

# Lord Fairfax Community College Public Transit Feasibility Study



## *Final Report*

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Prepared for  
Winchester-Frederick County Metropolitan Planning Organization



and

Lord Fairfax Community College



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# Chapter 1

## Introduction and Needs Assessment

### INTRODUCTION

Lord Fairfax Community College (LFCC) is one of Virginia's 23 public community colleges. As shown in Figure 1, LFCC's primary campus is located in Middletown, Virginia, on Skirmisher Lane along Route 11 in southern Frederick County. The campus primarily serves students from Clarke, Frederick, Page, Shenandoah, and Warren Counties as well as the City of Winchester. While the location is easily accessed via automobile, the campus currently lacks access to public transportation, which has resulted in transportation challenges and barriers for some current and potential students.

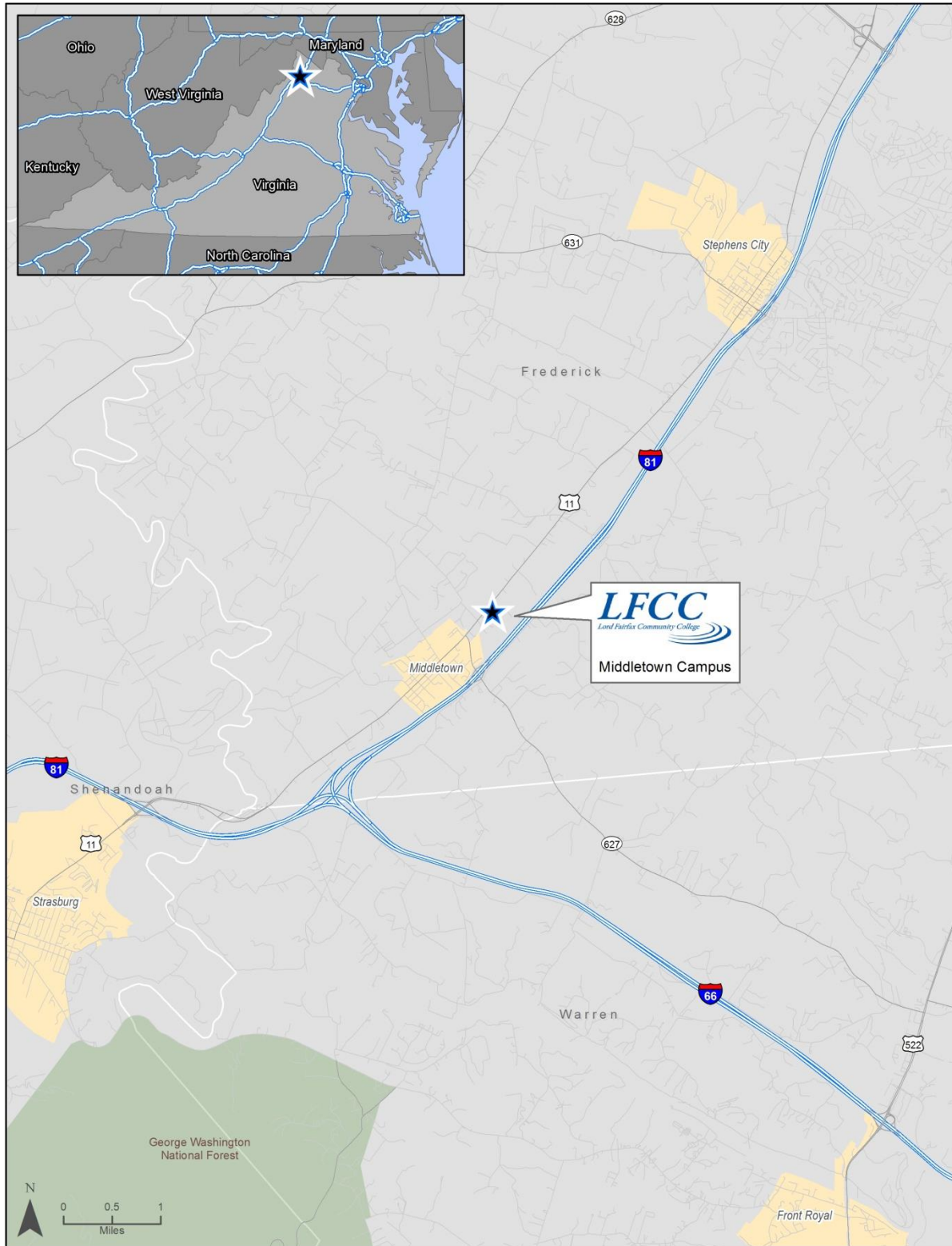
In recognition of the lack of public transportation access to the campus, the Winchester-Frederick County Metropolitan Planning Organization (WinFred MPO), in collaboration with Lord Fairfax Community College (LFCC) and other local stakeholders, has led the development of a public transit service feasibility study for LFCC's Middletown Campus.

The study was initiated in August, 2015 and completed in August, 2016. This report documents the study process and is organized into the following three chapters:

- Chapter 1: Introduction and Needs Assessment
- Chapter 2: Existing Transportation Providers and Potential Options
- Chapter 3: Transit Service Plan

The remainder of this first chapter provides a description of the LFCC transportation challenges, needs, and opportunities; provides an analysis of enrollment data; a demographic profile for the region; a review of previous transportation plans and studies; and finally a review of public transportation access to other public community colleges in Virginia.

Figure 1-1: Lord Fairfax Community College, Middletown Campus



## TRANSPORTATION CHALLENGES, NEEDS AND OPPORTUNITIES

### Advisory Committee

The study process was guided by an advisory committee that consisted of representatives from the City of Winchester, James Madison University, LFCC, United Way, Virginia Regional Transit, WinFred MPO, and WinTran (the public transportation program operated by the City of Winchester). During the project kick-off meeting in August 2015, the following challenges, needs, and opportunities were discussed among advisory committee members.

- The City of Winchester is striving to provide a link for its teens and young adults to reach educational opportunities at LFCC. Higher education for the City's young adults has been identified as one of the top priorities in the City's Strategic Plan and currently there is a high level of support for building transportation linkages between the City and LFCC.
- WinTran periodically receives calls for transportation from Winchester and Frederick County to LFCC, which it is currently unable to provide.
- Winchester's medical employment sector and companies located in the city's industrial parks have a need for employees with advanced training and certifications, which are offered through LFCC.
- James Madison University (JMU) has been interested for some time in the development of a service that would link the campus in Harrisonburg to Dulles International Airport and would pass directly through the Middletown area. JMU is interested in any synergistic approaches that may mutually benefit both educational institutions. JMU is the most popular receiving school for LFCC students who transfer to four-year colleges/universities.
- According to LFCC staff, the lack of dependable transportation is one of the greatest barriers for students. Any new services should be user-friendly, convenient, and high-frequency.
- LFCC financial support is highly dependent on the implementation of a service that shows an increase in student enrollment and retention. A student fee for transit could be a possibility but the LFCC administration is very sensitive to raising student fees. The pilot program would have to show high ridership levels to justify a student fee to support the service.
- Committee members indicated that they would like to distance this new effort from the unsuccessful route that was tried several years ago, linking Winchester to LFCC.

The previous service was reported to have operated at irregular times and frequencies, without input from LFCC, leading to rider dissatisfaction and poor performance.

- Any new service will have to comply with ADA guidelines that require the service to operate as a deviated fixed-route or as a fixed-route with a separate vehicle dedicated to complementary ADA paratransit service.

## **LFCC Faculty and Staff**

LFCC faculty and staff convened in September 2015 to discuss student and staff transportation challenges. A wide range of topics was covered ranging from vehicle reliability issues to what a potential service might look like. This discussion is summarized below.

- A lack of transportation options is one of the major issues facing students. In addition to reaching the LFCC campus, students also face barriers reaching employment opportunities. Many families only own one vehicle and must prioritize who is able to use it for the day. The work trip is usually chosen over the school trip.
- The most common reasons for student withdrawals are transportation challenges; either a vehicle break down, the inability to afford gas money, or losing a ride from a friend or family member. Some students have openly admitted to LFCC staff that if they only have one class on a particular day, it is not worth the transportation cost to attend on that day.
- There are currently 21 class locations for the adult education program. These multiple locations are a direct result of the transportation challenges experienced by adult education students. With a transit option available to students, the program could potentially consolidate locations and offer a wider variety of classes.
- An emerging trend among LFCC students are younger students enrolling without a driver's license, as the cost for someone under the age of 19 to obtain a license includes the cost of a driver education course, which is not required for those aged 19 and older (in Virginia).
- Enrollment in online classes is growing, even as in-person enrollment has declined in the last two years. It is suspected that transportation challenges are among the leading catalysts for the growth in popularity of online classes. This may not be the preferred way to learn for many students, but is the most convenient for many.
- LFCC depends heavily on work study students, some of whom experience transportation challenges. In one case, an office lost a worker for almost three weeks during the summer when their transportation arrangements fell through.

- Having the option of public transportation could be seen as an employment benefit for current and future employees.
- Service is needed Monday through Thursday from 7:00 a.m. to 10:00 p.m. on hourly headways. The need for service on Fridays is more limited due to a smaller number of classes offered.
- The top priority for LFCC is service into Winchester, as it is home to a relatively large concentration of LFCC students. Potential expansions could include Saturday service, summer service, and additional shuttles to other cities and towns in the region.

## Local High Schools

KFH Group conducted informational interviews with guidance counselors from area high schools to determine transportation challenges for dual-enrollment and potential future students. The results of these interviews are summarized below.

- A prevailing trend for area high school students is waiting until after graduation to acquire a driver's license. As previously mentioned, once an individual is over the age of 19 they do not have to enroll in a driver's education course, which may be cost and time prohibitive for some.
- Any potential transit service to LFCC should connect with WinTran at the downtown transfer station as there are many areas of need in Winchester.
- It was suggested that transit fares should be a component of tuition as many students qualify for financial aid, which could shoulder some of the cost of transportation for the student.
- Local high school counselors view the lack of public transportation as a barrier for students to attend LFCC.

## STUDENT/FACULTY/STAFF SURVEY

One of the major components used to help determine the level of need for transit services to LFCC was the completion of both student/faculty/staff and community surveys (the community survey results are analyzed in the following section). The student/faculty/staff survey instrument was developed collaboratively among LFCC, WinFred MPO, and KFH Group staff. The survey was provided in English and Spanish and made available online, via Survey Monkey, and through paper copies that were distributed at key community locations. Survey responses were received from November 5<sup>th</sup> to December 15<sup>th</sup>, 2015. A total of 315 surveys were received; including 313 in English and two in Spanish. The following section

provides some highlights from the survey. The survey instrument and a detailed analysis of each question can be found in Appendix A.

## Survey Participants

Just over 78 percent of the survey respondents identified as LFCC students. LFCC staff made up the second largest group with nearly 13 percent of the surveys and LFCC faculty represented seven percent of the survey respondents. Dual enrollment students represented 1.6 percent and GED/ESOL students represented 0.6 percent. Forty-three percent of the respondents attend classes in person at the Middletown Campus, 32 percent take classes in person and online, and eight percent took classes online only.

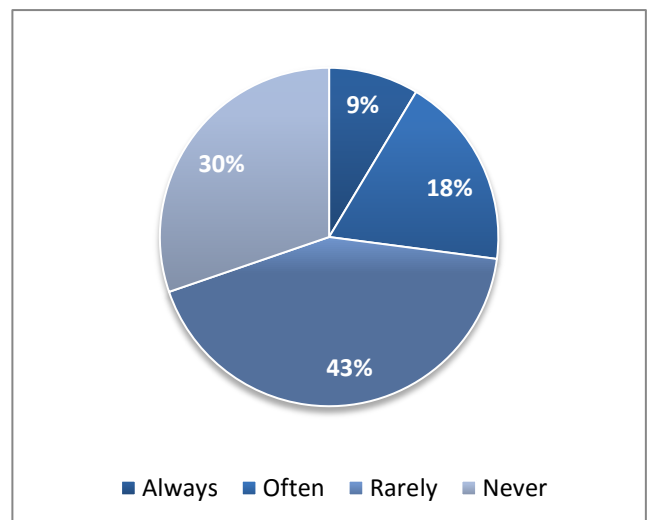
## Transportation Barriers

When asked if transportation is a barrier to reach the Middletown Campus, the majority of respondents answered “rarely” (43%).

Approximately nine percent of respondents “always” have a transportation barrier, 18 percent “often” have a transportation barrier, and 30 percent indicated that transportation was “never” a barrier. These results are displayed in Figure 1-2. The top barrier for respondents was the price of fuel (53%); followed by not having an available vehicle (17%) and depending upon others for a ride (15%).

Ninety-one percent of respondents possess a valid driver’s license and just over 81 percent drive alone to the Middletown Campus. Approximately 12 percent typically receive a ride from a friend or family member and fewer than four percent carpool.

**Figure 1-2: Is Transportation a Barrier?**



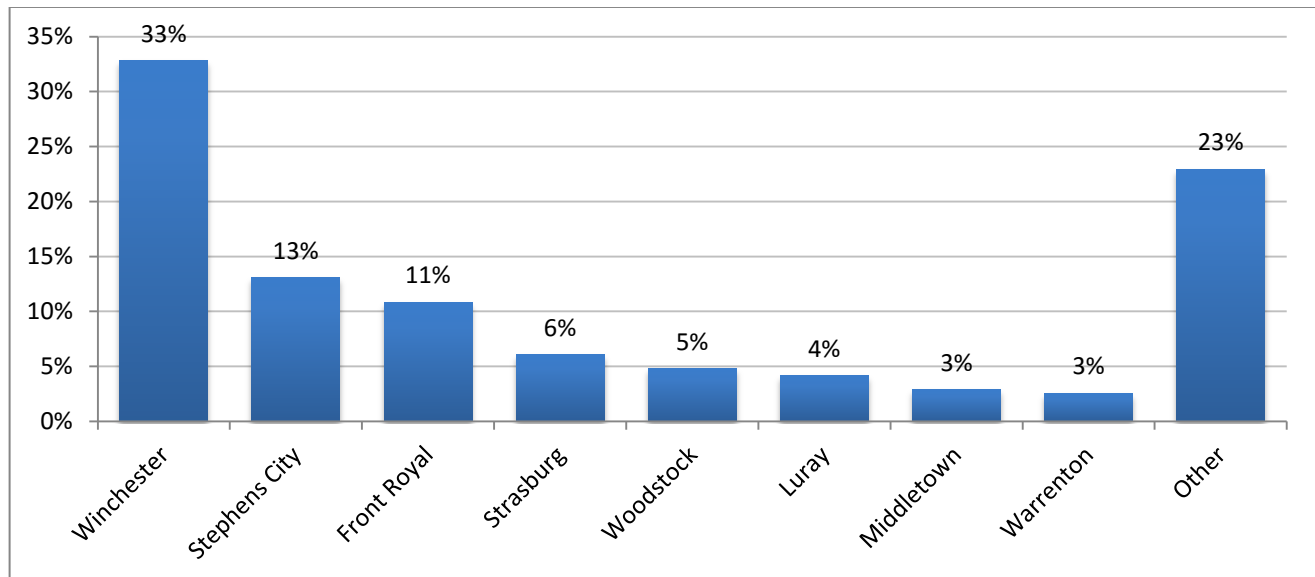
## Potential Transit Usage

When survey respondents were asked if they would use a transit service to get to and from the Middletown Campus just over two-thirds (68%) indicated that they would use such a service.

## Residency

Winchester was the residency location reported for 33 percent (103 responses) of the survey respondents. This was followed by Stephens City with 13 percent (41 responses) and Front Royal with 11 percent (34 responses). The locations with responses of three percent or more are displayed in Figure 1-3.

**Figure 1-3: Where Students, Faculty and Staff Live During School Semesters**

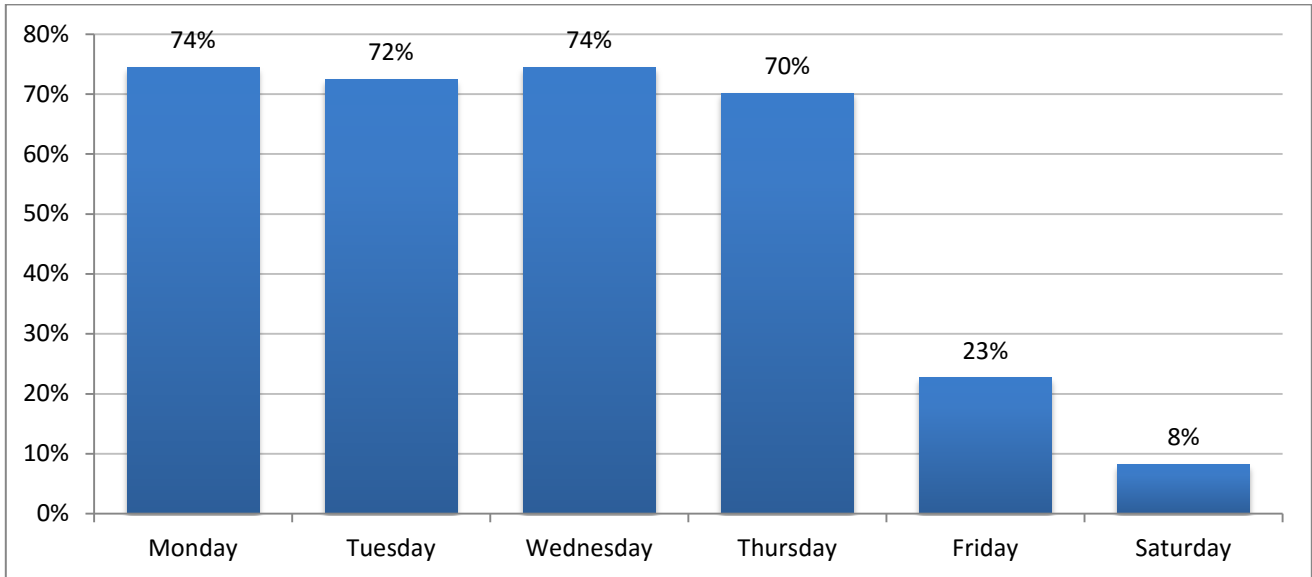


## Days and Times of Attendance

As shown in Figure 1-4, students, faculty, and staff typically visit the Middletown Campus Monday through Thursday with Monday and Wednesday tied for the busiest day. Friday garners just less than a third of the typical weekday and a handful of respondents visit on Saturday.

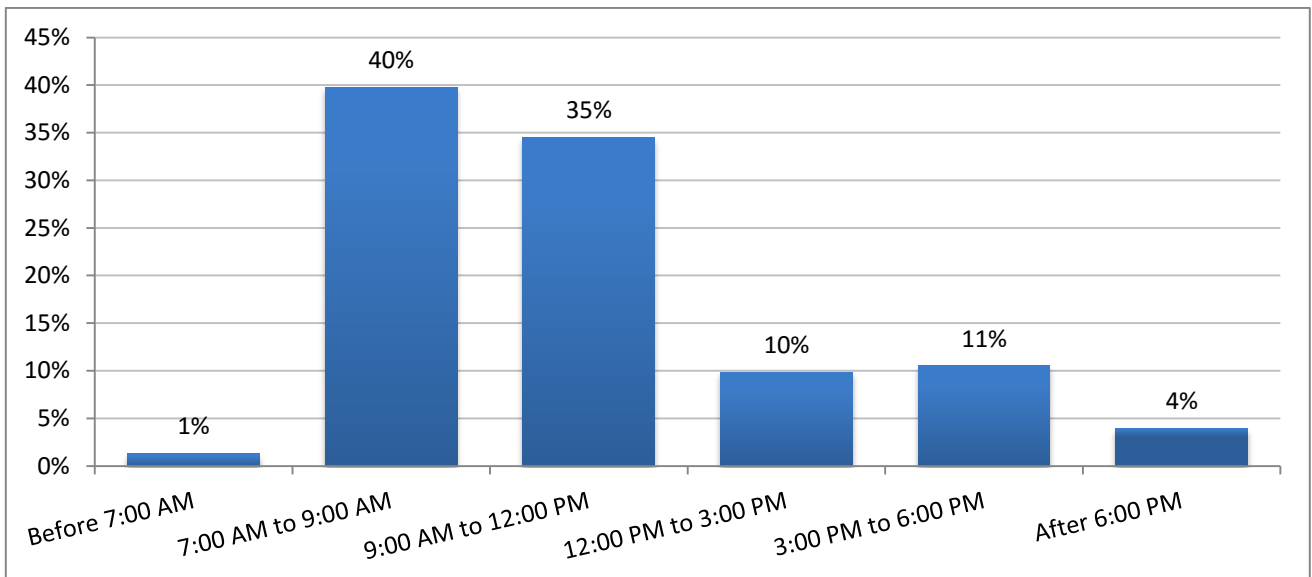


**Figure 1-4: Days of the Week Students, Faculty and Staff Typically Visit the Middletown Campus**



Forty percent of respondents typically arrive at the Middletown Campus between 7:00 a.m. and 9:00 a.m. and over one-third arrive between 9:00 a.m. and 12:00 p.m. (35%). The next largest arrival time period is from 3:00 p.m. to 6:00 p.m. (11%), presumably for evening classes. These results are displayed in Figure 1-5.

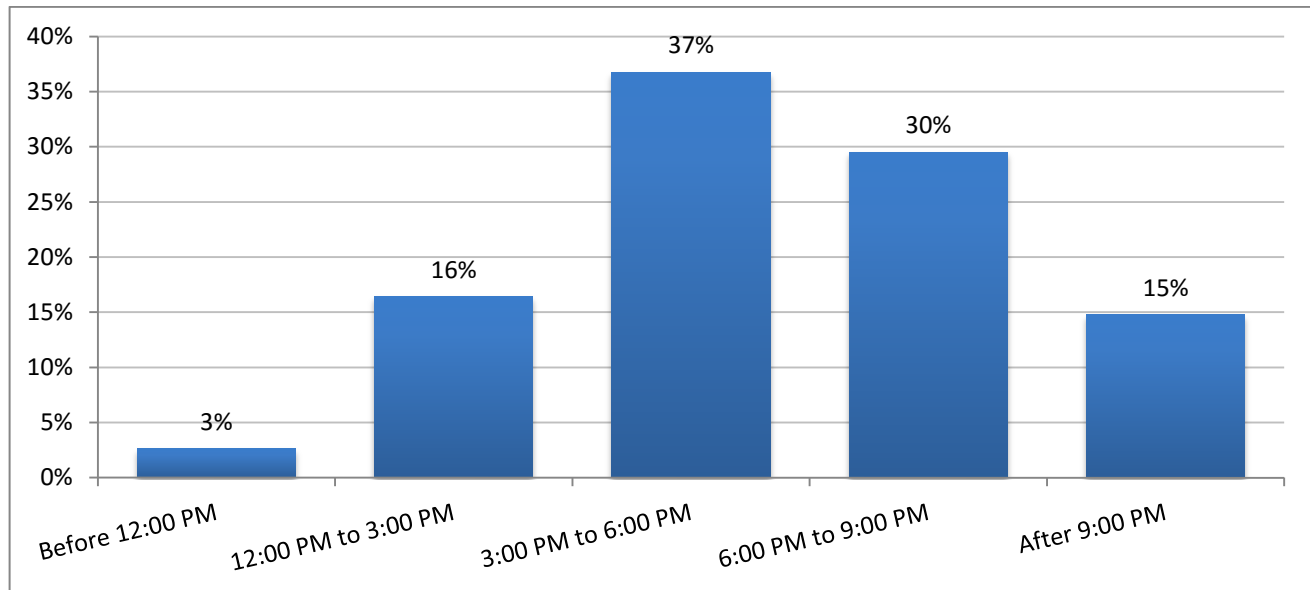
**Figure 1-5: Typical Arrival Times for Students, Faculty and Staff**





Departure times are a little more dispersed. The majority of respondents, 37 percent, typically leave campus between 3:00 p.m. and 6:00 p.m.; however, a large number of respondents also leave between 6:00 p.m. and 9:00 p.m. These responses are displayed in Figure 1-6.

**Figure 1-6: Typical Departure Times for Students, Faculty, and Staff**



## Transit Priorities

Respondents were asked what the highest priority should be for a public transit service to and from the Middletown Campus. This question allowed respondents to choose their top three priorities; therefore the priorities listed on the following page are shown by the number of responses and the total percent of respondents.

### Top Five Priorities for a New Transit Service:

1. High frequency service (hourly or better) – 160 responses or 53% of respondents
2. Service to and from Winchester – 134 responses or 44% of respondents
3. Morning service before 8:00 a.m. – 115 responses or 38% of respondents
4. Evening service past 5:00 p.m. – 112 responses or 37% of respondents
5. Wi-Fi onboard buses – 73 responses or 24% of respondents

## Fares

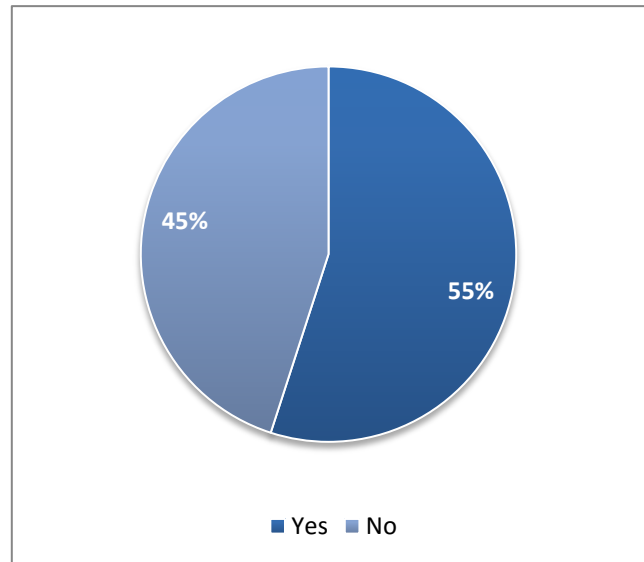
When asked if the potential transit service should have a fare, respondents were fairly divided with 55 percent in favor and 45 percent opposing a fare. This is shown in Figure 1-7.

### Top Five Suggested Fares:

1. \$2.00 per trip – 24%
2. \$1.00 per trip – 23%
3. \$3.00 per trip – 16%
4. More than \$3.00 per trip – 10%
5. Week, month, or semester pass – 8%

Those who did not favor a fare suggested that the service should be free and waivers should be used for low-income students.

**Figure 1-7: Should the Service Have a Fare?**



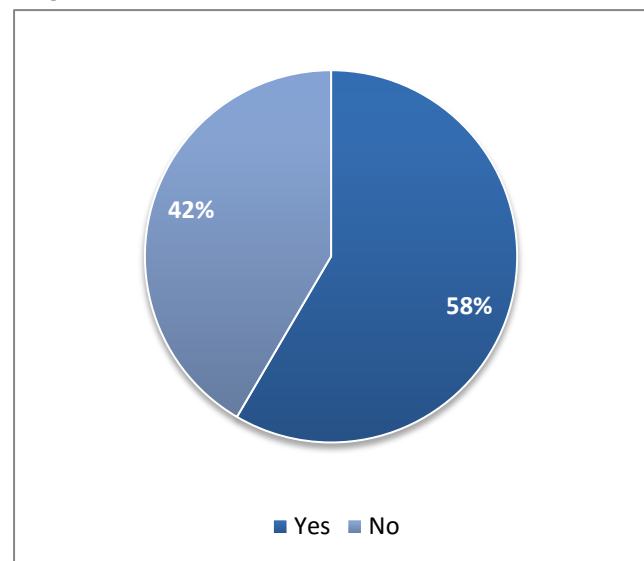
## Fees

The survey also asked if student fees should be increased to help pay for a transit program. Respondents were divided with 58 percent in favor and 42 percent opposing a fee increase. These data is displayed in Figure 1-8.

### Semester Fee Increase Breakdown:

1. \$5.00 or less – 34%
2. \$6.00 to \$10.00 – 23%
3. \$11.00 to \$15.00 – 16%
4. \$21.00 to \$25.00 – 10%
5. More than \$25.00 – 8%
6. \$16.00 to \$20.00 – 8%

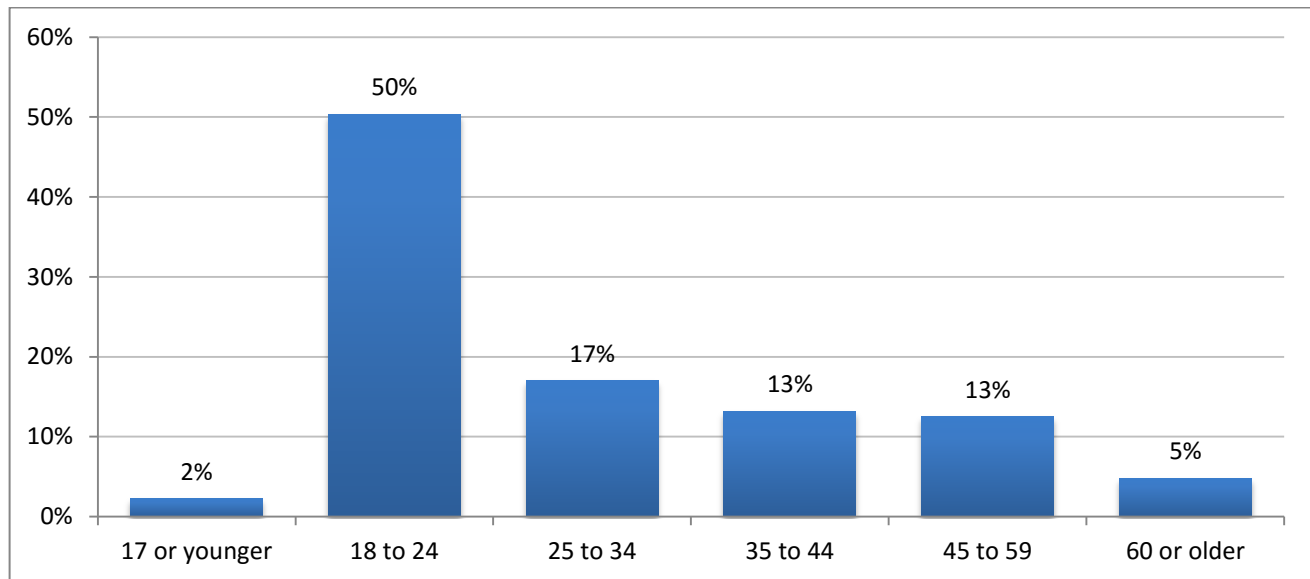
**Figure 1-8: Should Student Fees be Increased?**



## Age of Survey Respondents

Approximately 50 percent of respondents were between the ages of 18 and 24 and seventeen percent were between the ages of 25 and 34. These results are displayed in Figure 1-9.

**Figure 1-9: Survey Respondent's Age Range**



## General Comments

The comments portion of the survey generated mostly supportive responses. Most commenters mentioned fuel savings and reduced vehicle maintenance costs for students, helping those with no other means of transportation to attend LFCC, and alleviating parking issues on campus. Interestingly enough, many respondents who indicated that they would not use such a service were very supportive of creating one for those who would depend upon it. Generally, the only complaints were from students who were not interested in the service and do not want to pay higher student fees to support other's use.

## COMMUNITY SURVEY RESULTS

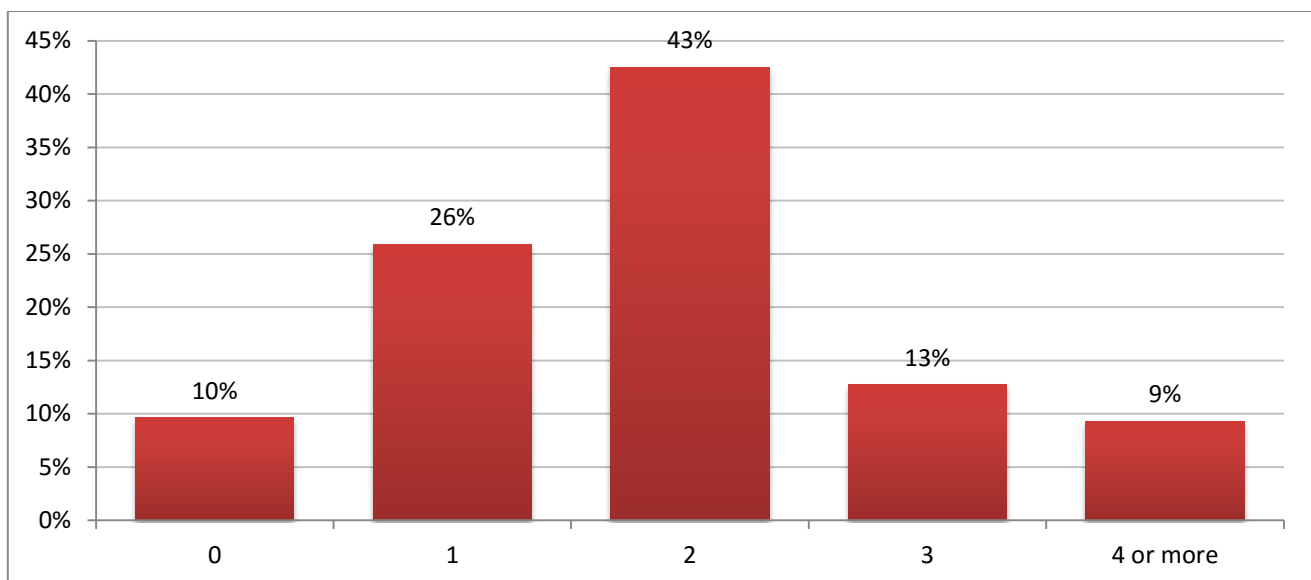
The community survey was open to all members of the general public. Similar to the student and faculty survey, the community survey was also provided in English and Spanish and made available online, via Survey Monkey, and through paper copies distributed around the community. Survey responses were received from November 5<sup>th</sup> to December 15<sup>th</sup>, 2015. A total of 337 surveys were received; including 210 in English and 127 in Spanish. This section provides some highlights from the survey; the survey instrument and a detailed analysis of each question can be found in Appendix B.

## Survey Respondents

Of the 337 respondents, 83 percent reported a connection with LFCC. The majority consisted of students enrolled in the LFCC Adult Education Program (52% of respondents) while 19 percent are prospective students, and a combined total of 16 percent are either an LFCC student, faculty, or staff member.

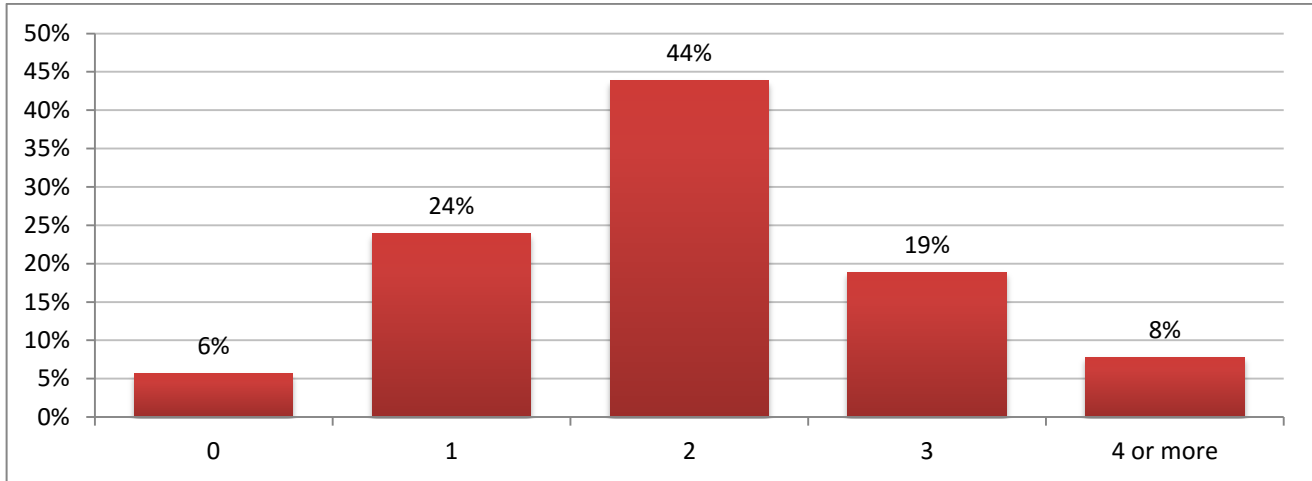
The average respondent lives in a fairly large household with an average of 4.3 residents. An average household consists of one child under the age of 15, two individuals between the ages of 19 and 44, and one individual aged 45 or older. Of these households, just below 10 percent do not have a resident with a valid driver's license. The majority of households have two licensed drivers (43%). The breakdown of driver's licenses per household is shown in Figure 1-10.

**Figure: 1-10: Number of Individuals in a Household with a Valid Driver's License**



## Vehicle Availability

As shown in Figure 1-11, the number of available vehicles per household seems to closely correlate with the number of driver's licenses. The majority of households, 43 percent, have two vehicles where 24 percent only have one. Six percent of households do not have a vehicle available.

**Figure 1-11: Number of Working Vehicles per Household**

## Residency

The community survey respondents primarily live in the Winchester – Frederick County area. The most commonly reported zip code locations for survey respondents are shown below.

### Top Five Respondent Zip Codes:

1. 22601 – Winchester, VA
2. 22602 – Frederick County, VA
3. 22664 – Woodstock, VA
4. 22655 – Frederick County- Stephens City area, VA
5. 22603 – Frederick County, VA

## Modes of Transportation

Fifty-eight percent of respondents reported that they primarily drive alone for general life trips, such as work and school. Seventeen percent ride with a friend or family member, and approximately nine percent carpool.

## Opinion Regarding Potential LFCC Transit Service

Respondents were supportive of a potential service linking LFCC to surrounding communities with 92 percent in favor and eight percent against. This result is shown in Figure 1-12. The comments received for this question were overwhelmingly supportive, noting that many individuals do not have access to a vehicle, lack a driver's license, or have to share one vehicle amongst family or friends. Those who do not favor the service doubt its usefulness and do not believe it would be utilized.

To put the amount of support for a new transit service in perspective it was mentioned above that 92 percent of respondents support the service but only 59 percent indicated that they would actually use the service. This is shown in Figure 1-13. Of those who would use the service, 33 percent indicated that they would use it daily, and 28 percent would use the service between one and four times per week, and 13 percent would use the service when needed.

## Transit Priorities

Respondents were then asked what the highest priority should be for a public transit service to and from the Middletown Campus. This question allowed respondents to choose their top three priorities; therefore the priorities listed below are shown by number of responses and the total percent of respondents.

