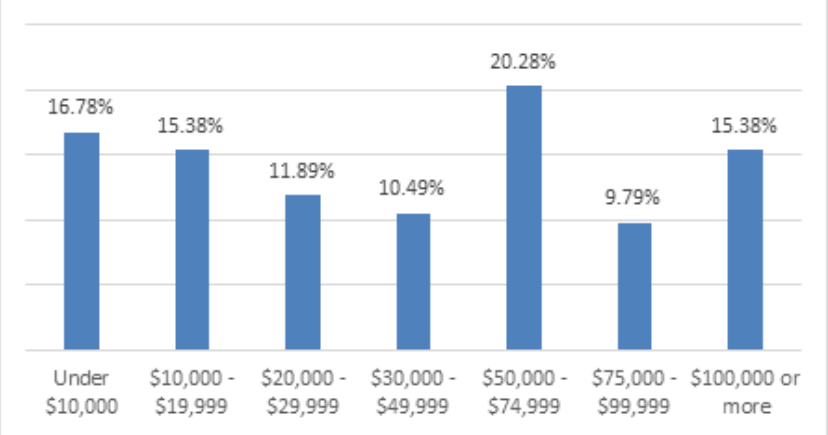
3.4 - 2. In what locality do you reside?

Locality	Responses	Percent of Responses
Alleghany County	49	26.63%
Franklin County	42	22.83%
Botetourt County	23	12.50%
Town of Clifton Forge	21	11.41%
Another Locality	19	10.33%
City of Covington	17	9.24%
Town of Rocky Mount	8	4.35%
Bedford County	2	1.09%
Roanoke County	2	1.09%
City of Roanoke	1	0.54%

Alleghany County had the most residents to respond to Survey #2, followed by Franklin County.

3.4 - 3. What is your annual household income?

The household income of Survey #2 respondents ranged from under $10,000 to over $100,000. Overall, while nearly half of all respondents had household incomes of $50,000 or over, nearly one in three respondents lived in a household earning less than $20,000 a year.



3.4 - 4. In what locality do you work?

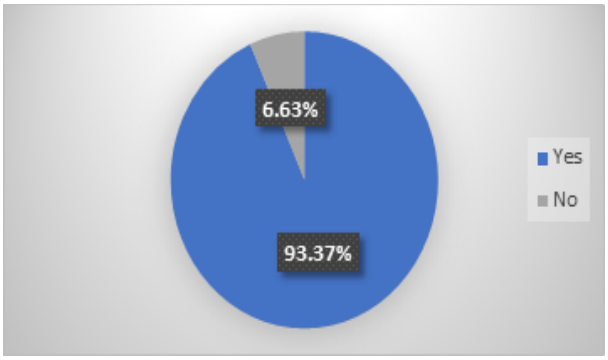
Answer	Percent of Response	Responses
Retired	34.25%	62
Disabled	4.97%	9
Unemployed	6.08%	11
Alleghany County, City of Covington, Town of Clifton Forge, other Alleghany County Locations	17.68%	32
Botetourt County, Town of Fincastle Other Botetourt County Locations	4.42%	8
Franklin County, Town of Rocky Mount Moneta Other Franklin County Locations	23.76%	43
Roanoke County City of Roanoke	8.29%	15
City of Lynchburg	0.55%	1

As indicated by the overall age distribution of the residents in the study area, over a third of the survey respondents are retired. Employed individuals mostly work in Alleghany County and Franklin County, as well as, the Town of Clifton Forge.

3.4.2 Transportation Trends and Transit Considerations from Survey #2

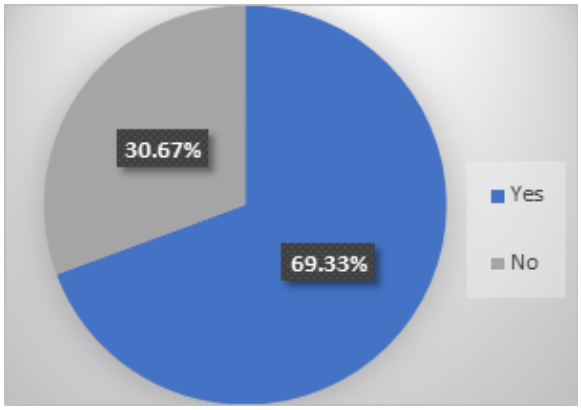
Most survey respondents own a car. 93.37% (169 of 181) responded “Yes”, while 6.63 % (12 of 181) indicated “No” to this question.

3.4 - 5. Do you own a car?



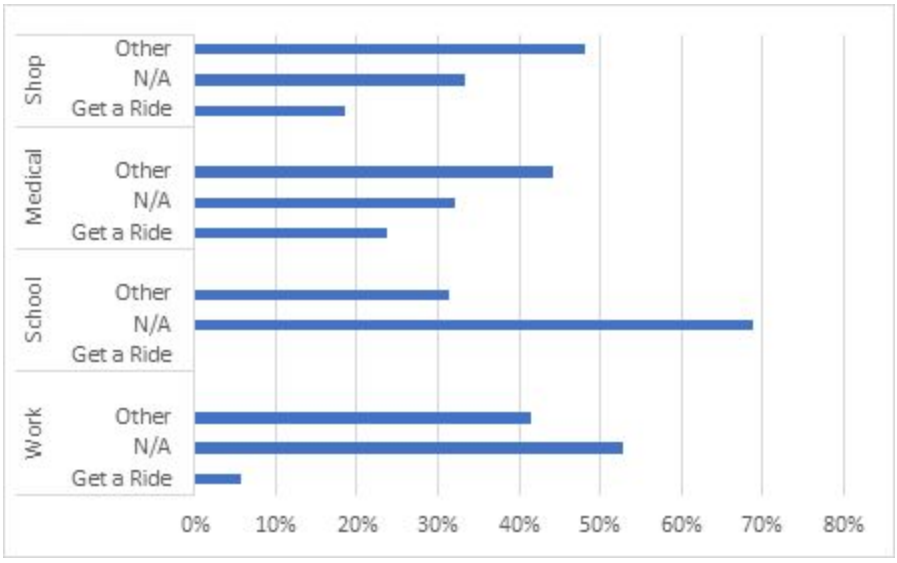
Residents were asked if there are interested in transit for some of their trips. Of the responding, 69.33% (113 of 163) indicated an interest in transit for some of their trips, while 30.67% (50 of 163) indicated no interest in transit services.

3.4 - 6. Are you interested in transit for some of your trips?



Residents were asked how they access various destinations, including shopping, medical appointments, school, and work. For shopping, 54 people responded, of which, 18.52% (10 of 54) “get a ride”, 48.15% (26 of 54) responded with “other” while 33.33% (18 of 54) replied with “N/A”.

3.4 - 7. How do you access….?



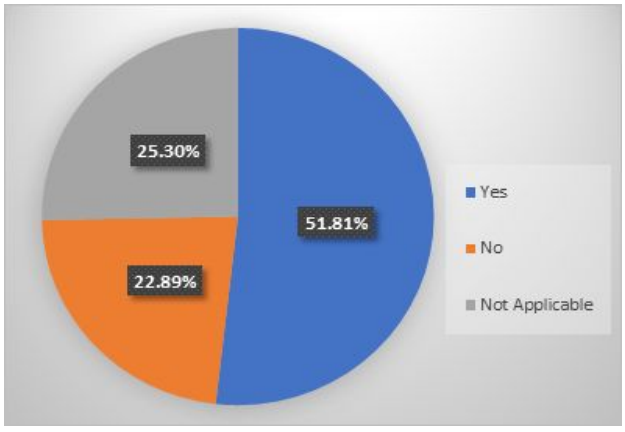
To better gauge where survey participants are traveling throughout the region, residents were asked where do they travel frequently for shopping, medical services, and other needs. The responses are listed in the following table.

