



AppalCART COMMUNITY TRANSPORTATION SERVICE PLAN

FINAL REPORT

March 2011



Prepared for

**AppalCART and
North Carolina
Department of Transportation,
Public Transportation Division**

Prepared by

KFH Group, Inc.

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Executive Summary

INTRODUCTION

AppalCART, a public transportation authority organized under Chapter 160A, Article 25, of the North Carolina General Statutes, provides community transportation throughout Watauga County. The Authority was established by the Watauga County Board of Commissioners in January 1980, to consolidate and coordinate the transportation being provided by different agencies in the County.

While AppalCART serves all of Watauga County, the majority of the passenger trips are taken on the fixed-route services in the Boone area. These routes are oriented to the needs of the Appalachian State University (ASU) community and the general public. Watauga County, located in Western North Carolina's High Country, is shown in Figure ES-1.

This Executive Summary provides an overview of the Community Transportation Service Plan (CTSP) process that has been completed for AppalCART. A CTSP is a Short-Range Transit Plan that outlines the services that AppalCART intends to implement during the five-year planning horizon, estimates what resources will be needed, and what funding opportunities are likely to be available. The CTSP was guided by a Steering Committee that provided input throughout the study process. The technical study tasks were undertaken by KFH Group, Inc., in close consultation with the Steering Committee, the North Carolina Department of Transportation-Public Transportation Division (NCDOT-PTD), and AppalCART staff. Task work for the CTSP began in April 2010 and was completed in December 2010. The AppalCART Board of Directors approved the Draft Plan in January 2011.

The CTSP was developed with a thorough community outreach effort, including public surveys, rider surveys, stakeholder interviews, and a series of public meetings. The outreach efforts resulted in a plan that highlights transit service improvements that are desired by the community.



ES-2

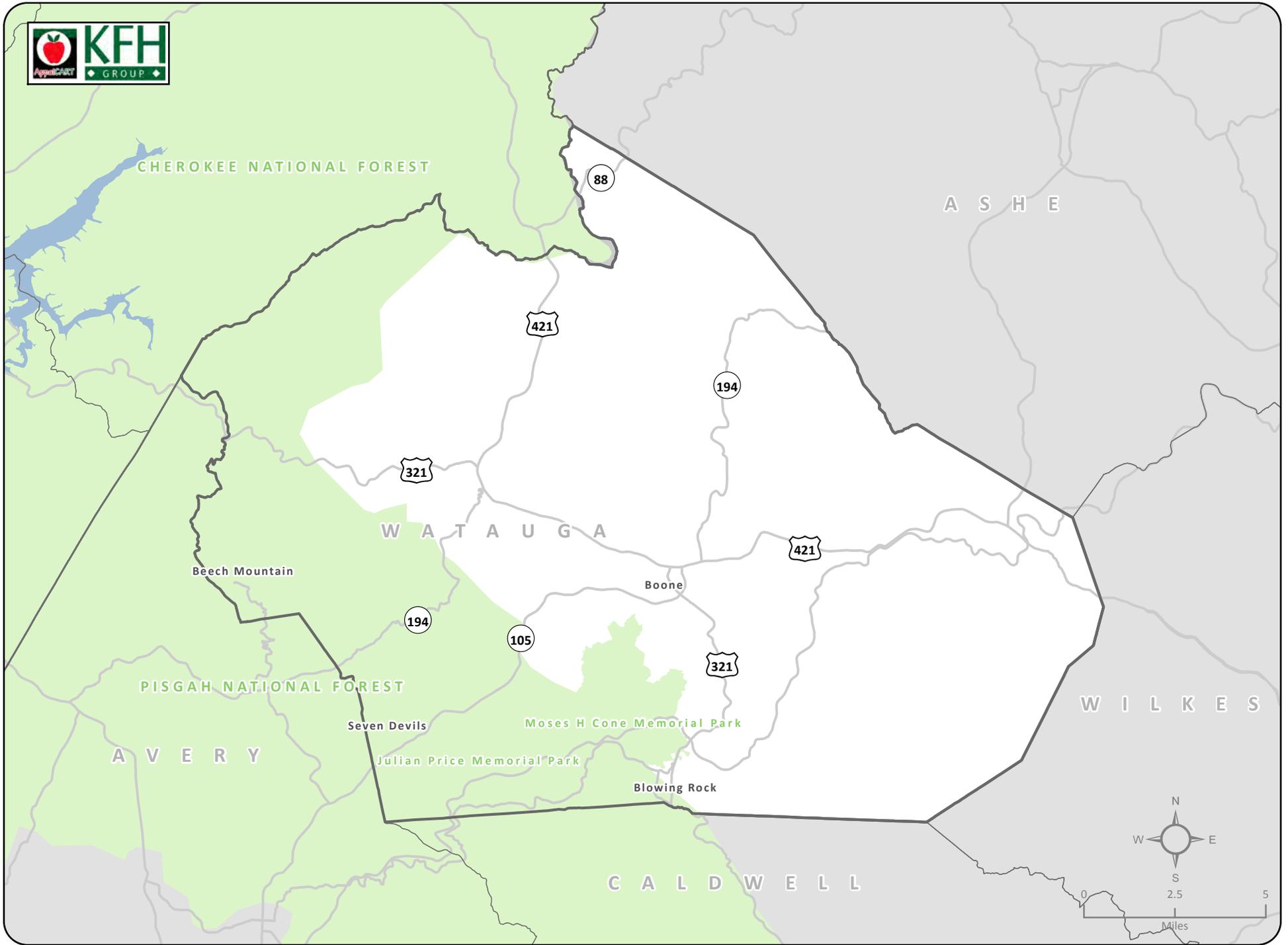


Figure ES-1: Watauga County, North Carolina

EXISTING SERVICES

The first major task for the CTSP was to document and analyze the existing community transportation resources in Watauga County, with a focus on AppalCART's services. AppalCART provides fixed-route services and Americans with Disabilities Act (ADA) complementary paratransit in the Boone area, as well as rural demand-response services throughout the County. Six of AppalCART's Boone-area fixed routes operate at all times of the year, and another four fixed routes operate during the fall and spring semesters at ASU.

Rural services are operated on a demand-response basis. AppalCART has established ten rural dial-a-ride routes that operate on particular days of the week, serving different areas of the County. These routes meet the needs of AppalCART's contractual riders (Watauga County Project on Aging, the Watauga County Department of Social Services, and Watauga Opportunities), and are open to the general public. AppalCART also provides out-of-county trips for agencies' clients as needed, including trips to Wilkesboro, Lenoir, Hickory, Winston-Salem, and Charlotte. These trips are open to the public on a fare-paying basis.

In FY 2010, AppalCART provided almost 1.2 million passenger trips, recording 50,636 vehicle service hours and 675,057 vehicle service miles. The FY 2010 operating and administrative expenses were just under \$2.6 million. AppalCART's fixed-route services averaged 31 passenger trips per service hour and the demand-response/contract services averaged 3.4 passenger trips per service hour. The combined average cost per passenger trip in FY 2010 was \$2.17. The total system budget for FY 2011 is \$ 2,843,227.

There are seven taxicab/private transportation providers in the County, as well as intercity bus service along the US421 corridor between Boone and Greensboro (Mountaineer East-West) and the US321 Corridor between Boone and Charlotte (Mountaineer North-South). An airport shuttle service also serves Watauga County (Hickory Hop).

TRANSIT NEEDS ANALYSIS

The transit needs analysis, which is fully documented in Chapter 3, included a significant data collection effort that considered demographics and land use, previous planning efforts, public opinion, rider opinion, and stakeholder opinion. Demographic data indicate that the region is growing slowly, with this trend likely to continue over the next several years.

In reviewing and analyzing the various data concerning transit needs, a number of unmet transit needs and potential services were echoed by several of the data sources. These key unmet needs and potential services are highlighted below and helped form the basis for the recommendations included in the five-year plan:

- The need to provide more frequent transit service for AppalCART's fixed routes, both to relieve overcrowding and to provide more convenient options.
- The need to explore the expansion of fixed-route services to some specific areas of growth, including specific destinations in the Town of Boone, areas adjacent to the Town, and the more rural areas.
- An exploration of how a park and ride network and potential transportation demand strategies could work in Watauga County.
- The need to explore extending the hours of service.
- A specific look at some of the routes to see if there could be a transition from a loop pattern to a bi-directional pattern.
- A look at increasing the availability of passenger waiting shelters and an exploration of a "next bus" type of electronic system that would tell passengers the next arrival of a particular bus in real time.

To the extent possible, these needs were addressed in the alternatives and reflected in the five-year plan.

FIVE-YEAR PLAN

The five-year plan for AppalCART was developed from a series of potential service and organizational alternatives that were presented in September and October, 2010 (Chapter 4 of the full CTSP report). The plan incorporated several of the alternatives, with improvements phased over time based on Steering Committee priorities. The alternatives were presented to the public at a series of forums held in October, 2010.

The plan is expansionary in nature and assumes that new revenue will be available, either through increases in the student transportation fee, or through new federal funds, pending the re-authorization of SAFETEA-LU. If additional revenue is not available, then the plan will need to be scaled back accordingly.

Table ES-1 provides a summary of the recommended projects for the five-year plan, including project descriptions, purposes, estimated revenue service hours, proposed implementation years, estimated expenses, and recommended funding sources. As is shown in Table ES-1, the plan proposes to add just over 12,600 annual service hours to the current 55,586, an increase of 23% over the five-year period. The annual operating and administrative budget is projected to grow from \$2.8 million (FY 2011) to just over \$4.3 million in FY 2016.

Planned improvements include the development of a park and ride network; improved frequency of service; two new routes (one fixed-route in Boone and a route between Boone and Blowing Rock); later hours of service on Saturdays; additional transit services on Sundays; additional passenger amenities, and real-time bus information. A multi-modal facility and a transportation demand management program are also featured in the plan.

Table ES-2 provides the financial plan for operations for the five-year period, Table ES-3 provides the financial plan for vehicle replacement and expansion, and Table ES-4 provides the financial plan for facilities, equipment, and other capital.

Table ES-1: AppalCART CTSP Summary of Service Improvements

Service Improvement	Purpose	Annual Revenue Hours	Annual Operating Cost	Capital Cost	Proposed Year	Proposed Funding Sources
Park and ride space rental	To provide parking options on the periphery of Boone to help reduce traffic and parking issues in Town and on the ASU Campus	-	\$ 59,000	\$ -	FY 2012	ASU, AppalCART (federal/state/local), users
Red Route- Improve frequency to 30 minutes	To improve service for riders of the Red Route and ensure that all routes have at least 30-minute frequencies.	1,870	\$ 97,240	\$ -	FY 2012	ASU Student fees
Offer later hours of service on Saturdays	To provide additional mobility options for transit riders after 5 p.m. on Saturdays.	1,040	\$ 54,000	\$ -	FY 2012	ASU Student fees
Bus Stop Amenities	To provide a safer and more comfortable environment for accessing transit service.		\$ -		FY 2012	Already funded through AARA
Silver Route/Reverse Pop105 Route	To reduce overcrowding, improve frequency of service, and improve pedestrian safety.	2,400	\$ 124,800	\$ 375,000	FY 2013	ASU Student fees
Provide additional service between Boone and Blowing Rock	To improve public transportation services between Boone and Blowing Rock, building upon the service already in place.	1,664	\$ 86,500	\$ 73,500	FY 2013	S.5311 Operating, fares, local
Implement real-time bus information	To provide riders with real-time information that will let them know when their bus will be arriving.	-	\$ -	\$ 350,000	FY 2013	80% federal, 10% state, 10% local
Targeted increases in frequency, peak periods	To reduce overcrowding and improve convenience. This alternative is priced per route.	1,200	\$ 62,000	\$ 375,000	FY 2014	ASU Student fees

Table ES-1: AppalCART CTSP Summary of Service Improvements

Service Improvement	Purpose	Annual Revenue Hours	Annual Operating Cost	Capital Cost	Proposed Year	Proposed Funding Sources
Sunday service on the Red, Green, Pop105, and Orange Routes	To provide transit riders with mobility options on Sundays.	2,080	\$ 108,000	\$ -	FY 2014	S. 5311, ASU Student fees, Town of Boone
Targeted increases in frequency, peak periods	To reduce overcrowding and improve convenience. This alternative is priced per route.	1,200	\$ 62,000	\$ 375,000	FY 2015	ASU Student fees
Targeted increases in frequency, peak periods	To reduce overcrowding and improve convenience. This alternative is priced per route.	1,200	\$ 67,000	\$ 375,000	FY 2016	ASU Student fees
	TOTALS	12,654	\$ 656,540	\$ 1,923,500		

Note: Cost estimates are in FY11 dollars. The financial plan (Tables 5-5, 5-6, and 5-7) include the inflated costs, based on the proposed year of implementation.

Table ES-2: AppalCART Financial Plan for Operations

Projects	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016
<i>Annual Service Hours</i>						
AppalCART Services - FY2010 Level of Service	55,586	55,586	55,586	55,586	55,586	55,586
CTSP Proposals:						
Red Route - improve frequency	-	1,870	1,870	1,870	1,870	1,870
Offer later hours of service on Saturdays	-	1,040	1,040	1,040	1,040	1,040
New Silver/ Pop 105 North Route	-	-	2,400	2,400	2,400	2,400
Additional service between Boone and Blowing Rock	-	-	1,664	1,664	1,664	1,664
Targeted increases if frequency, peak periods	-	-	-	1,200	2,400	3,600
Sunday Service on Red, Green, Pop105, and Orange	-	-	-	2,080	2,080	2,080
Proposed Additional Hours of Service	-	2,910	6,974	10,254	11,454	12,654
TOTAL CURRENT HOURS AND NEW PROPOSED SERVICES	55,586	58,496	62,560	65,840	67,040	68,240
Percent Increase in Community Transit Service Hours from Previous Year	-	5%	7%	5%	2%	2%
Total Increase in Service Hours	23%					

Table ES-2: AppalCART Financial Plan for Operations- Projected Operating Expenses (continued)

Projects	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016
<i>Projected Operating Expenses</i>						
AppalCART FY2011 operating budget for existing services, with inflationary increases	\$ 2,843,227	\$ 2,956,956	\$ 3,075,234	\$ 3,198,346	\$ 3,326,291	\$ 3,459,354
CTSP Proposals:						
Red Route - improve frequency	\$ -	\$ 101,130	\$ 105,175	\$ 109,385	\$ 113,761	\$ 118,312
Offer later hours of service on Saturdays	\$ -	\$ 56,243	\$ 58,493	\$ 60,835	\$ 63,268	\$ 65,799
New Silver/Pop 105 North Route	\$ -	\$ -	\$ 134,984	\$ 140,388	\$ 146,004	\$ 151,844
Additional service between Boone and Blowing Rock	\$ -	\$ -	\$ 93,589	\$ 97,335	\$ 101,229	\$ 105,279
Targeted increases if frequency, peak periods	\$ -	\$ -	\$ -	\$ 70,194	\$ 146,004	\$ 227,766
Sunday Service on Red, Green, Pop105, and Orange	\$ -	\$ -	\$ -	\$ 121,669	\$ 126,536	\$ 131,598
Subtotal New Operating Expenses	\$ -	\$ 157,373	\$ 392,240	\$ 599,806	\$ 696,802	\$ 800,598
Subtotal Proposed Transit Operating Expenses	\$ 2,843,227	\$ 3,114,329	\$ 3,467,474	\$ 3,798,152	\$ 4,023,093	\$ 4,259,953
Other						
Park and Ride Space Rental	\$ -	\$ 61,360	\$ 63,814	\$ 66,369	\$ 69,024	\$ 71,785
TOTAL OPERATING EXPENSES	\$ 2,843,227	\$ 3,175,689	\$ 3,531,289	\$ 3,864,521	\$ 4,092,117	\$ 4,331,738
Percent Increase in Expenses from Previous Year		12%	11%	9%	6%	6%
Total Increase in Expenses		52%				

Table ES-2: AppalCART Financial Plan for Operations - Projected Operating Revenues (continued)

Anticipated Funding Sources for Operating	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016
<i>Federal</i>						
FTA S. 5311 Operating	\$ 451,235	\$ 469,284	\$ 531,100	\$ 552,512	\$ 574,764	\$ 597,907
FTA S.5311 Administrative	\$ 374,644	\$ 389,630	\$ 405,215	\$ 421,437	\$ 438,296	\$ 455,829
Subtotal, Federal	\$ 825,879	\$ 858,914	\$ 936,315	\$ 973,949	\$ 1,013,060	\$ 1,053,736
State Maintenance Assistance Program (SMAP)	\$ 678,494	\$ 705,634	\$ 733,859	\$ 763,238	\$ 793,770	\$ 825,524
State Funds in Support of Administrative Expenses	\$ 23,415	\$ 24,352	\$ 25,326	\$ 26,340	\$ 27,393	\$ 28,489
Elderly and Disabled Transportation Assistance Program	\$ 71,448	\$ 74,306	\$ 77,278	\$ 80,372	\$ 83,587	\$ 86,931
Rural General Public	\$ 83,414	\$ 86,751	\$ 90,221	\$ 93,832	\$ 97,586	\$ 101,490
Employment	\$ 12,281	\$ 12,772	\$ 13,283	\$ 13,815	\$ 14,368	\$ 14,942
Subtotal, State	\$ 869,052	\$ 903,814	\$ 939,967	\$ 977,597	\$ 1,016,704	\$ 1,057,376
<i>Local</i>						
Appalachian State University Student Transportation Fee	\$ 905,000	\$ 1,107,200	\$ 1,298,127	\$ 1,533,589	\$ 1,666,753	\$ 1,803,004
Local Cash Match	\$ 70,246	\$ 103,736	\$ 129,407	\$ 134,663	\$ 140,125	\$ 145,806
Contract Revenue	\$ 145,050	\$ 150,852	\$ 178,408	\$ 185,626	\$ 193,126	\$ 200,927
Special Route Guarantees	\$ 29,000	\$ 30,160	\$ 31,366	\$ 32,622	\$ 33,927	\$ 35,284
Advertising	\$ 32,000	\$ 33,280	\$ 34,611	\$ 35,997	\$ 37,437	\$ 38,934
Passenger Fares	\$ 8,721	\$ 9,070	\$ 16,933	\$ 17,310	\$ 17,703	\$ 18,111
Subtotal, Local	\$ 1,190,017	\$ 1,434,298	\$ 1,688,853	\$ 1,939,807	\$ 2,089,071	\$ 2,242,066
Total Projected/Proposed Operating Revenues	\$ 2,884,948	\$ 3,197,026	\$ 3,565,135	\$ 3,891,353	\$ 4,118,836	\$ 4,353,178
<i>Surplus to be put toward reserve</i>	\$ 41,721	\$ 21,337	\$ 33,846	\$ 26,832	\$ 26,718	\$ 21,440

Table ES-3: AppalCART CTSP Financial Plan for Vehicle Replacement and Expansion

Number of Vehicles	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016
Replacement	0	2	2	4	8	8
Expansion	1	2	2	1	1	1
Total Vehicles	1	4	4	5	9	9

Vehicle Types:	Heavy Duty Transit	2 Heavy Duty Transit 1 LTV 1 Crossover	1 Heavy Duty Transit 1 LTV 1 Van 1 Minivan	3 Heavy Duty Transit 1 Van 1 Shop Truck	4 Heavy Duty Transit 3 Vans 2 CV	5 Heavy Duty Transit 2 Vans 2 CV
Replacement	\$ -	\$ 466,440	\$ 74,252	\$ 934,961	\$ 1,524,906	\$ 1,992,103
Expansion	\$ 575,000	\$ 419,900	\$ 485,098	\$ 421,838	\$ 438,713	\$ 456,263
Total Projected Vehicle Costs	\$ 575,000	\$ 886,340	\$ 559,349	\$ 1,356,798	\$ 1,963,619	\$ 2,448,365

Anticipated Funding Sources

Federal S. 5311	\$ 460,000	\$ 709,072	\$ 447,480	\$ 1,085,439	\$ 1,570,895	\$ 1,958,692
State	\$ 57,500	\$ 88,634	\$ 55,935	\$ 135,680	\$ 196,362	\$ 244,837
Local	\$ 57,500	\$ 88,634	\$ 55,935	\$ 135,680	\$ 196,362	\$ 244,837
Total Vehicle Revenues	\$ 575,000	\$ 886,340	\$ 559,349	\$ 1,356,798	\$ 1,963,619	\$ 2,448,365

Table ES-4 : AppalCART CTSP Financial Plan for Facilities, Equipment, and Other Capital

Projects	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016
<i>Facilities and Maintenance</i>						
Vehicle Spare Parts	\$ 28,000	\$ 29,120	\$ 30,285	\$ 31,497	\$ 32,757	\$ 34,068
Other Equipment	\$ 50,000	\$ 52,000	\$ 54,080	\$ 56,245	\$ 58,495	\$ 60,835
Multi-Modal Transportation Center Design/Construction	\$ -	\$ -	\$ 405,600	\$ 421,838	\$ -	\$ -
<i>Technology</i>						
Real-Time Bus Information Project	\$ -	\$ -	\$ 378,560	\$ -	\$ -	\$ -
Computer Upgrades	\$ 6,000	\$ 3,120	\$ 3,245	\$ 3,375	\$ 3,510	\$ 3,650
Computer Software	\$ 1,000	\$ 1,040	\$ 1,082	\$ 1,125	\$ 1,170	\$ 1,217
<i>Passenger Amenities</i>						
Bus Stop Signs	\$ -	\$ 1,040	\$ 1,082	\$ 1,125	\$ 1,170	\$ 1,217
Shelters (1)	\$ -					
Total Projected Non-Vehicle Capital Expenses	\$ 85,000	\$ 86,320	\$ 873,933	\$ 515,204	\$ 97,102	\$ 100,986
<i>Anticipated Funding Sources</i>						
NCDOT Technology Grant Program	\$ 7,000	\$ 4,160	\$ 382,886	\$ 4,500	\$ 4,680	\$ 4,867
Federal S. 5311	\$ 62,400	\$ 65,728	\$ 392,837	\$ 408,564	\$ 73,938	\$ 76,895
State	\$ 7,800	\$ 8,216	\$ 49,105	\$ 51,070	\$ 9,242	\$ 9,612
Local	\$ 7,800	\$ 8,216	\$ 49,105	\$ 51,070	\$ 9,242	\$ 9,612
Total Projected Non-Vehicle Capital Revenue	\$ 85,000	\$ 86,320	\$ 873,933	\$ 515,204	\$ 97,102	\$ 100,986

(1) The plan identified a need for additional shelters. These shelters are not reflected in the five-year budget, as AppalCART has funds from an ARRA grant (\$500,000) that are to be used for shelters. This grant amount will be sufficient to purchase the shelters needed for the next five years.

Chapter 1

Introduction

BACKGROUND AND PROCESS

The North Carolina Department of Transportation, Public Transportation Division (NCDOT-PTD), helps provide planning assistance for the transit programs that it supports through federal and State grants. One of the planning tools utilized by the NCDOT-PTD for its local grantees is the Community Transportation Service Plan (CTSP). NCDOT-PTD guidance indicates that A CTSP is:

“A dynamic planning tool to be utilized by the transit system as a guideline in order to effectively accomplish the following:

- Identify the current performance and organizational direction of the system.
- Recommend strategies and propose performance measures of operating or managing that increase mobility options for passengers.
- Improve the efficiency and effectiveness of the organization and transportation services.
- Support and encourage defensible, results-based budgets.
- Promote the coordination of public transportation services across geographies.”¹

This final report documents the CTSP process that has been undertaken for AppalCART. The CTSP was directed by a Steering Committee comprised of community stakeholders, with input from AppalCART staff and NCDOT-PTD. Appendix A provides a list of the Steering Committee members. The study tasks were

¹ NCDOT-PTD, 2009 Community Transportation Conference, Community Transportation Service Plan presentation, November 2009.

undertaken by KFH Group, Inc., in close consultation with the Steering Committee, AppalCART staff, and NCDOT-PTD.

This CTSP has been developed with a thorough community outreach effort, including public surveys, rider surveys, stakeholder interviews, and a series of public meetings. These outreach efforts have resulted in a plan that highlights transit service improvements that are desired by the community.

The primary task work for the CTSP began in April 2010 and was completed in December 2010. The following interim work products were completed and presented to the Steering Committee, AppalCART staff, and NCDOT-PTD during the study time frame:

- Technical Memorandum #1: Existing Services (May 2010)
- Technical Memorandum #2: Transit Needs Analysis (July 2010)
- Technical Memorandum #3: Service and Organizational Alternatives (September 2010)

Public meetings were held during the second week in October, 2010. The public meetings were structured as informal, open-house events, with one held at the Watauga County Human Services Center, one at Appalachian State University (ASU), and one at the Boone Town Council Chambers.

AppalCART BACKGROUND

AppalCART, a public transportation authority originally named the Watauga County Transportation Authority, provides community transportation throughout Watauga County. The Authority was established by the Watauga County Board of Commissioners in January 1980 to consolidate and coordinate the transportation being provided by different agencies in the County. AppalCART is organized under Chapter 160A, Article 25, of the North Carolina General Statutes.

While AppalCART serves all of Watauga County, the majority of the passenger trips are taken on the fixed route services in the Boone area. These routes are oriented to the needs of the ASU community and the general public.

Watauga County, located in Western North Carolina's High Country, is shown in Figure 1-1.



1-3

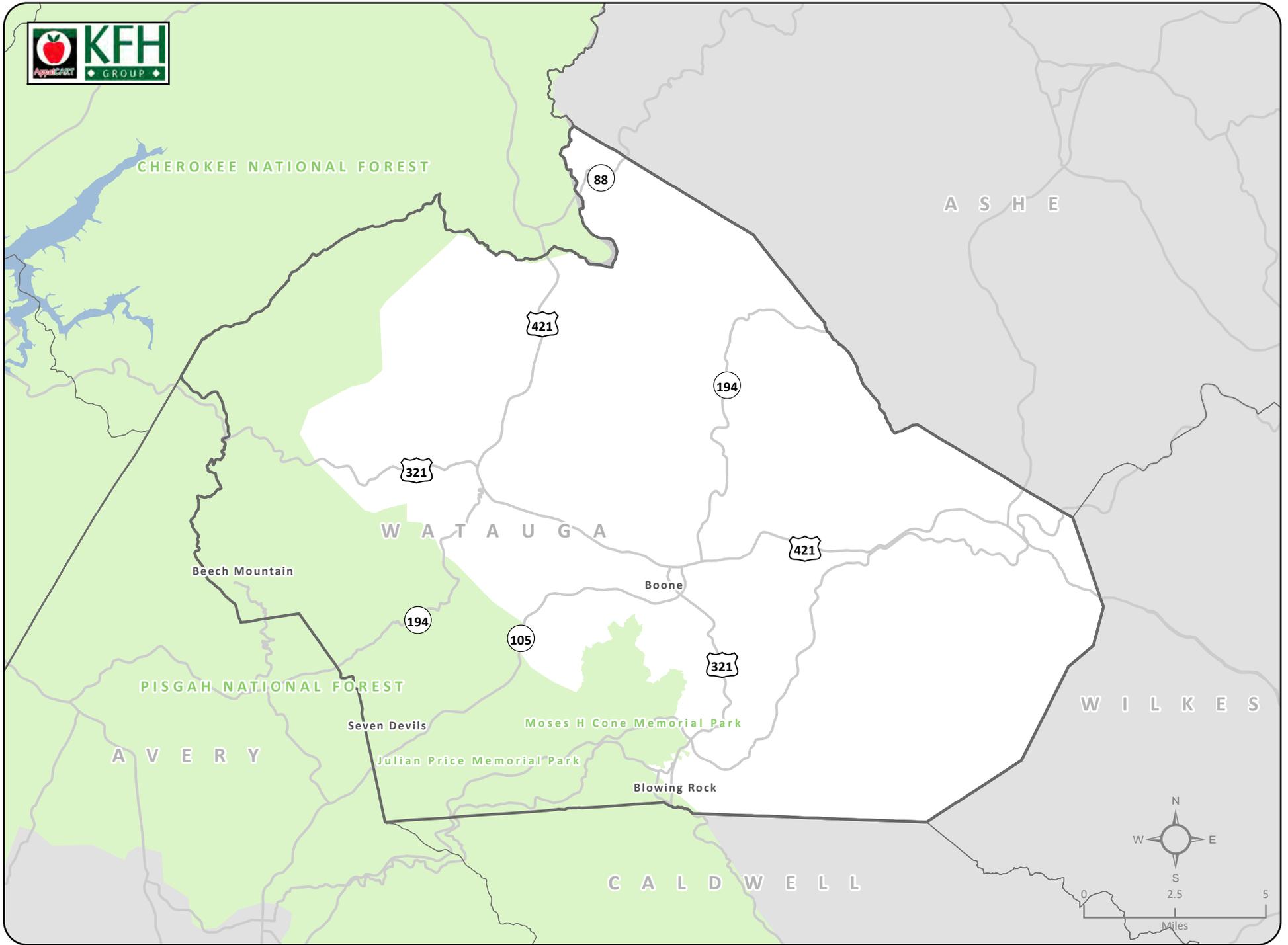


Figure 1-1: Watauga County, North Carolina

SPECIFIC ISSUES CONSIDERED DURING THE CTSP

At the initial Steering Committee meeting for the CTSP, held May 20th, 2010, Steering Committee members were asked to indicate what issues they thought were important to consider during the study process. These issues are summarized below and are not presented in any particular priority order.

- **There are a number of development issues that will likely affect the demand for transit, both in the Town of Boone and in the outlying areas of Watauga County.** The projects identified by Steering Committee members include the following:
 - The new Watauga High School opened in the Fall of 2010. It is located on Old US 421, about a mile east of Boone. AppalCART's Green Route serves the new location and AppalCART is working to get a shelter for the new school site.
 - The former high school site is located in Boone, along NC105, just west of the Boone Mall area. This site will be re-developed, though a specific site plan has not yet been approved.
 - The High Country Inn/Water Wheel, near the former high school site on NC 105, is redeveloping and will become student housing. This area is served by AppalCART's POP105 Route, but the route currently operates as a one-way loop, with the stop on the other side of the street.
 - Heavenly Mountain, a former retreat center located about nine miles southeast of Boone, is re-developing as an apartment complex. About 200 Appalachian State students already reside in these new apartments and about 200 more are expected to move there when the re-development is completed. The management of Heavenly Mountain has asked AppalCART to consider serving the area. There are issues with this request, as the road to access the area is difficult and there are few other opportunities for ridership between Boone and Heavenly Mountain.
 - There is a proposal to build a 168-unit apartment complex in Vilas. The developer has met with AppalCART.
 - Several developers have proposed "mega" apartment complexes to accommodate the student demand for higher quality housing. There was recently a short-term moratorium on these types of developments in Boone, as the Town is concerned that all of the available land will be developed as housing and there will not be space available for other uses. Town leaders are looking at ways to incorporate a mix of uses into the proposed projects.
 - There is a multi-family townhouse development planned on Poplar Grove Road in Boone.

- **There may be park-and-ride opportunities in the County and in the Town of Boone.** There are traffic and parking issues in the Town of Boone and using outlying intercept lots with shuttle service may be a way to reduce traffic congestion and reduce the demand for in-town parking. There are also several major employers in Boone that could potentially participate. There may also be a need for corridor park-and-ride lots with commuter-oriented and/or tourist-oriented transit services, both for people coming into Boone and for those traveling out of the County along one of the major travel corridors such as US 421 or US 321.
- **There may be a market for Transportation Demand Management (TDM).** The goal of a TDM program is to promote alternative transportation options to the single occupant vehicle, including carpooling, vanpooling, telecommuting, transit, bicycle, flexible work hours, compressed work weeks and parking policies/pricing strategies. A TDM program with several partners, including Appalachian State University, AppalCART, the County, and the Town of Boone could be successful in reducing traffic and reducing the need for parking in the area.
- **There is a need for additional service in the rural areas.** Lower income families are increasingly living farther out of town, as the housing is less expensive. It is difficult for people to access job opportunities when they live in the more rural portions of the County. Not all of AppalCART's rural routes operate on a daily basis.
- **Pedestrian safety is a major concern in the region,** as there are a number of roads that AppalCART serves that do not have crosswalks or signalized intersections for safe crossing.
- **There are service jobs in Foscoe and Blowing Rock** that are available for Watauga Opportunities' participants. A barrier to accessing these opportunities is often transportation. Blowing Rock is served three times a day by AppalCART, but the times may need to be adjusted to meet more job-oriented needs.
- **There is a need for non-traditional hours so that service workers can access job opportunities.**
- **The current AppalCART facility could potentially be used as a multi-modal center, allowing for connections with the Mountaineer Express.**

- **There may be a need for additional Mountaineer Express service to better meet commuter needs, both for the existing US 421 Corridor and the US 321 Corridor.** It should be noted that intercity bus service between Boone and Charlotte was recently re-instated along the 321 Corridor.

Prior to the full Committee meeting, KFH Group staff and AppalCART staff met to discuss the primary issues for the study. These issues are discussed below.

- AppalCART is constructing a new facility. The opening of the new facility is scheduled for Spring 2011. AppalCART has outgrown its current facility and the new facility will address many current operational issues such as limited vehicle parking, an inconvenient bus wash facility, and limited access to the maintenance garage. When the new facility opens, AppalCART and Watauga County will need to decide what to do with the current facility. It may be a good location for a park and ride facility and/or bus transfer facility, though a negotiation will likely be needed with NCDOT, as they have a financial interest in the building.
- Ridership on the fixed routes has grown significantly since the system went fare-free in 2005. This growth has caused crowding issues on several routes. AppalCART is working toward establishing a minimum of 30-minute frequencies on all of the fixed routes. There is a need to analyze alternatives for increasing capacity on the fixed-route system as part of the CTSP.
- There has been a reduction in service for the Project on Aging routes, due to a number of factors, including increased costs, budget reductions, and lower demand for service among the County's elderly population.
- The Town of Beech Mountain has requested shuttle services.

These issues have been reflected to the extent possible in the CTSP recommendations.

FINAL REPORT

This final report documents the study process and is organized in the following manner:

- Chapter 1: Introduction
- Chapter 2: Existing Services
- Chapter 3: Transit Needs Analysis
- Chapter 4: Service and Organizational Alternatives
- Chapter 5: Five Year Plan

Chapter 2

Existing Services

INTRODUCTION

This chapter of the CTSP provides a full description and analysis of AppalCART and provides a brief inventory of the other transportation providers in the region. The information contained in this chapter was used as the base data for the development of the CTSP alternatives and recommendations. These data were first presented in Technical Memorandum #1 and then updated for this chapter of the plan.

ADVISORY AND GOVERNANCE STRUCTURE

AppalCART Board of Authority

The AppalCART Board of Authority is the legal governing body of the Authority and provides policy and legislative direction for the transportation authority. The current Board includes representatives from:

- Boone
- ASU Office of Business Affairs (Vice Chair)
- Boone Town Council
- Watauga County Commissioners
- Watauga County Department of Social Services
- Watauga County Project on Aging
- AppalCART users
- ASU Parking and Traffic Department
- At Large (Chairman)

ORGANIZATIONAL FOCUS

Organizational Structure and Staffing

AppalCART is structured as an independent transit authority. AppalCART employees manage and operate public transportation services in the County. The Transportation Director serves as the liaison between the Board of Authority, the community, and the staff. As depicted in Figure 2-1, the Transportation Director oversees the following departments and managers:

- Finance Officer
- Operations Manager
- Secretary/Drug and Alcohol Program Manager
- Shop Manager
- Database Manager

Performance Plan and Analysis

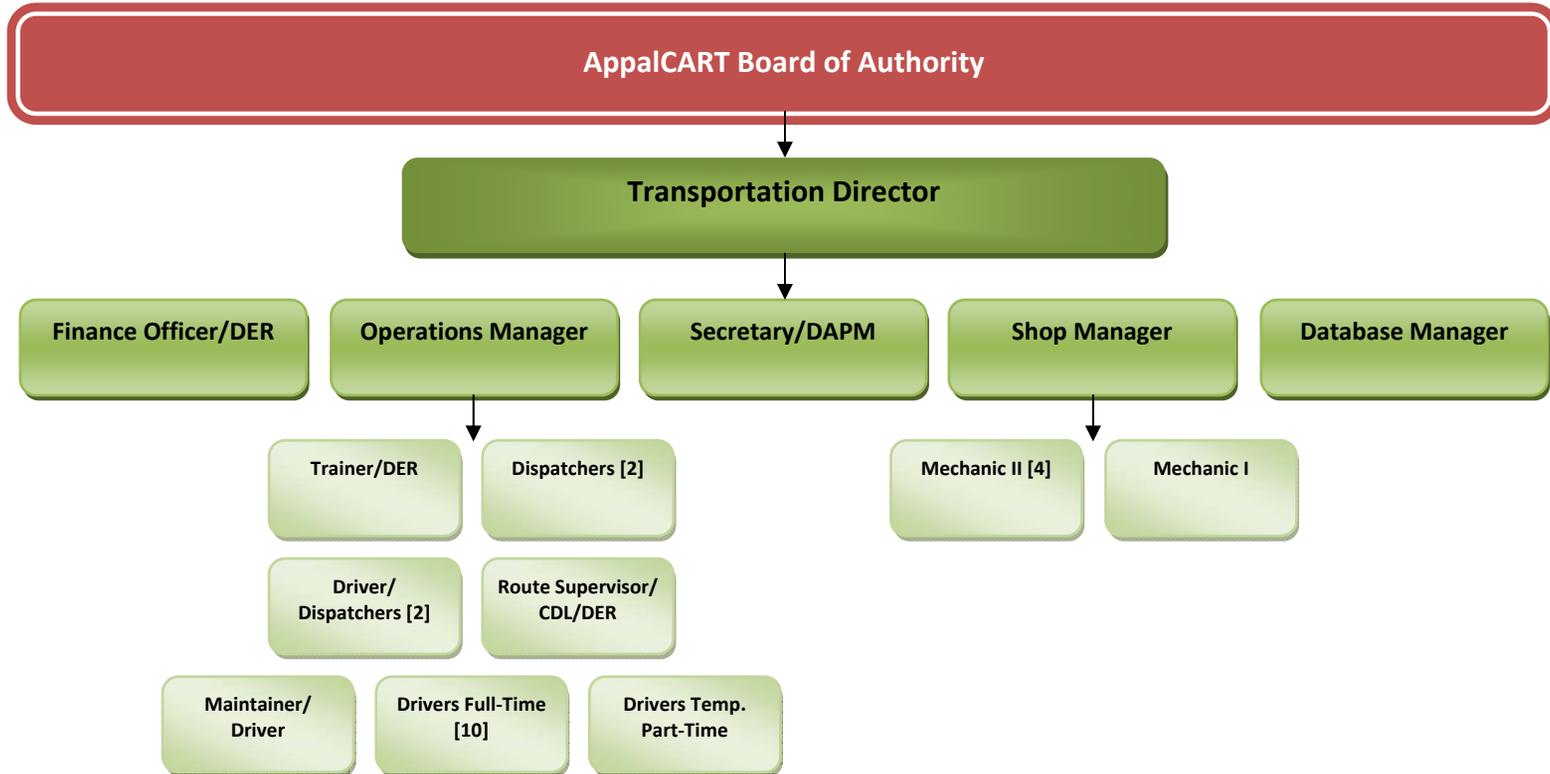
Separate from the CTSP process, a Performance Plan and Analysis was conducted for AppalCART by the Institute for Transportation Research and Education (ITRE) at North Carolina State University. The purpose of that plan was to provide AppalCART with a guide to achieve higher performance measures and improve business practices. The process also provided AppalCART with the opportunity to independently update the plan to track performance, and create a solid foundation for future improvements. The Performance Plan and Analysis was focused exclusively on AppalCART's demand-response programs.

The performance plan provided a number of recommendations for the program, including the following:¹

- Confirm that no-shows and cancellations are being properly recorded. ITRE staff indicated that the rates were very low may not be accurate.
- Revise manifest to include a line for each pick-up and drop-off that includes the full trip information.
- Review scheduling practices to discover why AppalCART experiences more deadhead miles than its peers.

¹ ITRE, Performance Plan and Analysis- AppalCART, Draft, April 2010, ITRE.

FIGURE 2-1: Organizational Chart for AppalCART



DAPM: Drug and Alcohol Program Manager
DER: Designated Employee Representative
CDL: Third Party CDL Road Tester

- Create a method of differentiating between subscription and demand response trips. This is needed if AppalCART wishes to qualify for Advanced Scheduling software in the future.
- Begin to practice real-time dispatching by having drivers call in no-shows as they occur so that schedules can be revised to maximize efficiency.
- Explore coordination with other systems in the area for out-of-county trips.
- Consider limiting the days that out-of-county services are provided.
- Consider changing the agency billing to mirror the rural general public fare structure, which is zone-based rather than mileage-based.
- Develop a rate-setting model.

SERVICE CHARACTERISTICS

AppalCART provides fixed-route services and Americans with Disabilities Act (ADA) complementary paratransit in the Boone area, as well as rural demand-response services throughout the County. Six of AppalCART's Boone-area fixed routes operate at all times of the year, and another four fixed routes operate during the fall and spring semesters at ASU.

Rural services are operated on a demand-response basis. AppalCART has established ten rural dial-a-ride routes that operate on particular days of the week, serving different areas of the County. These routes meet the needs of AppalCART's contractual riders (Watauga County Project on Aging, the Watauga County Department of Social Services, and Watauga Opportunities), and are open to the general public. AppalCART also provides out-of-county trips for agencies' clients as needed, including trips to Wilkesboro, Lenoir, Hickory, Winston-Salem, and Charlotte. These trips are open to the public on a fare-paying basis.

Operating Statistics

The overall operating statistics for the AppalCART services for FY 2009 and FY 2010 are provided in Table 2-1. As these data show, ridership on the fixed routes was down slightly between FY 2009 and FY 2010, while demand response and contract trips were down significantly, reflecting the difficult economic conditions facing local human service agencies. The snowy winter also likely reduced ridership, as AppalCART was forced to curtail service on several days. Revenue service hours increased 9.4% on the fixed routes and decreased by 7.8% on the demand-response/contract services. With

Table 2-1: FY 2009 and FY 2010 System Operating Statistics

	FY 2009 Fixed- Route	Demand- Response and Contract	FY 2009 Total	FY 2010 Fixed- Route	Demand- Response and Contract	FY 2010 Total
Total Boardings	1,148,688	54,986	1,203,674	1,144,394	46,440	1,190,834
Total Vehicle Service Hours	33,705	14,905	48,610	36,898	13,738	50,636
Total Vehicle Service Miles	403,752	250,314	654,066	443,770	231,287	675,057
Average Trips/Hour	34.08	3.69	24.76	31.02	3.38	23.52
Average Trips/Mile	2.85	0.22	1.84	2.58	0.20	1.76
Average Miles per Hour	11.98	16.79	13.46	12.03	16.84	13.33
Total Administrative and Operating Expenses			\$ 2,445,135			\$ 2,587,269
Total Cost/Hour			\$ 50.30			\$ 51.10
Total Cost/Mile			\$ 3.74			\$ 3.83
Total Cost/Trip			\$ 2.03			\$ 2.17

Note: these were compiled from two sources of data, the internal OpSum report and the PTD's Opstats.

the additional service hours, passenger trips per vehicle service hour decreased on the fixed routes from 34 trips/hour to 31 trips/hour. The demand-response/contract productivity was down slightly from 3.69 to 3.38 trips per hour.

Fixed-Route Services

As noted earlier, AppalCART operates ten fixed routes. All fixed routes are fare free. A map of the overall AppalCART system is found in Figure 2-2. The following routes operate year-round (though services may be modified during the summer):

- Gold Route
- Green Route
- Orange Route
- Pop-105 Route
- Purple Route
- Red Route

The following routes operate on a schedule based on the ASU spring and fall semesters:

- Blue Route
- Express Route
- Pink Route
- State Farm Route

As noted in Table 2-1, 1,148,688 passenger trips were provided on the AppalCART fixed routes in FY 2009 and 1,144,394 trips were provided in FY 2010, a slight decrease, most likely due to the snowy winter that forced AppalCART to curtail service on several occasions. A breakdown of ridership per route, along with other operating data per route, is provided in Table 2-2.

As these data show, the Blue Route has the highest productivity among the fixed routes, with over 66 passenger trips per revenue hour. These productivity numbers suggest that there are likely crowding issues on this route. The highest ridership is seen on the Pop-105 Route, which carried 236,782 passenger trips in FY 2010. The Pop-105 Route also had the highest level of service, with AppalCART providing 6,729 revenue service hours to the route in FY 2010.

The Express and Pop105 routes had the second and third highest productivity numbers in FY 2010, providing 49 and 35 passenger trips per hour, respectively. The mean productivity for the fixed routes, together, was 31 passenger trips per hour in FY2010, down from 34 passenger trips per hour in FY 2009 (reflecting the additional

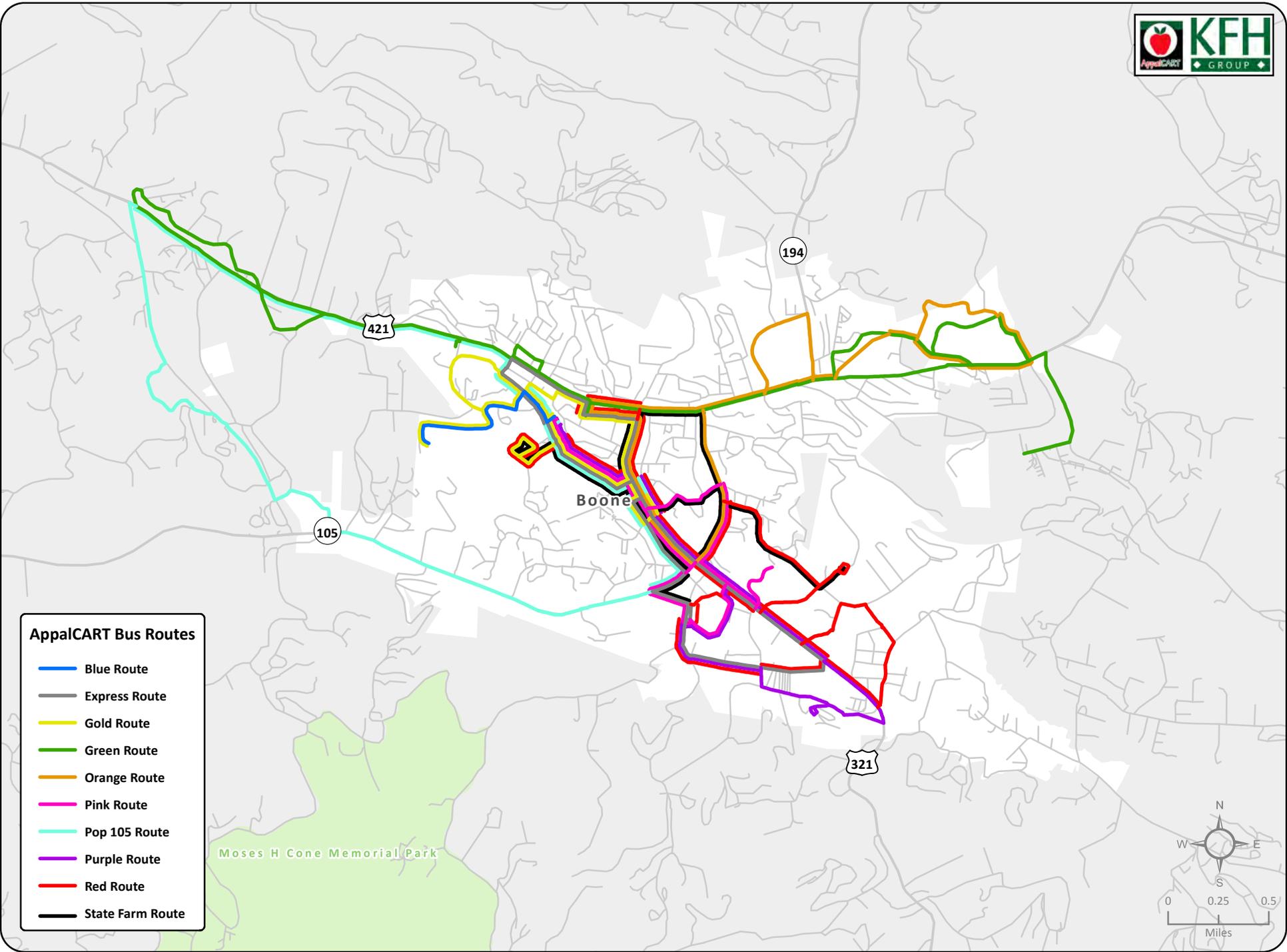


Figure 2-2: Bus System Map for AppalCART

Table 2-2: Fixed-Route Operating Statistics: FY 2009 and FY 2010

Route Name	Boardings		Miles		Hours		Boardings/Mile		Boardings/Hour	
	FY 2009	FY 2010	FY 2009	FY 2010	FY 2009	FY 2010	FY 2009	FY 2010	FY 2009	FY 2010
Blue	127,881	118,202	16,886	16,440	1,869	1,788	7.57	7.19	68.43	66.11
Express	86,613	87,369	19,129	17,769	1,829	1,800	4.53	4.92	47.36	48.54
Gold	66,777	58,465	37,122	36,032	3,636	3,673	1.80	1.62	18.37	15.92
Green	120,492	106,737	66,386	58,609	4,738	4,623	1.82	1.82	25.43	23.09
Orange	114,462	174,527	26,778	74,862	2,338	5,626	4.27	2.33	48.96	31.02
Pink	90,021	82,399	23,980	24,486	2,614	2,559	3.75	3.37	34.44	32.20
Pop 105	237,130	236,782	99,067	103,179	6,583	6,729	2.39	2.29	36.02	35.19
Purple	133,389	128,514	41,401	41,570	3,658	3,812	3.22	3.09	36.47	33.71
Red	123,487	111,627	57,691	56,781	4,962	4,891	2.14	1.97	24.89	22.82
State Farm	48,436	39,772	15,312	14,042	1,479	1,397	3.16	2.83	32.75	28.48
Total	1,148,688	1,144,394	403,752	443,770	33,705	36,898	2.85	2.58	34.08	31.02

Source: OpSum Report.

hours added to address crowding and the slight reduction in ridership). The Gold Route was the least productive of the fixed routes, providing about 16 trips per operating hour, which is still considered good for small city fixed route transit service.

Fixed-Route Profiles

The following section provides an overview of each of the AppalCART fixed routes. Route-by-route profiles include a map of the specific route, along with the following operating statistics for FY 2010:

- Total Ridership
- Total Miles
- Total Hours
- Trips per Mile
- Trips per Hour

Blue Route

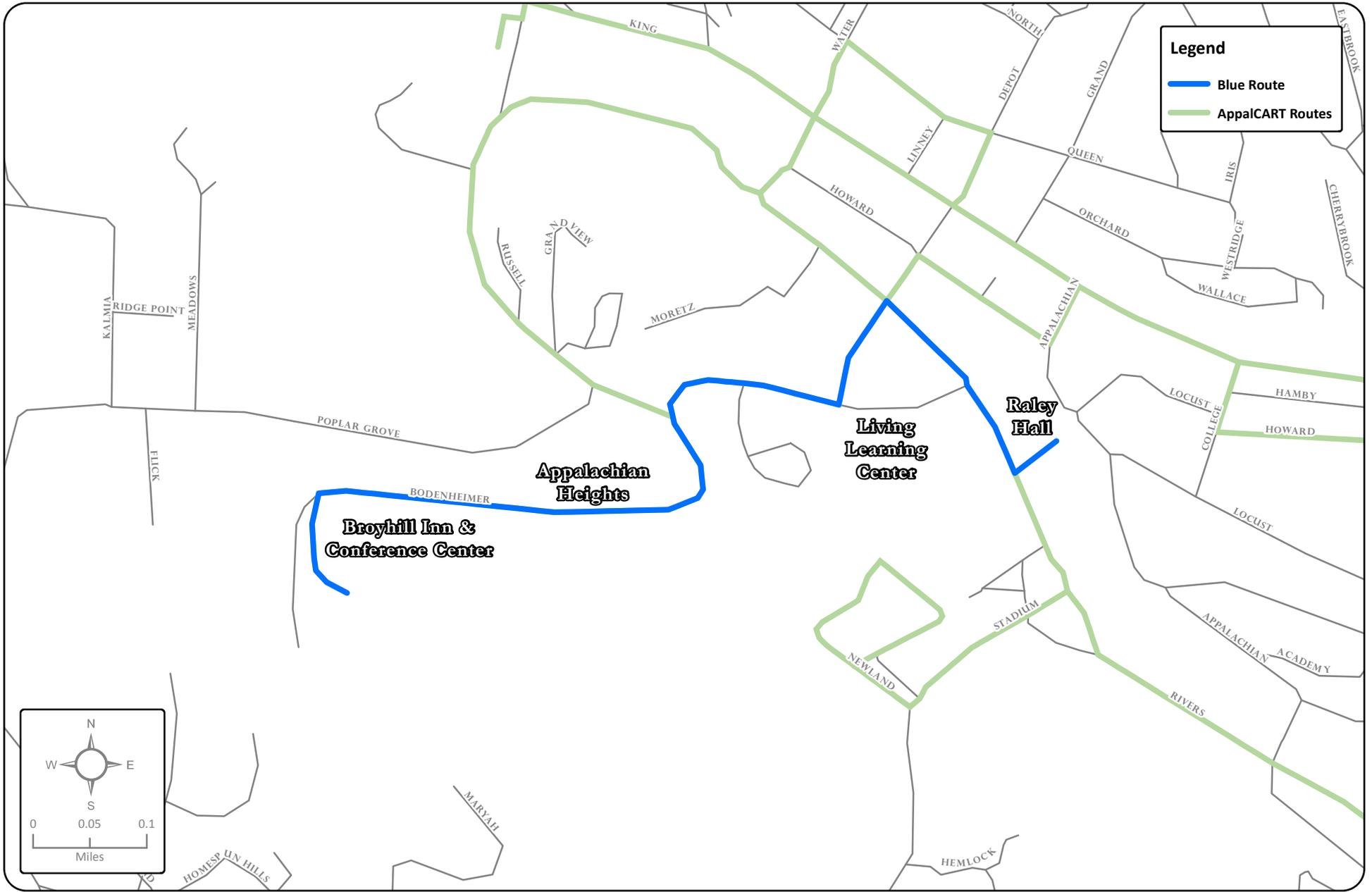
The Blue Route operates every 15 minutes Monday through Friday from 7:30 a.m. to 5:49 p.m. This route operates during ASU fall and spring semesters, connecting residential areas such as the Mountaineer Apartments and Appalachian Heights with the ASU campus, where the bus stops at the Raley Hall Traffic Circle. The Blue Route also connects the main campus with the Broyhill Inn and Conference Center. In addition, the Blue Route begins operating service five hours before ASU football games, and for two hours after these games. A profile of the Blue Route is located in Figure 2-3.

Express Route

The Express Route operates every 30 minutes Monday through Friday from 7:33 a.m. to 6:39 p.m., during ASU fall and spring semesters and on ASU exam days. The Express Route connects the ASU campus and downtown Boone with the Boone Mall and other locations along Blowing Rock Road (US 321) and adjoining areas. The Express Route has multiple stops on the ASU campus, including the College Street shelter where transfers can be made to the Green, Gold, and Red Routes. A profile of the Express Route is located in Figure 2-4.