### Top Five Priorities for a New Transit Service:

1. Service to and from Winchester – 207 responses or 64% of respondents
2. High frequency service (hourly or better) – 141 responses or 44% of respondents
3. Morning service before 8:00 a.m. – 123 responses or 38% of respondents
4. Evening service past 5:00 p.m. – 121 responses or 38% of respondents
5. Service geared towards employment – 73 responses or 24% of respondents

Figure 1-12: Support a New Transit Service

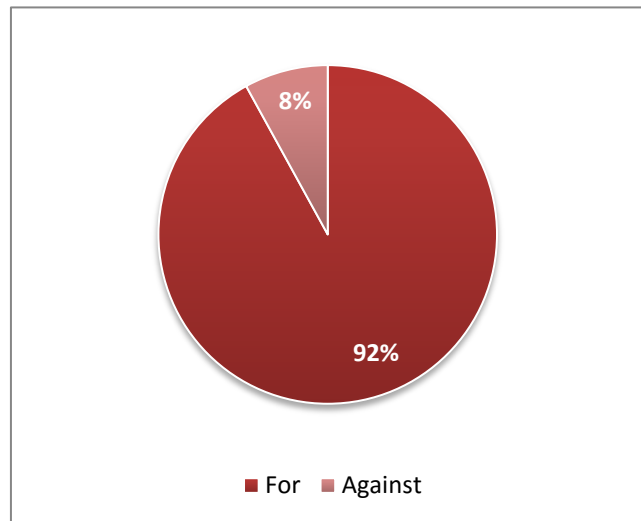
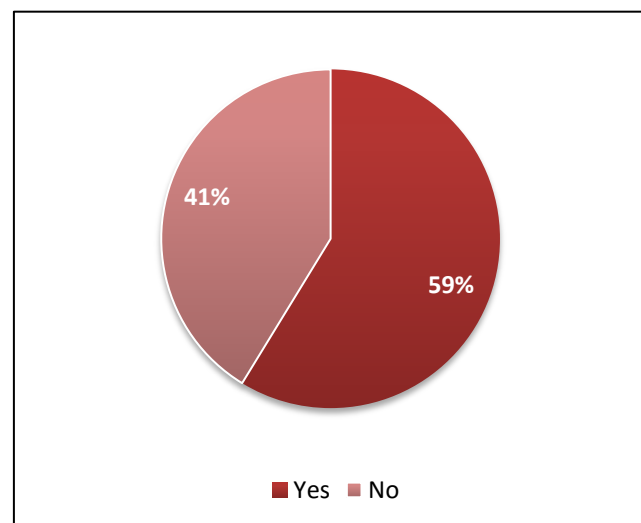


Figure 1-13: Would Use the New Transit Service

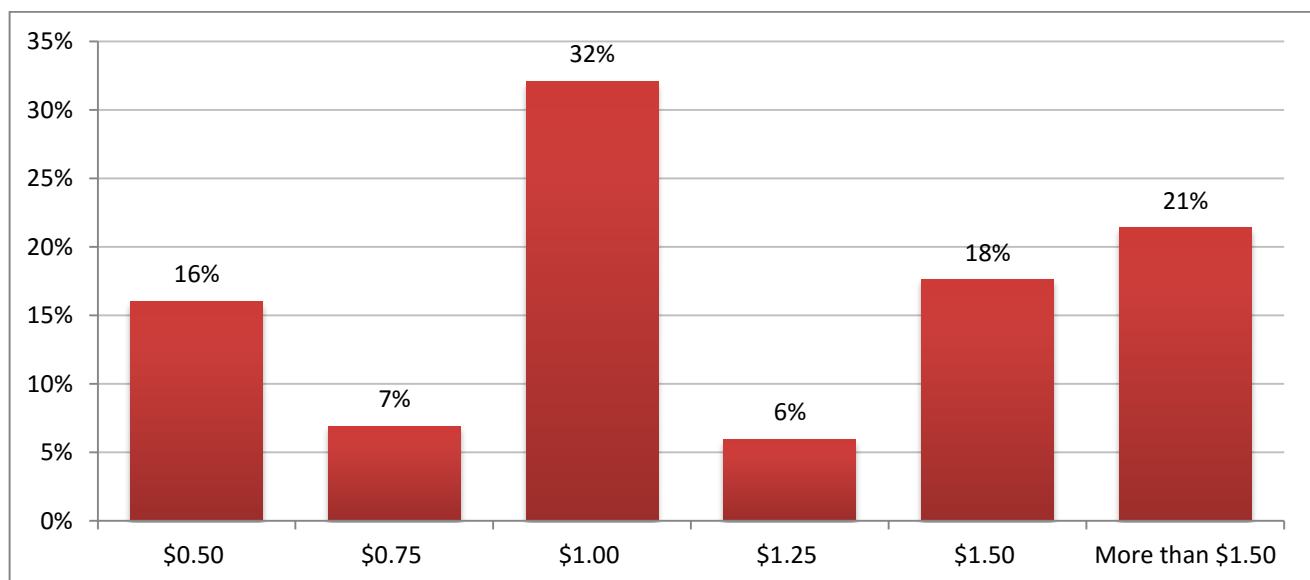


Suggestions were also sought for potential pickup and drop off locations in the region. Most suggested locations in Winchester (68%), eight percent suggested Woodstock, and Front Royal, Stephens City, and Strasburg garnered five percent a piece. The top suggested location in Winchester was downtown along Loudoun Street with 28 percent of the total responses.

## Fares

When asked what they would be willing to pay for a one-way fare, respondents mostly favored a \$1.00 fare. However, a combined total of 45 percent would be willing to pay a fare above \$1.00. These results are displayed in Figure 1-14.

**Figure 1-14: What Fare Would You Be Willing to Pay for a One-Way Trip?**



The survey also asked which days the service should operate. Eighty-five percent thought that the service should run Monday through Friday with 16 percent supporting Saturday service and six percent supporting Sunday service.

## General Comments

The comment portion of the survey generated overwhelmingly supportive comments noting a need for improved regional connectivity, the high costs associated with transportation, and how a lack of transportation is holding those back who are attempting to better themselves through education. Other comments included providing a mobile smart phone app for tracking the buses, offering service to specific destinations, and the importance of direct and convenient routing.

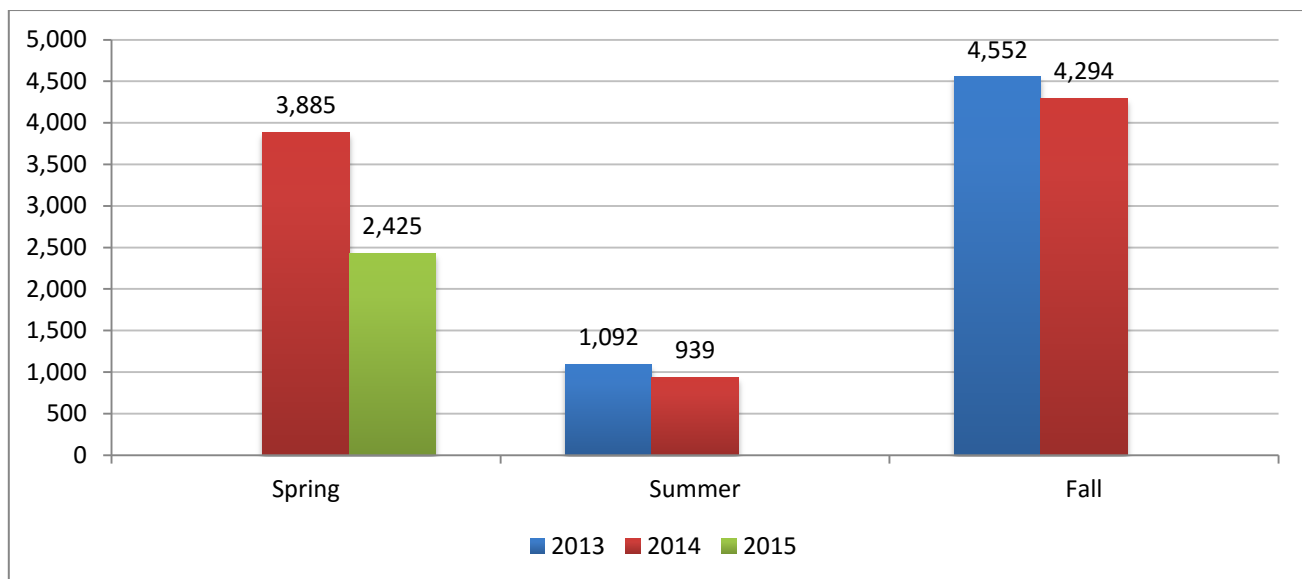
## ANALYSIS OF ENROLLMENT DATA

This section analyzes enrollment data provided by LFCC for the Middletown Campus and online classes. Enrollment data was provided to the study team by LFCC for summer 2013, fall 2013, spring 2014, summer 2014, fall 2014, and spring 2015. Total enrollment at the Middletown Campus is discussed, along with online, daily and hourly class trends, and a geographic distribution of students based on their postal zip code.

### In-Person and Online Enrollment

Figure 1-15 shows the total enrollment at LFCC's Middletown campus from summer 2013 to spring 2015. LFCC's fall semester experiences the largest enrollment as compared to the spring and summer semesters, with spring enrollment declining by about 1,000 students on average. Summer enrollment is approximately 32 percent of average spring enrollment and 23 percent of average fall enrollment. Depicted in Figure 1-15, in-person enrollment at LFCC's Middletown Campus has declined from 2013 to 2015. The most drastic comparison can be seen from the 2014 to the 2015 spring semesters where there was a 38 percent decline in the number of students enrolled. From the 2013 to the 2014 summer semester there was a 14 percent decline and from the 2013 to 2014 fall semester there was a six percent decline.

**Figure 1-15: LFCC Middletown Campus Enrollment**

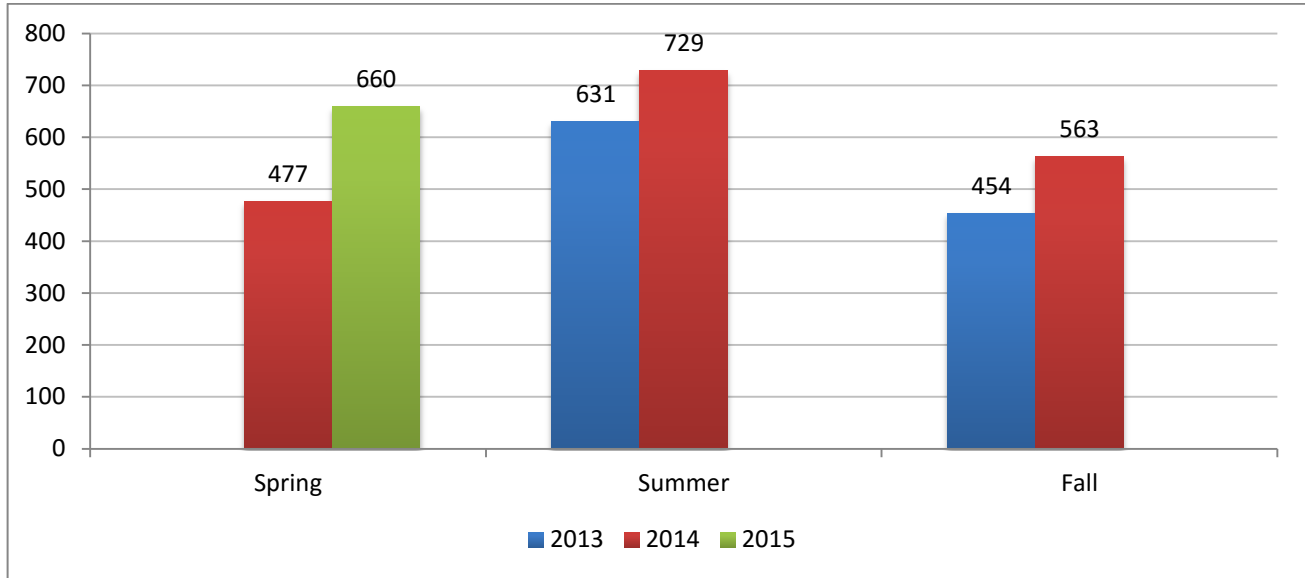


LFCC's online enrollment is increasing. Coincidentally, from the 2014 to the 2015 spring semester there was a 38 percent increase in online enrollment. However, this 38 percent increase totaled only 183 students whereas the 38 percent decline in in-person enrollment totaled 1,460 students. Between the 2013 and 2014 fall semesters there was a 24 percent



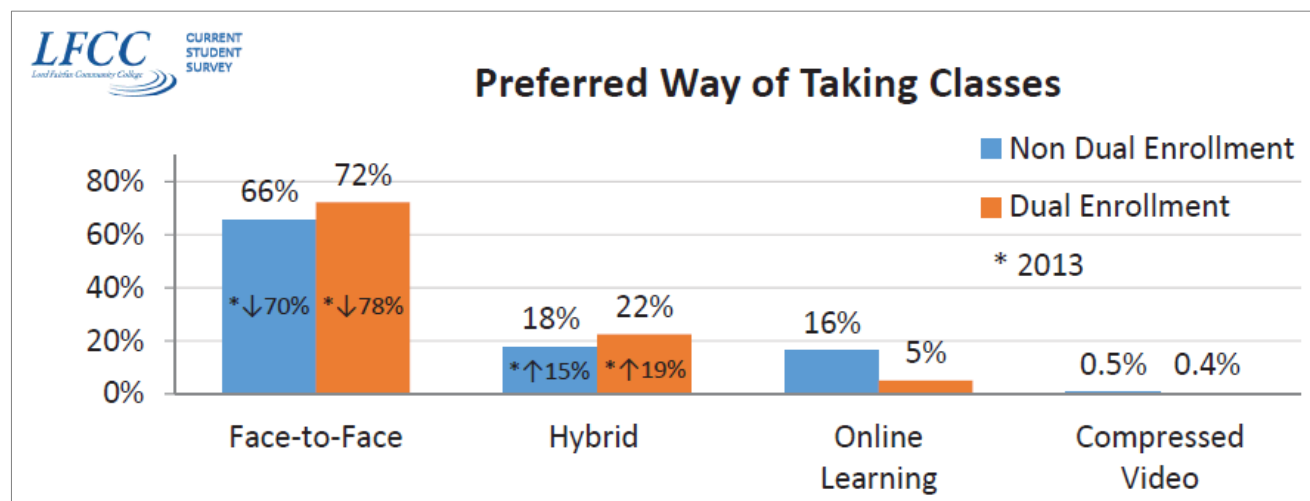
increase in online enrollment and between the 2013 and 2014 summer semesters there was a 16 percent increase. These data are presented in Figure 1-16.

**Figure 1-16: LFCC Online Enrollment**



As seen in Figure 1-17, taken from a 2014 LFCC student survey, students are beginning to favor a hybrid approach to class; where some classes are taken in-person and some are taken online. As the figure shows, face-to-face classes are dropping in popularity from 70 percent in 2013 to 66 percent in 2014. The shift is slightly greater for dual-enrollment students where 78 percent favored face-to-face classes in 2013 and 72 percent in 2014.

**Figure 1-17: Preferred Way of Taking Classes**



Source: LFCC Student Survey, 2014

## Daily and Hourly Enrollment Trends

As seen in Figure 1-18, LFCC students typically take classes Monday through Thursday. A very small percentage attends classes on Friday, mainly during the fall and spring semesters. In addition, a handful of students attend Saturday classes with an even smaller group attending a Sunday class.

**Figure 1-18: LFCC Middletown Campus Enrollment by Day of the Week**

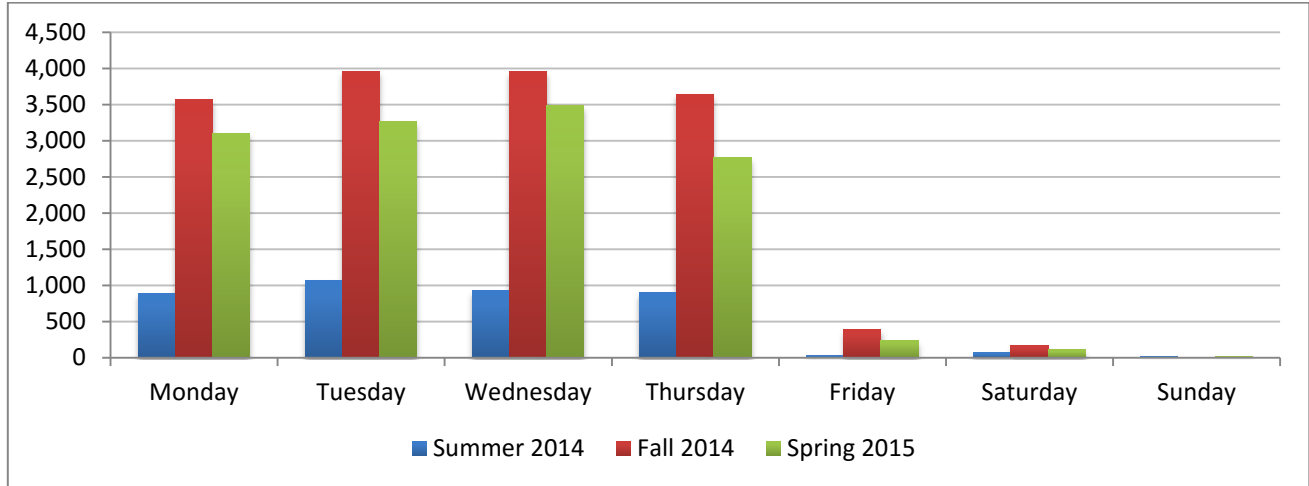
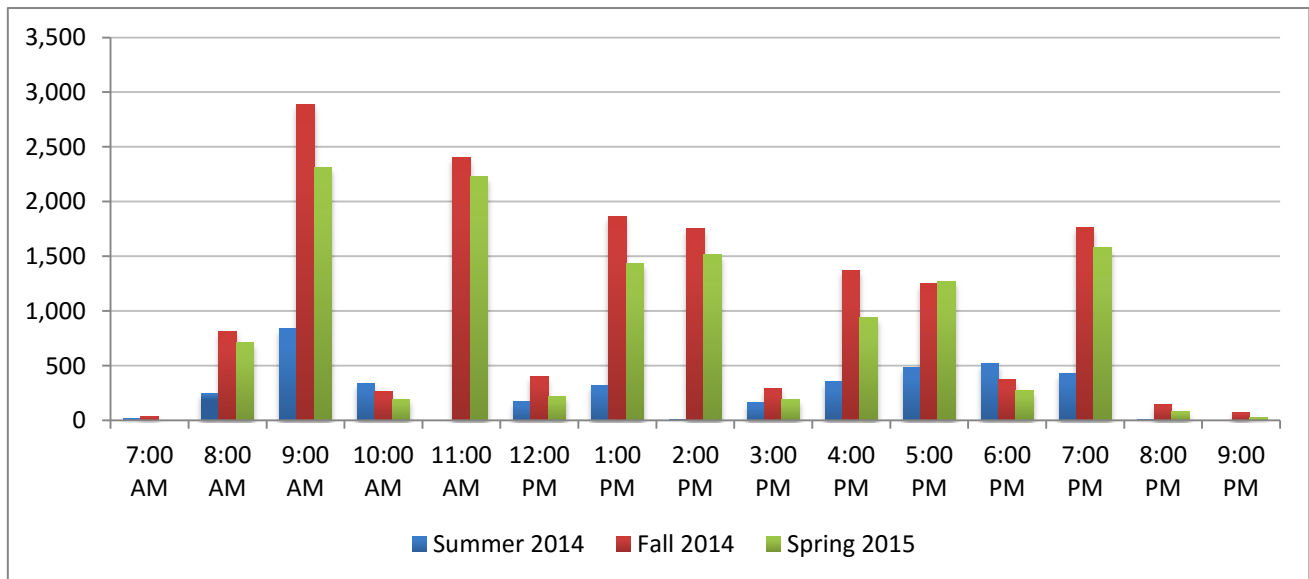


Figure 1-19 displays the total number of students enrolled in classes by hour. The graphic has grouped all classes that begin within a one hour range together; for example a class starting at 11:00 a.m. is combined with a class starting at 11:30 a.m.

**Figure 1-19: LFCC Middletown Campus Enrollment by Hour of the Day**



While varying by semester, generally the most popular times for classes are during the 9:00 a.m., 11:00 a.m. and 7:00 p.m. hours. As seen in Table 1-1, popular class times in the fall and spring semesters are very similar; with summer class times mainly in the evening hours. However, the 9:00 a.m. hour was the most prevalent class time across all semesters.

**Table 1-1: Top Five Enrollment Hours by Semester**

Ranking	Summer 2014	Fall 2014	Spring 2015
1	9:00 a.m. (841)	9:00 a.m. (2,887)	9:00 a.m. (2,314)
2	6:00 p.m. (521)	11:00 a.m. (2,404)	11:00 a.m. (2,232)
3	5:00 p.m. (487)	1:00 p.m. (1,869)	7:00 p.m. (1,583)
4	7:00 p.m. (431)	7:00 p.m. (1,762)	2:00 p.m. (1,513)
5	4:00 p.m. (352)	2:00 p.m. (1,758)	1:00 p.m. (1,436)

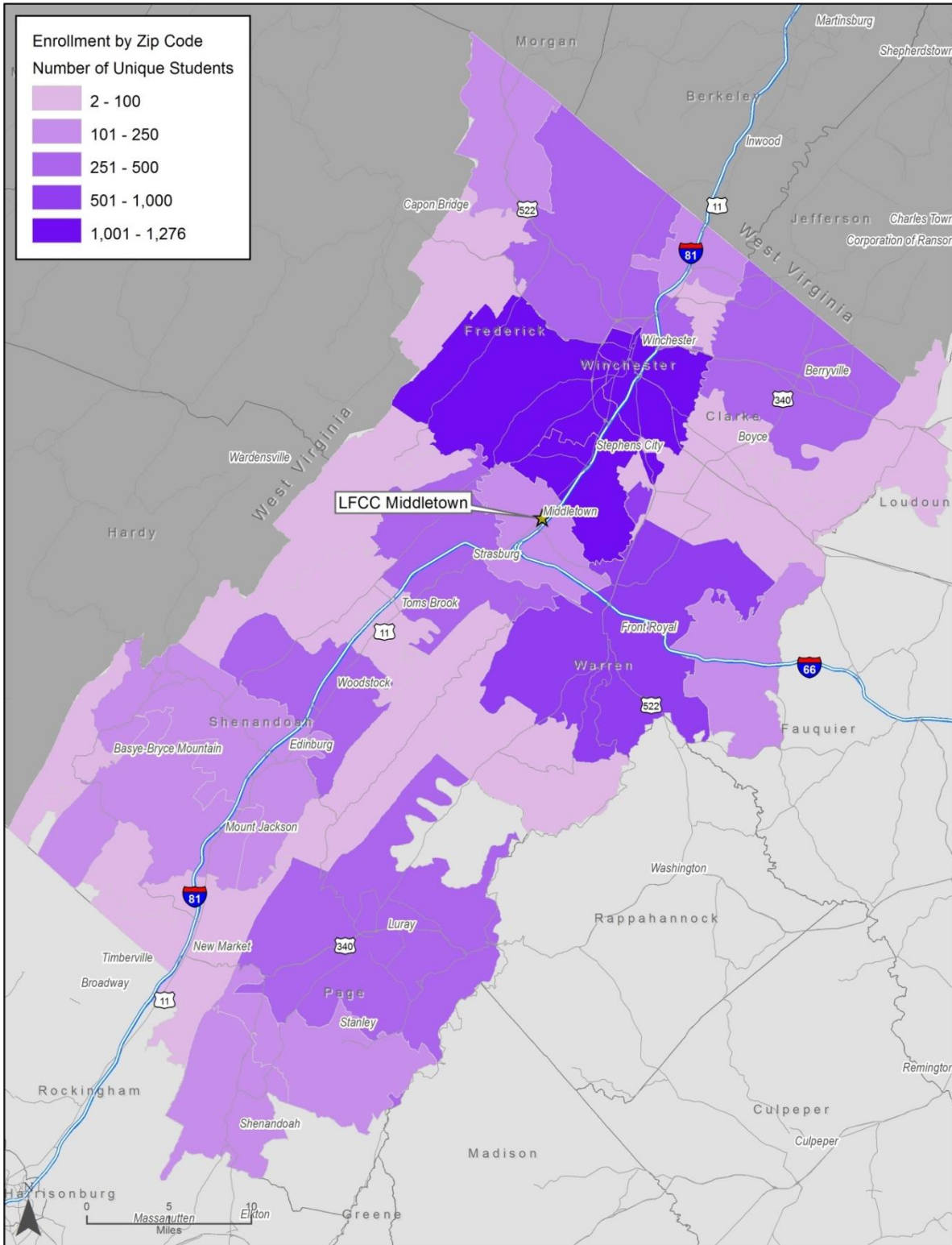
## Geographic Distribution of Enrollment

LFCC's enrollment largely originates from the City of Winchester, Stephens City and the western and southern areas of Frederick County. As seen in Figure 1-20, the large agglomeration of "dark purple" zip codes located in Winchester and southern Frederick County accounts for over 40 percent of the total enrollment at LFCC. Other notable areas with large enrollment numbers include Front Royal, Berryville, Strasburg, Woodstock, and Luray. The top five postal zip codes from the total enrollment data provided (Summer 2013 through Spring 2015) are shown below.

### Top Five Student Zip Codes:

1. 22602 (Frederick County, VA) – 1,276 students or 15%
2. 22655 (Frederick County/Stephens City, VA) – 1,123 students or 13%
3. 22601 (Winchester, VA) – 1,037 students or 12%
4. 22630 (Front Royal, VA) – 983 students or 12%
5. 22603 (Frederick County, VA) – 473 students or 6%

Figure 1-20: LFCC Middletown Enrollment by Zip Code – Summer 2013- Spring 2015



Source: Lord Fairfax Community College

## ANALYSIS OF DEMOGRAPHIC DATA

This section analyzes population and demographic data to assess the need for transit in the Northern Shenandoah Valley. Data ranging from historical populations to autoless households are documented and analyzed. Data sources for this information include the 2010 Census and the Census Bureau’s American Community Survey.

### Population Profile

Table 1-2 shows the census population counts from 1990 to 2010. From the 1990 to the 2010 Census, each of the region’s jurisdictions experienced population growth in the double digits. Frederick County led the region with a population growth rate of 71 percent; adding over 30,000 individuals to the County’s population over the 20-year period. Other notable growth rates include Warren County, with a growth rate of 44 percent, and Shenandoah County, with a growth rate of 33 percent.

**Table 1-2: Historical Populations**

County	1990 Population	2000 Population	2010 Population	1990-2000 % Change	2000-2010 % Change	1990-2010 % Change
Clarke	12,101	12,652	14,034	4.6%	10.9%	16.0%
Frederick	45,723	59,209	78,305	29.5%	32.3%	71.3%
Page	21,690	23,177	24,042	6.9%	3.7%	10.8%
Shenandoah	31,636	35,075	41,993	10.9%	19.7%	32.7%
Warren	26,142	31,584	37,575	20.8%	19.0%	43.7%
Winchester city	21,947	23,585	26,203	7.5%	11.1%	19.4%

Source: United States Census Bureau

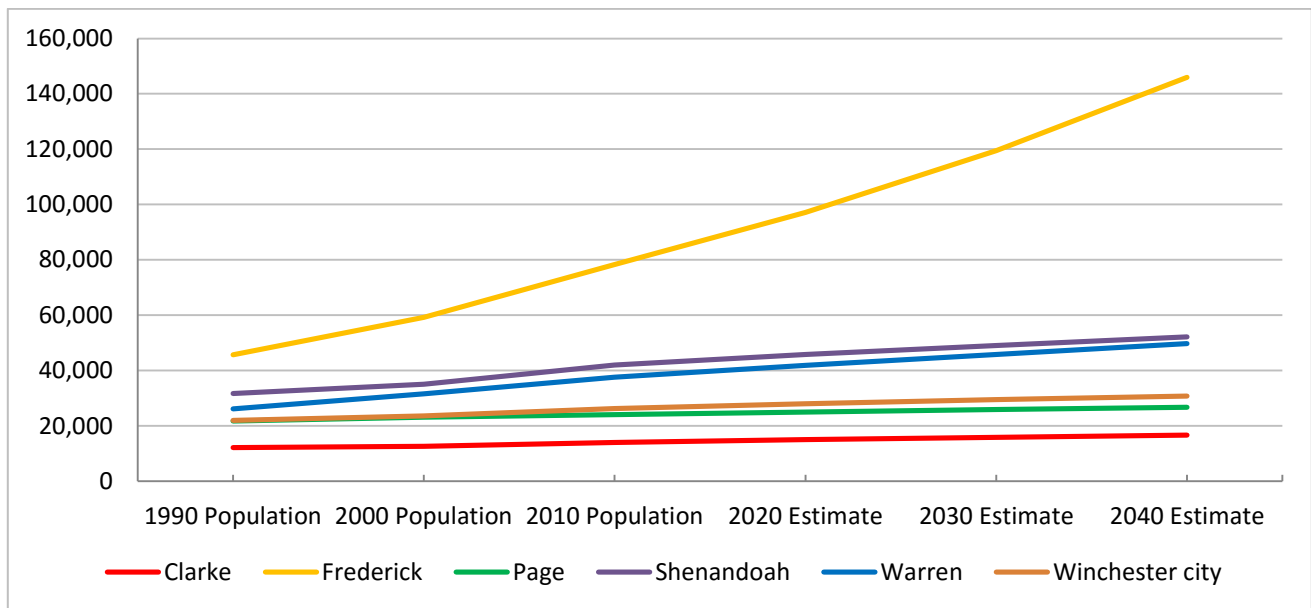
Table 1-3 shows the population projections from the University of Virginia’s Weldon Cooper Center for Public Service. These data suggest that the region’s population growth will continue into the upcoming decades. Frederick County is predicted to see the majority of the population growth in the region with an estimated 86 percent growth rate from 2010 to 2040.

The historical and project population trends are displayed in Figure 1-21. As depicted in the figure, all jurisdictions are experiencing population growth; however, Frederick County’s population is expected to increase at a much faster rate than the other jurisdictions, with a projected annual growth rate of just below three percent.

**Table 1-3: Future Population Projections**

County	2010 Population	2020 Population Estimate	2030 Population Estimate	2040 Population Estimate	2010-2040 Percent Change
Clarke	14,034	15,025	15,871	16,631	18.5%
Frederick	78,305	97,192	119,419	145,938	86.4%
Page	24,042	24,995	25,895	26,716	11.1%
Shenandoah	41,993	45,829	49,045	52,104	24.1%
Warren	37,575	41,856	45,818	49,709	32.3%
Winchester city	26,203	27,967	29,449	30,781	17.5%

Source: United States Census Bureau and Weldon Cooper Center for Public Service

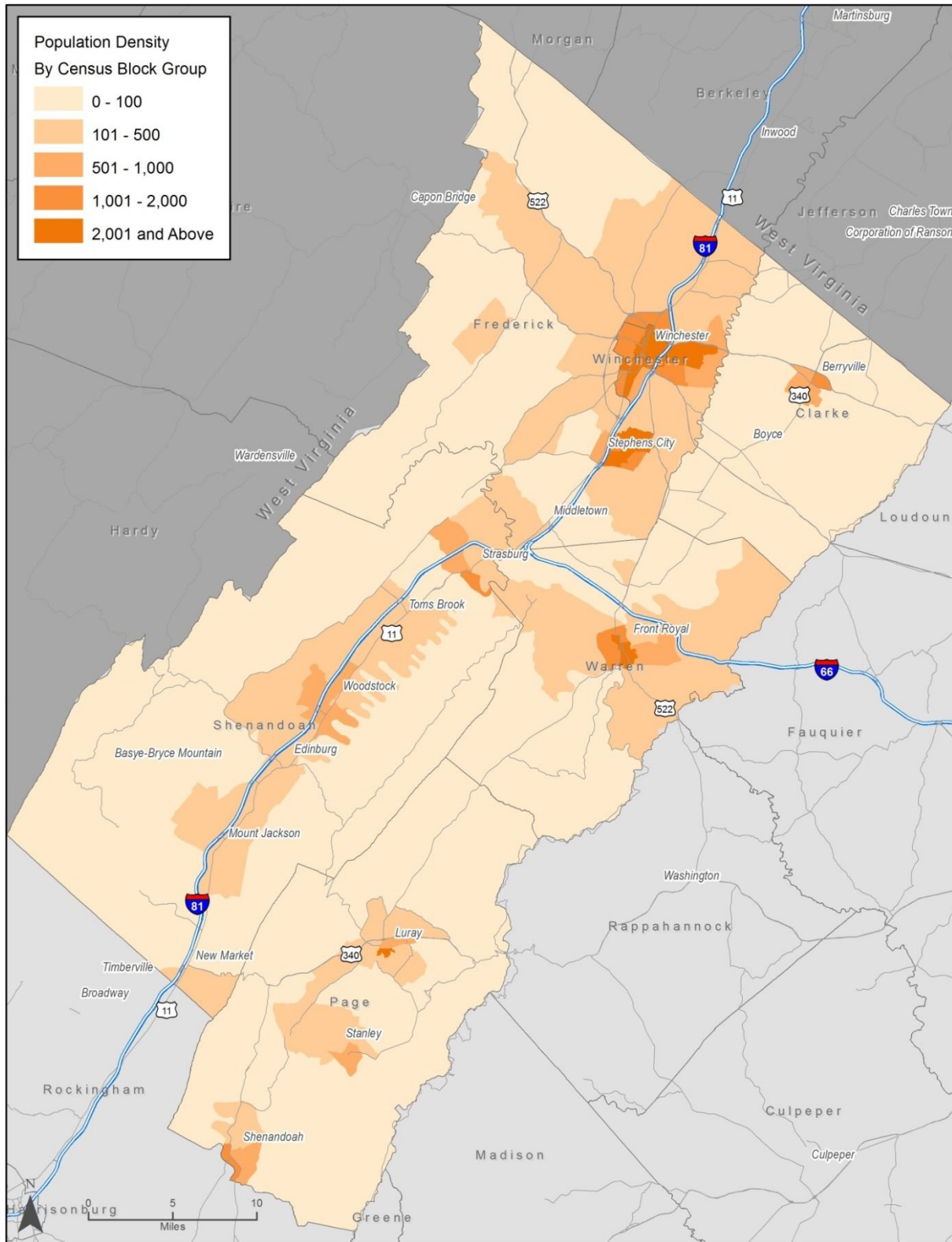
**Figure 1-21: Historical and Projected Population Trends**

Finally, population density is often a valuable indicator of where public transit services may be feasible. While exceptions will always exist, as a general rule of thumb, areas with a density of 2,000 or more persons per square mile will typically be able to support daily fixed route transit service. Areas with densities below 2,000, but above 1,000 persons are generally suitable for deviated routes while areas below 1,000 persons per square mile are typically suited for demand response service.

As Figure 1-22 illustrates, areas with population densities above 2,000 persons per square mile are primarily located in the City of Winchester and surrounding areas of Frederick County; also including Stephens City. Outside of the Frederick County area, locations with high population densities include Front Royal in Warren County and Luray in Page County.



Figure 1-22: Population Density in the Study Area



Source: U.S. Census, 2010

## Target Population Groups

In addition to population data, this analysis also examined a select number of population groups that may be potential riders for a LFCC Middletown campus shuttle. These groups include young adults (aged 18 to 24); youth aged population (aged 10 to 17), autoless households and individuals living below the federal poverty level.

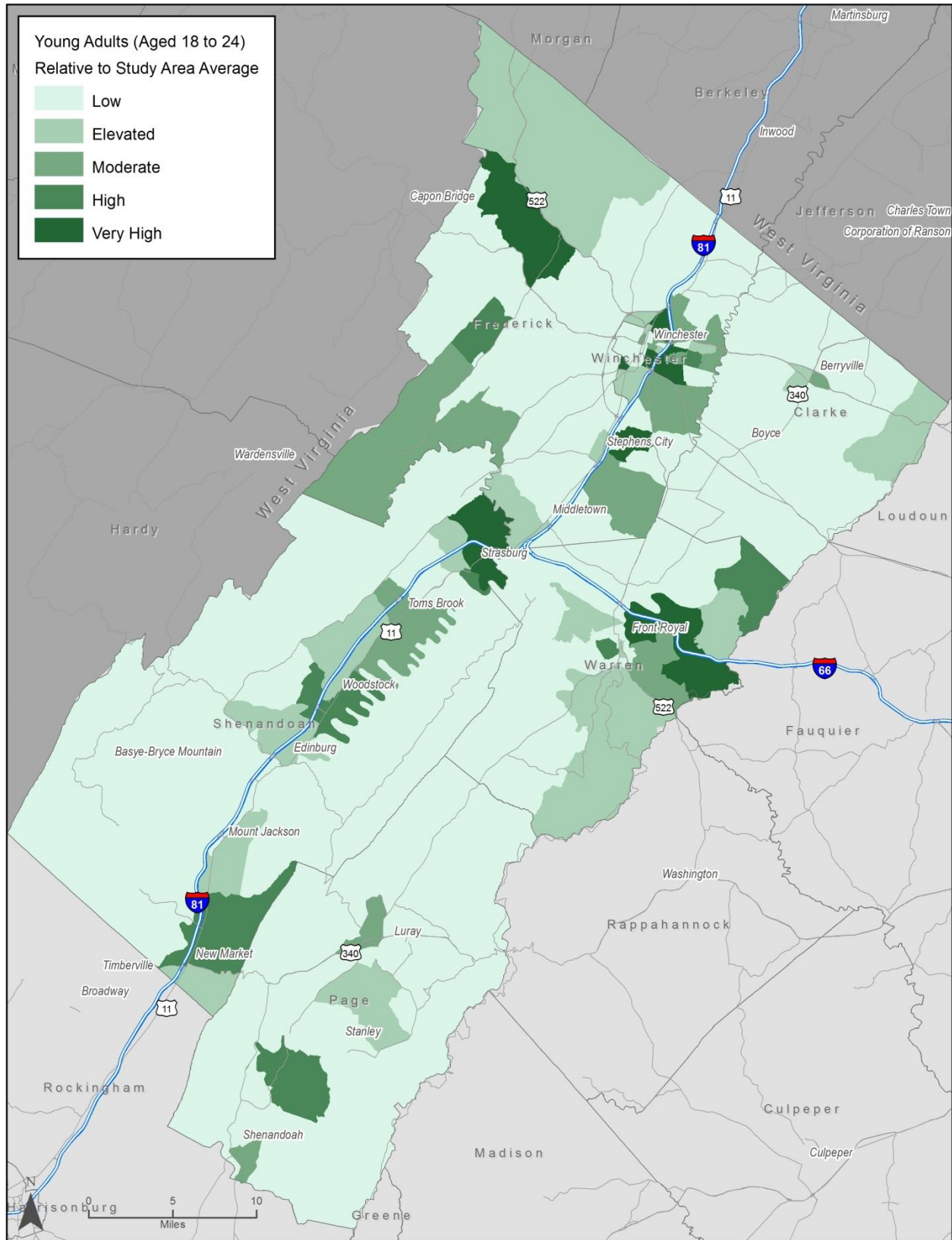
To provide an objective measure when mapping the above mentioned population groups, a relative measurement was used based on the study area's average. For the purpose of this study, the study area is defined as the Clarke, Frederick, Page, Shenandoah, and Warren Counties as well as the City of Winchester. A threshold of low, elevated, moderate, high, and very high was used for each demographic group. The low threshold consists of those block groups with below average concentrations of a specific demographic group; while the very high threshold consists of those 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 and are divided into thirds.

### **Young Adults**

Young adults, aged between 18 and 24 years old, make up the majority of students at LFCC. Just over 50 percent of the respondents to the student and faculty survey fall within this population group. Individuals between the ages of 18 and 24 may be splitting time between class, jobs, and social activities where public transportation can provide a vital transportation link. As shown in Figure 1-23, heavy concentrations of young adults reside in Winchester, Stephens City, Front Royal, Strasburg, Woodstock, New Market, and unincorporated areas of northern Frederick County and southern Page County. Approximately 20 percent of the study area's population is between the ages of 18 and 24.