3.4- 8. Where do you travel frequently for shopping, medical services, and other needs?

Locality	Percent of Responses	Responses
Alleghany County, Covington, Clifton Forge and Other Alleghany County Locations	30.34%	44
Botetourt, Fincastle and Other Botetourt Locations	3.45%	5
Franklin, Rocky Mount, and Moneta	15.18%	22
Roanoke County, City of Roanoke, City of Salem, and Other Roanoke County Locations	50.35%	73
Lynchburg	0.69%	1

When asked about the likelihood to use a bus service, taxi, or shuttle if offered between the Alleghany Highlands and Downtown Roanoke, 51.81% (86 of 166) of respondents replied “Yes”,22.89% (28 of 166) indicated “No” while 25.30% (42 of 1666) of respondents replied “Not Applicable”.

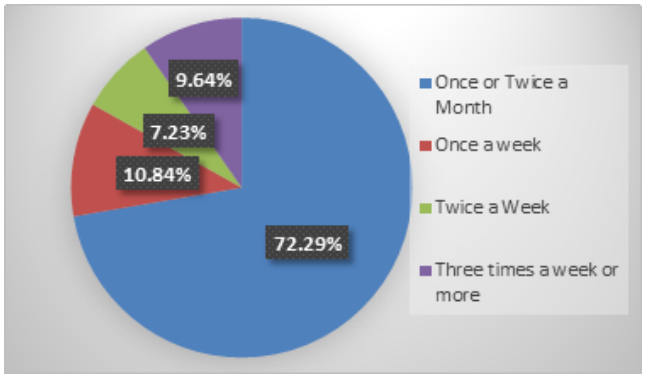
3.4 - 9. If a bus service, taxi or shuttle was offered, that travelled between the Alleghany Highlands, through Botetourt County, to Downtown Roanoke/the Amtrak station in Roanoke, would you use this service?



As a follow up, participants were asked, how often they would use the service. A total of 83 participants answered this question, in which 72.29% (60 of 83) answered “Once or twice a month”, 10.84% (9 of 83) of participants answered, “Once a week”, 7.23% (6 of 83) of

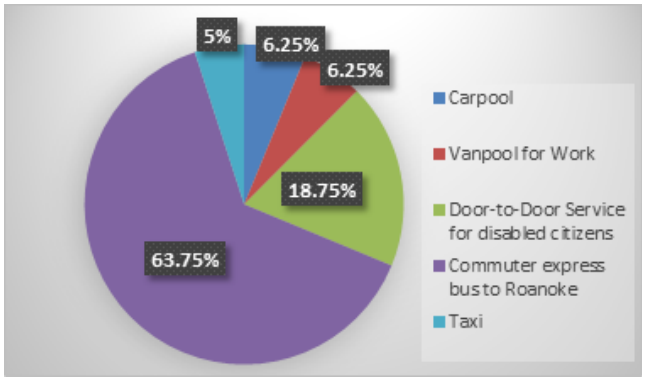
participants replied with “Twice a week”, and 9.64% (8 of 83) of participants replied “Three times a week or more”.

3.4 - 10. How often would you use this service?



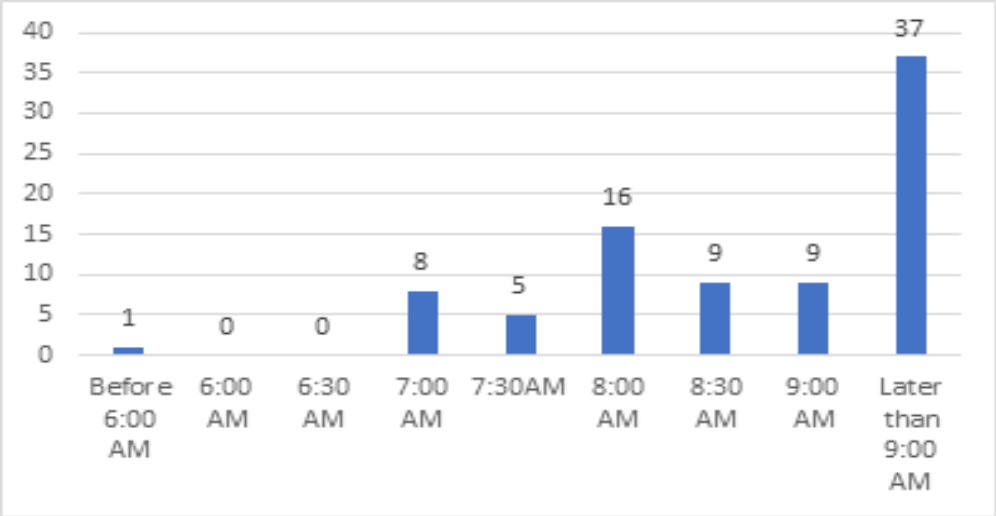
When asked about the type of transit service they were interested in, 63.75% (51 of 80) responded with “Commuter Express Bus to Roanoke”, 18.75 % (15 of 80) “Door-to-door service for disabled citizens”, 6.25% (5 of 80) “Vanpool for work”, 6.25% (5 of 80) “Carpool”, and 5% (4 of 80) “Taxi”.

3.4 - 11. Would you be interested in the following services?



As a follow-up to the previous question, participants were asked what time of the day they would need to arrive at their destination if provided with a new transit service from the Alleghany Highlands to Downtown Roanoke. A total of 85 participants answered this question, to which 43.53% (37 of 85) replied with “Later than 9:00 a.m.”, 18.82% (16 of 85) “8:00 a.m.”, and 10.59% (9 of 85) with both “8:30 a.m.” and “9:00 a.m.” All other answers were selected at a rate of 10% or below.

3.4 - 12. What time of the day would you need to arrive at your destination?



Additionally, the survey asked what time of day that potential users of an Alleghany Highlands transit service would need to leave from their destinations to return home. A total of 84 participants answered this question, in which 29.76% (25 of 84) of respondents replied “earlier than 4:00 PM” 16.67% (14 of 84) with “5:00 p.m”., and 10.71% (9 of 84) with “4:00 p.m.” All other answers each garnered less than 10% of total responses.

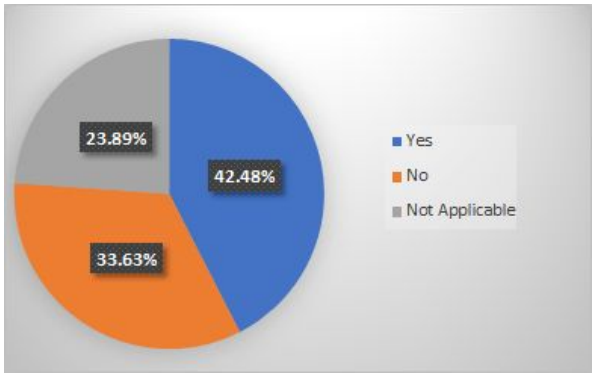
3.4 - 13. What time would you need to depart your destination?