Gold Route

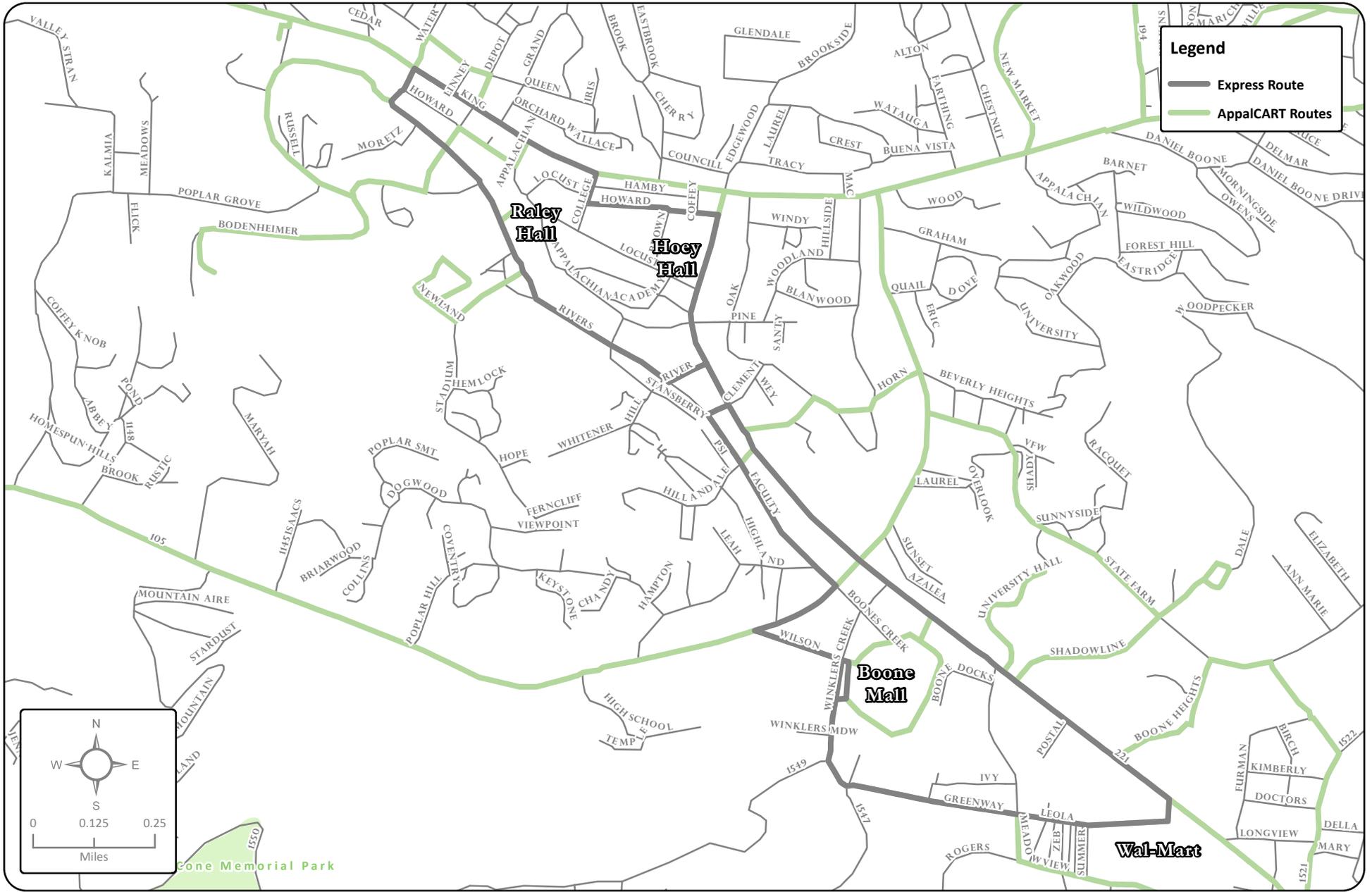
The Gold Route operates every 30 minutes Monday through Friday from 6:55 a.m. to 11:06 p.m. during ASU fall and spring semesters. During the summer, the route operates from 6:55 a.m. to 5:27 p.m. The Gold Route also operates on the day preceding ASU's class week (usually Sundays) from 4:02 p.m. to 11:06 p.m. As indicated on the system map, a portion of the route does not operate after 6:00 p.m. The Gold Route



FY2010 OPERATIONS SUMMARY:	Total Ridership: 118,202	Trips per Mile: 7.19
	Total Miles: 16,440	Trips per Hour: 66.11
	Total Hours: 1,788	



Figure 2-3: Profile of the Blue Route



FY2010 OPERATIONS SUMMARY:	Total Ridership: 87,369	Trips per Mile: 4.92
	Total Miles: 17,769	Trips per Hour: 48.54
	Total Hours: 1,800	



Figure 2-4: Profile of the Express Route

primarily serves the ASU campus and downtown Boone. Like the Blue Route, the Gold Route connects residential areas, such as the Mountaineer Apartments and Appalachian Heights, and the Broyhill Inn and Conference Center to the ASU campus. There are multiple stops on the ASU campus, including the College Street shelter where transfers can be made to the Express, Green, Gold, and Red Routes. A profile of the Gold Route is located in Figure 2-5.

Green Route

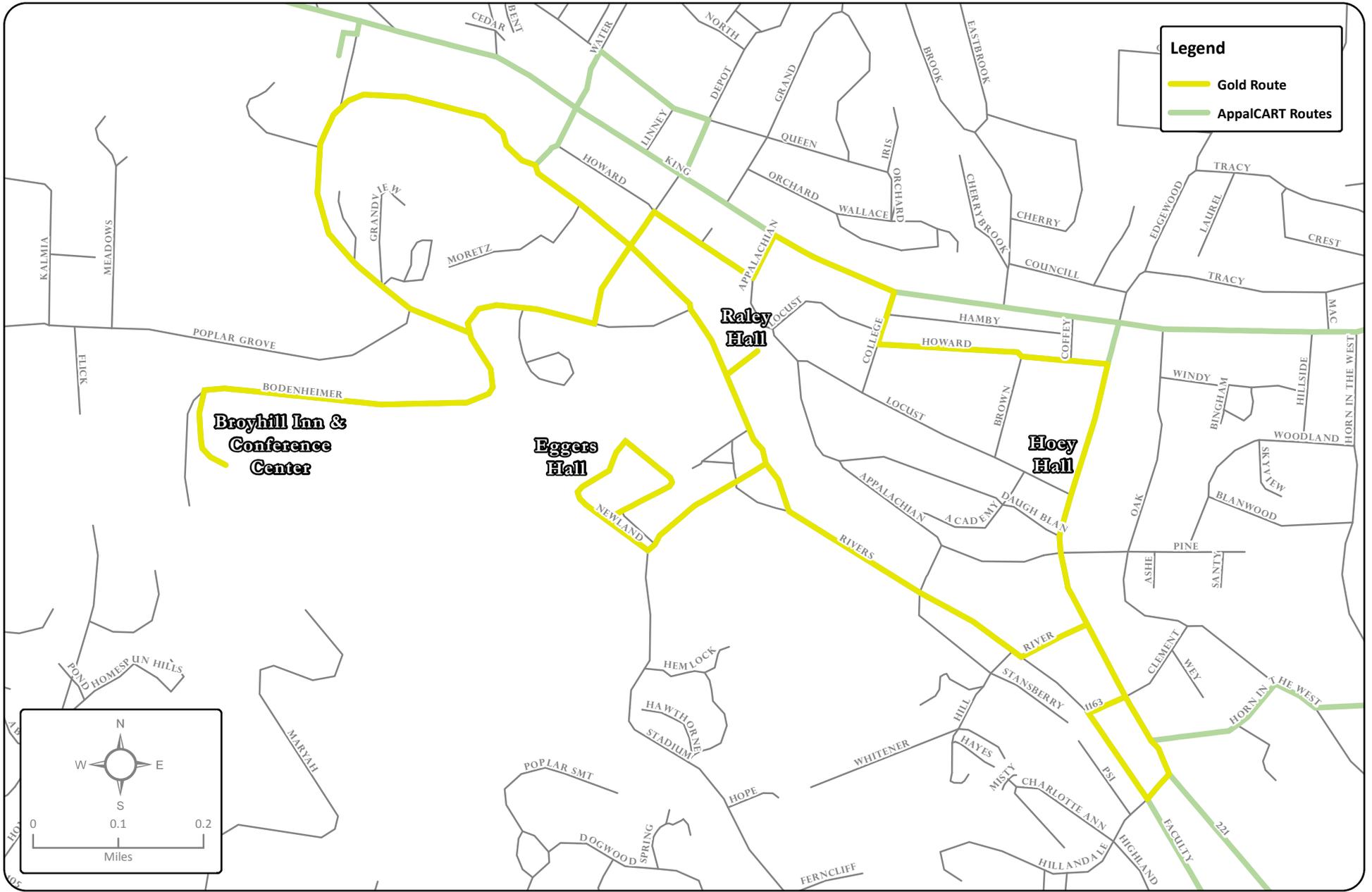
The Green Route operates on an hourly basis Monday through Friday from 6:59 a.m. to 10:58 p.m., and on Saturdays from 8:59 a.m. to 5:23 p.m. The route serves the Route 421 (King Street) corridor east and west of downtown Boone. The main ASU campus stop is at the shelter on College Street. Some key stops along the route are the New Market Center and the Watauga County Human Services Center. This route operates year-round, and service is extended on ASU home football days for two hours after the game ends. A profile for the Green Route is located in Figure 2-6. In the Fall of 2010 a second bus was added to the route to coincide with the re-location of the high school.

Orange Route

The Orange Route operates every hour Monday through Friday from 7:00 a.m. to 10:47 p.m., and on Saturdays 9:00 a.m. until 5:00 p.m. Extended service for two hours is offered after ASU home football games on this route. In addition, a second bus operates from 7:15 a.m. to 5:32 p.m., Monday through Friday, during fall and spring ASU semesters. The Orange Route connects the ASU campus with residential areas, shopping centers, and other destinations east of downtown Boone. These locations include Mountaineer Village Apartments, Kingswood Apartments, and the New Market Center. The Orange Route has multiple stops on the ASU campus, including the College Street shelter where transfers can be made to the Red, Green, Gold, and Express Routes. A profile of the Orange Route is located in Figure 2-7.

Pink Route

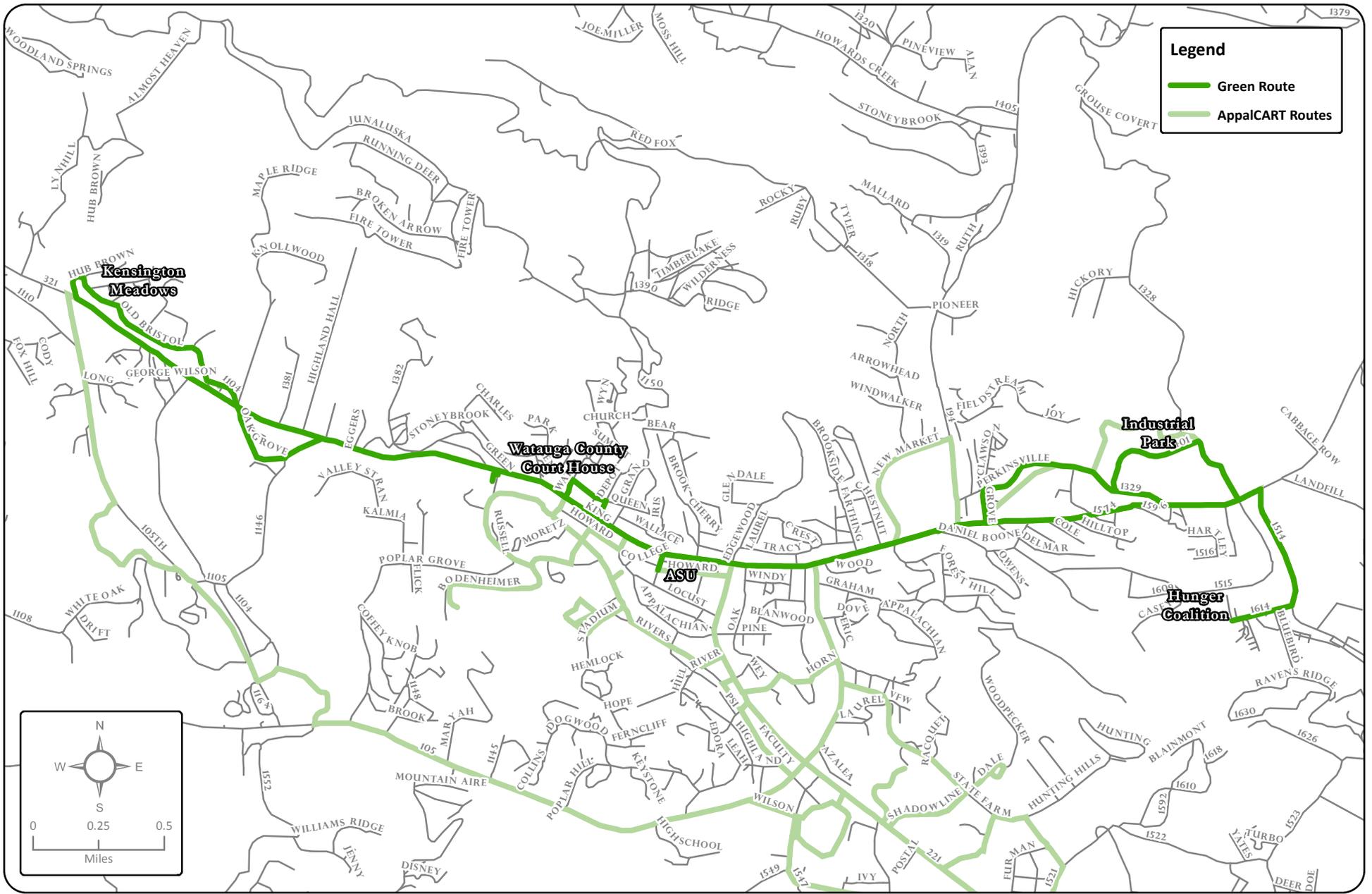
The Pink Route operates every 30 minutes Monday through Friday from 7:14 a.m. to 11:05 p.m. during ASU fall and spring semesters and on ASU exam days. The Pink Route also begins operating service five hours before ASU football games, and for two hours after these games. The Pink Route connects the ASU campus, originating at the Raley Hall Traffic Circle, to numerous locations south of campus along Blowing Rock Road, NC 105, and NC 105 Extended. A profile of the Pink Route is located in Figure 2-8.



FY2010 OPERATIONS SUMMARY:	Total Ridership: 58,465	Trips per Mile: 1.62
	Total Miles: 36,032	Trips per Hour: 15.92
	Total Hours: 3,673	



Figure 2-5: Profile of the Gold Route

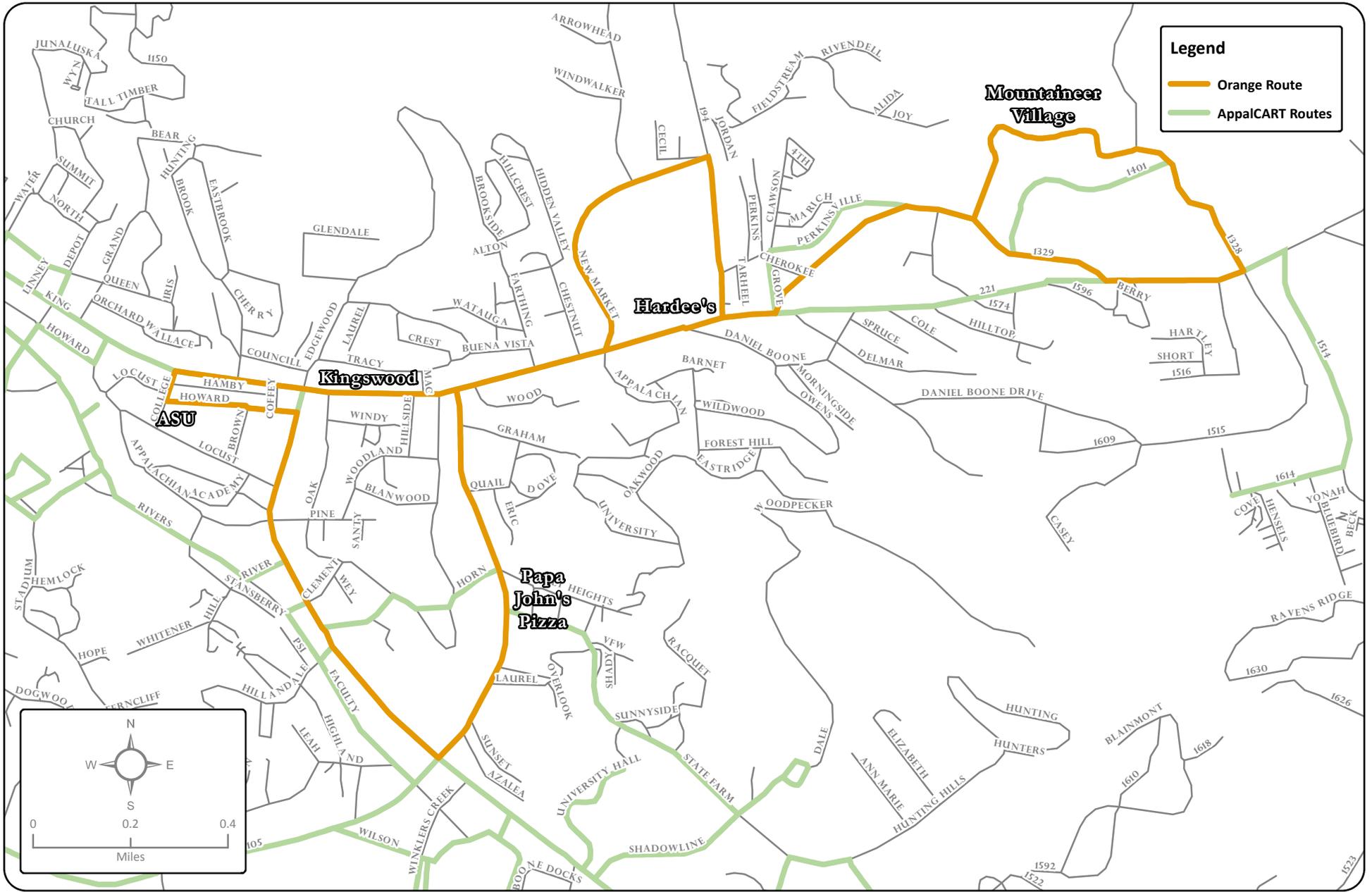


2-14

FY2010 OPERATIONS SUMMARY:	Total Ridership: 106,737	Trips per Mile: 1.82
	Total Miles: 58,609	Trips per Hour: 23.09
	Total Hours: 4,623	



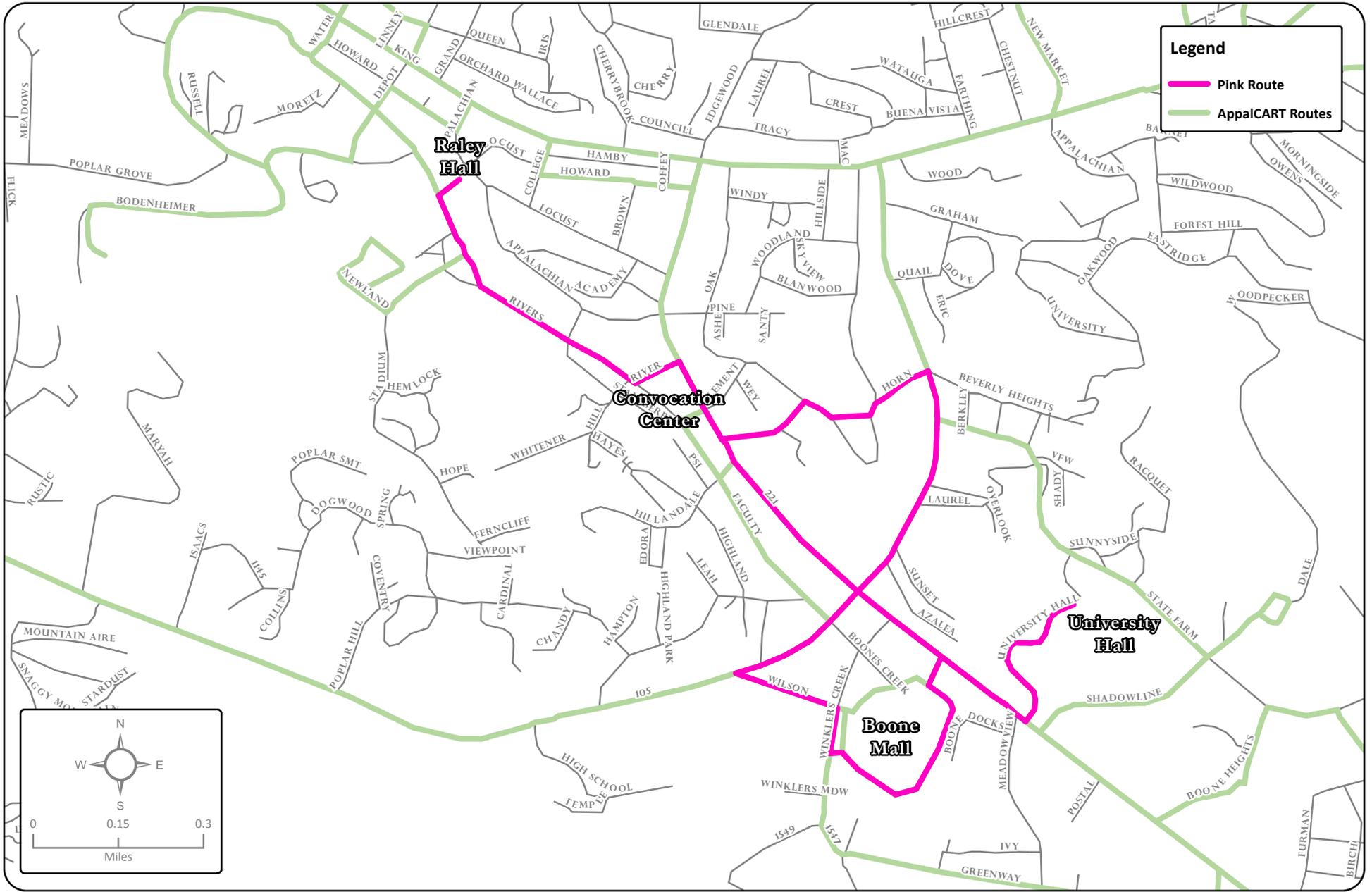
Figure 2-6: Profile of the Green Route



FY2010 OPERATIONS SUMMARY:	Total Ridership: 174,527	Trips per Mile: 2.33
	Total Miles: 74,862	Trips per Hour: 31.02
	Total Hours: 5,626	



Figure 2-7: Profile of the Orange Route



FY2010 OPERATIONS SUMMARY:	Total Ridership: 82,399	Trips per Mile: 3.37
	Total Miles: 24,486	Trips per Hour: 32.20
	Total Hours: 2,559	



Figure 2-8: Profile of the Pink Route

Pop-105 Route

The Pop-105 Route operates every hour Monday through Friday from 7:00 a.m. to 11:06 p.m., and on Saturdays 9:05 a.m. until 5:06 p.m. Extended service is offered for two hours after ASU home football games on this route. In addition, a second bus operates from 7:15 a.m. to 5:21 p.m. Monday through Friday during fall and spring ASU semesters, and a third bus operates from 7:23 a.m. to 10:20 a.m. Monday through Friday from August to May. The Pop-105 Route serves multiple stops on the ASU campus, along with residential and commercial locations along NC 105, the NC 105 Bypass, and King Street. A profile of the Pop-105 Route is located in Figure 2-9.

Purple Route

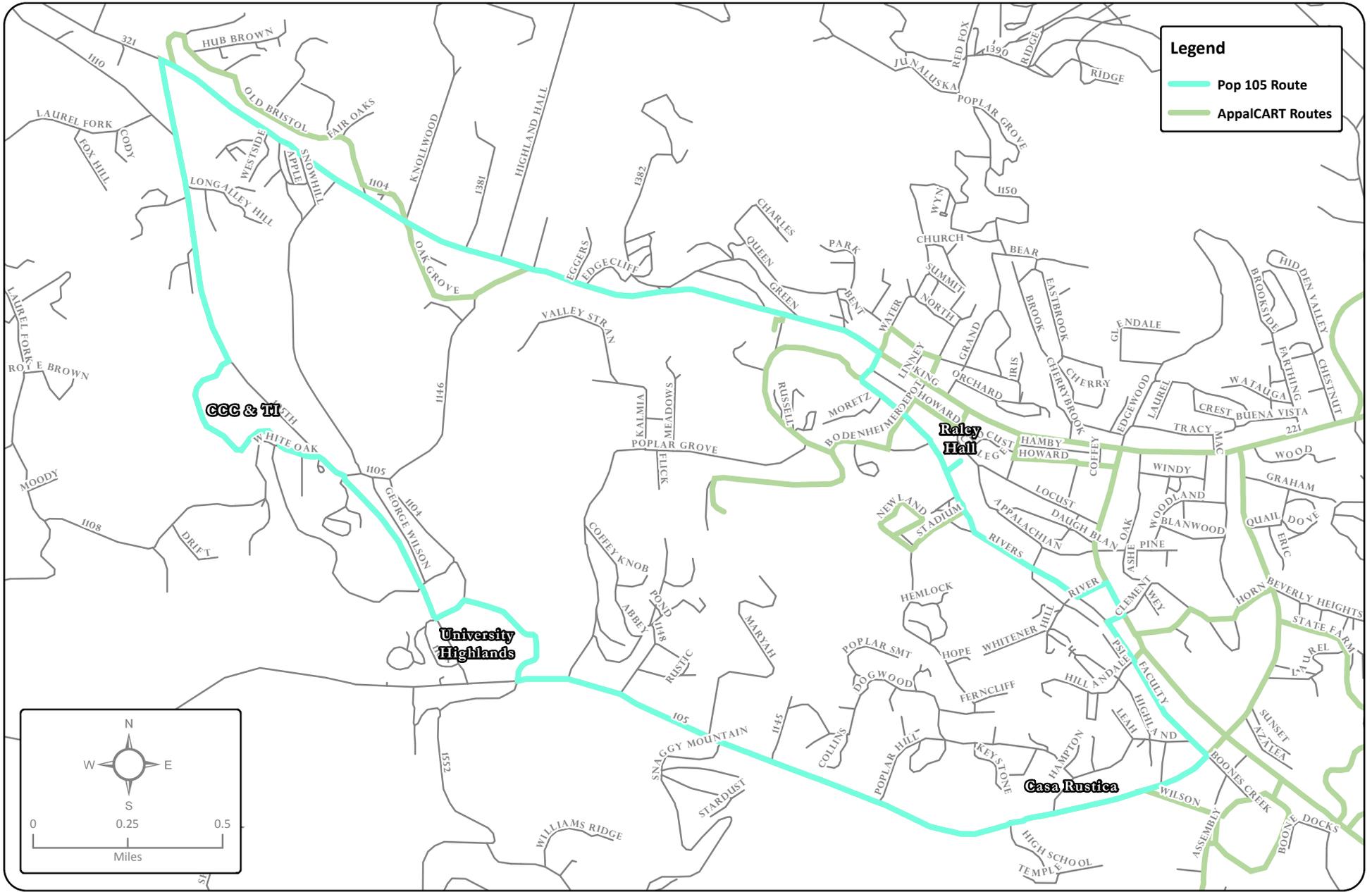
The Purple Route operates every 30 minutes Monday through Friday and on ASU exam days. Saturday service is provided from 7:01 a.m. to 8:06 p.m. The Purple Route operates year-round, and provides service starting five hours before ASU football games until two hours after these games. The Purple Route connects the ASU campus, originating at the Raley Hall Traffic Circle, to numerous locations south of campus along Blowing Rock Road and adjacent areas. Time transfers can be made to the Pop-105 Route at the Raley Hall Traffic Circle stop. A profile of the Purple Route is located in Figure 2-10.

Red Route

The Red Route operates on an hourly basis Monday through Friday from 7:11 a.m. to 11:11 p.m. (except for holidays), and on Saturdays from 8:32 a.m. to 5:11. This service is provided year-round. In addition, Sunday service is provided between 4:11 p.m. and 11:11 p.m. during ASU fall and spring semesters. Similar to the Green Route, service is extended for two hours after ASU football games. The main ASU campus stop is the shelter on College Street, where transfers can be made to the Express, Gold, Green, and Orange Routes. Key destinations along the route include Applebee's, Walmart, College Place, and Boone Mall. A profile of the Red Route is located in Figure 2-11.

State Farm Route

The State Farm Route operates every 30 minutes Monday through Thursday from 4:15 p.m. to 11:30 p.m., on Fridays from 10:15 a.m. to 5:28 p.m., and on Sundays (or the day before the school week starts) from 6:00 p.m. until 1:25 a.m. The State Farm Route operates during ASU fall and spring semesters, and connects the main campus to the State Farm lot and intramural activities in the area. A profile of the State Farm Route is located in Figure 2-12.

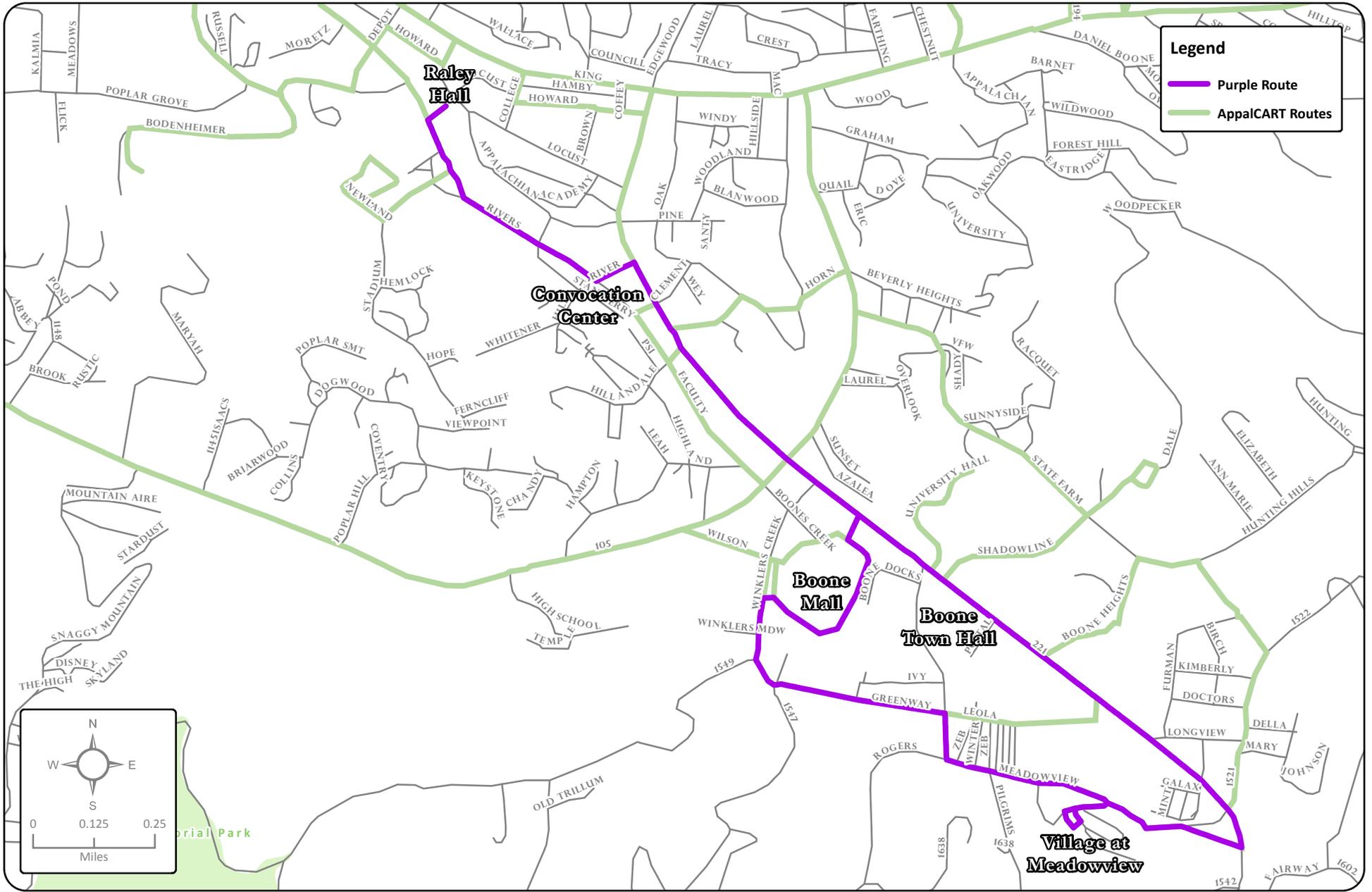


2-18

FY2010 OPERATIONS SUMMARY:	Total Ridership: 263,782	Trips per Mile: 2.29
	Total Miles: 103,179	Trips per Hour: 35.19
	Total Hours: 6,729	



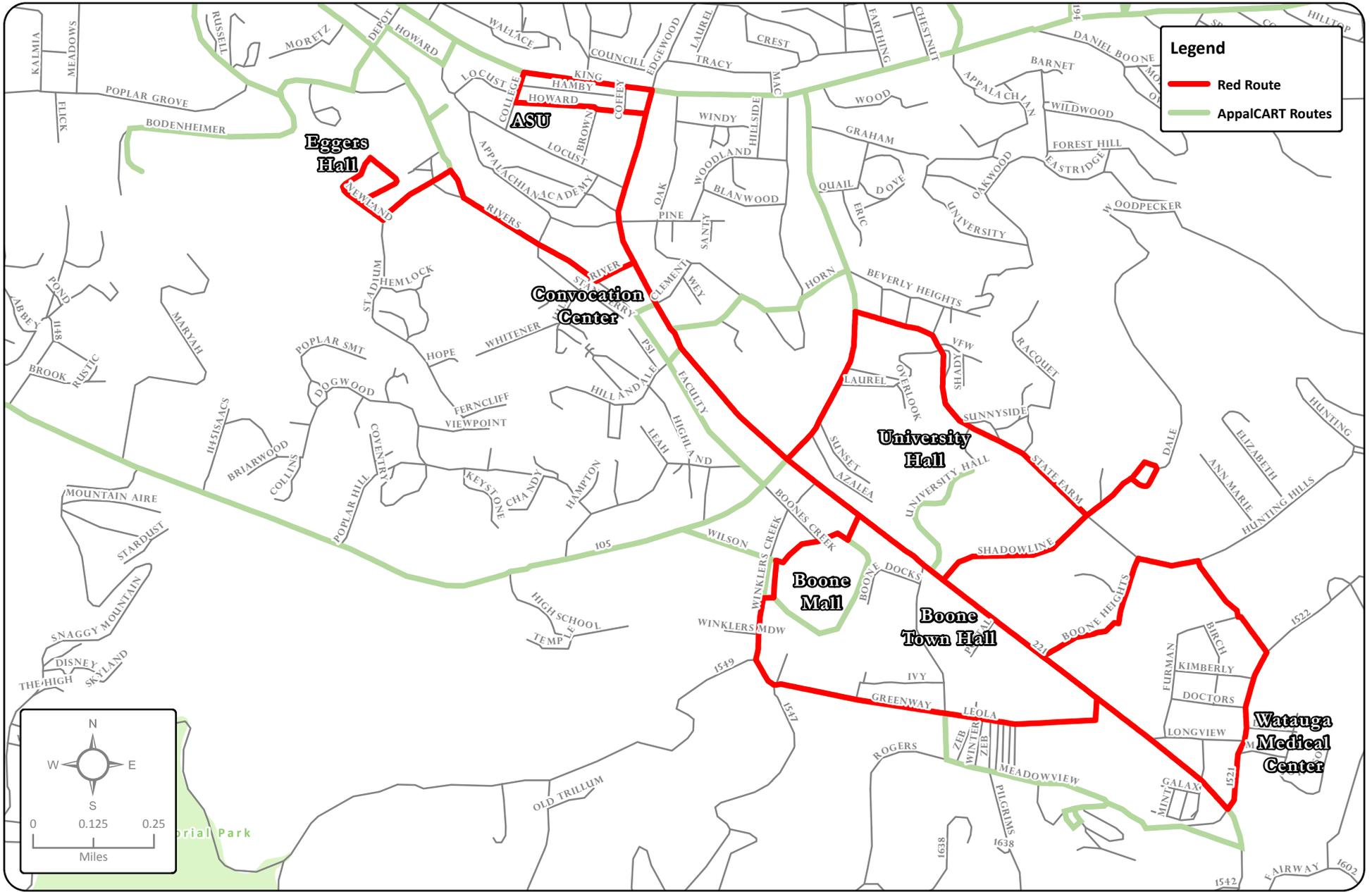
Figure 2-9: Profile of the Pop 105 Route



FY2010 OPERATIONS SUMMARY:	Total Ridership: 128,514	Trips per Mile: 3.09
	Total Miles: 41,570	Trips per Hour: 33.71
	Total Hours: 3,812	



Figure 2-10: Profile of the Purple Route

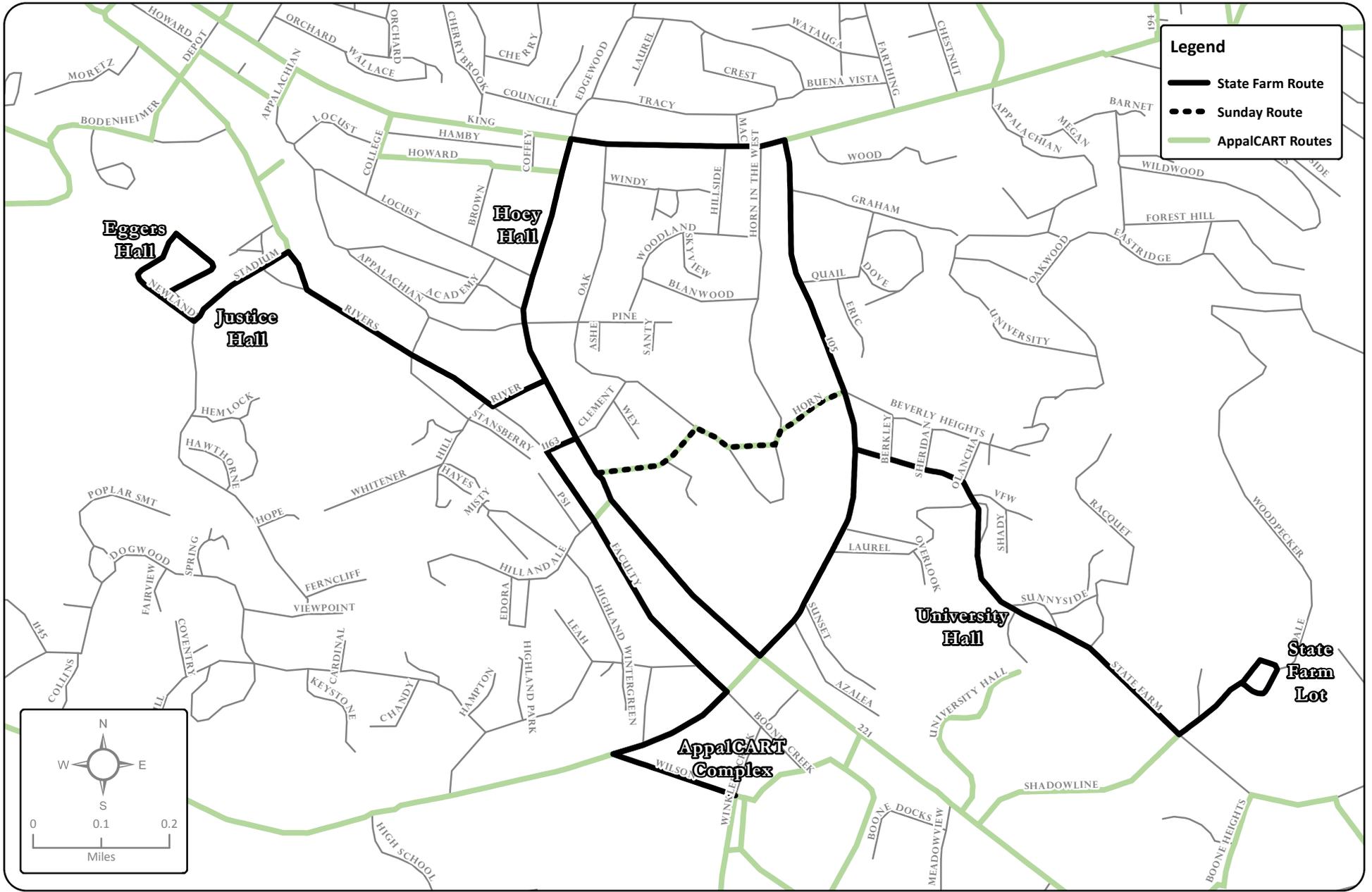


2-20

FY2010 OPERATIONS SUMMARY:	Total Ridership: 111,627	Trips per Mile: 1.97
	Total Miles: 56,781	Trips per Hour: 22.82
	Total Hours: 4,891	



Figure 2-11: Profile of the Red Route



2-21

FY2010 OPERATIONS SUMMARY:	Total Ridership: 39,772	Trips per Mile: 2.83
	Total Miles: 14,042	Trips per Hour: 28.48
	Total Hours: 1,397	



Figure 2-12: Profile of the State Farm Route

ADA Paratransit Services

AppalCART operates complementary paratransit services to meet the requirements of the ADA. The ADA paratransit service is provided on the same days and hours of operations as the fixed route bus services. Reservations for paratransit service must be made at least one day in advance and may be made up to seven days in advance. AppalCART provided 10,599 ADA paratransit tips in FY 2009 and 11,220 ADA paratransit trips in FY 2010.

Rural Service

AppalCART has established 10 rural dial-a-ride routes that operate on particular days of the week, serving different areas of the County. These routes meet the needs of AppalCART's contractual riders (Watauga County Project on Aging, the Watauga County Department of Social Services, and Watauga Opportunities), and are open to the general public. An overview of these routes is located in Exhibit 2-1.

Exhibit 2-1: AppalCART Rural Dial-A-Ride Routes

Route Name	Destination	AM	AM	Operating Days	PM	PM Return To Boone
		Depart Boone	Return To Boone		Depart Boone	
1	Zionville	6:30	8:30	M-F	4:00	5:30
2	Foscoe / Matney	7:15	8:30	M-F	4:00	5:00
3	Blowing Rock	7:15	8:30	M-F	4:30	5:00
4	Meat Camp	6:30	8:30	M-F	4:00	5:00
5	Blowing Rock	9:30	10:30	M-F	1:45	2:30
6	Cove Creek-Boone	8:45	10:00	M, Th	1:00	2:30
6	Cove Creek	8:45	10:00	M-F	1:00	2:30
7	Blowing Rock	8:45	10:45	Tu, F	1:00	2:45
8	Deep Gap	8:45	10:45	Tu, F	1:00	3:15
9	Foscoe / Matney	8:45	10:45	M, Th	1:00	2:45
10	Meat Camp / Boone	8:45	10:45	M, W	1:00	2:45

Source: AppalCART website, http://appalcart.com/rural_routes.html.

Table 2-3 provides the operating data that corresponds to these routes. Of these ten routes, the Blowing Rock/Boone route had the highest ridership in FY 2009, providing 1,962 passenger trips. The productivity of the Blowing Rock/Boone Route was also the highest among the rural routes, at just over three trips per revenue hour. The lowest ridership and productivity were seen on the Foscoe/Matney route, which provided 630 passenger trips in FY 2009 and 633 trips in FY 2010, carrying an average of 1.25 passenger trips per hour. The mean productivity among the rural routes was 2.38 passenger trips per hour in FY 2009 and 2.34 trips/hour in FY2010.

Out-of-County Service Routes

Out-of-County trips are also provided as needed for agency clients, including trips to Wilkesboro, Lenoir, Hickory, Winston-Salem, Johnson City, and Charlotte. These trips are open to the public on a fare-paying basis.

Contract Routes

AppalCART provides transportation under contract for a variety of agencies and organizations. These include transportation for activities through the Parks and Recreation Department and various special events. The following rates were in effect for 2010:

- Parks and Recreation: \$1.00 per mile and \$14.48 per hour
- Human Service: \$0.69 per mile and \$13.09 per hour
- Flat Rate Bus: \$52.50 per hour
- Flat Rate Cutaway (Van/Bus): \$40.00 per hour
- Flat rate van: \$31.50 per hour

Peer Comparison

In order to provide a context for AppalCART's operating data, KFH Group gathered data concerning other transportation providers in university-based communities. While each system is unique, with particular factors that drive their statistics, it is helpful to see how AppalCART's services compare with other similar programs. Table 2-4 provides an overview of the peer transit systems.

While the AppalCART system is the smallest in terms of passenger trips and the number of service hours provided, AppalCART exceeds the mean in regard to trips per hour and trips per mile. Costs per trip, hour, and mile are comparable to the median of the peer transit systems, which is particularly positive since the AppalCART costs include all services and not just the system's fixed routes.

Table 2-3: Rural Route Operating Statistics, FY 2009 and FY 2010

Route Name	Destination	Boardings		Miles		Hours		Boardings/Mile		Boardings/Hour		Miles/Hour	
		FY 2009	FY 2010	FY 2009	FY 2010	FY 2009	FY 2010	FY 2009	FY 2010	FY 2009	FY 2010	FY 2009	FY 2010
1	Zionville	1,827	1,661	15,040	14,546	668	621	0.12	0.11	2.74	2.67	22.51	23.42
2	Foscoe/Matney	630	633	11,334	11,324	512	499	0.06	0.06	1.23	1.27	22.14	22.69
3	Blowing Rock	1,008	736	8,042	6,656	508	412	0.13	0.11	1.98	1.79	15.83	16.16
4	Meat Camp	1,956	1,357	11,797	8,382	718	624	0.17	0.16	2.72	2.17	16.43	13.43
5	Blowing Rock	528	275	4,453	3,108	204	147	0.12	0.09	2.59	1.87	21.83	21.14
6	Cove Creek	992	1,434	9,502	12,094	559	645	0.10	0.12	1.77	2.22	16.99	18.75
7	Blowing Rock/ Boone Area	2,351	1,962	8,829	7,880	775	640	0.27	0.25	3.03	3.07	11.40	12.31
8	Deep Gap	1,147	1,290	6,466	6,546	423	412	0.18	0.20	2.71	3.13	15.29	15.89
9	Foscoe/Matney	317	-	2,123	-	146	-	0.15		2.17		14.53	
10	Meat Camp	1,100	888	5,603	4,093	478	380	0.20	0.22	2.30	2.34	11.72	10.77
	Totals	11,856	10,236	83,189	74,629	4,991	4,380	0.14	0.14	2.38	2.34	16.67	17.04

Source: OpSum Report.

Table 2-4: Selected Peer Comparison

System	Passenger Trips	Service Hours	Service Miles	Trips Per Hour	Trips Per Mile	Cost Per Trip	Cost Per Hour	Cost Per Mile
Asheville Transit	1,514,407	82,995	1,118,130	20.72	1.63	\$ 2.89	\$ 59.90	\$ 4.71
Charlottesville (VA) Transit	1,701,813	75,718	893,969	22.48	1.90	\$ 3.17	\$ 71.26	\$ 6.04
Harrisonburg (VA) Transit	1,491,042	53,824	522,481	33.84	3.43	\$ 1.65	\$ 55.86	\$ 5.66
Wave Transit (Wilmington)	1,454,425	92,303	1,511,581	15.76	0.96	\$ 3.24	\$ 51.04	\$ 3.12
WRTA (Youngstown, OH)	1,310,472	52,485	693,840	30.46	2.26	\$ 3.65	\$ 111.08	\$ 8.23
AppalCART	1,203,674	48,880	658,124	34.08	2.85	\$ 2.23	\$ 54.80	\$ 5.02
Mean		67,701	899,688	26.22	2.17	\$ 2.80	\$ 67.32	\$ 5.46

Source: NCDOT/NTD.

Notes:

Data from others systems from FY 2008; AppalCART from FY 2009.

Cost per trip, hour, and mile for AppalCART cumulative for all services; others systems for fixed-route services.

FUNDING AND FINANCIAL MANAGEMENT

The funding sources for the AppalCART system are varied and include federal, state, local, and contractual revenues. These sources are listed in Table 2-5 and are described below.

FY 2010 Revenue Sources

Federal Programs

Federal Section 5311 -- This program is used to support public transportation services in rural areas with a population less than 50,000. These funds can be used for either capital purchases or operating expenses. The match ratio for S.5311 funds is up to 80% federal for capital expenses, and up to 50% federal for operating expenses. Local funding and contractual revenue can be used for the remaining required match.

American Recovery and Reinvestment Act (ARRA) - This program, intended to stimulate the economy and create jobs, provided 100% federal funds for primarily capital projects that were “shovel-ready.” AppalCART was able to secure ARRA funds for the construction of the new facility.

For FY 2010, AppalCART received a total of \$ 2,235,705 in federal funding:

- \$399,753 for operating expenses
- \$343,560 for administrative expenses
- \$1,492,392 for capital expenses funds (includes ARRA funds)

State Programs

State Maintenance Assistance Program (SMAP). This State program is used to help provide operating assistance for transit programs (primarily urban systems) in the State. In FY 2010, AppalCART received \$658,465 in SMAP funds.

Community Transportation Program (CTP). These funds are used to support the administrative expenses incurred by local transit agencies in North Carolina. AppalCART received \$21,473 from this program in FY2010.

Rural Operating Assistance Program. This program combines the Rural General Public (RGP), Elderly and Disabled Transportation Assistance Program (EDTAP), and the Employment Program into one grant. AppalCART received an allocation of \$94,203 from this program in FY 2010.

Table 2-5: FY 2010 Administrative and Operating Revenue

Source	Amount
Federal:	
Section 5311-CTP Funds - Administrative	\$ 343,560
Section 5311-CTP Funds - Operating	\$ 399,753
Federal Total	\$ 743,313
State:	
CTP Funds - Administrative	\$ 21,473
ROAP Funds	\$ 94,203
SMAP	\$ 658,465
State Total	\$ 774,141
Local:	
Administrative Funds	\$ 71,918
Operating Funds	\$ 788,000
Contract Revenue	\$ 218,753
Fares/Donations	\$ 7,071
Interest Income	\$ 716
Advertising Revenue	\$ 21,851
Local Total	\$ 1,108,309
Subtotal Revenue	\$ 2,625,763
Unspent ROAP Funds	37,813
TOTAL REVENUE	\$ 2,587,950

Local Programs

Local Matching Funds. These funds are used to match federal and State grant funds. In FY 2010, local shares are:

- ASU: \$785,269
- Town of Boone: \$92,500
- Watauga County: \$67,495

Project on Aging. AppalCART's Rural Routes 6 through 10 are supported by the Watauga County Project on Aging. For FY 2010, AppalCART budgeted \$42,000 for this program, though it received only \$27,000.

Department of Social Services. AppalCART provides transportation for the Department of Social Services (DSS). For FY 2010, AppalCART received \$99,250 from DSS.

Other Local Match. In FY 2010 AppalCART received \$53,000 from the Village of Meadowview Apartments. As part of a requirement for a building permit, the apartments were required to provide financial support for AppalCART operations.

Passenger Fares. General public fares and prepaid fares generated about \$7,000 in FY 2010.

Other Contract Revenue. In addition to providing service for the POA and the DSS, AppalCART provides transportation under contract for a variety of other human service agencies and other organizations. In FY 2010, these included the Mental Health Department, Parks and Recreation, Work First, and a sheltered workshop.

Advertising Revenue. For FY 2010, AppalCART received \$21,851 through advertising on AppalCART buses.

FY 2011 Budget

The approved AppalCART budget for FY2011 is provided in Table 2-6. This budget includes \$2,374,922 for operating expenses and \$468,305 for administrative expenses.

Capital Projects

AppalCART's major capital project in FY2010 and FY2011 is the new facility, which was funded through an American Reinvestment and Recovery Act (ARRA)

Table 2-6: AppalCART Budget, FY 2011

Line Item	Amount
Administrative Expenses:	
Administrative Salaries and Wages	\$ 195,030
Social Security Contribution	\$ 14,920
Retirement Contribution	\$ 16,090
Hospitalization Insurance Contribution	\$ 35,880
Disability Insurance Contribution	\$ 828
Unemployment Contribution	\$ 1,200
Worker's Compensation	\$ 1,500
Other (Physicals, Bonus, Ins. etc.)	\$ 260
Accounting	\$ 11,000
Legal	\$ 1,500
Drug and Alcohol Testing Contract	\$ 200
Other - Professional Services	\$ -
Janitorial Supplies	\$ 1,400
Office Supplies & Materials	\$ 5,000
Air Conditioner/Furnace Filters	\$ 50
Computer Supplies	\$ 300
Travel	\$ 2,700
Travel Subsistence	\$ 2,700
Telephone Service	\$ 6,500
Internet Service Provider Fee	\$ 250
Postage	\$ 1,000
Electricity	\$ 10,500
Natural Gas	\$ 11,000
Water	\$ 10,000
Sewer	\$ 1,000
Trash Collection	\$ 1,200
Printing & Reproduction	\$ 12,000
R&M - Office/Computer Equipment	\$ 1,600
Other Repairs and Maintenance	\$ 6,000
Marketing - Paid Advertisements	\$ 13,000
Promotional Items	\$ 1,000
Computer Programming Services	\$ 500
Computer Support/Tech Assistance Svcs	\$ 1,100
Legal Advertising	\$ 1,000
Cleaning Services	\$ 9,400
Training - Employee Education	\$ 4,000
Other Services	\$ 2,000
Maintenance Contracts - Comm Equip	\$ 4,000
Maintenance Contracts - Repro Equip	\$ 1,000
Insurance - Property & General Liability	\$ 15,006
Insurance - Vehicles	\$ 45,880
Insurance - Professional Liabilities	\$ 9,821
Insurance - Special Liabilities	\$ 1,000
Dues and Subscriptions	\$ 8,000
Subtotal, Administrative Expenses	\$ 468,315

Table 2-6: AppalCART Budget, FY 2011

Line Item	Amount
Direct Operations Expenses	
Salaries and Wages - Full-Time	\$ 750,459
Salaries and Wages - Part-Time (No Benefits)	\$ 588,120
Social Security Contribution	\$ 102,401
Retirement Contribution	\$ 90,750
Hospitalization Insurance Contribution	\$ 198,120
Disability Insurance Contribution	\$ 4,572
Unemployment Compensation	\$ 6,000
Worker's Compensation	\$ 60,250
Drug and Alcohol Tests	\$ 4,000
Other - Professional Services	\$ 2,400
Uniforms	\$ 20,000
First Aid Supplies (replacement)	\$ 750
Motor Fuels and Lubrication	\$ 410,000
Tires and Tubes	\$ 45,000
Associated Capital Maintenance	\$ 70,000
Licenses, Tags, and Fees	\$ 300
Vehicle Cleaning Supplies	\$ 1,170
Hand Tools	\$ 1,500
Vehicle Sign and Paint Supplies	\$ 3,000
Travel	\$ 1,500
Travel Subsistence	\$ 2,000
Repairs and Maintenance - Vehicles	\$ 50,000
Repairs and Maintenance - Shop Equipment	\$ 3,000
Laundry and Dry Cleaning	\$ 151
Advertising Expenses	\$ (31,800)
Other Contract Accounts	\$ (8,721)
Subtotal, Direct Operations Expenses	\$ 2,374,922
Total Budget, FY 2010	\$ 2,843,237

grant. The ARRA grant also included funding for additional shelters in the Boone area, including upgrades to a primary passenger transfer center on the ASU campus.

AppalCART's approved Community Transportation Program capital budget for FY 2011 is provided in Table 2-7.

Table 2-7: FY 2011 Capital Budget

Item	Expense
Personal Computer System	\$ 4,500
Printer	\$ 1,500
Computer Software	\$ 1,000
Vehicle Spare Parts	\$ 28,000
Other Equipment	\$ 50,000
Heavy Duty Transit Bus- Hybrid	\$ 575,000
	Total \$ 660,000

Fare Structure

As noted earlier, with the support of ASU and the Town of Boone, the fixed route services operated by AppalCART are fare-free.

Fares for the rural routes are zoned-based, and range from \$0.50 to \$2.00 according to distance. Customers can purchase multi-trip tickets for \$16 that may be used for \$20 worth of rides.

Fares for Out-of-County trips open to the public vary based on destination:

- Wilkesboro: \$10 one-way / \$15 roundtrip
- Lenoir: \$6 one-way / \$10 roundtrip
- Hickory: \$12 one-way / \$20 roundtrip
- Winston-Salem: \$25 one-way / \$40 roundtrip
- Charlotte: \$30 one-way / \$50 roundtrip

CAPACITY ANALYSIS

This section of the inventory provides a description and analysis of the facilities, fleet, and technologies currently in use by or planned for AppalCART.

Facilities

AppalCART currently operates out of an operations and maintenance facility that it owns on Winklers Creek Road in Boone. As previously discussed, AppalCART has outgrown this facility and is scheduled to move into a new facility in the spring of 2011. The new facility will help address many current operational issues such as limited vehicle parking, an inconvenient bus wash facility, and limited access to the maintenance garage.

Fleet

AppalCART operates a fleet of 31 vehicles, 30 of which are revenue service vehicles. Two expansion vehicles are on order and should arrive in the spring of 2011. Seating capacity ranges from 6 to 37, with larger vehicles also allowing for standees. The fleet includes 25 lift-equipped vehicles (83% of the fleet). The current vehicle inventory is presented in Table 2-8.

Technologies

AppalCART does not currently have routing and scheduling software or real-time passenger information, though the fixed-route buses are equipped with global positioning system (GPS) transponders. AppalCART uses a series of database programs that its database manager has written to manage a number of administrative and paratransit recording functions.

AppalCART's level of demand-response trips does not meet NCDOT's threshold for funding routing and scheduling software. Real-time bus information has been identified as a need for the fixed-route system and is included as a recommendation in this plan (Chapter 5).

OTHER TRANSPORTATION PROVIDERS

While AppalCART is the primary provider of community transportation in the region, there are several private transportation providers that also serve the community, as listed below.