Figure 1-23: Young Adults (Aged 18 to 24)



### ***Autoless Households***

Lacking access to an automobile was one of the major transportation barriers voiced by survey respondents. Analyzing this segment of the population is crucial because many of the region's communities are too far from LFCC for non-motorized travel. Figure 1-24 provides a visual representation of the region's autoless households. As seen on the map, high and very high concentrations of autoless households exist in Winchester, northern Frederick County, Front Royal, Strasburg, Toms Brook, Woodstock, New Market, and northern Page County. Just over four percent of the area's households do not have access to a vehicle.

### ***One Vehicle Households***

As mentioned above, lacking access to transportation options is a challenge for some LFCC students. For students who live in single vehicle households where employment is the top priority for the family, the employment trip typically outweighs the need for the student to take the car for the day to drive to campus. As displayed in Figure 1-25, concentrations of one vehicle households are found in and around Winchester, Stephens City, Strasburg, Front Royal, Woodstock, and New Market. Approximately 10 percent of the region's households have access to only one vehicle.

### ***Below Poverty***

Those living at or below the poverty level may face financial hardships that make the ownership and maintenance of a personal vehicle difficult, and thus may be more inclined to depend on public transportation. As seen in Figure 1-26, below poverty populations are scattered across the region. Notable concentrations are located throughout the City of Winchester, Strasburg, Woodstock, Mount Jackson, and large portions of Page County. Just below 11 percent of the study area's population lives at or below the federal poverty level. This is slightly lower than the statewide poverty level of 11.7%.<sup>1</sup>

### ***Transit Dependence Index***

The transit dependence index (TDI) provides an aggregate measure of transit need that is based on Census data including population density, autoless households, senior populations, youth populations, and below poverty populations. Each of the TDI's factors, except senior populations, was analyzed previously in this section. Similar to those demographic groups, the TDI utilizes the overall average of each demographic group and then combines those averages to create the TDI index. Figure 1-27 displays the TDI for the region. As seen in the map, high and very high concentrations of transit need are located in Winchester, Stephens City, Berryville, Front Royal, and the Edinburg/Woodstock area.

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<sup>1</sup> "Virginia Performs," Virginia.gov, 1/11/16.

Figure 1-24: Autoless Households

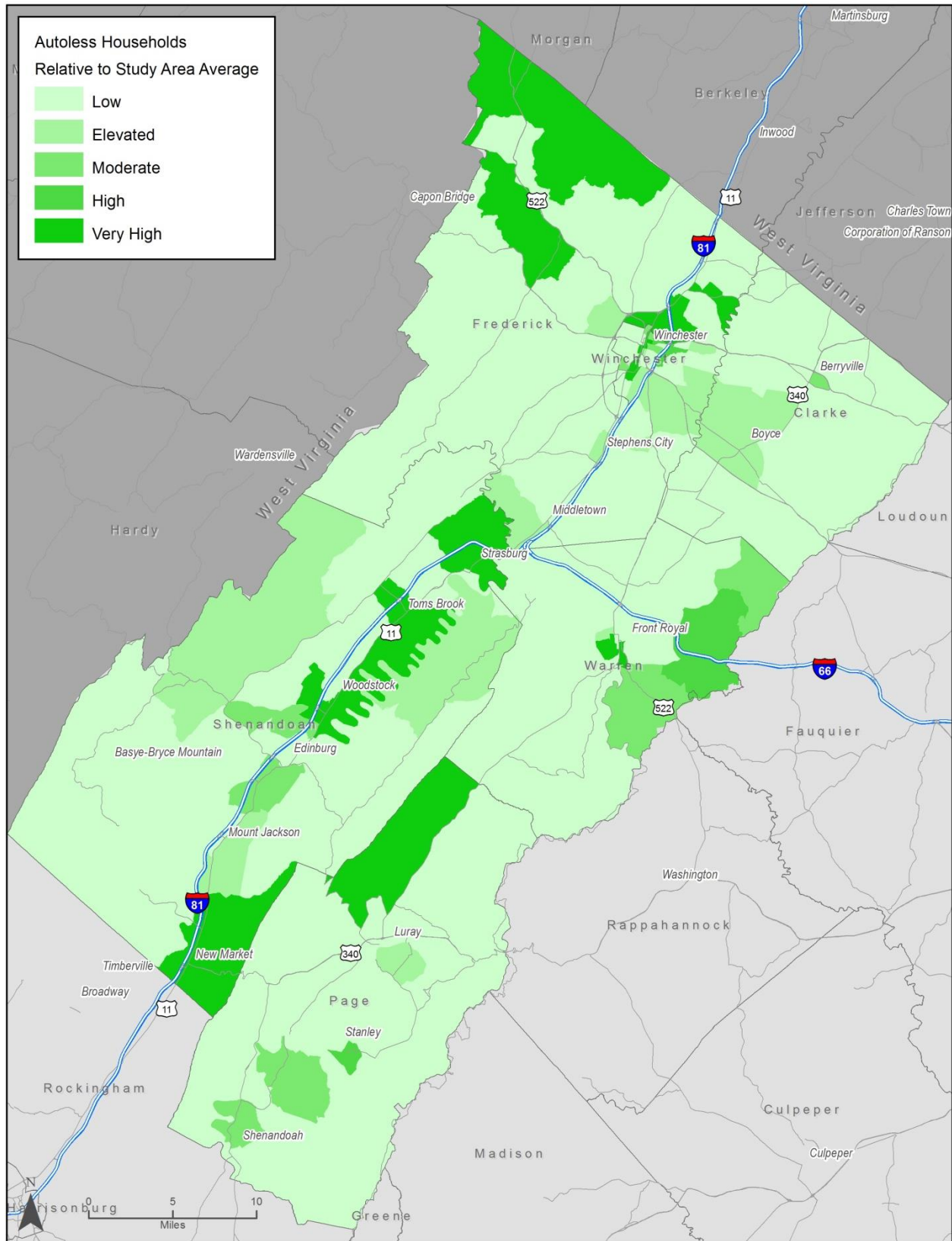




Figure 1-25: One Vehicle Households

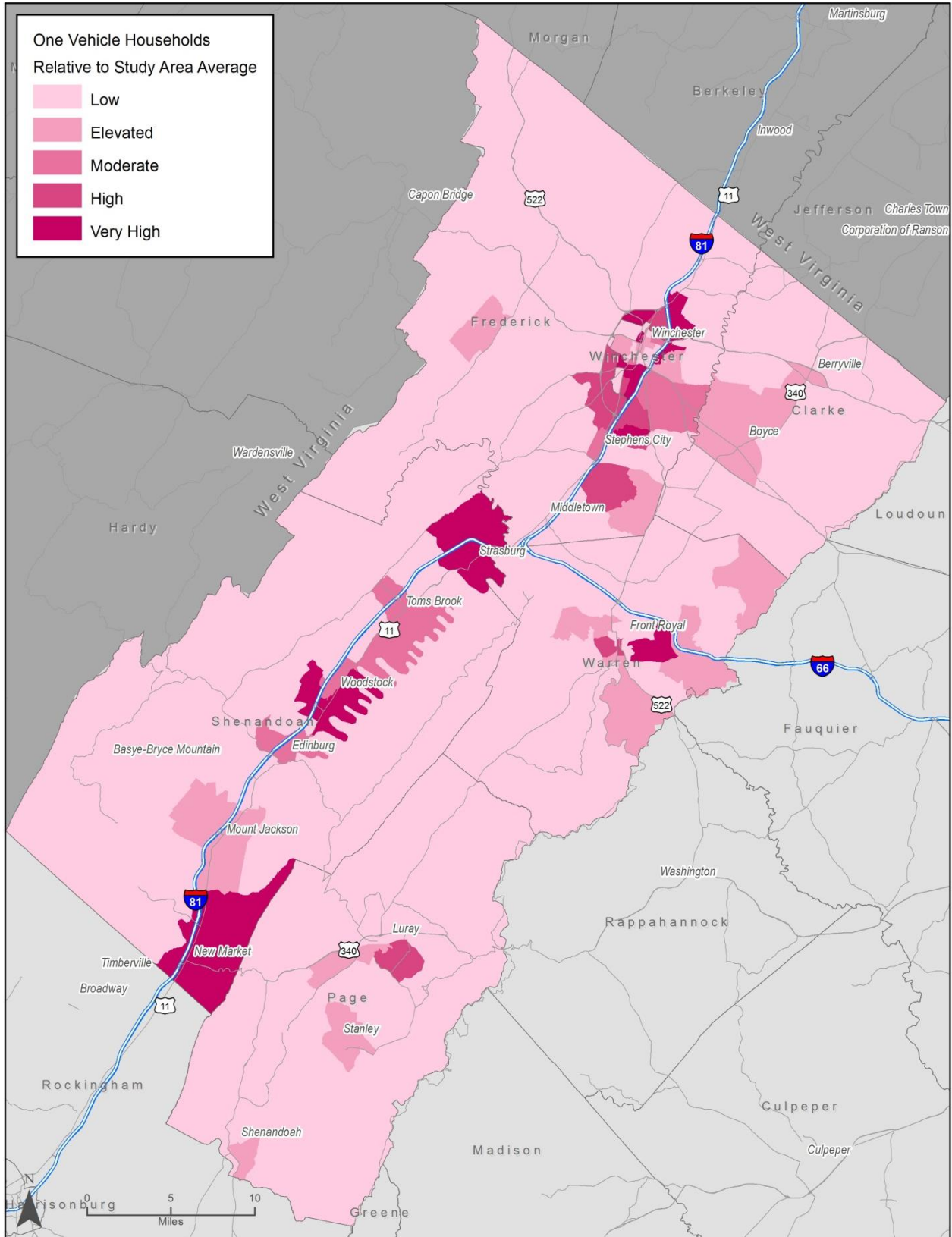


Figure 1-26: Individuals Living Below Poverty

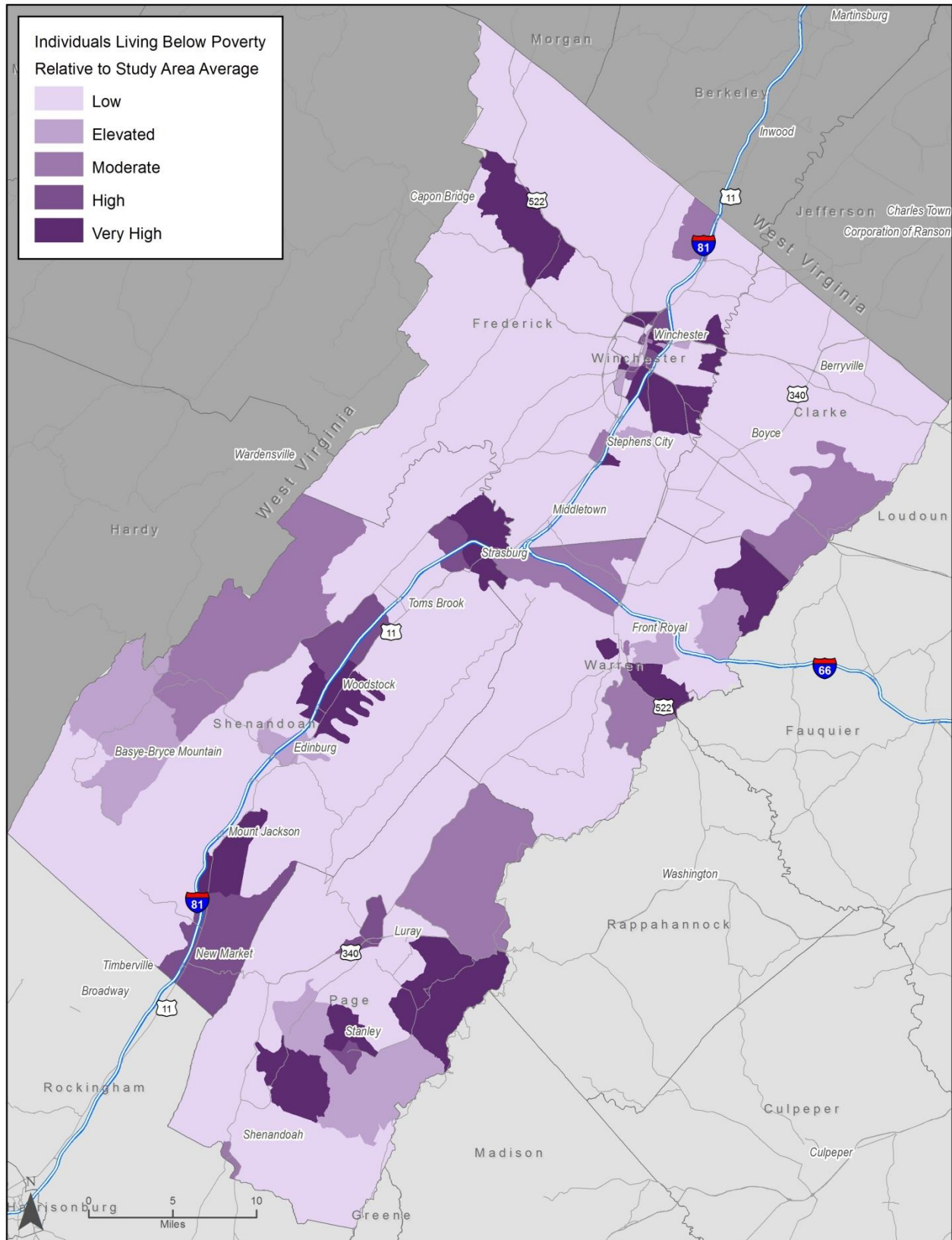
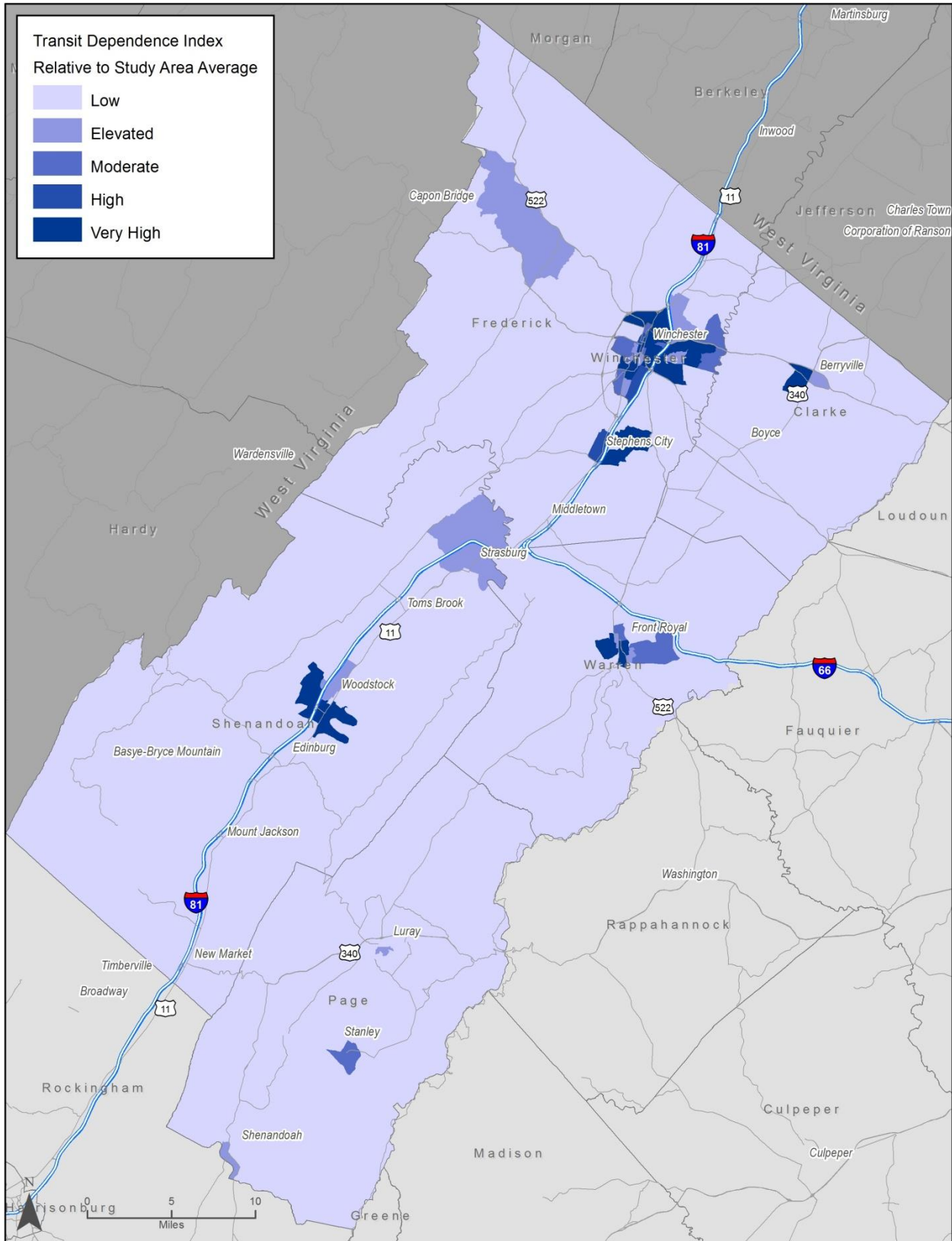


Figure 1-27: Transit Dependence Index



## REVIEW OF PREVIOUS PLANS AND STUDIES

This section reviews recent plans and studies that address the transportation needs pertinent to LFCC students, faculty, and staff. While the majority of the plans reviewed are specific to transportation, some plans also cover broader issues and planning efforts.

### “Achieve 2015,” Lord Fairfax Community College, Strategic Plan, 2010-2015

Beginning in 2009, LFCC conducted a six-year strategic planning process that resulted in “Achieve 2015,” LFCC’s 2010-2015 Strategic Plan. The plan included the following strategic initiatives and desired outcomes:

- **Access** – LFCC will increase enrollment, especially focusing on the number of underserved students.
- **Affordability** – LFCC will reduce costs and increase the amount of financial aid awarded to students.
- **Infrastructure** – LFCC will address space and facilities needs and implement ways to become green.
- **Organizational Development** – LFCC will streamline, improve decision-making, and promote one college.
- **Resources**- LFCC will be transparent, build relationships, and seek grants.
- **Student Success** – LFCC will improve retention and provide more learning opportunities.

In reviewing the specific objectives that were listed for each of these initiatives, helping to facilitate transportation to campus was not listed; however, transportation assistance is compatible with LFCC’s strategic initiatives of access, infrastructure, and student success.

### Lord Fairfax Community College - Middletown Campus Master Plan

The four primary goals of the LFCC Campus Master Plan for the Middletown Campus are summarized below:

- Take advantage of the natural features and organize buildings and circulation patterns to celebrate and engage those features while better utilizing available buildable area.
- Improve the “first impression” of the campus as approached by car by creating a campus front lawn.
- Locate buildings to define legible networks of pathways and open space to establish a memorable sense of place, while defining and connecting distinct campus districts.



- Plan for adequate parking and vehicular circulation including building service areas while prioritizing the pedestrian experience.

While these goals do not specifically address public transportation, they do emphasize the desire to maximize the natural features of the site and provide networks of pathways. The near-term plan includes additional surface parking, while the long-term plan includes additional surface parking, as well as a parking structure.

The extent to which a transit program could reduce the need for additional parking may be a consideration for future updates to the Campus Master Plan. This strategy is compatible with the master plan's focus on retention of natural features and view sheds.

### **Frederick County, Virginia, 2030 Comprehensive Plan**

The policies included in the transportation section of Frederick County's Comprehensive Plan generally focus on roadways; however, a "complete streets" policy is included, as well as a policy that states, "Provide cost effective alternatives to automobile travel as needed, for the elderly, disabled, and work force." The implementation strategies associated with this policy advocate for coordinating with existing agencies such as the Shenandoah Area Agency on Aging and Access Independence to secure outside funding to enhance service for senior citizens and people with disabilities, as well as making use of MPO resources to identify areas of most critical need.

### **City of Winchester Comprehensive Plan – 2011**

Winchester's most recent comprehensive plan was adopted in 2011, with an amendment adopted in 2014. Chapter Six of the plan focuses on mobility, with the following vision:

"A walkable community vision"

"Being able to get around Winchester is a key part of quality of life. Having mobility choices means residents, workers and visitors can drive, ride a bus, bike, or walk around the city. Every option feels safe, efficient, and right for a certain kind of task."

There are a number of bullets that describe specific examples of this vision, including the following: "some students walk or bike between Shenandoah University and the downtown while others catch a bus from the city to Lord Fairfax Community College."

To support this vision, the City Council developed twelve citywide mobility objectives to support the citywide goal of "Create and maintain a safe, efficient, and environmentally sustainable mobility and transportation network that is interconnected, multi-modal, and that facilitates walkable urban land use patterns less dependent on personal vehicle use."



Two of the specific objectives directly address the need to extend a public transportation link to Lord Fairfax Community College, including:

- **Objective 3** – Encourage the use of alternate modes of mobility including walking, bicycling, and public transportation by all sectors of the population to reduce the dependency upon private automobile use. As part of this objective, the plan specifically states, “Implement the recommendations of the MPO’s 2009 Transit Services Plan.” This plan included an increase in frequency for WinTran routes, as well as extending WinTran into Frederick County’s urbanized area to serve the needs of both city and county residents and visitors.
- **Objective 8** – Work closely with Frederick County and Stephens City to extend public transportation between the City and destinations such as Lord Fairfax Community College, the DMV, the Virginia Employment Commission, and the regional detention facilities, as well as the urbanizing areas of the County and the Town. As part of this objective, the plan states, “Implement the operational changes and undertake the capital expenses needed to develop a truly regional transit service that allows City residents to access services beyond the limits of existing transit routes.”

## City of Winchester, 2016-2020 Strategic Plan

The City of Winchester recently completed a strategic planning process to study and endorse broad issues of organizational direction and propose specific implementation goals. The mission of the Strategic Plan is, “To provide a safe, vibrant, sustainable community while striving to constantly improve the quality of life for our citizens and economic partners.” There are four goals outlined in the Strategic Plan. These are:

1. Encourage sustainable economic growth and partnerships through business and workforce development.
2. Promote and accelerate revitalization of catalyst sites and other areas throughout the city.
3. Advance the quality of life for all Winchester residents.
4. Improve city services and advance the strategic plan goals by promoting a culture of transparency, efficiency, and innovation.

Goal #1 is the most directly related to supporting the concept of providing a link to LFCC, as the first specific strategy listed focuses on supporting a comprehensive workforce development strategy. One of the action items listed for this strategy is to work with Winchester Public Schools and other organizations to identify and reduce barriers allowing residents to utilize existing resources and improve basic skills.

## **WinTran Transit Development Plan, 2011**

WinTran's most recent transit development plan (TDP) was completed in 2011. The six-year plan included the following recommendations:

- Minor changes to the fixed routes to improve efficiencies
- Route adjustments within the city to better meet the needs of the riders
- A downtown trolley circulator
- Extensions of the fixed routes along the major service corridors into Frederick County
- Improved passenger amenities and infrastructure

WinTran has been able to implement the minor changes and route adjustments and has improved passenger amenities and infrastructure. Funding has not been available for a downtown circulator or for the route extensions into Frederick County.

## **Winchester-Frederick County MPO, Transit Services Plan**

In 2009, the WinFred MPO completed a Transit Services Plan. This was the first major transit planning effort by the MPO, which was created in 2003 when the City of Winchester and parts of Frederick County were designated as "urbanized" by the Census Bureau. The following recommendations were included in the plan:

1. WinTran fixed-route transit service extensions and adjustments- these improvements focused on improving the current transit program and extending routes from the City into the urbanized areas of the County.
2. Countywide demand-response public transportation.
3. Corridor service on Route 11, including service from the City of Winchester to Stephens City and Lord Fairfax Community College.
4. Regional corridor service through the I-81/Route 11 corridor throughout the Shenandoah Valley.
5. Commuter infrastructure and services- to Northern Virginia and Washington, DC.

This plan is referenced in the City of Winchester's Comprehensive Plan. Since the completion of this plan, some improvements have been made to WinTran's routes and schedules, and there has been an increase in the level of demand-response transportation provided in the region through the Shenandoah Area Agency on Aging's transportation program.

## **Northern Shenandoah Valley Regional Commission Coordinated Human Service Mobility Plan (September 2013)**

The Northern Shenandoah Valley's Coordinated Human Service Mobility Plan provides a basis for transportation coordination in the region. The plan is largely tailored for human

service transportation providers, but a number of the documented needs and strategies are pertinent to this study. One of the most noteworthy needs in the plan is providing access to evening GED, ESL and college classes. LFCC's Adult Education students routinely face challenges in attending evening classes. Another need is expanding transportation options in the evenings for access to classes and employment opportunities.

Some suggested strategies from the plan include establishing a central point of access for transit services, for example the WinTran transfer station in downtown Winchester.

Implementing new public transportation services and providing service on a more frequent basis is also listed. The plan also stresses the importance of bringing new funding partners into public transit. These partners may include hospitals, employers, or retailers who may be willing to finance a portion of the cost of transporting riders to their facilities.

## REVIEW OF PUBLIC TRANSIT AT COMMUNITY COLLEGES IN VIRGINIA

There are 23 public community colleges in the Commonwealth of Virginia, serving students at 40 different physical locations. In order to learn about the public transportation options available for community college students in the Commonwealth, research concerning the availability of public transportation for each of the 23 colleges was conducted. Through this research the study team learned that:

- There is regularly scheduled public or school-provided transportation available at 19 of the 23 colleges. An additional three have some limited options.
- LFCC is the only community college that does not have any public transportation options.
- Of the 23 colleges, nine are in Census-designated urbanized areas, and the remaining 14 are in Census-designated rural areas, including LFCC.
- Three of the four colleges with limited or no public transportation options are in rural areas.
- Of the 19 colleges where transportation is available, eight offer no subsidy or discount for students who use the service. For students of six of the colleges, transportation to access the campus is free. Discounted transportation services are offered for students of another four of the colleges. There are also likely to be additional programs that offer transportation subsidies (similar to some of LFCC's gas card assistance programs), and these are not reflected in this research, with the exception of Danville.
- Northern Virginia Community College is the only one of Virginia's community colleges that offers its own transportation services, which are free for students to ride and are not open to the public.

A listing of Virginia’s public community colleges and public transportation availability is provided in Table 1-4.

**Table 1-4: Public Community Colleges in Virginia and Transit Availability**

Community College	Public Transit Availability
Blue Ridge	VRT/BRITE, pre-paid fares
Central Virginia	GLTC, no subsidy
Dabney S. Lancaster	Mountain Express- RADAR, no subsidy
Danville	Danville Transit, subsidy for particular programs
Eastern Shore	Star Transit, pre-paid fares/discounted fares
Germanna	FRED, pre-paid fares
J. Sargeant Reynolds	GRTC, no subsidy
John Tyler	Limited, GRTC, no subsidy
<b>Lord Fairfax</b>	<b>None available</b>
Mountain Empire	Four County Transit, students ride free (local government contribution)
New River	Pulaski Area Transit, discount
Northern Virginia	NOVA operates its own shuttle service that is free to students.
Patrick Henry	PART - RADAR, no subsidy
Paul D. Camp	I-RIDE, no subsidy, looking at issue
Piedmont Virginia	CAT, no subsidy
Rappahannock	Bay Transit, no subsidy
Southside Virginia	Blackstone Area Bus, Lake Area Bus, some subsidy
Southwest Virginia	Four County Transit, students ride free (local government contribution)
Thomas Nelson	HRT- Hampton- discounted goPass; WATA - Williamsburg, no current subsidy; previous subsidy to WATA
Tidewater	HRT- discounted goPass
Virginia Highlands	Limited through District Three Public Transit, no subsidy
Virginia Western	Valley Metro, no subsidy
Wytheville	Limited through District Three Public Transit, no subsidy

Source: Internet research and staff knowledge of systems

## STUDENT FEES AT COMMUNITY COLLEGES IN VIRGINIA

One of the ways in which public transportation for community college students is funded is through the collection of fees that are used to pre-pay fares so that students can ride to campus without paying a fare directly. In order to research these fees, the fee structures for in-state students at each of the 23 colleges was collected and analyzed.

This research indicated that the mean total in-state per credit fees at Virginia's community colleges is \$12.83 per credit hour, including the \$8.50 technology fee that is charged by each of the schools. LFCC's per credit fees, assuming a 12-credit course load, are slightly higher than the mean at \$12.90 per credit hour. It should be noted that both LFCC and John Tyler Community College have lump-sum fees that are the same for one credit as they are for a full academic load. Both of these fees were analyzed assuming a 12-credit course load. LFCC's is called an auxiliary fee and is \$27.00 per semester. John Tyler's is called a comprehensive fee and is \$35.00 per semester.

The highest per credit fees are found at Rappahannock Community College (\$19.65), Tidewater Community College (\$17.65), and Germanna Community College (\$17.00). Of these three, two provide either discounted transit fares (Tidewater- HRT) or pre-paid transit fares (Germanna- FRED). The total fees at NOVA, the only school that provides its own transportation service, are slightly higher than the mean at \$13.10 per credit (though NOVA has a significantly higher student population than any of the other colleges).

Four of the 23 colleges bundle their fees such that it is not possible to break out the individual programs that are funded through the fees, including Blue Ridge Community College, which is a nearby example of college-subsidized public transportation.

Not including the mandated technology fee, the most common fee among the colleges is a student activity fee. Six of the colleges have a specific parking fee; and 12 have fees with facilities, institution, or auxiliary in the title. Determining the exact services that are funded through these fees was beyond the scope of this research.

Table 1-5 provides a list of the public community colleges in Virginia, along with the data analyzed above.

Table 1-5: In-State Public Community College Fees in Virginia

Name	Location	Urban/ Rural	In-State Fees Per Credit						Total Fees Per Credit	2014-2015 FTE	Total Fees Based on 12 credits	
			Tech.	Student Activity	Parking Aux.	Facilities Auxiliary	Inst.	Aux.				
Blue Ridge CC	Verona	R	Bundled with tuition							2,837		
Central Virginia CC	Lynchburg	U	\$ 8.50	\$ 6.50					\$ 15.00	2,611	\$ 469,980	
Dabney S. Lancaster CC	Clifton Forge	R	\$ 8.50	\$ 3.00					\$ 11.50	723	\$ 99,774	
Danville CC	Danville	R	\$ 8.50	\$ 1.50		\$ 1.00			\$ 11.00	2,373	\$ 313,236	
Eastern Shore CC	Melfa	R	\$ 8.50	\$ 2.00	\$ 2.00				\$ 12.50	489	\$ 73,350	
Germanna CC	Fredericksburg	U	\$ 8.50	\$ 1.50	\$ 1.50	\$ 5.50			\$ 17.00	4,503	\$ 918,612	
J. Sargeant Reynolds CC	Richmond (3 locations)	U	Bundled with tuition							7,469		
John Tyler CC	Chester & Midlothian	U	\$ 8.50	\$35 comprehensive per semester fee (1)					\$ 11.41	5,543	\$ 758,948	
<b>Lord Fairfax CC (2)</b>	<b>Middletown</b>	<b>R</b>	<b>\$ 8.50</b>	<b>\$ 2.15</b>				<b>\$ 27.00</b>	<b>\$ 12.90</b>	<b>4,012</b>	<b>\$ 621,058</b>	
Mountain Empire CC	Big Stone Gap	R	\$ 8.50	\$ 1.00				\$ 2.00	\$ 11.50	1,745	\$ 240,810	
New River CC	Dublin	R	\$ 8.50	\$ 1.25		\$ 1.30			\$ 11.05	2,888	\$ 382,949	
Northern Virginia CC	Multiple locations	U	\$ 8.50	\$ 3.60	\$ 1.00				\$ 13.10	34,586	\$ 5,436,919	
Patrick Henry CC	Martinsville	R	\$ 8.50	\$ 2.83					\$ 11.33	2,052	\$ 278,990	
Paul D. Camp CC	Franklin	R	\$ 8.50	\$ 1.40				\$ 0.75	\$ 10.65	780	\$ 99,684	
Piedmont Virginia CC	Charlottesville	U	\$ 8.50	\$ 2.90			\$ 1.75		\$ 13.15	3,003	\$ 473,873	
Rappahannock CC	Middle Peninsula/Northern Neck	R	\$ 8.50	\$ 2.75			\$ 5.00	\$ 3.40	\$ 19.65	1,848	\$ 435,758	
Southside Virginia CC	Several campuses	R	\$ 8.50	\$ 1.25				\$ 2.50	\$ 12.25	3,264	\$ 479,808	
Southwest Virginia CC	Cedar Bluff	R	\$ 8.50				\$ 2.00		\$ 10.50	1,787	\$ 225,162	
Thomas Nelson CC	Hampton & Williamsburg	U	\$ 8.50	\$ 0.85	\$ 1.85				\$ 11.20	6,513	\$ 875,347	
Tidewater CC	Chesapeake, Portsmouth, Norfolk, VA Beach	U	\$ 8.50	\$ 2.55			\$ 6.30		\$ 17.35	18,673	\$ 3,887,719	
Virginia Highlands CC	Abingdon	R	\$ 8.50	\$ 2.00	\$ 1.00				\$ 11.50	1,614	\$ 222,732	
Virginia Western CC	Roanoke	U	\$ 8.50	Bundled with tuition							4,961	
Wytheville CC	Wytheville	R	\$ 8.50	\$ 1.00	\$ 1.00	\$ 1.50			\$ 12.00	1,963	\$ 282,672	
								<b>Mean</b>	<b>\$ 12.83</b>	<b>5,054</b>	<b>\$ 778,080</b>	

(1) Based on 12 credit hours

(2) The auxiliary fee is a flat \$27 (i.e., for one credit, up to 22 credits).

For the purposes of comparison, it was divided by 12 credits for the total fee column.

Source: Internet research

## SUMMARY

The transit needs data collected and analyzed for this chapter affirmed from several sources that there is a need for a public transportation program to serve the Middletown campus of Lord Fairfax Community College, with the highest demand for service likely being a connection to Winchester and Stephens City. Highlights from both the qualitative and quantitative data that support this need are summarized below.

- Staff members from LFCC as well as high school counselors indicated that the lack of public transportation is a barrier for students to enroll and to stay enrolled at LFCC.
- Twenty-seven percent of the student/faculty/staff survey respondents indicated that the lack of transportation is either always or often a barrier.
- Sixty-eight percent of the student/faculty/staff survey respondents indicated that they would use public transportation to access the campus if it were available.
- About 33% of the student/faculty/staff survey respondents reported that they live in the Winchester- Frederick County area and the majority travels to campus Monday through Thursday, arriving between 7:00 a.m. and 12:00 p.m.
- The results of the community survey indicated that 92% were in favor of the service and 59% indicated that they would use the service. Service between LFCC and Winchester was listed as the highest priority.
- The enrollment data show that 33% of the students live in the Winchester –Frederick County area, similar to what was reported via the survey.
- The transit dependence index shows relatively high transit needs in Winchester, Stephens City, Front Royal and just south of Woodstock.
- One of LFCC’s stated goals is improved access, and several of the previous planning efforts in the region specifically highlight the need to connect LFCC to Winchester via public transportation.
- LFCC is the only community college in Virginia that is not served by public transportation.





# Chapter 2

## Existing Services in the Region and Potential Organizational and Service Options

### INTRODUCTION

The previous chapter demonstrated a need for public transportation service to Lord Fairfax Community College (LFCC) through demographic data, student and community surveys, and enrollment data. This second chapter outlines the existing transportation providers in the region, including information pertinent to providing transit service to LFCC, and develops organizational and service options that could potentially be implemented to provide public transportation service for the LFCC community. These options were discussed with the stakeholder group prior to developing the plan provided in Chapter 3.

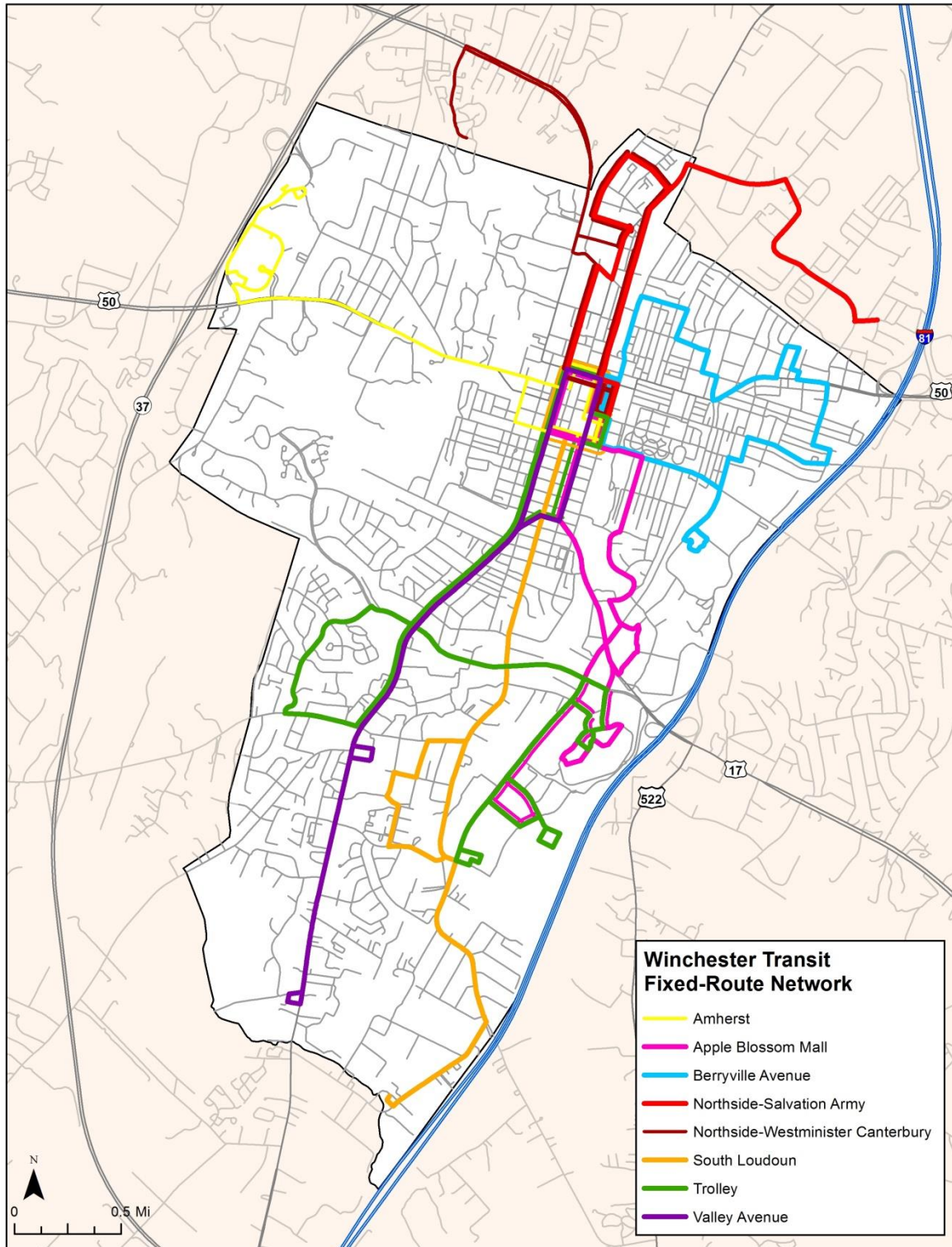
### EXISTING TRANSPORTATION PROVIDERS IN THE REGION

#### Winchester Transit System (WinTran)

WinTran provides public transportation primarily within the City of Winchester. Six fixed routes are offered (using three vehicles, with interlined routes), along with a trolley route and ADA complementary paratransit. The fixed routes meet for transfer opportunities at the Boscawen Street downtown transfer center. The fixed routes operate Monday through Friday from 6:00 a.m. to 8:00 p.m. and on Saturdays from 9:00 a.m. to 5:00 p.m. The trolley operates Monday, Wednesday, and Friday from 8:00 a.m. to 6:00 p.m. and on Saturdays from 10:00 a.m. to 4:00 p.m. The WinTran fixed route service map is provided as Figure 2-1.