Time of Day	Percent of Responses	Responses
Earlier than 4:00 PM	29.76%	25
4:00 PM	10.71%	9
4:30 PM	9.52%	8
5:00 PM	16.67%	14
5:30 PM	3.57%	3
6:00 PM	4.76%	4
6:30 PM	2.38%	2
7:00 PM	3.57%	3

7:30 PM	3.57%	3
8:00 PM	2.38%	2
8:30 PM	2.38%	2
9:00 PM	2.38%	2
Later than 9:00 PM	8.33%	7

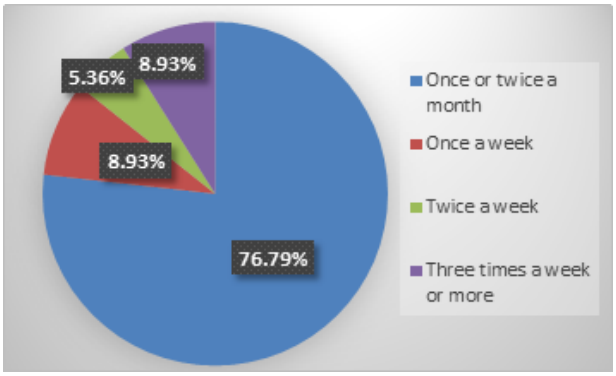
Respondents were asked about their likelihood to use a transit service if offered between the Rocky Mount area of Franklin County to Downtown Roanoke/Roanoke Amtrak Station. Of the 113 respondents, 42.48% (48 of 113) indicated that “Yes” they would utilize this service, 33.63% (38 of 113) “No”, and 23.89% (27 of 113) “Not Applicable”.

3.4 - 14. If a transit service was offered that traveled between the Rocky Mount area to Downtown Roanoke/the Amtrak station in Roanoke, would you use this service?



As a follow-up respondents were asked how often a survey participant would utilize transit services from Rocky Mount to Downtown Roanoke. Out of 56 participants to this question, 76.79% (43 of 56) replied with “Once or twice a month”, 8.93% (5 of 56) “Once a week”, 5.36% (3 of 56) “Twice a week”, and 8.93% (5 of 56) “Three times a week or more”.

3.4 - 15. How often would you use this service?



As a follow-up to the previous question, survey takers were asked during what time of day they would need to depart for their destination if provided transit services from Rocky Mount to Downtown Roanoke. Of 50 participants, 24% (12 of 50) replied with “later than 9:00 AM”, 24% “8:00 AM”. 18% (9 of 50) “9:00 AM” and both “7:00 AM” and “7:30 AM” each garnered 12% (6 of 50).

3.4 - 16. What time of day would you need to depart for your destination?

Time of Day	Percent of Responses	Responses
4:30 AM	2.00%	1
5:00 AM	0.00%	0
5:30 AM	0.00%	0
6:00 a.m.	2.00%	1
6:30 AM	6.00%	3
7:00 AM	12.00%	6
7:30 AM	12.00%	6
8:00 AM	24.00%	12
8:30 AM	0.00%	0
9:00 AM	18.00%	9
Later than 9:00 AM	24.00%	12

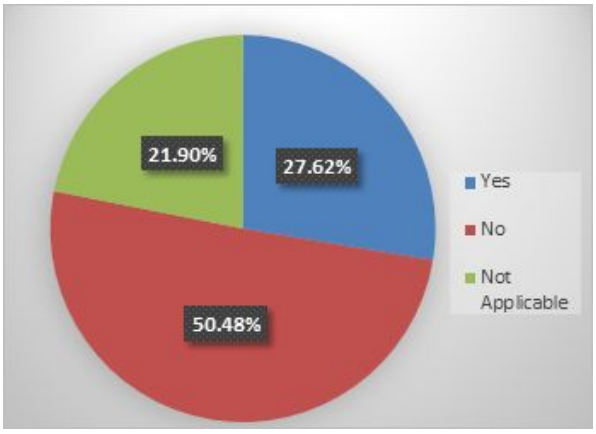
Survey takers were asked what time residents would need to return home if they were provided with transit services between the Rocky Mount area and Roanoke. Of 50 participants 28% (14 of 50) replied with “5:00 p.m.”, 10% (5 of 50) “6:00 p.m.” while answers “4:00 p.m.”, “5:30 p.m.”, and “Later than 9:00 p.m.” garnered 8% (4 of 50) of total responses, each.

3.4 - 17. What time would you need to depart your destination?

Time of Day	Percent of Responses	Responses
Earlier than 4:00 PM	22.00%	11
4:00 PM	8.00%	4
4:30 PM	4.00%	2
5:00 PM	28.00%	14
5:30 PM	8.00%	4
6:00 PM	10.00%	5
6:30 PM	2.00%	1
7:00 PM	2.00%	1
7:30 PM	0.00%	0
8:00 PM	2.00%	1
8:30 PM	2.00%	1
9:00 PM	4.00%	2
Later than 9:00 PM	8.00%	4

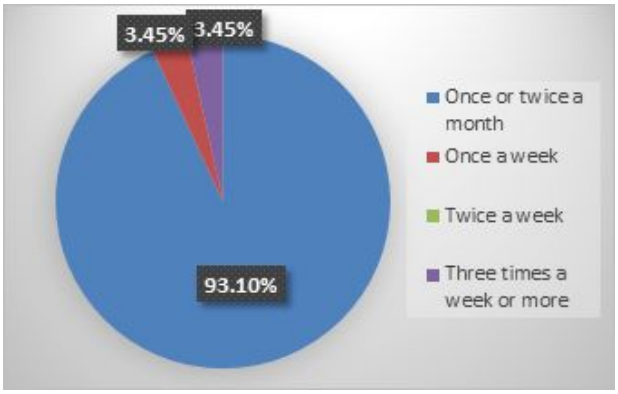
When asked about their likelihood to use a transit service that travelled between Rocky Mount to the Lynchburg Amtrak Station, 50.48% (53 of 105) replied with “No”, 27.62% (29 of 105) “Yes”, and 21.90% (23 of 105) “Not Applicable”.

3.4 - 18. If a transit service was offered that traveled between the Rocky Mount area to the Lynchburg Amtrak station, would you use this service?



As a follow-up, the next question asked how often a service between Rocky Mount and Lynchburg Amtrak will be used. Out of 29 responses, 93.10% (27 of 29) replied with “Once or twice a month” while “Once a week” and “Three times a week or more” garnered 3.45% (1 of 27) each.

3.4 - 19. How often would you use this service?



When asked about what time of day they would need to depart for their destination if provided a transit service between Rocky Mount and Lynchburg, out of 30 total responses, 33.33% (10 of 30) replied with “Later than 9:00 a.m.”, 16.67% (5 of 30) “9:00 a.m.” and “7:00 a.m.”, each., and “8:00 a.m.” garnered 13.33% (4 of 30) of total responses.

3.4 - 20. What time would you need to depart for your destination?