Table 2-8: AppalCART Vehicle Inventory

Local Fleet Number	Model Year	Manufacturer	Vehicle Type	Seating Capacity	Wheel-chair Stations	Standees	Mileage May 2010
B1	2005	EldoNati	Low Floor 35' Bus	34	2	25	
B2	2008	EldoNati	Low Floor 30' Bus	29	2	12	72,920
B3	2006	EldoNati	Low Floor 30' Bus	26	2	26	149,914
B4	2006	EldoNati	Low Floor 35' Bus	34	2	25	131,416
B5	2005	EldoNati	Low Floor 35' Bus	34	2	25	158,289
B6	2005	EldoNati	Low Floor 35' Bus	34	2	25	174,357
B7	2003	EldoNati	Low Floor 30' Bus	26	2	18	223,557
B8	2009	EldoNati	Low Floor 35' Bus	36	2	23	19,800
B10	2009	EldoNati	Low Floor 35' Bus	36	2	23	19,668
B11	2003	EldoNati	Low Floor 30' Bus	26	2	18	178,731
B15	2008	EldoNati	Low Floor 35' Bus	36	2	12	68,303
B16	2002	EldoNati	Transit Bus	37	2	25	
B17	2002	EldoNati	Low Floor 35' Bus	34	2	26	77,534
B18	2006	EldoNati	Low Floor 35' Bus	36	2	28	56,517
B19	2008	EldoNati	Low Floor 30' Bus	29	2	21	82,481
B20	2006	EldoNati	Low Floor 30' Bus	26	2	18	154,753
C9	2003	Ford/Goshen	Van Cutaway	20	2	0	134,868
H14	2006	Ford	Van Conversion	9	2	0	77,759
H22	2007	Ford	Van Conversion	9	2	0	66,367
H61	2008	Ford E-350	Van Conversion	9	2	0	39,897
H62	2008	Ford E-350	Van Conversion	9	2	0	36,921
H63	2008	Ford E-350	Van Conversion	9	2	0	37,119
H64	2009	Ford	Van Conversion	9	2	0	18,338
H65	2009	Ford	Van Conversion	9	2	0	20,926
CV53	2010	Dodge Journey	Crossover Vehicle	7	0	0	18,390
CV54	2010	Dodge Journey	Crossover Vehicle	7	0	0	5,912
CV55	2010	Dodge Journey	Crossover Vehicle	7	0	0	New
CV56	2010	Dodge Journey	Crossover Vehicle	7	0	0	New
V66	2010	Forde E-350	Van Conversion	13	0	0	New
MV52	2008	Dodge	Minivan	7	0	0	61,525
Shop	2006	Chevrolet	Ext. Cab Pick-up	6	0	0	

Taxi Services and Private Transportation Providers

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

- Ace Cab, 309 Meadow Hill Drive, Boone, NC
- All Weather Taxi, 275 E. King Street, Boone, NC
- Appalachian Cab Company, 162 Reese Road, Boone, NC
- Blowing Rock Airport Services, 719 Laurel Fork Road, Vilas, NC
- Boone Taxi, 180 Russell Beach Road, Vilas, NC
- Taxi by Bubba, 1303 Mount Jefferson Road, West Jefferson, NC
- Topsy Taxi, 500 Yosef Drive, Boone, NC

Intercity Bus Services

Mountaineer East-West

The Mountaineer East-West is the regional intercity bus route that connects major cities of the Piedmont and transports people from the outlying counties into the urban areas. The Mountaineer East-West, operated by Coach America and subsidized through the Federal S.5311(f) intercity bus program, provides service between Boone and Greensboro, with stops at ASU (Hoey Hall), the Boone Mall, Wilkesboro, and Winston-Salem. This service operates seven days a week, with one eastbound and one west bound trip each morning and afternoon.

Monday through Friday, eastbound buses leave Boone at 8:45 a.m. and 6:30 p.m. and the westbound buses arrive in Boone at 8:30 a.m. and 6:15 p.m. On the weekends, the morning eastbound bus leaves Boone at 11:30 a.m., and the evening eastbound bus leaves Boone at 7:00 p.m. Westbound buses arrive at 11:00 a.m. and 6:15 p.m. on the weekends. The general public fares from Boone vary from \$3.00 to \$10.00, depending upon the destination, with discounts for students, people with disabilities, and senior citizens.

Mountaineer North-South

The Mountaineer North-South is a new service (October, 2010) that provides regional intercity bus service between Boone and Charlotte along the US321 Corridor, serving ASU (Hoey Hall), the Boone Mall, Lenoir, Hickory, Lincolnton, Gastonia, and Charlotte. Also operated by Coach America and subsidized under the S.5311(f) program, this service operates seven days a week, with one southbound trip (9:15 a.m. departure from Boone) and one northbound trip (6:00 p.m. departure from Charlotte, 9:35 p.m. arrival in Boone) each day. The general public fares from Boone vary from

\$4.00 to \$16.00, depending upon the destination, with discounts for students, people with disabilities, and senior citizens.

Hickory Hop

The Hickory “Hop” provides airport shuttle service between Hickory and Charlotte. This service now provides connections in Hickory from Boone and Blowing Rock. Five daily trips are provided from Boone and Blowing Rock to the Hickory Airport where connections can be made to the service to the Charlotte Airport.

Fares vary based on the number of riders. For one rider, the shuttle from Boone and Blowing Rock to Hickory is \$60 one-way and \$120 roundtrip. With more than one rider, the cost is \$35 one-way and \$60 roundtrip.

AMTRAK

Passenger rail service, other than tourist-oriented excursions, is not provided in the immediate region. The closest AMTRAK station is 80 miles away in Gastonia. Gastonia is served by the Carolinian/Piedmont and the Crescent rail services.

The passenger rail portion of the 2009 North Carolina Rail Plan includes five major intercity passenger service additions, including a new service for Western North Carolina that would connect Salisbury to Asheville via Statesville, Conover, Valdese, Morganton, Marion, Old Fort, and Black Mountain.² The closest station to Boone will be Morganton, at 42 miles from Boone.

² North Carolina Rail Plan, 2009, NCDOT.

Chapter 3

Transit Needs Analysis

INTRODUCTION

The purpose of this transit needs analysis was to identify and describe the service area, analyze demographic and land use data, review recent plans and studies, assess public input on transit services and need, and evaluate how these distinct pieces impact the residents of Watauga County, North Carolina. This assessment is intended to provide a solid understanding of the current and future public transportation needs of the current and potential riders.

A description of the service area and an analysis and review of its demographic composition will comprise the first section, while the second section will provide an examination of the land use within the service area and a review of the trip generators that are supplementary to the land use decisions. Subsequent sections provide a review of recent planning documents and studies, along with primary resources such as the results of an on-board passenger survey, a public opinion survey, and input from key community stakeholders.

The combination of this data and information analysis provided a comprehensive understanding of transit demand within the county. This knowledge has set the foundation to determine where gaps in the current transit service exist, as well as where potential future demand associated with growth and development in the area may arise.

SECTION I: SERVICE AREA DESCRIPTION AND DEMOGRAPHIC ANALYSIS

In order to provide transit services that effectively meet the needs and demand of existing and potential users, it was necessary to understand the geographical setting and demographic composition of the service area. The initial step of this process was to

define the service area in terms of geographical situation and jurisdictional demarcation. The remainder of this section examines specific population characteristics to understand potential transit needs and demands within the service area.

Service Area Description

Watauga County (Figure 3-1) is located in the northwest corner of the State of North Carolina in the heart of the Appalachian Mountains. It is bordered by Ashe County to the northeast, Wilkes County to the southeast, Caldwell County to the south, Avery County to the southwest, and Johnson County in the State of Tennessee to the northwest. Watauga County covers an approximate total area of 313 square miles with its county seat of Boone being roughly located in the center of this area. In addition to Boone, Watauga County has three other incorporated communities, which include Beech Mountain, Blowing Rock, and Seven Devils. These three communities are located within or immediately adjacent to Pisgah National Forest, which stretches across the southwest portion of Watauga County. Further preserved open space is located to the west of Blowing Rock, Moses H. Cone Memorial Park, which covers approximately 11 square miles of the county, and to the south of Seven Devils, Julian Price Memorial Park, which covers approximately 14 square miles of Watauga County.

Demographic Analysis

General Population

There has been an uninterrupted period of growth in population for Watauga County dating back to the 1990 Census, with an increase in population of 15.54% from 36,952 in 1990 to 42,695 in 2000, and an estimated increase of 5.86% from the 2000 population to the Census estimate of 45,196 in 2008 (Table 3-1). The 2009 population for Watauga County is estimated at 45,479 residents. This consistent population growth within the two time spans is characteristic of the overall region, though lower than the growth experienced statewide. All four incorporated municipalities within Watauga County experienced population gains in the latter time span, with Seven Devils possessing the largest percentage increase and Boone having the largest aggregate gain in general population. Additionally, the five neighboring counties to Watauga County experienced positive population change in the separate time frames, with Ashe County enjoying the largest percentage increase and Caldwell County having the largest overall increase in total population.



3-3

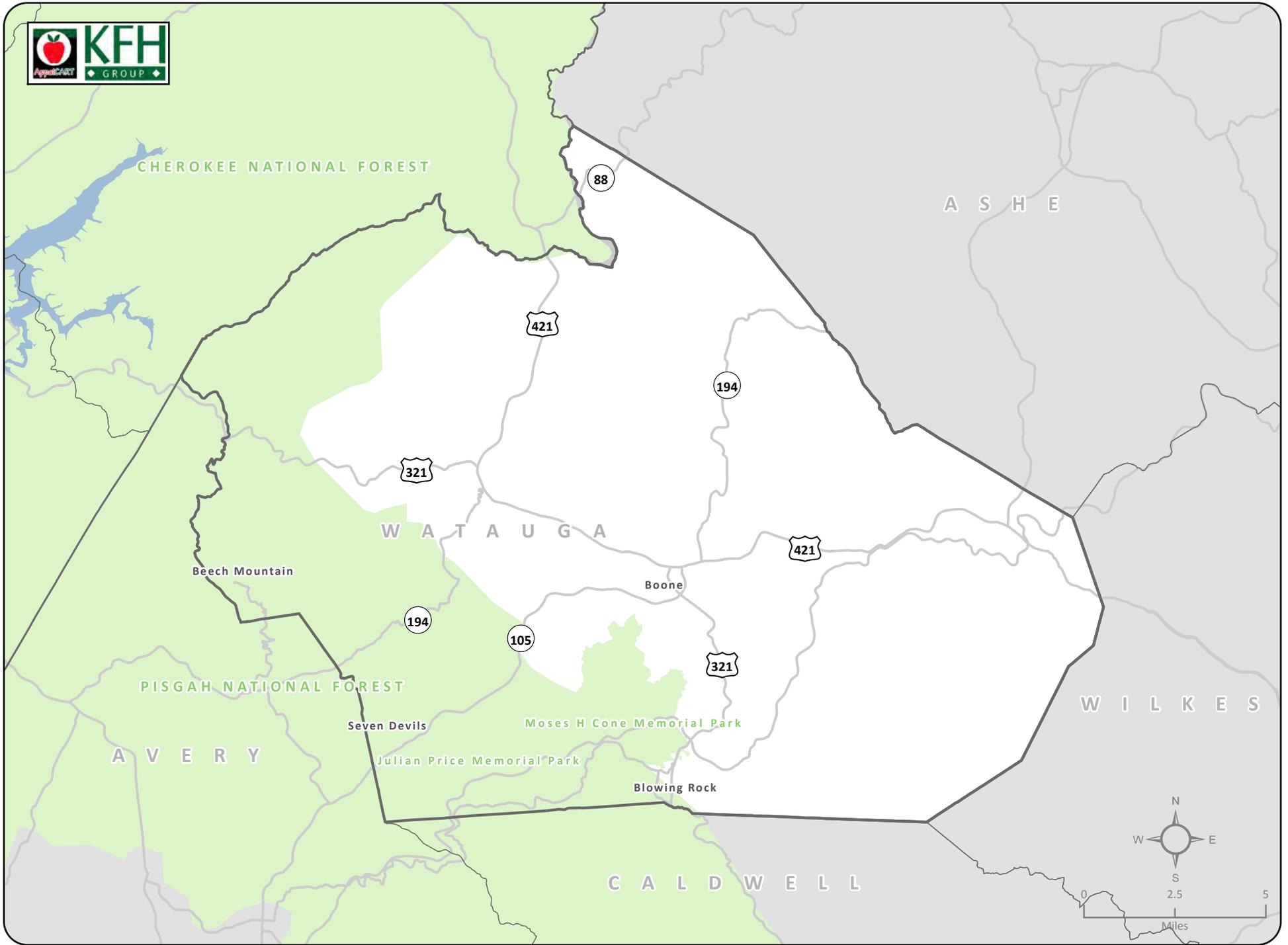


Figure 3-1: Watauga County, North Carolina

Table 3-1: Population Figures for Watauga County

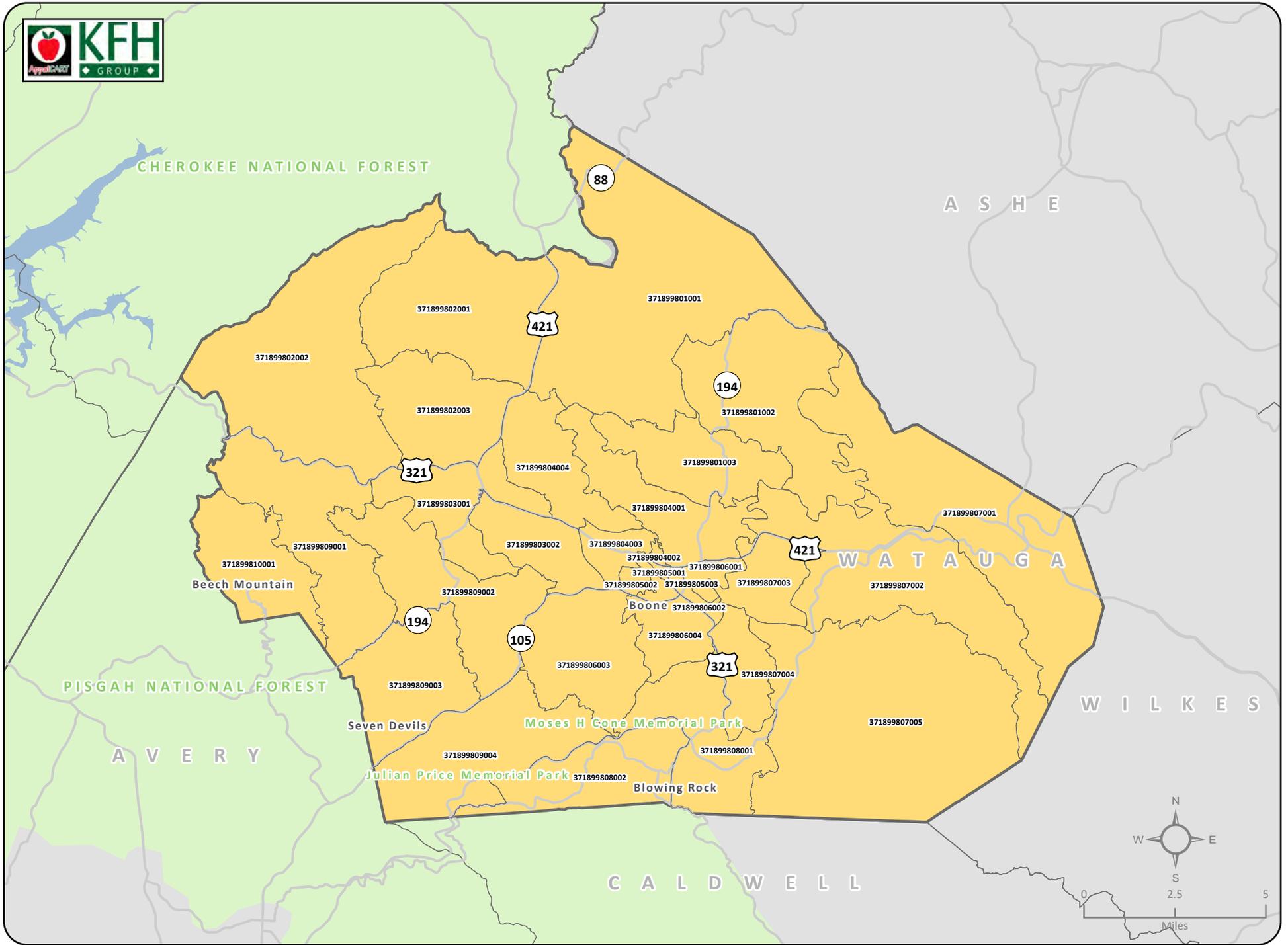
Place	1990 Population	2000 Population	2008 Population	1990-2000 Population Change	2000-2008 Population Change
North Carolina	6,628,637	8,049,313	9,222,414	21.43%	14.57%
Watauga County	36,952	42,695	45,196	15.54%	5.86%
<i>Beech Mountain</i>	239	310	338	29.71%	9.03%
<i>Blowing Rock</i>	1,257	1,418	1,490	12.81%	5.08%
<i>Boone</i>	12,915	13,472	13,945	4.31%	3.51%
<i>Seven Devils</i>	117	129	169	10.26%	31.01%
Ashe	22,209	24,384	25,702	9.79%	5.41%
Avery	14,867	17,167	17,884	15.47%	4.18%
Caldwell	70,709	77,415	80,059	9.48%	3.42%
Wilkes	59,393	65,632	66,655	10.50%	1.56%
Johnson, TN	13,766	17,499	18,112	27.12%	3.50%

Source: United States Census Bureau, Population Estimates.

Population Density

Population density is important to the assessment of transit potential, because it may be used as an indicator to the types of transit services that are most feasible for a particular area. While there will always be exceptions attributed to land use patterns, an area with a population density of over 2,000 persons per square mile should generally be able to support frequent daily fixed-route bus services. For this transit needs analysis, the population density for Watauga County was calculated at the physical unit of a block group, which is determined by the United States Census Bureau (Figure 3-2). Of the 31 block groups within Watauga County, there are five block groups that have the required level of population density to support a fixed-route service (Figure 3-3). Each of these five block groups is currently served by an existing transit service and can be found within the Town of Boone. More specifically, these areas of high population density include:

- The block group north of Rivers Street and south of King Street, having the boundary of Water Street to the west and US Route 221 to the east. This block group encompasses most of Appalachian State University.
- The block group north of King Street and south of Junaluska Road, having the boundary of Green Heights Drive and Water Street to the west and Eastbrook Drive and Cherry Drive to the east.



3-5

Figure 3-2: United States Census Block Groups for Watauga County

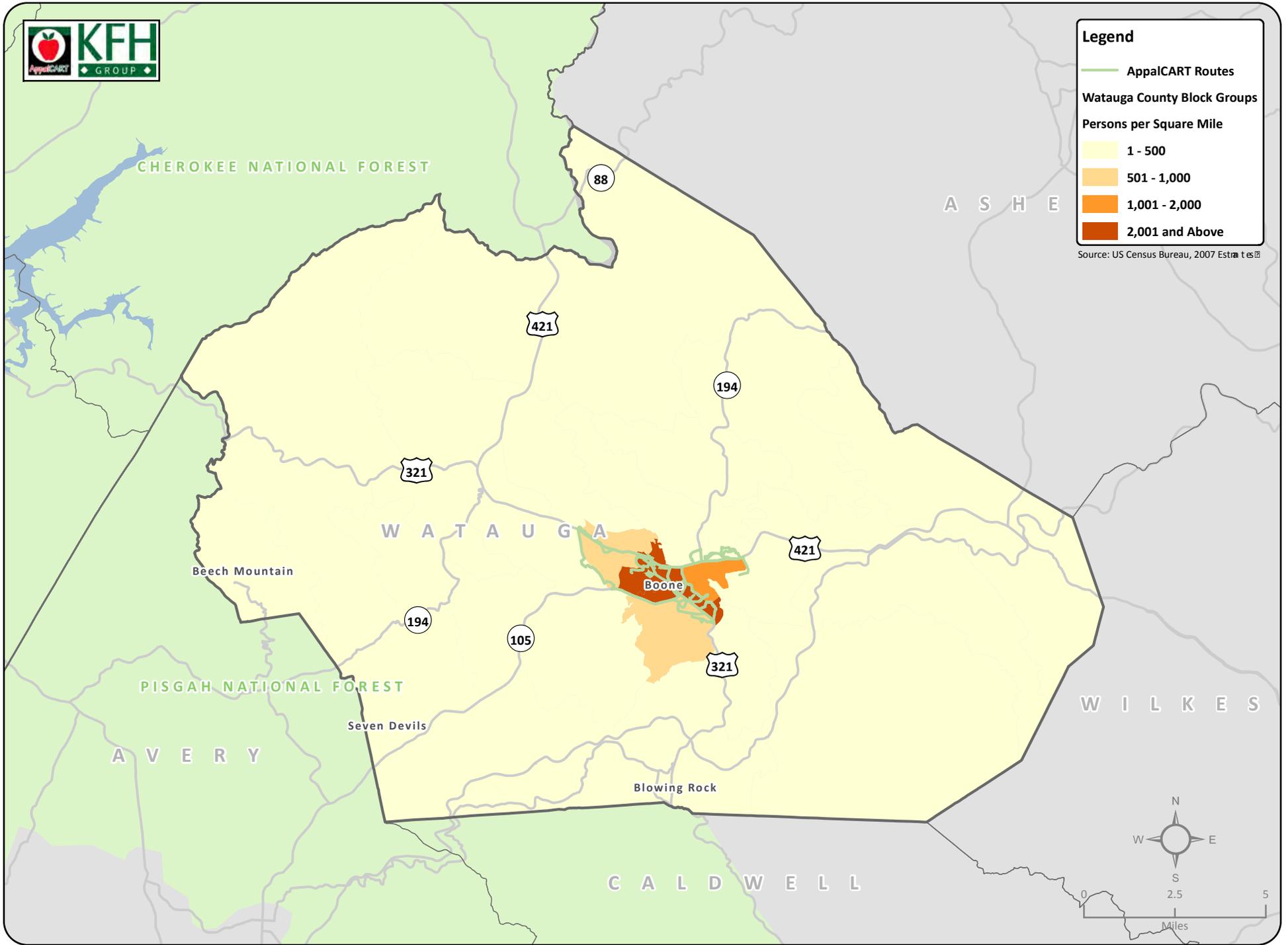


Figure 3-3: Population Density by Block Group & Fixed Route Transit Service in Watauga County

- The block group north of NC Route 105 and southwest of Rivers Road, having the boundary of Stadium Drive and Dogwood Road to the west.
- The block group north of NC Route 105 and south of Rivers Street, having the boundary of Stadium Drive and Dogwood Road to the east and Poplar Grove Road to the west.
- The block group northeast of Blowing Rock Road and south of King Street, having the boundary of NC Route 105 and State Farm Road to the northeast and Watauga Medical Center to the southeast.

Also shown in Figure 3-3 is the lone block group that has a population density between 1,000 and 2,000 persons per square mile, while the remaining 25 block groups in Watauga County represent a geographical unit where the population density is less than 1,000 persons per square mile. Outside of service to major commercial and industrial centers, block groups possessing a population density within the latter group typically warrant transportation services that are more demand-response oriented. The individual block group within the prior stratum of 1,000 to 2,000 persons per square mile straddles the northeastern edge of Boone. More specifically, the area of moderate population density includes:

- The block group north of State Farm Road and Hunting Hills Lane and south of King Street, having the boundary of NC Route 105 to the west and New Rivers Hill Road to the east.

Overview of Transit Dependent Populations

Transportation needs are defined in part by identifying the relative size and location of the population most likely to be dependent upon some form of public transportation service. Once the locality of populations with transportation needs is determined, it is possible to analyze the extent to which present transit services are fulfilling the demand of the community. To identify the areas of highest transportation need, a demographic analysis examining several factors was conducted. Those factors included the previously examined population density as well as the rankings of population segments in regard to the aggregate quantity, percentage, and density of five specific 2000 US Census categories. The five categories of populations that tend to more likely rely upon public transportation include:

- **Autoless Households:** Categorized as the number of households without ownership of an automobile. A significant factor in determining transit need is detailing concentrations of households whose members lack vehicular access.

- **Elderly:** Categorized as persons aged 60 and above. These individuals may include persons who choose to no longer drive, previously relied on a spouse for personal mobility, or are unable to drive due to obstacles associated with age.
- **Mobility Limited:** Categorized as persons over the age of five who have a mobility or self-care limitation. These individuals may experience difficulty in leaving the home for any array of trips including shopping or medical visits.
- **Poverty Status:** Categorized as persons who are living below the national poverty line. These individuals may not have the economic means to possess or maintain an automobile.
- **Youth:** Categorized as persons between the ages of 12 and 17. Many of these individuals are in a position to complete trips without an accompanying adult, but are often not of a legal driving age or in a position to access an automobile.

The aggregate total, percentage, and density for each of the population categories were assembled or calculated from the 2000 US Census at the block group level, which is the smallest geographic area for which these data are presented. Next, the block groups were ranked based upon the aforementioned five population categories. Since the data is not mutually exclusive, the block groups must be ranked and not simply totaled. Having ranked the categories, the acquired rankings for the block groups were then separated by equal intervals into three distinct classifications (low, moderate, and high), which correspond to the determined level of transportation needs representing the geographical area. For these three demographic analyses, all 31 block groups within the boundary of Watauga County were employed.

As an aside, there is acknowledgement that the use of 2000 US Census data is not ideal for reasons associated with its perceived irrelevance due to the dataset's age. Alternative data sources and techniques for modifying the 2000 US Census dataset were examined, which included the application of a coefficient to each of the five population categories based upon the population change of the block group from the decennial Census' report to the latest annual estimates. However, it has been concluded that this approach would provide more distortion to the figures than any benefit it would offer the analysis. Furthermore, there is a confidence that the current composition of areas where transit dependent persons reside is comparable to those areas determined with data from 2000 and that any potential alterations to this makeup would be found in the complementing land use analyses.

After determining the relative level of need by block group for each category, a collective ranking of the five categories was determined by aggregate number (total), percent, and density (please see Appendix B for rankings). The analysis was performed for the block group geography for Watauga County and the results of the categorical tallying are displayed in Table 3-2.

Numeric Ranking of Transit Dependent Characteristics

Data on the number of persons represented by each of the five designated categories concerning transportation dependent populations were collected and individually ranked by block group. The categorical rankings within the block groups were then summed and the block groups representing Watauga County were equally divided into three unique classifications of need (low, moderate, and high) based upon the calculated aggregate rankings. These classifications are displayed within Figure 3-4, which is a map of the findings concerning numeric ranking of the block groups overlaid with the existing transit network. Those block groups with a high numeric ranking for transit dependent characteristics are generally located in the more rural portions of the county. More specifically, these areas of a high numeric ranking include:

- The northwestern portion of Watauga County north of US Route 321 and south of the Tennessee border, having the boundary of the Tennessee border to the west and Philip's Branch Road to the east. There is no fixed-route service currently provided in this area.
- The northern quarter of Watauga County north of Bethel Road, Laurel Branch Road, Tater Hill Road, Chestnut Grove Road, Sock Houck Road, and Castleford Road. There is no fixed-route service currently provided in this area.
- The eastern third of Watauga County east of Valley Boulevard, Aho Road, Friendship Church Road, Bamboo Road, and Roby Green Road. The only fixed-route service currently provided in this area is the eastern terminus of the Green Route that traverses Bamboo Road.
- The south central portion of Watauga County north of the Caldwell County border and south of NC Route 105 and State Farm Road, having the boundary of the Blue Ridge Parkway, Flannery Fork Road, and Winkler's Creek Road to the west and US Route 321 to the east. The northern portion of this area stretches into Boone and is served by the Pink Route, Pop 105 Route, Purple Route, Red Route, and State Farm Route.

Table 3-2: Demographic Summary by Block Group for Watauga County

Block Group Identification	Block Group Description	Square Miles	Total Population	Population Density	Total Households	Autoless Households	Elderly Population	Mobility Limited	Below Poverty	Youth Population
371899801001	Northern County	32.61	1,530	1,528	606	64	221	134	288	115
371899801002	Northeastern County	15.14	1,453	1,594	569	34	226	136	175	143
371899801003	North Central County	8.01	963	1,017	404	0	146	54	75	78
371899802001	Northern County	15.65	1,414	1,482	607	42	295	164	121	103
371899802002	Northwestern County	24.18	1,382	1,407	543	23	254	112	138	142
371899802003	Northwestern County	9.53	963	1,018	418	42	180	50	183	61
371899803001	West Central County	7.54	836	985	329	19	172	102	173	59
371899803002	West Central County	5.14	1,153	1,312	529	47	173	90	219	78
371899804001	Central County	8.17	2,170	2,381	988	65	346	83	520	130
371899804002	Northwestern Boone	0.24	931	882	487	42	131	46	290	34
371899804003	Central County	2.16	1,692	1,730	779	29	243	86	536	92
371899804004	North Central County	6.82	726	828	300	20	114	15	52	44
371899805001	Central Boone	0.18	5,175	2,562	278	30	5	90	366	8
371899805002	Western Boone	0.70	496	2,262	246	11	69	22	139	28
371899805003	Southwestern Boone	0.51	854	1,699	431	36	146	19	94	51
371899806001	Eastern Boone	1.15	1,328	1,276	544	0	275	42	368	67
371899806002	Central Boone	0.71	1,387	1,426	764	96	202	130	621	23
371899806003	South Central County	9.83	1,078	1,220	481	17	198	43	39	88
371899806004	South Central County	3.71	1,833	1,982	867	42	191	128	741	54
371899807001	Eastern County	23.98	1,679	2,039	693	18	275	100	193	155
371899807002	Eastern County	19.31	1,688	1,773	651	51	235	85	96	155
371899807003	East Central County	4.33	1,798	1,821	709	48	259	114	297	172
371899807004	South Central County	4.16	1,344	1,546	619	36	214	46	183	88
371899807005	Southeastern County	34.24	2,062	1,998	724	10	330	86	265	134
371899808001	Eastern Blowing Rock	9.61	1,391	1,746	638	31	355	103	61	105
371899808002	Western Blowing Rock	8.71	1,331	1,391	612	28	364	66	196	83
371899809001	Western County	13.49	892	942	371	12	171	52	93	69
371899809002	West Central County	12.17	1,038	1,213	450	27	155	59	62	86
371899809003	Seven Devils	9.38	691	704	312	7	119	30	49	54
371899809004	Southwestern County	13.13	1,037	1,410	422	0	176	71	98	64
371899810001	Beach Mountain	8.20	380	402	169	0	110	4	30	16
TOTALS		312.69	42,695	45,576	16,540	927	6,350	2,362	6,761	2,579

Source: United States Census Bureau, 2000 Census and Population Estimates.



3-11

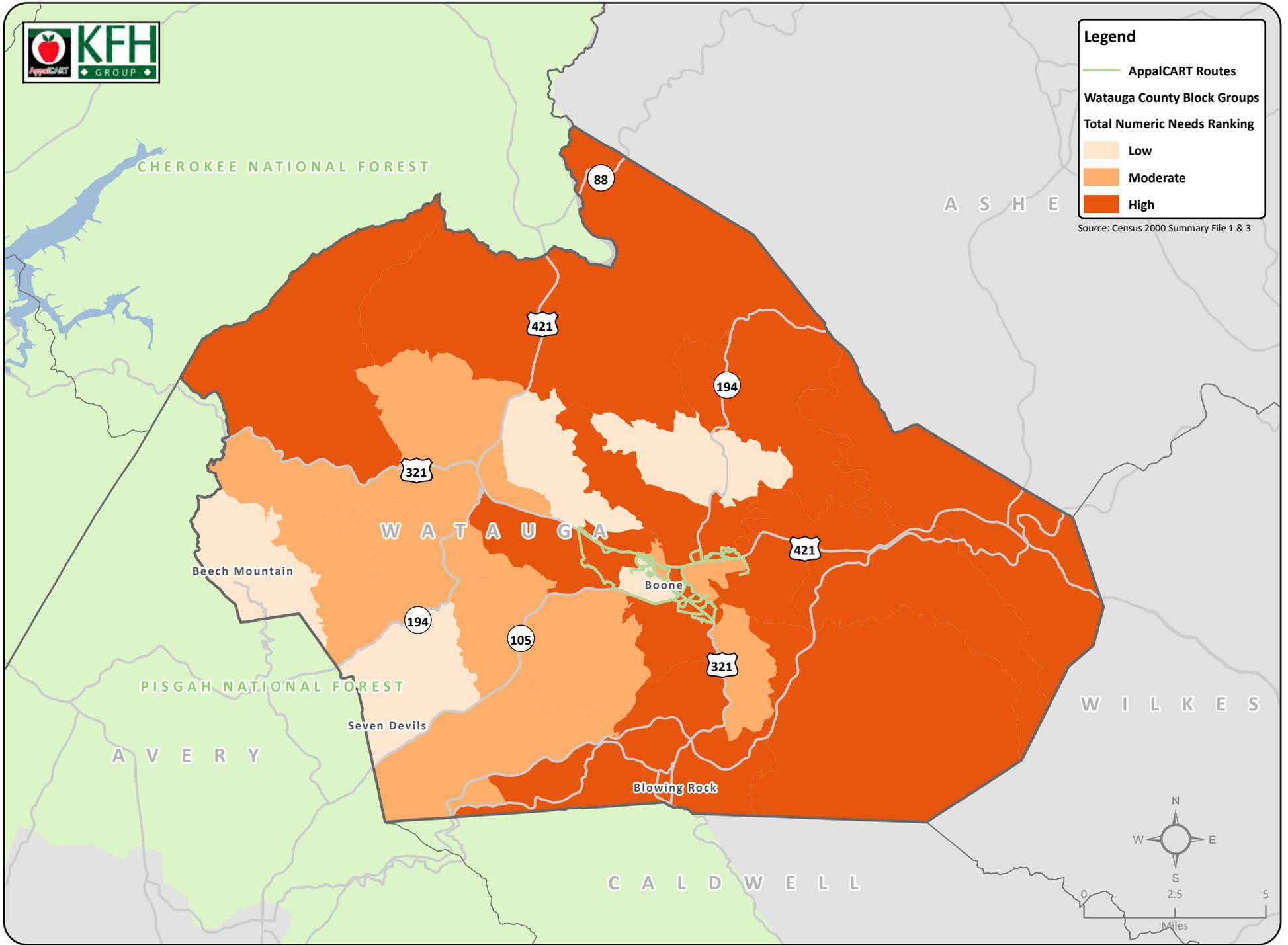


Figure 3-4: Numeric Ranking for Transit Dependent Populations & Fixed Route Transit Service in Watauga County

- The central portion of Watauga County to the northwest of Boone that is north of NC Route 105 and Baird’s Creek Road and south of US Route 421, having the boundary of NC Route 194 to the west and Poplar Grove Road and Junaluska Road to the east. The eastern portion of this area is served by the Green Route and Pop 105 Route.
- The central portion of Watauga County to the north of Boone that is north of King Street and south of Howard’s Creek Road, having the boundary of Junaluska Road and Eastbrook Drive to the west and Roby Green Road to the east. The southern portion of this area stretches into Boone and is served by the Green Route, Orange Route, and State Farm Route.

The numeric ranking is a beneficial analysis, but has the potential to lead to deceiving results. Since the size of the block group is not considered into the aggregation, only the total number of persons displaying the determined transit dependent characteristics is factored. In theory, a block group that is large in size may have a relatively high number of autoless households, but their locations may be spread over a large geographic radius. In this circumstance, there may be difficulty in serving the autoless households as their location is not concentrated. For this reason, the ranking of block groups with regard to the percentage and density of people displaying transit dependent characteristics has also been conducted.

Percent Ranking of Transit Dependent Characteristics

As with the previous process of numeric ranking, the percent ranking was found by separately ranking the five assigned categories by block group and obtaining a summation comprising all five rankings into one collective ranking for each block group. The resulting records were then grouped into the three classifications (low, moderate, and high), similar to the method used for numeric ranking in which the block groups were equally divided amongst the three classifications based upon the cumulative total. The different strata represent a ranking of transit dependent characteristics for each block group as a percentage of the block group’s overall population, as shown in Figure 3-5. Those block groups with a high percent ranking for transit dependent characteristics are generally located in the northern, rural portions of Watauga County. More specifically, these areas of a high percent ranking include:

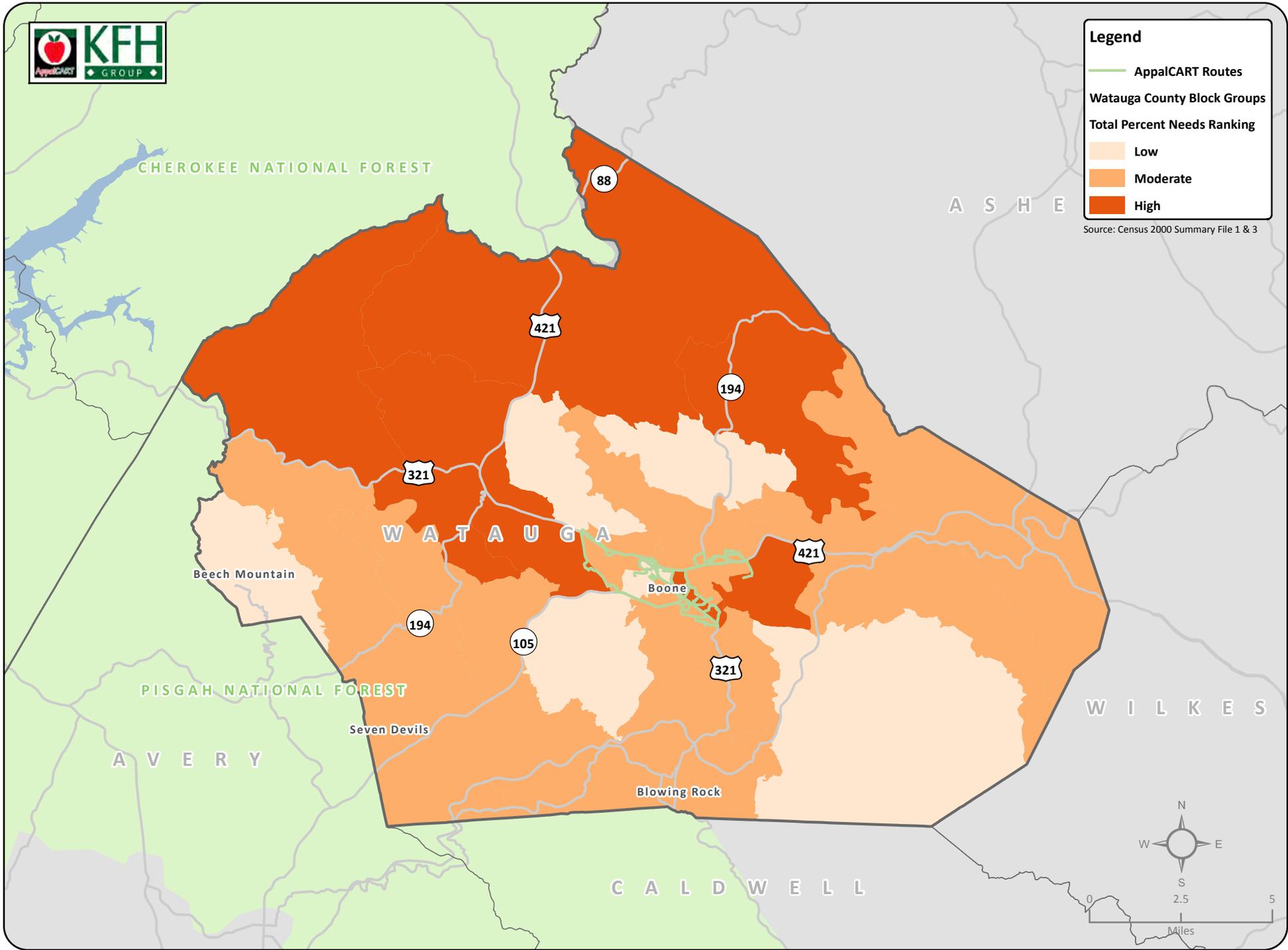
- The northwest portion of Watauga County to the north of US Route 321 and south of the Tennessee border, having the boundary of the Tennessee border to the west and US Route 421 to the east.
- The northern portion of Watauga County to the north of Cobb Creek Road and South Fork of the New River and south of the Tennessee border and



Legend

- AppalCART Routes
- Watauga County Block Groups
- Total Percent Needs Ranking
 - Low
 - Moderate
 - High

Source: Census 2000 Summary File 1 & 3



3-13

Figure 3-5: Percent Ranking for Transit Dependent Populations & Fixed Route Transit Service in Watauga County

Ashe County, having the boundary of US Route 421 to the west and the South Fork New River to the east.

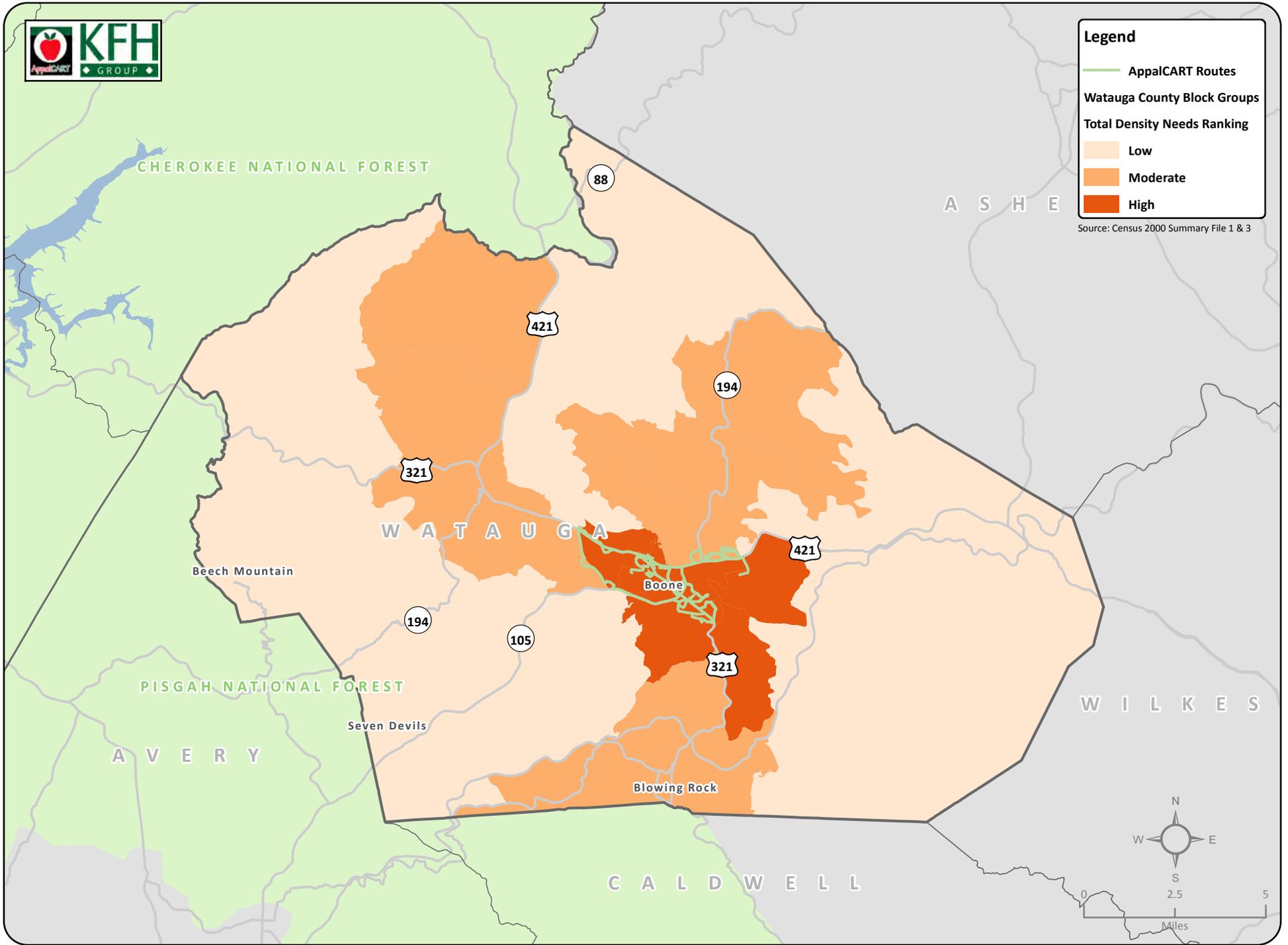
- The western central portion of Watauga County to the north of NC Route 105 and Dewitt Barnett Road and south of US Route 321 and US Route 421, having the boundary of the Watauga River to the west and Charlie Thompson Road, Linville Creek Road, and the NC Route 105 Bypass to the east.
- The eastern central portion of Watauga County to the north of Deerfield Road and south of US Route 421, having the boundary of the South Fork of the New River and US Route 421 to the west and Brown's Chapel Road and Bamboo Road to the east. The western portion of this area is served by the Green Route.
- The central portion of Boone to the north of Middle Fork and South Fork of the New River and to the south of King Street, having the boundary of US Route 221 to the west and State Farm Road to the east. This area is served by all fixed-route services currently offered by AppalCART.

Areas with a high percentage of persons displaying characteristics associated with high transit needs may be able to support frequent transit services even though the density of the highlighted area may be lower than the standard density of 2,000 persons per square mile, or these selected areas may be candidates for lower intensity transit services such as demand-response.

Density Ranking of Transit Dependent Characteristics

The density ranking of transit dependent characteristics for each block group was determined in an equivalent manner to the calculations utilized to discover the numeric and percent rankings, as was the classifying of the block groups representing Watauga County into the separate levels of need (low, moderate, and high). Density ranking of transit dependent characteristics for Watauga County is represented in Figure 3-6, and is unique to the previous rankings in that it is a measurement that accounts for the area through the division of transit dependent persons by the area in square miles for each examined block group. Those block groups with a high density ranking of transit dependent characteristics are generally located in the Town of Boone and the immediate surroundings. More specifically, these areas of a high density ranking include:

- The northwestern portion of Boone to the north of NC Route 105 and south of Hub Brown Road, Knollwood Drive, and Junaluska Road, having the boundary of NC Route 105 Bypass to the west and Eastbrook Drive and US



Legend

- AppalCART Routes
- Watauga County Block Groups
- Total Density Needs Ranking
 - Low
 - Moderate
 - High

Source: Census 2000 Summary File 1 & 3

Figure 3-6: Density Ranking for Transit Dependent Populations & Fixed Route Transit Service in Watauga County

Route 321 to the east. This area is served by all fixed-route services currently offered by AppalCART.

- The northeastern portion of Boone to the north of Deerfield Road and south of US Route 421, having the boundary of US Route 321 to the west and Brown’s Chapel Road and Bamboo Road to the east. This area is served by all fixed-route services currently offered by AppalCART.
- The southeastern portion of Boone to the north of Aho Road and south of Deerfield Road, having the boundary of US Route 321 to the west and Bamboo Road and Friendship Church Road to the east. The northern portion of this area is served by the Purple Route and Red Route.
- The southwestern portion of Boone to the north of Payne Branch Road and to the south of NC Route 105, having the boundary of Snaggy Mountain Boulevard and Winkler’s Creek Road to the west and US Route 321 to the east. The northern portion of this area is served by the Express Route, Pink Route, Pop 105 Route, Purple Route, Red Route, and State Farm Route.

Autoless Households

Households without access to at least one personal vehicle are more likely to rely on public transportation than those households with access to an automobile. Figure 3-7 is a map displaying the density of autoless households by block group for Watauga County. Density was used, rather than the numerical figure, so the large block groups would not skew the data. Those block groups with a high density of autoless households are generally located in the central portion of Watauga County. More specifically, these areas with a high density of autoless households include:

- The north central portion of Watauga County to the north of King Street and south of Howard’s Creek Road and Howard’s Creek, having the boundary of Junaluska Road, Eastbrook Drive, and Cherry Drive to the west and South Fork of the New River to the east. The southern portion of this area is served by the Green Route, Orange Route, Red Route, and State Farm Route.
- The east central portion of Watauga County to the north of Deerfield Road and south of US Route 421, having the boundary of the South Fork of the New River to the west and Brown’s Chapel Road and Bamboo Road to the east. The northwestern portion of this area is served by the Green Route.
- The southeastern portion of Boone to the north of Aho Road and south of Deerfield Road, having the boundary of US Route 321 to the west and



3-17

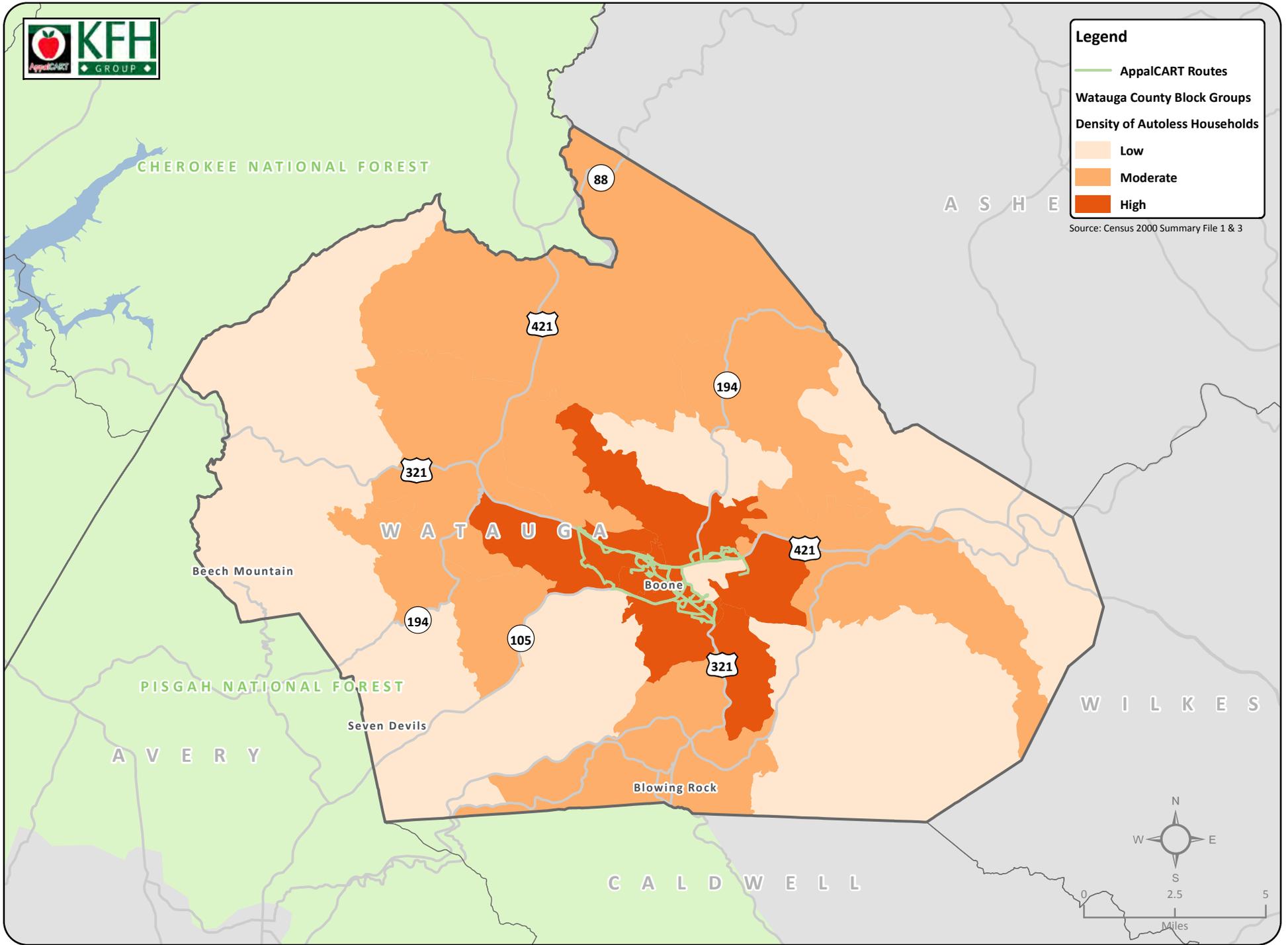


Figure 3-7: Density of Autoless Households & Fixed Route Transit Service in Watauga County

Bamboo Road and Friendship Church Road to the east. The northern portion of this area is served by the Purple Route and Red Route.

- The southwestern portion of Boone to the north of Payne Branch Road and to the south of NC Route 105, having the boundary of Snaggy Mountain Boulevard and Winkler's Creek Road to the west and US Route 321 to the east. The northern portion of this area is served by the Express Route, Pink Route, Pop 105 Route, Purple Route, Red Route, and State Farm Route.
- The west central portion of Watauga County to the north of NC Route 105 and south of US Route 321, Hub Brown Road, Knollwood Drive, and Junaluska Road, having the boundary of Baird's Creek Road and NC Route 194 to the west and Junaluska Road, Eastbrook Drive, Cherry Drive, and US Route 321 to the east. This area is served by all fixed-route services currently offered by AppalCART.

SECTION II: LAND USE PROFILE, ANALYSIS, AND EVALUATION

In addition to establishing where the populations who are likely to require transit assistance reside within Watauga County, another important component of the transit service planning process is to determine the common destinations to which these populations need to travel. The extent to which major origins and destinations are accessible through existing public transportation services was also evaluated.

Assessment of Major Trip Generators

The next significant aspect of the transit needs analysis is identifying locations of popular origins and destinations throughout Watauga County. The importance in identifying such major facilities is that they serve as commonly utilized trip generators for residents of the county, including those persons who are more reliant upon available transit services. For the purpose of this community transportation service plan (CTSP), major trip generators include concentrated origin locations (e.g., multifamily housing complexes) as well as destinations such as educational institutions, major employers, medical facilities, shopping destinations, and social service agencies. In addition to improving access to transit dependent persons, a thorough identification of these popular origins and destinations may lead to the development of convenient transit services that may attract choice riders.

Multifamily Housing

As a complement to the prior analysis of population density within Watauga County, the identification of large multifamily housing complexes was conducted. This process provides another effective method in determining where concentrations of the population reside. For the purposes of this CTSP, multifamily housing complexes included apartments, condominiums, senior housing, and affordable housing. Many of the senior housing complexes have age and income eligibility requirements, while some of these restricted establishments also have units available for persons living with disabilities. Subsidized housing is available to low-income individuals and families under the Section 8 Program of the Housing and Community Development Act of 1974.

Multifamily housing locations provide a concentration of residents that is relatively easy to serve with public transit, while senior and affordable housing facilities tend to accommodate residents who have high relative transit needs. Furthermore, residents who opt to reside in multifamily housing complexes near transit services may prefer to utilize the transit services over vehicular use. Figure 3-8 displays the location of multifamily housing sites in Watauga County, while the list of physical addresses to these housing locations may be found in Table 3-3. As the majority of multifamily housing complexes are found within the Town of Boone, a separate map (Figure 3-9) focusing on the spatial distribution of complexes in relation to transit services in Boone has been provided.

Educational Institutions

Presented with the fact that a sizeable portion of public transit use can be attributed to the youth population, it is important to identify the location of educational institutions, or schools. Transit is an important mode of travel for younger persons, many of whom are unable to obtain a driver's license, and those individuals who do not possess a personal vehicle to access further educational opportunities. For the purposes of this CTSP, schools that offer a public education and institutions of higher learning were denoted. By applying this criteria, there were 11 educational institutions in Watauga County, with two of these schools being institutions of higher learning, including: Appalachian State University (ASU) and Caldwell Community College and Technical Institute. Often, these advanced educational institutions also serve as a major employment resource for the community, which is certainly the case with ASU. The spatial location of all schools in Watauga County is presented in Figure 3-10, while the list of physical addresses for each school is noted in Table 3-4. A more detailed view of the schools in the Town of Boone and the transit services available to them is displayed in Figure 3-11.