The program is operated directly by the city, out of a relatively new transit facility, co-located with the city's public works department off of Cork Street. For FY16, the annual operating budget was \$989,524. Funding and revenue to support the program comes from fares (\$84,800); advertising (\$2,500); FTA's S. 5307 program (\$452,362); DRPT operating assistance (\$165,364); and local general funds (\$284,524). The base fare is \$1.00 per trip. FY15 operating statistics for WinTran are provided in Table 2-1.

Figure 2-1: WinTran Fixed Routes



**Table 2-1: WinTran FY15 Operating Data**

WinTran - FY15 Data	
Annual Operating Costs	\$892,181
Annual Vehicle Revenue Hours	18,119
Annual Vehicle Revenue Miles	189,821
Passenger Trips	126,122
Trips/Hour	6.96
Cost/Hour	\$49.24
Cost/Trip	\$7.07

Source: WinTran

### ***Connection to LFCC***

The need to connect the City of Winchester and Lord Fairfax Community College was discussed within the WinTran TDP, but funding was not available for this route extension at the time.

Regardless of the operating entity, it will be important for any new LFCC route to connect with WinTran's fixed route service network, most likely at the Boscawen Street downtown transfer center.

### **Shenandoah Area Agency on Aging**

The Shenandoah Area Agency on Aging (SAAA) offers a variety of services for senior citizens and people with disabilities, with the goal of allowing people to live independently.

In support of this mission, the SAAA operates a fairly extensive transportation program in the Northern Shenandoah Valley. The transportation program has two primary facets: service to support the region's active living centers; and WellTran, which provides transportation for both senior citizens and people with disabilities for primarily medical trips.

#### ***Active Living Center Transportation***

Transportation is provided so that senior citizens can access the following active living centers:

- Clarke County Active Living Center, Berryville
- Frederick County - United Methodist Church, Stephens City
- Page County - Fellowship Hall of Christ Episcopal Church

- Shenandoah County – Edinburg
- Warren County – Front Royal
- Winchester- Winchester Parks and Recreation (Cork Street)

Of the agency's 34 vehicles, 24 are used for the active living center-based services, which also include meal delivery. The active living center fleet is primarily comprised of body-on-chassis vehicles. The fleet is dispersed, with most of the vehicles stored within the community in which they are based.

### **WellTran**

The WellTran service provides demand-response transportation for senior citizens and people with disabilities, with funding assistance through the Federal Transit Administration's Section 5310 program, DRPT and local sources. There are 10 minivans in the WellTran fleet. Part-time drivers are used to provide the service.

While the majority of the WellTran trips are for medical purposes, WellTran does provide transportation between Berryville and LFCC three days a week for a student who uses a wheelchair.

There are currently 620 individual clients who use the WellTran service, which provides between 11,000 and 12,000 annual passenger trips. There are a number of WellTran clients who reside in the Route 11 corridor.

The fare to ride is \$4.00 for the first 20 miles, and \$0.50 per mile after that. For riders who cannot afford the fare, there is a sliding payment schedule that coincides with the rider's income.

In FY16, the total operating budget for the WellTran program was \$410,840.

The transportation manager for the SAAA indicated that the agency is not currently in a position to expand service, but is interested in coordinating with any new services that may be implemented to accommodate the needs of LFCC students, faculty and staff.

### **Virginia Regional Transit**

Virginia Regional Transit (VRT) is a non-profit public transportation company that operates transit services in a number of locations throughout Virginia. In some cases, VRT is the federal/state grantee and in other cases VRT has a contractual relationship with a public entity to provide service. In the Shenandoah Valley there are several programs operated by VRT. These are outlined below.

## **Clarke County**

VRT operates a general public demand response service in Clarke County. The service is operated Monday to Friday between 9:00 a.m. and 1:00 p.m. (end time approximate). The fare for the service is \$1.00 per trip. This service operates throughout Clarke County, with service into Frederick County and the City of Winchester.

The Clarke County program provides about 1,500 passenger trips annually, operating just over 1,000 annual service hours. VRT's system-wide average operating cost per hour for the Central Virginia services provided is about \$58.00 per hour, with significant cost variations between local systems.<sup>1</sup>

The transit development plan (TDP) prepared in 2015 for the West Central Virginia region included a recommendation to increase the number of service hours for the Clarke County demand-response service so that service is provided until 3:00 p.m., and then 5:00 p.m., rather than the current 1:00 p.m. A specific year was not associated with this proposed improvement.

## **Front Royal Area Transit**

Front Royal Area Transit (FRAT) provides fixed route shuttle service in the Town of Front Royal and limited service into Warren County. This service operates a north and a south loop route, on one-hour headways, Monday through Friday from 8:30 a.m. to 5:00 p.m. Saturday service consists of one route that circulates the downtown portion of Front Royal from 1:00 p.m. to 6:00 p.m. on 30-minute headways. Sunday service operates from 1:00 p.m. to 6:00 p.m. on one-hour headways. FRAT Trolley's map can be seen in Figure 2-2.

FRAT provides about 17,000 annual passenger trips, operating just over 4,000 annual revenue service hours. The reported operating cost per hour for FRAT is about \$46 per revenue hour.<sup>2</sup>

The West Central TDP included some future expansion projects for the Front-Royal-based service, including limited service to LFCC (three trips per day) and service from Front Royal north on along the US340 Corridor to the Virginia Inland Port and the Rappahannock Shenandoah Warren (RSW) Regional Jail. Weekday service from Front Royal to the Walmart and Target shopping areas near the U.S. 340/I-66 interchange was also included in the plan. Currently these areas are served only on Sundays.

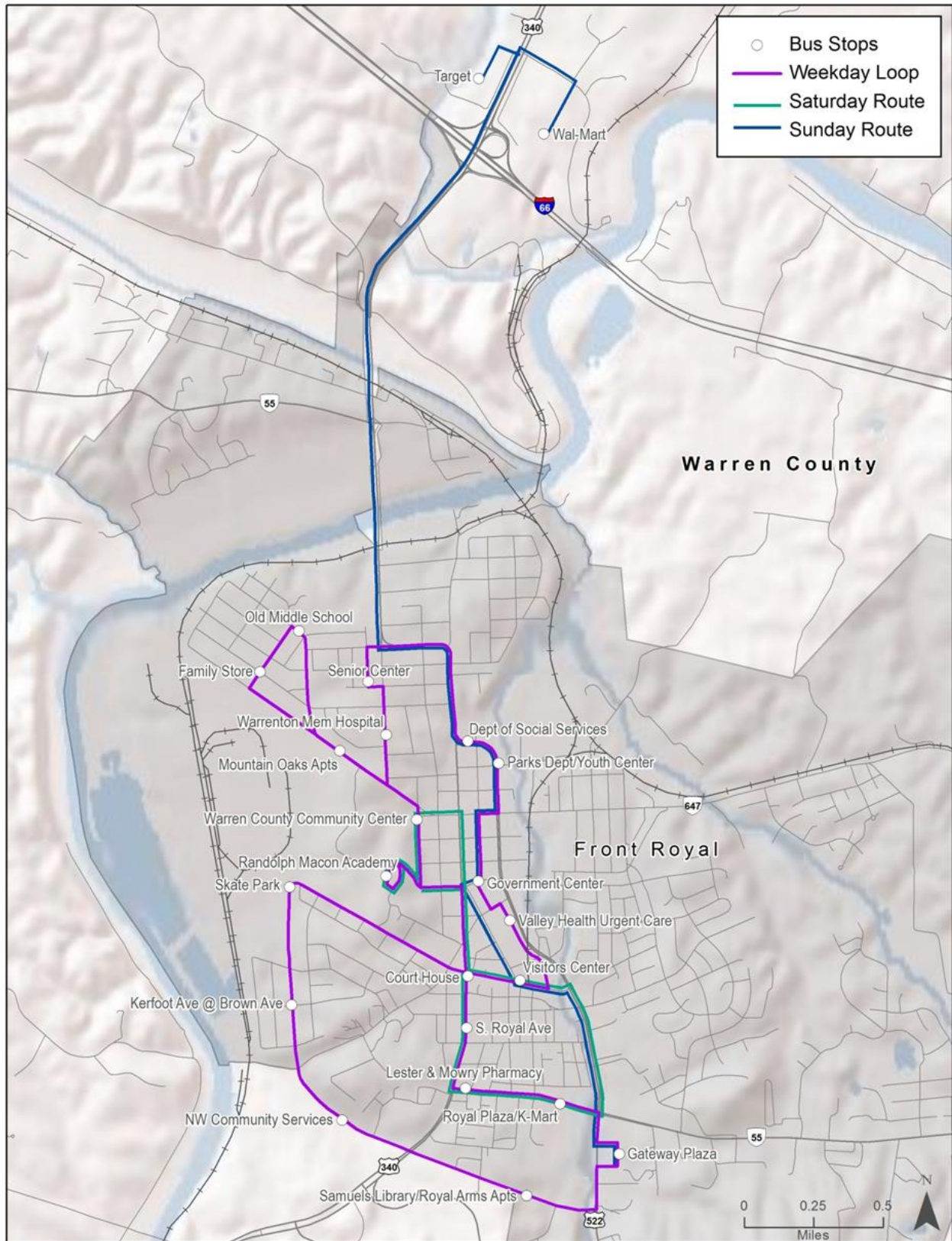
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<sup>1</sup> VRT System Manager

<sup>2</sup> Transit Development Plan for VRT West Central Virginia Region, 2015.



Figure 2-2: Front Royal Area Transit's (FRAT) Deviated Fixed Routes





### **Connection to LFCC**

If services are provided from the Front Royal area to LFCC, it will be important that the services make a direct connection to FRAT to maximize the mobility options for area students.

### **Blue Ridge Community College Shuttle**

While not in the immediate region, we have included service information about the BRCC Shuttle, as it is a relevant example of community college/ public transit service in the Shenandoah Valley.

There are two routes that comprise the Blue Ridge Community College Shuttle – the BRCC North and the BRCC South. The BRCC North connects the college’s campus near Weyers Cave to Harrisonburg and James Madison University. On the southbound trip, the route also serves the Towns of Dayton and Bridgewater, and Bridgewater College. Given the time constraints, the northbound trip is express in nature, using I-81 between Verona and Harrisonburg.

The BRCC South connects the campus to Staunton, with a few stops along the way, including Verona, which is the county seat of Augusta County. The BRCC South makes timed connections in Staunton with the local Staunton circulator routes and the 250 Connector, which provides service to Waynesboro.

For college students the fare is pre-paid. The general public fare is \$0.50 per trip.

The BRCC North provides about 31,500 annual passenger trips, offering about 3,500 annual revenue service hours. The BRCC South provides about 38,800 annual passenger trips, offering about 3,300 annual revenue service hours. The cost to provide service is just under \$59 per operating hour.<sup>3</sup> While ridership is significantly higher during the fall and spring semesters, the service is offered year-round and is used by the general public.

The Blue Ridge Community College Shuttle was initiated as a contractual service between the college and VRT. As public transportation in the Central Shenandoah area grew, the program was linked with several other services also operated by VRT, including the Staunton Trolley, the Route 250 Connector to Waynesboro, the Waynesboro Circulator, and the 340 Connector. Prior to 2012, the federal funding used to support these programs came from the rural S.5311 program. As a result of the 2010 Census, the City of Staunton, the City of Waynesboro, and much of the corridor in between became an urbanized area. As such, the federal funding for these areas shifted from S.5311 to S.5307. This shift required that a public agency serve as a grantee for the funds.

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<sup>3</sup> Data collected for the CSPDC 2015 TDP.

The Central Shenandoah Planning District Commission stepped up to fulfill the role of public transit grantee for the region for the S.5307 funds, while the S.5311 funds continue to be awarded to VRT for the rural services, including the Blue Ridge Community College Shuttle. Over the next year or two, the grantee for the rural program in the Central Shenandoah Valley is also expected to transition to the CSPDC.

## ORGANIZATIONAL AND GRANT ADMINISTRATION OPTIONS

Organizational options refer to the ways in which public transportation service to LFCC could be administered and managed. There are two primary options that could be pursued for the implementation of service. These are:

- Grant administration conducted by the City of Winchester or another public entity in the operating region, with the operation of service contracted to a private for-profit or private non-profit entity. Funding agreements among local participating jurisdictions and entities would need to be developed for the required local match, assuming federal and state funds were available.
- Grant administration *and direct operation* of service conducted by the City of Winchester or another public entity in the operating region. Funding agreements among local participating jurisdictions and entities would need to be developed for the required local match, assuming federal and state funds were available.

Additional more complex options, such as the development of a regional transit district or authority may be considered for the future, but are not likely to be necessary in the short to mid-term. The two options introduced above are discussed in this section.

### Grant Administration Options

Federal and state transit grant funding is likely to be needed in order for service to be implemented. Service to the campus may be eligible for a mix of federal S.5311 (rural transit funds) and federal S.5307 (urban transit funds), depending upon the route. State transit funding may also be available. Routes that originate within the City of Winchester and/or the surrounding urbanized area could be subsidized in part with urbanized area grant funds, while routes originating in rural areas could be subsidized in part with rural funds. Additional details regarding potential funding options are provided on page 2-21.

The first step in the grant application process will be to decide which public entity should lead the process by serving as the grant applicant. For this project, the grant applicant could be:

- The City of Winchester
- Frederick County
- The Northern Shenandoah Valley Regional Commission

Under any of these scenarios, there would need to be agreements in place to cover the local share for any federal/state grant funding applications.

### ***The City of Winchester***

The City of Winchester is the current local grantee for federal S.5307 funds and DRPT state funding assistance. These programs help support WinTran, which currently provides service exclusively within the Winchester Urbanized Area. For any transit services that originate within the urbanized area and are eligible (at least in part) for S.5307 funds, it makes sense that the City would be the grant applicant for the following reasons:

- The City is the designated recipient for these funds for the Winchester Urbanized Area.
- The City has the administrative grants management infrastructure in place to receive and manage FTA S.5307 funding.
- The City is familiar with the program, including the compliance and grant reporting requirements.
- The City has an existing fleet of FTA-funded vehicles.

The City could also be eligible to receive rural transit funding if the route(s) provided service within designated rural areas. Federal rural transit funding is administered through DRPT, which is the designated recipient for federal rural transit funding in Virginia, with local entities serving as sub-recipients.

### ***Frederick County***

Frederick County could also serve as the grant applicant for rural transit funding in the region. This option may make sense if the county is considering the implementation of any other rural transit programs. Frederick County is not currently an FTA grant sub-recipient, and would have to set up the grant administration mechanism, including the compliance and grant reporting functions. While the county does not have transit program operating experience, they likely do have public fleet management experience and grants management experience through other programs.

The only FTA grant-funded services that currently operate in the county are operated by private non-profit agencies (Welltran – S.5310 for seniors and people with disabilities; and VRT – limited, originating in Clarke County).

### ***Northern Shenandoah Valley Regional Commission***

As a regional public entity, NSVRC could also serve as the grant applicant for rural transit funding in the region. NSVRC has FTA/DRPT grants administration experience through its transportation demand management (TDM) program, as well as through the Winchester-Frederick County Metropolitan Planning Organization's (WinFred MPO) FTA S.5303 planning program. NSVRC does not have direct transit operating or fleet ownership experience.

## **Operator Options**

In addition to deciding which local entity should manage the grant administration functions, it will also be necessary to decide how the service will be operated. The two basic mechanisms are:

- Directly-operated by employees
- Contractor-operated

### ***Directly-Operated***

Under this model, the entity that serves as the grantee for the program would also directly hire and supervise the employees that provide the service, as well as procure the vehicles. For example, if the City of Winchester were to be the grantee, WinTran would apply for the necessary vehicles through the grant process and hire additional staff to expand their operations to include this service.

### ***Contractor-Operated***

Under the contractor model, the entity that administers the grant would prepare a request for proposals to solicit a contractor to operate the service. The contractor could be a private non-profit or for-profit entity. The contractor would hire and supervise the drivers, performing all day to day transit management functions for the route(s). The vehicles could be owned by either the oversight entity or the contractor.

## **Discussion of Organizational Options**

The simplest option to implement service from the Winchester area to LFCC would be for WinTran to expand their services, using the existing public transit infrastructure. This would take advantage of the transit resources already in place and ensure the linkage between WinTran and the new service is in place. This option assumes that WinTran is in a position to expand service and the City is interested in providing this service.

For service to LFCC from other parts of the region, it may make more sense for the grantee to be a regional entity that oversees one or more local contractors for service, or a local operator that is already in place. For example, if there is a service from Front Royal, it may make sense for VRT to apply for additional funds to add the route, as they are currently the grantee and operator for transit service in Front Royal.

For the development of transit service to LFCC, it is likely that the incremental expansion of existing services will be the most reasonable approach, taking full advantage of the transit infrastructure that is already in place.

## SERVICE OPTIONS

### **Alternative #1 – Service from the City of Winchester and Stephens City**

As demonstrated through surveys, enrollment data, and stakeholder input the highest transportation priority for LFCC is connecting the Middletown Campus to Winchester and Stephens City. A route between these three locations may be relatively straight-forward, but several service options need to be evaluated; these options are presented below.

#### ***Potential Stops***

In Winchester, the WinTran transfer stop on Boscawen Street is the proposed northern terminus of the route. This location offers many benefits for LFCC commuters. Many of the surveys and stakeholders explicitly asked for the Winchester shuttle stop to be located in a central location with access to WinTran services. With this link, commuters to the campus in Middletown will be able to utilize any of the WinTran routes to reach the Boscawen transfer stop. Additionally, across the street from the stop is the Court Square Auto Park that could provide a park and ride location for commuters who do not live along a WinTran bus route. The garage is fully automated and is open to the public 24 hours per day with parking rates of \$0.50 per hour or \$10.00 per day.

When identifying a stop location in Stephens City the study team prioritized locations close to U.S. Route 11 and Interstate 81. As seen in Figure 2-2, the review team has identified three potential stop locations in Stephens City. The first location is the Food Lion and Goodwill Shopping Center along Fairfax Pike. This location is directly accessible from Fairfax Pike and features a controlled intersection for making left turns out of the shopping center. The Food Lion Shopping Center offers a total of approximately 660 parking spaces. The second location, the Martin's Shopping Center, is somewhat setback from Fairfax Pike which would require the shuttle to turn onto Double Church Road to gain access. The Martin's Shopping Center features a total of approximately 400 parking spaces. The third location is a parking lot at the intersection of Filbert Street and Germain Street near the downtown area of Stephens City.



From online research it appears that this lot is used by a local church for overflow parking with a handful of vehicles parked in the lot on a typical weekday. This parking lot contains approximately 60 parking spots. For each of these three locations communication will need to be initiated with the parking lot owners to secure permission for use as a shuttle stop and park and ride location.

On the LFCC Middletown Campus, one or multiple stop locations should be designated. Given the campus layout, serving multiple buildings should be seamless with potential stop locations at Fairfax Hall, the Health and Science Building, and the Student Union.

**Figure 2-3: Potential Stop Locations in Stephens City**



### ***Potential Routing***

Developing a route between Winchester, Stephens City, and LFCC Middletown presents two general options; traveling exclusively on U.S. Route 11 or using a combination of Interstate 81 and U.S. Route 11. These two options and the varying three quarter-mile deviation/ADA paratransit zones are shown in Figure 2-4. As seen in Table 2-2, traveling on Interstate 81 from Winchester to Stephens City adds an additional mile per round trip but gives the advantage of higher speed limits, which significantly reduces travel time. The Route 11 option could allow access for more public riders through the corridor, which may also increase paratransit demand. Additionally, the Interstate 81 corridor between Winchester and Stephens City is within the Winchester Urbanized Area, whereas the urbanized area does not include the entirety of the parallel stretch of U.S. Route 11.

**Table 2-2: Winchester and Stephens City Shuttle Routing Comparison**

Routing	Round Trip Mileage	Urban Mileage	Rural Mileage	Unencumbered Round Trip Travel Time	Round Trip Travel Time at BRCC Oper. Speed (18.8 MPH)	Round Trip Travel Time at WinTran Oper. Speed (10.5 MPH)
U.S. Route 11	24.26	15.48	8.78	48 mins.	77 mins.	139 mins.
I-81 & U.S. 11	25.40	17.64	7.76	38 mins.	81 mins.	145 mins.

### ***Fixed Route versus Deviated Fixed Route***

When operating a public transportation route that is funded in part with federal funds, the service must comply with specific Americans with Disabilities Act (ADA) requirements. Using a fixed route service pattern, where the vehicle does not deviate from the published route, the transportation provider must also provide complementary paratransit service for those who are unable to reach the bus stops due to a physical or mental disability. The paratransit service must be provided for those who live within a three-quarter mile radius of the route. Another approach to satisfy the ADA requirement is to allow the vehicle to deviate from the published route, up to a three-quarter mile radius, to pick up and drop off individuals with disabilities. Both of these approaches have advantages and disadvantages that should be weighed against the type of service that is desired. These are listed below.

#### **Fixed Route**

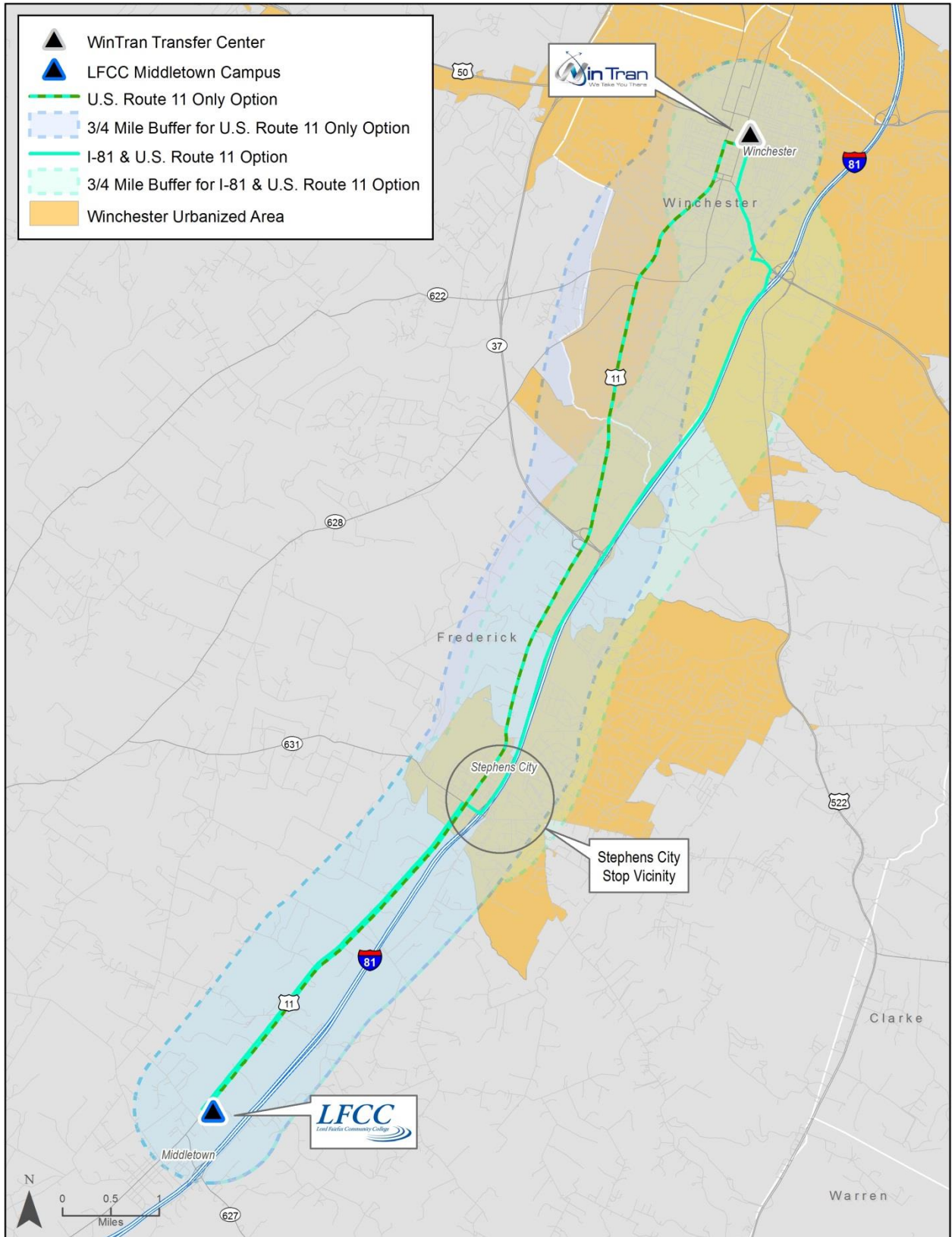
- Service is more reliable.
- Route could utilize I-81 for faster and more streamlined service.
- Requires a dedicated paratransit vehicle which would result in added operating costs.

#### **Deviated Fixed Route**

- Deviations will add travel time.
- Would make routing on I-81 virtually impossible with required deviations.
- Would not require an additional vehicle for ADA paratransit and the associated operating costs.



Figure 2-4: Potential Routing Alignments for Winchester and Stephens City Shuttle



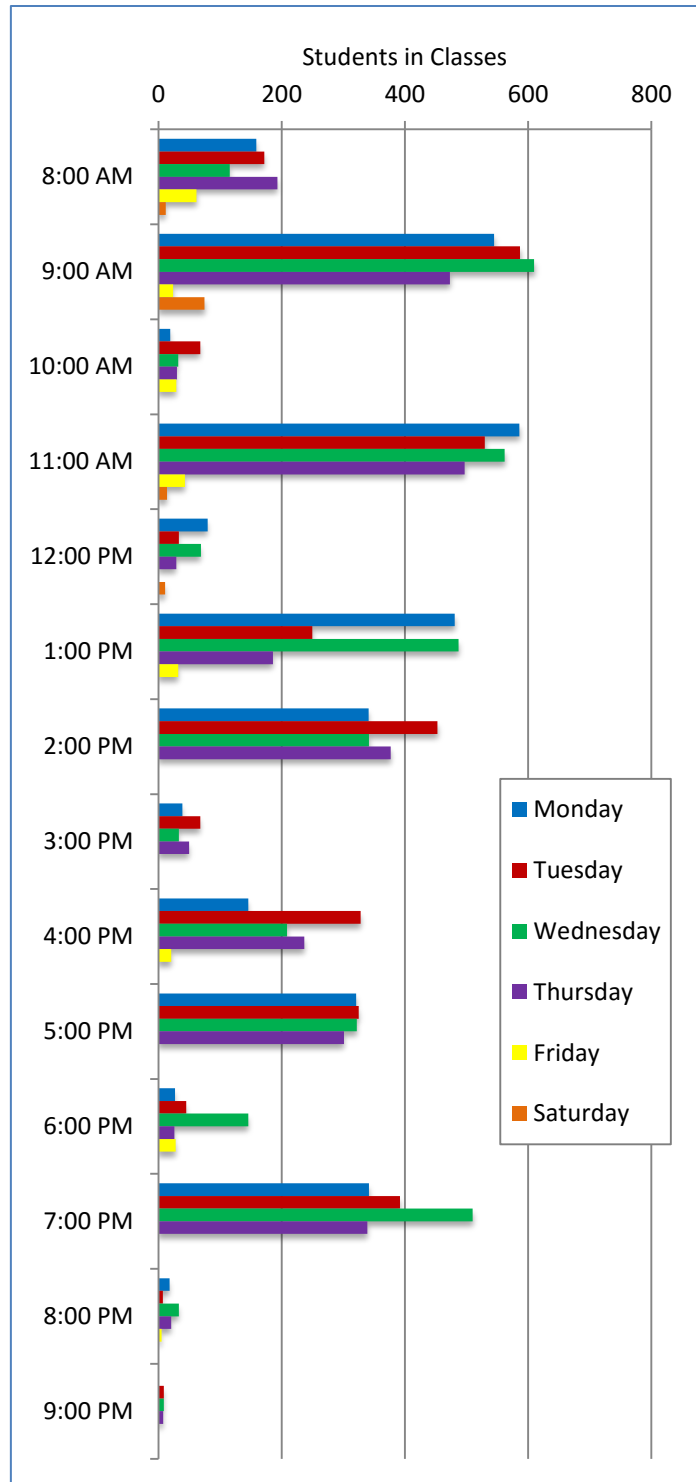
**Potential Service Spans**

The fall and spring semesters both have approximately 80 class and final exam days and there are about 50 class and exam days during the summer semester; adding up to a total of 220 potential service days annually. It is important to note that the summer semester has about a quarter of the enrollment from a typical fall or spring semester, which may warrant limited service during summer months.

When considering potential service hours, the enrollment from spring 2015 was reviewed (Figure 2-5). The spring enrollment data is proportionally representative of enrollment figures during the fall and summer semesters of 2014 and 2015. As seen in the graph, enrollment is the highest Monday through Thursday from the 8:00 a.m. hour to the 7:00 p.m. hour. Given these trends, a service beginning at 7:00 a.m. would be ideal to serve those with 8:00 a.m. classes and suspending the service at 9:00 p.m. would ensure a ride home to the vast majority of students enrolled in evening classes. The data also suggests that Friday enrollment is a mere fraction of a typical weekday. This may warrant limited service; such as longer headways or ending the service earlier in the afternoon.

While LFCC demand will be significantly higher on class and exam days, it is likely that the service will need to operate year round to accommodate general public riders, as well as summer activities at LFCC.

**Figure 2-5: Spring 2015 Enrollment by Day and Time**



### Potential Operating and Capital Costs

The potential operating costs for a fixed route and deviated fixed route are shown in Table 2-3. The two alternatives offer virtually the same service spans. The alternatives offer a full day of service from Monday to Thursday with Friday service ending early at 1:00 p.m. ADA paratransit costs are included as mirroring the fixed route service. This is an estimate as demand may not necessitate the service throughout the service span but a driver and vehicle must be available during service hours. This service may also be contracted out to a private vendor which could also affect the potential operating costs. These cost estimates are refined in Chapter 3.

**Table 2-3: Potential Operating Costs for Winchester and Stephens City Route**

Service Span	Service Type	Hours-Span	No. of Vehicles	Daily Service Hours	Days of Service	Annual Service Hours	WinTran Operating Cost (\$51.32/Hour)(1)
Monday to Thursday 7:00 am to 9:00 pm	Fixed Route	14.75	2	29.5	204	6,018	\$308,844
	ADA Paratransit	14.75	1	14.75	204	3,009	\$154,422
Friday 7:00 am to 1:00 pm	Fixed Route	7	2	14	51	714	\$36,642
	ADA Paratransit	7	1	7	51	357	\$18,321
<b>Total Cost- Year Round Service</b>							<b>\$518,229</b>
Monday to Thursday 7:00 am to 10:00 pm	Deviated Fixed Route	14.75	2	29.5	204	6,018	\$308,844
Friday 7:00 am to 1:00 pm	Deviated Fixed Route	7	2	14	51	714	\$36,642
<b>Total Cost Year Round Service</b>							<b>\$345,486</b>

(1) WinTran estimate of FY2016 fully-allocated hourly operating expenses

In addition to operating costs, transit vehicles must also be purchased. Vehicle costs are variable based on passenger capacity and the types of features included (e.g. wheelchair lifts, bicycle racks, fareboxes, security cameras, etc.). A typical 14 or 15 passenger vehicle fully outfitted with standard features will be in the neighborhood of \$60,000 to \$70,000. In comparison, a 19 passenger vehicle costs between \$70,000 and \$100,000 and a 27 passenger vehicle typically comes in over \$100,000. On the higher end of the spectrum, a medium sized low floor city transit bus would start at \$400,000 as a base price.

For service linking Winchester and Stephens City to LFCC, a 19 passenger vehicle would likely be the most flexible option. Transit vehicles must also be replaced once they have reached their useful life; allocating funding for these large capital costs should be done through multi-year budgeting. Once demand for the service has been demonstrated a larger 27 passenger bus may be an appropriate move to increase passenger capacity.

## **Alternative #2 – Deviated Fixed Route Service from Additional Towns**

In addition to Winchester and Stephens City, LFCC also has high enrollment numbers from Front Royal, Strasburg, and Woodstock. Given the distance of these towns from LFCC’s Middletown campus, deviated fixed route service or a commuter route would likely be the most appropriate service type to meet the demands of area students. The first version of the alternatives contemplated service only when LFCC is in session. These have been modified to include the full year (Monday through Friday), in recognition that these routes will likely attract general public riders as well, and are assumed to be funded with assistance through the Federal Transit Administration (FTA) and DRPT.

### ***Potential Stops***

#### **Front Royal Service**

Potential service to and from Front Royal has been planned and documented in Virginia Regional Transit’s (VRT) West Central Transit Development Plan. In the plan, VRT states that connecting the Front Royal Visitor’s Center (VRT’s main transit center in Front Royal) to LFCC would promote economic growth, employment opportunities, and higher education. VRT’s plan would also allow for stops at the Walmart and/or Target shopping centers north of Front Royal which would allow park and ride opportunities for commuters.

#### **Strasburg and Woodstock Service**

While further analysis should be conducted to determine the best and most appropriate stop locations, the Walmart in Woodstock and the Food Lion in Strasburg were selected as potential bus stop locations.

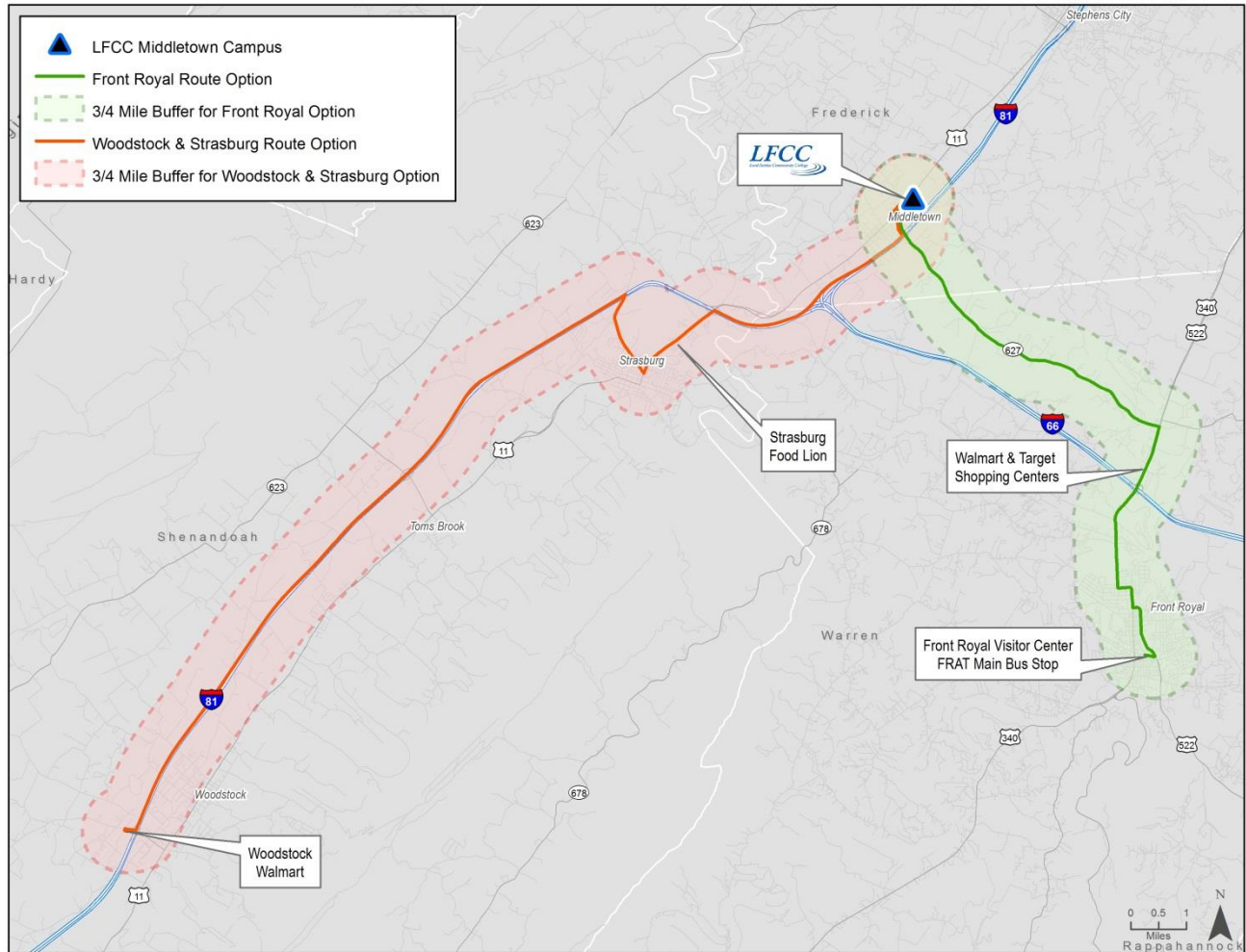
### ***Potential Routing***

#### **Front Royal Service**

The VRT West Central Transit Development Plan calls for a commuter service linking Front Royal to Middletown via U.S. Route 522 and Virginia Route 627. The rationale for using 627 is to expand transit service to the Reliance area. The proposed routing in Figure 2-6 is 23.2 miles round trip.



**Figure 2-6: Potential Routing Alignments for Service from Additional Towns**



### Strasburg and Woodstock Service

The proposed routing for this alternative is predominately on Interstate 81 which would achieve higher operating speeds. However, there is an opportunity to travel along Route 11 which would allow for additional stops along the way; this would likely attract non-LFCC users as there currently is no public transit option provided in these areas. The proposed route length is 44.4 miles round trip.

**Table 2-4: Front Royal and Strasburg/Woodstock Shuttle Routing Comparison**

Routing	Round Trip Mileage	Urban Mileage	Rural Mileage	Unencumbered Round Trip Travel Time	Round Trip Travel Time at BRCC Oper. Speed (18.8 MPH)	Round Trip Travel Time at WinTran Oper. Speed (10.5 MPH)
<b>Front Royal</b>						
Route 522 and 627	23.20	0	23.20	46 mins.	74 mins.	133 mins.
I-81	26.40	0	26.40	36 mins.	84 mins.	151 mins.
<b>Strasburg and Woodstock</b>						
I-81	44.40	0	44.40	58 mins.	142 mins.	254 mins.
U.S. Route 11	40.80	0	7.76	78 mins.	130 mins.	233 mins.

### **Potential Service Spans**

#### **Front Royal Service**

VRT's plan calls for commuter service providing three round trips per week day; one in the morning, a mid-day run, and an evening trip. While the plan does not provide specific times for service the best times to meet those high enrollment periods are 7:00 a.m., 12:00 p.m., and 6:00 p.m.