Time of Day	Percent of Responses	Responses
4:30 AM	0.00%	0
5:00 AM	0.00%	0
5:30 AM	0.00%	0
6:00 a.m.	3.33%	1
6:30 AM	10.00%	3
7:00 AM	16.67%	5
7:30 AM	3.33%	1
8:00 AM	13.33%	4
8:30 AM	3.33%	1
9:00 AM	16.67%	5
Later than 9:00 AM	33.33%	10

As a follow-up to the previous question, survey takers were asked what time would they need to depart for their return home, using a provided transit service between Rocky Mount and Lynchburg. Of 28 responses, 17.86% (5 of 28) replied with “4:00 p.m.”, 14.29% (4 of 28) “Earlier than 4:00 p.m.”, and “5:00 p.m”., “5:30 p.m.”, and “6:00 p.m.” each garnered 10.71% (3 of 28) of total responses.

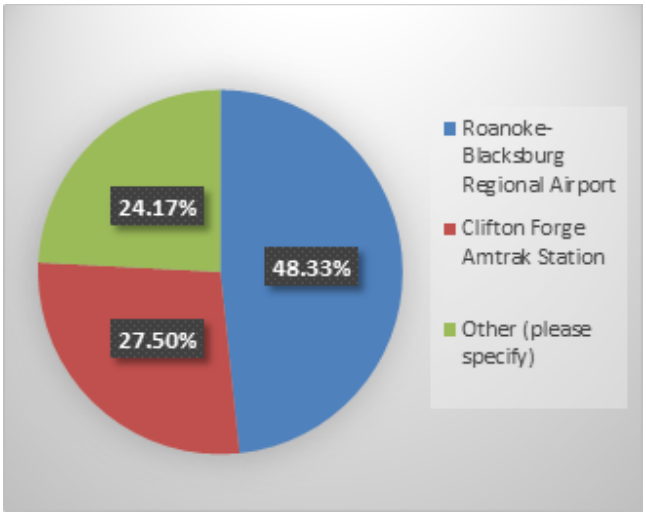
3.4 - 21. What time would you need to depart from your destination?

Time of Day	Percent of Responses	Responses
Earlier than 4:00 PM	14.29%	4
4:00 PM	17.86%	5
4:30 PM	7.14%	2
5:00 PM	10.71%	3

5:30 PM	10.71%	3
6:00 PM	10.71%	3
6:30 PM	3.57%	1
7:00 PM	7.14%	2
7:30 PM	3.57%	1
8:00 PM	3.57%	1
8:30 PM	0.00%	0
9:00 PM	3.57%	1
Later than 9:00 PM	7.14%	2

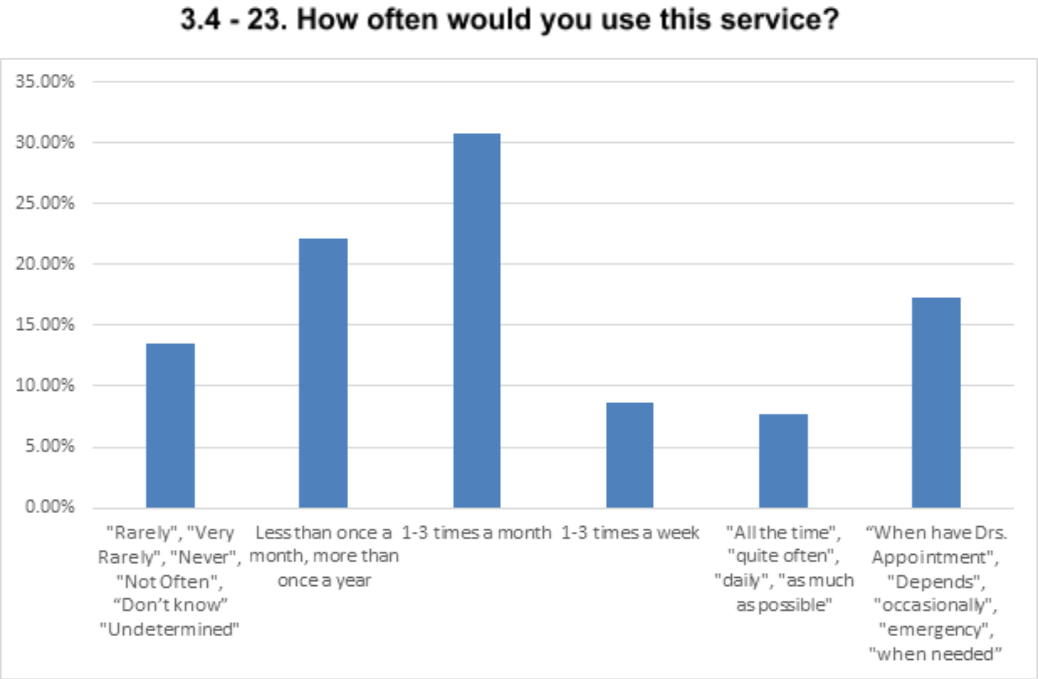
The next question asks participants if they would be interested in a transit service from their place of residence to the "Roanoke-Blacksburg Regional Airport", "Clifton Forge Amtrak Station", or "Other (please specify)". Out of 120 participants, 48.33% (58 of 120) replied with "Roanoke-Blacksburg Regional Airport", 27.50% (33 of 120) "Clifton Forge Amtrak Station", and 24.17% (29 of 120) of participants replied with "Other (please specify)".

3.4. - 22. Would you be interested in a transit service from your area to:...?



Survey takers were asked how often they would use any of the services listed above, if available. Survey participants were given the opportunity to submit open ended answers to this question. Out of 104 total responses, 30.77% (32 of 104) responded with 1-3 times a month, 22.12% (23 of 104) less than once a month but more than once a year, while 17.31% (18 of

104) replied with either “When have Drs. Appointment”, “Depends”, “Occasionally”, “Emergency”, or “When needed”.



4.0 Needs Assessment

A needs assessment is a process of understanding gaps between existing conditions and desired conditions. Understanding the needs of a community creates the foundation for decision making, and is used to identify priorities, goals, and strategies to address these needs. This section will not only discuss the existing state of regional transit conditions, but will also discuss what opportunities are available that can be utilized to reach these desired transit outcomes.

4.1 Overview

The Demographics analysis, public surveys, and meetings with rural stakeholders revealed several major areas of unmet transportation need in the region:

- Access to medical care facilities for transit dependent individuals (elderly, disabled, individuals without personal vehicles
- Transit Option for all ages and abilities
    - Access to shopping, education, leisure trips and basic social services
    - Access to Roanoke's Amtrak Station
    - Access to major places of employment

Given the number and distinctiveness of unmet transportation needs in the area, various transit solutions may be considered to serve the specific demands of passenger traffic in the region. Findings collected through the existing conditions analysis, review of previous studies, community profile and public and stakeholder outreach efforts suggest both challenges and opportunities associated with developing public transit services in the rural Roanoke Valley - Alleghany Region. The following sections summarizes the challenges and opportunities as they relate to the need and demand for public transportation.

4.2 Challenges

- Elderly (20.2% of population) and disabled (14.5% of population) make up over one-third of the overall population. Transportation services that accommodate these groups' physical limitations, time constraints, and needs is one of the biggest challenges facing rural transportation.
- The study area has a total area of 1683.70 square miles which results in the need to travel long distances to service communities.
- The area has a very low population density which may result in lower ridership for fixed transit routes.
- As shown throughout the comments section of the survey, some respondents question the cost and productivity of public transportation.

4.3 Opportunities

- Based on survey response rates, there is a desire among residents within the study area for transit/commuter services to the City of Roanoke, Roanoke County, and the City of

Salem. Several stakeholders support public transportation and are interested in developing options.