Legend

- AppalCART Routes
- Multifamily Housing

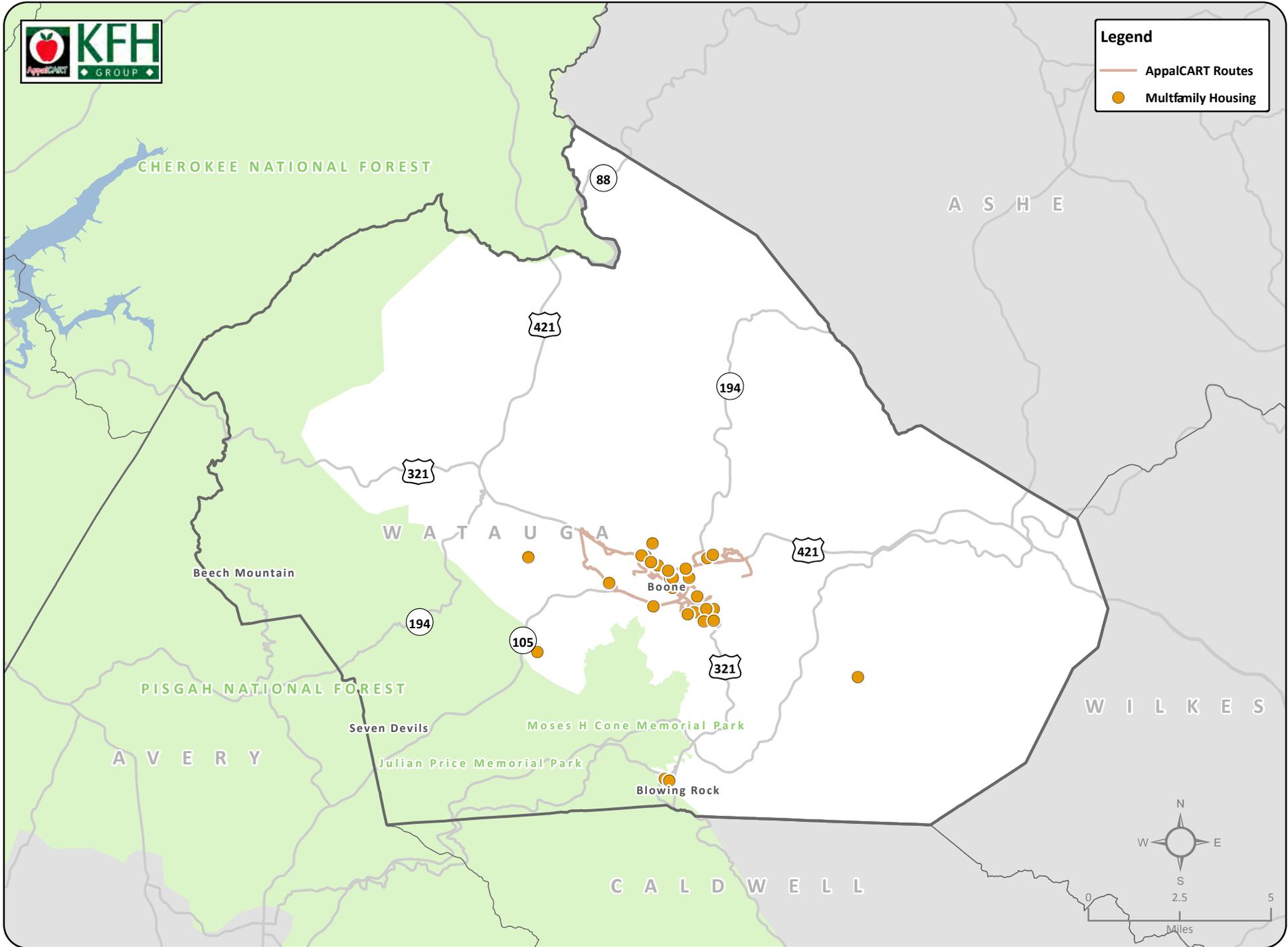


Figure 3-8: Multifamily Housing & Fixed Route Transit Service in Watauga County

Table 3-3: Multifamily Housing in Watauga County, North Carolina

Name	Address	Place	ZIP	1/2 Mile from Transit Service
Amberleigh Way	147 Ivy Drive	Boone	28607	Yes
Appalachian Manor	287 Hardin Street	Boone	28607	Yes
Appletree Apartments	150 S Water Street	Boone	28607	Yes
Bavarian Village Apartments	314 Meadowview Drive	Boone	28607	Yes
Birch Tree Apartments	130 Birch Street	Boone	28607	Yes
Boone Hall	138 S Water Street	Boone	28607	Yes
Boone Trail Motel and Apartments	275 E King Street	Boone	28607	Yes
Brown Heights Apartment Condos	375 Highway 105 Ext	Boone	28607	Yes
Cardinal I	2224 Blowing Rock Road	Boone	28607	Yes
Cardinal II	2146 Blowing Rock Road	Boone	28607	Yes
Christie Village	100 Hornbeam Road	Beech Mountain	28604	No
East Village	241 Marich Lane	Boone	28607	Yes
Green Street Triplex	106 Green Street	Boone	28607	Yes
Heavenly Mountain	639 Whispering Hills Road	Boone	28607	No
Hidden Garden Apartments and Cottages	127 Sunset Drive	Blowing Rock	28605	No
Holmes View Manor	185 Faculty Street	Boone	28607	Yes
Ivy Terrace Apartments	206 Ivy Terrace Drive	Boone	28607	Yes
Meadow Hill Apartments	219 Meadow Hill Drive	Boone	28607	Yes
Ransom Street Apartments	481 Ransom Street	Blowing Rock	28605	No
Ridgeview Townhomes	190 Ridgeview Drive	Boone	28607	Yes
Steeplechase Hardin Street	311 Hardin Street	Boone	28607	Yes
Steeplechase Howard Street	784 Howard Street	Boone	28607	Yes
Steeplechase Pine Street	143 Pine Street	Boone	28607	Yes
Steeplechase Straight Street	135 Straight Street	Boone	28607	Yes
Steeplechase Wood Circle	190 Wood Circle	Boone	28607	Yes
Studio West	125 Graduate Lane	Boone	28607	Yes
Tuckercook Apartments	215 Boone Heights Drive	Boone	28607	Yes
University Highlands Student Apartments	289 Ambling Way	Boone	28607	Yes
Village of Meadowview	304 Madison Avenue	Boone	28607	Yes
Vineyard Townhomes and Apartments	150 Green Street	Boone	28607	Yes
Watauga Village Apartments	165 Robin Lane	Boone	28607	Yes
Westview Apartments	206 Pheasant Walk Way	Vilas	28692	No
Wilcox Warehouse	151 Howard Street	Boone	28607	Yes
Winkler-Adams Apartments	201 Brown Street	Boone	28607	Yes



Legend

- Town of Boone
- Multifamily Housing

AppalCART Bus Routes

- Blue Route
- Express Route
- Gold Route
- Green Route
- Orange Route
- Pink Route
- Pop 105 Route
- Purple Route
- Red Route
- State Farm Route

Moses H Cone Memorial Park

0 0.25 0.5
Miles

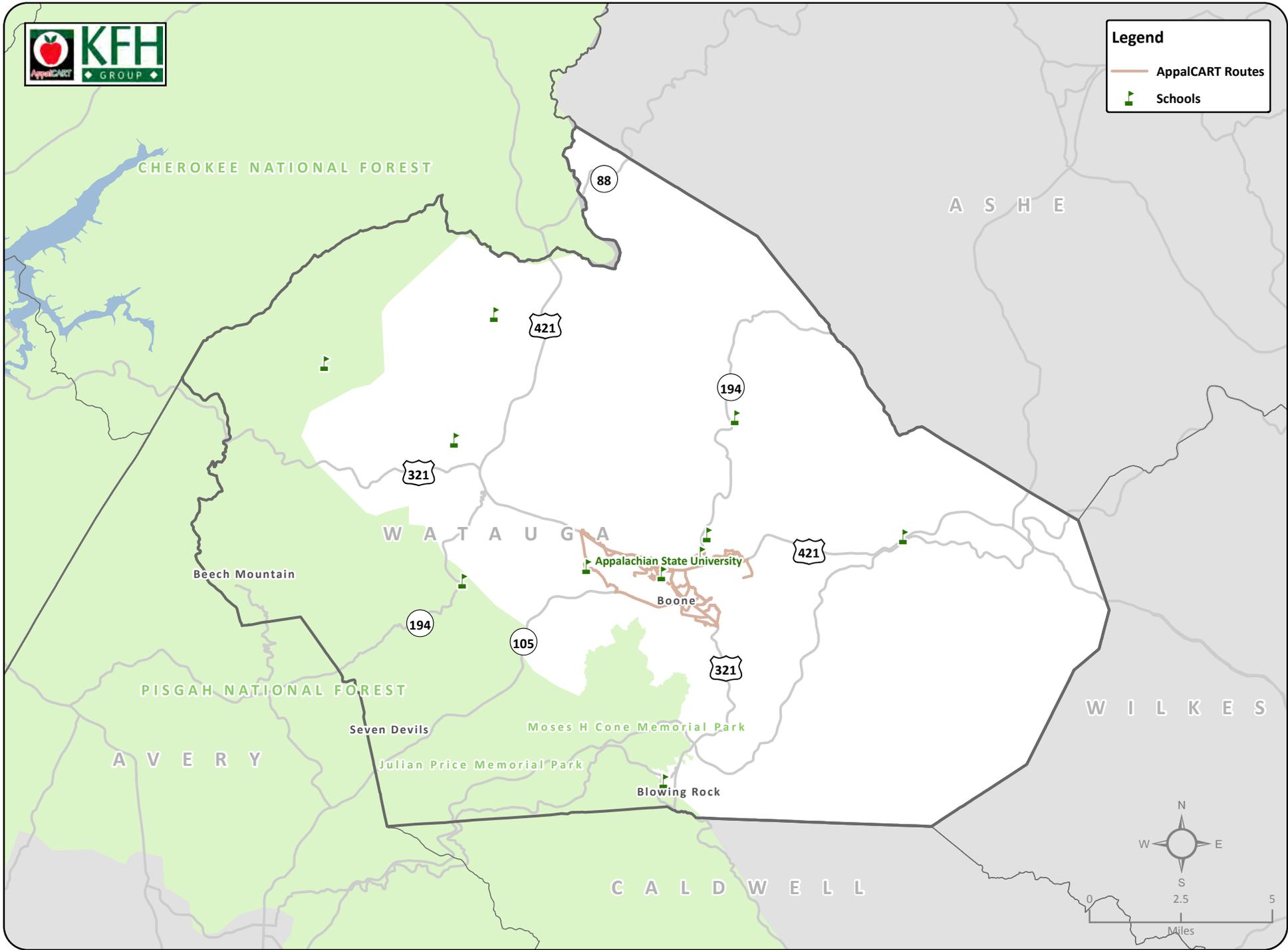
3-22

Figure 3-9: Multifamily Housing & Fixed Route Transit Service for the Town of Boone



Legend

- AppalCART Routes
- Schools



3-23

Figure 3-10: Educational Institutions & Fixed Route Transit Service in Watauga County

Table 3-4: Educational Institutions in Watauga County, North Carolina

Name	Address	Place	Zip Code	1/2 Mile from Transit Service
Appalachian State University	287 Rivers Street	Boone	28608	Yes
Bethel Elementary	138 Bethel School Road	Sugar Grove	28679	No
Blowing Rock Elementary	165 Morris Street	Blowing Rock	28605	No
Caldwell Community College and Technical Institute	372 Community College Drive	Boone	28607	Yes
Cove Creek Elementary	930 Vanderpool Road	Vilas	28692	No
Green Valley Elementary	189 Big Hill Road	Boone	28607	No
Hardin Park Elementary	361 Jefferson Road	Boone	28607	Yes
Mabel Elementary	404 Mabel School Road	Zionville	28698	No
Parkway School	160 Parkway School Drive	Boone	28607	No
Valle Crucis	2998 Broadstone Road	Sugar Grove	28679	No
Watauga High School	300 GoPioneers Drive	Boone	28607	Yes



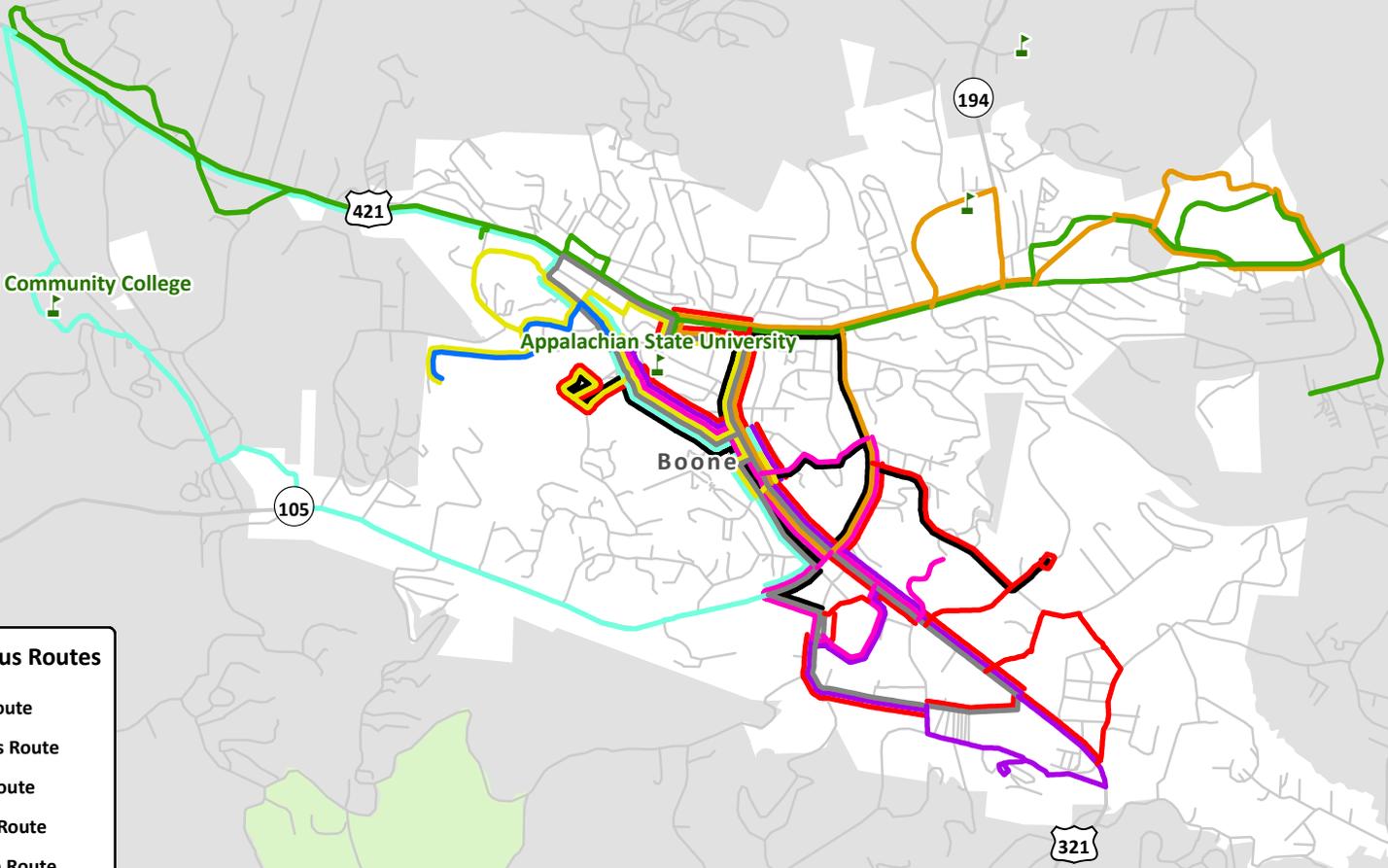
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- Town of Boone
- Schools

3-25

AppalCART Bus Routes

- Blue Route
- Express Route
- Gold Route
- Green Route
- Orange Route
- Pink Route
- Pop 105 Route
- Purple Route
- Red Route
- State Farm Route



A north arrow is located in the bottom right corner, with cardinal directions N, S, E, and W. Below it is a scale bar showing 0, 0.25, and 0.5 miles.

Figure 3-11: Education Institutions & Fixed Route Transit Service for the Town of Boone

Major Employers

For the purposes of this portion of the transit needs analysis, a major employer was identified as any facility in Watauga County employing over 100 persons at a single location, with the identification of these major employers supplied by the Watauga County Office of Economic Development. Providing transit service to these locations is advantageous to both the employee, as this individual is provided with direct access to their occupation and subsequent source of income, and the employer, as this entity will have assurance that their current or potential workforce will have diverse options for accessing the destination. The location of the major employment sites for Watauga County is displayed in Figure 3-12 and accompanied with a description of the physical location of the identified sites in Table 3-5. A more detailed view of the employment destinations for the Town of Boone and the available transit services is shown in Figure 3-13.

Medical Facilities

Medical facilities, which for the purpose of this study consist of general hospitals and their immediate network of outpatient services, represent a significant destination for users of public transportation. Since elderly adults and persons with disabilities represent a faction of the determined transit dependent population and often rely more heavily upon the services offered by medical facilities than other population segments, it is imperative that these facilities are made accessible through public transportation services. Figure 3-14 is a map of the medical facilities found within Watauga County, while Table 3-6 denotes the physical location of these two facilities. Figure 3-15 is a more detailed map showing the location of the medical center in Boone and the public transit service available to the site.

Table 3-6: Medical Facilities in Watauga County, North Carolina

Name	Address	Place	Zip	1/2 Mile from Transit Service
Blowing Rock Hospital	418 Chestnut Drive	Blowing Rock	28605	No
Watauga Medical Center	336 Deerfield Road	Boone	28607	Yes



Legend

- AppalCART Routes
- Major Employers

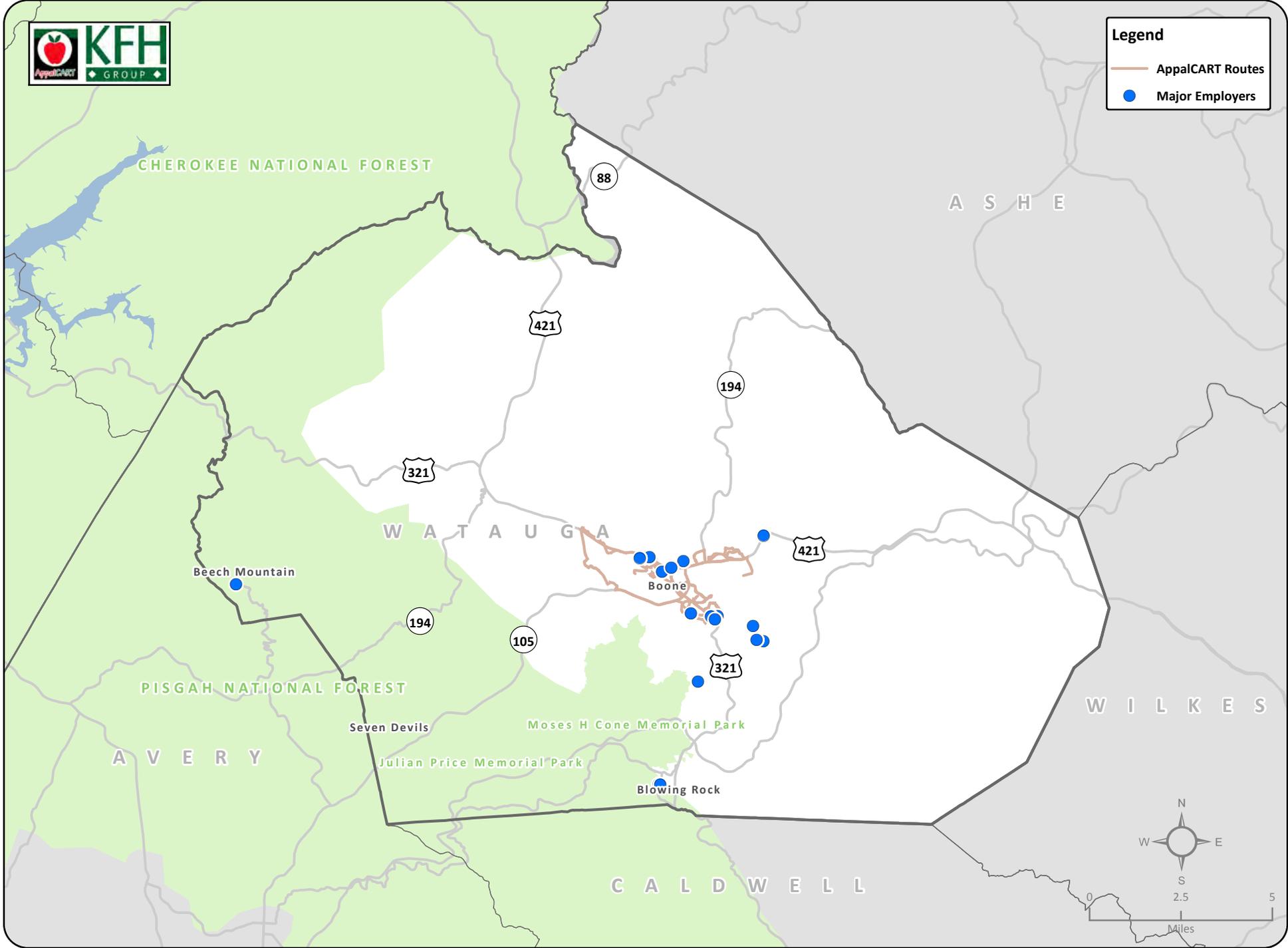


Figure 3-12: Major Employers & Fixed Route Transit Service in Watauga County

Table 3-5: Major Employers in Watauga County, North Carolina

Name	Address	Place	Zip Code	Size	1/2 Mile from Transit Service
Appalachian State University	287 Rivers Street	Boone	28608	1000+	Yes
ARHS: Blowing Rock Hospital	418 Chestnut Drive	Blowing Rock	28605	1000+	No
ARHS: Watauga Medical Center	336 Deefield Road	Boone	28607	1000+	Yes
Samaritan's Purse, Inc	801 Bamboo Road	Boone	28607	250-499	No
Wal-Mart	200 Watauga Village Drive	Boone	28607	250-499	Yes
Watauga County Government	814 W King Street	Boone	28607	250-499	Yes
Appalachian Hospitality Management	940 Ski Mountain Road	Blowing Rock	28605	100-249	No
Beech Mountain Resort	1007 Beech Mountain Parkway	Beech Mountain	28604	100-249	No
Chetola Mountain Resort	500 Main Street	Blowing Rock	28605	100-249	No
Food Lion	350 Watauga Drive	Boone	28607	100-249	Yes
Food Lion	1864 Old Highway 421 S	Boone	28607	100-249	No
Glenbridge Health and Rehabilitation	211 Milton Brown Heirs Road	Boone	28607	100-249	No
Hospitality Mints	213 Candy Lane	Boone	28607	100-249	No
IRC/TT Electronics	736 Greenway Road	Boone	28607	100-249	Yes
Lowe's Hardware	1855 Blowing Rock Road	Boone	28607	100-249	Yes
Mast General Store	630 W King Street	Boone	28607	100-249	Yes
New River Behavioral Healthcare	132 Poplar Grove Road	Boone	28607	100-249	Yes
Town of Boone Government	567 W King Street	Boone	28607	100-249	Yes

Source: Watauga County Office of Economic Development.



Legend

- Town of Boone
- Major Employers

3-29

AppalCART Bus Routes

- Blue Route
- Express Route
- Gold Route
- Green Route
- Orange Route
- Pink Route
- Pop 105 Route
- Purple Route
- Red Route
- State Farm Route

Moses H Cone Memorial Park

0 0.25 0.5 Miles

Figure 3-13: Major Employers & Fixed Route Transit Service for the Town of Boone

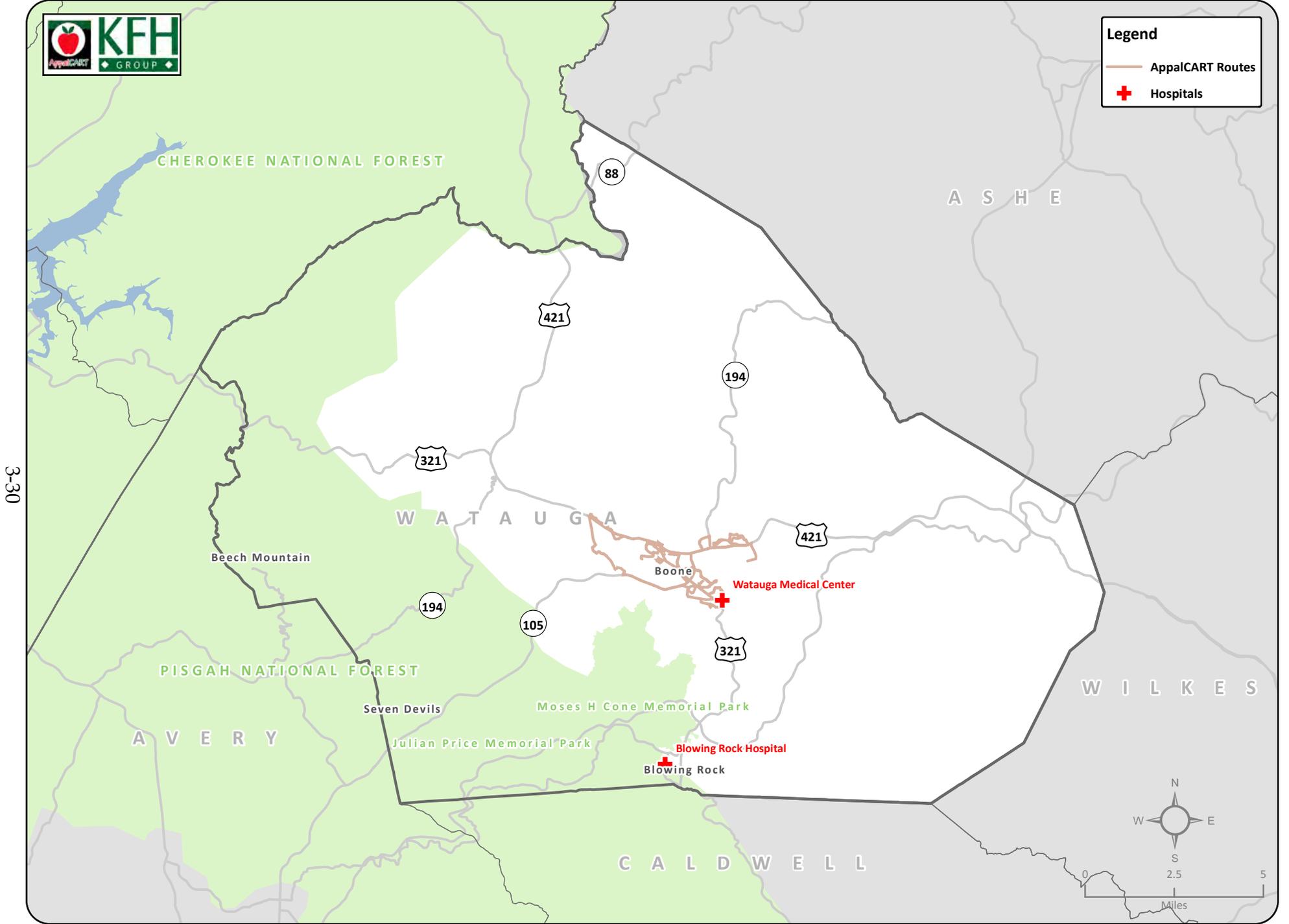


Figure 3-14: Medical Facilities & Fixed Route Transit Service in Watauga County



Legend

- ⊕ Town of Boone
- ⊕ Hospitals

3-31

AppalCART Bus Routes

- Blue Route
- Express Route
- Gold Route
- Green Route
- Orange Route
- Pink Route
- Pop 105 Route
- Purple Route
- Red Route
- State Farm Route

Moses H Cone Memorial Park

Watauga Medical Center

0 0.25 0.5
Miles

Figure 3-15: Medical Facilities & Fixed Route Transit Service for the Town of Boone

Shopping Destinations

The shopping destinations for Watauga County are displayed in Figure 3-16, while the addresses of these trip generators are included in Table 3-7. For this CTSP, a shopping destination was defined as a concentration of stores such as a mall or retail outlet center, large retail establishments, and major supermarkets. It is important that the selected shopping destinations do not simply represent recreational shopping locations, but also food outlets, as transit dependent persons are more likely to rely on the services provided by AppalCART for essential needs. As many of these locations are found within the Town of Boone, a more detailed map displaying the location of these shopping destinations and the transit routes that serve a particular location may be found in Figure 3-17.

Social Service Agencies

Social service agencies provide aid and assistance to residents who are seeking support for matters related to aging, parenthood, physical and mental health, as well as other social subjects. Public transit is often the only means of transportation for individuals who rely upon the support provided by these important community resource centers. There are 30 social service agencies, including the two senior centers, which have been identified within Watauga County. The North Carolina Division of Aging and Adult Services recognized two senior centers within the study area, which are the L.E. Harrill Senior Center in downtown Boone and the Western Watauga Senior Center in rural Sugar Grove. These locations are spatially represented in Figure 3-18, while the physical addresses of these establishments is denoted in Table 3-8. As with many of the other trip generators that have been discussed, a majority of the locations are found in the Town of Boone. Figure 3-19 represents a map of social service agencies and the transit system in the town limits of Boone.

Commute Patterns

The examination of commute patterns for residents and employees within Watauga County, through journey-to-work data produced by the 2000 US Census, enables a greater understanding of existing and potential transportation corridors within the County. Table 3-9 provides a summary of the commute patterns for the residents of Watauga County and presents insight as to where residents of the County commute for employment. The vast majority of Watauga County residents work within the County (86.17% of the workforce). However, there are four counties that employ over 200 Watauga County residents, including Avery County (3.70%), Caldwell County (1.73%), Wilkes County (1.23%), and Ashe County (1.18%). These counties represent the four North Carolina counties that neighbor Watauga County, so it is of no great surprise that they possess the highest share of employment destinations for Watauga County residents.

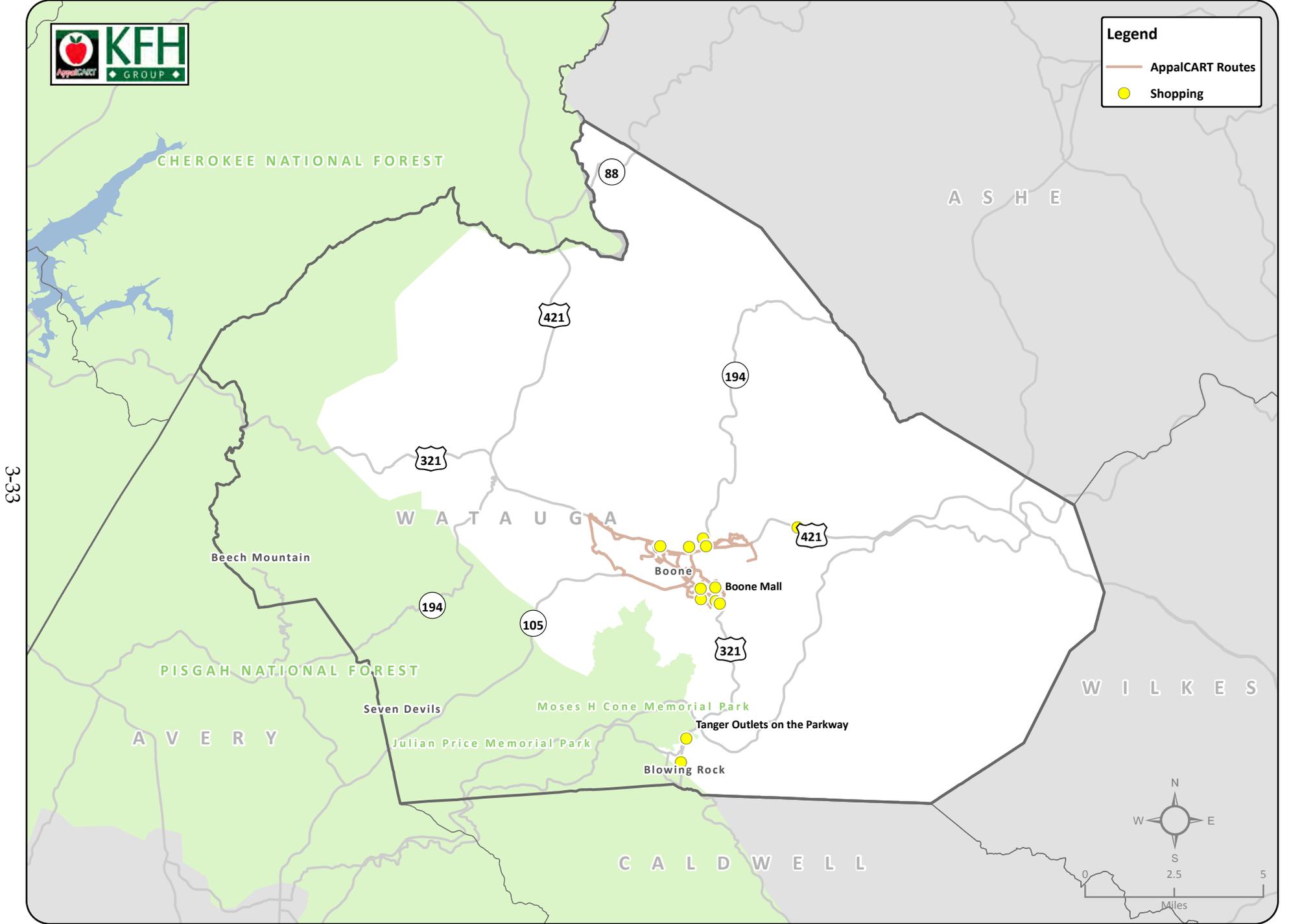


Figure 3-16: Major Shopping Destinations & Fixed Route Transit Service in Watauga County

Table 3-7: Shopping Centers in Watauga County, North Carolina

Name	Address	Place	Zip Code	1/2 Mile from Transit Service
Big Lots	223 New Market Boulevard	Boone	28607	Yes
Boone Heights Shopping Center	166 Boone Heights Drive	Boone	28607	Yes
Boone Mall	1180 Blowing Rock Road	Boone	28607	Yes
Earth Fare	178 West King Street	Boone	28607	Yes
Food Lion	350 Watauga Drive	Boone	28607	Yes
Food Lion	1864 Old Highway 421 S	Boone	28607	No
Food Lion	175 Highway 321 Bypass	Blowing Rock	28605	No
Harris Teeter	240 Shadowline Drive	Boone	28607	Yes
K-Mart	1620 Blowing Rock Road	Boone	28607	Yes
Lowe's Foods	267 New Market Centre	Boone	28607	Yes
Lowe's Home Improvement	1855 Blowing Rock Road	Boone	28607	Yes
Tanger Outlets on the Parkway	278 Shoppes on the Parway Road	Blowing Rock	28605	No
Walmart	200 Watauga Valley Drive	Boone	28607	Yes
Wilcox Emporium Warehouse	161 Howard Street	Boone	28607	Yes



Legend

- Town of Boone
- Shopping

3-35

AppalCART Bus Routes

- Blue Route
- Express Route
- Gold Route
- Green Route
- Orange Route
- Pink Route
- Pop 105 Route
- Purple Route
- Red Route
- State Farm Route

Moses H Cone Memorial Park

0 0.25 0.5
Miles

Figure 3-17: Major Shopping Destinations & Fixed Route Transit Service for the Town of Boone



Legend

- AppalCART Routes
- Senior Centers
- Social Service Agencies

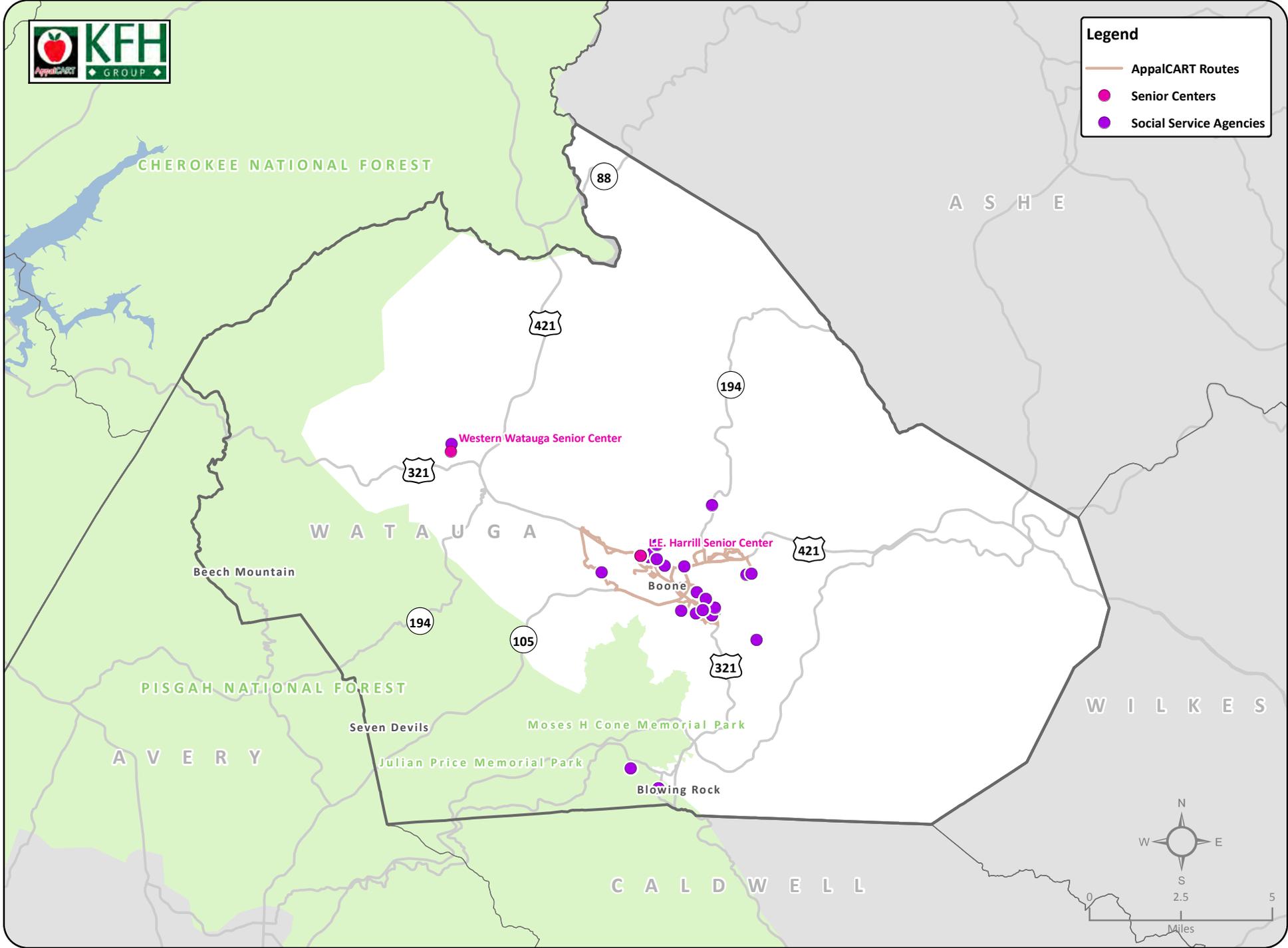


Figure 3-18: Social Service Agencies & Fixed Route Transit Service in Watauga County

Table 3-8: Social Service Agencies in Watauga County, North Carolina

Name	Address	Place	Zip Code	1/2 Mile from Transit Service
American Red Cross	331 Queen Street	Boone	28607	Yes
Blazing Saddles, Inc	1500 Laurel Lane	Blowing Rock	28605	No
Blowing Rock Public Library	1022 Main Street	Blowing Rock	28605	No
Children's Council of Watauga County	225 Birch Street	Boone	28607	Yes
Children's Playhouse	400 Tracy Circle	Boone	28607	Yes
First Things First	820 State Farm Road	Boone	28607	Yes
Glenbridge Health and Rehabilitation	211 Milton Brown Heirs Road	Boone	28607	No
Habitat for Humanity	711 George Wilson Road	Boone	28607	Yes
Head Start of Watauga County	312 Clint Lewis Road	Boone	28607	No
High Country Amigos	820 State Farm Road	Boone	28607	Yes
High Country Hospice of Watauga County	136 Furman Road	Boone	28607	Yes
High Country United Way	671 W King Street	Boone	28607	Yes
Hope Pregnancy Resource Center	232 Furman Road	Boone	28607	Yes
Hospitality House of Boone	302 W King Street	Boone	28607	Yes
Hunger and Health Coalition	141 Health Center Drive	Boone	28607	Yes
Mediation & Restorative Justice Center, Inc	133 N Water Street	Boone	28607	Yes
New River Behavioral Healthcare Family Solutions	377 Shadowline Drive	Boone	28607	Yes
North Carolina Vocational Rehabilitation	245 Winklers Creek Road	Boone	28607	Yes
OASIS, Inc	316 W King Street	Boone	28607	Yes
Parent to Parent Family Support Network	150 Den Mac Drive	Boone	28607	Yes
Smokey Mountain Center: Northern Region	895 State Farm Road	Boone	28607	Yes
Sugar Grove Developmental Day School	207 Dale Adams Road	Sugar Grove	28679	No
Turning Point Services, Inc	427 Meadowview Drive	Boone	28607	Yes
WAMY Community Action, Inc	152 Southgate Drive	Boone	28607	Yes
Watauga County Department of Health	126 Poplar Grove Connector	Boone	28607	Yes
Watauga County Department of Social Services	132 Poplar Grove Connector	Boone	28607	Yes
Watauga County Public Library	140 Queen Street	Boone	28607	Yes
Watauga Youth Network	155 WYN Way	Boone	28607	Yes
Western Watauga Senior Center	1081 Old US Highway 421	Sugar Grove	28679	No
LE Harrill Senior Center	132 Poplar Grove Connector	Boone	28607	Yes



Legend

- ⊕ Town of Boone
- Senior Centers
- Social Services

3-38

AppalCART Bus Routes

- Blue Route
- Express Route
- Gold Route
- Green Route
- Orange Route
- Pink Route
- Pop 105 Route
- Purple Route
- Red Route
- State Farm Route

Moses H Cone Memorial Park

0 0.25 0.5
Miles

Figure 3-19: Social Service Agencies & Fixed Route Transit Service for the Town of Boone

Table 3-9: Resident Journey-to-Work Data for Watauga County, North Carolina

County/State of Origin	County/State of Destination	Trips	Percent
Watauga County, NC	Watauga County, NC	18,083	86.17%
Watauga County, NC	Avery County, NC	777	3.70%
Watauga County, NC	Caldwell County, NC	364	1.73%
Watauga County, NC	Wilkes County, NC	259	1.23%
Watauga County, NC	Ashe County, NC	248	1.18%
Watauga County, NC	Catawba County, NC	175	0.83%
Watauga County, NC	Johnson County, TN	133	0.63%
Watauga County, NC	Mecklenburg County, NC	95	0.45%
Watauga County, NC	Forsyth County, NC	89	0.42%
Watauga County, NC	Iredell County, NC	74	0.35%
Watauga County, NC	Cabarrus County, NC	56	0.27%
Watauga County, NC	Mitchell County, NC	51	0.24%
Watauga County, NC	Burke County, NC	50	0.24%
Watauga County, NC	Lincoln County, NC	44	0.21%
Watauga County, NC	Gaston County, NC	42	0.20%
Watauga County, NC	Guilford County, NC	35	0.17%
Watauga County, NC	Moore County, NC	25	0.12%
Watauga County, NC	Wake County, NC	25	0.12%
Watauga County, NC	Buncombe County, NC	24	0.11%
Watauga County, NC	Orange County, NC	22	0.10%
Watauga County, NC	Surry County, NC	18	0.09%
Watauga County, NC	Macon County, NC	17	0.08%
Watauga County, NC	Horry County, SC	17	0.08%
Watauga County, NC	New Hanover County, NC	15	0.07%
Watauga County, NC	Haiti	15	0.07%
Watauga County, NC	Teton County, WY	14	0.07%
Watauga County, NC	Cobb County, GA	13	0.06%
Watauga County, NC	Haywood County, NC	12	0.06%
Watauga County, NC	Yadkin County, NC	11	0.05%
Watauga County, NC	St. Louis County, MO	10	0.05%
Watauga County, NC	Gloucester County, VA	10	0.05%
Watauga County, NC	Alexander County, NC	9	0.04%
Watauga County, NC	Davidson County, NC	9	0.04%
Watauga County, NC	Spartanburg County, SC	9	0.04%
Watauga County, NC	Broward County, FL	8	0.04%
Watauga County, NC	Dallas County, TX	8	0.04%
Watauga County, NC	Sarasota County, FL	7	0.03%
Watauga County, NC	McDowell County, NC	7	0.03%
Watauga County, NC	Randolph County, NC	7	0.03%
Watauga County, NC	Robeson County, NC	7	0.03%
Watauga County, NC	Vance County, NC	7	0.03%
Watauga County, NC	Smith County, TX	7	0.03%
Watauga County, NC	Gordon County, GA	6	0.03%
Watauga County, NC	Suffolk County, NY	6	0.03%
Watauga County, NC	Dare County, NC	6	0.03%
Watauga County, NC	Pitt County, NC	6	0.03%
Watauga County, NC	Pickens County, SC	6	0.03%
Watauga County, NC	Hillsborough County, FL	5	0.02%
Watauga County, NC	Palm Beach County, FL	5	0.02%
Watauga County, NC	Queens County, NY	5	0.02%
Watauga County, NC	Caswell County, NC	5	0.02%

Table 3-9: Resident Journey-to-Work Data for Watauga County, North Carolina

County/State of Origin	County/State of Destination	Trips	Percent
Watauga County, NC	Nicholas County, WV	5	0.02%
Watauga County, NC	Hamilton County, TN	4	0.02%
Watauga County, NC	Shelby County, TN	4	0.02%
Watauga County, NC	Davidson County, TN	3	0.01%
Watauga County, NC	Sullivan County, TN	3	0.01%
Watauga County, NC	St. Johns County, FL	2	0.01%
Watauga County, NC	Allegheny County, PA	2	0.01%
Watauga County, NC	Rutherford County, TN	2	0.01%
Watauga County, NC	Unicoi County, TN	2	0.01%
TOTAL		20,985	100.00%

Source: United States Census Bureau, 2000 Census.
 Release Date: March 6, 2003.

As a complement to examining where the residents of Watauga County commute for work, it is important to identify travel patterns that denote where employees within the county commute from. Table 3-10 provides a summary of the commute pattern for employees within Watauga County. It should be noted that a greater number of individuals commute to Watauga County from other counties for work (4,237) than residents who leave Watauga County for work in other counties (2,902). However, it should not be surprising that the counties with over 200 employees in Watauga County reside within the neighboring counties, including Ashe County (6.05%), Johnson County (4.25%), Avery County (2.50%), Caldwell County (1.21 %), and Wilkes County (1.09%). There are no significant segments of the commuting population who reside a great distance from Watauga County, in part due to the large number of residents who are employed within Watauga County (18,083).

SECTION III: REVIEW OF RECENT PLANS AND STUDIES

This section of the needs analysis includes an overview of existing planning documents and studies, addressing the transportation needs of the residents, which have been recently completed for Watauga County or the agencies and municipalities found within its borders. The plans and studies included those specific to public transportation, as well as those addressing more expansive land use and growth visions for the region. How these plans and studies articulate the issue of public transportation in Watauga County are abstracted in this section.

Appalachian State University, Campus Master Plan 2020

Appalachian State University, located in downtown Boone, published a strategic plan in 2009 that was approved by the Board of Trustees. This master plan represents a vision for the faculty, staff, administration, and Board of Trustees within Appalachian State University to accommodate sustainable growth through addressing prospective concerns in residential space, accessibility, transportation, environmental impact, and community integration. Specific to public transportation, the plan addresses multimodal access and circulation around the campus, the increasing role of AppalCART services to the academic community, and short-term recommendations for the transit service to pursue.

The campus plan provides considerations to alter the street system that, if pursued, may have residual impacts upon the route configuration of the transit service. This desire to alter the configuration of main roads, such as River Street, aims to accommodate a mix of travel modes, reduce private automobile dependence, and subsequently encourage bus service within the area. Further, the plan supports considerations to the current transit service that may provide seamless bus transfer

Table 3-10
Workplace Journey-to-Work Data for Watauga County, North Carolina

County/State of Origin	County/State of Destination	Trips	Percent
Watauga County, NC	Watauga County, NC	18,083	81.02%
Ashe County, NC	Watauga County, NC	1,350	6.05%
Johnson County, TN	Watauga County, NC	949	4.25%
Avery County, NC	Watauga County, NC	557	2.50%
Caldwell County, NC	Watauga County, NC	271	1.21%
Wilkes County, NC	Watauga County, NC	244	1.09%
Carter County, TN	Watauga County, NC	112	0.50%
Mecklenburg County, NC	Watauga County, NC	69	0.31%
Forsyth County, NC	Watauga County, NC	61	0.27%
Catawba County, NC	Watauga County, NC	55	0.25%
Wake County, NC	Watauga County, NC	43	0.19%
Buncombe County, NC	Watauga County, NC	40	0.18%
Washington County, VA	Watauga County, NC	38	0.17%
Burke County, NC	Watauga County, NC	27	0.12%
Mitchell County, NC	Watauga County, NC	27	0.12%
Cabarrus County, NC	Watauga County, NC	24	0.11%
Alexander County, NC	Watauga County, NC	21	0.09%
Guilford County, NC	Watauga County, NC	20	0.09%
Iredell County, NC	Watauga County, NC	19	0.09%
Washington County, TN	Watauga County, NC	19	0.09%
Lee County, FL	Watauga County, NC	18	0.08%
Alleghany County, NC	Watauga County, NC	17	0.08%
Grayson County, VA	Watauga County, NC	17	0.08%
Henry County, VA	Watauga County, NC	16	0.07%
Yancey County, NC	Watauga County, NC	15	0.07%
Gwinnett County, GA	Watauga County, NC	14	0.06%
Sullivan County, TN	Watauga County, NC	14	0.06%
Surry County, NC	Watauga County, NC	13	0.06%
Nueces County, TX	Watauga County, NC	13	0.06%
Miami-Dade County, FL	Watauga County, NC	12	0.05%
Moore County, NC	Watauga County, NC	12	0.05%
Pitt County, NC	Watauga County, NC	12	0.05%
Carroll County, VA	Watauga County, NC	12	0.05%
Orange County, NC	Watauga County, NC	11	0.05%
Davidson County, NC	Watauga County, NC	10	0.04%
Alamance County, NC	Watauga County, NC	8	0.04%
Anson County, NC	Watauga County, NC	8	0.04%
Gaston County, NC	Watauga County, NC	8	0.04%
Yadkin County, NC	Watauga County, NC	8	0.04%
Blount County, TN	Watauga County, NC	8	0.04%
Sevier County, TN	Watauga County, NC	7	0.03%
Wise County, VA	Watauga County, NC	7	0.03%
Jefferson County, IA	Watauga County, NC	6	0.03%
Anderson County, SC	Watauga County, NC	6	0.03%
Rowan County, NC	Watauga County, NC	5	0.02%
Hamilton County, TN	Watauga County, NC	5	0.02%

Table 3-10
Workplace Journey-to-Work Data for Watauga County, North Carolina

County/State of Origin	County/State of Destination	Trips	Percent
McDowell County, NC	Watauga County, NC	4	0.02%
Wayne County, NC	Watauga County, NC	3	0.01%
Cleveland County, NC	Watauga County, NC	1	0.00%
Harnett County, NC	Watauga County, NC	1	0.00%
TOTAL		22,320	100.00%

Source: United States Census Bureau, 2000 Census.
 Release Date: March 6, 2003.

locations on campus, reduce headways to five minutes in peak hours and accommodate large rider volume on popular routes, explore an expansion of the current network, and enhance regional connections to the university.

More specifically, this plan emphasizes a need for regional partnerships to promote service to the City of Charlotte, Piedmont Triad International airport, and the City of Raleigh. The plan also suggests collaboration with AppalCART to identify new parking locations and provide transit service to these facilities, introduce vanpool service to residents of remote communities attending the institute, expand and improve bus bays and shelters at the Raley Lot and College Street parking deck, and assist in the expansion of all these services by raising the student transportation fee.

Watauga County, Citizens' Plan for Watauga

The Citizens' Plan for Watauga was released in 2010 as a description of the goals and objectives for managing change within the county from its residents and leaders in the community. The plan represents an update to the county's comprehensive plan, recognized by the Watauga County Board of Commissioners and Watauga County Planning Board staff, which addresses the future decisions on a variety of themes including economic development, affordable housing, preservation of community, and transportation. In terms of transportation, the plan emphasizes an effort toward producing a safe multimodal infrastructure that promotes transit use, pedestrian accessibility, and bicycling.

Specific to the AppalCART bus service, the citizens' plan recommends decreasing the time between service intervals and an expansion of the coverage of rural routes. This expansion will ensure that more riders have access to the service by targeting the US Route 421 corridor leading out of Boone, US Route 321 between Boone and Blowing Rock, and NC Route 194 corridor stretching toward Green Valley Elementary to the north of Boone. In addition, the plan suggests an extension of service to affordable housing areas that AppalCART currently does not serve and the promotion of connectivity between the park and ride lots surrounding Boone and the current bus network. All of these recommendations are aimed toward developing a sustainable and safe transportation network that discourages private automobile reliance.

Town of Boone, Boone 2030 Land Use Plan

Adopted in October 2009, the land use master plan is a guiding vision and policy basis for the long-term future growth of Boone, as it defines suitable development within the community. This plan serves as a complement to the town's comprehensive plan that reflects smart growth principles and aspirations, which include many

recommendations for improving the current transit services provided within the town. Additionally, as part of the public process in developing this plan, a survey of 132 participants was conducted to determine community priorities. The fifth most popular transportation priority that resulted from this effort was to “expand local regional and transit service,” while “increased transit service” was ranked the eighth highest community objective for capital spending priorities.

In addition to the promotion of expanded transit service by participants in the land use plan, there were a number of transit-related recommendations made by the consultant team and project Advisory Committee. The plan suggests there is a desire from the community to expand the AppalCART fleet and frequency of its service, provide aesthetically pleasing bus stop environments, enhance the interregional service offered by the Mountaineer Express to Winston-Salem and Greensboro to include a stop at the Piedmont-Triad International airport, and the development of more park and ride lots along the periphery of the community.

In particular, the land use plan acknowledges the success of the AppalCART bus service, but recommends an expansion of routes serving the Deerfield Road Corridor to the new nursing school and US Route 421 west of the NC Route 105 spur as well as a reduction in headways and extension in service hours on weekends. This reduction would improve headways to less than seven to ten minutes during peak times and less than 20 minutes during off-peak hours, while the extension in service time would offer the popular transit option until 2:00 a.m. or later on weekends. Also, a recommendation was made for improving the communication of transit service information with online real-time bus arrival updates and clearer signage and schedule information. Finally, the producers of this plan advocate the implementation of bicycle racks on buses to promote an expansion in accommodation and transit catchment area. It should be noted that AppalCART does have bike racks on its buses.

Town of Blowing Rock, 2004 Blowing Rock Comprehensive Plan

The comprehensive plan for Blowing Rock was adopted by the small, mountain resort community in 2004 as a vision and policy approach toward maintaining the authenticity and diversity of the town in the next 15 years. The planning document covers an array of topics spanning from land use and development to transportation. The plan does not carry any specific recommendations concerning transit service outside of a general platitude of encouraging a balanced, multimodal transportation system that enhances the mobility of its citizens, reduces automobile dependence, and preserves the character of Blowing Rock.

Town of Blowing Rock, 2008 Downtown Parking Management Study

In response to parking issues, particularly during the summer tourist season, the Town of Blowing Rock conducted a parking study in July, 2008. The study's focus was to assess the impact of two proposed parking facilities and to provide recommendations to manage parking issues. The final study contained a variety of recommendations including the installation of additional signage and other outreach strategies. However, the study did not include any recommendations in regard to transit or shuttle services.

Watauga County Human Service Transportation Coordination Plan (Draft)

To respond to federal Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) legislation that requires a locally-developed, coordinated public transit/human service plan to access funds through the Federal Transit Administration's (FTA) Section 5310, Section 5316, and Section 5317 Programs, AppalCART and the High Country Council of Governments have drafted the Watauga County Human Service Transportation Coordination Plan. FTA guidance defines a coordinated public transit-human service transportation plan as one that identifies the transportation needs of individuals with disabilities, older adults, and people with low incomes; provides strategies for meeting those local needs; and prioritizes transportation services for funding and implementation.

The draft Watauga County Human Service Transportation Coordination Plan identified the following needs that represent gaps in human service transportation within Watauga County:

- Need to expand hours for rural routes and in-town, including weekends (Sundays) and nights.
- Run in-town routes regardless of Appalachian State University (ASU) schedules.
- Increase frequency of stops.
- Focus on low income areas just outside the in-town bus routes, such as Bamboo, Greenbriar, and Brown's Trailer Park.
- Department of Social Services needs more than two out of town trips per day.
- Increased availability of local transports outside of the in-town routes to access dialysis/cancer center.

- Extension of paratransit area.
- Location of stops closer to low income housing such as Watauga Village and Meadowhill by using small vehicle routes with increased frequency.
- More enclosed bus shelters with increased police patrols and an “Adopt-a-Shelter” program.
- Access to human service agencies such as Hunger Coalition, Hospitality House, and Margo Lane/Greenbriar.
- Rural “Park and Ride” with buses arriving and leaving regularly.
- Addition of east and west bound routes (going in opposite directions).
- Rural route expansion and increased frequency.
- New AppalCART facility that would include a park and ride lot, a transfer station for in-town buses, ASU, Caldwell Community College, PART, and the Hickory Hop.
- Demand-Response service for non-emergency urgent care needs. (Coordinate with 911 response).
- Through the door service for the elderly and disabled. (Assist from home to bus or van).
- Use of small vehicles/cars for fewer riders, such as for out of town and rural areas.
- Routes to rural areas for classes at the Family Resource Center across from Watauga Medical Center (9:00 a.m. until 12:00 p.m. on Tuesday, Wednesday, and Thursday and also 6:00 p.m. until 8:00 p.m. on Thursday).
- A paratransit shuttle to apartments with disabled residents to take them to fixed-route stops.
- Create official park and ride lots as opposed to defacto.

As also noted in the Plan, many of the gaps in transportation for Watauga County involve extending service hours, expanding rural routes, extending the hours of the fixed routes, and more frequent out of town trips. The Plan commented that as in

most of the High Country region, several populations were considered to be underserved; the most notable of which were the low income who need transportation to employment, education, and to the human service agencies, and who typically live in the remote areas of the county.

The Watauga County Human Service Transportation Coordination Plan also included a further list of issues and needs that were used to develop coordination strategies. The primary issues and needs identified in the Plan include:

- Extended hours of operation (longer hours, weekends, and holidays)
- Enclosed shelters
- Transfer center for intermodal vehicles
- Expansion of paratransit services (shuttles to fixed-route stops and service to low income areas)
- Additional vehicles and employees for additional out of town trips
- Extension of dial-a-ride service beyond 4:00 p.m.
- Coordination of classes sponsored by Human Service agencies with AppalCART services
- Park and Ride lots in the rural areas to connect to fixed route service (locations at civic and faith based organizations)
- Coordinate with 911 for non-emergency calls
- Small vehicles for use in the out of town and rural areas.