#### **Strasburg and Woodstock Service**

Given the geographical distance between Woodstock, Strasburg, and Middletown, a commuter service would likely be the best fit for providing transit service. A commuter service offers inbound runs (Woodstock to Middletown) in the morning and outbound runs (Middletown to Woodstock) in the evenings. When considering potential operating hours the hourly enrollment data was examined. Given the large enrollment number for the 8:00 a.m. and 9:00 a.m. class hours, a 7:00 a.m. departure from Woodstock and a 7:30 a.m. departure from Strasburg should provide ample time for students to reach LFCC in Middletown. An additional morning run could possibly depart Woodstock at 9:30 a.m. and Strasburg at 10:00 a.m. for students taking classes in the busy 11:00 a.m. hour. Conversely, afternoon/evening service could depart Middletown at 3:00 p.m. and 6:00 p.m. following large enrollment hours. An additional outbound evening run at 8:00 p.m. could be considered for students staying late.

### **Potential Operating and Capital Costs**

The potential operating costs for a fixed route and deviated fixed route are shown in Table 2-5. The proposed two services offer similar service spans; Monday through Friday with three round trips to Front Royal and two inbound and two outbound trips from Strasburg and

Woodstock. VRT's operating costs were used to estimate the cost for these services. While all vehicles must be accessible, ADA paratransit is not required for commuter service.

**Table 2-5: Potential Operating Costs for Front Royal and Strasburg/Woodstock**

Service Span	Service Type	Daily Service Hours	Days of Service	Annual Service Hours	Estimated Operating Cost (\$59/Hr.)
<b>Front Royal</b>					
Monday to Friday 7:00 am 12:00 pm 6:00 pm	Commuter Service	6	254	1,524	\$89,916
					<b>\$89,916</b>
<b>Strasburg and Woodstock</b>					
Monday to Friday 7:00 am 9:30 am 3:00 pm 6:00 pm	Commuter Service	10	254	2,540	\$149,860
					<b>\$149,860</b>

For service linking Front Royal and Strasburg and Woodstock, a 19-passenger vehicle would likely be the most flexible option. Associated per vehicle costs would be between \$70,000 and \$100,000, depending upon the options.

### **Alternative #3 – Demand Response Service from Rural Areas**

Given the rural nature of the region, demand response services may be the best solution for providing transportation to needy individuals outside of the region's travel corridors. Demand response service provides personalized curb-to-curb or door-to-door services while grouping trips for maximum travel efficiency. Service may be on-call or utilize a system of advanced reservations. WellTran, the Shenandoah Area Agency on Aging's transportation system, is currently providing demand-response service in the Middletown area. This may present a unique opportunity to partner with WellTran to tap into their existing operating infrastructure.



### **Potential Service Spans**

Demand response is largely a reactive service; if there is no demand for transportation then the demand response vehicle will idle until service is requested. Potential demand for service would range from 7:00 a.m. to 10:00 p.m. to meet all the class times.

### **Potential Operating and Capital Costs**

Costs associated with a demand response service vary depending upon service hours. While the service may not be utilized during the full day, a dedicated vehicle and driver must be available to respond to trip requests. Operating cost estimates are provided below in Table 2-6.

**Table 2-6: Potential Operating Costs for Demand Response Service**

Service Span	Service Type	Daily Service Hours	Days of Service	Annual Service Hours	Operating Cost Estimate (\$59/Hr.)
Monday to Friday 7:00 am to 10:00 pm	Demand Response	15	254	3,810	\$224,790
<b>Total</b>					<b>\$224,790</b>

Demand response service is typically provided through smaller 14 or 15 passenger vehicles which may range from \$60,000 to \$70,000 depending upon the features.

## **POTENTIAL FUNDING SOURCES**

### **Revenue**

In order to determine the net deficit for a transit operating project, a local grant recipient first must deduct any locally-generated revenue from the total project cost. The most common forms of local revenue are fares (either directly into the farebox or pre-paid from large user groups, such as universities) and advertising revenue. Many systems sell display advertising spots on vehicles and shelters as a way to generate revenue. In some markets, transit advertising can generate a significant level of revenue. It is typically a local policy decision whether or not to sell advertising, as well as whether to only sell interior bus ads, or to allow more extensive advertisements such as bus wraps.

### **Local Example**

WinTran's farebox recovery is about 9.5% and the system generates about \$2,500 annually in advertising revenue. WinTran has reported a recent increase in advertising revenue through the use of vinyl panels displayed on its shelters. The BRCC shuttles experience a low farebox recovery (3%), largely because the majority of the riders are associated with either BRCC or JMU and do not pay a fare. BRCC makes an annual contribution to the local matching funds required to operate the route.

### **Urban and Rural Federal Transit Funding**

It is relevant to note that Winchester is part of an urbanized area, which means that the federal funding available to help support the program is derived from the federal S.5307 program, which provides funding assistance for transit programs in urbanized areas. The Winchester Urbanized area is shown in Figure 2-7. As displayed by the map, Middletown is in a rural area. If federal transit funding is available for a transit service between Winchester and Middletown, it may be necessary to split the federal funding sources between the S.5307 (urban) and S.5311 (rural) programs based on the revenue miles planned for each category.

The following describes the features of each of these two FTA funding programs, which may be options to support service oriented to the needs of LFCC.

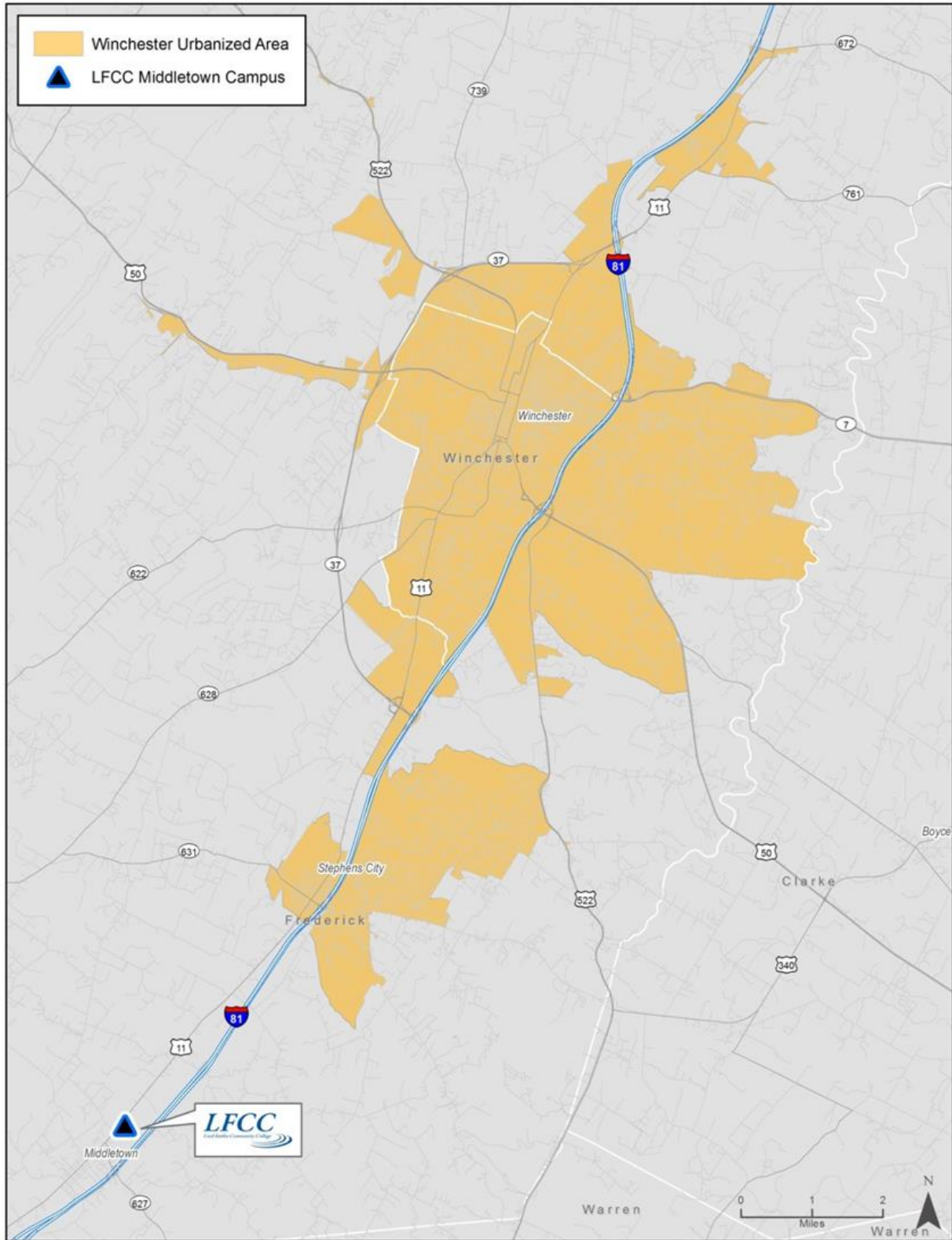
#### ***Urbanized Area Formula Funding Program (49 USC 5307)***

The S.5307 program makes federal financial resources available to urbanized areas and to governors for transit capital and operating assistance and for transportation-related planning.<sup>4</sup> An urbanized area is defined as an incorporated area with a population of 50,000 or more that is designated as such by the Census Bureau. Designated recipients must be public bodies with the legal authority to receive and dispense federal funds. For urbanized areas of between 50,000 and 200,000, the Governor or the Governor's designee is the designated recipient.

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<sup>4</sup> Urbanized Area Formula Program (5307), USDOT website, [www.transit.gov/funding/grants/grant-programs/urbanized-area-funding-programs](http://www.transit.gov/funding/grants/grant-programs/urbanized-area-funding-programs), updated March 2016.

Figure 2-7: Winchester Urbanized Area



Funds are available for planning, capital and operating expenses (for small urbanized areas). For urbanized areas under 200,000 in population the funds are apportioned to DRPT for distribution. The federal share is not to exceed 80% of the net project cost for capital expenses. The federal share may be up to 90% for the cost of vehicle-related equipment needed for ADA compliance, projects related to bicycles, and projects related to compliance with the Clean Air Act. For operating assistance, the federal share may not exceed 50% of the net project cost. Preventive maintenance is considered a capital cost.

### Local Example

WinTran is the designated recipient of S.5307 funds for the Winchester Urbanized Area. The FY2016 allocation for the region is \$988,057. WinTran's FY2016 budget allocated \$452,362 of this allocation for operating expenses and another \$360,000 for capital. This would potentially leave some federal urban transit funding available for expansion (\$175,695), depending upon WinTran's future capital and operating needs, as well as the future S.5307 allocations, which have not yet been published.

### **Formula Grants for Other than Urbanized Areas (49 USC 5311)**

The S.5311 program is a formula-based rural program that provides funding to states for the purpose of supporting public transportation in rural areas with populations of less than 50,000. DRPT is the direct recipient of funding under the S.5311 program. Eligible sub-recipients include state or local governmental authorities, nonprofit organizations, or operators of public transportation or intercity bus service that receive federal transit program grant funds indirectly through a recipient. DRPT oversees the program in Virginia.

Capital, operating, and administrative expenses are eligible uses for the funds. The federal share of eligible capital and project administrative activities may not exceed 80% of the net project cost and the federal share for operating expenses may not exceed 50% of the net operating cost. For projects that meet the requirements of the ADA, the Clean Air Act, or bicycle access projects, the federal share can be as much as 90%.<sup>5</sup>

### Local Example

Federal S.5311 funding is used to help fund transit services operated by VRT in Clarke County and in Front Royal. The BRCC shuttles are also funded up to 50% by S.5311. In FY15, the BRCC shuttles received about \$215,000 in federal operating support.

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<sup>5</sup> Formula Grants for other than Urbanized Areas (5311), USDOT website, [www.transit.dot.gov/funding/grants/grant-programs/formula-grants-other-urbanized](http://www.transit.dot.gov/funding/grants/grant-programs/formula-grants-other-urbanized) programs, updated March 16, 2016.

## State Transit Funding

In addition to providing oversight for federal transit funding programs in the Commonwealth, DRPT also administers eight state aid grant programs. These programs are summarized in Figure 2-8, taken from DRPT's Public Transportation Application Guidance.

### Local Example

In FY2016, WinTran received \$165,364 in state operating assistance and \$72,000 in state capital assistance. The BRCC shuttles receive about \$86,000 in state operating assistance (FY2015 data).

## Local Transit Funding

Local transit funding refers to funds that are provided by local governments or agencies to match federal and state grants. These funds could be derived from a county or city's general fund, or could be derived from a specific dedicated source, such as a contract for transit service or a tax. It is typical for a rural transit system to derive at least some of its local transit funding from local service contracts. Some examples included contracts for senior center-based transportation and medical transportation.

### Local Example

The City of Winchester currently provides \$284,498 from the City's general fund to support the operations of WinTran. Blue Ridge Community College contributes about \$154,000 annually to provide the local match for the operation of the two shuttle routes.

## NEXT STEPS

The next steps in the study process were for the stakeholder group to decide upon the options to pursue for the development of the transit service plan, which is highlighted in Chapter 3. The transit service plan provides a refined version of the concepts included in this chapter. The information contained within the transit service plan can form the basis for grant requests to DRPT to help implement service.



Figure 2-8: DRPT Administered State Aid Grant Programs

State Aid Grant Program	Program Description	Eligible Recipients	Matching Ratios
<b>Operating Assistance</b>	Supports costs borne by eligible recipients for operating related public transportation expenses	Local and State Government Transportation District Commissions Public Service Corporations	Up to 95% of eligible expenses
<b>Capital Assistance</b>	Supports costs borne by eligible recipients for public transportation capital projects	Local and State Government Transportation District Commissions Public Service Corporations	Up to 95% of eligible expenses
<b>Demonstration Project Assistance</b>	Supports 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
<b>Public Transportation Intern Program</b>	Supports increased awareness of public transportation as a career choice	Local and State Government Transportation District Commissions Public Service Corporations Planning District Commissions Human Service Agencies Involved in Rural Public Transportation	Up to 95% of eligible expenses
<b>Technical Assistance</b>	Supports planning or technical assistance to help improve or initiate public transportation related services	Local and State Government Transportation District Commissions Public Service Corporations Planning District Commissions Human Service Agencies Involved in Rural Public Transportation	Up to 50% of eligible expenses  Federal Funds may be provided to support 80% of project costs
<b>TDM Operating Assistance</b>	Supports administration of existing or new local and regional Transportation Demand Management/Commuter Assistance programs	Local and State Government Transportation District Commissions Public Service Corporations Planning District Commissions Transportation Management Associations	Up to 80% of eligible expenses
<b>Transportation Management Project Assistance</b>	Supports Transportation Demand Management projects and programs that encourage the reduction of single occupant vehicle travel	Local and State Government Transportation District Commissions Public Service Corporations Planning District Commissions Transportation Management Associations	Up to 80% of eligible expenses
<b>Senior Transportation Program</b>	Supports projects and programs that improve mobility for senior citizens	Local and State Government Transportation District Commissions Public Service Corporations Private Non-Profit Organizations	Up to 80% of eligible expenses



# Chapter 3

## Transit Service Plan

### INTRODUCTION

After review and discussion of the service options presented in Chapter 2, study committee members chose a plan to consider for implementation. The chosen plan includes a near-term option to develop a public transportation route from the City of Winchester to Lord Fairfax Community College (LFCC) via Stephens City; a mid-term plan to extend service to Front Royal; a long-term plan to extend service to Woodstock and Strasburg; and evaluate service from areas north and west of Winchester as well as Berryville. While derived from the general concepts outlined in Chapter 2, the plan offers a more modest approach to implementing service than was outlined in Chapter 2, with the goal of initiating basic service, and adding to it as demand warrants and funding levels allow.

The plan is detailed in this chapter, including organizational, service, and financial details. The implementation of service will depend upon the level of federal, state, and local funds available for the project. Of particular importance will be an agreement among local stakeholders to provide an equitable share of the local match required for annual operating and capital budgets.

### ORGANIZATIONAL PLAN

#### Near-Term

The City of Winchester, with financial assistance from local partners, may consider applying for grant funding from the Virginia Department of Rail and Public Transportation (DRPT) and the Federal Transit Administration (FTA) to extend a route from the City of Winchester to LFCC. Given that the route serves both urban and rural areas, it is proposed that WinTran use both S.5307 (urbanized area) funding and S.5311 (rural area) funding for the federal portion of the public transportation funding assistance. The proposed route, using the Route 11 corridor, totals 24.26 miles round trip, with 64% of the route miles in the urbanized area and 36% of the route miles are in the rural area. It is likely that this link will also attract a significant number of general public riders, particularly between Stephens City and Winchester.

As the existing grantee for FTA urbanized area funding in the region, as well as the origin area for about 24% of the LFCC student population that will be potentially served via the transit corridor, it makes sense for the City to take the lead for the near-term transit service link to

LFCC.<sup>1</sup> Local funding sources could include the City of Winchester, Frederick County, the towns of Stephens City and Middletown, LFCC, and major employers in the corridor.

## Mid-Term

There are additional areas of the Northern Shenandoah Valley that are home to LFCC students who need to access the Middletown campus. The second largest concentration of LFCC–Middletown students (behind the Winchester area and Stephens City), is the Front Royal area.

The mid-term plan calls for a public transportation link between Front Royal and LFCC. This link would be administered and operated by VRT, as part of their role in administering and providing public transportation service in the Front Royal area. The federal funding source would be the rural S.5311 program. Local funding sources could include the Town of Front Royal, Frederick County, Warren County, LFCC, and major employers in the corridor.

## Long-Term

The longer-term plan includes a route along the Route 11 South corridor, providing a link from Woodstock and Strasburg to LFCC. There is not currently a public transportation program operating in this corridor. It is proposed that the same operator that oversees the Front Royal service (currently VRT) also operate the Woodstock/Strasburg link.

Also in the long-term, it is recommended that a link to the north and west of Winchester, in Frederick County, be further examined for future service to link into the City of Winchester and the LFCC service. Service from Berryville should also be considered.

## Future Organizational Considerations

While there is not currently a public transportation program in Frederick County, the need has been articulated for several years. Public transportation options have also been discussed for Warren County, including service along the 340/522 Corridor. If public transportation services in the region continue to grow, it may make sense to explore development of a regional entity to administer public transportation services in the region, rather than the current structure of Winchester City and VRT (private non-profit) administration.

## Advisory Committee

In order to provide guidance and help the program succeed, it is proposed that the current LFCC study committee, which has provided guidance for this feasibility study, remain in place and transition to an advisory committee for the LFCC-based service. The committee can meet

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<sup>1</sup> Based on LFCC enrollment data within and adjacent to the proposed service corridor.

on a regular basis, with monthly meetings likely useful during the planning and implementation stages and less frequent meetings once the service is established. An important role for the committee will be to help reach out to potential additional funding partners and to establish performance measures that can be used for future service planning (i.e., route viability, expansion, etc.).

## Staffing

It is proposed that the LFCC Shuttle be operated by WinTran staff for the link to Winchester and by VRT staff for the link to Front Royal. There may be a possibility of contracting the ADA paratransit service to a private non-profit or for-profit transportation provider, and this option will be further explored during the implementation phase.

## SERVICE PLAN

### Near Term

#### *LFCC Shuttle*

Given the relative density of LFCC students in the City of Winchester, the area of Frederick County adjacent to Winchester and the proposed corridor, as well as the opportunity to connect to the full WinTran route network in downtown Winchester, the development of a fixed route shuttle service between WinTran's Boscawen Street transfer stop in the City of Winchester and LFCC is recommended. The preliminary route proposal will serve the Route 11 (Valley Avenue) corridor, including a stop in Stephens City. As proposed, the route will:

- Originate at the Boscawen Street stop in downtown Winchester.
- Use the same downtown routing as the Valley Avenue route, serving Cameron and Braddock Streets downtown, and then travel south along Valley Avenue.
- Make the following passenger stops in the southbound direction:
  - Downtown Winchester
  - John Handley High School
  - The Elms
  - Creekside Station
  - The DMV
  - Main Street, Stephens City
  - LFCC
- Make the following stops in the northbound direction:
  - LFCC
  - Main Street, Stephens City
  - Kernstown Commons

- Valley Avenue @ Brookfield
- Wards Plaza
- Valley Avenue @ Lambden
- McDonalds
- Downtown Winchester

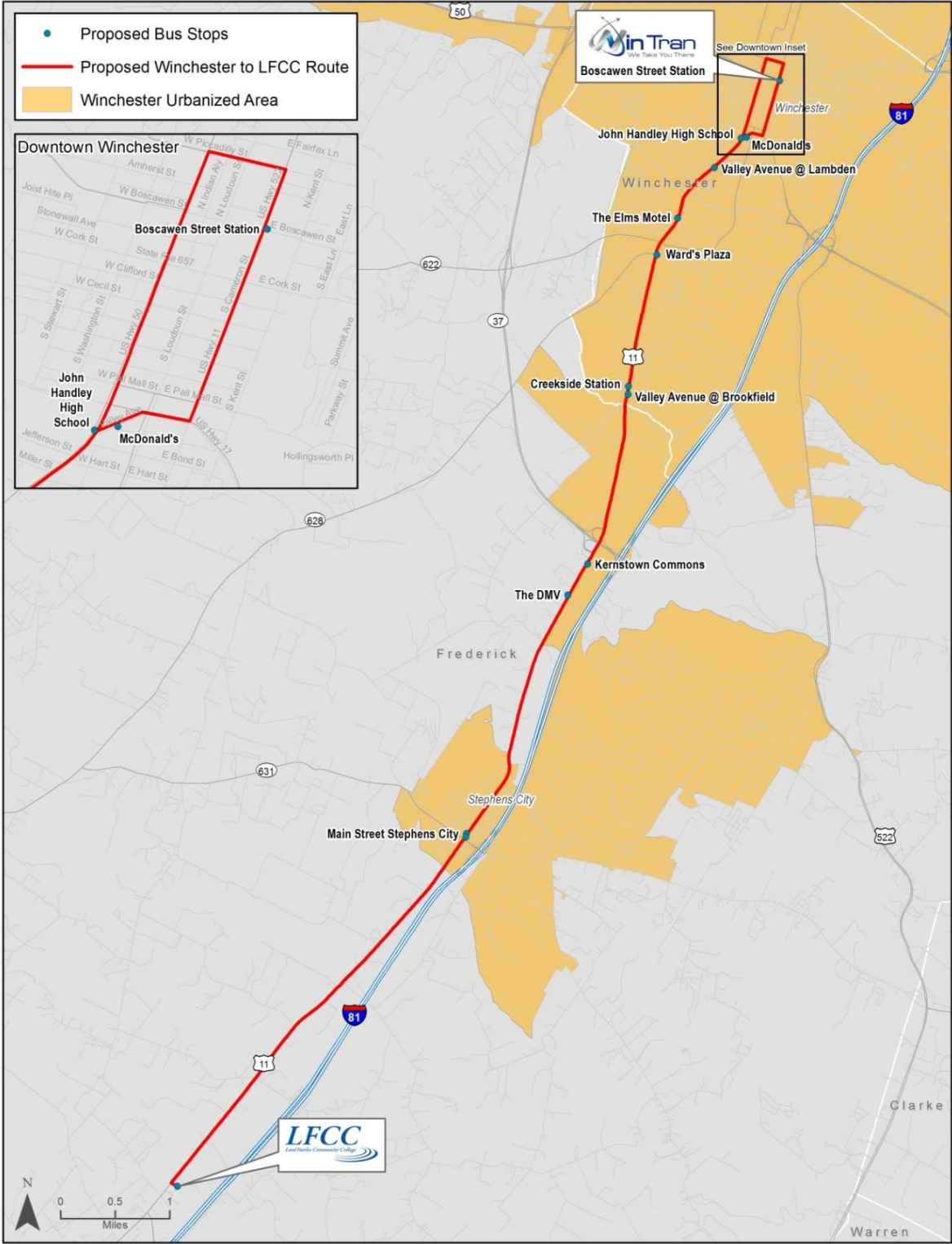
This route, as described above, is 24.26 miles round trip. This distance, allowing for passenger stops, traffic, and driver recovery will require two vehicles to be assigned to the route to achieve one-hour frequencies. A preliminary route map is provided in Figure 3-1.

For ease of use among students, and to get students to campus with enough time to attend classes that start on the hour, it is recommended that this route leave Winchester on the hour. This schedule will complement the Valley Avenue route for most of the day, with the exception of the 10:00 a.m. and the 5:00 p.m. runs, where the routes will be duplicative for the city portion of the route. A proposed time table for Monday through Thursday is provided in Table 3-1. This schedule equates to about 4,386 annual revenue service hours.

As discussed in Chapter 1, there are significantly fewer students on campus on Fridays, with very little activity after 1:00 p.m. In recognition of the fact that the route will also attract general public riders, it is proposed that the route operate until about 6:00 p.m. on Fridays. The proposed time table for Friday service is provided in Table 3-2. Evening and weekend services are not planned for the near term. The Friday service equates to about 995 annual revenue service hours, for a total of 5,380 revenue service hours for the fixed route service.

The proposed schedule appears to be on the “loose” side, meaning that there is extra time built in on either end. Some of this time is scheduled for driver recovery, and some could be used for added stops in the City of Winchester and/or on the LFCC campus. WinTran will need to further test the proposed schedule using a transit vehicle and adjust the schedule as needed prior to implementation.

Figure 3-1: LFCC- Winchester Shuttle Preliminary Route Map



**Table 3-1: LFCC- Winchester Shuttle – Proposed Schedule- Monday - Thursday**

	<i>Southbound</i>								<i>Northbound</i>						
	Boscawen Street Station	John Handley High School	The Elms	Creekside Station	The DMV	Main Street Stephens City	Arrive LFCC	Depart LFCC	Main Street Stephens City	Kernstown Commons	Valley Avenue @ Brookfield	Wards Plaza	Valley Avenue @ Lambden	McDonalds	Boscawen Street Station
a.m.	7:00	7:09	7:15	7:21	7:29	7:35	7:45	8:00	8:10	8:17	8:23	8:30	8:35	8:37	8:41
	8:00	8:09	8:15	8:21	8:29	8:35	8:45	9:00	9:10	9:17	9:23	9:30	9:35	9:37	9:41
	9:00	9:09	9:15	9:21	9:29	9:35	9:45	10:00	10:10	10:17	10:23	10:30	10:35	10:37	10:41
	10:00	10:09	10:15	10:21	10:29	10:35	10:45	11:00	11:10	11:17	11:23	11:30	11:35	11:37	11:41
	11:00	11:09	11:15	11:21	11:29	11:35	11:45	12:00	12:10	12:17	12:23	12:30	12:35	12:37	12:41
p.m.	12:00	12:09	12:15	12:21	12:29	12:35	12:45	1:00	1:10	1:17	1:23	1:30	1:35	1:37	1:41
	1:00	1:09	1:15	1:21	1:29	1:35	1:45	2:00	2:10	2:17	2:23	2:30	2:35	2:37	2:41
	2:00	2:09	2:15	2:21	2:29	2:35	2:45	3:00	3:10	3:17	3:23	3:30	3:35	3:37	3:41
	3:00	3:09	3:15	3:21	3:29	3:35	3:45	4:00	4:10	4:17	4:23	4:30	4:35	4:37	4:41
	4:00	4:09	4:15	4:21	4:29	4:35	4:45	5:00	5:10	5:17	5:23	5:30	5:35	5:37	5:41
	5:00	5:09	5:15	5:21	5:29	5:35	5:45	6:00	6:10	6:17	6:23	6:30	6:35	6:37	6:41



**Table 3-2: LFCC- Winchester Shuttle – Proposed Schedule- Friday**

	<i>Southbound</i>								<i>Northbound</i>						
	Boscawen Street Station	John Handley High School	The Elms	Creekside Station	The DMV	Main Street Stephens City	Arrive LFCC	Depart LFCC	Main Street Stephens City	Kernstown Commons	Valley Avenue @ Brookfield	Wards Plaza	Valley Avenue @ Lambden	McDonalds	Boscawen Street Station
a.m.	7:00	7:09	7:15	7:21	7:29	7:35	7:45	8:00	8:10	8:17	8:23	8:30	8:35	8:37	8:41
	8:00	8:09	8:15	8:21	8:29	8:35	8:45	9:00	9:10	9:17	9:23	9:30	9:35	9:37	9:41
	9:00	9:09	9:15	9:21	9:29	9:35	9:45	10:00	10:10	10:17	10:23	10:30	10:35	10:37	10:41
	10:00	10:09	10:15	10:21	10:29	10:35	10:45	11:00	11:10	11:17	11:23	11:30	11:35	11:37	11:41
	11:00	11:09	11:15	11:21	11:29	11:35	11:45	12:00	12:10	12:17	12:23	12:30	12:35	12:37	12:41
p.m.	12:00	12:09	12:15	12:21	12:29	12:35	12:45	1:00	1:10	1:17	1:23	1:30	1:35	1:37	1:41
	1:00	1:09	1:15	1:21	1:29	1:35	1:45	2:00	2:10	2:17	2:23	2:30	2:35	2:37	2:41
	2:00	2:09	2:15	2:21	2:29	2:35	2:45	3:00	3:10	3:17	3:23	3:30	3:35	3:37	3:41
	3:00	3:09	3:15	3:21	3:29	3:35	3:45	4:00	4:10	4:17	4:23	4:30	4:35	4:37	4:41
	4:00	4:09	4:15	4:21	4:29	4:35	4:45	5:00	5:10	5:17	5:23	5:30	5:35	5:37	5:41

Given that this route will provide important connectivity through the Route 11 corridor, it is recommended that the route operate year round. This will allow Winchester area students to attend registration, orientation, and summer programs held at LFCC. It will also allow year-round faculty and staff to use the service consistently. While evening service is thought to be important, local stakeholders indicated implementing day service would be a good first step and indicator of demand. As funding and demand dictates, the service could be expanded into the evening in the future.

**Americans with Disabilities Act (ADA) Service**

In order to comply with ADA requirements, people with disabilities who cannot travel to a bus stop must be accommodated. This service must be offered within ¾ mile of a fixed route. Transit programs can provide service either by deviation from their fixed routes (deviated fixed route service) or by providing a separate demand response vehicle.

The current service proposal calls for ADA service to be offered through the provision of ADA paratransit for this corridor. Route deviation was considered, but the consensus of stakeholders

is that students are particularly sensitive to travel time and route deviations will add to total travel time.

WinTran already provides ADA paratransit for the fixed route network. Adding the LFCC-Winchester Shuttle to the WinTran network will increase the service area covered by ADA service from the current southern terminus (3/4 mile south of Creekside Station) to 3/4 mile south of LFCC. The added ADA paratransit service area is highlighted in Figure 3-2. As is shown on this map, the majority of additional ADA paratransit demand is likely to come from the Stephens City area.

There are two primary ways in which the ADA demand can be met. The first is for WinTran to add ADA capacity to cover the added demand and the second is for the City to issue a request for proposals (RFP) to investigate the possibility of a contractor operating the service. It is possible that either WellTran, VRT, or another operator may be able to serve as a contractor for ADA paratransit in the corridor. The WellTran program currently provides paratransit services in the Route 11 corridor for senior citizens and people with disabilities for medical purposes, and VRT operates service in Berryville and Front Royal.

Under either scenario, service hours will need to be budgeted for the provision of ADA paratransit service, and two expansion vehicles will be needed. The estimated number annual revenue service hours for ADA paratransit, based on the fixed route schedule, is 2,945 revenue service hours. The preliminary budget assumes WinTran will operate the service, but this may change if an RFP process discovers that a more suitable alternative.

### **Fares**

It is recommended that the fare be consistent with the WinTran fare structure, which is \$1.00 per trip for an adult fare; \$0.50 for the half-fare program (students, seniors ages 65 or older, individuals with disabilities, or Medicare card holders); and free for children under two years of age. Transfers from one route to another during the same one-way trip are free.

While the concept of LFCC providing full payment in lieu of fares for LFCC students was discussed, LFCC representatives indicated that the available funding to support the service will not be enough to supplant fare revenue.

### **Targeted Riders**

While the route is oriented to the needs of LFCC students, the LFCC-Winchester Shuttle will be open to the public, including all segments of the local community. The chosen route serves a number of community destinations, in addition to LFCC, the Town of Stephens City, Middletown, and downtown Winchester.



Figure 3-2: LFCC- Winchester Shuttle, ADA Service Area



### Estimated Ridership

Ridership estimates have been developed using a combination of data including student enrollment in the proposed service corridor and the general population in the proposed service corridor. Table 3-3 provides the LFCC enrollment data for a particular semester (Fall 2014), as well as the distinct student population over several semesters for the service corridor, and the general population.

**Table 3-3: LFCC Enrollment by Zip Code for Proposed Transit Service Corridor- Winchester- LFCC**

Area/Jurisdiction	Zip Code	Fall 2014 Enrollment	% Total	Distinct Students Fall 2013-Spring 2015	% Total	General Population	% Total
Frederick County - E. and W. of Winchester	22602	687	33%	1,276	31%	28,443	30%
Frederick County - Stephens City	22655	561	27%	1,123	27%	19,328	21%
Frederick County - N. Winchester	22603	251	12%	473	11%	13,910	15%
Winchester City	22601	497	24%	1,037	25%	27,813	30%
Frederick County - Middletown	22645	108	5%	209	5%	3,880	4%
<b>Corridor Enrollment/Distinct Students</b>		<b>2,104</b>		<b>4,118</b>		<b>93,374</b>	

Notes: Enrollment data provided by LFCC; Population by Zip Code from U.S. Census, 2010.

In order to estimate LFCC ridership from these data, a number of trip rates were applied to the semester corridor enrollment to estimate the number of individual riders, as well as the total annual ridership that can be expected, based on a range of between 2% (low end) and 10% (high end). These data are provided in Table 3- 4.

**Table 3-4: Estimated LFCC Ridership Using Enrollment Data**

Potential Trip Rates	# of Individual Users	Annual LFCC Ridership (1)
2%	42	12,372
3%	63	18,557
4%	84	24,743
5%	105	30,929
6%	126	37,115
7%	147	43,300
8%	168	49,486
9%	189	55,672
10%	210	61,858

(1) Based on 3.5 round trips per week; 42 weeks/year



For the community data, the population of Stephens City was used as a basis, as using the total corridor population would significantly inflate the pool of potential users by including the portion of the route that is within the City of Winchester and already has transit service. Using the Stephens City population of 1,842, trip rate estimates are provided in Table 3-5.

**Table 3-5: Community Ridership Estimates**

Potential Trip Rates	Individual Community Users	Annual Ridership (1)
2%	37	7,609
3%	55	11,413
4%	73	15,217
5%	91	19,022

(1) Based on 2 round trips per week; 52 weeks/year

The total corridor ridership estimate, using a 5% mode split for the LFCC population and a 3% mode split for the community population, is 42,342 annual passenger trips.

### ***Estimated Performance Data***

Using these ridership estimates, it is estimated the fixed route service will provide 7.9 passenger trips per revenue hour. This is on the conservative side, with higher numbers certainly possible. If this productivity is achieved, the resulting direct operating cost per trip for the fixed route shuttle will be \$6.34. These preliminary cost figures are based on the estimated annual operating budget (provided in the Financial Plan section), estimated ridership, and planned number of service hours.

### ***Expansion***

The route between Winchester and LFCC represents a significant expansion for WinTran, as the total additional service hours (including ADA) are more than half of what is currently provided. For this reason, a supervisor position was added, as well as a half-time office assistant.

## **Mid Term**

### ***LFCC- Front Royal Shuttle***

The second phase of LFCC service is planned to connect the Front Royal area to LFCC. As currently proposed, this service would provide a direct connection from the Front Royal Area

Trolley (FRAT) service to campus. This phase would include a local link for FRAT that is currently only available on Sundays - the link is from downtown Front Royal to Walmart and Target, located near the interchange of 340/522 and I-66. It is proposed that the LFCC-Front Royal Shuttle operate from the Visitor Center in Front Royal, travel through Front Royal using some of the same segments as FRAT's weekday North Loop and then travel north along Route 340/522, making a stop at the Riverton Commons area, and then traveling to LFCC via Reliance Road.

As proposed, the route will:

- Originate at the Visitor Center in Front Royal
- Make passenger stops in the northbound direction:
  - Government Center
  - Department of Social Services
  - Target
  - Walmart
  - Reliance
  - LFCC
- Make stops in the southbound direction:
  - LFCC
  - Reliance
  - Walmart
  - Target
  - Department of Social Services
  - Government Center
  - Visitor Center

This route is approximately 24 miles round trip. This distance, allowing for passenger stops, traffic, and driver recovery will require one vehicle to be assigned to the route to achieve two-hour frequencies. A preliminary route map is provided in Figure 3-3.

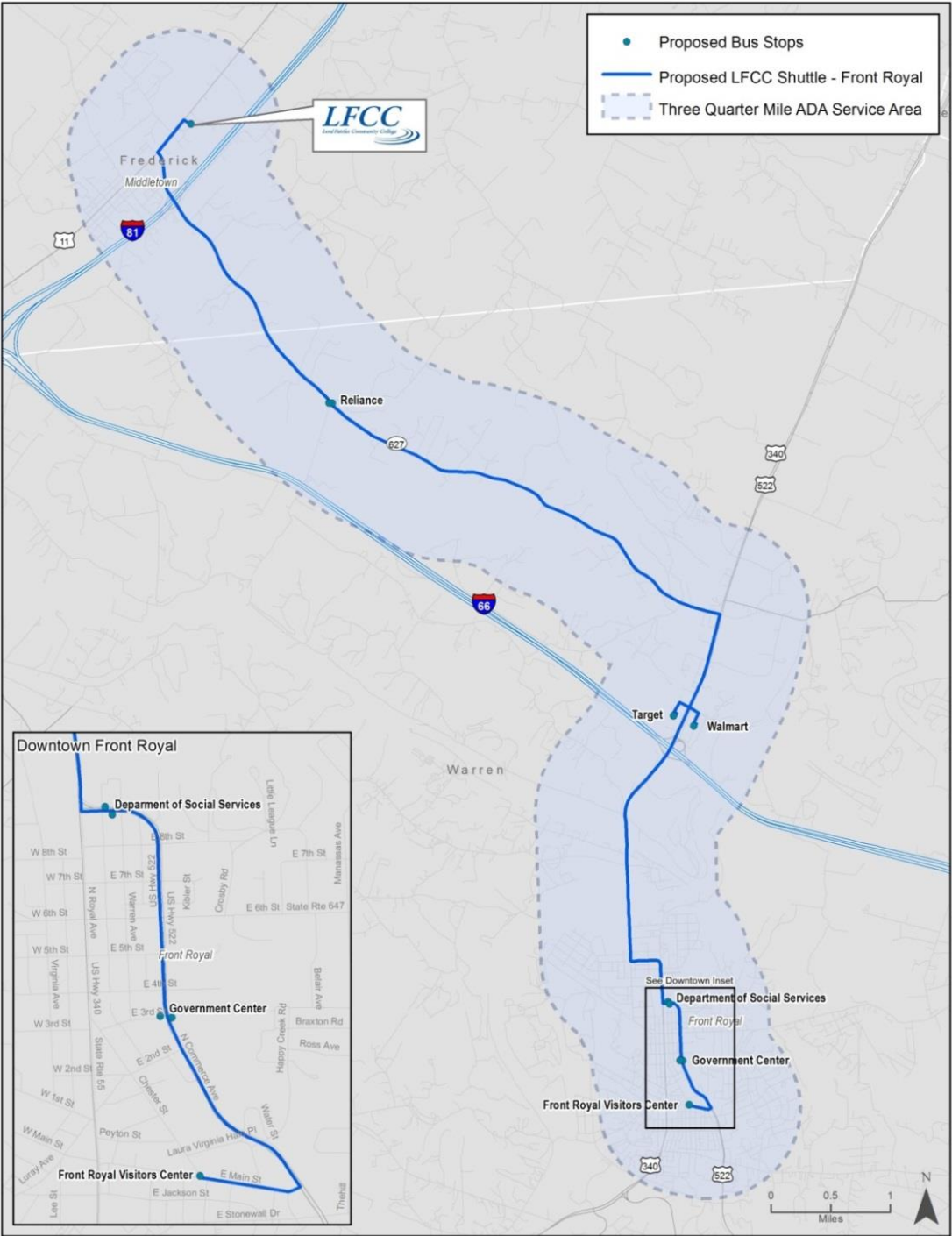
For ease of use among students and to get students to campus with enough time to attend classes that start on the hour, it is recommended that this route leave Front Royal on the hour.