- There are several future employment opportunities along the U.S. 220 corridor, specifically within Botetourt County
- The comments section of the survey indicated a clear need for intra/interjurisdictional transit/commuter services from the study area localities to the Roanoke Valley. Comments included concerns of isolated populations throughout the rural area that may lack adequate transportation, including youth, disabled, veterans, and elderly populations.
- While most of the survey participants own cars, around 70% of these participants said they would use transit/commuter services, if provided, to supplement their transportation needs.

5.0 Potential Service

Depending on the travel needs of their community, transit providers and stakeholders can organize modes of transportation into a tailored transit service that serves the specific needs. Service options range from low-cost options that are targeted at specific segments of the community (i.e. volunteer driver and taxi voucher programs) or serve specific geographic markets (commuter services) or try to serve the general public (fixed-route transit). Common transit services in rural areas include fixed-route, flex-route, demand-response, volunteers, and transit vanpools. A more exhaustive list of potential transit services for the study area are described in the table below.

Table 5.0 - 1 List of Potential Transit Services

Service Type	Best Suited For	Advantages	Potential Providers
Fixed - Route Bus	• Commuters • Older adults and persons with disabilities • Non-Drivers	• Easy to understand/use • Builds on existing system • Low fares • Low per passenger cost	• Valley Metro • RADAR
Deviated Fixed-Route	• Commuters	• Flexible • More attractive service • Satisfies ADA requirements	• Valley Metro • RADAR
Flex-Services	• Older Adults • Persons with Disabilities • Non-Drivers	• Combines key advantages of fixed-route and Dial-A-Ride service • Increases service area • Can be designed to flex in key areas only	• Valley Metro • RADAR • Local Office on Aging
Regional Services	• Commuters • Potential for medical trips	• Easy to understand • Potential to build on existing service	• Valley Metro • RADAR

Voucher Programs	• Medical trips • Ad hoc/emergency travel	• Lower cost • Flexible • Low start-up costs	• RADAR • Local Office on Aging
Volunteer Driver Programs	• Medical trips • Ad hoc travel	• Low-cost • High flexibility • High service level	• Local Office on Aging • Ride Solutions
Ridesharing	• Commuters	• Systems in place to administer program • Low cost • High flexibility	• Ride Solutions
Dial-A-Ride (DAR)	• Older Adults • Persons with Disabilities • Non-Drivers	• Higher level of service	• RADAR

Source: Nelson\Nygaard Consulting Associates

5.1 Potential Transit Strategies for Rural Roanoke Valley- Alleghany Region

In order to help meet the needs identified in Section 4, several new transit strategies are:

- **Establishment of Mobility Management Position** to more actively manage existing transportation programs and resources, create marketing and educational materials and build coalitions among planners, county officials, and transit providers to support funding to expand existing services.
- **Volunteer Driving** to provide rides that are individually tailored to specific transportation needs, especially elderly and disabled populations, and allows for travel beyond county lines.
- **Expand Demand Response Service** to provide more flexible service options to the most vulnerable populations within the rural area.
- **Further Explore Fixed Route Commuter Service along US Highway 220** connecting the Alleghany Highlands, Botetourt County, and Franklin County to the Roanoke Valley.
- **Carpool/Vanpool Services** to complement transit agencies and resources already in place and to fill the gaps where traditional fixed route or demand response services are insufficient.

5.1.1 Strategy 1 Mobility Management

There are a number of transportation resources that are available in the region. Notably, there are several fleets of passenger vans currently stationed throughout the Alleghany Highlands, owned by community services or church/religious organizations, that are being underutilized. While these resources have the potential to be tremendous assets to the community, these resources for the most part are not well organized or coordinated. Existing services in the area are comprised of separate programs; however, there may be opportunities to share resources and coordinate efforts in addressing unmet transportation needs.

One option, therefore, would be to hire a mobility manager and task this individual with more actively managing existing transportation programs and developing new ones. A mobility manager is already servicing Franklin County via the Southern Area Agency on Aging. Initial initiatives may include:

- **Creates a Service Directory –** According to regional stakeholders, there is a very limited understanding among the public of what transportation services are available, who can use them and how they can be accessed. One of the first tasks for a mobility manager would be to create a service directory of available transportation resources throughout the region.
- **Advocates for local community transit needs** - Stakeholders have voiced concerns of underrepresentation of certain customer groups in the region when discussing transportation needs. The role of the mobility manager, in this capacity, would be to gain an understanding of the transportation needs of the customer base throughout the region to better navigate resources to their specific needs. In addition, with this understanding mobility managers will recommend and advocate for transportation policies that address the needs of these underrepresented populations.
- **Understands DRPT policies and can make these policies work for citizens locally**- There are a number of funding opportunities available through DRPT to enhance the effectiveness and quality of local and regional transportation services. In this capacity a mobility manager will investigate these opportunities and other relevant state resources to understand how they can be tailored to the specific transportation needs of the region.
- **Helps coordinate trips among agencies** - The region has a number of existing mobility resources, although these resources are more locally focused. Through a mobility manager, the region could help leverage regional resources to expand transportation options locally and support efforts to create more transit supportive land use patterns and pedestrian facilities.
- **Works with community services boards -** Currently, the region is served by the Blue Ridge Behavioral Healthcare, the Alleghany Highlands Community Services Board and the Piedmont Community Services, as well as a number of state and national agencies. Community service boards are by statute the single points of entry into publicly funded mental health, substance use disorder, and developmental services.[7] Access to these vital community assets contributes to the sustainability of the region as a whole. Therefore, the role of the mobility manager will be to not only help coordinate trips based on specific needs of patients that utilize these services, but to work with these agencies to recognize transportation barriers that underserved populations face. Furthermore, their role would be to create programs that address transportation needs for accessing medical appointments and community services.

[7] https://vacsb.org/community-services-boards-and-the-behavioral-authority-csbs-and-the-bha/

Mobility Management: Regional Implications

Several mobility managers operate throughout Southwest Virginia: New River Valley Agency on Aging, Mountain Empire Older Citizens Transit, and the Southern Area Agency on Aging. Short 15 minute interviews were conducted with the mobility managers of these respective agencies to understand how these positions operate throughout the region. Mobility managers were asked about their job descriptions, scope of work, and compensation. The results of these interviews were an overview of how mobility managers operate within the region. From these interviews, it was determined that the scope of work for regional mobility managers was generally relegated to providing services for seniors and disabled individuals, only. Given the amount of work involved in a mobility management position, mobility managers avoid trip servicing for employment or leisure trips. Additionally, it was determined that aside from the initial mobility management tasks described previously, mobility managers are trained based on the respective needs of the communities that they are serving. The responsibilities of this position can also be dictated through the agency in which the position is housed. For example, the mobility managers interviewed are housed in agencies of aging and therefore focus their resources on the elderly as well as disabled populations. A local office on aging or RADAR may be a natural organization to support a mobility manager position.