To respond to these issues and needs, the draft Watauga County Human Service Transportation Coordination Plan includes the following action strategies:

- **Need:** Additional transit vehicles and drivers to provide additional and extended service during the week and on weekends and out of town service.
 - Action Strategy: Apply for FTA Section 5310, Section 5316, and Section 5317 funds to help pay for additional vehicles and operating assistance
 - Action Strategy: Seek local funding options

- **Need:** Construction of additional enclosed shelters near destinations or facilities populated by disabled, elderly, and low income individuals.
 - Action Strategy: Apply for FTA Section 5310, 5316, and 5317 funds
 - Action Strategy: Partner with destinations or facilities to install facilities
 - Action Strategy: Adopt-a-Shelter program to assist with costs and maintenance
 - Action Strategy: Seek local funding options

- **Need:** Dedicated facilities for park and ride lots and intermodal transfer center.
 - Action Strategy: Coordinate with area churches and community centers to use facilities for possible park and ride lots
 - Action Strategy: Identify other potential sites for park and ride lots
 - Action Strategy: Identify and obtain location for intermodal transfer; Hickory Hop, Mountaineer Express, paratransit, and fixed-route buses
 - Action Strategy: Apply for FTA Section 5310, Section 5311, Section 5316, and Section 5317 funds

- **Need:** Coordination of transportation services offered by AppalCART and classes offered by human service agencies.
 - Action Strategy: Identify staff at AppalCART for Human Service agencies to contact concerning transportation of clients and transit schedule
 - Action Strategy: Establish policy for providing transportation to classes after typical operating hours

- **Need:** Coordinate with 911 for non-emergency calls.
 - Action Strategy: Establish policy for transporting individuals who need medical attention, but may not need emergency transportation provided by an ambulance
 - Action Strategy: Coordinate with 911 to identify individuals who could benefit from this service

- **Need:** Acquire smaller vehicles for fuel savings and individualized service to disabled and elderly populations being transported to out of town medical appointments.
 - Action Strategy: Apply for FTA Section 5310 and Section 5317 funds to help pay for additional vehicles and operating assistance

SECTION IV: REVIEW OF SURVEYS

To supplement the review of existing planning documents, this needs analysis also included a series of surveys to better understand the demographic composition, travel behavior, level of satisfaction, and impetus behind riders of the bus system. In addition to two separate surveys of riders using the available transit services, the study team also conducted a community survey in order to determine what elements of the transit service non-riders believe need improvement. An analysis of the results from these separate surveys may reveal existing or perceived gaps in the transit service as well as suggestions from the public that the agency may take note of to improve quality or increase ridership.

On-Board Rider Survey: Fixed-Route Services

On April 13-14, 2010, the study team conducted a survey effort to gather the opinions of riders of the fixed-route system as well as to determine any unmet transit needs their responses may reveal. The data collection process was administered by temporary workers, who were hired by the study team to distribute a questionnaire (please see Appendix C) to passengers aboard the ten fixed-route services that comprise the AppalCART bus system. During these two days of survey administration, a total of 880 surveys were completed by fixed-route riders. A statistical summary of the riders' responses to the on-board survey may be viewed in Table 3-11.

An examination of the survey responses tells an informative story of the travel behavior of the riders who were questioned. One such significant finding disclosed by the survey responses was that it is uncommon for riders of the fixed-route system to have to transfer buses in order to reach their intended destination. Less than 5% of the respondents noted having to transfer buses in order to complete their trip, with less than 1% stating that it would take two or more transfers to do so. Within this low transfer response rate, the Green Route and Pop 105 Route were the most popular routes to transfer onto, with eight surveyed riders noting each of those routes as being their final fixed-route service. As for which routes were the most popular for providing survey responses, the Purple Route, Blue Route, Orange Route, Red Route, and Gold Route each supplied over 10% of the completed questionnaires. While aboard the fixed-route services, three-quarters of the respondents selected school as the purpose of their reported trip, which was followed by errands or personal business with 12% and work with 9%.

In addition to travel behavior, the fixed-route survey was able to help explain the socioeconomic character of the ridership base. More than half of the surveyed fixed-route riders (57%) noted that they are a student of ASU who is currently living in an off-campus residence, while approximately one-third (31%) of respondents stated they

Table 3-11: AppalCART On-Board Rider Survey, Fixed-Route Services

Q1: What route are you currently riding?

Red Route:	<u>12.50%</u>	Gold Route:	<u>10.11%</u>
Green Route:	<u>8.98%</u>	Blue Route:	<u>14.43%</u>
Pop 105 Route:	<u>4.89%</u>	Express Route:	<u>9.09%</u>
Purple Route:	<u>17.05%</u>	Pink Route:	<u>8.30%</u>
Orange Route:	<u>13.30%</u>	State Farm Route:	<u>1.36%</u>

Q3: Did you or will you have to transfer buses in order to complete this trip?

Yes, one transfer:	<u>4.43%</u>	No:	<u>93.98%</u>
Yes, two or more transfers:	<u>0.23%</u>	(Blank):	<u>1.36%</u>

Q4: What bus route(s) will you transfer to or did you transfer from?

Red Route:	<u>0.57%</u>	Blue Route:	<u>0.45%</u>
Green Route:	<u>0.91%</u>	Express Route:	<u>0.23%</u>
Pop 105 Route:	<u>0.91%</u>	Pink Route:	<u>0.00%</u>
Purple Route:	<u>0.23%</u>	State Farm Route:	<u>0.11%</u>
Orange Route:	<u>0.45%</u>	(Blank):	<u>95.68%</u>
Gold Route:	<u>0.45%</u>		

Q6: What is the purpose of your bus trip today? (You may check more than one)

Work:	<u>8.64%</u>	Medical:	<u>1.14%</u>
Shopping:	<u>5.34%</u>	Government Service Agency:	<u>0.00%</u>
School:	<u>75.45%</u>	Errands/Personal Business:	<u>11.59%</u>
Social/Recreation:	<u>5.11%</u>	Other:	<u>2.84%</u>

Q7: Are you: (Please check all that apply)

A resident of the Town of Boone:	<u>22.16%</u>
A resident of Watauga County, residing outside of the Town of Boone:	<u>4.77%</u>
An ASU student, living on-campus:	<u>30.68%</u>
An ASU student, living off-campus:	<u>57.05%</u>
A faculty or staff member of ASU:	<u>1.59%</u>
A resident of a different County:	<u>5.00%</u>

Q9: Please rate your satisfaction with AppalCART services in the following areas:

	VS	S	U	VU
On-time performance:	<u>15.68%</u>	<u>65.23%</u>	<u>15.57%</u>	<u>1.70%</u>
Convenience of bus routes:	<u>29.89%</u>	<u>63.18%</u>	<u>4.43%</u>	<u>0.80%</u>
Convenience of bus stops:	<u>30.91%</u>	<u>62.16%</u>	<u>4.32%</u>	<u>0.68%</u>
Days of service:	<u>30.11%</u>	<u>53.75%</u>	<u>12.16%</u>	<u>1.82%</u>
Hours of service:	<u>24.66%</u>	<u>50.80%</u>	<u>18.41%</u>	<u>3.52%</u>
Frequency of service:	<u>26.70%</u>	<u>57.16%</u>	<u>11.93%</u>	<u>1.36%</u>
Cleanliness of the buses:	<u>39.89%</u>	<u>55.45%</u>	<u>2.16%</u>	<u>0.45%</u>
Driver courtesy:	<u>48.86%</u>	<u>46.70%</u>	<u>2.16%</u>	<u>0.57%</u>
Availability of information:	<u>35.91%</u>	<u>56.70%</u>	<u>4.66%</u>	<u>0.57%</u>
Safety and security:	<u>40.68%</u>	<u>54.43%</u>	<u>1.93%</u>	<u>0.68%</u>
Telephone customer service:	<u>25.34%</u>	<u>58.30%</u>	<u>5.11%</u>	<u>1.70%</u>
Usefulness of website:	<u>29.43%</u>	<u>56.36%</u>	<u>7.27%</u>	<u>1.36%</u>

Q10: How would you classify yourself?

African American:	<u>5.91%</u>	Hispanic/Latino:	<u>2.05%</u>
Asian:	<u>1.36%</u>	Native American:	<u>1.02%</u>
Caucasian:	<u>85.00%</u>	Other:	<u>2.39%</u>

Q11: Are you:

Male:	<u>42.50%</u>	(Blank):	<u>2.27%</u>
Female:	<u>55.23%</u>		

Table 3-11 (continued)

Q12: Do you have a driver's license?			
Yes:	<u>90.23%</u>	(Blank):	<u>2.05%</u>
No:	<u>7.73%</u>		
Q13: How many vehicles (cars, trucks, motorcycles) are available in the household where you live?			
Zero:	<u>10.34%</u>	Three:	<u>15.23%</u>
One:	<u>40.45%</u>	Four or more:	<u>14.55%</u>
Two:	<u>17.05%</u>	(Blank):	<u>2.39%</u>
Q14: Please indicate your age group:			
Under 12 years old:	<u>0.00%</u>	26-55 years old:	<u>7.95%</u>
12-17 years old:	<u>0.11%</u>	56-64 years old:	<u>0.91%</u>
18-25 years old:	<u>89.09%</u>	65 years old or older:	<u>0.11%</u>
Q15: Which of the following best describes your current employment status? (You may check more than one)			
Employed, full-time:	<u>4.77%</u>	Student, part-time:	<u>13.64%</u>
Employed, part-time:	<u>28.86%</u>	Homemaker:	<u>0.91%</u>
Retired:	<u>0.57%</u>	Unemployed:	<u>9.20%</u>
Student, full-time:	<u>66.36%</u>	Other:	<u>0.57%</u>
Q16: Please check your approximate total annual household income from all sources:			
\$14,999 or less:	<u>50.68%</u>	\$60,000-\$74,999:	<u>4.66%</u>
\$15,000-\$29,999:	<u>6.82%</u>	\$75,000 or higher:	<u>13.18%</u>
\$30,000-\$44,999:	<u>6.36%</u>	(Blank):	<u>12.61%</u>
\$45,000-\$59,999:	<u>5.68%</u>		

Notes:

1. Questions 2, 5, 8, and 17 were open-ended questions and varied based upon survey.
2. There were 880 respondents.

were ASU students who lived in an on-campus facility. Furthermore, less than 5% of those surveyed described themselves as residents of Watauga County who reside outside of the Town of Boone, while 22% of those surveyed describe themselves as a resident of the Town of Boone. The majority of those riders who responded to the questionnaire were female (55%), while 85% classified themselves as being Caucasian.

One half of those surveyed indicated that their annual income was less than \$14,999, with two-thirds of the respondents stating that they were full-time students. This latter answer is in-line with the finding that nearly nine out of ten (89%) of the respondents specified their age to be between 18 and 25 years old. As for vehicle-related information, over 90% of those surveyed reported having a driver's license, while the most popular response to the number of available vehicles in the household was one (40%).

As for their contentment with the fixed-route services, the overall response was optimistic. For each of the 12 elements that were surveyed, the majority of riders expressed satisfaction with the provided services. In fact, respondents of the survey conveyed that they were "very satisfied" with driver courtesy as it was the most popular option for that particular category. In contrast, four themes produced an unsatisfactory response of greater than 10%, including: hours of service (18%), on-time performance (16%), days of service (12%), and frequency of service (12%).

The survey instrument also provided opportunities for those surveyed to provide unstructured responses. One such question targeted potential geographies where riders would like to see an expansion toward or within. Due to the large volume of survey responses, it is difficult to synthesize all responses, but the most popular comments generally described the following:

- Extension of bus services into the communities surrounding the Town of Boone, such as Banner Elk, Deep Gap, Valle Crucis, Vilas, and especially Blowing Rock.
- Expansion of bus services into the areas immediately surrounding the Town of Boone, including the eastern stretches along Bamboo Road and Deerfield Road, the southern stretches along US Route 321, and the southwestern stretches along NC Route 105 and NC Route 194.
- Expand the bus service throughout the Town of Boone to include trip generators such as the Food Lion on US Route 421, Driver's License Office on Furman Road, and Harris Teeter off of Shadowline Drive.

Appendix D provides the responses to the open-ended comment question that was included on the survey. These comments generally echo the responses provided to the structured questions. There were also a number of specific complaints and compliments.

On-Board Rider Survey: Demand-Response Services

The study team also performed a survey of demand-response services on AppalCART's rural routes on April 13-14, 2010. The attempt of this effort was to better gauge the travel needs and level of satisfaction for users of the service. Although the respondent total was not great enough to provide any significant findings (14 completed surveys), their answers do provide anecdotal insight into the travel behavior, perception of quality, and personal mobility of demand-response riders. A statistical summary of the riders' responses to the demand-response survey may be viewed in Table 2-12.

In terms of travel behavior, the most popular origin for the requested trip was Boone (36%), followed by Deep Gap (29%), and Zionville (21%), whereas all survey respondents indicated the Watauga County Human Services Building as their final destination. The most popular response pointed to the purpose of their trip being to attend the senior center (86%) or being related to shopping (64%). Within this sample, none of the demand-response riders stated that they use the fixed-route services in the Town of Boone, with the vast majority of respondents (71%) affirming that they use the demand-response service two to three times per week. Nearly two-thirds (64%) of the survey respondents noted having utilized the service for more than five years and many of those surveyed initially discovered the service through senior center staff (43%).

As for strengths of the demand-response service, half of the respondents highlighted the quality and another 43% commented on the availability of the service, while only 14% of the respondents noted displeasure in the promptness of the service. The majority of those surveyed believed the demand-response van serves the appropriate regional locations, which positively corresponds to the finding that 64% of those surveyed live in an autoless household, 57% did not have an automobile available for this trip, and 71% do not possess a driver's license. When rating satisfaction with the different aspects of the demand-response service, the overall feedback was exceedingly positive with only the topic of service days generating any dissatisfaction.

Public Opinion Survey

A public opinion survey was an additional mechanism used to solicit information concerning transit needs in Boone and Watauga County. The survey

Table 3-12: AppalCART On-Board Rider Survey, Demand-Response Services

Q1: What was the location where you boarded the van?				
Banner Elk:	<u>7.14%</u>	Deep Gap:	<u>28.57%</u>	
Boone:	<u>35.71%</u>	Zionville:	<u>21.43%</u>	
Cove Creek:	<u>7.14%</u>			
Q2: What is your destination?				
Watauga County Human Services Building:	<u>100.00%</u>			
Other:	<u>0.00%</u>			
Q3: What is the purpose of your van trip today? (You may check more than one)				
Work:	<u>7.14%</u>	Government Service Agency:	<u>0.00%</u>	
Shopping:	<u>64.29%</u>	Errands/Personal Business:	<u>7.14%</u>	
School:	<u>0.00%</u>	Attend Senior Center:	<u>85.71%</u>	
Social/Recreation:	<u>42.86%</u>	Other:	<u>0.00%</u>	
Medical:	<u>35.71%</u>			
Q4: Do you also use the fixed-route bus services operated by AppalCART?				
Yes, I use the services operated in the Town of Boone			<u>0.00%</u>	
No, I only use the demand-response bus			<u>57.14%</u>	
(Blank):			<u>42.86%</u>	
Q5: How often do you use the van service?				
4 times per week or more	<u>14.29%</u>	2-3 times per month	<u>7.14%</u>	
2-3 times per week	<u>71.43%</u>	Once a month	<u>0.00%</u>	
Once a week	<u>7.14%</u>	Less than once a month	<u>0.00%</u>	
Q6: How did you find out about the van service?				
Already knew:		<u>7.14%</u>		
Asked someone who uses the service:		<u>7.14%</u>		
AppalCART website:		<u>0.00%</u>		
Senior center staff:		<u>42.86%</u>		
Other agency staff:		<u>7.14%</u>		
Brochure:		<u>0.00%</u>		
Asked driver:		<u>0.00%</u>		
Telephoned AppalCART:		<u>0.00%</u>		
Other:		<u>35.71%</u>		
Q7: How long have you been using community transportation services in Watauga County?				
Six months or less:		<u>0.00%</u>		
Between six months and one year:		<u>7.14%</u>		
About one year:		<u>7.14%</u>		
Between one and two years:		<u>14.29%</u>		
More than two years:		<u>7.14%</u>		
More than five years:		<u>64.29%</u>		
Q8: Please rate your satisfaction with AppalCART services in the following areas:				
	VS	S	U	VU
Trip scheduling process:	<u>71.43%</u>	<u>14.29%</u>	<u>0.00%</u>	<u>0.00%</u>
Telephone customer service:	<u>71.43%</u>	<u>14.29%</u>	<u>0.00%</u>	<u>0.00%</u>
On-time performance:	<u>57.14%</u>	<u>21.43%</u>	<u>0.00%</u>	<u>0.00%</u>
Days of service:	<u>64.29%</u>	<u>7.14%</u>	<u>14.29%</u>	<u>0.00%</u>
Hours of service:	<u>64.29%</u>	<u>21.43%</u>	<u>0.00%</u>	<u>0.00%</u>
Cost of van fare:	<u>71.43%</u>	<u>7.14%</u>	<u>0.00%</u>	<u>0.00%</u>
Cleanliness of the vans:	<u>85.71%</u>	<u>14.29%</u>	<u>0.00%</u>	<u>0.00%</u>
Driver courtesy:	<u>92.86%</u>	<u>7.14%</u>	<u>0.00%</u>	<u>0.00%</u>
Availability of information:	<u>71.43%</u>	<u>14.29%</u>	<u>0.00%</u>	<u>0.00%</u>
Safety and security:	<u>92.86%</u>	<u>7.14%</u>	<u>0.00%</u>	<u>0.00%</u>
Usefulness of website:	<u>21.43%</u>	<u>0.00%</u>	<u>0.00%</u>	<u>0.00%</u>

Table 3-12 (continued)

Q9: Are there places in the County or the region where you would like to go on a regular basis, but you cannot get to because there is not a public transportation service available for the trip?			
No:	<u>71.43%</u>		
Yes:	<u>14.29%</u>	<i>(one respondent noted: Walmart)</i>	
Q10: What do you like best about AppalCART?			
Availability of service:	<u>42.86%</u>	Quality of service/staff:	<u>50.00%</u>
Promptness of service:	<u>7.14%</u>	Other:	<u>0.00%</u>
Q11: What do you like least about AppalCART?			
Nothing:	<u>71.43%</u>	Quality of service/staff:	<u>7.14%</u>
Promptness of service:	<u>14.29%</u>	Other:	<u>7.14%</u>
Q12: How many vehicles (cars, trucks, motorcycles) are available in the household where you live?			
Zero:	<u>64.29%</u>	Three:	<u>0.00%</u>
One:	<u>7.14%</u>	Four or more:	<u>0.00%</u>
Two:	<u>28.57%</u>	(Blank):	<u>0.00%</u>
Q13: Was a car available for this trip?			
Yes:	<u>28.57%</u>		
No:	<u>71.43%</u>		
Q14: Do you have a driver's license?			
Yes:	<u>42.86%</u>		
No:	<u>57.14%</u>		
Q15: Additional comments:			
I:	"I think the AppalCART is the best service in Watauga County"		
II:	"I think it's very helpful to pick me up at my apartment and carry me back. Very helpful to stop at a grocery store."		

Notes:

1. Questions 1, 2, 10, and 11 were open-ended questions that have been placed into bins.
2. There were 14 respondents.

questions were developed by KFH Group in consultation with AppalCART. A copy of the survey instrument is provided in Appendix E.

There were two means of data collection for the survey effort: an Internet-based survey and paper survey. The Internet-based survey was constructed in Survey Monkey and linked to the AppalCART website and the Watauga County website. In addition, ASU sent an e-mail to students with a link to the survey. AppalCART also distributed a press release to its media list highlighting the survey effort and providing instructions on how to access the survey. The on-line survey was available from mid-April through May 27, 2010.

In recognition of the possibility that many potential and current transit riders may not have convenient Internet access, paper surveys were provided at key locations around the region, including the Towne of Boone City Hall, Watauga County Manager's Office, Boone Area Chamber of Commerce, and the Appalachian State University Parking and Traffic Department. The paper surveys were then manually entered into the Survey Monkey database for analysis. The surveys were available between April 14, 2010 and May 14, 2010.

Results

A total of 1,089 public opinion surveys were completed. The majority of the survey respondents indicated zip codes in Boone (41%) or Boone-Appalachian State (17%). Other local respondents included people from Blowing Rock (1.2%), Vilas (1.2%), Banner Elk (fewer than 1%) and Deep Gap (fewer than 1%). Over 100 zip codes were represented, most likely due to the high percentage of survey respondents who are Appalachian State students.

The primary travel mode for the respondents, when looking at all trip purposes, was "drive myself," with 49% of the participants indicating this response. Public transportation's mode share was 25% among the respondents, followed by walking (13%), riding with family or friends (11%), and bicycling (1%). The highest transit mode share reported was for the purpose of getting to school, with 56% of the respondents indicating that they use public transportation as their primary mode for this trip purpose.

Knowledge of AppalCART and Transit Use

Over 98% of the survey respondents indicated that they are aware of AppalCART's services, with 74% of the participants indicating that they use AppalCART's fixed routes at least once a week, and another 18% indicating either occasional or monthly use. Not nearly as many survey participants reported using

AppalCART's rural routes (90% indicated that they had never used the rural routes). Twenty percent of the survey respondents indicated that they have used PART's Mountaineer Express. The full results for this question are provided in Table 3-13.

Public Transportation Improvements

When asked if there is a need for additional or improved public transportation in Watauga County, 71% of the survey respondents indicated "yes." Questions 6, 7, and 8 of the survey further probed what kind of improvements are needed, including asking about geographic coverage (both within the County and the region); days/hours/frequency; and potential quality of service improvements.

Survey respondents indicated that more service was needed in Boone, followed by service between Boone and Blowing Rock, the ASU campus, Route 105 improvements, and farther out in Boone. The full responses to this question are provided in Table 3-14. As seen in these responses, some survey participants wrote in improvements not related to geographic coverage (i.e., longer hours, more frequency).

In terms of intra-regional transportation service, the most important linkage noted was service between Boone and Charlotte, following by Boone/Asheville, Boone/Hickory, Boone/Wilkesboro, and Boone/Lenoir. It should be noted that the new intercity bus service that began in October, 2010, now connects Boone to Charlotte, serving both Lenoir and Hickory. The full results for this question are provided in Table 3-15.

In considering potential improvements to the current AppalCART transit service network, more frequent service was the most frequently requested improvement (59.6%), followed by service later in the evening (58.7%), additional Saturday service (45.5%), and additional Sunday service (42%). These results are provided in Table 3-16.

Table 3-17 highlights the quality of service improvements indicated by survey participants. Improved on-time performance was the most frequently requested improvement (72.6%), followed by additional shelters and benches (61.5%). A more informative website and improved access to information were also requested by just over 25% of the survey participants. There were a number of write-in suggestions, including several that requested the ability to electronically track the buses so that riders could access this information from their cell-phones, computers, or from electronic displays at the bus stops.

Table 3-13: Frequency of Public Transportation Use

Services	Frequency										Response Count
	On occasion	Never	1x/month	1x/week	2x/week	3x/week	4x/week	5x/week	6x/week	7x/week	
AppalCART fixed route services	120	73	65	89	90	97	81	225	46	127	1013
AppalCART rural routes	68	848	9	3	2	0	3	2	1	3	939
Taxis	82	839	16	2	1	1	0	0	0	1	942
Vanpools	57	848	15	5	8	2	1	0	0	2	938
Carpools	225	437	54	71	64	51	14	16	6	9	947
Mountaineer Express	117	754	54	11	6	1	2	0	1	1	947
Hickory Hop	13	917	3	2	1	0	0	0	0	1	937
Other	25	462	6	4	10	3	3	2	2	2	519
										<i>answered question</i>	1016
										<i>skipped question</i>	73
Other Modes:											
	Safe Ride			22							
	Friends			4							
	Drive myself			3							
	Fraternity Beeper late night weekends										
	PART bus, 3 times a year										
	Non-AppalCART related things, e.g. CATS										
	Greensboro airport bus										
	I use the appalcart to get to my car in order to drive myself										
Modes	% On Occasion	% Never	% 1x/mo	% 1x/wk	% 2x/wk	% 3+x/wk					
AppalCART fixed route services	12%	7%	6%	9%	9%	57%					
AppalCART rural routes	7%	90%	1%	0%	0%	1%					
Taxis	9%	89%	2%	0%	0%	0%					
Vanpools	6%	90%	2%	1%	1%	1%					
Carpools	24%	46%	6%	7%	7%	10%					
Mountaineer Express	12%	80%	6%	1%	1%	1%					
Hickory Hop	1%	98%	0%	0%	0%	0%					

Table 3-14
Where is there a need for additional or improved public transit services?

Place/Improvements Listed	Number
Boone, generally	86
Between Boone and Blowing Rock	36
More frequency	35
ASU Campus	31
Route 105/Pop 105 Improvements	30
Farther out of Boone	29
Longer hours of service	25
Green Route Improvements (mostly frequency)	16
Bamboo Road	15
More service to large apartment complexes	15
Orange Route Improvements (mostly frequency)	14
More buses to relieve crowding	13
Purple Route Improvements (mostly frequency)	13
Route 194	13
State Farm Route Improvements (mostly frequency)	12
"Everywhere"	10
Mountaineer Village	9
University Highlands	8
US 421 general	8
Vilas	8
Red Route Improvements (mostly frequency)	7
US 421 South	7
Walmart	7
Deerfield	6
Express Route (mostly frequency)	6
Meadowview	6
Pink Route Improvements (mostly frequency)	5
Banner Elk	4
More routes to grocery stores	4
Stadium Drive	4
US 421 North	4
APH	3
Charlotte	3
Kensington Meadows	3
More routes closer to Medical Center	3
Park and rides	3
Deep Gap	2
New Market Area	2
A bus every 2-3 hours to Zionville	
A weekend stop at a laudromat	

Table 3-14 (continued)

Place/Improvements Listed	Number
Asheville	
Bavarian Village Apts.	
Better access for senior citizens, especially those with mobility issues	
Better roads in Boone	
Between Water and Depot Street- Wilcox Warehouse Apts.	
Bus/bike lanes	
Castleford Road	
Daniel Boone Drive off of 421	
East side of town	
East Village Apts	
Foscoe	
From 421, up to Wilson Ridge Road, to Deerfield, then 321, then to campus	
Green Valley	
Greenbriar Road	
Heavenly Mountain	
Howards Creek Road	
Junaluska	
Major apt complexes late night- Friday, Saturday	
Meat Camp	
Modified Saturday run: Raley to App Heights, College Shelter, McDonalds, Mall, Walmart, State Farm	
Need more bike paths all over	
New Market Centre- extended hours for movies	
Oak Street	
Old Bristol Road	
Old Highway 421	
Sugar Grove	
Watauga Village Apts.	
Westview Heights	
Whispering Hills	
Willow Valley Golf Course	

Table 3-15: Intra-Regional Connections

If you think there is a need for additional intra-regional services between jurisdictions within the region, or intercity bus services in the broader Western North Carolina region, please indicate the most important linkages:

Answer Options	Response Percent	Response Count
Boone and Charlotte	70.4%	328
Boone and Asheville	45.3%	211
Boone and Hickory	27.5%	128
Boone and Wilkesboro	25.8%	120
Boone and Lenoir	13.5%	63
Boone and Statesville	7.5%	35
Boone and Morganton	5.4%	25
Other Links	16.7%	78
	<i>answered question</i>	466
	<i>skipped question</i>	623
	#	
To/from: Boone and Raleigh/Durham/Chapel Hill area	35	
Boone and Blowing Rock	6	
Boone and Winston-Salem	6	
Greensboro	5	
Boone and Jefferson/West Jefferson	4	
Boone to Charlotte	3	
Boone/Wilmington	3	
Boone to airports	2	
Ashe County to ASU		
Boone to Appalachian Campus.		
Boone to Bristol/tri-cities airport		
Boone/California		
Boone and Deep Gap		
Boone and Knoxville		
Boone and Lexington		
Boone to Myrtle Beach		
Boone/Parkway		
Boone and Salisbury		
Boone/Vilas		
Boone and Washington		
More routes outside of town		

Table 3-15 (continued)

Intra-Inter-City Bus Linkages, Continued

I believe that Public transportation is the key to ending carbon emissions, so every town should be linked.

Route to away football games

I would like to see it cover more of the Boone area - I

live off of Brown's Chapel Road

There should be an Appalcart Bus that exclusively serves the University Highlands. And Pop 105

shouldn't go to the Highlands

and Paris

Doctors offices

Table 3-16: Potential Service Improvements

If you see a need for additional days/hours/frequency of service for the current AppalCART services, please indicate these below.

Answer Options	Response Percent	Response Count
More frequent service	59.6%	368
Service later in the evenings	58.7%	362
Additional Saturday Service	45.5%	281
Additional Sunday service	42.0%	259
Service earlier in the mornings	23.3%	144
Other	8.9%	55
	<i>answered question</i>	617
	<i>skipped question</i>	472

Other (please specify):

Running buses that go around town until 2:30 a.m.

Express Route needs more frequent service that goes later into the evening.

Buses that are ON TIME.

More frequent service during peak times, which I believe is mostly already attended to.

Some routes could probably use one more bus (Purple, for example) during busy times. I'd also like to see other routes besides Red running on Sundays - even if it was a highly reduced schedule!

Another AppalCART Green Route for more frequent service.

The purple route bus is ALWAYS full in the mornings and so many people can't get on the bus.

Definitely later in the evenings so students can ride home safely after spending late nights in the library or at work.

Divide the Red Route into two separate routes. Enabling a 30 minute turn-around for the hospital area, as well as State Farm Parking-lot. Additionally, later Friday and Saturday night service would provide a much needed mode of transportation for people out at bars and such. After all, this is a college town, and who can argue against trying to ensure public safety. If necessary, you could even charge for certain "after hours" rides on the weekend.

Morning class times when hundreds of students need to get to campus at the same time.

Another bus on the green route.

Provide more routes that have campus stops that have a departure time of after 5pm so more employees can use. The one route I can take I either have to leave work early or stay two hours late.

Frequent service: going out to W King St (green route on the :30) on weekday afternoons.

24 Hour Service.

Service to State Farm parking lot later in the night, and later on Sundays.

Pop 105 additional morning and late afternoon travel.

If there was a route (or two) that covered the city LATE on Fri/Sat night, I believe there would be less drunk driving in Boone. I find it to be worth the cost, even if a charge (maybe 50 cents?) applied.

Prevent drinking and driving.

Earlier State Farm route on Sundays and State Farm running on Saturdays.

Green route should have more frequent stops at East Village.

Definitely provide services past 2 am! So so so so so so much drunk driving would be avoided.

Late night routes, generic routes covering a lot of the Watauga County stops.

Table 3-16 (continued)

Pop 105 bus should run for a longer amount of time on Saturdays, and it should start running on Sundays.
One late night bus that ran every hour would suffice, and this would reduce a lot of drunk driving.

Saturday night.

Popular stops, such as University Highlands tend to fill the buses around mid-morning, and prevent people such as myself from getting on at later stops.

More routes to State Farm Parking Lot instead of just the Red route during the day.

More room for everybody during school hours.

State farm routes on the weekends.

Additional buses- often times the buses are over-crowded or full.

An option could be to either have another Green route bus and/or have a separate bus just for the highlands.

There needs to be additional buses for the Purple Route.

There needs to be another Green Route, just like there are two Orange Routes!

Later evening, on campus.

On reading day/eve or before school holidays change to regular Friday hours for Campus routes.

Additional services for football games and other sporting events.

More than one Red Route bus and Run until 3am.

More routes running during the day.

Change red route to make it more on time and more frequent.

I can't stay in the library past 11 because I won't have a bus ride back to my apartment. I rely on the bus to take me to campus so I don't have to pay for parking, but it is an inconvenience to not have late-night service available.

I rarely ride the bus because my stop is after Highlands and it is ALWAYS full, I hate being told I can't get on because 2,000 of those kids want to ride the bus, I have just as much as a right as they do.

More routes that run to state farm parking lot during the day, besides the red route.

The popular routes fill up quickly and often there is not enough space. I'm sure there is a violation of the maximum occupancy regulation.

Sometimes if you are parked in the State Farm Parking lot on weekends the buses are not running at that time, so the only thing that can be done is to walk or call a friend and hope they can come pick you up.

Night time on the weekends... Currently since there is no service, it encourages drinking and driving.

Routes running later into the night.

Food stores.

More frequent summer services for commuters.

The more, the better!

Later service! many jobs end later than 11 pm and I cant get home.

Late Night till 2 on the weekends.

Stop catering to ASU students. There are many other people who would ride the AppalCART if you had operating times/hours that weren't crap.

Additional summer service.

There should be at least one that goes up to green wood lot on campus on Saturdays for students that live at App. Heights.

Sunday AM and weekend PM for bars.

Table 3-17: Potential Quality Improvements

If you see a need for quality of service improvements for AppalCART, please check all that apply:

Answer Options	Response Percent	Response Count
Improved on-time performance	72.6%	438
Additional bus shelters and benches	61.5%	371
More informative website	26.0%	157
Improved access to transit information	25.4%	153
Safer buses	10.0%	60
More helpful staff	9.0%	54
Cleaner buses	7.6%	46
Other (please specify):	15.6%	94
	<i>answered question</i>	603
	<i>skipped question</i>	486

Other:

Bus tracking/GPS/phone APP/web to track- 19 suggestions.

Additional buses to run routes during prime travel times- 6 suggestions.

Solar powered heating under the bus shelters for the winter

Better alerts to weather (generally snow) related delays and or cancellations. Text messages would be great.

Better communication during severe weather conditions.

Better drivers!

Better infrastructure such as safer bus stops, unlike the one across from Winkler's Meadow. Also improved roads and routes that cater to community members and not just students. The drivers have a tendency to be hellbent in their driving style. More training may be necessary.

Better lighting at some bus stops.

Bus actually stops at the stop instead of speeding past because its over capacity.

Bus drivers should not force students to be subjected to religious talkshows. I come to school to learn, and my rights are infringed when I listen to a program denouncing my faith and humanity.

Bus shelters at the extremities of the entire Appalcart route would be nice, sort of like park-n-rides. Maybe if there were better waiting areas, people may use them more.

Buses could be a bit more presentable. Seem to always need a wash.

Buses do not arrive on time and are often full, causing me to be late to class

Continue service during snow.

Don;t take my tuition money for transportation costs if the service provided is unacceptable.

Drivers patient enough not to scream at construction traffic.

Drivers who know how to properly accelerate and brake the bus... EVERY TIME my friends or myself are on the AppalCART, we are sick to our stomachs when we get off...

Easier access to limited route schedules.

Table 3-17 (continued)

Especially dealing with the Red route, this is the most common bus for Freshman since we have to park 1,000 miles away in State Farm, so it would be nice if the Red route wasn't so long and didn't only run on the hour. The State Farm route should run everyday.

Expand a line out to all of the apartments on Kellwood Drive/Deerfield area.

Extend the routes in Boone.

Forgot to add this earlier: AppalCART to serve the Kellwood area.

Get the drunks and bums off the buses.

I know that on-time performance is tough with the traffic, new WHS, and road construction.

I think the drivers should be more careful when driving, for example a lot of the AppalCart drivers slam on the breaks and hit the gas very quickly.

If you're early on the route, don't just keep on driving by, we don't know if you're going to be early or late, and who wants to stand out in the snow an extra 10 minutes because you never know when its going to come. They need to wait at each stop the appropriate amount of time. or at least slow down to see if i'm almost to the stop before they fly on by and leave me if they're going to be early.

Improved drivers. I've fallen off the seat before because a driver took a sharp turn too fast and I've seen too many of them running red lights.

Infant support(car seat type things).

Less drivebys.

Less heat.

Longer hours for purple route!!!!!!!!!!!!!!!!!!!!!!.

Longer routes.

Major expansion of routes/areas services within Boone and close to town.

Many of the drivers are safe, but some can improve.

More Appalcarts- they are ALWAYS FULL.

More bike racks if possible.

More buses.

More buses in general.

More consistency between stops specified on website/brochure, and stops where Appalcart actually stops. There are a couple of stops listed on the website/brochure, that the drivers say are now "special stops" (they stop for me anyway, if I request it, but there's no sign there, and they say it's not a standard stop). Maybe information needs to be updated more. Also, it would be super-helpful if schedules were posted AT the stops (as is the standard in bigger cities), so that you can check the schedule AT the stop itself - not just at the major stops.

More consistent arrival times, stick to schedule. Especially on the orange route, bus arrival times are unpredictable. Sometimes they are running extremely late, sometimes they are on time, and other times they come before the listed time and don't wait.

More frequent service to and from the mall. It currently takes less time to walk, but only if you want to play chicken across 105.

More frequent stops other than every half hour.

More locations!!!!

more postings of stop times around bus stops.

More pop 105.

Table 3-17 (continued)

More routes that include 105 south from Highlands to Wendys.
More routes, like more from University Highlands to places for shopping and things.
not driving past when the bus isn't anywhere near capacity.

Not pack the state farm bus as tightly on the weekends, maybe have more frequent buses that would lessen the amount of people standing on the bus.
Phone Operators are often very rude

prefer that drivers have a pen to mark off trip tickets instead of tearing. Would like for drivers to back around in my drive-way.
Pro-active maintenance of vehicles.
Readiness w/ snow. Waited an hour in blizzard for bus.
Really nice tour buses (with champagne).
Safer conditions for the drivers (i have many friends that drive).
Safer drivers.
service outside the city limits of Boone.
Some bus drivers need to be better about being early. When they're more than 5 minutes early, it's really difficult to catch the bus.
Sometimes the buses are full and some have to wait for it to come around again.
stricter routes. sometimes buses go on "reverse" route and no one knows but the driver.
Student only.

The appalcart system is confusing and there needs to be more buses with less stoppage and a system that lets us know where the buses are so we're not waiting in the cold for an hour.

The busses are to often late or early, even before the road construction, and there are at least weekly times that I have been late for class or work because of driver error on time.
The walmart bus stop needs a light. It is not safe at night. too many hobos go there.
the website is not user friendly, moreover, the times aren't provided on all cart stops.
The website is very difficult to understand and get to the links you need. I wouldn't have understood it if it wasn't for help of a peer.

There was a bus driver on blue that wouldn't let my friend and her baby off at the stop she rang for, and he would not let her off until they got to the broyhill.
To never be early.
Two driver assaults in 2010, drivers need protecting.
Two way routes not round trips.
University hall buses weren't going up for a while i had to request to be taken up there multiple times.
Women, elderly, and handicap should have priority seating.

Non-Users of Public Transportation

Just under 9.4% of the survey respondents indicated that they do not use any form of public transportation. The number one reason cited for not using public transportation was “have to wait too long for the bus/van or between buses/vans.” The number two reason cited for not using public transportation was that “buses/vans are unreliable/late,” followed by “the hours of operation are too limited.”

Over 96% of survey respondents indicated that they would use public transportation services in Watauga County if there was a service that met their travel needs.

Potential Financing Mechanisms

The survey also asked the participants to indicate if they would support either of two specific financing mechanisms that could be used to help fund public transportation improvements in Watauga County. Table 3-18 provides these responses, which indicate that just over half of the survey respondents would not support a fee or tax to help fund public transportation improvements in the County. Respondents could check more than one option, which is why the combination of the responses in support of the vehicle registration fee (26.3%) and the ¼ cent sales tax (34.5%) add up to 60.8%, which is higher than the 51.8% who indicated that they would not support either of the options.

Table 3-18

Potential Financing Mechanisms		
Answer Options	Response Percent	Response Count
A vehicle registration fee of up to \$7.00 per vehicle.	26.3%	257
A one-quarter cent sales tax.	34.5%	337
I would not support either of these options, but I do feel public transportation in the County is important.	50.8%	496
I would not support either of these options, and I do not feel that public transportation in the County is important.	1.0%	10
	<i>answered question</i>	976
	<i>skipped question</i>	113

Demographics

Table 3-19 provides the survey responses to the demographic questions. As these data show, the majority of the survey respondents were full-time students, in the 18-25 year age category.

Comments

Over 300 open-ended comments were provided by survey respondents. These comments offer a diverse set of opinions, both positive and negative concerning AppalCART, as well as offering a number of suggestions for improving public transportation in the County. These responses generally echo the sentiments noted elsewhere on the survey (i.e., with regard to needed improvements). The full list of comments is provided in Appendix F.

Watauga County Project on Aging Survey

In 2009, the Watauga County Project on Aging surveyed 29 older adults at their location in Boone regarding transportation services provided by AppalCART. Of the 29 respondents, 20 reported receiving transportation to the Senior Center, and 21 reported using the service to access shopping and other services in the community. All 29 respondents reported they thought that AppalCART was a beneficial service, and that the AppalCART staff was courteous and helpful.

Respondents to the Watauga County Project on Aging survey also provided comments on AppalCART services. These results are included in the summary of the survey in Appendix G.

SECTION V: STAKEHOLDER INPUT CONCERNING TRANSIT NEEDS

The public transportation needs analysis also included obtaining input from a variety of community stakeholders. This was gained from the various agencies and organizations represented on the CTSP Steering Committee, as well as through interviews with appropriate local governmental officials.

CTSP Steering Committee

During the initial meeting with the CTSP Steering Committee on May 20, 2010, Committee members and AppalCART staff provided comments on the issues they

Table 3-19: Public Survey Demographics

How would you classify yourself?

African American:	<u>1.53%</u>	Hispanic/Latino:	<u>1.74%</u>
Asian:	<u>1.33%</u>	Native American:	<u>0.72%</u>
Caucasian:	<u>91.32%</u>	Other:	<u>3.37%</u>
		(Blank):	<u>10.01%</u>

Do you have a driver's license?

Yes:	<u>95.71%</u>	(Blank):	<u>10.01%</u>
No:	<u>4.29%</u>		

How many vehicles (cars, trucks, motorcycles) are available in the household where you live?

Zero:	<u>6.30%</u>	Three:	<u>18.19%</u>
One:	<u>38.41%</u>	Four or more:	<u>15.65%</u>
Two:	<u>21.44%</u>	(Blank):	<u>9.64%</u>

Please indicate your age group:

Under 12 years old:	<u>0.00%</u>	26-55 years old:	<u>8.95%</u>
12-17 years old:	<u>0.10%</u>	56-64 years old:	<u>1.02%</u>
18-25 years old:	<u>89.62%</u>	65 years old or older:	<u>0.31%</u>
		(Blank):	<u>9.73%</u>

Which of the following best describes your current employment status? (You may check more than one)

Employed, full-time:	<u>7.32%</u>	Student, part-time:	<u>8.34%</u>
Employed, part-time:	<u>36.62%</u>	Homemaker:	<u>0.61%</u>
Retired:	<u>0.51%</u>	Unemployed:	<u>6.00%</u>
Student, full-time:	<u>84.44%</u>	Other:	<u>0.71%</u>
		(Blank):	<u>9.73%</u>

Please check your approximate total annual household income from all sources:

\$14,999 or less:	<u>59.80%</u>	\$60,000-\$74,999:	<u>5.85%</u>
\$15,000-\$29,999:	<u>6.07%</u>	\$75,000 or higher:	<u>14.52%</u>
\$30,000-\$44,999:	<u>7.04%</u>	(Blank):	<u>15.24%</u>
\$45,000-\$59,999:	<u>6.72%</u>		

considered to be most important. These issues are summarized below, though are not presented in any particular priority order:

- There are a number of development issues that will likely affect the demand for transit, both in the Town of Boone and in the outlying areas of Watauga County. The projects identified by Steering Committee members include the following:
 - The new Watauga High School opened in the Fall of 2010. It is located on Old US 421, about a mile east of Boone. AppalCART's Green Route serves the new location and AppalCART is working to get a shelter for the new school site.
 - The current high school site is located in Boone, along NC105, just west of the Mall area. This site will be re-developed, though a specific site plan has not been approved.
 - The High Country Inn/Water Wheel, near the current high school site on NC 105, is redeveloping and will become student housing. This area is served by AppalCART's POP105 Route, but the route currently operates as a one-way loop, with the stop on the other side of the street. The CTSP will look at potential ways to adjust the POP 105 to better serve these new developments.
 - Heavenly Mountain, a former retreat center located about 9 miles southeast of Boone, is re-developing as an apartment complex. About 200 Appalachian State students already reside in these new apartments and about 200 more are expected to move there when the re-development is completed. The management of Heavenly Mountain has asked AppalCART to consider serving the area. There are issues with this request, as the road to access the area is difficult and there are few other opportunities for ridership between Boone and Heavenly Mountain.
 - There is a proposal to build a 450-unit apartment complex in Vilas. The developer met with AppalCART.
 - Several developers have proposed "mega" apartment complexes to accommodate the student demand for higher quality housing. There is currently a short-term moratorium on these types of developments in Boone, as the Town is concerned that all of the available land will be developed as housing and there will not be space available for other uses. Town leaders are looking at ways to incorporate a mix of uses into the proposed projects.
 - There is a multi-family townhouse development planned on Poplar Grove Road in Boone.
 - There may be park-and-ride opportunities in the County and in the Town of Boone. There are traffic and parking issues in the Town of Boone and using outlying intercept lots with shuttle service may be a way to reduce

traffic congestion and reduce the demand for in-town parking. There are also several major employers in Boone that could potentially participate. There may also be a need for corridor park-and-ride lots with commuter-oriented and/or tourist-oriented transit services, both for people coming into Boone and for those traveling out of the County along one of the major travel corridors such as US 421 or US 321.

- There may be a market for Transportation Demand Management (TDM). The goal of a TDM program is to promote alternative transportation options to the single occupant vehicle, including carpooling, vanpooling, telecommuting, transit, bicycle, flexible work hours, compressed work weeks and parking policies/pricing strategies. A TDM program with several partners, including ASU, AppalCART, the County, and the Town of Boone could be successful in reducing traffic and reducing the need for parking in the area.
- There is a need for additional service in the rural areas. Lower income families are increasingly living farther out of town, as the housing is less expensive. It is difficult for people to access job opportunities when they live in the more rural portions of the County. Not all of AppalCART's rural routes operate on a daily basis.
- Pedestrian safety is a major concern in the region, as there are a number of roads that AppalCART serves that do not have crosswalks or signalized intersections for safe crossing.
- There are service jobs in Foscoe and Blowing Rock that are available for Watauga Opportunities' participants. A barrier to accessing these opportunities is often transportation. Blowing Rock is served three times a day by AppalCART, but the times may need to be adjusted to meet more job-oriented needs.
- There is a need for non-traditional hours so that service workers can access job opportunities.
- The current AppalCART facility could potentially be used as a multi-modal center, allowing for connections with regional services.
- There may be a need for additional regional service to better meet commuter needs, both for the existing US 421 Corridor and the US 321 Corridor. It should be noted that intercity bus service between Boone and Charlotte was re-instated along the 321 Corridor in the fall of 2010.

Town of Blowing Rock

Currently, AppalCART's rural routes provide service between Boone and Blowing Rock. KFH Group staff interviewed the Town Manager for Blowing Rock, and he expressed familiarity with services provided by AppalCART since he serves on the Transportation Committee for the High Country Council of Governments. He

noted though, that the community-at-large is not as familiar with AppalCART services, primarily because residents are not typical transit users and since many residents do not live in the area year round. Many of Blowing Rock's residents are "snowbirds" who have a primary residence in Florida or other nearby states and a second home in the Blowing Rock area. Property values in Blowing Rock are high, and therefore these residents have higher incomes.

The Blowing Rock Town Manager reported that he hears little in regard to public transit needs. However, he provided the following comments related to transportation needs and possible service improvements:

- The majority of people who work in Blowing Rock cannot afford to live in Blowing Rock. Many live in surrounding rural areas, particularly in the northern section of adjacent Caldwell County.
- Many local residents travel to Boone for work at ASU, while others travel to Hickory for their jobs.
- Some ASU students serve as the staff for summer camps in the Blowing Rock area, while others work at the restaurants in Blowing Rock. However, these students drive themselves, and provide little input on transportation issues unless they receive a parking ticket in town.
- Blowing Rock Hospital, part of the Appalachian Regional Healthcare System, includes a long-term care facility. There are plans to expand services at this location. This facility has involvement with the current nursing program at ASU.
- There are parking and traffic issues in Blowing Rock during special events (i.e. Art in the Park, Symphony by the Lake) and during high tourist seasons (i.e. holidays, fall foliage). Currently, the Chamber of Commerce contracts with a private provider to operate a trolley that serves as a parking shuttle during these peak periods.
- A parking study was completed in 2008. The study did not include any recommendations in regard to transit or shuttle services.
- If some type of park and ride shuttle services were considered, logical locations would include the Tanger Outlets and Food Lion.
- The Town of Blowing Rock is participating in the study of a possible Boone bypass.

Town of Seven Devils

KFH Group staff conducted a phone interview with the Town Manager for Seven Devils. He expressed little need for transit services, noting the seasonal nature of this resort community and that most residents do not live in the area year round. Many of these residents have a primary residence in other areas of North Carolina or in Florida or other nearby states and a second home in Seven Devils. Similar to Blowing Rock, property values in Seven Devils are high, and therefore these residents have higher incomes. Only about 150 people are year-long residents, and have no reported unmet transportation needs. The Town of Seven Devils only employs 13 people.

Seven Devils is home to the Hawksnest resort that features a large snow tubing park and a zip line course. Since these recreational activities are scheduled by particular session times and people arrive at different times throughout the day, there are little traffic issues.

SUMMARY AND ANALYSIS

The compilation of the various data sources used in the transit needs analysis points to the following areas of transit need that will be the focus of the service alternatives for the CTSP:

- The potential to provide frequent transit service for AppalCART's fixed routes, both to relieve overcrowding and to provide more convenient options.
- The need to explore the expansion of fixed-route services to some specific areas of growth, including specific destinations in the Town of Boone, areas adjacent to the Town, and the more rural areas.
- An exploration of how a park and ride network and potential travel demand strategies could work in Watauga County.
- The need to explore extending the hours of service.
- A specific look at some of the routes to see if there could be a transition from a loop pattern to a bi-directional pattern.
- A look at increasing the availability of passenger waiting shelters and an exploration of a "next bus" type of electronic system that would tell passengers the next arrival of a particular bus in real time.

Chapter 4

Service and Organizational Alternatives

INTRODUCTION

The first three chapters prepared for the AppalCART CTSP documented transit needs in Watauga County and outlined the services currently available. The development of this data collection and analysis showed that there are some unmet transit needs in the study area, as well as capacity issues with some of the fixed routes. The purpose of this chapter is to provide a series of service and organizational alternatives that could be implemented to help improve capacity and further meet transit needs in Watauga County. It should be noted that these alternatives were meant to serve as a starting point and were modified during the alternatives analysis phase of the CTSP as reflected in Chapter 5. For each alternative there is a description of the concept, a discussion of the advantages and disadvantages, and a cost estimate. Service alternatives are presented first, followed by the organizational alternatives. The five-year plan (Chapter 5) was constructed from these alternatives.

SERVICE ALTERNATIVES

The service alternatives have been organized into three general categories: potential improvements to the current fixed-route network in the Boone area; potential improvements focused on areas of Watauga County outside of Boone; and potential quality of service improvements.

Potential Improvements for the Current Fixed-Route Network

The transit needs analysis discovered that the current fixed routes are, for the most part, serving the areas where they are needed. Potential improvements for the fixed routes focus on increasing capacity, improving frequency of service, making

minor route adjustments/extensions, and extending the hours of service. These alternatives are outlined below.

Service Improvement #1: Improve Service Frequencies

The survey work and the analysis of previous plans and studies indicated that the community would like more frequent transit service. The Campus Master Plan suggested five-minute peak period frequency for selected routes and the Town of Boone Plan suggested 7-10 minute peak frequency. These frequencies represent a significant expansion and are likely more of a long-term goal for AppalCART.

For this CTSP alternative the focus is on improving the frequency of service, with the first step including ensuring that all fixed routes have 30-minute frequency, followed by adding frequency to address overcrowding, followed by improving peak period frequency to improve service convenience. Specific improvements to consider are:

- **Red Route -- improve service frequency to 30 minutes.** The Red Route is currently the only route in the AppalCART fixed-route network that does not have at least 30-minute frequencies. Several comments from the public indicated a need for more frequent service to particular locations on the Red Route, most notably the Watauga Medical Center, Wal-Mart, and the State Farm lot. In addition, Appalachian State is planning to build a facility across the street from the hospital, and this facility will house the Nursing Program, as well as several others. Preliminary information suggests that this facility is about 2.5 years away from opening.
 - **Advantages and Disadvantages.** The Red Route provides connectivity between Appalachian State University, downtown Boone, and the commercial corridor of US 321/Blowing Rock Road. Improving frequency on this route will improve access for residents and students to retail, employment, and medical facilities in the corridor. Providing 30-minute service on the Red Route will also meet one of AppalCART's goals, which is to provide 30-minute service on all in-town fixed routes. The disadvantages to adding a second bus to this route include a possible reduction in productivity (i.e., service frequency will double, but ridership will likely not) and cost.
 - **Costs.** The fully-allocated operating costs to implement a second bus on the Red Route are estimated to be \$271,000 annually. A vehicle will also be needed. A 35-foot hybrid is currently priced at \$575,000 and a conventional bus of the same length is currently priced at \$375,000.

- **Pop 105 -- add a vehicle to reduce overcrowding.** The Pop 105 route currently has between one and three vehicles assigned, depending upon the time of year and the time of day. The current peak service (three vehicles) is between 7:23 a.m. and 10:20 a.m. during the fall and spring semesters at ASU. Several survey respondents indicated that even with this relatively high level of service, the buses were still overcrowded and that it was a particular problem for people who live on the section of the route that is after University Highlands, as there is a large concentration of AppalCART riders from the Highlands.

There are several potential ways that AppalCART could add capacity to the Pop 105 Route, two of which also address the issue of pedestrian safety and the difficulty in crossing NC105 along the route. These potential solutions are:

- *Add a fourth bus during the peak period*, following the same route, and extend the third bus for a longer period of time. The advantages to this solution are that the route remains the same, thus eliminating rider confusion. The disadvantage to this solution is that it does not address the pedestrian safety issue.
 - **Cost.** Adding the fourth bus during peak period, during the fall and spring ASU semesters only, would add about 600 annual operating hours, or \$33,000 in fully-allocated annual operating expenses. Extending the third bus to run a longer span of service (e.g., three additional hours per weekday during the ASU spring and fall semesters) would also add about 600 annual operating hours, or \$33,000 in fully-allocated annual operating expenses. A vehicle would be required to add the fourth bus, at either a cost of \$575,000 for a hybrid or \$375,000 for a conventional bus.
- *Add a bus during all service periods to run the opposite direction and NOT serve University Highlands.* This would provide bi-directional service on the route, add capacity, address the concerns of people on the route who do not live in the University Highlands, and address the issue of pedestrian safety. The disadvantage of this approach is that it does not serve a major trip generator (Highlands).
 - **Cost.** Adding a bus to the route during all service periods would result in 4,300 additional annual revenue service hours, or about \$236,000 in fully-allocated operating costs. A vehicle would be required, at either a cost of \$575,000 for a hybrid or \$375,000 for a conventional bus.
- *Split the route and add a vehicle.* The third way to address the Pop105 issues would be to split the route into two, with either Caldwell

Community College and Technical Institute (CCTI) or University Highlands serving as the terminus, with one leg serving from CCTI/Highlands to campus via NC105 Bypass, and the second leg serving from CCTI/Highlands, then left onto NC105 Bypass, then right on King Street to campus. This approach would address the issue of bi-directional service and would add capacity; however, if CCTI is chosen, then two of the four peak period trips would not serve the Highlands and if the Highlands is chosen, there would be a difficult left to make back out onto the NC 105 Bypass.

- **Cost.** For this alternative, we will assume a level of service equivalent to adding a bus for all service periods, which would result in 4,300 additional annual revenue service hours, or about \$236,000 in fully-allocated operating costs. A vehicle would be required, at either a cost of \$575,000 for a hybrid or \$375,000 for a conventional bus.
- o **Add an express bus dedicated solely to the Highlands, peak period only.** This alternative would target the high demand from the Highlands and free up capacity (on the other three Pop105 vehicles) for other riders along the route; however, it would also only offer more frequent service to people who live in the Highlands, and would not address the pedestrian safety issues.
 - **Cost.** Adding the fourth bus during peak period during the fall and spring ASU semesters only, would add about 600 annual operating hours, or \$33,000 in fully-allocated annual operating expenses. A vehicle would be required, at either a cost of \$575,000 for a hybrid or \$375,000 for a conventional bus.
- **Targeted Increases in Frequency.** The purpose of this alternative is to plan for improved frequency as needed, based on capacity constraints. The concept is to budget for a certain number of additional service hours each year, to be applied to the routes where there is the most demand. This alternative would help AppalCART remain flexible and able to respond to new developments as needed. The first route to examine (other than Red and Pop 105, which were discussed above) is likely the Purple Route, as many comments were received that suggested additional capacity was needed on this route.
 - o **Cost.** This alternative proposes to add one bus' worth of peak period service for each year of the CTSP. Assuming six hours per day, five days a week, 40 weeks of the year, the annual revenue service hours would equate to 1,200 and the corresponding fully allocated cost would be \$66,000 annually. A vehicle would also be needed, at either \$575,000 or \$375,000.