A proposed time table for Monday through Thursday is provided in Table 3-6. The Monday through Thursday schedule represents 2,860 annual revenue service hours. There are significantly fewer students on campus on Fridays, with very little activity after 1:00 p.m. In recognition of the fact that the route will also attract general public riders, it is proposed that the route operate until about 6:00 p.m. on Fridays. The proposed time table for Friday service is provided in Table 3-7. The Friday schedule equates to 507 annual service hours. Weekend service is not planned for the near term. Evening services are currently included in the schedule, but this may need to be adjusted depending upon funding availability at the time of implementation.



The proposed schedule appears to be on the “loose” side, meaning that there is extra time built in on either end. This time will likely be needed to accommodate route deviations. VRT will need to further test the proposed schedule using a transit vehicle and adjust the schedule as needed.

Figure 3-3: LFCC- Front Royal Shuttle



**Table 3-6: Proposed LFCC-Front Royal Shuttle, Monday -Thursday**

		<i>Northbound</i>							<i>Southbound</i>						
		Front Royal Visitor Center	Government Center	Department of Social Services	Target	Walmart	Reliance	Arrive LFCC	Depart LFCC	Reliance	Walmart	Target	Department of Social Services	Government Center	Visitor Center
a.m.	7:00	7:03	7:06	7:21	7:26	7:36	7:48	8:00	8:12	8:22	8:27	8:42	8:46	8:49	
	9:00	9:03	9:06	9:21	9:26	9:36	9:48	10:00	10:12	10:22	10:17	10:42	10:46	10:49	
	11:00	11:03	11:06	11:21	11:26	11:36	11:48	12:00	12:12	12:22	12:27	12:42	12:46	12:49	
p.m.	1:00	1:03	1:06	1:21	1:26	1:36	1:48	2:00	2:12	2:22	2:27	2:42	2:46	2:49	
	3:00	3:03	3:06	3:21	3:26	3:36	3:48	4:00	4:12	4:22	4:27	4:42	4:46	4:49	
	5:00	5:03	5:06	5:21	5:26	5:36	5:48	6:00	6:12	6:22	6:27	6:42	6:46	5:49	
	7:00	7:03	7:06	7:21	7:26	7:36	7:48	8:00	8:12	8:22	8:27	8:42	8:46	8:49	

**Table 3-7: Proposed LFCC- Front Royal Shuttle, Friday**

		<i>Northbound</i>							<i>Southbound</i>						
		Front Royal Visitor Center	Government Center	Department of Social Services	Target	Walmart	Reliance	Arrive LFCC	Depart LFCC	Reliance	Walmart	Target	Department of Social Services	Government Center	Visitor Center
a.m.	7:00	7:03	7:06	7:21	7:26	7:36	7:48	8:00	8:12	8:22	8:27	8:42	8:46	8:49	
	9:00	9:03	9:06	9:21	9:26	9:36	9:48	10:00	10:12	10:22	10:17	10:42	10:46	10:49	
	11:00	11:03	11:06	11:21	11:26	11:36	11:48	12:00	12:12	12:22	12:27	12:42	12:46	12:49	
p.m.	1:00	1:03	1:06	1:21	1:26	1:36	1:48	2:00	2:12	2:22	2:27	2:42	2:46	2:49	
	3:00	3:03	3:06	3:21	3:26	3:36	3:48	4:00	4:12	4:22	4:27	4:42	4:46	4:49	

Given that this route will provide important connectivity from Front Royal to Middletown, including Target, Walmart and Reliance, it is recommended that the route operate year round. This will allow Front Royal area students to attend registration, orientation, and summer programs held at LFCC. It will also allow year-round faculty and staff to use the service consistently.

### ***Americans with Disabilities Act (ADA) Service***

In order to comply with ADA requirements, people with disabilities who cannot travel to a bus stop must be accommodated. This service must be offered within  $\frac{3}{4}$  mile of a fixed route. Transit programs can provide this service either by deviation from their fixed routes (deviated fixed route service) or by providing a separate demand response vehicle.

The current service proposal calls for ADA service to be offered through route deviation for this corridor, similar to the existing FRAT service model. Given the lower population density in this service area (as compared to the Winchester area), route deviation should be a viable service model to accommodate people with disabilities.

### ***Fares***

It is recommended that the fare be consistent with the fare structure developed for the route between LFCC and Winchester, which is \$1.00 per trip for an adult fare; \$0.50 for the half-fare program (students, seniors age 65 or older, individuals with disabilities, or Medicare card holders); and free for children under two years of age. Free transfers to/ from the FRAT Trolley are recommended.

### ***Targeted Riders***

While the route is oriented to the needs of LFCC students, the LFCC- Front Royal Shuttle will be open to the public, including all segments of the local community. In addition to LFCC, the chosen route serves a number of community destinations, including Department of Social Services, Government Center, Target and Walmart.

### ***Estimated Ridership***

Ridership estimates have been developed using a combination of data including student enrollment in the proposed service corridor and the general population in the proposed service corridor. Table 3-8 provides the LFCC enrollment data for the service corridor, as well as the number of distinct students served by zip code between Fall 2013 and Spring 2015.

**Table 3-8: LFCC Enrollment by Zip Code and General Population for Proposed Transit Service Corridor- Front Royal - LFCC**

Area/Jurisdiction	Zip Code	Fall 2014 Enrollment	% Total	Distinct Students Fall 2013- Spring 2015	% Total	General Population	% Total
Warren County - Front Royal	22630	458	81%	983	82%	30,292	89%
Frederick County - Middletown	22645	108	19%	209	18%	3,880	11%
<b>Corridor Enrollment/Distinct Students</b>		<b>566</b>		<b>1,192</b>		<b>34,172</b>	

Notes: Enrollment data provided by LFCC; Population by Zip Code from U.S. Census, 2010.

In order to estimate LFCC ridership from these data, a number of trip rates were applied to the semester corridor enrollment to estimate the number of individual riders, as well as the total annual ridership that can be expected, based on a range of between 2% (low end) and 10% (high end). These data are provided in Table 3-9.

**Table 3-9: Estimated LFCC Ridership- Front Royal Corridor Using Enrollment Data**

Potential Trip Rates	# of Individual Users	Annual Ridership (1)
2%	11	3,328
3%	17	4,992
4%	23	6,656
5%	28	8,320
6%	34	9,984
7%	40	11,648
8%	45	13,312
9%	51	14,976
10%	57	16,640

(1) Based on 3.5 round trips per week; 42 weeks/year

For the community data, the service corridor population was used as a basis. The corridor population was used because this corridor represents significant new service destinations for Front Royal and Warren County residents. The service area population of the corridor is 15,531. The community trip rates are provided in Table 3-10.

**Table 3-10: Community Trip Rates- Front Royal – LFCC Corridor**

Potential Trip Rates	Community Users	Annual Ridership (1)
1%	155	8,076
2%	311	16,152
3%	466	24,228

(1) Based on .5 round trips per week; 52 weeks/year

Even with very conservative estimates, it would appear that there could be significant community ridership for this corridor, particularly between Front Royal and the Target/Wal-Mart areas.

The total corridor ridership estimate, using 5% for the LFCC population and 2% for the community population results in a total annual ridership of 24,472 annual passenger trips.

### ***Estimated Performance Data***

It is estimated that service will provide 7.3 passenger trips per revenue hour. This is on the conservative side, with higher numbers certainly possible. If this productivity is achieved, the resulting fully-allocated cost per trip will be \$7.98. The fully allocated operating costs include all administrative and direct operating expenses. VRT's estimated fully allocated operating cost per hour is \$58.00 per hour. These preliminary cost figures are based on estimated operating budget, estimated ridership, and planned number of service hours. Final cost per hour may be higher or lower, depending upon how VRT can integrate service into the Front Royal operation and how service is implemented.

### **Regional Connectivity**

In addition to providing needed service from Winchester to LFCC and from Front Royal to LFCC, these two routes together will allow people to travel between Winchester and Front Royal, making a transfer at LFCC. This will likely be an important link for employment, medical, and other trip purposes. These routes may serve to form the basis of a regional transit program for the Northern Shenandoah Valley.

### **Long Term**

Longer term options are not described with the level of detail associated with near and mid-term services largely because they are further into the future, which makes it more difficult to estimate appropriate service parameters and associated costs. Three additional service areas should be considered for long-term additional public transportation options for LFCC:

- Route 11 South corridor service, connecting Woodstock, Strasburg, and LFCC.
- Service from areas in Frederick County west and north of Winchester. These areas would likely be served through a route that connected to the proposed LFCC-Winchester Connector.
- Service from Berryville to LFCC.

## CAPITAL PLAN

### Near Term- LFCC – Winchester Shuttle Capital Needs

#### ***Vehicles***

WinTran will need to apply for funding from DRPT/FTA to purchase three 19-passenger, lift-equipped, body-on-chassis vehicles for the fixed route shuttle (two on the road at a time and one spare). This type of vehicle is expected to cost about \$100,000 per vehicle, fully equipped for service with accessibility equipment, a farebox, bike racks, and radio. Two paratransit vehicles will also be needed to provide ADA complementary paratransit. These vehicles cost about \$60,000 each.

#### ***Shelters and Seating***

It is recommended that passenger waiting shelters with seating be provided at key locations along the route where other shelter is not available. For the LFCC-Winchester Shuttle, there is likely a need to add four shelters. LFCC staff indicated that they own a shelter from the prior transit demonstration program and it could be re-installed.

#### ***Bus Stop Signs***

Bus stop signs will be needed for stops not currently in the WinTran network. These stops include:

- The DMV - southbound
- Kernstown Commons - northbound
- Stephens City – southbound and northbound
- LFCC

WinTran has estimated that these signs are expected to cost about \$1,000.



## Mid-Term – LFCC –Front Royal Capital Needs

### ***Vehicles***

VRT will need to apply for funding from DRPT/FTA to purchase a 19-passenger, lift-equipped, body-on-chassis vehicle. It is suggested that one of VRTs existing vehicles be used as a spare vehicle. This type of vehicle, fully equipped for service, is estimated to cost about \$100,000.

### ***Shelters and Seating***

It is recommended that passenger waiting shelters with seating be provided at key locations along the route where other shelter is not available. For the LFCC Front Royal Shuttle, these locations include LFCC (same shelter as LFCC - Winchester) and possibly Target and Walmart.

### ***Bus Stop Signs***

Bus stop signs will be needed for stops not currently in the FRAT network. These stops include:

- Reliance
- LFCC

## Longer Term

Longer term capital needs will likely include additional signs, shelters and seating. Vehicle replacement will need to be programmed, and if demand warrants, additional expansion vehicles. Small transit vehicles have a life span of between five and seven years, depending upon annual mileage, maintenance provided, and specific vehicle make.

## FINANCIAL PLAN

### Near Term

The operating cost estimate for the LFCC-Winchester Shuttle is currently based on the budgets constructed in Tables 3-11 and 3-12. The estimates for total annual expenses, hours, miles, and ridership are presented in Table 3-13.

**Table 3-11: Proposed Annual Operating Budget, LFCC-Winchester Shuttle**

Expense Category	Per Unit Rate	#Hours	Pre/Post Hours	Amount
Salaries and Wages:				
Drivers	\$ 13.11	5,380	807	\$ 81,112
Supervisor	\$ 18.44	2,080		\$ 38,355
Office Assistant	\$ 13.11	1,040		\$ 13,634
<b>Subtotal</b>				<b>\$ 133,101</b>
Fringe Benefits	21%			\$ 27,951
Health Insurance	\$ 5,000			\$ 30,000
<b>Total Salaries, Wages, Fringe</b>				<b>\$ 191,052</b>
Other Operating Expenses:		<b># of units</b>		
Motor Fuels and Lubricants	\$ 1.75	10,087		\$ 17,652
Vehicle Maintenance and Repairs	\$ 15,000	3		\$ 45,000
Advertising and Promotion Media				\$ 5,000
Drug Testing	\$ 162	5		\$ 810
Vehicle Insurance (1)	\$ 1,750	3		\$ 5,250
Uniforms	\$ 700	5		\$ 3,500
<b>Subtotal, Other Operating Expenses</b>				<b>\$ 77,212</b>
<b>Total Operating Budget - Fixed Route</b>				<b>\$ 268,265</b>

(i) Estimate

Source: Per unit costs were supplied by WinTran. # of hours and units were estimated by KFH Group.

**Table 3-12: ADA Paratransit and Total Operating Expenses to Support LFCC-Winchester Shuttle**

Expense Category	Per Unit Rate	#Hours	Pre/Post Hours	Amount
Salaries and Wages:				
Drivers	\$ 13.11	2,945	442	\$ 44,400
<b>Subtotal</b>				
Fringe Benefits	21%			\$ 9,324
Health Insurance	\$ 5,000			\$ 10,000
<b>Total Salaries, Wages, Fringe</b>				<b>\$ 63,724</b>
Other Operating Expenses:				
		<b># of units</b>		
Motor Fuels and Lubricants	\$ 1.95	4,417		\$ 8,613
Vehicle Maintenance and Repairs	\$ 6,000	2		\$ 12,000
Drug Testing	\$ 162	2		\$ 324
Vehicle Insurance (1)	\$ 1,750	2		\$ 3,500
Uniforms	\$ 700	2		\$ 1,400
<b>Subtotal, Other Operating Expenses</b>				<b>\$ 25,837</b>
<b>Total Operating Budget Paratransit</b>				<b>\$ 89,562</b>
<b>TOTAL FIXED ROUTE AND PARATRANSIT</b>				<b>\$ 357,826</b>

(1) Estimate

Source: Per unit costs were supplied by WinTran. # of hours and units were estimated by KFH Group

**Table 3-13: LFCC-Winchester Shuttle – Estimated Annual Operating Data**

Estimated Operating Data			
	Fixed Route	Paratransit	Total
Annual Revenue Hours	5,380	2,945	8,325
Annual Revenue Miles	60,525	35,340	95,865
Estimated Ridership	42,342	3,829	46,171
Direct Cost per Hour (1)	\$ 49.86	\$ 30.41	\$ 42.98
Direct Cost per Trip	\$ 6.34	\$ 23.39	\$ 7.75
<b>Estimated Annual Operating Costs</b>	<b>\$ 268,265</b>	<b>\$ 89,562</b>	<b>\$ 357,827</b>

(1) The added supervisor and office assistant expenses were included under the fixed route portion

The city, with financial support from local partners, will need to apply to DRPT/FTA to secure grant funding to help implement the LFCC-Winchester Shuttle. Local funding for service is proposed to come from fares, advertising, LFCC, the City of Winchester, and Frederick County. It is assumed that the LFCC students will pay a fare to ride the bus. Proposed funding sources for operations of the near-term route are provided in Table 3-14.

**Table 3-14: Proposed Funding Sources- Annual Operating Expenses- LFCC Winchester Shuttle**

<b>Total Annual Expenses</b>	<b>\$ 357,827</b>
<b>Proposed Funding Sources</b>	<b>Amount</b>
Farebox Estimate (1)	\$ 35,783
Advertising	\$ 6,000
<b>Net Deficit</b>	<b>\$ 316,044</b>
<b>Urbanized Area Net Deficit</b>	<b>\$ 202,268</b>
<b>Rural Area Net Deficit</b>	<b>\$ 113,776</b>
Federal S.5307 (2)	\$ 101,134
Federal S. 5311 (3)	\$ 56,888
State Operating Assistance	\$ 53,095
Federal and State Subtotal	\$ 211,118
Local Funding Needed	\$ 104,927
<b>Total</b>	<b>\$ 316,044</b>

(1) Assumes LFCC students pay a fare

(2) 50% of the urbanized area net deficit

(3) 50% of the rural area net deficit

In order to start the conversation regarding the sources of local funding, two possible funding scenarios have been created (Table 3-15). Both scenarios include a match of \$20,000 from LFCC. The first scenario proposes to split the remaining local match between the City of Winchester and Frederick County based on the percentage of the total students that will be served by the route according to LFCC enrollment by zip code data. The second scenario proposes to split the route based on the percentage of the general population that will be served by the route according to population data by zip code.

There is also the possibility for local stakeholders to seek additional funding partners, which would reduce the local match for each contributor. Advertising revenue has also been budgeted and recent WinTran experience suggests that this source has the potential to grow, which would reduce the net deficit (Table 3-14, above).

**Table 3-15: Proposed Local Funding Options- Operating Expenses**

<b>Funding Partner</b>	<b>Amount</b>	<b>Notes</b>
City of Winchester	\$ 20,382	24% of non-LFCC share, based on student population served
Frederick County	\$ 64,545	76% of non-LFCC share, based on student population served
LFCC	\$ 20,000	LFCC can potentially budget up to \$25,000; \$5,000 reserved for capital
<i>Other - additional partners</i>		Stephens City, Middletown, local major employers?
<b>Total Local Funding</b>	<b>\$ 104,927</b>	
<b>Funding Partner</b>	<b>Amount</b>	<b>Notes</b>
City of Winchester	\$ 25,478	30% of non-LFCC share, based on general population served
Frederick County	\$ 59,449	70% of non-LFCC share, based on general population served
LFCC	\$ 20,000	LFCC can potentially budget up to \$25,000; \$5,000 reserved for capital
<i>Other - additional partners</i>		Stephens City, Middletown, local major employers?
<b>Total Local Funding</b>	<b>\$ 104,927</b>	

Capital expenses for start-up include three vehicles, four shelters, and bus stop signs. This budget is presented in Table 3-16.

**Table 3-16: Start-up Capital Budget LFCC Winchester Shuttle**

Expenses	Amount
Vehicles	
3 - 19 passenger lift-equipped body-on-chassis	\$ 300,000
2- paratransit vehicles	\$ 120,000
Shelters (4)	\$ 40,000
Bus Stop Signs	\$ 1,000
<b>Total</b>	<b>\$ 461,000</b>
<b>Estimated Capital Funding Sources</b>	
Federal	\$ 368,800
FTA S.5307 (64% of federal total)	\$ 236,032
FTA S. 5311 (36% of federal total)	\$ 132,768
DRPT Capital Assistance (1)	\$ 59,908
Local	\$ 32,292
<b>Total</b>	<b>\$ 461,000</b>

(1) Calculated using DRPT's tiered capital funding. Vehicles are considered Tier One and bus stop infrastructure is Tier Two.

The local match scenarios for the start-up capital for the LFCC Winchester Shuttle are provided in Table 3-17. The first scenario applies the remainder of LFCC's \$25,000 contribution (\$5,000) to capital needs and splits the rest according to the student population in the service corridor. The second scenario also applies \$5,000 from LFCC, and splits the remainder according to the general population in the corridor. The third scenario applies the LFCC contribution and splits the remainder equally between the city and the county; and the last scenario has the city paying the local capital match as the named grantee. Under this scenario, the entire LFCC contribution (\$25,000) would be applied to operating match.

These scenarios have been developed as examples of ways in which the local match for the capital start-up could be funded. Local stakeholders will need to reach consensus with regard to the scenario that is most feasible for all parties. It should be noted that after the initial start-up, the annual capital needs will be significantly lower until the vehicles need to be replaced, or a service expansion takes place.



**Table 3-17: Local Match Scenarios for Start-up Capital- LFCC Winchester Shuttle**

<b>Funding Partner</b>	<b>Amount</b>	<b>Notes</b>
City of Winchester	\$ 6,550	24% of non-LFCC share, based on student population served
Frederick County	\$ 20,742	76% of non-LFCC share, based on student population served
LFCC	\$ 5,000	Portion of LFCC \$25,000 contribution
Other - additional partners		
<b>Total Local Funding</b>	<b>\$ 32,292</b>	

<b>Funding Partner</b>	<b>Amount</b>	<b>Notes</b>
City of Winchester	\$ 8,188	30% of non-LFCC share, based on general population served
Frederick County	\$ 19,104	70% of non-LFCC share, based on general population served
LFCC	\$ 5,000	
Other - additional partners		
<b>Total Local Funding</b>	<b>\$ 32,292</b>	

<b>Funding Partner</b>	<b>Amount</b>	<b>Notes</b>
City of Winchester	\$ 16,146	Half of the local capital share
Frederick County	\$ 16,146	Half of the local capital share
<b>Total Local Funding</b>	<b>\$ 32,292</b>	

<b>Funding Partner</b>	<b>Amount</b>	<b>Notes</b>
City of Winchester	\$ 32,292	100% City. Capital part of City system assets.
<b>Total Local Funding</b>	<b>\$ 32,292</b>	

## Mid-Term

The mid-term plan calls for extension of service between LFCC and Front Royal. Estimated operating data and expenses are provided in Table 3-18. These data are based on VRT providing service in conjunction with the FRAT program. The cost per hour estimate was provided for planning purposes, and may be higher or lower upon implementation, based on how service can be integrated into FRAT's operating model.

**Table 3-18: Proposed Annual Operating Data, LFCC-Front Royal Shuttle**

Estimated Operating Data and Expenses	
Annual Revenue Hours	3,367
Annual Revenue Miles	40,392
Estimated Ridership	24,472
Cost per hour	\$58.00
<b>Annual Operating Costs</b>	<b>\$195,286</b>

Proposed funding sources for operations of the Front Royal route are provided in Table 3-19. The service area is completely within a rural area, so the federal funding source would be S.5311. Local funding for service is *proposed* to come from fares, advertising, LFCC, the Town of Front Royal, Frederick County, and Warren County. A specific breakdown for the local funding will need to be negotiated prior to implementation. Additional funding partners will be sought as the program develops.

**Table 3-19: Proposed Funding Sources for Operations, LFCC-Front Royal Shuttle**

<b>Total Annual Operating Expenses</b>	<b>\$ 195,286</b>
<b>Proposed Funding Sources</b>	<b>Amount</b>
Farebox Estimate (1)	\$ 19,529
Advertising	\$ 500
<b>Net Deficit</b>	<b>\$ 175,257</b>
Federal S. 5311 (2)	\$ 87,629
State Operating Assistance	\$ 29,443
Federal and State Subtotal	\$ 117,072
Local Funding Needed	\$ 58,185
<b>Total</b>	<b>\$ 175,257</b>

(1) Assumes LFCC students pay a fare

(2) 50% of the net deficit

The mid-term budget for capital expenses for start-up includes one vehicle, one shelter, and bus stop signs. This budget is presented in Table 3-20.

**Table 3-20: Proposed Capital Start-up Budget – LFCC Front Royal Shuttle**

Expenses	Amount
Vehicles	
1 body-on-chassis lift equipped vehicle	\$ 90,000
Shelters (1)	\$ 10,000
Bus Stop Signs	\$ 1,000
<b>Total</b>	<b>\$ 101,000</b>
<b>Estimated Capital Funding Sources</b>	
Federal S.5311	\$ 80,800
DRPT Capital Assistance (1)	\$ 12,988
Local	\$ 7,212
<b>Total</b>	<b>\$ 101,000</b>

(1) Calculated using DRPT's tiered capital funding. Vehicles are considered Tier One and bus stop infrastructure is Tier Two.

## Longer Term

After the initial implementation period, it is likely that transit demand within the community and among LFCC students will grow as people learn about service. As demand grows, the financial requirements of the system may also increase, as additional service hours are added. The longer term plan considers additional links to Woodstock and Strasburg in the US 11 South corridor, as well as links north and west of Winchester, and a link to Berryville.

## IMPLEMENTATION PROCESS

The first step in the implementation process will be to begin to build consensus regarding the acceptance of the plan and the amount of matching funds to be provided by each local partner. Additional funding partners should also be sought to make the project more affordable for each local funding partner. The timing for the completion of the feasibility study should provide sufficient time for local partners to include funds within their FY18 budgets. Building local consensus will be necessary prior to including the service in the DRPT's FY18 grant application cycle (due February 2017). This feasibility study has generated the bulk of the data that will be necessary to complete the grant application, assuming consensus can be reached regarding local funding shares.

The additional general implementation steps are discussed below.

## **Continuation of Advisory Committee**

In order to help with the full implementation of the plan, including reaching out to additional funding partners, it is recommended that the advisory committee continue to meet on a regular basis.

## **Grant Application**

Once local funding is in place, WinTran can include the LFCC shuttle in the FY18 grant application. Given that the route includes both urban and rural areas, WinTran will have to apply to both the S.5311 and S.5307 programs. The FY2018 grant applications are due to DRPT in early February 2017. When DRPT notifies the city as to the level of funding available, the city and its local partners can then determine whether or to proceed with implementation in FY2018, based on local financial constraints.

Commitments for the agreed upon local funding amounts will need to be sought by the grant application deadline.

## **RFP Preparation and Proposal Evaluation**

Once WinTran is notified concerning the availability of grant funding, a request for proposals (RFP) for the ADA portion of the service will need to be prepared. The purpose of the RFP process is two-fold: 1) to provide the private sector and existing agency transportation programs the opportunity to provide the ADA complementary paratransit services under contract to WinTran; 2) to ensure that public transportation services are provided in the most cost effective manner possible.

Once the proposals have been evaluated by the WinTran, the program can move forward with either a contract operator for ADA paratransit to complement the route, or in-house operation by WinTran. The decision will be based on cost as well as capacity to provide the service in full compliance with federal and state requirements.

## **Vehicle Selection and Order**

Once the grant has been approved, WinTran can proceed with vehicle selection and ordering through its typical process. WinTran has historically purchased vehicles from the state contract.

## **Final Route and Schedule Development**

It is recommended that WinTran's operations staff work to finalize the route and schedule, based on safety and operational constraints. Once the route and schedule are finalized, the service can be formally announced and marketed. Discussions with private land owners concerning bus stops and amenities will also be needed, along with specific sighting of bus stops.

## **Naming and Marketing**

A preliminary name for the service is the LFCC- Winchester Shuttle. If this name is not desired by stakeholders, a different name can be chosen in collaboration with local stakeholders. WinTran and local stakeholders should also decide if the shuttle should be branded through WinTran, as one of their regular routes, or in an LFCC-specific manner. Once the route is named and the branding is finalized, a start-up route and schedule can be printed for distribution and web posting. The printed schedules should be distributed to the high schools in the area, as well as the typical LFCC and city information dissemination channels. A ribbon-cutting should be held to celebrate the start of service and generate additional press about the service.

## **Hiring and Training**

In preparation for the start-up of the route, WinTran will need to hire additional drivers to cover the planned hours of operation. The actual number of drivers hired will depend on whether ADA paratransit is provided by WinTran or a contractor. An additional supervisor and a part-time office assistant have also been included in the preliminary budget. Once on board, new staff will have to be trained for service.

## **Service Start**

While it would be advantageous to implement service for the fall semester, 2017, it is not likely possible, given the time it takes to order and receive vehicles. The target for implementing service will most likely be spring semester, 2018, which is in state fiscal year FY18.

## **Data Monitoring, Reporting, and Compliance**

As an existing provider of public transportation and recipient of federal and state transit funds, the City of Winchester has data compilation, reporting, and compliance mechanisms in place. It will be important for WinTran to closely monitor the performance of the route as it is implemented and make adjustments if needed.





# Appendix A

# Student/Faculty/Staff Survey and Detailed Results



# Appendix A

## Student/Faculty/Staff Survey and Detailed Results

### METHODOLOGY

One of the major components of determining the level of need for this feasibility study was conducting both a student/faculty and community based survey (the community survey results are analyzed in Appendix B). The student and faculty survey was developed collaboratively between LFCC, WinFred MPO, and KFH Group. The survey was provided in English and Spanish and made available online, via Survey Monkey, and through paper copies which were distributed throughout the college. Survey responses were received from November 5<sup>th</sup> to December 15<sup>th</sup>, 2015. A total of 315 surveys were received; including 313 in English and two in Spanish. The following section provides a detailed analysis of each question.


### STUDENT AND FACULTY SURVEY

This section offers a detailed analysis of the results of the Student and Faculty Survey. Each of the 17 questions and comment section are detailed in order. A copy of the Student and Faculty Survey can be seen on the following pages.

## Student and Faculty Survey (Front)

### TRANSPORTATION SURVEY

Lord Fairfax Community College (LFCC) is currently studying the feasibility of implementing a new public transit service to link students, faculty, and staff to the LFCC Middletown Campus. Please complete the following survey to give your opinion.



1. Please select the group to which you belong:
 

<input type="checkbox"/> LFCC Student	<input type="checkbox"/> Dual Enrollment Student	<input type="checkbox"/> LFCC Adult Education Student (ESOL/GED)
<input type="checkbox"/> Faculty	<input type="checkbox"/> Staff	<input type="checkbox"/> Other (please specify): _____
  
2. In what types of classes are you currently enrolled?
 

<input type="checkbox"/> In person, I travel to LFCC in Middletown for class	<input type="checkbox"/> Online
<input type="checkbox"/> In person and online	<input type="checkbox"/> Not applicable
  
3. Is transportation a barrier for you to reach the LFCC Middletown Campus?
 

<input type="checkbox"/> Always	<input type="checkbox"/> Often	<input type="checkbox"/> Rarely	<input type="checkbox"/> Never
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4. Please indicate any transportation barriers that you may face (select all that apply):
 

<input type="checkbox"/> None	<input type="checkbox"/> No vehicle available	<input type="checkbox"/> Depend on others for rides to campus
<input type="checkbox"/> Cost of fuel	<input type="checkbox"/> Unreliable vehicle	<input type="checkbox"/> Other (please specify): _____
  
5. Do you currently possess a valid driver's license?
 

<input type="checkbox"/> Yes	<input type="checkbox"/> No
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6. What is your primary mode of transportation to reach the Middletown Campus?
 

<input type="checkbox"/> Drive myself	<input type="checkbox"/> Motorcycle/Moped
<input type="checkbox"/> Carpool with other students – I am usually the driver	<input type="checkbox"/> Bicycle
<input type="checkbox"/> Carpool with other students – I am usually a passenger	<input type="checkbox"/> Walk
<input type="checkbox"/> A friend or family member drives me to/from campus	<input type="checkbox"/> Taxi
<input type="checkbox"/> Other (please specify): _____	
  
7. If you currently drive alone to campus or carpool, would you use a public transit service to get to and from LFCC, if such a service was available?
 

<input type="checkbox"/> Yes	<input type="checkbox"/> No
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8. Where do you live during the semester?
 

<input type="checkbox"/> Berryville	<input type="checkbox"/> Clear Brook	<input type="checkbox"/> Cross Junction	<input type="checkbox"/> Edinburg
<input type="checkbox"/> Front Royal	<input type="checkbox"/> Linden	<input type="checkbox"/> Mt. Jackson	<input type="checkbox"/> Middletown
<input type="checkbox"/> Stephens City	<input type="checkbox"/> Stephenson	<input type="checkbox"/> Strasburg	<input type="checkbox"/> Winchester
<input type="checkbox"/> Woodstock	<input type="checkbox"/> Luray	<input type="checkbox"/> Other (please specify): _____	
  
8. Which days of the week do you typically visit the LFCC Middletown Campus:
 

<input type="checkbox"/> Monday	<input type="checkbox"/> Tuesday	<input type="checkbox"/> Wednesday	<input type="checkbox"/> Thursday	<input type="checkbox"/> Friday	<input type="checkbox"/> Saturday
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➔ Over

## Student and Faculty Survey (Back)

9. What time of day do you typically arrive on campus?  
*(If your arrival time varies per day please select the earliest that you would normally arrive)*

Before 7:00 a.m.       7:00 a.m. to 9:00 a.m.       9:00 a.m. to 12:00 p.m.  
 12:00 p.m. to 3:00 p.m.       3:00 p.m. to 6:00 p.m.       After 6:00 p.m.

10. What time of day do you typically depart campus?  
*(If your departure time varies per day please select the latest that you would normally depart)*

Before 12:00 p.m.       12:00 p.m. to 3:00 p.m.       3:00 p.m. to 6:00 p.m.  
 6:00 p.m. to 9:00 p.m.       After 9:00 p.m.

11. If public transportation services were provided to and from LFCC's Middletown Campus, which of the following should be the highest priority? *(Please check only three)*

Morning service (before 8 a.m.)       Evening service (past 5 p.m.)  
 High frequency service (hourly or better)       Saturday service  
 Service around the campus       Service to/from Winchester  
 Service to/from Front Royal       Service to/from Stephens City  
 WIFI Onboard the Buses       Other *(please specify)*: \_\_\_\_\_

12. Do you think that a transportation service to campus should charge a fare per ride?

Yes       No      If yes, what would you be willing to pay per trip: \_\_\_\_\_

13. Would you support an increase in student fees (a component of your LFCC bill each semester) to cover the cost of a transit service that meets your needs? *(If no, skip to question 14)*

Yes       No

14. If yes, how much of an increase per semester do you think would be reasonable?

\$5 or less       \$6 to \$10       \$11 to \$15  
 \$16 to \$20       \$21 to \$25       More than \$25

15. Please indicate your age range:

17 or younger       18 to 24       25 to 34  
 35 to 44       45 to 59       60 or older

16. How else could a public transit service meet your needs?

\_\_\_\_\_

\_\_\_\_\_

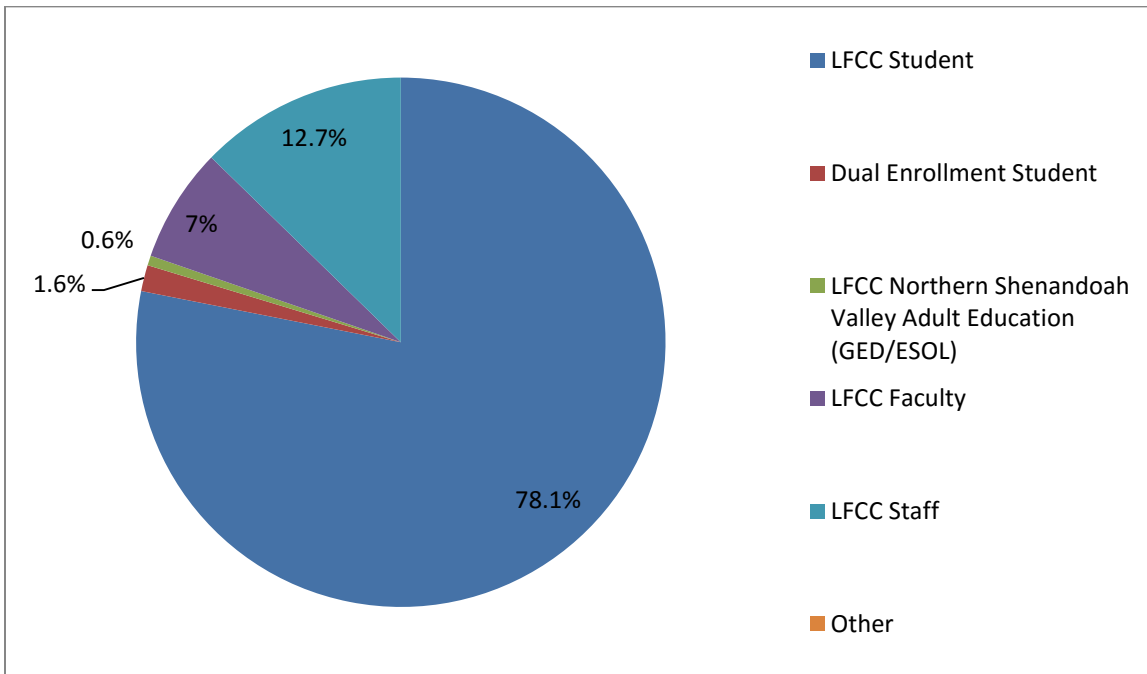
\_\_\_\_\_

Thank you for taking the time to fill out this survey. If you would like to be entered into a drawing for a \$100 gas gift card please fill out the contact information below:

Name: \_\_\_\_\_ Phone: \_\_\_\_\_ Email: \_\_\_\_\_

**Question #1: Please select the group to which you belong:**

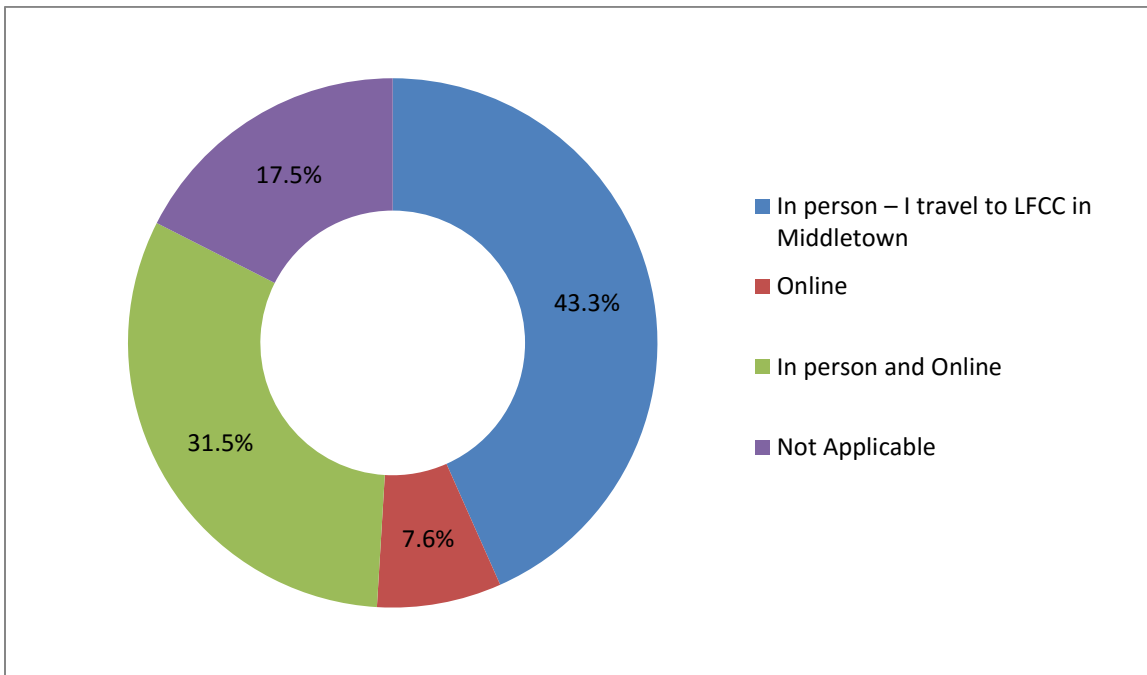
Answer Options	Response Percent	Response Count
LFCC Student	78.1%	246
Dual Enrollment Student	1.6%	5
LFCC Northern Shenandoah Valley Adult Education (GED/ESOL)	0.6%	2
LFCC Faculty	7%	22
LFCC Staff	12.7%	40
	<b>Answered Question</b>	315
	<b>Skipped Question</b>	0