There was no consensus on the salary of a full-time mobility manager, as it depends on the location and market value for said position, according to the interviews. For this report, to provide a provisional planning estimate, the salary for a full-time mobility manager was estimated at $45,990 for 2017 with an additional 28% added for benefits. This salary was based on the mean 2017 salary for a Community and Social Service Specialists, All Other ($53,960) and for Dispatchers, except fire/police ($38,020) for the Roanoke region found in the Bureau of Labor Statistics Occupational Employment and Wage estimates database. An estimate of wage inflation was set at three percent per year

	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024
Salary	$48,791	$50,255	$51,762	$53,315	$54,914	$56,562
Benefits	$13,661	$14,071	$14,493	$14,928	$15,376	$15,837
Total	$62,452	$64,326	$66,255	$68,243	$70,290	$72,399

Provisional Planning Estimates. FY 2019 salary is adjusted from the 2017 mean salary estimate

5.1.2 Strategy 2 Volunteer Driving Program

Organizations typically use volunteer drivers to provide specialized transportation to individuals that need a higher level of service, such as door-to-door or door-through-door services[8]. Typically, drivers operate their own personal vehicle but can also operate vans and small buses. The role of a volunteer driver, generally are:

[8] https://www.n4a.org/files/NCST%20Volunteer%20Transportation%20Info%20Brief.pdf

- **As a driver**: Some volunteers use their own vehicle, while others use an agency-owned vehicle.
- **As an escort/assistant:**
    - Some volunteer transportation programs go beyond curb-to-curb service by assisting the rider from the point of origin to the destination and back. This may be called door-through-door or hand-to-hand service.
    - Some programs use a volunteer escort in addition to the volunteer driver for riders who need additional assistance at their destination (i.e., for understanding a doctor's orders or reaching high shelves at a grocery store).
    - Volunteers are also providing escort assistance on public transportation to support those who are able to use public transit but require additional help.
- **As a trainer**: Current volunteers serving as peer mentors can be an added enhancement to a volunteer driver training curriculum.
- **As a recruiter**: A volunteer discussing his/her experience as a volunteer driver has been reported as one of the most successful ways to recruit new volunteers.
- **For program support**: Some programs utilize volunteers to assist with scheduling, dispatch, and program management.[9]

There is generally no typical volunteer transportation program, as they vary to suit the needs of the communities they serve. As indicated in the rural transportation stakeholder meetings there is a surplus of available vans/ vehicles throughout the area that are not in use – mainly church/religious institutions. The establishment of a volunteer driver program could serve as a nexus between the localities and a possible partnership with these institutions to tap into these resources.

The Southern Office of Aging currently operates two volunteer driver programs in the region: the Miles 4 Vets Program which provides wheelchair-accessible transportation for veterans to Salem VA Medical Center and Danville Community-Based Outpatient Clinic and the Volunteer Driver Program, coordinated through LogistiCare, which also provides out-of-town non-emergency medical transportation to all ages.

It is difficult to determine provisional costs of a volunteer program. However, the National Volunteer Transportation Center indicated that operating budgets for volunteer driver programs across the country range from less than $100,000 to $500,000.[10] It is important that volunteer transportation programs give consideration to liability, risk, and exposure in their planning and operation. Although there is a general assumption that volunteer transportation programs are inexpensive to operate, not all programs are equal. The inclusion of paid drivers and owned or leased vehicles and infrastructure costs (paid staff, rented or owned office space, software etc) have a substantial impact on the costs of operating a volunteer transportation program.[11]

[9] https://www.n4a.org/files/NCST%20Volunteer%20Transportation%20Info%20Brief.pdf
[10] https://ctaa.org/wp-content/uploads/2018/10/Tip_Sheet_Vol_Trans_Trends.pdf
[11] https://ctaa.org/wp-content/uploads/2018/10/Fact_Sheet_Vol_Driver_Program_Review.pdf

5.1.3 Strategy 3 Expand Demand Response Services

Stakeholders discussed the possibility of expanding demand response, or dial-a-ride, services as an opportunity to service specific/targeted populations. Demand-response transit (DRT) is a non-fixed route, flexible transit service, that provides curb-to-curb or door-to-door pickups and drop-offs upon customers' request and usually requires advanced scheduling by the customer.[12] Demand-response transportation services are typically employed to provide greater flexibility in accommodating more people in areas with low population, poor road conditions, or where fixed-route transit cannot be supported.[13]

Unmet regional transportation needs identified within the region also include connecting residents to places of employment. Currently there are employment centers along the US 220 corridor, as well as, within the urbanized area, with little to no access for potential employees. Demand-response serves in this capacity could be used as a connection, with scheduling that coincides with a typical work day. This service will operate more like Danville Transit's Reserve-A-Ride service, which is tailored towards employee schedules and provides expanded demand-response services to businesses located along U.S. 58 east. Reserve-A-Ride services operate weekday and Saturday service to any location within the City limits of Danville and Cane Creek Centre Industrial Park. A potential demand-response service for the region could conceivably operate two services, one for localities north of the Roanoke Urbanized Area, and another for Franklin County. These services would operate along U.S. 220 with access to major points of employment on the way to the Roanoke Valley.

Demand responsive transit is most commonly operated by private companies under contract with public transit agencies, but can also be operated by community groups, nonprofit organizations, or the public transit agency directly.[14] Regionally, RADAR operates as the leading demand response and paratransit services within the region. In order to meet these demands for employment-specific services, RADAR must be willing to expand its demand-response/paratransit services already in place through the Mountain Express and Ferrum Express. However, DRPT does offer Demonstration Assistance Grants for pilot programs for local governments/service providers. Given this opportunity, RADAR or any other eligible recipient can test out how well an employment-driven demand response service along U.S. 220 performs before committing any local funds/resources.

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[12] https://static.tti.tamu.edu/tti.tamu.edu/documents/policy/congestion-mitigation/demand-response-transit.pdf

[13] https://www.oregon.gov/ODOT/Planning/Documents/Mosaic-Demand-Responsive-Transit-Service.pdf

[14] https://www.oregon.gov/ODOT/Planning/Documents/Mosaic-Demand-Responsive-Transit-Service.pdf

5.1.4 Strategy 4 Fixed Route Service Options

5.1.4.1. Possible Service Between the Alleghany Highlands and Roanoke Valley

A service to access key medical facilities, shopping, education, the Downtown Roanoke Amtrak station and other basic needs in the Roanoke Valley was identified as one of the top unmet transportation needs in the study area. RVARC staff studied the possibility of a commuter service between the Alleghany Highlands and the Roanoke Valley, operating seven days a week with deviated services on Saturday and Sunday. This is a conceptual analysis of a service option where further analysis would be required by the transit provider prior to implementation.

An Alleghany Highland-Roanoke Valley Commuter Service could access the following stops, and enable a transit connection to the Clifton Forge Amtrak as shown below:

- Clifton Forge
- Botetourt Center at Greenfield
- VA Medical Center
- Campbell Court
- Valley View Mall (Accessed on Saturday service only)

Due to the early morning/late evening arrival times for the Amtrak in Downtown Roanoke, the service concept shown does not include a connection for this purpose. Provisional capital and operating costs as well as a conceptual schedule are available below. These trips would utilize two 15-passenger commuter buses that would together make five roundtrips between Clifton Forge and Roanoke Monday through Friday, two roundtrip runs on Saturday, and three on Sunday.