-
- **Increased Frequency Based on Policy.** In the ASU and Town of Boone plans, there were references to desired transit frequency that were based on convenience and policy, rather than transit demand. This alternative focuses on building the AppalCART system further, so that the in-town fixed routes offer ten-minute frequency during peak times. This alternative would require a major transit expansion and may not be feasible in the short-term.
 - **Cost.** If ten minute frequency were to be offered during peak periods (three hours a.m. and three hours p.m.), on all of the fixed routes during the Appalachian State spring and fall semesters (about 40 weeks), the total additional service hours would approximate 23,400, with corresponding annual operating costs of \$1,287,000 and 23 additional vehicles.

Service Improvement #2: Extend Green Route on Both Ends to Vilas (west) and to the Driver's License Office (east)

The Green Route currently offers service along the US 421 Corridor, with an eastern terminus at the Hunger Coalition site, which is located on Brook Hollow Drive, about ¼ mile off of Bamboo Drive, and a western terminus at Old Bristol Road. This alternative proposes to extend the Green Route on the eastern end to the new North Carolina State Drivers' License Office, which is located at 4469 Bamboo Road, about 1 mile from the Brook Hollow/Bamboo Drive intersection and extend it on the western end when the new student apartment development is built in Vilas. This alternative would add 2.3 miles to the eastern portion of the route (8.5 minutes) and 5.9 miles on the western portion (24 minutes). Implementing both sides of this alternative would require a third bus to be added to the route to maintain 30-minute headways (a second bus was added for the Fall 2010 semester). Figure 4-1 provides a map of this alternative.

Implementing this alternative will meet some of the needs articulated by the community via the survey, and will add service to the Drivers' License Office; however, given the low densities in between trip generators, it is likely that the productivity on these extensions will be relatively low. A possible compromise would be to offer these extensions every other trip, or on a few specified trips each day.

- **Cost.** Adding a bus to the Green Route to accommodate the route extensions, peak periods only (6 hours per day, including Saturdays for the western extension), will result in about 1,860 additional annual revenue hours at a fully allocated expense of about \$102,000. An additional vehicle is priced at either \$575,000 for a hybrid bus or \$375,000 for a conventional bus.

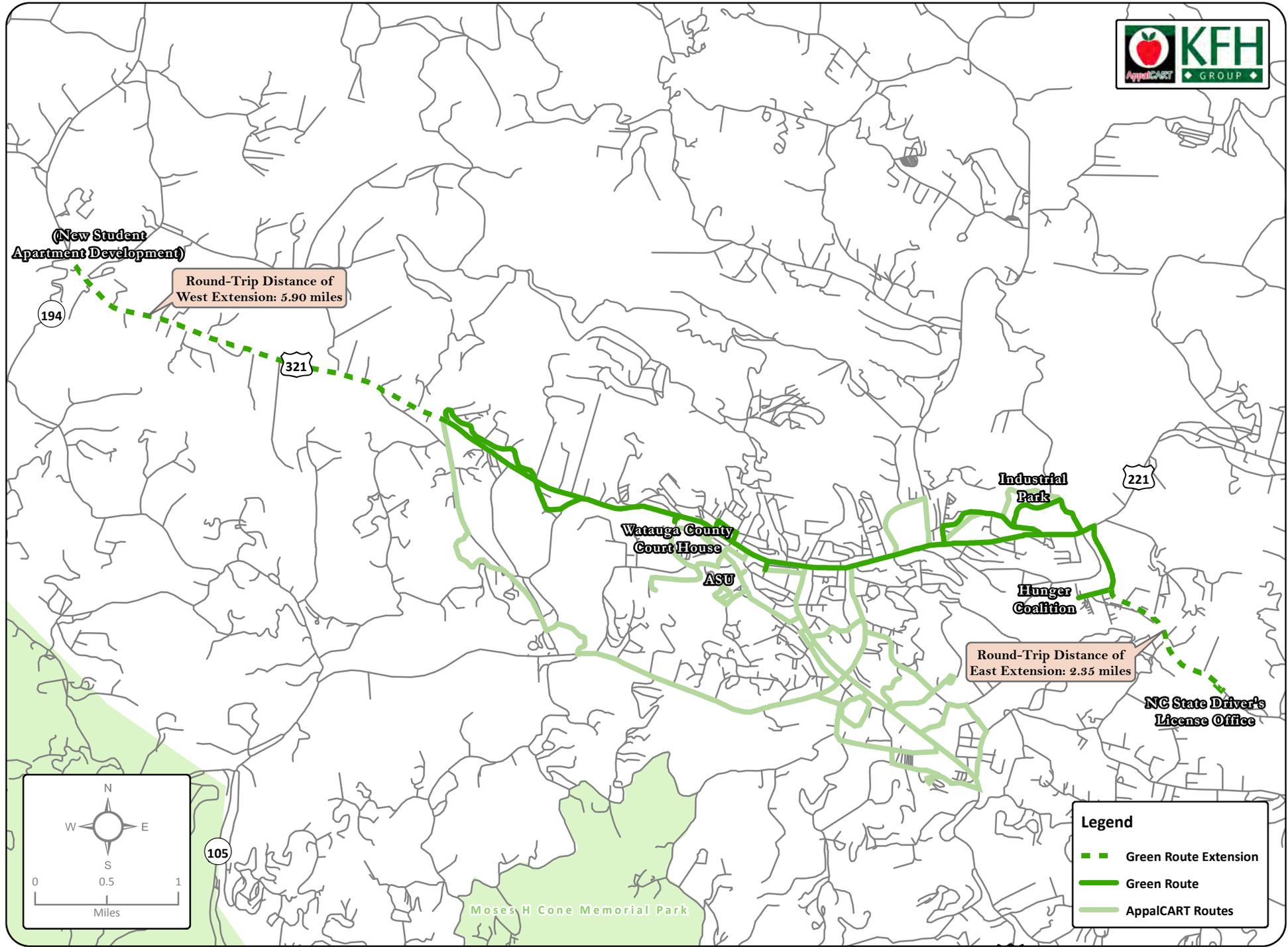


Figure 4-1: Service Improvement #2 - Extend Green Route on Both Ends

Service Improvement #3: Offer Later Hours of Service

A number of comments received via the surveys indicated that riders would like to have service runs later on Saturdays and late night on Fridays and Saturdays.

- **Later Saturday Service.** This alternative focuses on extending service on Saturdays for the routes that currently have Saturday service. These are: Red, Green, Pop105, and Orange. Operating later on Saturday (along with ADA paratransit) would provide additional mobility options for bus riders to get to/from work, shopping, and other destinations after 5:00 p.m. on Saturdays.
 - **Cost.** If revenue service hours were to be added to each of these routes, plus ADA paratransit, using one vehicle per route (extending service until 9:00 p.m., year round), a total of 1,040 annual revenue hours would be added, at a cost of about \$57,200.

- **Late night Friday and Saturday Service.** Late night service was requested by students and by the Town of Boone. Late night service is geared toward providing mobility for people who work in the evenings, as well as for people who socialize in the evenings. Late night service is typically structured differently than day service, with perhaps one or two routes operating, targeting areas where riders need night service. There are often differences of opinion concerning night service in college environments -- some feel that these types of services enable people to over-consume alcoholic beverages, while others feel that these types of services prevent drunk driving. Driver security can be an issue for late night services as well. Late night service is provided in Asheville (until 1:30 a.m.) and Harrisonburg, but not in Wilmington.
 - **Cost.** If two vehicles plus ADA paratransit operated Fridays until 2:00 a.m. (about three hours later than current), during the ASU fall and spring semesters, the total additional Friday annual operating hours would be 360 (40 weeks, nine hours per week), for a total of \$19,800 in annual operating expenses. Extending Saturday service would require additional hours, as service currently ends on Saturdays at 5:30 p.m. or so. Saturday late night service, using three vehicles during the ASU fall and spring semesters, would equate to about 840 annual revenue hours and \$46,200. No additional vehicles would be required for either of these options.

Potential Improvements Focused on Areas Outside of Boone

While the areas outside of Boone do not have sufficient population densities to support the implementation of traditional fixed route services, there are some suggested improvements and service extensions that could be implemented to build upon

AppalCART's current rural Dial-A-Ride route network. These alternatives are discussed below.

Service Improvement #4: Strengthen Link to Blowing Rock

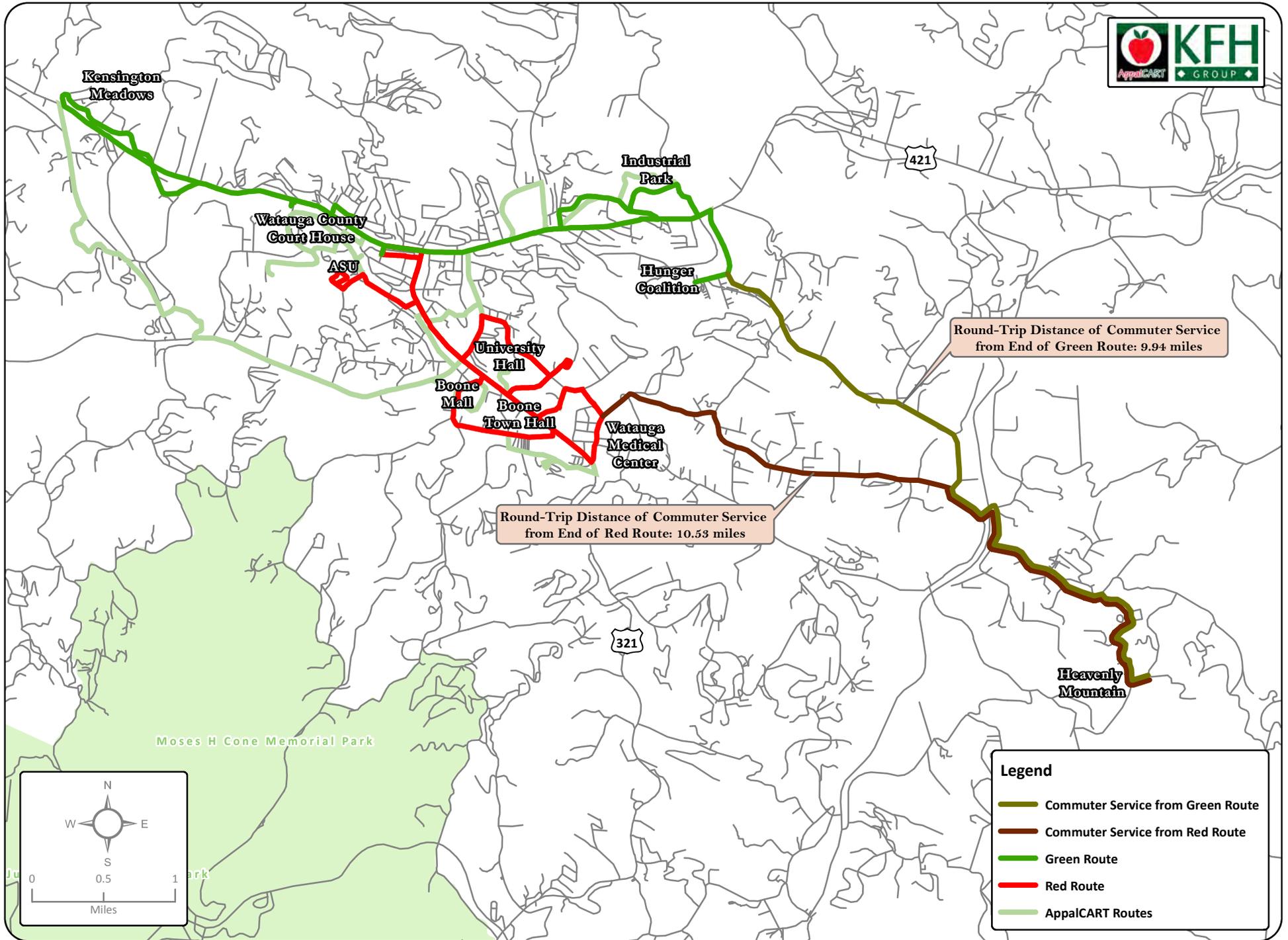
The number one request for geographic expansion within Watauga County via the survey efforts was for service to Blowing Rock. AppalCART already provides service to Blowing Rock via Rural Routes #3, #5, and #7. This alternative proposes to consolidate and expand these routes so that there is service between Boone and Blowing Rock on an hourly basis, between 7:15 a.m. and 5:00 p.m., Monday through Friday, and between 9:00 a.m. and 5:00 p.m. on Saturdays. The service could then be re-branded as "Blowing Rock," rather than different numbered rural routes. Route deviation, with specific time points that are always served, would be the service mode.

Consolidating these services and re-branding will potentially increase the awareness of the services to Blowing Rock and meet the demand for travel between the towns and along the Route 321 Corridor. One possible issue with this proposal is that Route #7 is sponsored by the Project on Aging. Consultation with the human service community will be needed to ensure that this arrangement will accommodate, and hopefully improve service for current riders.

- **Costs.** The current schedule already includes four round-trips Monday-Friday and six round trips Tuesday, Thursday, and Friday. The new scenario would add six trips Mondays and Wednesdays and four trips Tuesdays, Thursdays, and Fridays. New Saturday service would include eight trips. Total new additional service hours would be 32 per week, or 1,664 annually. Fully allocated operating expenses for the new hours would be about \$91,500 and one vehicle would be needed (perhaps a smaller one than is used for the fixed routes).

Service Improvement #5: Commuter Service for Heavenly Mountain

There is a former resort community located in southeastern Watauga County, off of Little Laurel Road near the Tar Ridge, that is being renovated and converted into apartments. There are already about 250 or so ASU students living there, with more expected. As shown in Figure 4-2, this location is remote, about five miles past the current terminus of the Green Route, and the terrain is mountainous. It is likely not feasible to offer traditional fixed-route service to this location, but a few targeted trips could serve to reduce the number of cars traveling to Boone and could perhaps be tied into some limited service in the Deerfield Road Corridor from Bamboo into Boone, which was also requested via the surveys.



4-9

Figure 4-2: Service Improvement #5 - Commuter Service for Heavenly Mountain

Implementing this type of service could reduce the number of cars on the rural roads and reduce the number of cars traveling into Boone, but AppalCART may wish to consider if doing so would set a precedent for other developers to assume that AppalCART will serve remote areas with concentrations of students. The productivity of this service will be limited, as there will be few opportunities for boarding and alighting. It may be more appealing to implement this type of service if the community financially supports the service.

- **Costs.** A round trip to Heavenly Mountain and back would likely take about two hours. If two morning trips and two afternoon trips are offered Monday through Friday year round, the total annual operating hours would be 2,080 or so and the corresponding costs would be about \$115,000 annually. A vehicle will also be needed.

Service Improvement #6: Commuter Van/Park and Ride System Serving Major Travel Corridors

The concept of remote park and ride lots serving major corridors in Watauga County, has been articulated by stakeholders, the surveys, and by local planning documents. The idea would be to provide ridesharing opportunities for people who work in Boone and live in the more rural areas of the County. The need for parking in Boone could be reduced, and traffic congestion in Boone could be reduced if a meaningful network of park and ride opportunities could be developed. This alternative is a companion to Organizational Alternative #3 - Transportation Demand Management. It is discussed as a service alternative, in recognition that people articulated a need for corridor service, but the demand is such that it may make more sense to begin corridor services as carpool/vanpool operations.

This alternative would focus on finding park and ride opportunities for the US 321 Corridor (western Watauga), the US 421 N Corridor from Tennessee, and the US 421/US221 Corridor in eastern Watauga. The NC 105 Corridor from Seven Devils may also be a candidate.

Park and ride lot arrangements include a number of different scenarios, including public ownership of the land and the lot; lease arrangements with lot owners (typically in a shared-use arrangement, such as a shopping center); and more informal agreements with lot owners. Identifying these opportunities would be one of the tasks for a TDM program, if this alternative is pursued. Park and ride options can be implemented without a TDM program, but they would likely be more effective if implemented together.

The van arrangements would also be a task for a TDM program, as there are a number of ways that rideshare programs can be structured. There are national vanpool operators, such as VPSI, and there is a rural vanpooling program in North Carolina operated by a company called 2Plus.

The costs for this alternative are variable, depending upon the particular park and ride and vanpool/carpool options that are implemented. A more complete discussion of the expenses are presented under the TDM Alternative, in the section of this chapter that discusses organizational alternatives.

Potential Quality of Service Improvements

This section of the alternatives highlights improvements targeting the quality of AppalCART's services. The focus of these improvements is to improve the availability of information for riders and to improve comfort and safety while waiting for the bus.

Quality of Service Improvement #1: Improved Access to Information -- Real-Time Bus Information

Real-time bus information is a technology that allows riders to know exactly where their desired bus is, via a number of different electronic media. The basic technology includes GPS transponders on vehicles that use satellite technology to transmit the vehicle's location. Riders can receive this information through a number of different ways, including via computers, electronic screens at bus stops, and cell phones. This technology is particularly widespread among university transit programs.

Real-time bus information eliminates the anxiety that riders sometimes feel when waiting for the bus, particularly when there are delays, as they know when the bus will be coming. These types of systems have been growing in popularity and several are in place in other systems in North Carolina, including the Wolfline (NC State) and Chapel Hill Transit. The Greensboro Transportation Authority, the Winston-Salem Transportation Authority, HiTran, and PART recently contracted with Nextbus to implement real-time bus information and the Wolfline uses TransLoc.

- **Cost.** The cost to implement real-time bus information is variable, depending upon what equipment is already installed on the vehicles and the "bells & whistles" chosen. There is typically a one-time cost per vehicle for the hardware and ongoing monthly operating expenses. Preliminary cost information solicited from vendors indicate that there are different ways to structure the costs (i.e., upfront versus monthly payment structure), and that a low end system is likely to be about \$10,000 per vehicle and a high end system about \$17,500 per vehicle.

Quality of Service Improvement #2: Bus Stop Amenities and Pedestrian Improvements

Survey respondents indicated that additional shelters are needed so that passengers are more comfortable and shielded from the weather while waiting for the bus. There is also a need to improve the pedestrian connections to and from bus stops, though this improvement will need to be in partnership with the Town of Boone and Appalachian State University.

Providing a more comfortable place for passengers to wait is a courtesy to riders and is also a way to increase the visibility of the transit system in the community and provide fixed locations to display transit information to the public (either electronically or more traditionally). The only disadvantage to providing additional shelters is cost.

- **Cost.** Shelters cost about \$10,000, installed. If ten additional shelters were placed at high activity stops throughout the system, the total cost would be \$100,000, requiring \$10,000 in local funds.

Summary of Service Alternatives

Table 4-1 provides a summary of the service alternatives.

ORGANIZATIONAL ALTERNATIVES

This section outlines a number of organizational alternatives. These alternatives do not focus on specific services, but rather on how AppalCART can make changes and improvements to better serve the community. The organizational alternatives address revenue generation, facilities, partnerships, and TDM. For each of the organizational alternatives there is a description of the concept and a discussion of the potential outcomes and financial implications.

Organizational Alternative #1: Develop Dedicated Local Transit Revenue

In North Carolina, there are currently two mechanisms that can be pursued to gain access to locally-generated, dedicated revenue. These mechanisms are a ¼ cent sales tax and/or a vehicle registration fee of up to \$8.00 per vehicle.

Table 4-1: AppalCART CTSP Summary of Service Alternatives

Service Alternative	Purpose	Annual Operating Cost	Capital Needed	Capital Cost
Service Alternative #1: Improve Service Frequencies, Several Sub-alternatives:				
Red Route -- Improve frequency to 30 minutes	To improve service for riders of the Red Route and ensure that all routes have at least 30-minute frequencies.	\$ 271,000	1 bus	\$ 375,000
Pop 105 -- Add a vehicle all day- several potential sub-alternatives	To reduce overcrowding and improve frequency of service.	\$ 236,000	1 bus	\$ 375,000
Pop 105 -- Add a vehicle during peak times only	To reduce overcrowding and improve frequency of service.	\$ 66,000	1 bus	\$ 375,000
Targeted Increases in Frequency, Peak Periods	To reduce overcrowding and improve convenience. This alternative is priced per route.	\$ 66,000	1 bus	\$ 375,000
Increase Frequency Based on Policy -- Ten-minute peak period service for all routes	To improve convenience for the riders.	\$ 1,287,000	23 buses	\$ 8,625,000
Service Improvement #2: Extend Green Route	To provide service to the Drivers' License Office and an apartment complex (when constructed).	\$ 102,000	1 bus	\$ 375,000
Service Improvement #3: Offer Later Hours of Service:				
Offer Later Hours of Service on Saturdays	To provide additional mobility options for transit riders after 5:00 p.m. on Saturdays.	\$ 34,000	none	\$ -
Offer Late Night Friday and Saturday Service with a Limited Route Structure	To provide public transportation options for late night travel.	\$ 44,500	none	

Table 4-1 (continued)

Service Alternative	Purpose	Annual Operating Cost	Capital Needed	Capital Cost
Potential Improvements Focused on Areas Outside of Boone:				
Service Improvement #4: Strengthen the Link to Blowing Rock	To improve public transportation services between Boone and Blowing Rock, building upon the service already in place.	\$ 91,500	1 vehicle	\$ 150,000
Service Improvement #5: Commuter Service for Heavenly Mountain	To provide public transportation options for people living in the community.	\$ 115,000	1 vehicle	\$ 150,000
Service Improvement #6: Commuter Van/Park and Ride Network	To provide ridesharing opportunities for people who work in Boone and live in the more rural areas of the County.	Variable		
Quality of Service Improvements:				
Quality Improvement #1: Improved Access to Information -- Real-time bus information	To provide riders with real-time information that will let them know when their bus will be arriving.			Low end = \$200,000: based on 20 vehicles; High End = \$350,000
Quality Improvement #2: Bus Stop Amenities and Pedestrian Improvements	To provide a safer and more comfortable environment for accessing transit service.	\$ -	10 shelters	\$ 100,000

One-Quarter Cent Sales Tax

For the ¼ cent sales tax, the *counties* are authorized to levy a sales tax with a referendum called by the County Board of Commissioners, meaning that the sales tax must pass both the commissioners and the voters.

Table 4-2 provides the FY 2009 data concerning sales taxes in Watauga County.

Table 4-2: Potential Revenue from ¼ Cent Sales Tax for Transit

County	Taxable Sales, FY 2009	1/4 cent
Watauga	\$ 613,875,789	\$ 1,534,689

Vehicle Registration Fee

For the vehicle registration fee option, the *counties* are authorized to levy a vehicle registration fee of up to \$7.00 per vehicle. This mechanism requires Commissioner approval, but not direct voter approval.

Table 4-3 shows the revenues that could be generated in Watauga County, based on an annual vehicle registration fee of between \$1.00 and \$7.00. As these data show, with 56,000 registered vehicles in the County, this fee could generate between \$56,000 and \$392,000 annually.

Table 4-3: Revenue Generation Potential for Vehicle Registration Fee

County	Number Registered Vehicles (per year)	Data Year	<i>Total Collected if Implemented Vehicle Registration Fee at:</i>						
			\$1	\$2	\$3	\$4	\$5	\$6	\$7
Watauga	56,000	current estimate	\$56,000	\$112,000	\$168,000	\$224,000	\$280,000	\$336,000	\$392,000

Discussion of the Options

A ¼ cent sales tax referendum for parks and recreation was recently (August, 2010) defeated in Watauga County. This recent referendum attempt would suggest that a ¼ cent sales tax to support public transportation would not likely be passed in the near term. The results from the public opinion survey indicate some support for taxes/fees for public transportation, though more respondents indicated the ¼ cent response (34.5%) than the vehicle registration fee (26.3%).

With the current economic climate, it may be difficult to get a vehicle registration fee passed by the Commissioners, though perhaps if tied to particular community transportation improvements that benefited County residents, it would be possible.

Organizational Alternative #2: Raise the Student Transportation Fee

Several of the service alternatives are geared to improving service for routes that serve ASU. The focus of this alternative is to examine the revenue generation potential for incremental student transportation fee increases that would be tied to implementing additional transit services.

The current student transportation fee is \$76 per year, per full-time student equivalent. For this current academic year, ASU is expecting to collect the fee from 14,698 full-time equivalent students, for a total of \$1,117,048, with \$905,000 going to AppalCART. Table 4-4 provides some scenarios for student transportation fee increases that could be incrementally implemented to support additional transit services.

Organizational Alternative #3: Develop Transportation Demand Management Program in Collaboration with Appalachian State University

The needs analysis indicated that there may be a market for shared-ride programs, such as vanpooling and carpooling, both to access Boone from the outlying areas of Watauga County and to access other towns and metropolitan areas outside of the immediate region, such as Wilkesboro, Statesville, Greensboro, and Asheville. A potential way to implement a shared-ride program is to develop a broader TDM program. Given that Appalachian State is a major employer and educational institution in the County, and that they experience parking and circulation issues, it would be logical for AppalCART to partner with Appalachian State in the development of a TDM program.

The goal of a TDM program is to promote alternative transportation options to the single occupant vehicle, including carpooling, vanpooling, telecommuting, transit, bicycle, flexible work hours, compressed work weeks and parking policies/pricing

Table 4-4: Revenue Potential of Student Transportation Fee Increases

Fee	Student FTE	Annual Fee	Additional Revenue	Total Revenue	Additional Hours of Service Supported
Current Fee Structure	14,698	\$ 76.00	\$ -	\$ 1,117,048	-
\$10.00 increase	14,698	\$ 86.00	\$ 146,980	\$ 1,264,028	2,672
\$20.00 increase	14,698	\$ 96.00	\$ 293,960	\$ 1,411,008	5,345
\$30.00 increase	14,698	\$ 106.00	\$ 440,940	\$ 1,557,988	8,017
\$40.00 increase	14,698	\$ 116.00	\$ 587,920	\$ 1,704,968	10,689
\$50.00 increase	14,698	\$ 126.00	\$ 734,900	\$ 1,851,948	13,362
\$60.00 increase	14,698	\$ 136.00	\$ 881,880	\$ 1,998,928	16,034
\$70.00 increase	14,698	\$ 146.00	\$ 1,028,860	\$ 2,145,908	18,707
\$80.00 increase	14,698	\$ 156.00	\$ 1,175,840	\$ 2,292,888	21,379

For reference -- current fixed-route annual revenue hours are 36,898 (FY10).

strategies. NCDOT became active in supporting TDM programs as a way to decrease ground level ozone pollution from motor vehicles and mitigate the effects of increasing vehicle miles traveled (VMT) and NOx emissions.¹

Beginning in 2004, NCDOT began a funding assistance program for local TDM programs to fund 50% of their administrative costs. Eligible organizations must be public bodies responsible for promotion of TDM activities, with only one grantee per region. At this time only programs operating in urbanized areas are eligible for this funding program.

Advantages and Disadvantages

Developing a TDM program is compatible with Appalachian State and AppalCART's focus on environmental responsibility and could serve as a mechanism to increase ridesharing in the region. A TDM program that operates in conjunction with a transit program is a good fit, as the full spectrum of community mobility options are co-located. There are traffic and congestion issues in Boone, which are two conditions that typically coincide with successful TDM programs. The only real disadvantage to initiating a TDM program, assuming there is demand for one within the community, is cost.

Costs

The primary expenses for a TDM program would include a staff person (salary and fringe) and marketing/printing. These costs are estimated to be about \$80,000 annually. This staff person could be housed at either Appalachian State or at AppalCART, depending upon the arrangement chosen.

Organizational Alternative #4: Multi-Modal Facility

A new administrative and operations facility for AppalCART is currently under construction. When the new facility is complete, AppalCART will re-locate from its current facility, which is located on Winklers Creek Road, adjacent to the Boone Mall. The location of the current facility would be perfect for a multi-modal center and mini-hub for AppalCART services. The Mountaineer intercity bus route could use that location as a stop and AppalCART could potentially serve as a ticket agent for intercity bus services.

The site would need some re-configuration for this arrangement to work well, including taking out the bus wash and part of the building (maybe the maintenance

¹ TDM Program Overview, NCDOT-PTD.

side?) to allow for more vehicle circulation and parking. A ticket sales office could be located at the site and the remainder of the building could potentially be leased.

There are likely to be some issues with this idea, as the land is owned by the County and the building/site was renovated with FTA funds.

SUMMARY AND ALTERNATIVE ANALYSIS

The focus of the alternatives outlined for this CTSP was built upon AppalCART's current network, both in terms of increasing the frequency of service provided within the existing service area, and extending to some currently un-served and under-served areas. The introduction of real-time bus information was also included as an alternative, as this has proven to be a valuable tool for many other transit programs, particularly those that serve college students. Transportation demand management strategies, including a network of park and rides, were also discussed as an alternative. The organizational alternatives for this CTSP focused on revenue generation, the TDM concept, and the development of a multi-modal facility.

These alternatives were presented to the Steering Committee in September, 2010. The concepts were then refined based on input received from Committee members. The refined alternatives were presented to the public at a series of public meetings held in October, 2010. The comments received at the public meetings are documented in Appendix H.

The public comments were shared with Committee members at the end of October. Members were then asked to indicate whether or not each of the alternatives should be implemented in the next five years, if funding were to be available. Members were also asked to prioritize the alternatives they wished to see move forward (high-medium-low). The projects recommended for implementation in the final plan (Chapter 5) were based on the priorities set by Committee members.

Chapter 5

Five-Year Plan

INTRODUCTION

This five-year plan is the product of the AppalCART CTSP, which has been developed over the course of a nine-month planning process. The recommended projects were derived through detailed analysis of existing community transportation services, a transit needs analysis, alternatives analysis, public discussion, and committee discussion.

The five-year plan includes a series of service improvements and expansions, though it should be noted that these projects are dependent upon available federal, state, and local funding. Future funding levels are somewhat unknown, with the federal transit funding legislation expired and yet to be re-authorized, though federal transit funding has historically risen over the years.

The plan is organized in the following eight sections:

- **Service Plan** - Describes the service projects that are included in the plan.
- **Organizational Plan** - Describes the organizational projects that are included in the plan.
- **Implementation Schedule** - Outlines the activities that are planned for implementation in each of the five years of the planning period.
- **Capital Plan** - Describes the capital that will be required to implement the five-year plan.
- **Financial Plan** - Provides a five year budget for implementing the projects included in the plan, including projected expenses and anticipated revenues.

- **Performance Measurement Plan** – Sets performance goals for AppalCART.
- **Public Involvement Description** – Documents the public input received during the development of the plan.
- **Summary of Recommendations** - Ties the recommended projects to NCDOT's mobility goals.

An interactive financial tool was be provided to AppalCART, based on the final recommendations.

SERVICE PLAN

The service plan includes all of the public transit service projects planned for inclusion over the five-year planning horizon. Project descriptions and estimated costs are included in this section. It is organized into three categories:

- Improvements for the Current Fixed-Route Network
- Improvements Focused on Areas Outside of Boone
- Quality of Service Improvements

Improvements for the Current Fixed-Route Network

This section of the plan highlights the recommended improvements that pertain to the fixed-route transit network based in Boone. They are presented in priority order, based on the opinions of CTSP Steering Committee members.

Commuter Park and Ride System Serving Major Travel Corridors at/near the Endpoints of AppalCART's Fixed Routes

The focus of this alternative is to develop park and ride locations at the periphery of Boone near the endpoints of AppalCART's fixed routes. These park and ride opportunities would be "official" park and ride locations for people traveling into Boone and would be signed as such.

This project was rated the highest by Steering Committee members and is particularly timely, as the Boone Mall has recently asked AppalCART to no longer stop on its property. The development of these lots over time could help to ease traffic congestion and parking issues in Boone and on the ASU campus and will also generate additional transit ridership.

Agreements with lot owners will be necessary and it was suggested that perhaps church lots would be good candidates. Given that these lots will drive ridership, the first search for potential lots should be along routes that have some capacity (Gold, Red, and Green). Committee members also thought AppalCART should explore county and town-owned property to see if any park and ride opportunities were available through publicly-owned facilities. The old high school site off of NC105 was mentioned as a potential park and ride opportunity; however, this location would only be feasible if the Silver route is implemented.

In terms of financing future park and ride lots, Committee members would also like to explore the concept of having developers contribute toward the cost of new lots. Purchasing land and constructing lots may also be an option, but this would likely involve extending routes, as there is very little in-fill land available for such a use. Lot ownership would be more cost effective in the long-term, if appropriate locations could be found.

Cost and Ridership. While the costs to lease park and ride spaces are not known until agreements are in place, there are some data available to help provide a cost estimate. Currently there are several centrally located lots in downtown Boone that sell parking spaces to students. These lots charge an average of \$561 an academic year, with St. Luke's Church being the lowest polled (\$368 per academic year) and Holton Management/LMS Parking being the highest (between \$600 and \$700 per academic year).

If we assume that a 50% lower rate would be charged for lots that are a bus ride away, rather than a short walk, the average parking lot space rental would cost \$295 per academic year. If AppalCART or ASU were to lease 200 spaces (say 50 spaces at four different lots), the annual cost per academic year would be \$59,000. Whether or not to pass along these costs to the parking consumer is both a policy and financial decision. If AppalCART, the town of Boone, Watauga County, or ASU were to pay the lease expenses for the periphery parking, more people would likely use this option and fewer cars would travel into downtown.

These spaces would generate about 400 additional transit trips per day, for a total annual ridership increase of 80,000 trips (assuming 40 weeks of demand). It should be noted that some of these trips will likely not be new trips, but trips shifted from other areas, such as the mall.

30-Minute Frequencies on the Red Route

As discussed in Chapter 4, the Red Route is the only AppalCART fixed-route that still operates with hourly headways, rather than 30-minute headways. This route serves several key retail destinations as well as the Watauga Medical Center.

The chosen option for improving frequency on the Red Route involves taking the State Farm loop off of the Red Route, thus making the Red Route 30 minutes. Additional State Farm loop service would be added during the ASU Fall and Spring Semesters. This scenario was the least expensive of the three options presented and does not require a second vehicle. A map of the revised Red Route is shown as Figure 5-1. The total additional annual revenue hours will be about 1,870.

Ridership. The first component of this improvement (shifting the route from the State Farm loop to the base Red Route) will likely cause a slight dip in the productivity of the Red Route, as the State Farm piece is more productive than the base Red Route; however, the added convenience of 30-minute service will likely attract additional riders. The more significant ridership gains from this improvement will come from the added hours of service on the State Farm loop. With 1,870 additional annual revenue hours, not at peak time, the added passenger trips are likely to be about 32,000 per year.

Costs. The estimated annual fully allocated operating costs for adding service on the State Farm route during the ASU Fall and Spring semesters is \$97,240 (based on 1,870 added annual hours at \$52 per revenue service hour.) An expansion vehicle is not required for this improvement.

Add a Vehicle to the Pop105 Route

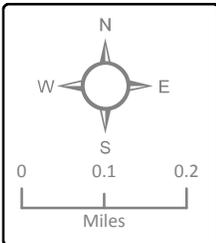
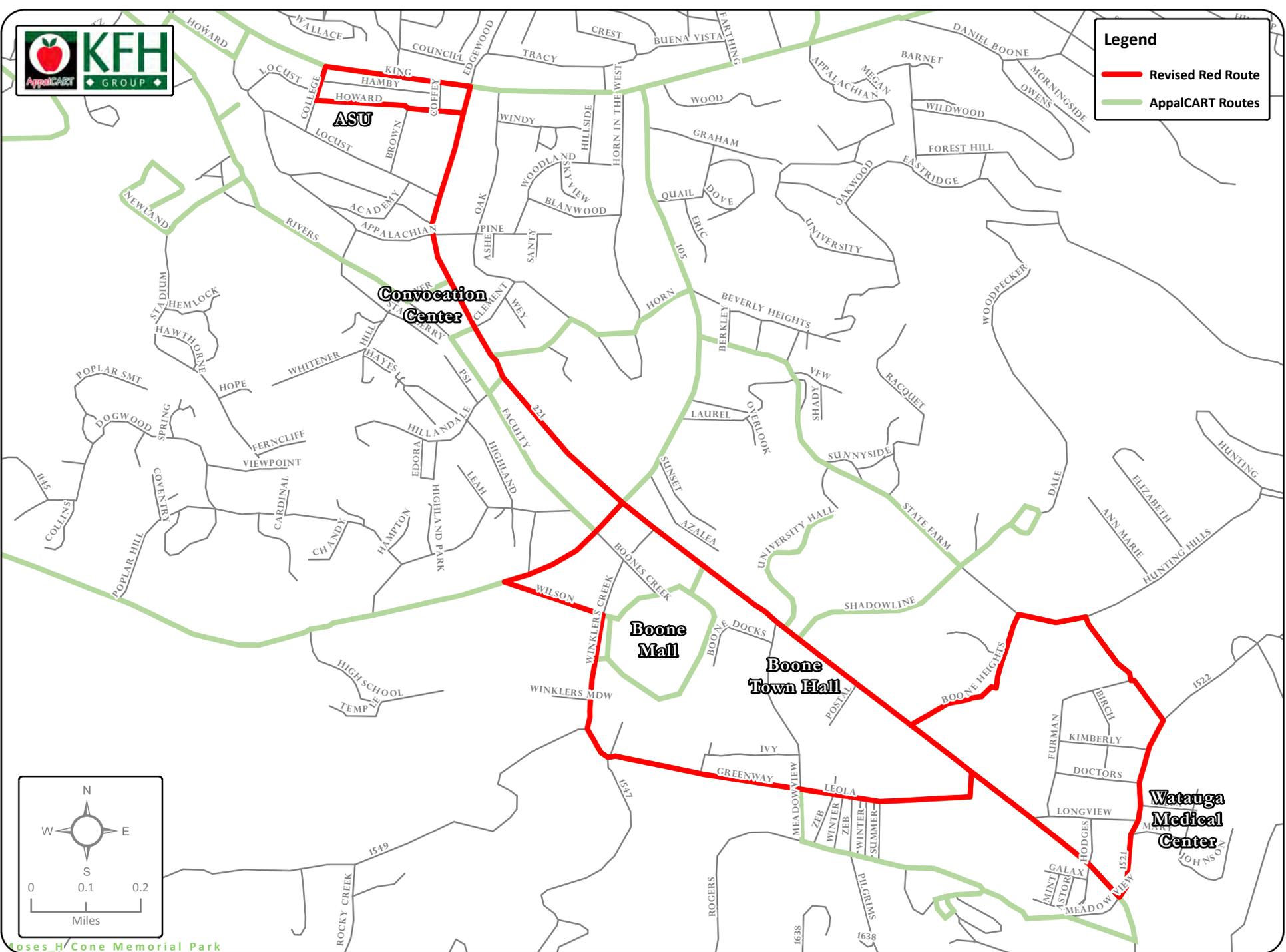
Overcrowding of the Pop105 Route, coupled with the need to serve existing and new trip generators on the opposite side of the street, are the two most important reasons for adding a vehicle to this route and running it in the reverse direction for part of the trip. Under this scenario the Silver route would begin in the same manner as the current Pop105 route until it got to CCCTI. After serving CCCTI, the route would make a right back onto NC105 and serve the Highland Commons Shopping Center, Studio West, the old high school area, and the Appalachian Panhellenic Hall on the way back to ASU. This scenario has evolved after several different potential solutions were discussed. A map of the proposed Silver route is shown in Figure 5-2.



Legend

- Revised Red Route
- AppalCART Routes

5-5



Roses H Cone Memorial Park

Figure 5-1: Revised Red Route

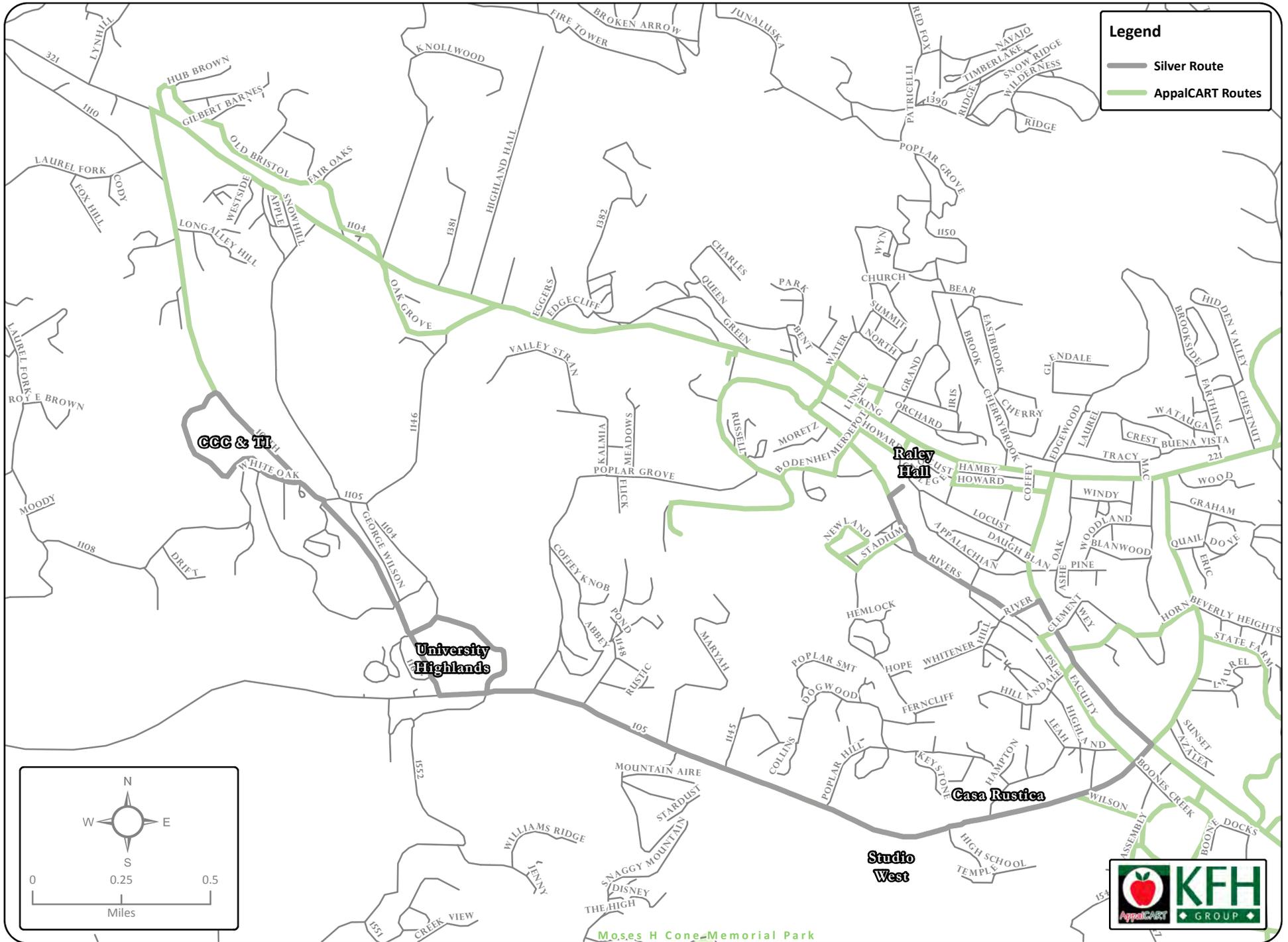


Figure 5-2: Silver Route



If AppalCART were to add the Silver route for approximately the same span as the Orange Route (which is less than the span of service for the Pop105), the added annual revenue hours would be 2,400.

Ridership. The Pop105 currently has the highest ridership of any of AppalCART's fixed routes. It also has the highest level of service, with over 6,500 revenue hours provided each year. Productivity on the route is currently about 36 passenger trips per revenue hour. If the Silver route achieves a productivity of 31 passenger trips per revenue hour, the route's annual ridership will be about 74,400 trips (assuming 2,400 annual revenue service hours).

Cost. Adding the Silver route bus for 2,400 additional annual revenue service hours would cost about \$124,800 in fully-allocated operating costs. A vehicle will be required (\$375,000), as will a number of bus stop signs (\$1,000).

Later Hours of Service on Saturdays

There are four routes that operate on a typical Saturday (i.e., non-ASU game day). These are: Red, Green, Pop105, and Orange. Currently these routes operate approximately 9:00 a.m. to 5:00 p.m. on Saturdays, with the Red Route starting a bit earlier (8:32 a.m.) This improvement would extend service for these four routes on Saturdays so that they operate until 9:00 p.m., offering additional mobility options for Saturday riders. ADA complementary paratransit would also be extended for four hours to support these routes.

Implementing this improvement will not require additional capital and will add about 1,040 annual revenue vehicle hours (five vehicles per Saturday, four hours each Saturday, for 52 weeks).

Ridership. Saturday ridership is typically lower than weekday ridership, and evening ridership is typically lower than daytime ridership. Given these factors, this added service will likely have lower productivity than the system average. The FY10 Saturday productivity on the fixed routes was 21 passenger trips per revenue hour. Evening productivity is estimated to be about 14 passenger trips per revenue hour, for an annual ridership estimate of 14,560 additional passenger trips.

Cost. The operating costs associated with 1,040 additional annual revenue hours are estimated to be about \$54,000 annually. There are no capital costs associated with operating service later in the evenings on Saturdays.

Targeted Increases in Frequency

As AppalCART has grown and expanded over the years in response to increasing demand, it has added service as has been feasible and affordable to address crowding on the vehicles and new development.

The purpose of this improvement is to plan for improved frequency as needed, based on capacity constraints. The concept is to budget for a certain number of additional service hours each year, to be applied to the routes where there is the most demand. Some of the expected demand has been addressed through other planned improvements associated with the CTSP (i.e., Red Route and Pop105 projects), but others are likely to arise unexpectedly as developers continue to build multi-family housing in and around the Town of Boone.

This improvement provides for one bus' worth of peak period service for the three out years of the CTSP (i.e., FY 2014, FY 2015, and FY 2016). Including these additional hours and the associated vehicles will allow AppalCART to continue to be flexible and respond to the community's mobility needs as they arise.

The annual increases in revenue hours associated with the targeted increases in frequency are 1,200 hours each year (for the three out-years of the CTSP). This equates to six additional hours per day, five days per week, 40 weeks per year.

Ridership. Without knowing exactly where the added service will be needed, it is possible only to provide a rough estimate of likely ridership, based on the current average productivity. In FY 2010, the average productivity of the fixed routes was 31 passenger trips per revenue hour. Applying this level of productivity to the additional revenue hours results in annual ridership increases of about 37,200 passenger trips.

Cost. Adding 1,200 hours of service is expected to cost about \$62,000 per year (fully-allocated operating expenses). A vehicle will also be needed (\$375,000), as the proposed expansions are during peak hours.

Offer Additional Sunday Service

While the majority of the Steering Committee members endorsed Sunday service for implementation at some time during the life of the plan, only one of the committee members indicated it was a high priority. Most Committee members considered Sunday service a medium or low priority.

Offering Sunday service on the routes that currently have Saturday service would provide mobility options for AppalCART riders. Four routes, plus ADA

paratransit, offered for an eight-hour span of service is proposed. Total annual revenue service hours are estimated to be 2,080 for this level of service.

Ridership. Sunday ridership will likely be considerably lower than weekday and Saturday ridership. A conservative productivity estimate of ten passenger trips per revenue hour would equate to a total annual Sunday ridership of just over 20,000 passenger trips.

Cost. The annual operating expenses associated with limited Sunday service, as described above, are estimated to be \$108,000. No capital will be required.

Improvements Focused on Areas Outside of Boone

There is one recommendation for improved community transportation services for areas of Watauga County that are outside of Boone. During the alternatives analysis, the park and ride alternative was also presented in this category, but that project has evolved into one that is now classified as a fixed-route area project. This change was made for two primary reasons: 1) developing park and ride opportunities along existing transit corridors maximizes the use of the current transit investments; and 2) extending service to farther-out lots was considered too expensive in the near term for the level of likely ridership.

Provide Additional Service between Boone and Blowing Rock

The survey results indicated that people are interested in having improved public transportation services between Boone and Blowing Rock. The focus of this improvement is to consolidate and expand the existing Blowing Rock routes so that there is service between Boone and Blowing Rock on an hourly basis, between 7:15 a.m. and 5:00 p.m., Monday through Friday, and between 9:00 a.m. and 5:00 p.m. on Saturdays. The service could then be re-branded as “Blowing Rock,” rather than different numbered rural routes. Route deviation, with specific time points that are always served, would be the service mode.

The current schedule already includes four round-trips Monday-Friday and six round trips Tuesday, Thursday, and Friday. In FY10 there were 1,197 revenue vehicle hours recorded for the three demand response routes that serve Blowing Rock. The new scenario would add six trips Mondays and Wednesdays and four trips Tuesdays, Thursdays, and Fridays. New Saturday service would include eight trips. Total new additional service hours would be 32 per week, or 1,664 annually, bringing the total vehicle service hours for the Boone to Blowing Rock link to 2,861.

Ridership. Deviated fixed-route service between Boone and Blowing Rock will generate ridership figures that are higher than what is currently experienced on the demand response services and lower than what is currently experienced on the Boone-area fixed route services. It is likely that this service could generate about five passenger trips per revenue hour, for total annual ridership of 14,300 (for both the existing services and the new services). This compares to the FY 2010 ridership of 2,973 trips for the demand response services that currently operate between the two towns.

Cost. The fully allocated operating expenses for the new hours would be about \$86,500, bringing the total fully allocated operating cost for the Blowing Rock to Boone link to about \$157,000 annually. One expansion vehicle will be needed. A smaller and less expensive vehicle, such as body-on-chassis (\$73,500), would be appropriate for the level of demand likely to be seen on this route.

Potential Quality of Service Improvements

There were two quality of service improvements discussed in Chapter 4 and both have moved forward for implementation during the five-year planning horizon. These improvements are bus stop amenities/pedestrian improvements and real-time bus information. The majority of Steering Committee members rated the bus stop amenities/pedestrian improvements as having a higher priority than the real-time bus information. Both of these improvements are described below.

Bus Stop Amenities and Pedestrian Improvements

Survey respondents indicated that additional shelters are needed so that passengers are more comfortable and shielded from the weather while waiting for the bus. There is also a need to improve the pedestrian connections to and from bus stops, though this improvement will need to be in partnership with the Town of Boone and ASU.

Providing a more comfortable place for passengers to wait is courtesy to riders and is also a way to increase the visibility of the transit system in the community and provide fixed locations to display transit information to the public (either electronically or more traditionally).

AppalCART has an ARRA grant of \$500,000 to purchase and install shelters. This grant will allow the Authority to procure between 20 and 30 shelters, which will be sufficient for the 5-year CTSP period.

Pedestrian improvements are more difficult to price, as there are more variables involved. AppalCART would not typically be responsible for funding pedestrian

improvements, though the construction of accessible pathways to bus stops is an eligible expense under the S.5317 New Freedom program.

Improved Access to Information- Real-time Bus Information

Real-time bus information is a technology that allows riders to know exactly where their desired bus is, via a number of different electronic media. The basic technology includes GPS transponders on vehicles that use satellite technology to transmit the vehicle's location. Riders can receive this information through a number of different ways, including via computers, electronic screens at bus stops, and cell phones. This technology is particularly widespread among university transit programs.

There were 19 write-in comments from the public opinion survey that requested real-time bus information. In addition, one of the public forum participants, an ASU student, felt that this improvement would be highly valued by students, particularly if the information could be provided via a smart phone application. He also suggested that students would be willing to pay for such an application.

Cost. The cost to implement real-time bus information is variable, depending upon the technology chosen (i.e. cellular versus satellite) and the number of "bells and whistles." Preliminary research indicates that this improvement will cost between \$10,000 and \$17,500 per vehicle, for a total cost (based on 20 vehicles) of between \$200,000 and \$350,000.

Summary of Service Improvements

Table 5-1 provides a summary of the service improvements recommended for the five-year plan. As is shown, the plan calls for about 12,654 additional revenue service hours. The estimated increase in ridership from these projects is about 268,386 annual passenger trips.

ORGANIZATIONAL PLAN

The focus of the organizational plan for AppalCART is on revenue generation, facilities, and transportation demand management. As with the recommended service improvements, these concepts are presented in priority order.

Table 5-1: AppalCART CTSP Summary of Service Improvements

Service Improvement	Purpose	Annual Revenue Hours	Annual Operating Cost	Capital Cost	Proposed Year	Proposed Funding Sources
Park and ride space rental	To provide parking options on the periphery of Boone to help reduce traffic and parking issues in Town and on the ASU Campus	-	\$ 59,000	\$ -	FY 2012	ASU, AppalCART (federal/state/local), users
Red Route- Improve frequency to 30 minutes	To improve service for riders of the Red Route and ensure that all routes have at least 30-minute frequencies.	1,870	\$ 97,240	\$ -	FY 2012	ASU Student fees
Offer later hours of service on Saturdays	To provide additional mobility options for transit riders after 5 p.m. on Saturdays.	1,040	\$ 54,000	\$ -	FY 2012	ASU Student fees
Bus Stop Amenities	To provide a safer and more comfortable environment for accessing transit service.		\$ -		FY 2012	Already funded through AARA
Silver Route/Reverse Pop105 Route	To reduce overcrowding, improve frequency of service, and improve pedestrian safety.	2,400	\$ 124,800	\$ 375,000	FY 2013	ASU Student fees
Provide additional service between Boone and Blowing Rock	To improve public transportation services between Boone and Blowing Rock, building upon the service already in place.	1,664	\$ 86,500	\$ 73,500	FY 2013	S.5311 Operating, fares, local
Implement real-time bus information	To provide riders with real-time information that will let them know when their bus will be arriving.	-	\$ -	\$ 350,000	FY 2013	80% federal, 10% state, 10% local
Targeted increases in frequency, peak periods	To reduce overcrowding and improve convenience. This alternative is priced per route.	1,200	\$ 62,000	\$ 375,000	FY 2014	ASU Student fees

Table 5-1: AppalCART CTSP Summary of Service Improvements

Service Improvement	Purpose	Annual Revenue Hours	Annual Operating Cost	Capital Cost	Proposed Year	Proposed Funding Sources
Sunday service on the Red, Green, Pop105, and Orange Routes	To provide transit riders with mobility options on Sundays.	2,080	\$ 108,000	\$ -	FY 2014	S. 5311, ASU Student fees, Town of Boone
Targeted increases in frequency, peak periods	To reduce overcrowding and improve convenience. This alternative is priced per route.	1,200	\$ 62,000	\$ 375,000	FY 2015	ASU Student fees
Targeted increases in frequency, peak periods	To reduce overcrowding and improve convenience. This alternative is priced per route.	1,200	\$ 67,000	\$ 375,000	FY 2016	ASU Student fees
	TOTALS	12,654	\$ 656,540	\$ 1,923,500		

Note: Cost estimates are in FY11 dollars. The financial plan (Tables 5-5, 5-6, and 5-7) include the inflated costs, based on the proposed year of implementation.

Revenue Generation

As articulated in Chapter 4, three potential mechanisms to generate additional local revenue for AppalCART were discussed. These mechanisms included a ¼ cent sales tax, a vehicle registration fee, and an increase in the student transportation fee. The Steering Committee generally agreed that a ¼ cent sales tax for transit is not likely to be a feasible option for the five-year planning horizon.

Committee members were in agreement concerning the need to raise the student transportation fee, largely because so many of the transit improvements included in the plan are focused on routes that serve the ASU campus. The vehicle registration fee was supported by the committee, but for future implementation. Both of the potential revenue generation mechanisms are discussed in more detail below.

Student Transportation Fee

ASU's student transportation fee helps to fund transit services provided by AppalCART in support of student mobility on campus and throughout the Town of Boone. The fee is negotiated each year. The current annual fee is \$76 per student and generates about \$1.1 million annually, of which \$ 905,000 goes to AppalCART.

For the academic year 2011-12, a fee increase of \$5 has been requested by the Parking and Traffic Department. If approved, this will provide about \$73,000 in additional funds for AppalCART service expansions in FY 2012.

A \$15 increase each year in the student transportation fee is proposed for the remaining four years of the plan. These funds will allow for the implementation of the improvements focused on the mobility needs of the ASU community. This proposal will raise the fee incrementally from \$76 per year (2010/11) to \$141 per year (2015/16). The revenue generation will increase from the current \$1.1 million to \$2.07 million, allowing for about \$955,370 worth of transit operating and capital improvements. Table 5-2 shows this incremental fee increase. Given that ASU has had to raise fees in several areas, the proposed transportation fee increases may not be possible in each of the proposed years. If the full proposed transportation fees included in this plan are not implemented, then the planned service expansions will need to be scaled back accordingly.

Table 5-2: Proposed Student Transportation Fee Increases

Academic Year	Student FTE	Annual Fee	Additional Revenue	Total Revenue	Additional Hours of Service Supported
2010-11	14,698	\$ 76.00	\$ -	\$ 1,117,048	-
2011-12	14,698	\$ 81.00	\$ 73,490	\$ 1,190,538	1,413
2012-13	14,698	\$ 96.00	\$ 293,960	\$ 1,411,008	5,653
2013-14	14,698	\$ 111.00	\$ 514,430	\$ 1,631,478	9,893
2014-15	14,698	\$ 126.00	\$ 734,900	\$ 1,851,948	14,133
2015-16	14,698	\$ 141.00	\$ 955,370	\$ 2,072,418	18,373

For reference -- current fixed-route annual revenue hours are 40,400 (est. FY11).