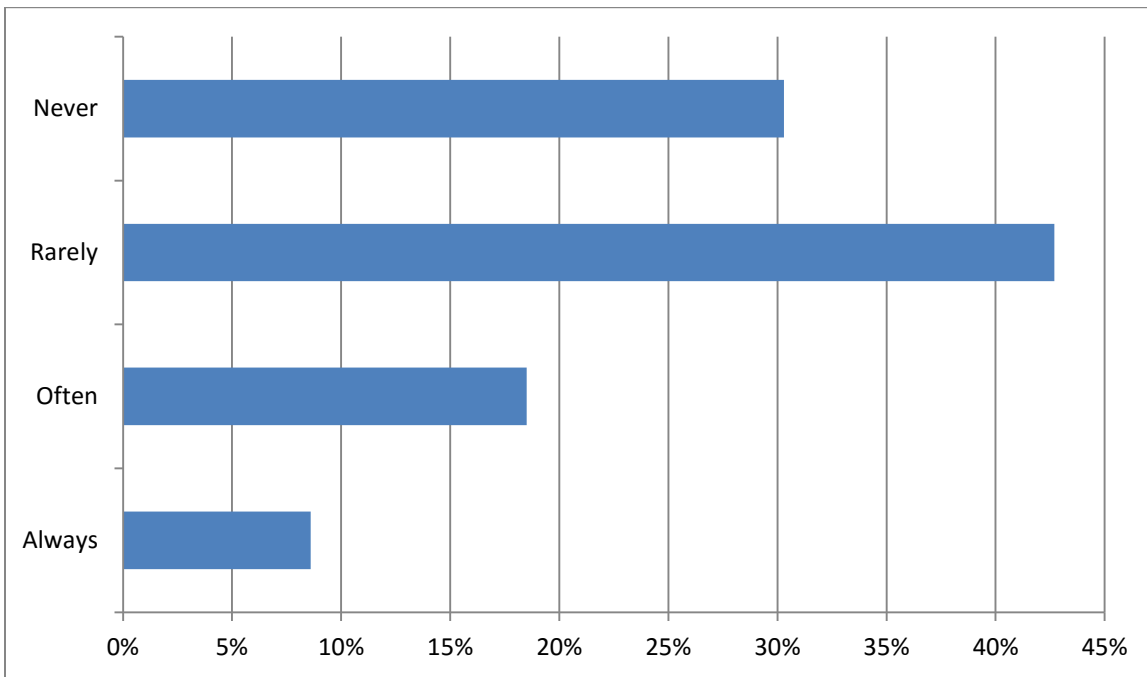
**Question #2: What types of classes are you currently enrolled in?**

Answer Options	Response Percent	Response Count
In person – I travel to LFCC in Middletown	43.3%	136
Online	7.6%	24
In person and Online	31.5%	99
Not Applicable	17.5%	55
<b>Answered Question</b>		314
<b>Skipped Question</b>		1



**Question #3: Is transportation a barrier for you to reach the LFCC Middletown Campus?**

Answer Options	Response Percent	Response Count
Always	8.6%	27
Often	18.5%	58
Rarely	42.7%	134
Never	30.3%	95
<b>Answered Question</b>		314
<b>Skipped Question</b>		1



**Question #4: Please indicate any transportation barriers that you may face (select all that apply):**

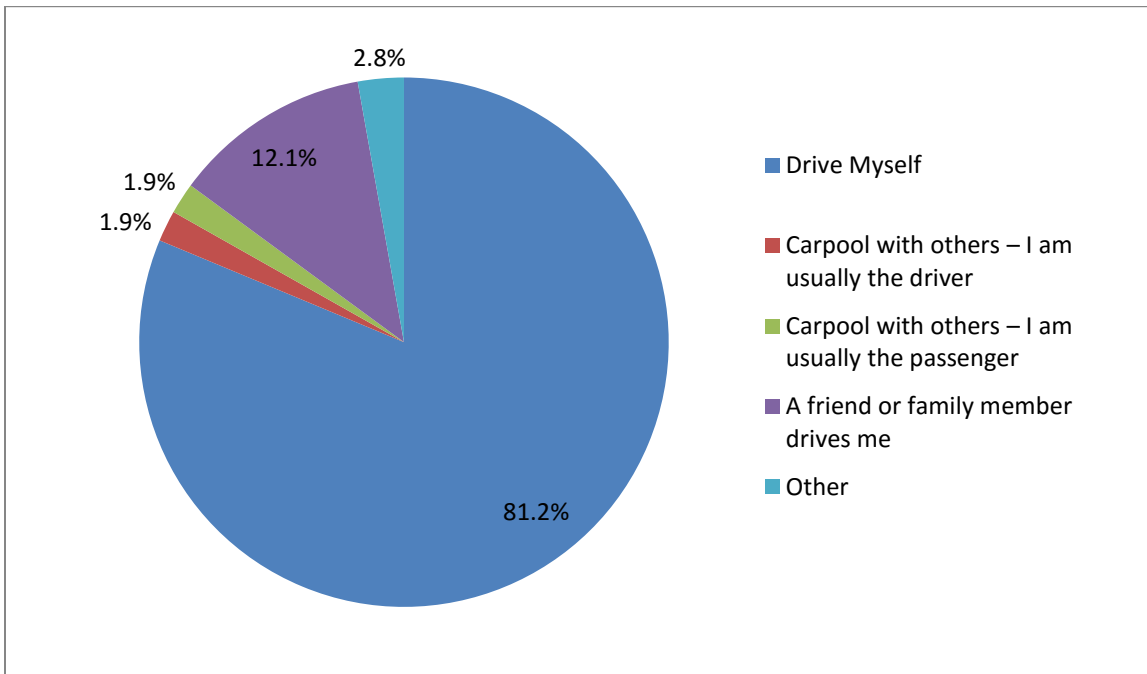
Answers	Response Percent	Response Count
None	29.1%	89
Cost of Fuel	52.9%	162
No Vehicle Available	16.7%	51
Depend on Others for Rides	15%	46
Weather	2.3%	7
Distance	2%	6
Disability/Injury	1.3%	4
Traffic	1.3%	4
Vehicle Repairs	1%	3
Shared Vehicle	0.7%	2
Travel Time	0.7%	2
Car Mileage for Lease	0.3%	1
Daycare Costs	0.3%	1
High Maintenance Costs	0.3%	1
No License	0.3%	1
Schedule	0.3%	1
Taxi Cost	0.3%	1
	<b>Answered Question</b>	306
	<b>Skipped Question</b>	9

**Question #5: Do you currently possess a valid driver’s license?**

Answer Options	Response Percent	Response Count
Yes	90.5%	285
No	9.5%	30
	<b>Answered Question</b>	315
	<b>Skipped Question</b>	0

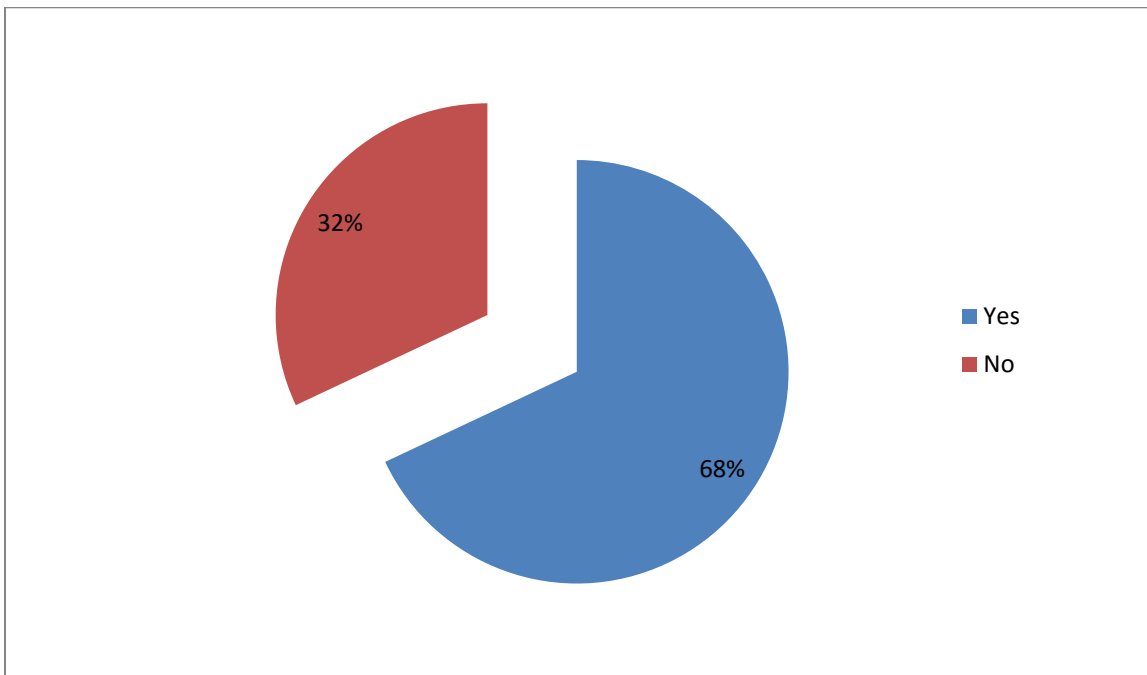
**Question #6: What is your primary mode of transportation to reach the Middletown Campus?**

Answers	Response Percent	Response Count
Drive Myself	81.2%	254
Carpool with others – I am usually the driver	1.9%	6
Carpool with others – I am usually the passenger	1.9%	6
A friend or family member drives me	12.1%	38
Walk	1.3%	4
Bicycle	0.3%	1
Taxicab	0.3%	1
Bus	0.3%	1
None	0.3%	1
Not Applicable	0.3%	1
	<b>Answered Question</b>	313
	<b>Skipped Question</b>	2



**Question #7: If you currently drive alone to campus or carpool, would you use a public transit service to get to and from LFCC, if such a service was available?**

Answer Options		Response Percent	Response Count
Yes		68%	210
No		32%	101
		<b>Answered Question</b>	311
		<b>Skipped Question</b>	4



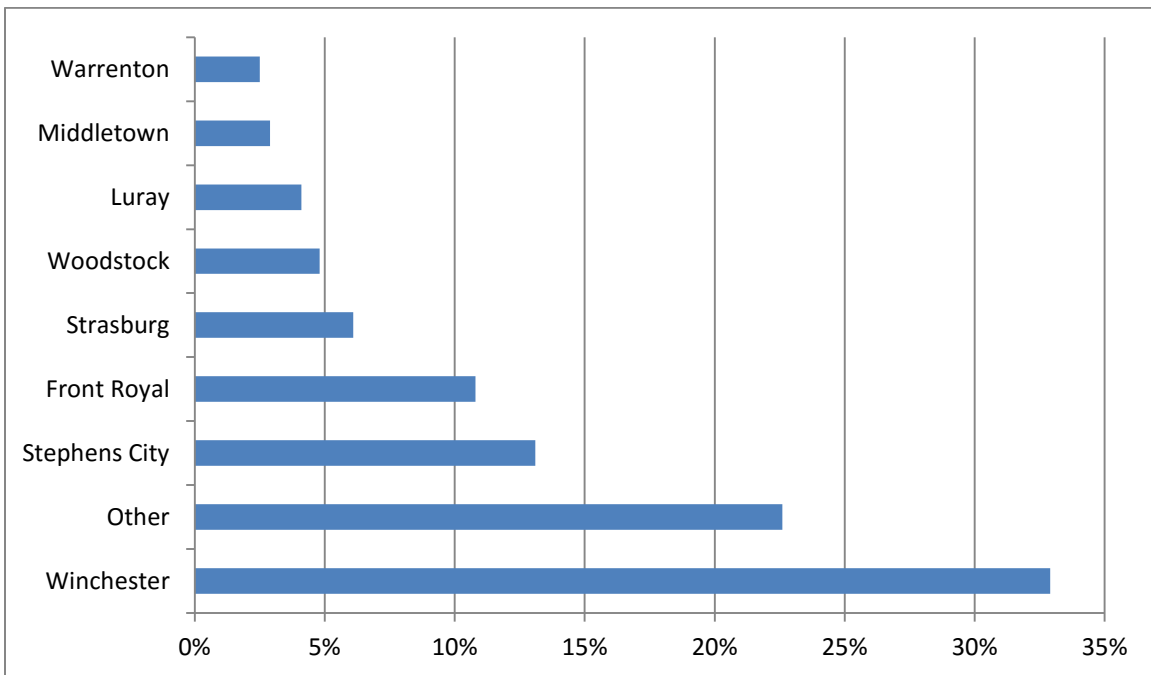
**Question #8: Where do you live during the semester?**

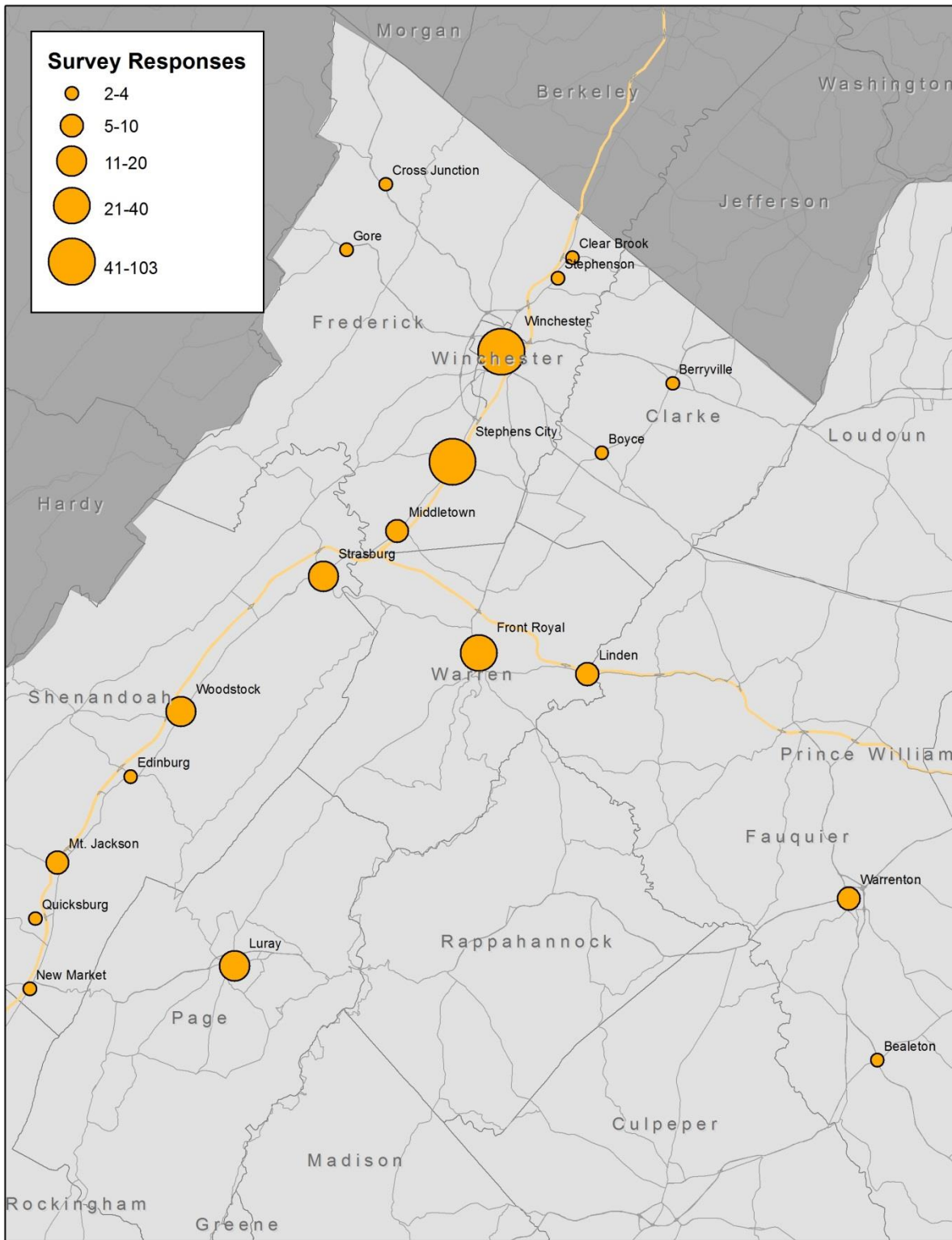
Answers	Response Percent	Response Count
Winchester	32.9%	103
Stephens City	13.1%	41
Front Royal	10.8%	34
Strasburg	6.1%	19
Woodstock	4.8%	15
Luray	4.1%	13
Middletown	2.9%	9
Warrenton	2.5%	8
Linden	1.9%	6
Mt. Jackson	1.9%	6
Boyce	1.3%	4
Clear Brook	1.3%	4
Cross Junction	1.3%	4
Edinburg	1.3%	4
Other	1.3%	4
Berryville	1%	3
Fauquier	1%	3
Gore	1%	3
Bealeton	0.6%	2
New Market	0.6%	2
Quicksburg	0.6%	2
Rappahannock County	0.6%	2
Stephenson	0.6%	2
West Virginia	0.6%	2
Bentonville	0.3%	1
Bloomery, WV	0.3%	1
Bluemont	0.3%	1
Broadway	0.3%	1
Bunker Hill, WV	0.3%	1
Charlottesville	0.3%	1
Chester Gap	0.3%	1
Culpepper	0.3%	1
Delaplane	0.3%	1
Fort Valley	0.3%	1



Appendix A: Student/Faculty/Staff Survey and Detailed Results

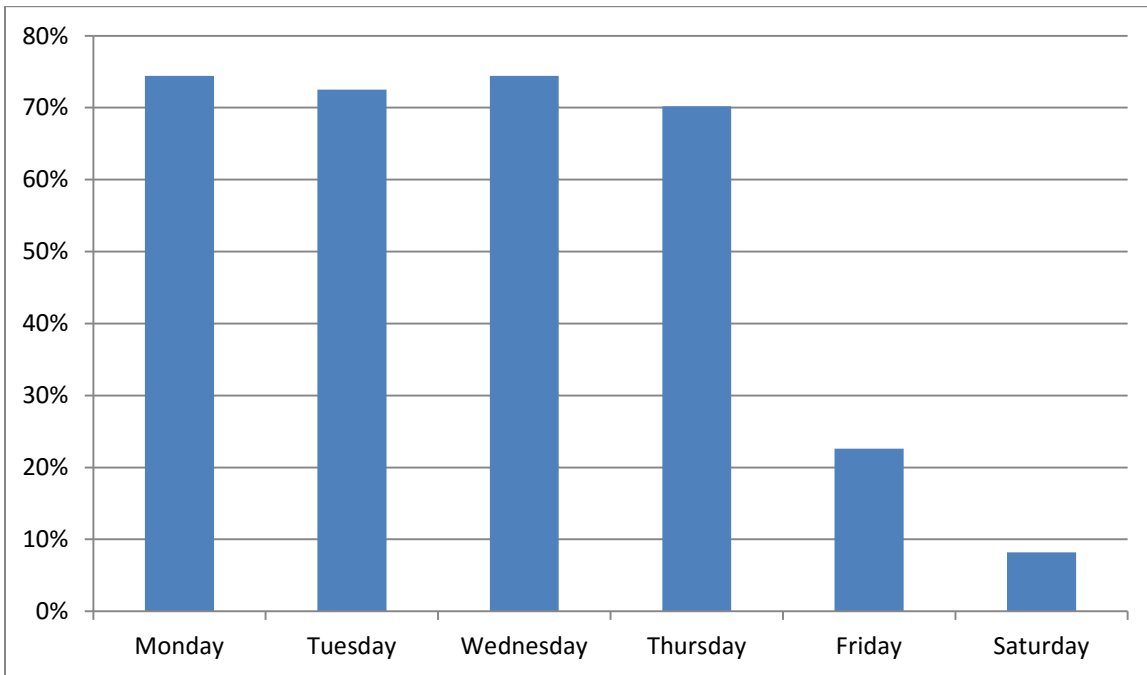
Frederick County	0.3%	1
Harrisonburg	0.3%	1
Haymarket	0.3%	1
Inwood	0.3%	1
Martinsburg, WV	0.3%	1
Round Hill	0.3%	1
Star Tannery	0.3%	1
Summerduck	0.3%	1
Washington, VA	0.3%	1
	<b>Answered Question</b>	314
	<b>Skipped Question</b>	1





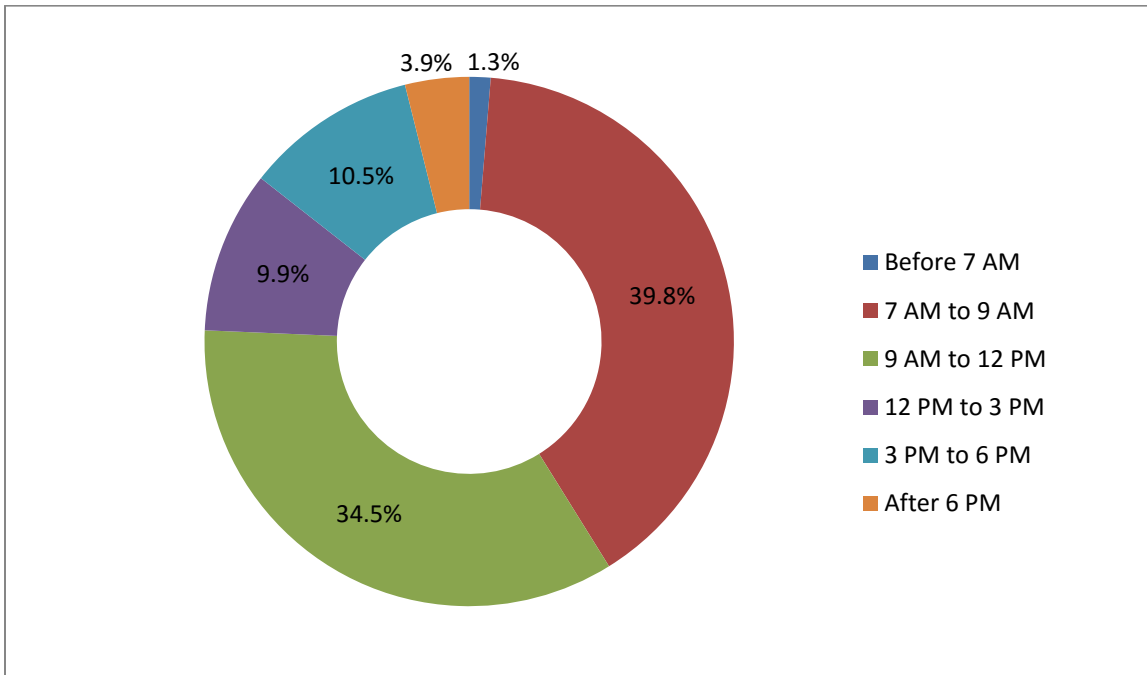
**Question #9: Which days of the week do you typically visit the LFCC Middletown Campus?**

Answer Options	Response Percent	Response Count
Monday	74.4%	227
Tuesday	72.5%	221
Wednesday	74.4%	227
Thursday	70.2%	214
Friday	22.6%	69
Saturday	8.2%	25
<b>Answered Question</b>		305
<b>Skipped Question</b>		10



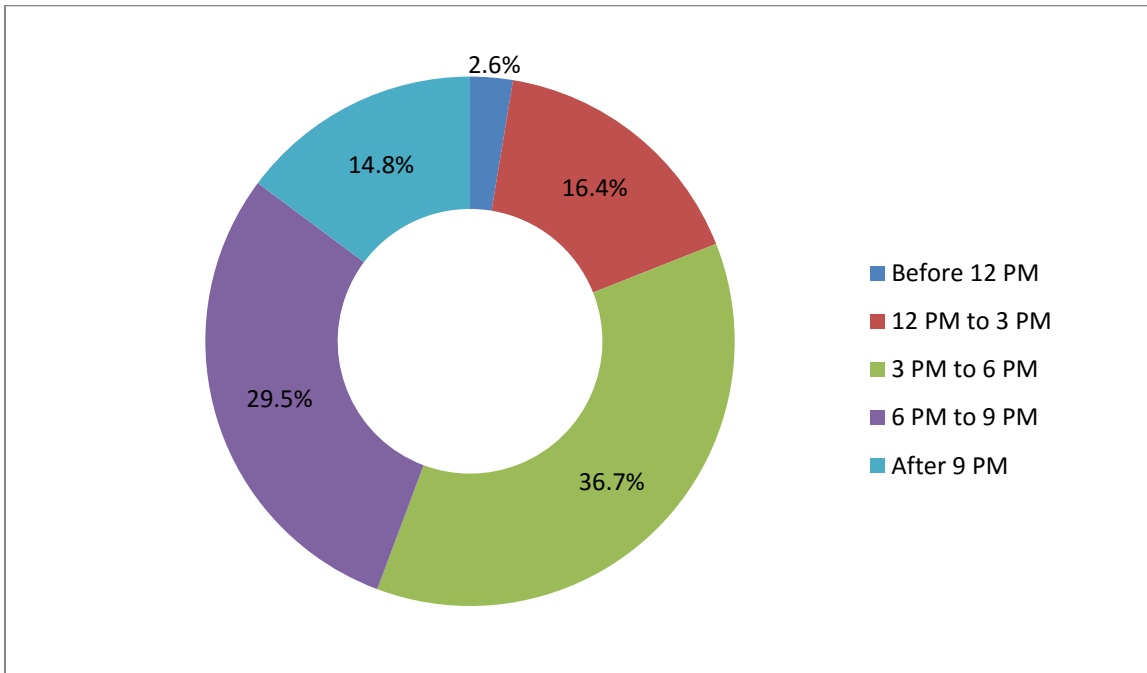
**Question #10: What time do you typically arrive on campus? (If your arrival time varies per day please select the earliest that you would normally arrive)**

Answer Options	Response Percent	Response Count
Before 7 AM	1.3%	4
7 AM to 9 AM	39.8%	121
9 AM to 12 PM	34.5%	105
12 PM to 3 PM	9.9%	30
3 PM to 6 PM	10.5%	32
After 6 PM	3.9%	12
<b>Answered Question</b>		304
<b>Skipped Question</b>		11



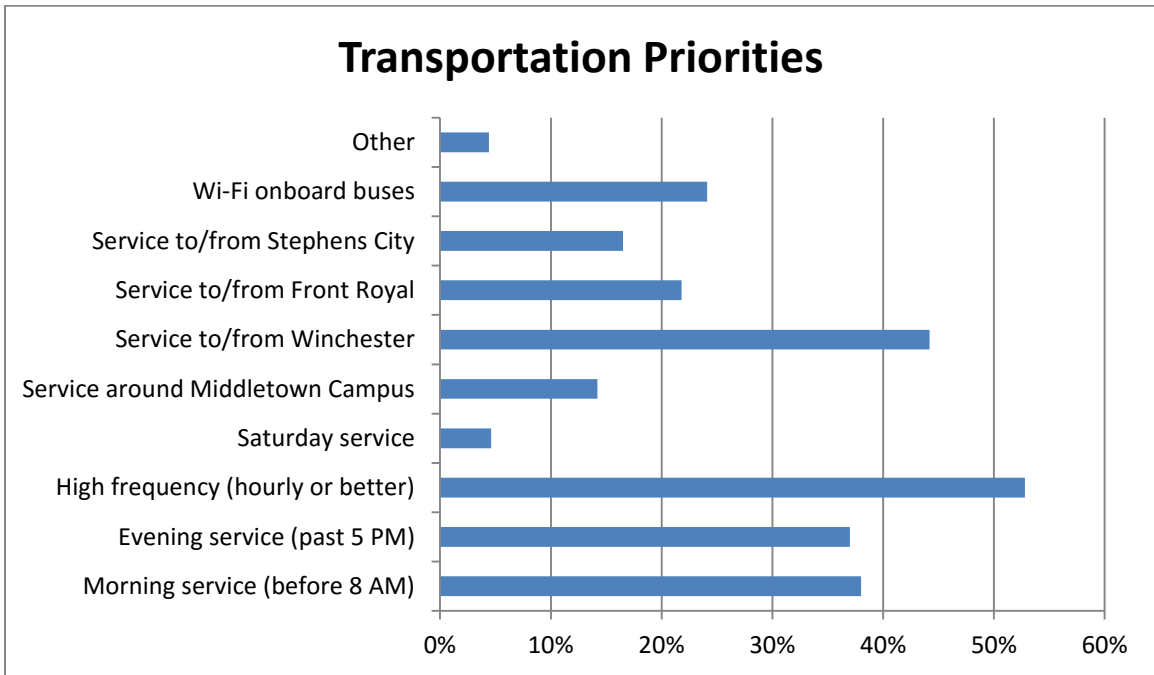
**Question #11: What time of the day do you typically depart campus? (If your departure time varies per day please select the latest that you would normally depart)**

Answer Options	Response Percent	Response Count
Before 12 PM	2.6%	8
12 PM to 3 PM	16.4%	50
3 PM to 6 PM	36.7%	112
6 PM to 9 PM	29.5%	90
After 9 PM	14.8%	45
<b>Answered Question</b>		305
<b>Skipped Question</b>		10



**Question #12: If public transportation services were provided to and from LFCC's Middletown Campus, which of the following should be the highest priority? (Please check only three)**

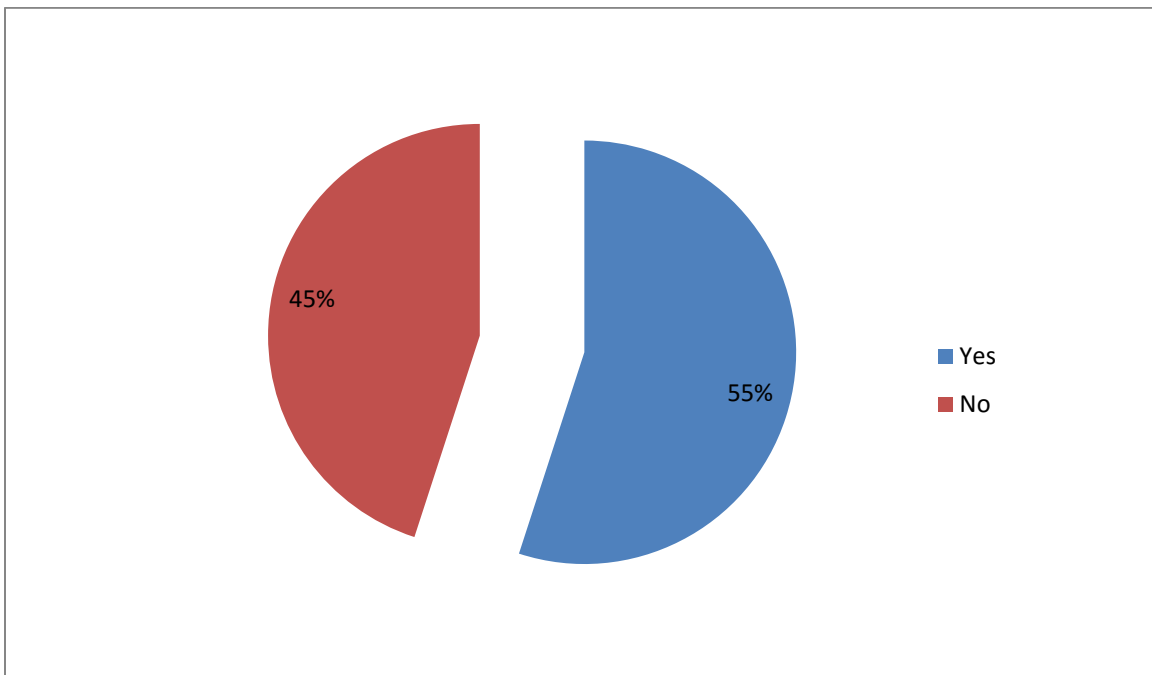
Answer Options	Response Percent	Response Count
Morning service (before 8 AM)	38%	115
Evening service (past 5 PM)	37%	112
High frequency (hourly or better)	52.8%	160
Saturday service	4.6%	14
Service around Middletown Campus	14.2%	43
Service to/from Winchester	44.2%	134
Service to/from Front Royal	21.8%	66
Service to/from Stephens City	16.5%	50
Wi-Fi onboard buses	24.1%	73
Service to/from Fauquier County	1%	3
Service to/from Woodstock	1%	3
Service to/from Edinburg	0.3%	1
Service to/from Linden	0.3%	1
Service to/from Luray	0.3%	1
Service to/from New Market	0.3%	1
Service to/from Park & Ride	0.3%	1
Service to/from Strasburg	0.3%	1
Service three times a day	0.3%	1
Service to/from Warrenton	0.3%	1
	<b>Answered Question</b>	303
	<b>Skipped Question</b>	12



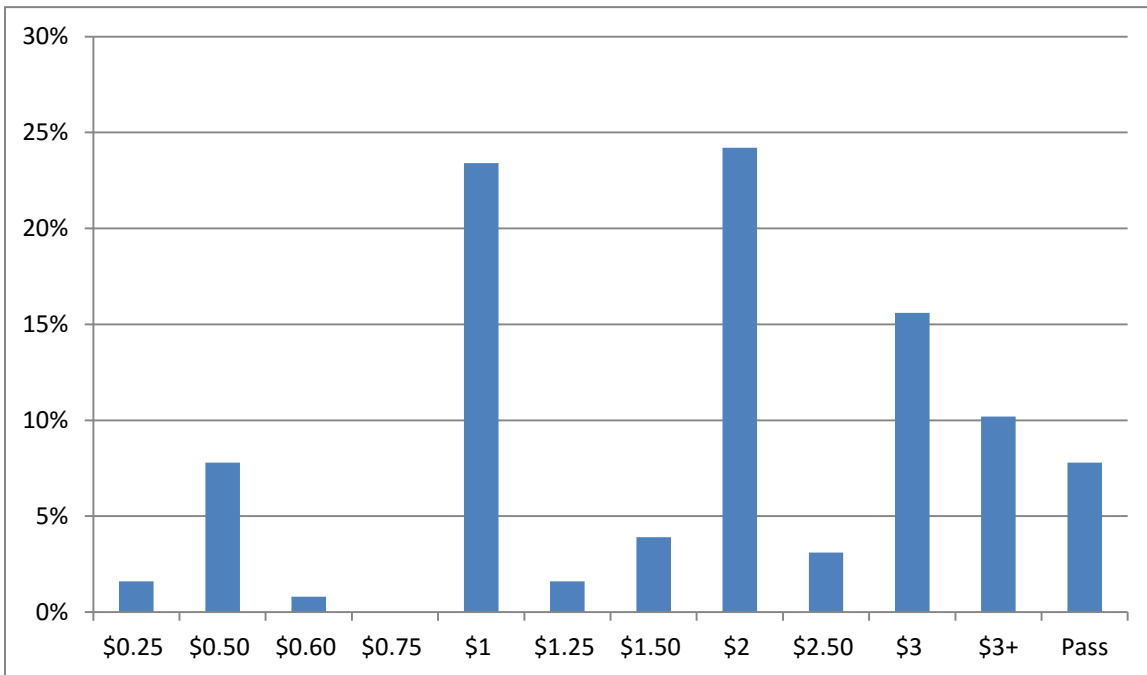


**Question #13: Do you think that a transportation service to campus should charge a fare per ride?**

Do you think that a transportation service to campus should charge a fare per ride?		
Answer Options	Response Percent	Response Count
Yes	55%	171
No	45%	140
Answered Question		311
Skipped Question		4

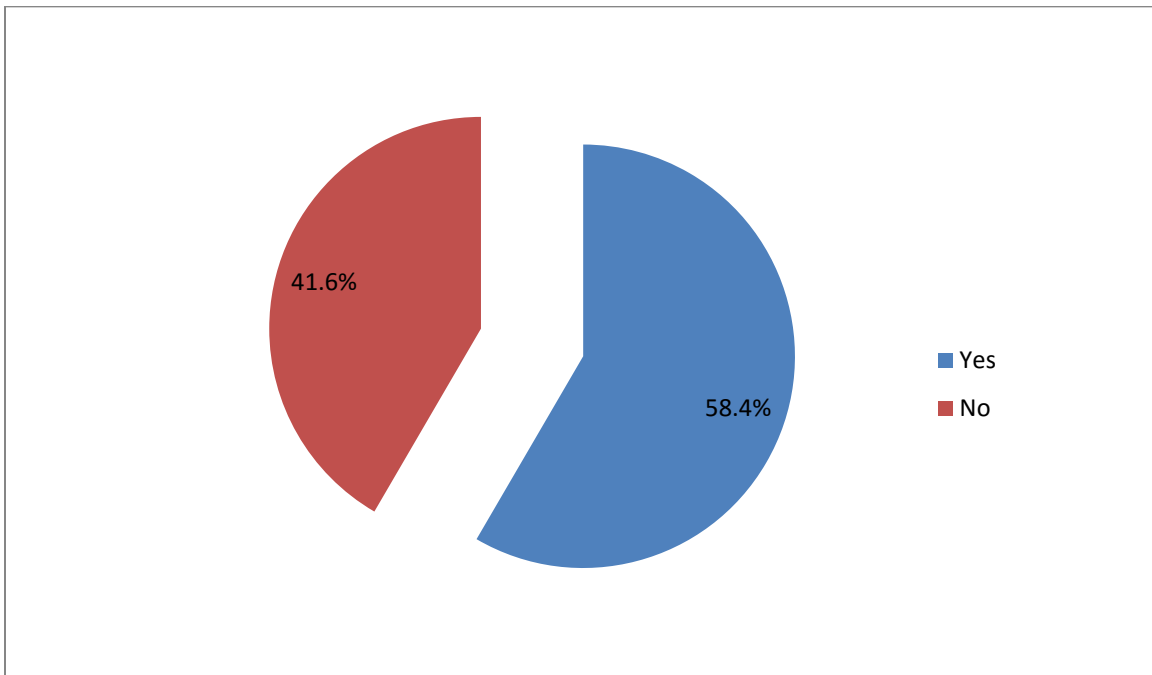


Suggested Fare per Ride		
Answers	Response Percent	Response Count
\$0.25	1.6%	2
\$0.50	7.8%	10
\$0.60	0.8%	1
\$0.75	0%	0
\$1	23.4%	30
\$1.25	1.6%	2
\$1.50	3.9%	5
\$2	24.2%	31
\$2.50	3.1%	4
\$3	15.6%	20
More than \$3	10.2%	13
Pass (either weekly, monthly, or by semester)	7.8%	10
<b>Total Suggestions</b>		<b>128</b>



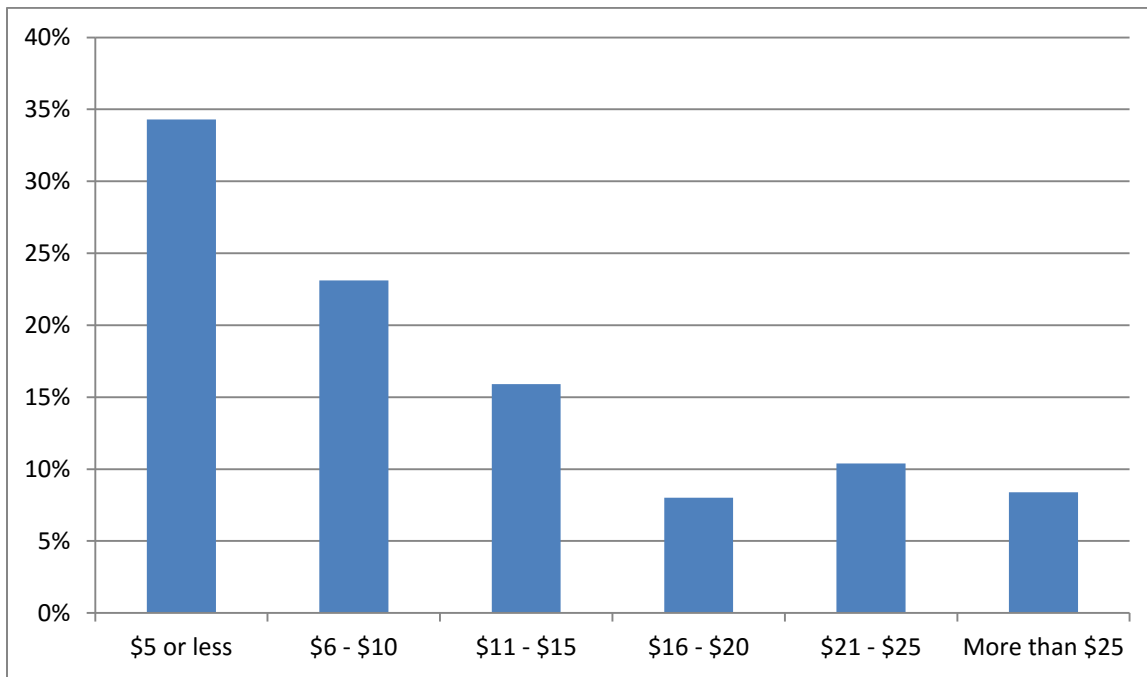
**Question #14: Would you support an increase in student fees (a component of your LFCC bill each semester) to cover the cost of a transit service that meets your needs?**

Answer Options	Response Percent	Response Count
Yes	58.4%	180
No	41.6%	128
Answered Question		308
Skipped Question		7



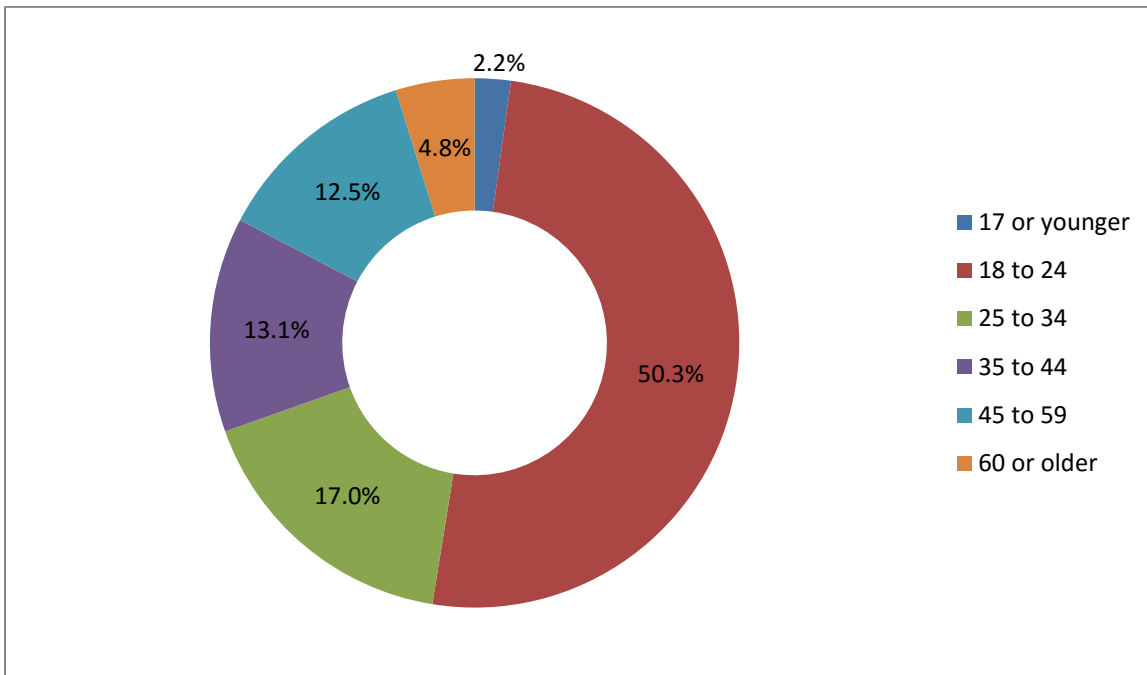
**Question #15: If you would support an increase in student fees, how much of an increase per semester do you think would be reasonable?**

Answer Options	Response Percent	Response Count
\$5 or less	34.3%	86
\$6 - \$10	23.1%	58
\$11 - \$15	15.9%	40
\$16 - \$20	8%	20
\$21 - \$25	10.4%	26
More than \$25	8.4%	21
<b>Answered Question</b>		251
<b>Skipped Question</b>		64



**Question #16: Please indicate your age range:**

Answer Options	Response Percent	Response Count
17 or younger	2.2%	7
18 to 24	50.3%	157
25 to 34	17%	53
35 to 44	13.1%	41
45 to 59	12.5%	39
60 or older	4.8%	15
	<b>Answered Question</b>	312
	<b>Skipped Question</b>	3



**Question #17: How else could a public transit service meet your needs?**

Many of the additional comments were supportive of introducing a transit system to LFCC in Middletown. Several of the most common comments were:

1. It would help with fuel and maintenance costs;
2. It would help those who have no other means to attend LFCC;
3. It would alleviate parking issues at LFCC;
4. It would help those with unreliable transportation;
5. It would help those who rely on others for rides to school.