Figure 5.4.1 - 1 Conceptual Schedule for Potential Alleghany Highlands Service

Monday-Friday

Depart Clifton Forge	Arrive Greenfield	Depart Greenfield	Arrive VA Medical Center	Depart VA Medical Center	Arrive Roanoke Campbell Court	Depart Roanoke Campbell Court	Arrive Greenfield	Depart Greenfield	Arrive Clifton Forge
6:10 AM	6:50 AM	6:53 AM	7:20 AM	7:25 AM	7:40 AM	7:50 AM	8:20 AM	8:25 AM	9:10 AM
9:25 AM	10:05 AM	10:08 AM	10:35 AM	10:40 AM	10:55 AM	11:05 AM	11:35 AM	11:40 AM	12:25 PM
12:40 PM	1:20 PM	1:23 PM	1:50 PM	1:55 PM	2:10 PM	2:20 PM	2:50 PM	2:55 PM	3:40 PM
1:05 PM	1:45 PM	1:48 PM	2:15 PM	2:20 PM	2:35 PM	2:45 PM	3:15 PM	3:20 PM	4:05 PM
3:55 PM	4:30 PM	4:33 PM	5:00 PM	5:05 PM	5:20 PM	5:30 PM	6:00 PM	6:05 PM	6:50 PM

Saturday

Depart Clifton Forge	Valley View			Arrive Roanoke Campbell Court	Depart Roanoke Campbell Court	Valley View		Arrive Clifton Forge
9:25 AM	10:25 AM			10:40 AM	10:55 AM	11:05 AM		12:20 PM
1:00 PM	2:00 PM			2:15 PM	2:30 PM	2:40 PM		3:50 PM

Sunday

Depart Clifton Forge		Arrive Roanoke Campbell Court	Depart Roanoke Campbell Court		Arrive Clifton Forge
10:00 AM		11:00 AM	11:15 AM		12:20 PM
1:00 PM		2:00 PM	2:45 PM		3:50 PM
4:30 PM		5:30 PM	5:45 PM		6:45 PM

Table 5.4.1 - 1 Capital and Operating Costs of Potential Alleghany Highlands Service - Planning-Level Estimated

Capital		**Assumptions:** **$60,000 each = $120,000 total if existing buses are not available.**
Two 15-passenger Commuter Buses	**$120,000**	
Operating		
Monday-Friday	**$246,126**	**254 days/year, $76/hour, 12.75 Hrs.**
Saturday	**$24,700**	**52 days/year, $76/hour, 6.25 Hrs.**
Sunday	**$34,580**	**52 days/year, $76/hour, 8.75 Hrs.**
Total Estimated Costs	**$305,406**	

5.1.4.2. Possible Service Between Rocky Mount and Downtown Roanoke

In addition to the Alleghany Highlands conceptual commuter service, commuter and all-day routes were examined between Rocky Mount and Downtown Roanoke with continuing connections to Valley Metro. The purpose of the commuter route would be to provide a transportation connection to jobs, education, shopping, and medical services in the Roanoke Valley. This service could operate a morning route (5:30 AM to 9:10 AM) and an evening route (3:20 PM to 7:10 PM) to coincide with travel during a typical workday. The purpose of the service would be to provide a consistent transit option for multiple trip purposes between Rocky Mount and Roanoke all day between 5:30 AM to 7:00 PM.

The times and locations for stops were assumed based off of the current Ferrum Express run between Roanoke and Walmart on Route 40 in Rocky Mount. The VDOT Park and Ride lot (Route 40 (Old Franklin Turnpike) & U.S. 220) was assumed to be the origin in Rocky Mount to enable daily parking of personal vehicles. Estimated costs and a conceptual schedule are located below.

Figure 5.4.1.2 - 1 Conceptual Schedule for Potential Franklin County Commuter Service

Rocky Mount U.S. 220 / Route 40 Park & Ride Lot and Downtown Roanoke with Connections to Valley Metro, AMTRAK

Monday - Friday

Depart	Arrive	Depart	Arrive
Rocky Mount Park & Ride	Downtown Roanoke - Campbell Court	Downtown Roanoke - Campbell Court	Rocky Mount Park & Ride
5:30 a.m.	6:05 a.m.	6:20 a.m.	6:55 a.m.
7:00 a.m.	7:40 a.m.	7:50 a.m.	8:25 a.m.
8:30 a.m.	9:10 a.m.		
		3:20 p.m.	3:55 p.m.
4:00 p.m.	4:40 p.m.	4:50 p.m.	5:30 p.m.
5:35 p.m.	6:10 p.m.	6:20 p.m.	7:00 p.m.
Mon. - Fri. AMTRAK Connector upon reservation 72 hours in advance:		10:10 p.m.	10:45 p.m.

Saturday

Existing Ferrum Express departs Roanoke at 10:00 p.m. Addition of Rocky Mount Park & Ride would be needed.

Sunday

AMTRAK Connector upon reservation 72 hours in advance:	9:50 p.m.	10:25 p.m.

Figure 5.4.1.2 - 2 Capital and Operating for Potential Franklin County Commuter Service - Planning-Level Estimates

Capital		**$60,000 each = $120,000 total if existing buses are not available.**
Two 15-passenger Commuter Buses	**$120,000**	
Operating		
Monday-Friday	**$137,160**	**254 days/year, $60/hour, 4 hours in AM, 4 hours in PM + 1 hour at night**
Saturday	**$0**	**Utilize existing service**
Sunday	**$3,120**	**52 days/year, $60/hour, 1 hour**
Total Estimated Costs	**$260,280**	

Figure 5.1.4.2 - 3 Conceptual Schedule for Potential Franklin County All-Day Service

Rocky Mount U.S. 220 / Route 40 Park & Ride Lot and Downtown Roanoke with Connections to Valley Metro, AMTRAK			
Monday - Friday			
Depart	**Arrive**	**Depart**	**Arrive**
Rocky Mount Park & Ride	**Downtown Roanoke - Campbell Court**	**Downtown Roanoke - Campbell Court**	**Rocky Mount Park & Ride**
5:30 a.m.	6:05 a.m.	6:20 a.m.	6:55 a.m.
7:00 a.m.	7:40 a.m.	7:50 a.m.	8:25 a.m.
8:30 a.m.	9:10 a.m.	9:20 a.m.	9:55 a.m.
10:00 a.m.	10:40 a.m.	10:50 a.m.	11:25 a.m.
11:30 a.m.	12:10 p.m.	12:20 p.m.	12:55 p.m.
1:00 p.m.	1:40 p.m.	1:50 p.m.	2:25 p.m.
2:30 p.m.	3:10 p.m.	3:20 p.m.	3:55 p.m.
4:00 p.m.	4:40 p.m.	4:50 p.m.	5:30 p.m.
5:35 p.m.	6:10 p.m.	6:20 p.m.	7:00 p.m.
Mon. - Fri. AMTRAK Connector upon reservation 72 hours in advance:		10:10 p.m.	10:45 p.m.
Saturday			
Existing Ferrum Express departs Roanoke at 10:00 p.m. Addition of Rocky Mount Park & Ride would be needed.			
Sunday			
AMTRAK Connector upon reservation 72 hours in advance:		9:50 p.m.	10:25 p.m.

Table 5.4.1.2 - 4 Capital and Operating Costs of Potential Franklin County All Day Service - Planning-Level Estimates

Capital		**$60,000 each = $120,000 total if existing buses are not available.**
Two 15-passenger Commuter Buses	**$120,000**	
Operating		
Monday-Friday	**$279,908**	**254 days/year, $76/hour, 13.5 hours + 1 hour at night**
Saturday	**$0**	**Utilize existing service**
Sunday	**$3,952**	**52 days/year, $76/hour, 1 hour**
Total Estimated Cost	**$403,860**	

5.1.5 Strategy 5 Vanpool/Carpool

Carpooling involves two or more people sharing a ride in their personal vehicles and usually but not always travel to/from work. Vanpooling refers to an arrangement where a slightly larger group of individuals (usually five or more) share the costs of operating a van that also usually takes individuals to/from work. There are a variety of strategies that encourage and support ridesharing, such as advertising the benefits of ridesharing, creating a database to match

drivers and riders, developing a vanpool program, and/or developing support services, such as guaranteed ride home programs that allow carpoolers to get a free taxi ride home in case of emergency.