Vehicle Registration Fee

A vehicle registration fee of between \$1.00 and \$7.00 per vehicle per year to be used to support public transportation service in Watauga County could be implemented by the County Commissioners. Given the state of the economy, it is unlikely that this fee would be supported by county residents and their elected officials within the next couple of years, so it has not been included as a revenue source for this planning period. If the economy improves, the idea of implementing this fee should be re-visited.

Facilities

AppalCART is currently building a new administrative, operations, and maintenance facility. This facility had been planned for several years, with the construction funded by a grant from the American Recovery and Reinvestment Act (ARRA). The facility is due to be completed in the Spring of 2011.

When AppalCART moves into the new facility, it will vacate the property on Winkler's Creek Road. As discussed in Chapter 4, the location of this facility is ideal for a multi-modal transportation facility, particularly given the new operating scenario that has AppalCART unable to use the Boone Mall.

The land upon which the Winkler's Creek Road facility is located is owned by the County, while the facility was renovated with FTA funds. There will need to be some negotiations between NCDOT-PTD, the County, and AppalCART in order for a multi-modal facility to move forward on this site. The county may wish to sell the site, and if that is the case, it will have to pay back the FTA's interest in the property.

Cost

The cost to develop a multi-modal transportation facility on the site of the current AppalCART facility will include those costs associated with demolishing the current structures, constructing a much smaller building, paving/stripping the lot to add parking and bus circulation, and landscaping. The City of Hickory recently constructed a bus transfer facility, pictured in Exhibit 5-1. The cost to construct this facility was about \$475,000 in FY 2010. While it is not possible to provide a detailed cost estimate without a more in-depth study of the site, a preliminary estimate for this project is between \$ 525,000 and \$750,000.

Transportation Demand Management (TDM)

The needs analysis indicated that there may be a market for shared-ride programs, such as vanpooling and carpooling, both to access Boone from the outlying areas of Watauga County and to access other towns and metropolitan areas outside of the immediate region, such as Wilkesboro, Statesville, Greensboro and Asheville. A potential way to implement a shared-ride program is to develop a broader TDM program. Given that ASU is a major employer and educational institution in the County, and that they experience parking and circulation issues, it would be logical for AppalCART to partner with ASU in the development of a TDM program.

The goal of a TDM program is to promote alternative transportation options to the single occupant vehicle, including carpooling, vanpooling, telecommuting, transit, bicycle, flexible work hours, compressed work weeks, and parking policies/pricing strategies. NCDOT became active in supporting TDM programs as a way to decrease ground level ozone pollution from motor vehicles and mitigate the effects of increasing vehicle miles traveled (VMT) and NOx emissions.¹

¹ TDM Program Overview, NCDOT-PTD.



Exhibit 5-1: Hickory Transfer Center

Beginning in 2004, NCDOT began a funding assistance program for local TDM programs to fund 50% of their administrative costs. Eligible organizations must be public bodies responsible for promotion of TDM activities, with only one grantee per region. At this time, only programs operating in urbanized areas are eligible for the state TDM grant.

Developing a TDM program is compatible with ASU and AppalCART's focus on environmental responsibility and could serve as a mechanism to increase ridesharing in the region. A TDM program that operates in conjunction with a transit program is a good fit, as the full spectrum of community mobility options are co-located. There are traffic, congestion, and parking issues in Boone, which are conditions that typically coincide with successful TDM programs.

Cost

The primary expenses for a TDM program would include a staff person (salary and fringe) and marketing/printing. These costs are estimated to be about \$80,000 annually. This staff person could be housed at either ASU or at AppalCART, depending upon the arrangement chosen. During the final plan review, it was determined that NCDOT only funds TDM programs in urbanized areas. Because the state TDM grant will not be available, this project may not be implemented. It is still included in the plan, in the event that an alternate funding source can be found.

IMPLEMENTATION SCHEDULE

This section of the plan provides an implementation schedule for the activities that have been described in this plan. It should be noted the implementation of some of the initiatives listed on this schedule and described in the plan are dependent upon available funding, which may necessitate future revisions to this schedule. The implementation schedule generally follows the priorities of the CTSP Committee, though some projects that are relatively inexpensive to implement are recommended sooner than their priority ranking would suggest. This schedule does not include the vehicle replacement and expansion activities, as these are presented with the Capital Plan section (page 5-21).

Current Fiscal Year- 2010-11

- Apply for additional waiting shelters and negotiate with potential sites for placement. Sites along inbound King Street, NC105, and Blowing Rock Road should be targeted.

- Begin to reach out to parking lot owners for park and ride project.
- Continue to monitor progress of new multi-family housing projects that may affect AppalCART ridership (i.e., Studio West and the Vilas proposal).
- Plan for Red Route/State Farm change and later Saturday services.

Year One: Fiscal Year 2011-12

- Research and negotiate agreements with existing lot owners for park and ride lot arrangements.
- Research opportunities to purchase land for publicly-owned park and ride lots.
- Implement 30-minute frequencies on the Red Route (for Fall 2011 semester).
- Implement later hours of service on Saturdays (for Fall 2011 semester).
- Include the real-time bus information project in the grant application for FY 2013.
- Further research more precise cost estimates for multi-modal center so that it can be included in the FY13 grant application.
- Work with the Town of Boone and the development community to ensure that pedestrian connections and waiting shelters are included in new development projects.
- Install additional bus shelters and continue to monitor the need for shelters and the locations where they will be most used.
- Raise the student transportation fee by \$5 to fund AppalCART service improvements that improve mobility for the ASU community.
- Plan for FY 2013 changes and improvements.

Year Two: Fiscal Year 2012-13

- Add a vehicle to the Pop105 Route (“Silver” route).

- Provide additional service between Boone and Blowing Rock.
- Continue with park and ride lot project, as is feasible within available funding and parking area constraints.
- Implement real-time bus information project, if grant funding awarded.
- Solicit bids for multi-modal center, if grant funds awarded for project.
- Raise the student transportation fee by \$15 to fund AppalCART service improvements that improve mobility for the ASU community.
- Monitor the performance of the projects implemented in FY 2012 (Red Route improvements, the later Saturday hours, and the park and ride agreements).
- Plan for FY 2015 changes and improvements.

Year Three: Fiscal Year 2013-14

- Offer Sunday service on the Red, Green, Pop105, and Orange Routes.
- Improve frequency where needed, based on demand.
- Construct multi-modal facility, if grant funds awarded for project.
- Raise the student transportation fee by \$15 to fund AppalCART service improvements that improve mobility for the ASU community.
- Monitor the performance of the projects implemented in FY 2013.

Year Four: Fiscal Year 2014-15

- Improve frequency where needed, based on demand.
- Raise the student transportation fee by \$15 to fund AppalCART service improvements that improve mobility for the ASU community.
- Monitor the performance of the projects implemented in FY 2014.

Year Five: Fiscal Year 2015-16

- Improve frequency where needed, based on demand.
- Raise the student transportation fee by \$15 to fund AppalCART service improvements that improve mobility for the ASU community.
- Monitor the performance of the projects implemented in FY 2015.

CAPITAL PLAN

There are a number of important capital projects planned for AppalCART during the five-year planning horizon. While each of these projects has been referenced in other portions of the plan, they are highlighted together below.

Facilities

There are two facility projects included in this CTSP -- the commuter park and ride lots (discussed as an operating project) and the multi-modal transportation center. Both of these projects have become more pressing in the last month, given the need to find alternatives to the Boone Mall location, which has served as both a park and ride and passenger transfer site.

A preliminary cost estimate for the multi-modal transportation center is between \$550,000 and \$750,000. Costs for the park and ride options are not entirely known at this time, but this CTSP has budgeted \$59,000 a year for this purpose, beginning in FY 2013. The park and ride options are included under the operating budgets at the moment, assuming that spaces will be leased. Given the expense of leasing parking, it is recommended that the potential to purchase lots be investigated.

Passenger Amenities

A high priority for riders and for CTSP Committee members was to continue to improve passenger amenities, particularly passenger waiting shelters and pedestrian connections. AppalCART has an ARRA grant to fund shelters and will be ordering a number of bus shelters as soon as they have space to store them. Real-time bus information is another passenger amenity/capital/technology project that is included in the plan.

Vehicles

This capital plan includes a vehicle replacement and expansion plan that corresponds with the implementation plan presented above. A supervisory vehicle has also been added to allow for a timely response for incidents/accidents and to shuttle drivers during shift change. An expansion vehicle has also been added for FY12 to support current demand. Table 5-3 presents the vehicle expansion and replacement plan and Table 5-4 provides the vehicle inventory updated with the known and recommended replacement years.

FINANCIAL PLAN

The CTSP financial plan is comprised of three primary components: the financial plan for operations, the financial plan for vehicle replacement and expansion, and the financial plan for facilities, equipment, and other capital.

These components are presented in Tables 5-5, 5-6, and 5-7. For each of the three components, approved budget numbers were used for the base year (FY 2011). For the four subsequent years, estimates have been made using currently available data and assumptions concerning service expansion and inflation. The inflation factors used were those published by NCDOT's TIP Development Unit and are as follows:

- 2011: 1.02
- 2012: 1.06
- 2013: 1.10
- 2014: 1.15
- 2015: 1.19

This factor equates to a 4% inflation rate.

An interactive financial tool, based in a spreadsheet format, was provided to NCDOT and AppalCART.

It should be noted that at this writing it is not possible to predict the levels of federal, state, and local funds that will be available to implement the projects proposed in this plan. This financial plan makes a number of assumptions that may need to be changed in the future. The interactive financial tool that will be developed as a companion to this plan will allow AppalCART to change the assumptions of this financial plan to reflect future funding scenarios.

**Table 5-3
AppalCART Transit Vehicle Replacement and Expansion Program**

Vehicle Type	Useful Life	Number in Current Fleet	# Vehicle Procurements								Number in FY 2016 Fleet			
			FY 2011		FY 2012		FY 2013		FY 2014			FY 2015		FY 2016
			Repl. Exp.	Repl. Exp.	Repl. Exp.	Repl. Exp.	Repl. Exp.	Repl. Exp.	Repl. Exp.	Repl. Exp.	Repl. Exp.	Repl. Exp.	Repl. Exp.	
Minivans	5 yrs./100k	1			1								1	
Crossover Vehicles	5 yrs./100k	4		1				2		2			5	
Lift and Conversion Vans	5 yrs./100k	8			1		1		3		2		8	
Light Transit Vehicles	7 yrs./130k	1		1		1							2	
Heavy Duty Transit Buses (1)	10-12 yrs., 350-500k	17	1	1	1		1	2	1	3	1	4	1	23
Shop Truck	5 yrs./100k	1					1						1	
Number Vehicles Procured			0	1	2	2	2	2	4	1	8	1	8	1
Fleet Size		32												40

(1) AppalCART currently has 16 heavy duty transit vehicles with two on order. One of the vehicles on order was a FY 2010 purchase.

Table 5-4: AppalCART Vehicle Inventory with Replacement Years

Local Fleet Number	Model Year	Manufacturer	Vehicle Type	Seating Capacity	Wheel-chair Stations	Standees	Mileage May 2010	Replacement Year
B1	2005	EldoNati	Low Floor 35' Bus	34	2	25	158,600	2015
B2	2008	EldoNati	Low Floor 30' Bus	29	2	12	72,920	2018
B3	2006	EldoNati	Low Floor 30' Bus	26	2	26	149,914	2016
B4	2006	EldoNati	Low Floor 35' Bus	34	2	25	131,416	2016
B5	2005	EldoNati	Low Floor 35' Bus	34	2	25	158,289	2015
B6	2005	EldoNati	Low Floor 35' Bus	34	2	25	174,357	2015
B7	2003	EldoNati	Low Floor 30' Bus	26	2	18	223,557	2014
B8	2009	EldoNati	Low Floor 35' Bus	36	2	23	19,800	2019
B10	2009	EldoNati	Low Floor 35' Bus	36	2	23	19,668	2019
B11	2003	EldoNati	Low Floor 30' Bus	26	2	18	178,731	2014
B15	2008	EldoNati	Low Floor 35' Bus	36	2	12	68,303	2018
B16	2002	EldoNati	Transit Bus	37	2	25	143,180	2012
B17	2002	EldoNati	Low Floor 35' Bus	34	2	26	77,534	2016
B18	2006	EldoNati	Low Floor 35' Bus	36	2	28	56,517	2018
B19	2008	EldoNati	Low Floor 30' Bus	29	2	21	82,481	2018
B20	2006	EldoNati	Low Floor 30' Bus	26	2	18	154,753	2016
C9	2003	Ford/Goshen	Van Cutaway	20	2	0	134,868	2012
H14	2006	Ford	Van Conversion	9	2	0	77,759	2013
H22	2007	Ford	Van Conversion	9	2	0	66,367	2014
H61	2008	Ford E-350	Van Conversion	9	2	0	39,897	2015
H62	2008	Ford E-350	Van Conversion	9	2	0	36,921	2015
H63	2008	Ford E-350	Van Conversion	9	2	0	37,119	2015
H64	2009	Ford	Van Conversion	9	2	0	18,338	2016
H65	2009	Ford	Van Conversion	9	2	0	20,926	2016
CV53	2010	Dodge Journey	Crossover Vehicle	7	0	0	18,390	2015
CV54	2010	Dodge Journey	Crossover Vehicle	7	0	0	5,912	2015
CV55	2010	Dodge Journey	Crossover Vehicle	7	0	0	New	2016
CV56	2010	Dodge Journey	Crossover Vehicle	7	0	0	New	2016
V66	2010	Forde E-350	Van Conversion	13	0	0	New	2017
MV52	2008	Dodge	Minivan	7	0	0	61,525	2013
Shop	2006	Chevrolet	Ext. Cab Pick-up	6	0	0		2014

Note: Replacement years estimated based on NCDOT useful life standards.

Table 5-5: AppalCART Financial Plan for Operations

Projects	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016
<i>Annual Service Hours</i>						
AppalCART Services - FY2010 Level of Service	55,586	55,586	55,586	55,586	55,586	55,586
CTSP Proposals:						
Red Route - improve frequency	-	1,870	1,870	1,870	1,870	1,870
Offer later hours of service on Saturdays	-	1,040	1,040	1,040	1,040	1,040
New Silver/ Pop 105 North Route	-	-	2,400	2,400	2,400	2,400
Additional service between Boone and Blowing Rock	-	-	1,664	1,664	1,664	1,664
Targeted increases if frequency, peak periods	-	-	-	1,200	2,400	3,600
Sunday Service on Red, Green, Pop105, and Orange	-	-	-	2,080	2,080	2,080
Proposed Additional Hours of Service	-	2,910	6,974	10,254	11,454	12,654
TOTAL CURRENT HOURS AND NEW PROPOSED SERVICES	55,586	58,496	62,560	65,840	67,040	68,240
Percent Increase in Community Transit Service Hours from Previous Year	-	5%	7%	5%	2%	2%
Total Increase in Service Hours	23%					

Table 5-5: AppalCART Financial Plan for Operations- Projected Operating Expenses (continued)

Projects	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016
<i>Projected Operating Expenses</i>						
AppalCART FY2011 operating budget for existing services, with inflationary increases	\$ 2,843,227	\$ 2,956,956	\$ 3,075,234	\$ 3,198,346	\$ 3,326,291	\$ 3,459,354
CTSP Proposals:						
Red Route - improve frequency	\$ -	\$ 101,130	\$ 105,175	\$ 109,385	\$ 113,761	\$ 118,312
Offer later hours of service on Saturdays	\$ -	\$ 56,243	\$ 58,493	\$ 60,835	\$ 63,268	\$ 65,799
New Silver/Pop 105 North Route	\$ -	\$ -	\$ 134,984	\$ 140,388	\$ 146,004	\$ 151,844
Additional service between Boone and Blowing Rock	\$ -	\$ -	\$ 93,589	\$ 97,335	\$ 101,229	\$ 105,279
Targeted increases if frequency, peak periods	\$ -	\$ -	\$ -	\$ 70,194	\$ 146,004	\$ 227,766
Sunday Service on Red, Green, Pop105, and Orange	\$ -	\$ -	\$ -	\$ 121,669	\$ 126,536	\$ 131,598
Subtotal New Operating Expenses	\$ -	\$ 157,373	\$ 392,240	\$ 599,806	\$ 696,802	\$ 800,598
Subtotal Proposed Transit Operating Expenses	\$ 2,843,227	\$ 3,114,329	\$ 3,467,474	\$ 3,798,152	\$ 4,023,093	\$ 4,259,953
Other						
Park and Ride Space Rental	\$ -	\$ 61,360	\$ 63,814	\$ 66,369	\$ 69,024	\$ 71,785
TOTAL OPERATING EXPENSES	\$ 2,843,227	\$ 3,175,689	\$ 3,531,289	\$ 3,864,521	\$ 4,092,117	\$ 4,331,738
Percent Increase in Expenses from Previous Year		12%	11%	9%	6%	6%
Total Increase in Expenses		52%				

Table 5-5: AppalCART Financial Plan for Operations - Projected Operating Revenues (continued)

Anticipated Funding Sources for Operating	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016
<i>Federal</i>						
FTA S. 5311 Operating	\$ 451,235	\$ 469,284	\$ 531,100	\$ 552,512	\$ 574,764	\$ 597,907
FTA S.5311 Administrative	\$ 374,644	\$ 389,630	\$ 405,215	\$ 421,437	\$ 438,296	\$ 455,829
Subtotal, Federal	\$ 825,879	\$ 858,914	\$ 936,315	\$ 973,949	\$ 1,013,060	\$ 1,053,736
State Maintenance Assistance Program (SMAP)	\$ 678,494	\$ 705,634	\$ 733,859	\$ 763,238	\$ 793,770	\$ 825,524
State Funds in Support of Administrative Expenses	\$ 23,415	\$ 24,352	\$ 25,326	\$ 26,340	\$ 27,393	\$ 28,489
Elderly and Disabled Transportation Assistance Program	\$ 71,448	\$ 74,306	\$ 77,278	\$ 80,372	\$ 83,587	\$ 86,931
Rural General Public	\$ 83,414	\$ 86,751	\$ 90,221	\$ 93,832	\$ 97,586	\$ 101,490
Employment	\$ 12,281	\$ 12,772	\$ 13,283	\$ 13,815	\$ 14,368	\$ 14,942
Subtotal, State	\$ 869,052	\$ 903,814	\$ 939,967	\$ 977,597	\$ 1,016,704	\$ 1,057,376
<i>Local</i>						
Appalachian State University Student Transportation Fee	\$ 905,000	\$ 1,107,200	\$ 1,298,127	\$ 1,533,589	\$ 1,666,753	\$ 1,803,004
Local Cash Match	\$ 70,246	\$ 103,736	\$ 129,407	\$ 134,663	\$ 140,125	\$ 145,806
Contract Revenue	\$ 145,050	\$ 150,852	\$ 178,408	\$ 185,626	\$ 193,126	\$ 200,927
Special Route Guarantees	\$ 29,000	\$ 30,160	\$ 31,366	\$ 32,622	\$ 33,927	\$ 35,284
Advertising	\$ 32,000	\$ 33,280	\$ 34,611	\$ 35,997	\$ 37,437	\$ 38,934
Passenger Fares	\$ 8,721	\$ 9,070	\$ 16,933	\$ 17,310	\$ 17,703	\$ 18,111
Subtotal, Local	\$ 1,190,017	\$ 1,434,298	\$ 1,688,853	\$ 1,939,807	\$ 2,089,071	\$ 2,242,066
Total Projected/Proposed Operating Revenues	\$ 2,884,948	\$ 3,197,026	\$ 3,565,135	\$ 3,891,353	\$ 4,118,836	\$ 4,353,178
<i>Surplus to be put toward reserve</i>	\$ 41,721	\$ 21,337	\$ 33,846	\$ 26,832	\$ 26,718	\$ 21,440

Table 5-6: AppalCART CTSP Financial Plan for Vehicle Replacement and Expansion

Number of Vehicles	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016
Replacement	0	2	2	4	8	8
Expansion	1	2	2	1	1	1
Total Vehicles	1	4	4	5	9	9

Vehicle Types:	Heavy Duty Transit	2 Heavy Duty Transit	1 Heavy Duty Transit	3 Heavy Duty Transit	4 Heavy Duty Transit	5 Heavy Duty Transit
		1 LTV	1 LTV	1 Van	3 Vans	2 Vans
		1 Crossover	1 Van	1 Shop Truck	2 CV	2 CV
			1 Minivan			

Vehicle Costs							
Replacement	\$ -	\$ 466,440	\$ 74,252	\$ 934,961	\$ 1,524,906	\$ 1,992,103	
Expansion	\$ 575,000	\$ 419,900	\$ 485,098	\$ 421,838	\$ 438,713	\$ 456,263	
Total Projected Vehicle Costs	\$ 575,000	\$ 886,340	\$ 559,349	\$ 1,356,798	\$ 1,963,619	\$ 2,448,365	

Anticipated Funding Sources							
Federal S. 5311	\$ 460,000	\$ 709,072	\$ 447,480	\$ 1,085,439	\$ 1,570,895	\$ 1,958,692	
State	\$ 57,500	\$ 88,634	\$ 55,935	\$ 135,680	\$ 196,362	\$ 244,837	
Local	\$ 57,500	\$ 88,634	\$ 55,935	\$ 135,680	\$ 196,362	\$ 244,837	
Total Vehicle Revenues	\$ 575,000	\$ 886,340	\$ 559,349	\$ 1,356,798	\$ 1,963,619	\$ 2,448,365	

Table 5-7 : AppalCART CTSP Financial Plan for Facilities, Equipment, and Other Capital

Projects	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016
<i>Facilities and Maintenance</i>						
Vehicle Spare Parts	\$ 28,000	\$ 29,120	\$ 30,285	\$ 31,497	\$ 32,757	\$ 34,068
Other Equipment	\$ 50,000	\$ 52,000	\$ 54,080	\$ 56,245	\$ 58,495	\$ 60,835
Multi-Modal Transportation Center						
Design/Construction	\$ -	\$ -	\$ 405,600	\$ 421,838	\$ -	\$ -
<i>Technology</i>						
Real-Time Bus Information Project	\$ -	\$ -	\$ 378,560	\$ -	\$ -	\$ -
Computer Upgrades	\$ 6,000	\$ 3,120	\$ 3,245	\$ 3,375	\$ 3,510	\$ 3,650
Computer Software	\$ 1,000	\$ 1,040	\$ 1,082	\$ 1,125	\$ 1,170	\$ 1,217
<i>Passenger Amenities</i>						
Bus Stop Signs	\$ -	\$ 1,040	\$ 1,082	\$ 1,125	\$ 1,170	\$ 1,217
Shelters (1)	\$ -					
Total Projected Non-Vehicle Capital Expenses	\$ 85,000	\$ 86,320	\$ 873,933	\$ 515,204	\$ 97,102	\$ 100,986
<i>Anticipated Funding Sources</i>						
	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016
NCDOT Technology Grant Program	\$ 7,000	\$ 4,160	\$ 382,886	\$ 4,500	\$ 4,680	\$ 4,867
Federal S. 5311	\$ 62,400	\$ 65,728	\$ 392,837	\$ 408,564	\$ 73,938	\$ 76,895
State	\$ 7,800	\$ 8,216	\$ 49,105	\$ 51,070	\$ 9,242	\$ 9,612
Local	\$ 7,800	\$ 8,216	\$ 49,105	\$ 51,070	\$ 9,242	\$ 9,612
Total Projected Non-Vehicle Capital Revenue	\$ 85,000	\$ 86,320	\$ 873,933	\$ 515,204	\$ 97,102	\$ 100,986

(1) The plan identified a need for additional shelters. These shelters are not reflected in the five-year budget, as AppalCART has funds from an ARRA grant (\$500,000) that are to be used for shelters. This grant amount will be sufficient to purchase the shelters needed for the next five years.

Financial Plan for Operations

The Financial Plan for Operations was constructed by taking the current service hours (FY 2011), and then adding the services as they are scheduled for implementation. The fully-allocated hourly costs (\$52/hour) were then applied to arrive at the total annual operating expenses for each year. An inflation factor of 4% per year, as estimated by NCDOT's TIP development unit (above), has been used for the subsequent years after FY 2011. As Table 5-5 indicates, the total annual operating expenses are planned to rise from about \$2.8 million in FY 2011 to \$4.4 million in FY 2016.

For the revenue side of the financial plan, only inflationary increases in federal or state funds have been assumed, other than specific grants highlighted for inclusion. It should be noted that it is plausible that federal funding will increase upon the reauthorization of SAFETEA-LU, as transit funding has historically increased with each reauthorization. The ASU student fee is shown to increase steadily over the life of the plan, reflecting the planned improvements oriented to serving the ASU community.

Financial Plan for Vehicle Replacement and Expansion

Table 5-6 provided the Financial Plan for Vehicle Replacement and Expansion. This plan is based on the current year's approved vehicle purchases, with future replacements and expansions based on vehicle age, estimated mileage, and new services. The following useful life criteria were used:

- Minivans, vans, conversion vans, capacity of 15 passengers or fewer: minimum of 100,000
- Light transit vehicles (20-25'): minimum of 130,000 miles
- Ten-year transit buses (30-35'): at least ten years or 350,000 miles
- Twelve-year transit buses (30-35'): at least 12 years or 500,000 miles

Financial Plan for Facilities, Equipment, and Other Capital

Table 5-7 provided the Financial Plan for Facilities, Equipment, and other Capital. This spreadsheet provides the financial estimates for the non-vehicle capital that is anticipated to be needed over the five-year period. The single largest capital item is the multi-modal facility, proposed to be split between FY 2013 and FY 2014 at a 2011 cost of \$750,000 (FY11 dollars).

PERFORMANCE MEASUREMENT PLAN

Table 5-8 provides the FY 2010 performance measures for AppalCART in a number of key areas. These performance measures will be used as a baseline for future performance. AppalCART staff should review the indicators for these measures on a regular basis to ensure that the system is maintaining safe, efficient, and high quality transit services.

Table 5-8: AppalCART Performance Indicators

Indicator	Target
Total Customer Complaints per Passenger Trip	(Need to add this one)
Reportable Accidents per 100,000 Vehicle Service Miles	Less than 1
Miles between Mechanical Failure	More than 14,000 miles
Cost per Vehicle Revenue Hour	\$52.00
Cost per Passenger Trip- Overall System	\$2.17
Passengers per Revenue Hour - Fixed-Route	31
Passengers per Revenue Hour - Demand-Response	3.4
On-time Performance	90%

PUBLIC INVOLVEMENT DESCRIPTION

Several of the services planned for implementation over the five-year planning horizon for this CTSP came from suggestions made by riders, stakeholders, and the public. The following mechanisms were used to solicit public input for the development of the plan:

- The planning process was guided by a Steering Committee, which is comprised of community stakeholders from a number of key transit constituency groups.

- A public opinion survey was conducted with 1,089 surveys completed for the effort.
- Rider surveys were conducted, with 894 surveys completed on board the vehicles.
- Public meetings were held in three locations during the alternatives analysis phase of the CTSP.

SUMMARY OF RECOMMENDATIONS

Table 5-9 is comprised of two columns. The left column lists the PTD objectives for CTSPs and the right column indicates the corresponding recommendations in this plan that support the various objectives.

Table 5-9: Summary of Recommendations

NCDOT-PTD CTSP Objectives	Supporting Recommendations
<p>PLAN OBJECTIVE #1 - Promote the development and availability of transportation services throughout the state, in partnership with local officials, public and private non-profit agencies, and operators of transportation services, and members of the public.</p>	<ul style="list-style-type: none"> • Park and Ride Program • TDM Program • New routes and longer hours in support of the ASU community • Longer hours on Saturdays • Additional Sunday services • Additional service between Boone and Blowing Rock
<p>PLAN OBJECTIVE # 2 - Improve the efficiency and effectiveness of federal/state funded transportation programs.</p>	<ul style="list-style-type: none"> • Park and Ride Program • Real-time Bus Information • Multi-modal transportation center
<p>PLAN OBJECTIVE # 3 – Support and promote the coordination of public transportation services across geographies, jurisdictions, and program areas.</p>	<ul style="list-style-type: none"> • Park and Ride Program • TDM Program • New routes and longer hours in support of the ASU community • Additional service between Boone and Blowing Rock • Multi-modal transportation center
<p>PLAN OBJECTIVE # 4 - Provide dependable transportation to the general public, low income individuals, elderly persons, and/or persons with disabilities within the guidelines and funding levels provided by NCDOT and FTA.</p>	<ul style="list-style-type: none"> • Additional service between Boone and Blowing Rock • Longer hours on Saturdays • Additional Sunday services
<p>PLAN OBJECTIVE # 5 - Enhance the coordination of existing services for the development of a seamless transportation network.</p>	<ul style="list-style-type: none"> • Park and Ride Program • TDM Program • Multi-modal transportation center • Additional service between Boone and Blowing Rock
<p>PLAN OBJECTIVE # 6 - Build upon the coordination efforts that exist within North Carolina’s public transportation system.</p>	<ul style="list-style-type: none"> • Multi-modal transportation center • TDM Program

Table 5-9: Summary of Recommendations

NCDOT-PTD CTSP Objectives	Supporting Recommendations
PLAN OBJECTIVE # 7 - Serve as a basis for funding requests from NCDOT	The entire CTSP documents the need for the projects that have been recommended for implementation. The financial plan provides estimates of expenses and potential revenue sources and will serve as basis for funding requests from NCDOT.

Appendix A

Steering Committee Members

Appendix A

CTSP Steering Committee Meeting Members

Angie Boitnotte
Watauga County Project on Aging

Kedith England
Watauga County Department of Social
Services

Tim Futrelle
Watauga County Commissioner

Brent Graybeal
Watauga County Department of
Planning

Kim Hash
Watauga Opportunities

Craig Hughes
High Country Council of Governments

Lynne Mason
Hospitality House/Town of Boone
Council Member

Michael Maybee
Watauga Opportunities

David Morris
Piedmont Area Regional Transportation

Mike Norwood
AppalCART Finance Officer

Pat Perry
North Carolina Department of
Transportation, Public Transportation
Division

Stephen Phillips
Town of Boone Council Member

Stephen Poulos
Watauga County Department of Parks
and Recreation

Barry Sauls
Appalachian State University
Parking and Transportation

Jane Shook
Town of Boone Planning

Tim Townsend
AppalCART Operations Manager

Chris Turner
AppalCART Director

Appendix B

Ranking of Census Block Groups

Appendix B: Numeric Ranking of Transit Dependent Characteristics for Watauga County

Block Group Identification	Autoless Households	AH Numeric Ranking	Elderly Population	E Numeric Ranking	Mobility Limited	ML Numeric Ranking	Below Poverty	BP Numeric Ranking	Youth Population	Y Numeric Ranking	Total Numeric Ranking
371899801001	64	3	221	13	134	3	288	9	115	8	36
371899801002	34	13	226	12	136	2	175	16	143	4	47
371899801003	0	31	146	25	54	20	75	25	78	16	117
371899802001	42	10	295	5	164	1	121	20	103	10	46
371899802002	23	19	254	9	112	7	138	19	142	5	59
371899802003	42	9	180	18	50	22	183	14	61	21	84
371899803001	19	21	172	21	102	9	173	17	59	22	90
371899803002	47	6	173	20	90	11	219	11	78	17	65
371899804001	65	2	346	3	83	16	520	4	130	7	32
371899804002	42	8	131	26	46	24	290	8	34	27	93
371899804003	29	16	243	10	86	14	536	3	92	11	54
371899804004	20	20	114	28	15	30	52	28	44	26	132
371899805001	30	15	5	31	90	12	366	6	8	31	95
371899805002	11	25	69	30	22	28	139	18	28	28	129
371899805003	36	12	146	24	19	29	94	23	51	25	113
371899806001	0	28	275	7	42	26	368	5	67	19	85
371899806002	96	1	202	15	130	4	621	2	23	29	51
371899806003	17	23	198	16	43	25	39	30	88	12	106
371899806004	42	7	191	17	128	5	741	1	54	24	54
371899807001	18	22	275	6	100	10	193	13	155	2	53
371899807002	51	4	235	11	85	15	96	22	155	3	55
371899807003	48	5	259	8	114	6	297	7	172	1	27
371899807004	36	11	214	14	46	23	183	15	88	13	76
371899807005	10	26	330	4	86	13	265	10	134	6	59
371899808001	31	14	355	2	103	8	61	27	105	9	60
371899808002	28	17	364	1	66	18	196	12	83	15	63
371899809001	12	24	171	22	52	21	93	24	69	18	109
371899809002	27	18	155	23	59	19	62	26	86	14	100
371899809003	7	27	119	27	30	27	49	29	54	23	133
371899809004	0	29	176	19	71	17	98	21	64	20	106
371899810001	0	30	110	29	4	31	30	31	16	30	151
TOTALS	927	496	6,350	496	2,362	496	6,761	496	2,579	496	2,480

Appendix B: Percent Ranking of Transit Dependent Characteristics for Watauga County

Block Group Identification	Autoless Households %	AH Percent Ranking	Elderly Population %	E Percent Ranking	Mobility Limited %	ML Percent Ranking	Below Poverty %	BP Percent Ranking	Youth Population %	Y Percent Ranking	Total Percent Ranking
371899801001	8.33	4	14.44	24	8.76	5	18.82	11	7.52	12	56
371899801002	5.14	13	15.55	19	9.36	4	12.04	16	9.84	2	54
371899801003	0.00	31	15.16	20	5.61	15	7.79	24	8.10	8	98
371899802001	6.21	9	20.86	4	11.60	2	8.56	22	7.28	13	50
371899802002	3.54	19	18.38	9	8.10	6	9.99	20	10.27	1	55
371899802003	8.66	3	18.69	8	5.19	16	19.00	9	6.33	18	54
371899803001	4.90	14	20.57	6	12.20	1	20.69	8	7.06	14	43
371899803002	7.72	6	15.00	21	7.81	7	18.99	10	6.76	15	59
371899804001	5.62	12	15.94	16	3.82	25	23.96	7	5.99	22	82
371899804002	7.98	5	14.07	27	4.94	20	31.15	4	3.65	28	84
371899804003	3.38	20	14.36	26	5.08	17	31.68	3	5.44	25	91
371899804004	5.65	11	15.70	18	2.07	29	7.16	25	6.06	21	104
371899805001	10.45	2	0.10	31	1.74	30	7.07	27	0.15	31	121
371899805002	4.01	17	13.91	29	4.44	21	28.02	5	5.65	24	96
371899805003	7.58	7	17.10	12	2.22	28	11.01	18	5.97	23	88
371899806001	0.00	28	20.71	5	3.16	27	27.71	6	5.05	26	92
371899806002	11.48	1	14.56	23	9.37	3	44.77	1	1.66	30	58
371899806003	1.69	25	18.37	10	3.99	24	3.62	31	8.16	7	97
371899806004	4.16	16	10.42	30	6.98	9	40.43	2	2.95	29	86
371899807001	2.25	23	16.38	14	5.96	12	11.49	17	9.23	4	70
371899807002	6.69	8	13.92	28	5.04	18	5.69	29	9.18	5	88
371899807003	5.67	10	14.40	25	6.34	11	16.52	12	9.57	3	61
371899807004	4.65	15	15.92	17	3.42	26	13.62	14	6.55	16	88
371899807005	0.92	27	16.00	15	4.17	23	12.85	15	6.50	17	97
371899808001	2.42	22	25.52	3	7.40	8	4.39	30	7.55	11	74
371899808002	2.19	24	27.35	2	4.96	19	14.73	13	6.24	19	77
371899809001	2.49	21	19.17	7	5.83	13	10.43	19	7.74	10	70
371899809002	3.65	18	14.93	22	5.68	14	5.97	28	8.29	6	88
371899809003	0.98	26	17.22	11	4.34	22	7.09	26	7.81	9	94
371899809004	0.00	29	16.97	13	6.85	10	9.45	21	6.17	20	93
371899810001	0.00	30	28.95	1	1.05	31	7.89	23	4.21	27	112
TOTALS	138.43	496.00	520.66	496.00	177.49	496.00	492.59	496.00	202.93	496.00	2,480.00

Appendix B: Density Ranking of Transit Dependent Characteristics for Watauga County

Block Group Identification	Autoless Households Den.	AH Density Ranking	Elderly Population Den.	E Density Ranking	Mobility Limited Den.	ML Density Ranking	Below Poverty Den.	BP Density Ranking	Youth Population Den.	Y Density Ranking	Total Density Ranking
371899801001	2	21	7	31	4	26	9	18	4	30	126
371899801002	2	19	15	21	9	16	12	16	9	16	88
371899801003	0	31	18	19	7	18	9	17	10	14	99
371899802001	3	16	19	18	10	14	8	21	7	21	90
371899802002	1	23	10	29	5	22	6	26	6	25	125
371899802003	4	12	19	17	5	20	19	15	6	24	88
371899803001	3	18	23	15	14	11	23	13	8	19	76
371899803002	9	9	34	13	17	10	43	12	15	11	55
371899804001	8	11	42	11	10	15	63	10	16	10	57
371899804002	172	2	535	1	188	2	1,184	2	139	1	8
371899804003	13	6	112	5	40	4	248	5	43	5	25
371899804004	3	15	17	20	2	30	8	22	6	23	110
371899805001	174	1	29	14	521	1	2,117	1	46	4	21
371899805002	16	5	99	6	31	8	199	7	40	6	32
371899805003	71	4	287	2	37	5	185	8	100	2	21
371899806001	0	28	242	4	37	6	324	4	59	3	45
371899806002	132	3	279	3	179	3	857	3	32	8	20
371899806003	2	22	20	16	4	24	4	30	9	17	109
371899806004	11	7	51	8	34	7	199	6	14	12	40
371899807001	1	26	11	28	4	25	8	19	6	22	120
371899807002	3	17	12	27	4	23	5	29	8	18	114
371899807003	11	8	60	7	26	9	68	9	40	7	40
371899807004	9	10	51	9	11	12	44	11	21	9	51
371899807005	0	27	10	30	3	29	8	20	4	29	135
371899808001	3	14	37	12	11	13	6	25	11	13	77
371899808002	3	13	42	10	8	17	23	14	10	15	69
371899809001	1	24	13	26	4	27	7	24	5	27	128
371899809002	2	20	13	24	5	21	5	28	7	20	113
371899809003	1	25	13	25	3	28	5	27	6	26	131
371899809004	0	29	13	23	5	19	7	23	5	28	122
371899810001	0	30	14	22	0	31	4	31	2	31	145
TOTALS	659	496	2,146	496	1,240	496	5,706	496	693	496	2,480

Appendix C

On-Board Rider Survey

AppalCART - ON-BOARD RIDER SURVEY - Fixed Route Services

AppalCART is conducting a Community Transportation Services Plan (CTSP). The purpose of this study is to develop a five-year plan for public transportation services in Watauga County. As part of our planning process, it is important for us to understand the travel patterns and needs of our riders and to solicit input concerning our services. Please complete this survey for your current bus trip. When you are finished with this survey, please give it to the surveyor on your bus. If you have already completed a survey this week you do not need to complete a second one. *Thank you!*

1. What route are you **currently** riding?

- (1) Red Route (4) Purple Route (7) Blue Route (10) State Farm Route
 (2) Green Route (5) Orange Route (8) Express Route
 (3) Pop 105 Route (6) Gold Route (9) Pink Route

2. What was the location where you boarded the bus? If you transferred, the place where you first boarded a bus for this trip. Please indicate the street address, intersection, building, or landmark. *For example, Howard St./Hardin St.* Please do not use vague terms, such as "home" or "work."

3. Did you or will you have to transfer buses in order to complete this trip?

- (1) Yes, one transfer (2) Yes, two or more transfers (3) No (If No, Skip to question #5)

4. What bus route(s) will you **transfer to or did you transfer from**?

- (1) Red Route (4) Purple Route (7) Blue Route (10) State Farm Route
 (2) Green Route (5) Orange Route (8) Express Route
 (3) Pop 105 Route (6) Gold Route (9) Pink Route

5. What is your destination? Please indicate the street address, intersection, building, or landmark. *For example, Watauga Medical Center.* Please do not use vague terms such as "home" or "work."

6. What is the purpose of your bus trip today? You may check more than one.

- (1) Work (4) Social/ Recreation (7) Errands/ personal business
 (2) Shopping (5) Medical (8) Other: _____
 (3) School (6) Government Service Agency

7. Are you: *(please check all that apply)*

- (1) A resident of the Town of Boone
 (2) A resident of Watauga County, residing outside of the Town of Boone
 (3) An ASU student, living on-campus
 (4) An ASU student, living off-campus
 (5) A faculty or staff member of ASU
 (6) A resident of a different County, please indicate: _____

8. If AppalCART were to make service improvements or expand to serve additional geographic areas, what would be your top three choices?

- (1) _____ (2) _____ (3) _____

OVER, PLEASE 

9. Please rate your satisfaction with AppalCART services in the following areas:

	Very Satisfied (1)	Satisfied (2)	Unsatisfied (3)	Very Unsatisfied (4)
On-time performance	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Convenience of bus routes	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Convenience of bus stop locations	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Days of service	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Hours of service	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Frequency of service	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Cleanliness of the buses	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Driver courtesy	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Availability of information	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Safety and security	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Telephone customer service	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Usefulness of AppalCART website	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

10. How would you classify yourself?

- (1) African American (3) Caucasian (5) Native American
 (2) Asian (4) Hispanic/Latino (6) Other

11. Are you: (1) Male (2) Female

12. Do you have a driver's license? (1) Yes (2) No

13. How many vehicles (cars, trucks, motorcycles) are available in the household where you live?
 0 1 2 3 4 or more

14. Please indicate your age group.

- (1) Under 12 years old (3) 18-25 years old (5) 56-64 years old
 (2) 12-17 years old (4) 26-55 years old (6) 65 years old or older

15. Which of the following best describes your current employment status? You may check more than one.

- (1) Employed, full-time (4) Student, full-time (7) Unemployed
 (2) Employed, part-time (5) Student, part-time (8) Other
 (3) Retired (6) Homemaker

16. What is your annual household income level? Please check only one.

- (1) \$14,999 or less (3) \$30,000-\$44,999 (5) \$60,000- \$74,999
 (2) \$15,000- \$29,999 (4) \$45,000-\$59,999 (6) \$75,000 or higher

17. Please provide any comments you may have concerning public transportation in Watauga County, or the broader Western North Carolina region.

Appendix D

Fixed-Route Survey Comments

FIXED ROUTE SURVEY COMMENTS

2nd GREEN ROUTE!!!!
421 stoplights should be synced better. All entering roads never backup, but they get to enter 421 and then fill up the lanes. The stoplights turn to green and no one on 421 gets to go forward because the entering cars have filled all the lanes and the stop lights in front are red. It took me a full hour on the bus this morning to get to Convocation Center from Mountaineer Village.
20 min
A bus driver shut someone in a door!
A second purple route to make more frequent stops
A Sunday route for the Orange Route would be greatly appreciated
add a 2nd Purple route!
Add a second bus to Green Route
an extra Purple route
An extra Red route needs to be added or split from the State Farm Lot route because of overcrowding and the full hour wait between rounds at the hospital
An online service that shows where the buses currently are so you know if they will be on time or not.
AppalCART from Mtn Village is FULL to capacity. Make people take every seat and move back. Bus drivers should be assertive about that.
AppalCART goes everywhere I need to go
AppalCART has done a good job!
AppalCART is a wonderful service I am very thankful for!
AppalCART is an invaluable service for me in getting to ASU and downtown. Thanks!
AppalCART is doing a great job and people are not in the position to complain. It gets you where you need to go in a very timely manner.
AppalCART is wonderful transportation
AppalCART sucks
Appreciate it very much. Makes getting to campus extremely easy.
At New Market entrance, a shelter or bench would be nice, the winter was tough out there!
Awesome service!
Ballin...
Best I've ever seen
Better updates online during bad weather
Boone is the bomb
BUS (PART) to Durham, not just G'boro
buses should take more considerations in running when there is ice and snow. Also, buses get really full at Highlands. Maybe it would be possible to have more Pop 105 buses, or an additional route to come.
Buses to big cities like Raleigh and Charlotte would be awesome.
4:45pm
Certain routes fill up very quickly due to one bus stop like Meadowview. This makes it hard for people after these stops to have unreliable service
Could make Express more functional. Overcrowding is a big issue.
Could use more public buses that go down the mountain

Could use two Green Routes
Customer service varies but is largely unhelpful, times of arrival are often erratic
Drivers need to make sure that ALL passengers are seated before moving again especially older riders
drivers should be friendly. Lower radio down. Drivers should drive safe. Air or heat need work thanks.
Early morning there are a lot of routes that get way too full to the point where I try for three buses and cannot catch any of them. So more backup or "trooper" buses
Enjoyed it while I was here.
AppalCART and Boone.
Extend weekend hours please
For the most part, the drivers are the best thing about AppalCART. Thanks, Guys!!
Free Weezy!!
Gas too cheap!
Good
Good customer relationship
Good Job Man
Good service by AppalCART
Good things are coming... don't worry.
Great service
Great service!
Green route left my son and I at the bus stop at noon on 4-13-10. We were standing right at the sign
Green Route too expansive, split into two 30 minute routes please
Have a bus go to Outback Steakhouse in Blowing Rock
Have another bus route for east and west for Green so it can come every half hour
Have available shuttle for people after Village of Meadowview if bus full.
Have both doors open at every stop--Green Route incident when bus driver was attacked April 7 , 2010
Have maps of routes available on buses and in shelters
Hours of the routes
Hours should be extended on Purple route. Maybe 7am to 10pm
I am really satisfied with the bus service. All of the drivers are nice and friendly
I can't catch the bus after 9am because it's full. Frustrating, but that's my only complaint
across the street at the mall. Some drivers think they are the owners of the world with bad attitudes. But they only drive buses.
I enjoy having free public transportation. I am thankful for that.
I feel very fortunate to have public transportation.
I find it very useful and am grateful to have free transportation
I have to wait for the alternate (Red) route to get back to College Pl after 6pm. Classes run until 7:45
I like the AppalCART
aren't.
I love having AppalCART. It saves me the hassle of driving
day because of it.
I remember the transportation to State Farm was bad. Way too overcrowded on the weekends.
I ride everyday and the bus drivers are always friendly

I think AppalCART is a wonderful service but I think the Purple needs to run every 15 mins if at all possible because there are tons of people who ride this bus
I think the AppalCART is good transportation to almost anywhere you need to go.
I think the buses are very crowded
I think you guys are doing a fantastic service to the community!!
I think you have improved on being able to transfer Good Job!
I wish all routes ran until at least 10pm: sometimes I am on campus from 8am-whenver I get done at the libs and there has been more than once where I have been stranded
midnight.
I wish the bus covered more remote areas of town. I can't name any specific places, but it would be helpful. I also wish more of the routes ran past 11pm as students working on campus may get off work late. Finally, I wish the service on weekends/summer wasn't so limited.
I wish we had an Amtrak in Boone, but the bus system here is wonderful!
demand for it.
I'd like a way to get from Boone to Asheville by bus
If AppalCART were to receive more budgeting, an additional Red route should be added
If you wanted to go to state line by AppalCART how would you do that?
In terms of safety concerns, I know several females that have felt threatened by the drunks/crackheads that are an inherent part of public transportations systems in general. I offer no solutions.
It is convenient and a good way to get to class
it is great!
It would be nice to have a Highland's shuttle to cut out on the hectic 105 rush
It would be nice to have a late night bus on the weekends
It would be nice to have a route come around at 2am Thu-Sat to get a ride home from the bar.
It'd be nice if the buses ran on the weekend (Blue)
It's a very nice and convenient service.
It's convenient and reliable for the most part. I can't think of anyhting more to ask of the buses
it's fine
It's free so that helps a lot. Thank you.
pretty friendly
It's very convenient for me, I use it multiple times a day
I've been left at bus stops and not let off at stops countless times
I've been passed by on bus stops and wasn't let off at stops
Knowing when the buses are coming when late. Online tracking system?
late night weekend service
Later hours on weekends and/or weekdays. A route to go to Harris Teeter
Less close stops make more efficient spread out stops. Not so many close together on the same road
Little more time for routes, sometimes 30 min isn't enough
Love AppalCART. Very helpful for students without parking passes or on-campus residences.
love it!
love the AppalCART
weekends
Maybe it could run later on the weekend

Meadowview NEEDS two buses. And more than one bus every 30 minutes.
More buses needed. Too many people on the Blue route
More buses should be running in order to increase frequency and space for riders.
More frequent sit updates
More frequent stops at East Village
with rider
More inter-regional routes across several transportation systems would be helpful, ie Boone to Asheville, Boone to Hickory, Boone to Raleigh, etc
more weekend routes
Need AppalCART bus lane
Need more buses in morning
Need more sheltered stops
Need to improve snow routes, especially at Meadowview. They are unsafe and inconvenient
Needs to go to Broyhill Music Center
Not on time in morning
routes and send two
Please expand weekend routes
Please go to DMV at least to help establish transportation for others
Please keep it free
Please tell your bus drivers that if they want to stop at the SECU parking lot randomly and stay there... that they should at LEAST explain why. I would prefer they do not even stop.
Provide a more direct route from apartments to campus
Purple route needs another bus!
Red route is always late!!! By 20 minutes. Need more Red route buses expand area coverage
Roads need to be repaired
hours
RUN LATER so we don't drink and drive
Run two Purple routes during heavy hours
Some drivers are very friendly others are not. Amy, Tex and a few others make my day.
Succotash!!
Thank You
Thanks
Thanks for getting us around for free
The "on-time performance" wasn't your fault. If there were no construction going on the bus was always punctual. Otherwise it's kind of a gamble.
The Blue route gets very crowded
ie Green route.
The Express route has gotten very popular this year (2010). I'm not sure what happened, but it's like there's not ENOUGH space, and it's EVERYDAY!! Expansion?
The people who answer the phones are RUDE! If the bus is late and we call to ask where it is we're talked to like it's our fault.
The transportation in Boone is good but not very many other places

There aren't enough places readily available to park for those not on the AppalCART route. Watauga County should help this
There aren't many problems that can be easily fixed, but there are some problems (times, buses) that can be mediated. Also, AppalCART should limit the amount of standing room because when there are too many standers, which I have been on a bus frequently with, it seems like a very big safety issue
There have been many times this semester that AppalCART has been EARLY and not waited on students/people running to catch the bus or really late and a lot of people depend on the bus to get to campus on time for classes, jobs, internships, and EXAMS!
continually 5+ minutes late. He's old, white, and has glasses and bushy black eyebrows. Please put him on another route or on one of the vans.
Village of Meadowview stop gets passed by in the mornings. This probably causes people to be late for work
There should be an online service to tell if buses are running on time
There should be less routes and more buses running the same route. Current system is extremely insufficient. <ajor improvements should be made to routes.
They do very well
This is the least safe place for transport I've ever been. The bus is the safest simply because I can't be struck by a car. However there are almost no shelters and they aren't lighted.
for that!
Times can be inaccurate
Too many people on Village of Meadowview so we would like another bus maybe in between times of the original route -- every 15 min
Try to be on time more often
very convenient
Very crowded at times, although, aside from frequency, I'm not sure how this would be fixed.
Very good service
Very good service, free service is a huge help!!
Very lucky to have this because of the cost of parking passes
Very satisfied
Very satisfied with the routes, even thoug hI have to drive a little to the stop each day
We really need more than one Green route!
times
Weekend hours are too short. There are no Orange routes on Sunday.
appreciated
appreciative

Appendix E

Public Opinion Survey

AppalCART Community Transportation Service Plan Public Opinion Survey

AppalCART is conducting a Community Transportation Service Plan. The purpose of this study is to develop a five-year plan for public transportation services in Watauga County. An important task for this effort is to solicit input from residents concerning transit needs. This survey is one method that is being used to obtain this important public input.

1. Please use the table below to indicate your current **primary** mode of transportation for the following trip purposes. Check the boxes that correspond with how you **usually** travel for these typical daily trips.

	<i>Modes:</i>						
<i>Trip Purposes:</i>	Drive Myself	Ride w/ Family/ Friends	Public Transportation	Bicycle	Walk	Taxi	Other
Work							
Medical							
Social/ Recreational							
School							
Shopping/Errands							

2. Are you aware of the public transportation services that are provided by AppalCART? Yes No
3. Do you currently use any of the following forms of public transportation on a regular basis? Please check all that apply and indicate how often you typically ride:
- AppalCART in-town fixed-route services—How frequently? _____
 - AppalCART rural dial-a-ride routes—How frequently? _____
 - Taxis—How frequently? _____ Vanpools—How frequently? _____
 - Carpools—How frequently? _____ Mountaineer Express—How frequently? _____
 - Hickory Hop—How frequently? _____ Other: _____ How frequently? _____
 - I do not currently use public transportation.
4. If not, why not? (please check all that apply):
- No service near my home/work/school. The bus/van is uncomfortable. The fare is expensive.
 - Don't know if service is available and/or location of stops. I have limited mobility/hard for me to use the bus.
 - Buses/vans are unreliable/late. Need my car for work/school. The hours of operation are too limited.
 - Need my car before/after work/school. Have to wait too long for the bus/van or between buses/vans.
 - Need my car for emergencies/overtime. It might not be safe/ I don't feel safe.
 - Have to transfer/too many transfers Trip is too long/takes too much time. Other: _____
5. Do you think there is a need for additional or improved public transportation in Watauga County? Yes No
If you checked "No," please skip to Question #8.
6. If you checked "Yes" for Question #5 above, please indicate *where within Watauga County* there is a need for additional or improved public transit services?
-
7. If you think there is a need for additional intra-regional services between jurisdictions within the region, or intercity bus services in the broader Western North Carolina region, please indicate the most important linkages:
- Boone and Wilkesboro Boone and Lenoir Boone and Morganton Boone and Hickory
 - Boone and Statesville Boone and Asheville Boone and Charlotte To/from: _____

Over, Please ⇨

8. If you checked "yes" to Question #5 above, please indicate what other improvements you think are needed:
- Additional days/ hours/frequency of service for the current AppalCART services. Please indicate which additional days/hours are needed (*check all that apply*):
- Additional Sunday service Service later in the evenings Service earlier in the mornings
 Additional Saturday service More frequent service Other: _____
- Quality of service improvements for AppalCART (*check all that apply*):
- Improved on-time performance Cleaner buses Safer buses
 More helpful staff Additional bus shelters and benches Improved access to transit information
 More informative website Other : _____
9. Would you use public transportation services in Watauga County if there was a service that met your travel needs?
 Yes No
10. Would you support either of the following financing mechanisms that could potentially be used to help fund public transportation improvements in Watauga County? (*check all that apply*):
- A vehicle registration fee of up to \$7.00 per vehicle. A ¼ cent sales tax.
 I would not support either of these options, *but I do feel public transportation in the County is important.*
 I would not support either of these options, *and I do not feel that public transportation in the County is important.*
11. Please indicate your zip code of residence: _____
12. Do you have a valid driver's license? Yes No
13. How many working cars/trucks/suvs/motorcycles in your household? 0 1 2 3 4 or more
14. Please indicate your age group.
- Under 12 years old 18-25 years old 56-64 years old
 12-17 years old 26-55 years old 65 years old or older
15. Which of the following best describes your current employment status? You may check more than one.
- Employed, full-time Student, full-time Unemployed Employed, part-time
 Student, part-time Retired Homemaker Other
16. What is your annual household income level? Please check only one.
- \$14,999 or less \$30,000-\$44,999 \$60,000- \$74,999
 \$15,000- \$29,999 \$45,000-\$59,999 \$75,000 or higher
17. How would you classify yourself?
- African American Caucasian Native American
 Asian Hispanic/Latino Other
18. Please provide your comments regarding the need for improved public transportation in Watauga County and/or in the broader region of Western North Carolina.