Many respondents who said they would not use the service, still support creating one for those who need it.

The most common complaint about having such a service were from individuals who would not use the service and do not want to see higher school fees to support others' use of such a service.





# Appendix B

# Community Survey and Detailed Results



## Appendix B

# Community Survey and Detailed Results

### METHODOLOGY

One of the major components of determining the level of need for this feasibility study was conducting both a student/faculty and community based survey (the Student and Faculty results are analyzed in Appendix A). The Community Survey was developed collaboratively between LFCC, WinFred MPO, and KFH Group. The survey was provided in English and Spanish and made available online, via Survey Monkey, and through paper copies which were distributed throughout the community. Survey responses were received from November 5<sup>th</sup> to December 15<sup>th</sup>, 2015. A total of 337 surveys were received; including 210 in English and 127 in Spanish. The following section provides a detailed analysis of each question.


### STUDENT AND FACULTY SURVEY

This section offers a detailed analysis of the results of the Community Survey. Each of the 13 questions and comment section are detailed in order. A copy of the Student and Faculty Survey can be seen on the following pages.

## Community Survey (Front)

### TRANSPORTATION SURVEY

Lord Fairfax Community College (LFCC) is currently studying the feasibility of implementing a new public transit service to link students, faculty, and staff to the LFCC Middletown Campus. Please complete the following survey to give your opinion.



**LFCC**  
Lord Fairfax Community College

1. Please indicate the number of people in your household by age group:
 

<input type="checkbox"/> 0 to 15: _____	<input type="checkbox"/> 16 to 18: _____	<input type="checkbox"/> 19 to 24: _____	<input type="checkbox"/> 25 to 44: _____
<input type="checkbox"/> 45 to 59: _____	<input type="checkbox"/> 60 to 69: _____	<input type="checkbox"/> 70 +: _____	
  
2. Please indicate how many of these individuals have a valid drivers license:
 

<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4 or more
----------------------------	----------------------------	----------------------------	----------------------------	------------------------------------
  
3. How many working vehicles (cars/trucks/motorcycles) are available in your household?
 

<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4 or more
----------------------------	----------------------------	----------------------------	----------------------------	------------------------------------
  
4. Please indicate your ZIP code: \_\_\_\_\_
  
5. Please check any that apply:
 

<input type="checkbox"/> I am a student at LFCC	<input type="checkbox"/> I am a LFCC Northern Shenandoah Valley Adult Education Student (ESOL/GED)
<input type="checkbox"/> I am a faculty/staff member at LFCC	
<input type="checkbox"/> I applied to LFCC but chose not to enroll	<input type="checkbox"/> I am a prospective LFCC student
  
6. What is your primary mode of transportation to access work, school, shopping, medical appointments, and other life activities?
 

<input type="checkbox"/> Drive myself	<input type="checkbox"/> Motorcycle/Moped
<input type="checkbox"/> Carpool with others - I am usually the driver	<input type="checkbox"/> Bicycle
<input type="checkbox"/> Carpool with others – I am usually a passenger	<input type="checkbox"/> Walk
<input type="checkbox"/> A friend or family member drives me	<input type="checkbox"/> Public Transportation
<input type="checkbox"/> Other (please specify): _____	
  
7. It is anticipated that any new public transit service to LFCC would use small buses to connect parts of the surrounding communities, with marked bus stops, and service open to anybody who wishes to ride and pay the fare. Do you think that there is a need for this type of public transit service ?
 

<input type="checkbox"/> Yes	<input type="checkbox"/> No	Please explain why or why not:
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## Community Survey (Back)

**8. If public transportation services were to be provided to and from LFCC's Middletown Campus, which of the following should be the highest priority? (Please check only three)**

<input type="checkbox"/> Morning service (before 8 a.m.)	<input type="checkbox"/> Evening service (past 5 p.m.)
<input type="checkbox"/> High frequency service (hourly or better)	<input type="checkbox"/> Saturday service
<input type="checkbox"/> WIFI Onboard the Buses	<input type="checkbox"/> Service around the campus
<input type="checkbox"/> Service to/from Winchester	<input type="checkbox"/> Service to/from Front Royal
<input type="checkbox"/> Service to/from Stephens City	<input type="checkbox"/> Service geared towards employment
<input type="checkbox"/> Other (please specify): _____	

**9. Would you or members of your household use public transit services to/from LFCC?**

Yes       No      If yes, how often: \_\_\_\_\_

**10. If you were to choose a central pickup and dropoff location in your community for transportation to LFCC where would it be? (Example: Piccadilly St and Loudoun St in Winchester, East Main St. and Church St., Front Royal, etc.)**

\_\_\_\_\_

**11. What fare would you be willing to pay for a one-way public transit trip?**

\$0.50       \$0.75       \$1.00       \$1.25       \$1.50       More than \$1.50

**12. If public transit service were to be implemented, which days of the week should service operate to the LFCC Middletown Campus? (Check all that apply)**

All Weekdays       Only some weekdays       Saturdays       Sundays

**13. Please provide any additional comments you may have concerning the need for public transportation to access LFCC or other destinations in the region.**

\_\_\_\_\_

\_\_\_\_\_

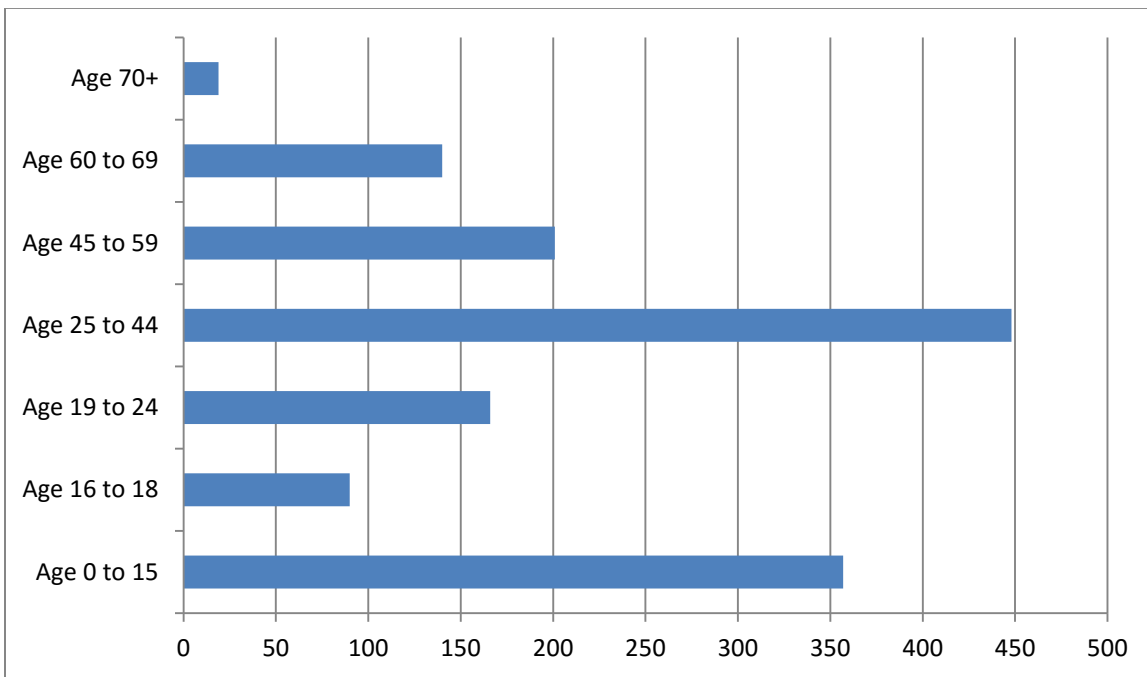
\_\_\_\_\_

**Thank you for taking the time to fill out this survey. If you would like to be entered into a drawing for a \$100 gas gift card please fill out the contact information below:**

Name: \_\_\_\_\_ Phone: \_\_\_\_\_ Email: \_\_\_\_\_

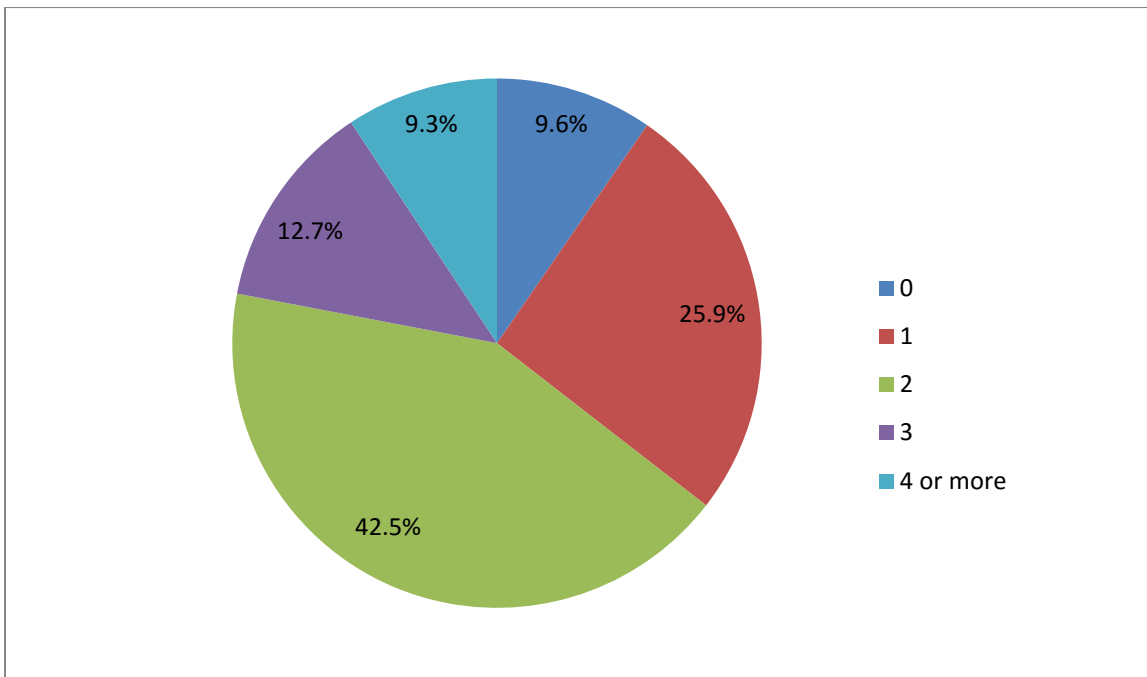
**Question 1: Please indicate the number of people in your household by age group:**

Answer Options	Response Average	Response Total	Response Count
Age 0 to 15	2.08	357	172
Age 16 to 18	1.20	90	75
Age 19 to 24	1.38	166	120
Age 25 to 44	2.08	448	215
Age 45 to 59	1.55	201	130
Age 60 to 69	2.09	140	67
Age 70+	0.58	19	33
	<b>Answered Question</b>		334
	<b>Skipped Question</b>		3



**Question 2: Please indicate how many of these individuals have a valid driver's license:**

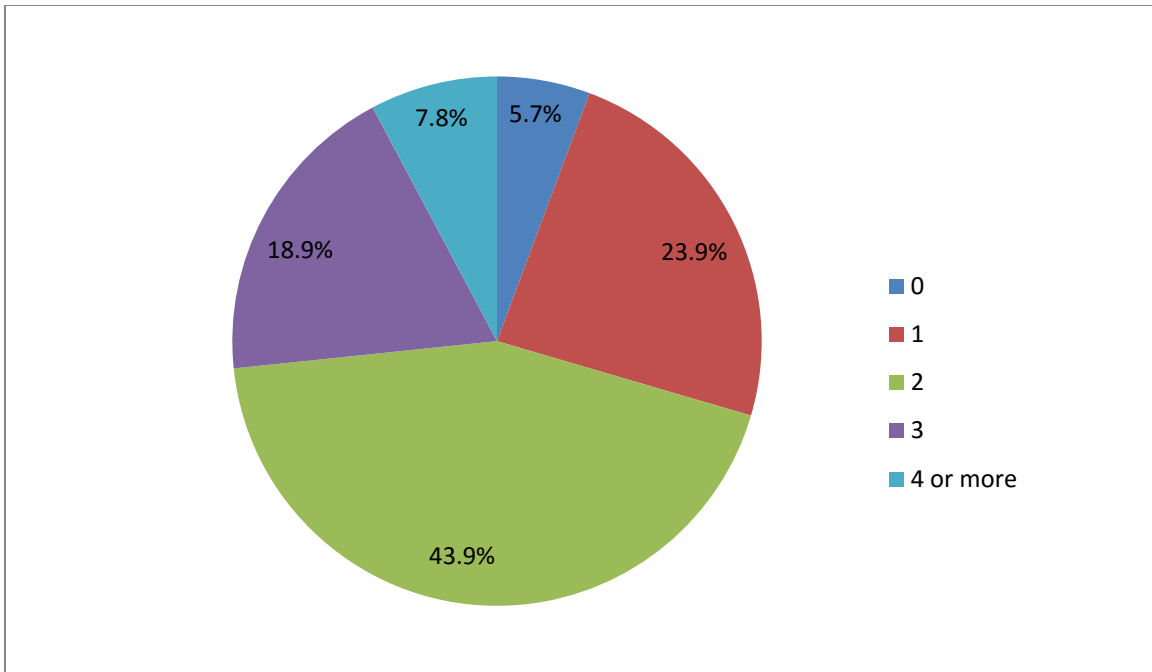
Answer Options	Response Percent	Response Count
0	9.6%	32
1	25.9%	86
2	42.5%	141
3	12.7%	42
4 or more	9.3%	31
<b>Answered Question</b>		332
<b>Skipped Question</b>		5





**Question 3: How many working vehicles (cars/trucks/motorcycles) are available in your household?**

Answer Options	Response Percent	Response Count
0	5.7%	19
1	23.9%	80
2	43.9%	147
3	18.9%	63
4 or more	7.8%	26
<b>Answered Question</b>		335
<b>Skipped Question</b>		2



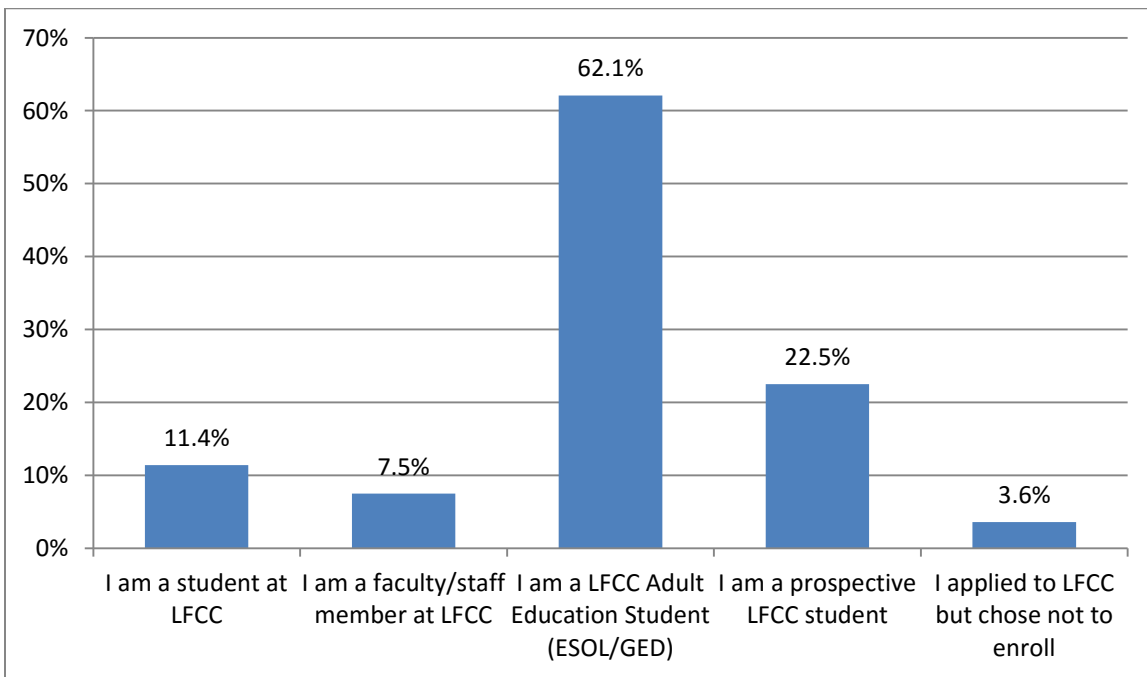
**Question 4: Please indicate your ZIP code:**

Location	Zip Code	#
Winchester, VA	22601	158
Winchester, VA	22602	45
Woodstock, VA	22664	23
Stephens City, VA	22655	18
Winchester, VA	22603	17
Strasburg, VA	22657	13
Front Royal, VA	22630	6
Stephenson, VA	22656	5
Mount Jackson, VA	22842	5
New Market, VA	22844	5
Cross Junction, VA	22625	4
Luray, VA	22835	4
Clear Brook, VA	22624	3
Gore, VA	22637	3
Middletown, VA	22645	3
Edinburg, VA	22824	3
Mauertown, VA	22644	2
White Post, VA	22663	2
McLean, VA	22101	1
Winchester, VA	22604	1
Berryville, VA	22611	1
Strasburg, VA	22641	1
Star Tannery, VA	22654	1



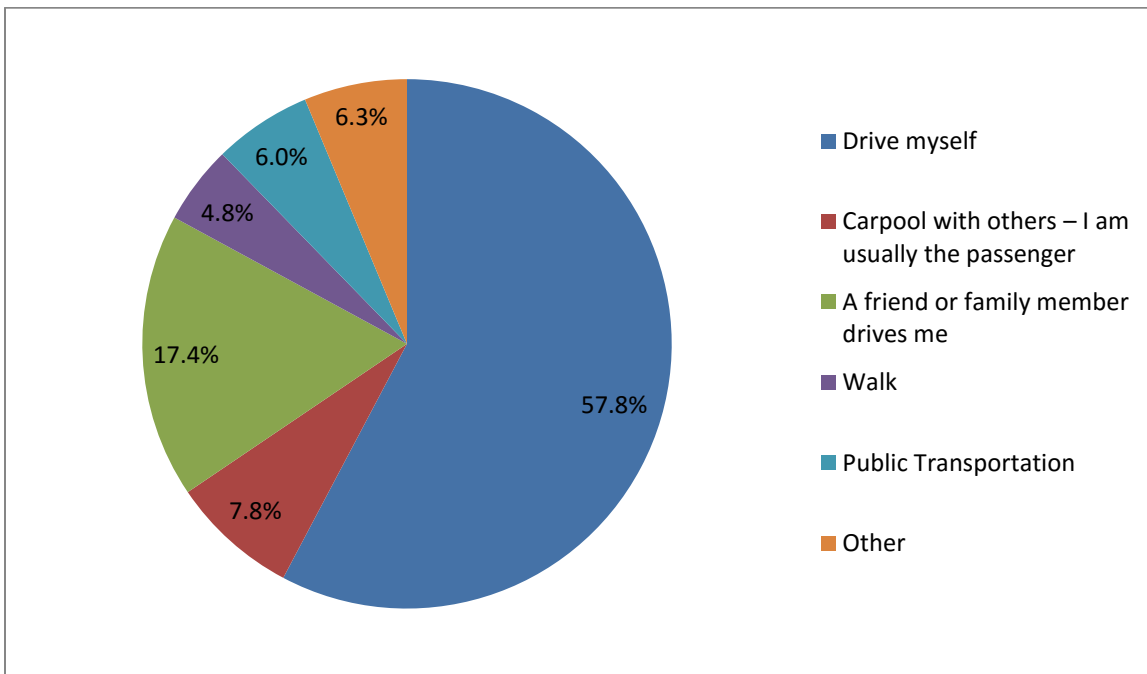
**Question 5: Please check any that apply:**

Answer Options	Response Percent	Response Count
I am a student at LFCC	11.4%	32
I am a faculty/staff member at LFCC	7.5%	21
I am a LFCC Adult Education Student (ESOL/GED)	62.1%	174
I am a prospective LFCC student	22.5%	63
I applied to LFCC but chose not to enroll	3.6%	10
<b>Answered Question</b>		280
<b>Skipped Question</b>		57

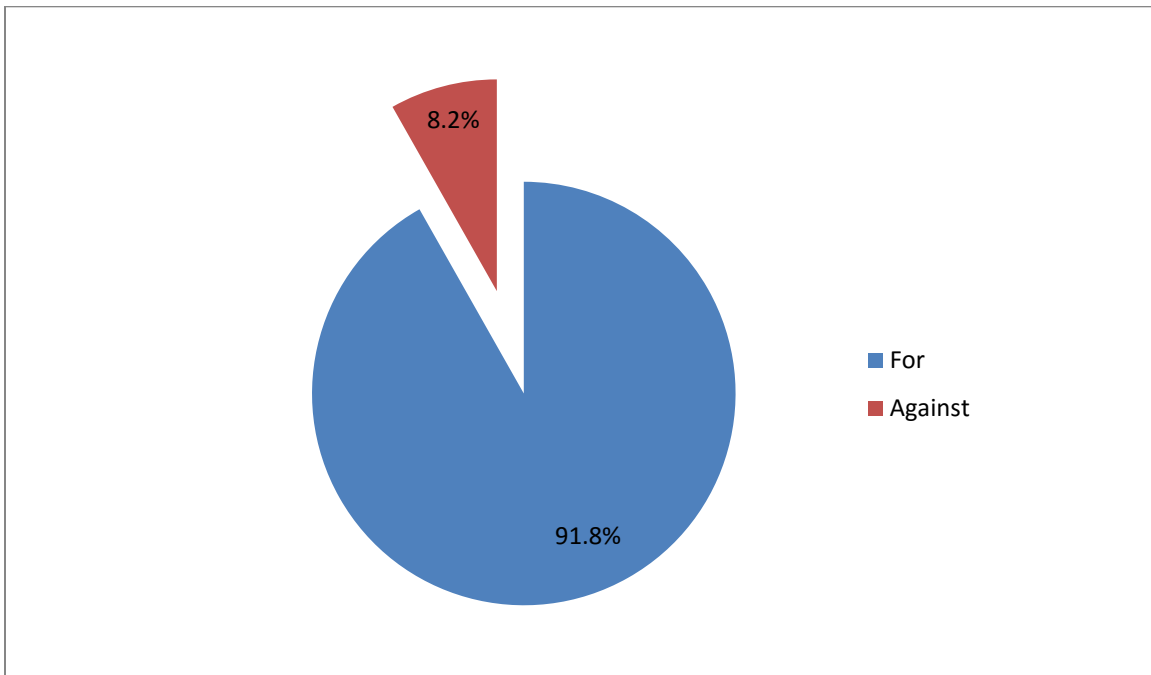


**Question 6: What is your primary mode of transportation to access work, school, shopping, medical appointments, and other life activities?**

Answers	Response Percent	Response Count
Drive myself	57.8%	193
Carpool with others – I am usually the driver	1.5%	5
Carpool with others – I am usually the passenger	7.8%	26
A friend or family member drives me	17.4%	58
Motorcycle/Moped	0.3%	1
Bicycle	2.1%	7
Walk	4.8%	16
Public Transportation	6%	20
Taxi	1.8%	6
Combination	0.3%	1
Medicaid Cab/Van	0.3%	1
<b>Answered Question</b>		334
<b>Skipped Question</b>		3



**Question 7: It is anticipated that any new public transit service to LFCC would use small buses to connect parts of the surrounding communities, with marked stops, and service open to anybody who wishes to ride and pay the fare. Do you think that there is a need for this type of public transit service?**



There were many more respondents in favor of establishing the service. The top 3 comments in support of the service were:

1. Generally supportive;
2. Many individuals do not have a car or license;
3. Many individuals have to share their vehicle with family members or friends.

The top 3 comments against the proposed service were:

1. Individuals would not use it;
2. Individuals are not sure if they use it;
3. Individuals have no opinion on the matter.

**Question 8: If public transportation were to be provided to and from LFCC's Middletown Campus, which of the following should be the highest priority? (Please check only three)**

Answers	Response Percent	Response Count
Service to/from Winchester	64.1%	207
High frequency service (hourly or better)	43.7%	141
Morning service (before 8 a.m.)	38.1%	123
Evening service (after 5 p.m.)	37.5%	121
Service geared toward employment	16.4%	53
Service to/from Stephens City	15.5%	50
Service to/from Front Royal	13.9%	45
WIFI onboard buses	13.3%	43
Saturday service	12.7%	41
Service around the campus	4.3%	14
Service to/from Woodstock	1.9%	6
Service to/from Strasburg	0.9%	3
Service to/from Mount Jackson	0.9%	3
Service to/from Luray	0.6%	2
Mainly any hour	0.6%	2
Coordinate with classes	0.6%	2
During any extracurricular activity/event at LFCC	0.6%	2
Anytime you need one	0.3%	1
It would be determined by the needs of those enrolled	0.3%	1

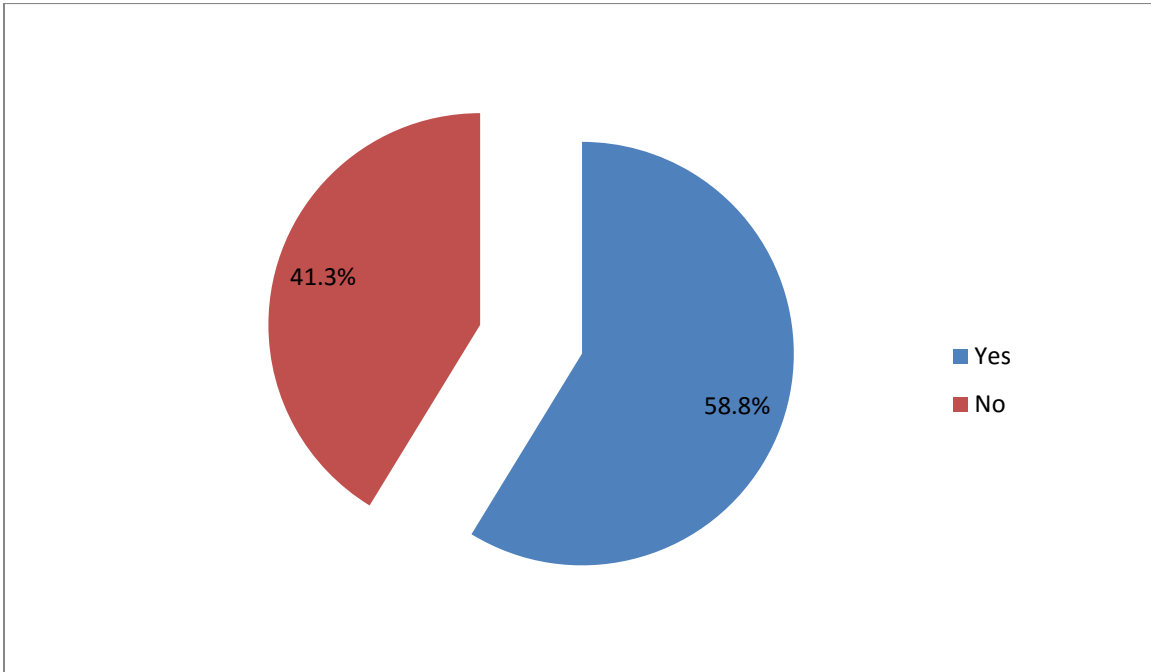


Appendix B: Community Survey and Detailed Results

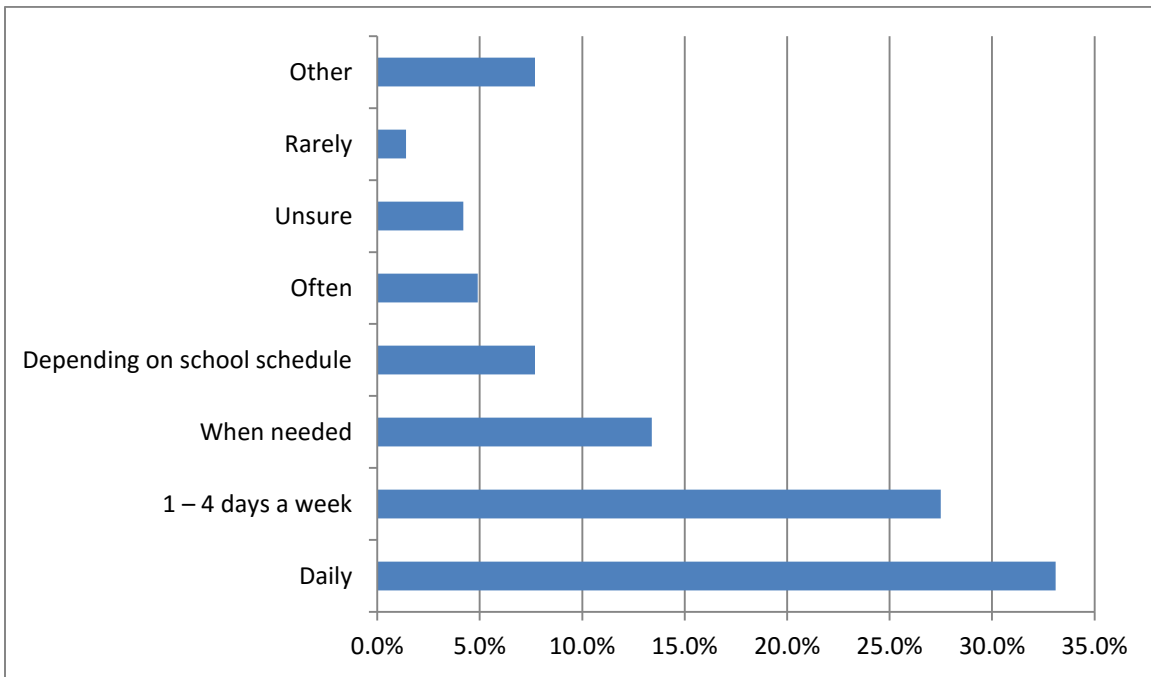
From Middletown-Winchester and anywhere in between	0.3%	1
Stop convenience	0.3%	1
At least two runs in the morning and two in the afternoon	0.3%	1
9:00 AM	0.3%	1
Strasburg to Middletown	0.3%	1
Service to Shenandoah County	0.3%	1
Service to/from Brunswick or Manassas to facilitate transportation to/from Washington, DC	0.3%	1
Morning, midday or early evening routes	0.3%	1
7 AM to 4 PM	0.3%	1
They all should be of highest priority	0.3%	1
I would not use	0.3%	1
Service for the 7 Berryville Pike	0.3%	1
Service to/from Stephenson	0.3%	1
Service for kids to get to school	0.3%	1
Sunday service	0.3%	1
Every half hour	0.3%	1
Service to/from New Market	0.3%	1
	<b>Answered Question</b>	323
	<b>Skipped Question</b>	14

**Question 9: Would you or members of your household use public transit service to/from LFCC? If yes, how often?**

Answer Options		Response Percent	Response Count
Yes		58.8%	188
No		41.3%	132
		<b>Answered Question</b>	320
		<b>Skipped Question</b>	17



Top Comments in Regards to Expected Use of Proposed Transit System		
Comment	Response Percent	Response Count
Daily	33.1%	47
1 – 4 days a week	27.5%	39
When needed	13.4%	19
Depending on school schedule	7.7%	11
Often	4.9%	7
Unsure	4.2%	6
Rarely	1.4%	2
Other	7.7%	11
<b>Comments</b>		<b>142</b>



**Question 10: If you were to choose a central pickup and drop-off location in your community for transportation to LFCC where would it be? (Example: Piccadilly St and Loudoun St in Winchester, East Main Street and Church Street in Front Royal, etc.)**

Total Locations	Town	Responses per Town	Locality	Responses per Locality	Specific Location	# of Responses
313 Total Locations	Winchester	214	Central Winchester	133	Piccadilly & Loudoun	51
					Loudoun St.	22
					Downtown	16
					Near Cork & Braddock	9
					Boscawen Transfer Station	8
					Other	27
			East Winchester	34	Apple Blossom Mall	7
					Near Millwood Pike & Pleasant Valley	7
					Wal-Mart	4
					Shawnee & Papermill	3
					Other	13
					Rt. 11 / Valley Avenue Area	28
			Near Ward Plaza	7		
			Valley & Jubal Early	5		
			Other	4		
			Northwest Winchester	7		
	Additional Winchester	12				
	Woodstock	24				
	Stephens City	18				
	Strasburg	17				
	Front Royal	17				
	Other	23				

**Question 11: What fare would you be willing to pay for a one-way public transit trip?**

Answers	Response Percent	Response Count
\$0.50	16.0%	51
\$0.75	6.9%	22
\$1.00	32.1%	102
\$1.25	6.0%	19
\$1.50	17.6%	56
More than \$1.50	21.4%	68
<b>Answered Question</b>		318
<b>Skipped Question</b>		19

**Question 12: If public transit service were to be implemented, which days of the week should service operate to the LFCC Middletown Campus? (Check all that apply)**

Answers	Response Percent	Response Count
All weekdays	85.0%	273
Only some weekdays	14.0%	45
Saturdays	16.2%	52
Sundays	5.6%	18
<b>Answered Question</b>		321
<b>Skipped Question</b>		16

**Question 13: Please provide any additional comments you may have concerning the need for public transportation to access LFCC or other destinations in the region.**

Comment	#
Supportive	46
Improve regional transportation	40
Transportation is a barrier to LFCC	27
County of Frederick (Winchester, Middletown, Stephens City)	17
Out-of-state Destinations	14
Transportation is expensive	12
Shenandoah County (Edinburg, Woodstock, Strasburg)	10
Unreliable Transportation	7
Coordinate buses with class schedule	4
Utilize Winchester City public transportation	4
Poor existing public transportation	3
Uncertain	3
To LFCC	3
Mobile App	2
Events	2
Service between LFCC campuses	2
Connect to senior centers	2
Inform the public about LFCC	1
Make this available to Adult Ed.	1
Walking is unsafe	1
Connect to high schools	1

*Appendix B: Community Survey and Detailed Results*

Reach out to inform the poor	1
Later service on Friday & Saturday	1
Rt. 37	1
Front Royal to LFCC	1
direct route	1
monthly/semester pass	1
bus shelter	1
student discount	1
more space needed for books, etc.	1
On-Demand Service	1
Monday-Thursday	1
Reliability is most important	1
\$5 OK	1
Monday & Friday Service	1
Front Royal Hospital	1
It should be free	1
It is dangerous to drive when it rains	1
Park and Ride at Reliance and 81	1
<b>Answered Question</b>	133
<b>Skipped Question</b>	204