There are carpool/vanpool services available through RideSolutions, within the region. However, the organization has been seeking ways to better market their existing regional transportation services. As stated previously, stakeholders are looking for ways to effectively reach out to more potential customers on available transportation services in the region.The current approach is effective for people who already know of the service, but is less useful for prospective or new employees.

Several organizations throughout the Commonwealth operate vanpool/carpool services in some capacity, including Four County Transit, Bay Transit, and Northern Neck Transit. Transit providers may offer Carpool/Vanpool themselves or may provide a list of independent carpool/vanpool service providers in their respective regions. Promoting carpooling and ridesharing is a relatively low cost option that is usually managed as part of another job. Most ridesharing programs do not place dollar limits on the cost of the trips, but those that do range from $25 to $35. Provided that an agency will provide 100 trips a year, agencies may pay between $2500 to $3500 a year to offer a ridesharing program.[15][16] DRPT offers a Technical Assistance Program which could provide funds to help craft marketing and promotional plans for ridesharing services.

6.0 Funding Sources

Table 6.0 - 1 provides an overview of the available Federal Transit Administration (FTA) grants. Typically, rural transit services are easily funded with Section 5311 rural transportation funds once a permanent source of local match funding is in place. Specialized transportation that serve seniors and individuals with disabilities, including capital improvements (buses, vans wheelchair lifts, ramps, secure devices) can be funded through Section 5310 - Enhanced Mobility of Seniors & Individuals with Disabilities.

6.0 - 1 Federal Funding Sources

Federal Grant	Purpose	Federal/Local Match	Eligible Recipients
Section 5310 - Enhanced Mobility of Seniors & Individuals with Disabilities	Assisting in meeting the transportation needs of older adults and people with disabilities current services are insufficient	55% capital, 45% operating ; Requires 20% match on capital, 50% match on operating	Local and State Governments, Private nonprofit organizations, Operators of public transportation.

[15] https://mobility.tamu.edu/mip/strategies-pdfs/travel-options/technical-summary/Vanpool-4-Pg.pdf
[16] https://nctr.usf.edu/jpt/pdf/JPT%2010-4%20Menczer.pdf

Section 5311 - Formula Grants for Rural Areas	Capital, planning, and operating assistance to support public transportation in rural areas with populations of less than 50,000, where many residents often rely on public transit to reach their destinations.	50 percent federal for operating assistance, and 80 percent federal for Americans with Disabilities Act (ADA) non-fixed route paratransit service. Min. 4% local match required	Local and State Government, Transportation District Commissions, Public Service Corporations, Private Non-Profit Organizations.

Table 6.0 - 2 provides an overview of the State Aid Grant Assistance offered by DRPT. This information is updated with each annual grant cycle. DRPT has an annual Grant Application which opens December 1st and ends February 1st. In the past, Demonstration Project Assistance supported the implementation of new transit services such as the former Smartway Connector from Blacksburg to Lynchburg**.** As stated previously, this program could be targeted to address many of the unmet needs identified by the stakeholders.

6.0 - 2 State Funding Sources

State Aid Grant Program	Purpose	Eligible Recipients	Matching Ratios
Operating Assistance Program	Provides funding for operating expenses for fixed route and commuter bus service, and light rail service.	Local and State Governments Transportation District Commissions Public Service Corporations	Up to 95% of eligible Expenses
Capital Assistance	Supports public transportation capital projects necessary to maintain, improve or expand public transportation services.	Local and State Government Transportation District Commissions Public Service Corporations	Up to 95% of eligible expenses
Demonstration Project Assistance	Innovative investments in all functional areas of public transportation.	Local and State Government Transportation District Commissions Public Service Corporations	Up to 95% of eligible expenses
TDM Assistance Program	Supports administration of local and regional Transportation Demand Management/ Commuter Assistance programs.	Local and State Government Transportation District Commissions Public Service Corporations Planning District Commissions	Up to 80% of eligible expenses

Mobility Programs	Supports transportation demand management (TDM) projects that encourages the development of telework and commuter benefits programs.	Local and State Governments Transportation Management Associations Planning District Commissions Transportation District Commissions Transit Operators Private operators of vanpool services may be eligible on a case by case basis	Up to 80% of eligible expenses
Senior Transportation Program	Supports operating expenses for new transportation services for adults 60 years of age and older.	Local and State Government Transportation District Commissions Operators of Public Transportation	Up to 80% of eligible expenses
Transportation Management Project Assistance	Supports Transportation Demand Management projects and programs that encourage the reduction of SOV travel	Local and State Government Transportation District Commissions Public Service Corporations Planning District Commissions Transportation Management Associations	Up to 80% of eligible expenses

In order to be eligible to receive federal and state funding, a local contribution must be part of the complete funding package. The local sources of funding include taxes on sales, gas, property, vehicle leasing and rental fees, utility fees, parking fees, fines, etc. In addition, individual transit agencies and providers can also provide local match money through farebox revenue, advertising revenue, contracts or purchase of service, among other sources. Rural stakeholders should collaboratively assess the currently available funding sources for transportation across all organizations and sources in the community that could contribute funding to meet a local match requirement.

7.0 Conclusion

Developing viable rural transit services within the study area will be a challenge given the size of the area, the relatively low population, and the dispersed settlement of populations that are more likely to depend on transit services. Determining the demand and potential ridership of any transit service will be vital to both identifying suitable transit solutions and to determining the viability and costs associated with providing a service. From the analysis of the study area's population, demographics, stakeholder feedback, public surveys, and assessment of current transportation resources, it is clear that some form(s) of transportation service is needed to meet the existing, and increasing, needs of the population in the study area. Any transportation service initiated should be tailored to the specific needs of the community, should start small, and should be affordable and sustainable. Accordingly, any transportation service would need to be carefully designed and implemented to maximize its benefits and to be sustainable over the long term.

The RVARC Rural Transit Feasibility Study has yielded several findings and has established a variety of future activities that may be undertaken to improve mobility throughout the study area. Considering the size of the study area, at least 3-4 separate services may be required to effectively serve the localized, as well as, longer distance travel needs of residents. Fundamental to the discussion of future transportation services are the demographic characteristics of the study area. According to our public survey and transportation trends analysis, residents of the study area have a high likelihood to make specific destinations outside of their locality of residence, for the purposes of employment, medical services, shopping, leisure, and education. Conceptually, there are several demand-based types of transportation services and programs that would be most appropriate to respond to the specific, priority needs of residents including demand-response, volunteer driver, and vanpool/carpool services. Fixed-route commuter services have also been explored throughout this process to access key destinations along the US 220 corridor. However, more time might be needed to consider this option. Given the low density of the study area, anticipated low level of daily ridership and the significant fixed cost to implement and operate such as service, a full-scale version of this service may not be as feasible as other options presented in this report. It will be important for stakeholders to continue to monitor the mobility needs of the study area's population to ensure appropriate transportation services are in place to serve diverse needs.