Please return this survey to the survey box, or mail to: KFH Group, Inc., 4920 Elm Street, Suite 350, Bethesda, Maryland 20814. Questions? Please call 301- 951-8660

Appendix F

Public Survey Comments

Public Survey

Comments

<p>A bus to asheville and raleigh from boone, routes on sundays and more available routes throughout the day, more shelters</p>
<p>A bus, similar to the bus that runs from Boone to Greensboro, would be extremely helpful if it went to Charlotte. I've spent a lot of time commuting back and forth both because my family is there and because my boyfriend is there. I would definitely not mind spending the money to ride a bus instead of having to drive back and forth on a regular basis.</p>
<p>A late night service would help lower drunken driving incidents and get students home safely. More Saturday services can help during football season.</p>
<p>A late-night bus service in Boone (Watauga County) to cut back on the amount of ASU student drunk driving.</p>
<p>A lot of people frequent Asheville as much as those who take the Mountaineer Express or that travel to Charlotte. Intra-regional transportation would be ideal. Locally, the transportation system is very decent.</p>
<p>A lot of the service is offered right in town, where I can either ride my bike or walk. When living further out, (ten to fifteen min drive with traffic) by five miles or more, service is no longer available and I am forced to drive and add to the horrible congestion in this little town.</p>
<p>A lot of times the buses are already full by the time it gets to my stop.</p>
<p>A route that goes all the way down Poplar Grove Road between ASU and 105 would be wonderful and I would</p>
<p>A satellite parking lot would make using the Appalcart more accessible.</p>
<p>Again, I think a regular, Mountaineer Express-style bus to Charlotte would be so incredibly helpful.</p>
<p>Again, if they would just slow down and check to see if people are on their way down to the bus stop if they know they're going to be earlier, than the time on the website!</p>
<p>An additional orange route would help in the over flow at mountaineer village. sometimes the buses don't show up at all or arrive late. one of the orange route buses stops driving at 530, it would be helpful with rush hour traffic if this bus continued til about 6 or 630.</p>
<p>An app for telephones that shows where the buses are on the current route would be helpful. I think NCSU has one like this.</p>
<p>Appal cart should run longer on weekends</p>
<p>Appalcart does a great job of getting me where I need to be on campus and around town, but I definitely think that some of the drivers should work on being more on schedule. The Appalcart route map tells us a certain time, and I understand having a 3 to 5 minute window of opportunity, but I feel that when the bus is 10 minutes late in the morning that it's a little unacceptable.</p>
<p>Appalcart drivers have become noticeably more aggressive over the past couple of years. I cannot count the times I have been cut off in traffic by one of these drivers! I also can't stand getting stuck behing one of these buses. I think when a line of traffic has accumulated behind one of these buses due to frequent stops, they should be considerate enough to pull of the road, and let other drivers pass them. I'm to the point that I dread seeing the Appalcart coming! Please find better drivers!</p>
<p>Appalcart has done a great job for me in the past. I used to ride it everyday to class and it was late maybe twice. The drivers know what they are doing and I think that your routes are well planned. This is of course based off of my limited use of the Green/Orange/Red/Blue routes. I think that you can improve the Pop105 because too many kids ride it to Highlands. Maybe adding a separate shuttle that goes only from campus to there would improve instead of doing 3 or 4 busses an hour. All the kids want to ride the bus that gets them to class right before it starts so everyone left after still has problems getting on. It's not the worst thing in the world, but being told I can't get on twice while it was raining and then when it was about 3 degrease outside, really made me</p>

AppalCart has done an adequate job of providing transportation from my home at Mountaineer Village to Appalachian State, however, I cannot speak for any other bus than Orange because I have never ridden another.

Appalcart is a great form of public transportation and I love that it is free to use. The only issue with Appalcart that I have, is that it is not always reliable. On one occasion, just a few weeks ago, The Express route broke down in the middle of Blowing Rock Rd. And was able to drop us off at the back side of the mall. The driver radioed to the Pink route so that they would know to pick us up. After waiting half an hour, the Pink route sped by the group of stranded Appalcart riders without stopping. As a result, I, a female, took my chances and accepted a ride from two previously unknown gentlemen. As potentially dangerous as the situation was, I was in urgent need to get back to campus and took my chances. Thankfully, the two men were very kind and trustworthy.

AppalCART is a great service. The only improvement I suggest from what extent I use the service is to have two buses scheduled to run on the purple route, at least at certain times in the day. POP 105 has several buses and they never seem to fill up, but Purple often skips my stop (Ivy Dr) because sometimes there's no room left on the bus.

AppalCart is a GREAT service. You guys do a great job. I would like to see more frequent service, and I know that's difficult to dial in, especially when route needs change when students are not in town. We much appreciate that an Orange route runs year-round now. The new WHS opening in August is going to be a real challenge out east of town, I fear. I would also like for the Town of Boone, Watauga County, and AppalCart to explore ways to create and integrate PARK & RIDE satellite services out in the county. To an extent, people are already doing this closer in. Riders leave cars at Brookshire Park, Mountaineer Village, and New Market Center now. I think we could alleviate some Boone traffic problems if we made park and ride a viable alternative for potential riders further out. I appreciate the services you guys provide, and since it's free, I don't feel it's fair to complain about it too much!

Appalcart is excellent. If I was a permanent residence I would use this facilities much more.

Appalcart is great. But could be a little more reliable and some of the drivers (Esp. Pop 105) are terrible! I honestly fear for my safety with some of them that fly around curves and slam on the brakes

Appalcart is unreliable, rarely on time. Start by improving the routes we already have then maybe think about expanding. I also would not support an expansion of the service if it costs the taxpayer more money. Charge fares rather than tax people that do not use the service.

Appalcart routes do not go far enough up highway 194 or down 105. I have to drive to class because I can't catch a bus from where I live. Lots of people live farther down 105 closer to Valley Crucis

Around campus there needs to be a late night or better a 24 hour bus route that follows something similar to a combination of Red Route and Pop 105 route. Even if it cost some money I would still use it.

As a student that uses our new 24 hour Library, as well as an adult who enjoys the evening social scene in Boone, there are few safe outlets for transportation after midnight. Adding later hours to Appalcart services, even if there is a late night fee would be a great step for Appalcart to make. The Town of Boone would definitely see a decrease in DUI offenses, and would have a much safer community if Appalcart follows through with adding late night hours.

As I have stated in previous surveys, I believe that the Orange Route would be better served with a stop on Clint Norris Road off of 194 as the road is a loop and would likely only add a few minutes onto the route.

Although the route has more buses than other routes, the bus has been up to 50 minutes late at times which can be quite frustrating. As traffic can make it impossible to make routes more ontime, perhaps an online system on the appalcart website could be implemented to let riders know how late buses are running (particularly during rush hour); as a graduate student and employee I could have been more productive to ASU if I did not need to wait for outside for extended periods of time due to the bus being stuck in traffic.

Hopefully this will become moot once King St. is expanded, but in the meantime it would be helpful.

As I mentioned, I live at the top of Stadium Drive and currently either walk or drive to school. My husband most frequently drives himself to school now, as he was hit by a truck while bicycling down Stadium Drive last year. Our street is unsafe to walk and bike down, particularly in the winter, as there are no sidewalks. If a bus went up the hill, we would use public transportation.

As mentioned earlier, a solo bus route that hit all major roads and apt. complexes late fri. and sat. night would greatly reduce drunk driving. This could be a very infrequent bus, but it would need to run until 3:00 AM or so to be very effective.

As stated before, I feel this is a definite need for direct transportation to and from Boone to major NC airports. The current Mountaineer Express has very limited hours and there is a need to transfer at certain points. Also on weekends free service from the airport to the hub is not available. People that need to fly out of NC airports to visit family/work related/ or for students is necessary. Only direct service from Boone to a nearby airport is through a limo service which is extremely expensive. Driving to an airport and leaving your car over spring break/winter break is also quite expensive. The college is growing by leaps and bounds and we need a service for our growing population for out of state residents and for our visitors and summer residents.

Awesome Show, Great Job!!!

Be more on time. I take the Appalcart to class and several times this semester from using the Appalcart it has made me late to class and professors do NOT like this at all.

BE ON TIME ARGHHHHHHHHH!!!!!!

Because of the increased traffic due to the construction on 421, buses that travel through several of the major roads are continuously late. A lot of students that are full-time at Appalachian live off of campus and are completely dependent on the AppalCart getting them to class on time, because we can't afford parking passes on campus and because there is a limited supply of parking spaces. There have been times where the Appalcart is early, and doesn't wait until the appropriate time at the bus stop, it is rarely on time, but most of all, the Appalcart is usually late. Today for example, I was unable to get the bus that arrived at 12 after the hour so I had to wait for the one that was 42 minutes after the hour. Said bus didn't arrive until 15 minutes later after I had already commissioned a friend of mine to drive me to school, even so I was 15 minutes late to class. Had I waited and got on the bus that came at 7:57 rather than the 42 I would have been probably more around 25 minutes late. Either of these options would leave me over ten minutes tardy which is looked down upon by instructors at Appalachian, but, obviously, I had no other choice.

Better AppalCart drivers. There are a few drivers that I will dread riding with because they are so reckless. It's like they don't even pay attention to anyone else on the road sometimes.

Blue Route is always crowded in the afternoon, to the point where you have to wait until it has to come around. I'd say 90% of the time I ride it, it's completely full which is about 2 times a day for 4 days.

Bus between Boone and Asheville would be wonderful!

Buses after large apartment complexes are often full and people are left.

Buses and vans need to run later on Fridays and Saturday nights for party students and out to blowing rock but a charge fee

Buses should run later routes to insure safe traveling during the night
Buses turn people off. I know trains are expensive but if there is any possible way to fund it id go for it. People will flock to them. Intercity travel especially, noonday would drive if there was a train. I know thats too much for local government to handle so cooperate on up the chain and make it happen! Americas genius lies not in our ideals but in our ability to solve our problems! Get to work people! Political expedience be damned!
Cleaner fuel.
Currently, the bus Appalcart system is pretty good. At times however I get frustrated wit having to, at times, wait for half an hour for a bus, if not longer. Also, taking the bus to campus on Saturday is a nice thing since parking is a hassle. However, when I need to leave (around 7 or so) there isn't a bus running. With what y'all have, it works great! Just maybe another bus or two running a little later on Saturday would be nice,
Definitely need a bus like the Mountaineer Express but to Charlotte!
Divide the Red Route into two separate routes. Extend the night service hours, especially on the weekend. Starting thirty minutes earlier during weekdays would benefit the community, as well.
Due to the fact that students are charged a transportation fee, I don't not believe that student should be required to pay additional fees to cover the appal cart. In boone, boone residents who are not associated with the university should attain a bus pass or pay a bus fee. Every morning Tuesday and Thursdays at 9:30 the express route is filled to maximum capacity, students have to be concerned about whether they will be able to get on the bus, which should not be a concern when they are paying for a service. Parking on ASU campus is unrealistically expensive and the student population is growing. Expansion does need to be made to accommodate students using public transportation to and from class. More buses running more frequently in the mornings 7-11 and then having more routes run in the evening times 5-9pm would manage the overcrowding within the boone area.
Due to the increased amount of students being admitted, every school day the buses have to pass and leave so many students at the bus stops. This causes students to miss class unnecessarily.
everything seems fine.
Expansion of the extent of AppalCART routes could increase ridership (especially in winter months). Up-to-speed information on bus routes could be presented to users online, or at shelters. Integration of intelligent transportation systems and GIS would make process easier automatic passenger load / unload counters per stop, real-time online maps, schedule-based pathfinding...so much potential
extended hours.
Firstly, I truly appreciate the service and all of the drivers for their dedication. I do, however, have a couple of concerns. <input type="checkbox"/> <input type="checkbox"/> The problems I see are for Orange Route specifically. I live on 194 and park at Lowes. I usually try to catch the bus at the stop right by Lowes on 194, but I have started walking to and from class because buses have become so unreliable. <input type="checkbox"/> <input type="checkbox"/> On time - Late is not a problem. I realize that 421 traffic is outrageous. The problem arises when the bus comes 5 minutes early because it didn't wait the 5 minutes it was supposed to wait at College Street for just that purpose. <input type="checkbox"/> <input type="checkbox"/> More buses in the morning when hundreds of students need to be at class at the same time and half or more are left behind. Especially when drivers don't even try to fill their buses to capacity. <input type="checkbox"/> <input type="checkbox"/> The same problems occurred last year when I rode Pop 105. Now their are 5 or 6 buses for Pop and other routes all over town are still struggling to serve their riders. <input type="checkbox"/>

<p>For people who commute daily to work in Winston or Wilkesboro, or who reside in Boone but take summer classes off the mountain it is hard to take the Mountaineer express because of its late arrival times in wilkesboro/winston. If there was a bus that left Boone in the morning and made it to wilkesboro between 730-800 and departed between 5-6 I think that more people would be able to commute using public transportation.</p>
<p>For students taking the bus to and from campus, we rely on the bus to be on time. When its not, it causes us to be late which relates to stress and poor grades. Both of which can lead to health problems. I, personally, hate the system because EVERY time i try to take the bus its ALWAYS late and it takes way too long to get to campus. Routes are too long. Or at least mine is... the Orange Route. Plus, I vote that each bus makes a stop at 3 different campus locations: Convo, Raley, and Library Circle.</p>
<p>For the different routes that go around campus, particularly pink and purple if the routes could be made shorter so that they came more frequently-it would be extremely helpful. Having the routes come every thirty minutes is discouraging if you need to be at campus at a certain time and you are either extremely early or late.</p>
<p>From my experience using the pink route from the APH to campus I've noticed that the bus is always packed and cramped. Maybe another bus could be added to the route from the aph and back</p>
<p>Get rid of the unnecessary stops in order to be able to add more stops and save money.</p>
<p>have more buses on the routes for appalcart</p>
<p>Have more than 1 or 2 busses on each route...when the bus only comes twice an hour it makes it very hard to schedule yourself around it, especially since mostly it doesn't coincide with classes ending. In addition, the seats on the bus are limited and uncomfortable.</p>
<p>Having a transit between Boone and Asheville would be AMAZING- that would also really complete your current network, considering Asheville is a very large city on this end of the state. And my hometown. :)</p>
<p>I am begging for a route to go to Blowing Rock so I can retire my car year round.</p>
<p>I am mostly concerned with PROMPTNESS. The Purple Route is my main route and it is generally always late. Improved time span would be ideal.</p>
<p>I am one of many students living out in the Kellwood Drive area. I think it would be great if you guys could run a bus out here for a general pickup.</p>
<p>I am very appreciative of Appalcart, and use it occasionally. When I lived in town, I used it regularly. Now I live in Foscoe, so I only use Appalcart on occasion. In an ideal world, there would be a more regular schedule to Foscoe. I also think if there was a way for it to be economically viable, having an Appalcart system with somewhat regular routes between Blowing Rock-Boone-Banner Elk would be a great idea too.</p>
<p>I am very thankful to have the Appalcart as a means of getting around Boone. I take the bus almost everyday, seeing as how I do not have a car of my own. However, I do think the public transportation system could benefit from some changes/improvements, especially since it is partially funded by student tuition. I definitely think that the buses needs to run past 11:00pm Monday-Sunday for two very important reasons. One, where I am currently living, the last bus that runs to my house leave from Raley Hall is at 10:25pm. Because my schedule is so busy, I usually don't end up being able to study at the library until about 9:00pm, giving me very little time to get my work accomplished before having to catch the bus, even though the library is open 24 hours. Two, if there were buses running into the early morning hours on the weekends (2-3AM), I know a number of people who would use it instead of driving drunk! I hope you consider my suggestions.</p>
<p>I believe AppalCart does a good job but is far too ASU oriented. The fact that you don't run virtually any routes when the fall/spring semesters aren't on shows how dependent on ASU you are. I believe that "if you run them, they will come". Very few non-ASU students ride the buses because they are inconvenient, and stop running too early (especially express route). I'm in the office until 6 PM most days, so how can I catch a bus that effectively stops running at 5:55?</p>
<p>I believe Appalcart is doing a great job with helping with the needs of public transportation. I do believe that one of the reasons it is needed so much is because of the lack of parking on campus and how expensive it is.</p>
<p>I believe that appelcart should address the issue of the rising traffic in boone and how it will effect the public transportaion in five years.</p>

I believe that I would be very helpful if the buses could be tracked through GPS. This way students could go to the website or download applications to their phones to see where the buses are, which would allow them to better predict when to arrive at the bus stop and to know when they need to catch the bus to arrive at campus on time.

I believe that improving public transportation in this area should be a high priority. There's not much room to expand in the high country, and the more cars off the roads, the better for everyone really. I am a student but I think the key here is to get local residents riding the bus more often too! It should be a great tool for everyone to use and that means running a little more often and on weekends or when school isn't in session.

I believe that more routes should be made for those living in Mountaineer Village. With it being the last stop and quite possibly one of the largest pick-ups, I think that there should be more routes offered earlier in the mornings for people who need to be at a particular place early in the morning. Other than that I believe that AppalCART is a great way of transportation in the Boone area!

I believe that the public transportation system up here is above par when compared with the rest of the state.

I believe that the State Farm bus in Boone needs to run all day every day, or to have another Red bus so that the students that have to get their car from the State Farm Parking Lot during the day, do not have to wait an hour if they happen to miss the bus. The buses also are not completely reliable and may be running behind which in turn causes the students to wait for long periods of time or to miss the bus completely. This can cause students to miss appointments or any emergency that they may need their car for. In doing this, it will also result in fewer students cramming on the bus at a time, trying to get back to campus at the end of the weekend. I also recommend another Orange bus, as well as other buses that visit major apartment complexes, due to the number of complaints from the students that live in these areas that have to cram on to the bus or are left behind by the bus drivers because there are simply too many people on the bus. This in turn causes the student to be late to their classes and can ultimately effect their grades and academic improvement.

I believe the use of bikes for rent would be efficient and better for the environment. The cost be included in tuition here at Appalachian and student could swipe their cards and go and rent the bikes as long as needed.

I believe there should be transportation between Boone and Charlotte

I believe, as a college student without a car on campus, that a bus route going to and from Wal-Mart ONLY would be helpful. Otherwise, we have to ride the Red Route or Purple route which could easily take 30-40

I definitely think the bus schedule needs to start earlier in the morning. What if people want to arrive on campus before 7:30am and before their 8am class? That's not giving enough time to enjoy a nice breakfast. ☐

☐
And some bus drivers are not safe at all, and absolutely unfriendly. There needs to be checks on the drivers. Have someone in disguise go onto the buses and see how well the drivers respond to people and see how safe they drive. ☐

☐
And safe ride? Are you kidding me? Everyone on campus calls in Danger Ride because that's exactly what it is. I have never ridden Safe Ride and felt safe. And the woman who answers the phone is soooo rude! I dread calling Safe Ride just because of her!

I drive to hickory on the weekends and I know a lot of other people who do as well so it would be nice to have some kind of public transportation for this.

I enjoy riding the AppalCart, and would certainly like to see this service grow. I would also like to comment on the consistent kindness of the drivers of the AppalCarts. Thanks!

I feel (specifically the purple route) that there could be later bus routes and for summer, there could be earlier ones.

I feel as if catching an Appal-Cart on the weekends is a crap shoot. Im not even sure if all of the buses run or on any given schedule. Boone certainly does not close on the weekends and makes relying on public transportation a hassle.

I feel as if the buses should be on time more often. Many students depend completely upon the appalcart routes to get them to and from classes on time. There are plenty of times where the bus is either late or so full that it just keeps on going. This is not reliable service and makes it harder on those of us that are completely dependent on the appalcart to get us to and from campus for classes on time.

I feel like the public transportation system is running just fine, and there is really no need for change.

I feel that specially the Appalcart transportation at ASU needs a better outlet for information or greatly improve on their webpage. The webpage is not only difficult to understand but also hard to find the necessary information. It also lacks important information like the different hours of operation both in normal schedule and special schedule, as well as it is not updated. It makes it very difficult for the person who is transporting through it.

I greatly appreciate the public transportation system. I'll definitely be utilizing it often next year for school (I didn't need it all that much this year because of where I was on campus), but I support any improvements to the system, though I don't really know that it needs any.

I hate the appalcart system, it's idea is superb but the fact that it's never on time, or always late, or one to two routes behind makes it completely useless. I know i'm speaking for several students when I say that the only reason why they take the appalcart system is because they're left without another option because campus parking is even more ridiculous than the appalcart system.

I have been saying that the Appalcart needs to be more student friendly for a long time. If you ran a late night bus service around Boone and found a way to fund it, either through a sales tax or by charging a fee to riders, I would use it very often. I hate to say it, but in my experience, the Appalcart is easily the worst public transportation system I have ever seen.

I have to either drive in with my mother-in-law or drive myself to Boone everyday from Zionville. I wish there was a bus that would make rounds to Zionville from 7 A.M. until 12 A.M. The bus could have hourly pick up times from 7 AM until 11 AM, and then afterwards they could come by ever three hours to pick or drop people off. It would really save on gas.

I have to get rides to Lowe's Foods for a ride on the bus now or walk 5 miles to get to the bus stop and I am pregnant and have a hard time also getting my two year old to daycare so she had to drop of out daycare and get private care in my home. If I had had the bus route near my home then she could have stayed in childcare and it would not have been so hard for me to attend class every day.

I have used the Appalcart frequently since 2006. There have been times that I have depended on it as my sole transportation. The main problems I have found are buses coming early and leaving before the assigned time, buses being more than five minutes late, buses being over-crowded, and sometimes the drivers seem to take more risks than I feel comfortable with as a passenger. I have mostly used the purple route which comes every half hour, but it would be nice to have one that came in-between to help meet the large number of passengers, give students a bus to take that arrives sooner in case they miss one, and give students more options instead of arriving at class on the hour or having to get there half an hour early. I realize that you can't control traffic, which is why if traffic is light and a bus is ahead or schedule or traffic is heavy and a bus is behind schedule, it would help to have more frequent buses as I mentioned earlier.

I hope that there will be more options for getting to Asheville, Charlotte, and Knoxville. Thanks!

I know a lot of students and low income families that live in Deerfield and in the Bamboo road area. They need a bus to go out there! It's hard/impossible for them to afford a car. Lots of students have apartments around Whispering Hills resort. THEY NEED AN APPALCART! Even if it only made five trips there a day--at 8am, 11am, 2pm, 5pm, 8pm.

I know there was a 3rd Pop 105 route added recently but it still really doesn't help those like me who live after University Highlands on this route during high traffic times. I cannot tell you how many times I have been late to class because the bus was full and just kept driving past me. It is very frustrating. My suggestion would be to cut back the 3 Pop 105's to regular 2 and have a shuttle directly to and from highlands instead during busy times.

I like having the AppalCart but more frequent and on-time service would be the most helpful. Also, later in the afternoon when there is only one bus running, it is awful having to wait around for 30 minutes just because you

I like the AppalCart system and I think it is generally very efficient. I like that it is free for everyone. Most of the problems I have ever encountered have been due to issues that are generally outside of AppalCart's control, namely the traffic on 421. I hope that once the construction on 421 is finished it will help improve the reliability of the buses that use it. I think that additional bus routes along 421 could help (i.e. it seems that Green Route and Orange Route travel a pretty long way for one route).

I like the buses and most of the drivers (some can be quite rude) but I think that the most important thing is that buses reach the stops when they are scheduled to. Too often I have waited an extra 10-20 min. or missed the bus because it was 10 minutes early!

Also if there were some availability (maybe only weekends) for the bus to take people to the parkway from one or two places in town so that people can spend the day on the parkway, this would cut down significantly on the amount of traffic and gas used to and from the parkway for recreation!

I like the convenience of the transportation but see the need for better care of the buses.

I live a few miles down Bamboo Road from US 421. If there was a AppalCart stop closer to me I would use it to get into town regularly.

i live at University Highlands. I think there should just be a Highlands bus because there is no room for any more people after they stop at highlands

I live on Stadium Drive near the apartment complex. As I mentioned earlier, a route to Stadium, beyond the parking lot, would be really helpful. The road is fairly dangerous to walk along because of the lack of sidewalk, I've nearly been hit several times, and the hill is a really rough trek during the summer and snowy months. I've also found the appalcart to be helpful when I need to get to stores and other things, but only from on-campus.

I love appalcart!!!

I love that it is free, but it often isn't running when I need it.

I love the presence of public buses in Boone! It is a fabulous resource and should be praised for the services it has provided for the town for many years. The partnership between the city and the university is encouraging as well. What I would love to see is a bus service to and from the international airports.

I mainly ride the Appal Carts. They do their job most of the time, but one of my biggest pet peeves is buses leaving early. You never know if the bus has already come and gone or is just late and you end up wasting more of your time. Also it's hard to find out which routes to take and when to take them to get to a destination. The website doesn't help much, and it's impossible to figure out when and if certain buses are running during breaks and weekends.

I make use of the public transportation system in Watauga County as much as possible. However, limited evening schedules, inconvenient switching points for bus routes, and infrequent/unreliable stop times make my use of the system much less than it could be. If these problems could be alleviated, I would probably use the bus system for most of my transportation needs.

I moved here from a place where I relied on public transportation for all my commuting and most my shopping needs. I was dismayed at how inconvenient the public transit is here, but still try to use it. The Mountaineer Express is great, for a weekend, but not for a day in G-boro. It also runs so infrequently it's hard to use it to get to the G-boro airport. A bus that went to Charlotte often enough so you could go down there for a day would be great. (ANY bus to Charlotte would be great, to hook up with the airport)

I really do enjoy the AppalCart, but I often find the bus is not on time. This is the reason I don't really like riding

I really love the Appalcart and I'm glad we have it. My husband and I share a car and the Appalcart enables us to do this. We would love to see more public transportation connecting to the Charlotte airport and Asheville. I would use the Appalcart more myself if I didn't have to transport other people and equipment.

I think that increasing public transportation from a point in Ashe County and Tennessee would improve traffic as well.

I rely heavily on the Appalcart for school during the week. It is frustrating to have countless Appalcart buses pass you because they are too full, especially during our past very cold winter. I would suggest that if there are not enough current funds for having more buses: start charging 25 cents for non-student riders (since some of our tuition at ASU does go towards the Appalcart transportation) and/or have a route that goes to the highlands every other bus (so that the opposite every other bus could pick up people not mainly just from the highlands). This, I believe, would reduce the number of people left behind waiting at the AppalCart stops and supply more funds for a greater future system of public transportation.

I ride Appal-Cart daily to my job. I usually ride Express from work, and miss it when ASU is not in session. I would like to see Appal-Cart Express operate year-round. If I work later, there is always an Appal-Cart coming around in another 30 minutes to an hour.

I ride the appalcart every day. It is a great method of transportation until the evening hours. The buses need to run more frequently at night, because it does not feel safe to wait on a bus for half an hour or hour at stops away from the main area of campus. I would really appreciate the buses running longer during the summer too.

I ride the pop 105 bus and i just don't feel like i can depend on them to be on time

I see a serious problem with pedestrian traffic. Around college campuses there should be more student right-of-ways. There should not be 4 lane roads going through campus and there should be a safe way to walk to the mall if commuters are encouraged to park off campus. Funding could be better placed making pedestrians feel safer, especially students. Maybe limit traffic on and around campus rather than give students tickets for jay-walking. Harden is scary to cross on foot as well. It is not good for businesses adjacent to campus. The appalcart is pretty good. When I've taken it is is generally on time except during inclement weather. I don't think simply extending hours of operation or increasing routes will change people's behavior. Also, I live in Asheville and I have to drive but I might take a bus if one were available.

I think a bus route from Boone through Wilkesboro to Charlotte and back would be useful to a lot of people, and I would definitely use it. Maybe a route from Boone to Lenoir, Hickory, Morganton, Asheville, and then back to Boone would be useful too.

I think a taxi service and a bus route to Asheville from Boone would be the greatest additions to public transportation in Watauga County.

I think about any other region that you add the apple cart in other parts of Watauga County they will be used. I live in Vilas so I would like to see them run out that way, personally.

I think free public transportation is great. A lot of people don't have the necessary means of transportation to get to class or other places, so public transportation is great.

I think it is amazing that Watauga provides free public transportation. I just wished the ApplCart was more reliable. I also have a difficult time translating when exactly the buses will arrive and what location I need to go to get on the correct bus. Other than that, ApplCart is as close to perfection on wheels a bus can get.

I think it should be student transportation only

I think more frequent bus service will really enhance our transit system. I can get where i need to go around Watauga, but i find my self waiting for the bus for a really long time. For example a Wal-mart trip can take 2 to 3 hrs when i take the bus, but around an hour or less if i go with a friend in their car.

I think that friendlier Appalcart staff is very important. There are often times that the bus drivers are grumpy and unhelpful when asked a question and I know specifically a girl who emailed the Director of Appalcart with a couple concerns and he was EXTREMELY rude to her and completely blew off everything she had to say and told her she was very wrong.

I think that multiple buses for one route should run later into the night.

I think that public transportation is very important to our region, especially for students. With parking being so limited and the Appalachian's campus only growing, AppalCart is an integral part to a student's life. Not many freshmen have cars in the area and even so, have limited access to them during the week. AppalCart also provides public transportation for working adults in the area and helps with our pollution output. □
It is important, however, for us to put some effort into fixing our roads for the public transportation system to truly be effective. Roads and the infrastructure are extremely important to public transportation and should be taken into consideration.

I think that since ASU forces us to park so far off campus, we should be able to access our cars at any time during any day. We are constrained to this campus and it shouldn't be that way.

I think that University Highlands should have their own bus route. After the Pop 105 picks up at University Highlands, there is never enough room for the bus stops after the University Highlands stop. □

The State Farm Route needs to run more than 2 times an hour and preferably before 3 p.m during the weekdays.

I think the AppalCART does a great job. I'm sure no one would enjoy the added congestion downtown if it went away. Personally I would use it more except that I usually have to drop my daughter off at daycare before school/work.

I think the Appalcart is great and I am glad that it is provided to students. All of the drivers are very nice.

I think the APPALCART provides a great service to the community and would even support paying a bus fee(25 cents or whatever) a ride or pay a flat rate and get a bus pass. But since the Hospitality House is moving to Bamboo Road I sure hope APPALCART has prepared for the traffic increase in those areas.

I think the Appalcart need to run on a stricter time schedule.

I think the Public transportation system is doing very well considering the funds available. I understand that there needs to be more funding in order to supply more buses. My only thoughts are since more apartment complexes are being built throughout town it puts more strain on the, already crowded, buses. I feel like something could be done during the busiest hours of the day to help students catch a ride on the bus.

I think Watauga County is trying to become more green and having less congestion on the roads which I think is great. But you have to realize the buses are not convenient, I have to be at work almost right after I get out of class and it is just easier to hop in my car to get there than wait for a bus that may be over-crowded in the first place, and may have to stop several times before it gets to my stop. Although the bus comes to both my apartment and workplace directly without having to walk elsewhere to wait at a designated stop, I still choose to not take it because of inconvenience.

I think we need something like a park and ride system for people living outside of Boone but who work in Boone. This would get everyone to work without all the traffic in the morning and evenings. Also, more stops outside of town, not just Bamboo Road.

I understand that traffic and construction frequently cause the bus to be late. Construction is constantly interfering with traffic and bus routes...it's an issue. If there's any way to switch to nighttime construction, that would be awesome. Also, I've been on the Orange Route several times when the bus has had to leave behind a lot of passengers trying to get to class because the bus is already full. Obviously these kids need to learn to think ahead since they get left at the bus stop several mornings a week, but greater bus frequency in the mornings might be a solution?

I use appalcart to get to my car at statefarm.
I utilize the Green route from Pinnacle Dr. during the week to get to classes. However, it becomes very difficult to use it efficiently because it only come once an hour. My suggestion is to split the Green route in two and have one for 421 South of College St. and one for 421 North of College St. More frequent stops would improve my public transportation experience. If the stops were more frequent I would also be more willing to use the bus service, currently it is a hassle.
I will be living at the new apartments on 105 at the water wheel. I would like to see a stop there on that side of 105.
I will be living in a brand new apartment complex called Briarcliff which is out 421. It is a 5 minute drive to campus, however it would take over 30 minutes for me to ride the bus because only the green route passes my side of the street.
I work on campus, but I get off late and therefore I have to drive my car to campus so that I can drive home when I get off. It would be nice if the buses would run a little longer, so that I wouldn't have to waste my time or
I would appreciate it if Appalcart would work with the construction and city planning teams in Boone to inform bus riders ahead of time of expected delays due to construction and traffic. Even things as simple as posting signs inside the bus would help of when to expect delays for the upcoming week (example would be 4/26/10 - 5/03/10 expect delays from 2:00 pm- 5:00 pm). As a full time student, getting to class on time is extremely important. Appalcart plays a crucial role in that. So, when the bus runs late or comes early and doesn't wait, having to catch the next bus results in many students being significantly late to class. Appalcart needs to either communicate their delays with riders or run more buses when there is heavy traffic so that the buses arrive on schedule and students are able to rely on Appalcart to get to campus on time.
I would like a bus that went from Charlotte to Boone, I would also like more buses on the orange in-town route (it is often packed to capacity and people are left at the stops in the morning.
I would suggest adding an Appalcart stop at the new Studio West apartments since there will be a great need for transportation from a large number of students going to and from campus.
I would support a 7.00\$ fee as long as that money went DIRECTLY to the APPALCART in Boone. I believe that Watauga County needs to provide more reliable service to students. It is not acceptable for a student to be late to class just because the bus ran late.
I would take a bus or ride my bike, if there was bike/path access from Tweetsie Railroad to Boone. <input type="checkbox"/> Or I would take a bus in to ASU, but by the time I am in the car, why stop at a bus stop. ASU <input type="checkbox"/> requires you to pay for a parking pass.
I would use local bus service from Blowing Rock to Boone if it was scheduled hourly each day. I would also like to see daily service to transportation centers/connections in major cities such as Charlotte and Asheville, like the Mountaineer Express offers to Winston Salem and Greensboro.
I would wait for more than an hour in the cold to go from Harris Teeter to Campus. Definitely not worth it. I know it is a free service but ASU does pay to have this service for students. I really only need transportation to go buy food. Transportation is unreliable. Most of your drivers are awesome. One or two are rude and unhelpful and mean. I have reported one of them and nothing ever changed. =/

If buses were available I would ride them. I used to live in NYC and LOVED the buses and subway. Traffic will soon get out of hand in Boone and I fear that our public transport system will not or cannot keep up with the growth. Please, please, please create more routes, bus shelters and consider express buses during the busiest times on campus. □

□
Don't get me wrong, I am happy that we even have a public transport system up here but the town of Boone needs to be more proactive rather than reactive. □

□
Also, I know many people (myself included) that drives down the mountain for work. If there was a bus or shuttle that could pick up and drop off at different locations many people may utilize the service.
if the busses came on time I would take them

If the car tax was a one-time only tax, and not annually, I would be more supportive of paying this. It is already expensive to live in this area, and as a full time student, money is a huge issue. I think it is most outstanding to have a bus system that runs and allows riders to ride free of charge. You are amazing to have this. Only thought I have regarding decreasing costs would be to have a different schedule for non-school days (ASU), because on those weekend days, the busses are typically sparsely filled.

If the red route (intown) could go one more hour longer and do its loop twice again it would be helpful to me

If there was a train service from one side of the state to the other I would use it. I would also take a PART bus from Boone to Asheville if there was one.

If there was more parking access in Boone, there would be less of a need for public transportation. I feel that the town and the school should look into spending more money on parking before one more cent is spent on Appalcart.

Increase the use of vans to help ease the burden on full buses. Too often a bus has had to pass students and residents waiting for a bus because they are full. □

□
Add a stop at Hub Brown Road!!! There are a lot of households in that neighborhood that have to wither walk to Kensington or Gilbert Barnes Road on narrow streets or cross 421 to get to the Veterinarian Stop to get to a bus!

It is simply not possible for me to access public transportation on a regular basis. I don't think there is a reasonable/financially possible solution for this. There are too many "out of the way" neighborhoods for Appalcart to serve all.

It just needs to be improved OVERALL

It would be amazing if there was a bus service from Boone to Asheville. I don't like driving and my parents get sick of carting me back and forth.

It would be good if the Appalcart ran longer hours

It would be great for the Pop 105 bus to say "Next Stop Mary's School". She is on the corner of 105 bypass and 321/421. □

□
More bike lanes along the natural creeks would be sweet. And a bike path from boone to blowing rock! □

□
It would be great if a tracking system was possible in the future so that you would be able to see where the buses were on their routes. I'm aware that this is very expensive though.

It would be great to see more public transportation options in Boone. I live a few miles outside of town and would welcome bus service but I think I'm probably in the minority

It would be improved if the buses were more on-time because it would make it more reliable and easier to get to classes.

<p>It would be nice if I could easily take the Appalcart to hiking locations. Even just a regular route to Cone Manor would be helpful.</p>
<p>I also need to get up my courage and try taking my bicycle via Appalcart to the Greenway, since I like to bike but don't trust myself in Boone traffic, and there's no other way for me to get to the Greenway except by car...unless I figure out how to take the bus!</p>
<p>It would be nice if the AppalCart ran later than 11pm because even though I work on campus, I have to drive to get there since I get off at 11pm and can't take the bus home.</p>
<p>it would be nice if there was some kind of transportation service to more further away cities from Boone, such as Charlotte or Raleigh</p>
<p>It would benefit me and probably a lot of other people to have later bus routes.</p>
<p>It's hard to tell when the buses are going to be on time and when they are not. I know a lot of people who have to use them to get to class and when they miss them/they're running late, it isn't good. It would also be helpful if there was an AppalCart schedule in each shelter and if each shelter was a little cleaner. When it's cold or rainy outside, I would love to use one of the shelters but they're too dirty with cigarette butts. It should be illegal to smoke at an AppalCart stop. A lot of people don't smoke and don't want to be standing in a small space with someone who is.</p>
<p>Just mainly I think it would help a great deal if the AppalCART came on time. A lot of the time it'll come early or late.</p>
<p>Just more on buses running better routes, on time. Possibly more shelters.</p>
<p>keep up the good work. consider linking 421 to 321 via wilson ridge road, deerfield road. residents living in these areas could take a bus to town/campus, and cut down on traffic there.</p>
<p>Late Night transportation Transport to Charlotte Airport - Raleigh Airport</p>
<p>Later hours, especially on weekends</p>
<p>Like i said before, since App State makes everyone go to school if the Appalcart route runs then they should be available to every road/apartment complex in Boone and blowing rock. It's not fair when it snows and we can't drive out of our driveway and get unexcused absences all because the appalcart runs. I know it isn't your fault but since you are a direct link to the school openings it would help everyone else out. i would definitely use it all the time. i would be grateful.</p>
<p>Love the Apple Cart but make it identify with the university more! School pride! Black and Gold!</p>
<p>mainly, there should be more frequent stops at east village</p>
<p>Metro System. Maybe a trolley. Oooh Oooh a trolley. with a Krystal Burger on it.</p>
<p>More buses on Pop 105, Dont end bus 3 till 5pm, keep bus 2 running till 8 or 9pm.</p>
<p>More buses per route would make riding the bus much more convenient and easier to schedule around. It would also be nice to have a notification system for when a bus is running ahead/ behind schedule or skipping a stop completely. When the weather is bad, there needs to be alternate routes instead of the bus skipping stops where there may be people waiting not knowing the stop is being skipped.</p>
<p>more busses for college place, bavarian and other neighborhoods in that area</p>
<p>More frequent routes and more buses should be used during high traffic events, like football games, concerts,</p>
<p>More Green Routes</p>
<p>More reliable bus routes, more buses on the populated routes in the morning. The buses are always slam packed when they get to my stop and they always drive right past my stop, so I am forced to walk 30 mins to get to class</p>
<p>More reliable service.</p>
<p>More routes than 1 an hour on Old Bristol Rd. If bus is missed for any reason then students miss class, tests, quizzes, and other important information.</p>
<p>More routes, buses running later in the evening, buses to and from Boone to Charlotte.</p>

More space on the bus. Seats are nice but not always functional on busy routes such as Pop 105. Seats tend to take up more room than necessary. It's quite easy to stand up, perhaps a few seats along the front would suffice.

Make requesting to stop en route not as forbidden. I would like the Pink to stop and let me off at the Express stop at the mall, and I always feel uncomfortable asking unless it's late at night.

Most of the time I just want to know where the bus is. It would be pretty easy to implement GPS tracking and I think that it would greatly increase the satisfaction of bus users.

My largest issue has been the limited weekend service. My car is at State Farm lot, and I have had to walk there on many occasions because the buses were not running on the weekend. The AppalCart website/shelters are not informative about bus status, and many routes/times are outdated that are posted on the walls. It's incorrect to assume that students only need transportation on weekend evenings- to start Sunday service of the Red Route (the most important one) at 4:11pm does not work.

My only complaint is that the green route should run on every half hour, rather than just the hour. It should be split up between two buses. Where I live if you miss the bus there is really no chance of making it to your class.

n/a

NC States bus system called the "Wolfline" features an option to track all of their buses on their website. I'm guessing each bus has a GPS tracker and you can go online and look at a map of the routes and a blinking dot where each of the buses is in realtime. This would help a lot in situations where my AppalCart route is running late, and i'm not sure when and if the bus will ever arrive.

need buses that run more frequently to the large apartment complexes, every single tuesday/thursday morning people get left at Mountaineer Village

Need intown bus stops near grocery and drug stores. I can walk but have trouble walking on uneven terrain, I can't walk and carry groceries a good distance away. Also, I do not want to have to walk alone to a busy road with no bus shelter to catch the bus. I want to wait for the bus near the entrance of the grocery store because other people are around, and it is well lit. The intown buses are designed for young, fit, college students not for an older, less physically-fit group. Not one intown bus services the front door of a grocery or drug store. that's why many people have to sign up for paratransit.

Not many bus shelters in relation to the amount of bus stops.

AppalCART says they service all corners of the County but I don't think they really do.

Need more fixed routes for public use in the western end of the county to and from Boone. Also a route going into Mtn City, Tennessee and back certain times during the week for shopping and appointments there.

One more morning route for Purple or Pink route. There are many girls left outside the APH daily because the buses are so crowded.

Nicer receptionist. I have called to ask questions and been spoken to very rudely. I was offended by how she treated me.

Overall, I think AppalCART does a great service to the community, not only for college students, but also for the disabled, elderly, and those who have no other form of transportation. One innovation that I think would benefit many AppalCART passengers would be the use of real-time bus information that can be accessed on the AppalCART website. This tool would use tracking technology to inform passengers what stop a bus is currently at, which would decrease waiting time, particularly when buses are running behind due to traffic. One other useful idea (which I realize is largely out of the AppalCART's individual control) would be to set up a left-arrow signal at the light at King St. and College St. I'm not sure if there is a way in which the traffic signal could detect the approach of an AppalCART bus. Either way, some sort of signal there would really help to keep traffic from bottlenecking coming into Downtown Boone because of buses that are blocking traffic because they are unable to turn left at that light. Regardless of these comments, I think AppalCART is an asset the Boone and ASU community and I think that other public transportation initiative like Mountaineer Express also provide a

Overall, the AppalCart does a good job at providing service. However, late night services would be a very great benefit for students if they are studying late at the library, etc.

A bus to Asheville would be great because it is a good place to go on weekends and such. I know so many people who would use it frequently, including myself. If a bus to Chapel Hill area was implemented it would allow students from the two schools to be more involved with each other, and I'm sure it would be used.

Park and ride options would help eliminate some of the traffic problems---current Appalcart routes seem to serve the needs of ASU students rather than the general population of Watauga County. The use of Rural General Public transportation funds could be used to address the needs of the Watauga County citizens who do not live in Boone.

please continue the services and additional ones. connections with amtrack or other public trains would also be helpful.

please have a route to charlotte!!!

Please have at least one route that runs until at least 2 a.m.

Please increase running statefarm route. Perhaps have it run on Saturdays and earlier on Sundays.

Please provide more stops out to Sugar Grove/Cove Creek to/from ASU. I would be willing to pay for this service. I would love to have access so that I could leave the car at home and conserve gas (and help our environment). Thanks.

Please, please, let's get more public transportation!

POP 105 route and green route has the biggest problems, if it snows white oak and kensingtons meadows people have to walk down dangerous roads to get to a stop. I almost got hit by a car because I had to walk down 105 bypass to catch a bus

Public transportation between Boone and Asheville is of the utmost importance, especially for college-aged

Public transportation in Boone, while great to have, isn't always reliable. As a student, when needing to get to class on time, it is difficult to depend on a bus that can be up to 25 minutes late sometimes. Most of the students at ASU don't have on campus parking and are fully dependent on the AppalCart for getting them to and from classes, rain or shine. We need more reliable service, possible more frequent routes rather than just 4 times within the hour.

Public transportation in Watauga County is well-established and an essential part of the community. There is a greater need for routes to major cities outside of Watauga, however, such as Charlotte. This is, primarily, in the interest of students in the area. Understandably, additional ways to fund this new public transportation will need to be instituted but should be only enough to support the establishment of these new improvements.

Public transportation in Watauga is working fine for me, whenever I need it. Perhaps better schedules on weekends?

Put some type of route that would run from W. Jefferson/ Fleetwood/ Deep Gap to ASU to allow 8-5 employees AppalCart options.

Red Route needs to be improved.

Regional transportation is where it is at! A PART like bus needs to running to Charolotte and more people need to be encouraged to ride these regional systems. Make them fun, put wireless on them, and make them more accessible.

Ride to charlotte

Riding the bus around town helps alot when we get all of the visitors in Boone. We don't have to drive in the craziness and we get where we need to go because there are so many routes available.

During my Aunt's recent visit she caught the ride from Hickory to Charlotte. The price was very good and helped get her to the airport. She was alot less stressed since there was no driving all the way to Charlotte, trying to park at the airport, etc..

routes are good to ASU and back to my apt but I have to get in my car for shopping, buses don't run to any of the food stores except Earthfare and I can't afford that one. Bus stops are not in safe places, out on busy roads and no sheltered stops out there.

see above complaint about overcapacity on POP 105 route regarding University Highlands and inability to get to AppState campus on time for class due to overfilled buses that can not pick you up.

Some days, the buses literally just do not show up and we have to call to find out that something broke down.

When a bus breaks down an immediate replacement should be sent out while it is getting fixed, otherwise, people unknowingly wait forever to miss class and/or work because the bus was a no show. Also, sometimes the blue route gets so overwhelmingly full that they leave people behind, and again, you are late for important things because you were unaware that even though you waited for the bus, you would be unable to actually ride it.

Some routes, such as Purple, could use more buses. However I think coverage in Boone is generally quite good.

Somehow, public transportation must become more attractive and easier than driving yourself (good luck!). But in the end, that is what will really turn people over. Also, the tax on cars I feel is better than sales tax because the tax on cars targets those people who would get a car, and thus, be driving it, and thus not using public transportation, and thus creating more pollution and consumption as well as congestion on roadways. I usually try to ride the buses more frequently, but this semester, I chickened out. I also live on the outskirts of town, just past the last stop on the Green and Pop105 Route. I have to walk a decent distance and in inclement weather, waiting without shelter is very unattractive.

Sunday routes for the Green route, and maybe going to kensington meadows twice an hour.

Teach the bus drivers how to use the pedals; some of them seem to think that you need to pump the brakes/accelerator ALL THE DAMN TIME and it gets remarkably uncomfortable.

Thanks Appal Cart for getting me to school. Yall do an awesome job and should keep up the good work.

The afternoon appalcart service in Boone is borderline pathetic. I have been consistently left behind by the pop 105 route throughout the day resulting in loss of grades/points due to tardiness and absenses. All color routes are consistently late/full.

The Appalcart is a great asset to Watauga County. I have never had a bad experience and have used it everyday for 3 years. The drivers are pleasant and the buses are clean. I feel that public transportation can always improve but not as far as the Appalcart is concerned.

The Appalcart is a great service and I take advantage of it regularly. I would only like to see the routes strech out of the city a little bit more. Even if they only ran once or twice in the morning and afternoon. I think people would be more interested in using the appalcart if it came closer.

The Appalcart is a useful way of getting around town. More frequent routes and more coverage would be nice.

The AppalCart is always late. I catch the red route and the state farm route on the weekends, and have almost never seen it come on time. I don't understand how it can be so consistently late. It is completely unreliable.

When I pick people up and they ask what time, I have no idea because I don't know if the appalcart is going to be 45 minutes or an hour late. It would be a great and usable system if the buses just came when they were

The AppalCart is constantly late and for the PINK route it is always full! There need to be more frequent stops at the APH and other places on that route, more within the hour. Maybe 5 times in an hour instead of only 2, especially in the morning.

The Appalcart is great and is very useful but should also go later into the night, especially on weekends. I know multiple people that choose to drink and drive after a party when they would take public transportation if it was available.

The Appalcart is great, but it would be a lot more helpful if there were more than one purple route and more than one orange route.

The AppalCart Orange Route is frequently late and sometime completely full, but I think most of this is due to ridiculous traffic on 421. Online real time updates on bus locations would be really nice. Also if the buses ran later in the evening like chapel hill and raleigh you would cut down on drunk driving.

The appalcart should have more late night and weekend service. This would make Boone a safer place from less drunk drivers.

The appalcart should run on Saturdays. And the Gold Route should run before 4pm on Sundays, in the winter it's dark by 5. The gold route should run by 12pm.

The appalcarts need to be more in sync with the part bus, that way it would be easier to jump on the appalcart a good 10-15 min after the mountaineer express drops students off. It's frustrating when red route (one that takes me to my dorm) came just 5 min before the mountaineer express bus did, and then i have to wait in the dark for 50 minutes. please work on that. ☐

☐ also make the schedules readable, saying the bus will arrive 43 minutes after w/e is frustrating if you mess up, when it it would have been clearly written. ☐

☐ The best part about appalcart is the fact that it is completely free. If I had to pay for it, I would walk for free

The bus needs to be on time more often. When it's 10 degrees outside, it is not fun to wait an extra 15 minutes for the bus to arrive, especially when you're not somewhere with a shelter.

The green route needs to be split into two routes, east and west. It's really annoying when the bus only runs your way once an hour. If you miss it, you then have to wait another whole hour for the next one.

The bus routes on the appalcart do not run late enough, especially Thurs.-Sat. night. If main routes, i.e. Red, Orange/Green, and Purple were able to run into the later hours it would be a much greater asset to its riders.

The bus system should run until 3 am to major apartment complexes like other major universities do.

The buses are never on time, making it next to impossible for students to use them for transportation to and from ASU's campus. In bad weather, the buses either stop running altogether or run on smaller routes, making it even harder for students to depend on them to get to class, work, etc.

the buses are unreliable

The buses get full so quickly, because of this, I am late for classes much of the time or I have to find another form of transportation. Also, I am an Education major, so many of the classes and things we have to do is early in the morning when the bus doesn't run, it would be nice to be able to ride the bus more frequently to and from school if there was a solution to this problem.

The buses incite a lot of anger because they are never on time. On fridays, when the most people are getting their cars at once, the statefarm bus will miss a 30 minute section of the route, sometime an hour. And there is no remorse.... traffic is no excuse. It's obvious that there is bad traffic in boone so the buses should deal with that instead of making people angry and late.

The buses need to be on time more and there should also be some sort of tracking system so we can determine where a bus is and whether or not it is on time rather than just having to stand out in the rain or snow for 30 minutes to see if it is on time.

The buses that come by the APH in the mornings are always super crowded. Because there are 500 women that all have to take the bus within the same 3 hr time span, I think that the APH should have its own bus route that just goes between the APH and campus.

The connections made between Watauga County and the surrounding areas is an important one to make, specifically with Asheville. It seems there is no public transportation to that location. If something along the lines of a Mountaineer Express was established there, it would bolster the current bus that runs to Greensboro with Asheville students. It would also provide Boone the ability to efficiently travel there for recreational/educational purposes.

The current system is GREAT!!! My only complaints are that there should be more than one bus per hour stopping at walmart... maybe 2 busses that interchangeable stop on the half hour... My other complaint is that motion sickness is ALWAYS associated with the Appalcart's current drivers...

The Green route drives too fast on Old Bristol road and endangers other travelers on a frequent basis and with little regard for others on the road.

the green route is so infrequent yet has so many people depending on it from kinsington meadows and other apartment buildings that it gets crowded and if you miss it you have to wait a whole hour more to get home.

The hours of operation are not long enough to meet my work needs

the lack of punctuality is ridiculous. ive often waited for an extra 20-25 minutes for a bus to arrive which means that i am then late for whatever i have scheduled. i ride the bus to save on gas and because it is a more eco friendly alternative but i may have to sacrifice this if busses cannot follow their schedule. ☐

☐ also, in high population areas (ie- mountaineer village) there are not enough busses to meet the needs of such large groups. ☐

☐ i suggest looking into a gps system that is hooked up to a website so riders can log on and see exactly where the bus is and how long their wait will be.

The main things are that the bus doesn't run often enough at night and the routes that I would need to take don't pick up near my building.

The mountaineer route needs to go to Charlotte also.

The need for public transportation is very important due to the great amount of emissions Boone is currently expressing. Many, many people drive through downtown while there are many perfectly good sidewalks. I live very close to campus and my roommate constantly drives to class, if she wakes up late or it is raining. The Appalcart rides right by our apartment complex and could take us to campus, and I have told her this, but some people just aren't going to change unless they have to. This is why I support the tax placed on cars and a fee. If it costs more, people could maybe put the environmental costs into perspective and realize the importance of reducing our emissions and

The needs to more buses later at night. There needs to be buses to more cities like Asheville and Charlotte. I Boone there needs to be a bus route or something that goes around the edges of the town and is not a to and from campus bus.

The only beef I have with Appalcart is that sometimes I will wait for the bus in the morning for class, and if it is too full, it will just drive right by.

the only issues i have deal with the schedual. the bus is rarely on time and frequently causes me to take the earliest time in order to get to where i need to go. in other words i have to set an hour aside to make sure i get to where i'm going ontime, if im doing that at least twice a day that effects the amount of time i have for everything else i need to get done. I'm in university highlands and almost think it would be beneficial to have a bus strictly for that complex. all too frequently i see people at the following stops unable to get on or have a set due to the large amount of travelers here alone. sometimes there isn't even enough room for all the people at the stop.

The only reason the busses aren't reliable is that they sometimes don't get students to class on time. The traffic on 321 has delayed the busses up to 20 minutes on more occasions than I can count.

The only thing I would say to change is for drivers to be more on time but I do understand the construction on 421 hinders that. So other than that, the buses have been great.

The only thing that I might want considered is some bus service available on Sundays

The only time I run into problems is overcrowding during the school year-- on the express & purple routes especially. I've helped myself with this problem by waking earlier and traveling longer to get to an earlier bus stop. I have knee problems, which is exacerbated when I have to stand on the Appalcart. If there was more frequent service to the area, then buses may not be so crowded, but I realize it also may not be feasible.

The Pop 105 route should be extended to Sunday routes, earlier in the mornings. It would allow Appalachian off-campus students (who do not have a car) and other Watauga County citizens to attend church more regularly. It would also allow them to run errands.

The primary AppalCart users are Appalachian students. Students are normally out late especially on the weekends. The way that everything is set up in Boone, if the AppalCart would run later there would be plenty of demand to justify it. Greek organizations use a beeper designated driver system to get people around Boone. AppalCart could charge a small fee for routes that run after 10PM on Thursday - Saturday night to make up for the extra driving costs. At \$1 per passenger per ride the system could rake in the needed cash to have this system work. Safe Ride cuts off at 2AM and the AppalCart could do the same thing.

The public transportation in Watauga County is adequate, but needs more buses for certain routes.

The purple route busses are generally late, understandable in the snow but during a light rain it is not acceptable. There should be a shuttle twice an hour just to serve the Village of Meadowview apartments because they take over the purple route and it becomes way over crowded and I sometimes can not even get on the bus.

The purple route needs help. It needs another bus or more frequent times. It almost always fills up in the mornings, leaving many people without rides to school and work.

The red route needs help. It either needs more buses or to skip state farm. It's the only bus that goes to walmart and there is already a state farm bus dedicated only to that

The Saturday routes are a bit lacking. I have an awkward schedule that makes public transport during the week difficult at best, so I do most of my errands on Saturday if possible. I also must park on the other side of town because I have no campus parking pass, so I cannot get to my car to do these things myself. ☐

☐
Next year, I will be living in an area only serviced by the pop 105 route. Though I ride it little now, I know next year I will rely greatly on it to get me to campus. I have heard many horror stories from numerous friends who rely on it now as their primary method of transportation, detailing how they'd been passed by the pop 105 buses multiple times due to overcrowding, and thereby missing presentations and exams, or arriving late to work. I know there are already three buses running the 105, but I don't think it would hurt to run a fourth on limited hours if at all possible.

The students at Appalachian State need a safe alternative to driving drunk on weekends. To provide a safe alternative for drunk driving I believe that the bus service should run until 2 on weekends for students/residents who need a sober driver. Students would rather drive drunk than call a taxi but they would get on the AppalCart to get home safe.

The traffic in Watauga County is too heavy. If there was more frequent and encouraged public transportation, students and residents alike could reduce traffic and use of cars. If the times were more frequent and on-time people would be more willing to take the bus during winter months. Also, if the buses extended greater distances, faculty and students would be able to take the bus more.

The transit system either needs more buses to hickory, or a bus to hickory that is better advertised.

The University should run the AppalCart, not the other way around. The school determines whether or not classes should be held in the event of inclement weather based on whether or not the AppalCart can run its routes safely. Not all students live in areas covered by the AppalCart routes therefore they are unfairly punished if they are unable to make it to school when they rely on themselves as their primary and usually only method of transportation.

There are often routes, within Boone, that have over-loaded buses or practically empty buses. They should adjust the number of buses ran according to who rides most often. It is very frustrating and inconvenient as a student to be left behind because of a full bus. However, empty buses are one of the worst forms of transportation for the environment.

There has been many times where I've needed to go to work late at night and have had no way to get there because the appalcart stopped running. I think the appalcarts should run until at least 2:00 am for people without cars. And if it gets too expensive then charge people a dollar after midnight or something. PLEASE MAKE THE BUSES RUN LATER!!!!

There is a lot of over-crowding on some of the routes. I have been left at a bus stop before because there wasn't enough room for anymore people on the bus, which made me late for classes. I think this is an area in which improvements could be made. Maybe a bus just for picking up the "leftovers" that goes straight to campus?

There is a need of more transportation and longer hours for bus routes that go out to places like the Bowling Alley and the Movie Theater. Many students are told as Freshmen there is no need to have a vehicle here, but then once they get here they are not able to go and do things. I personally follow the law and do not drink since I am underage, so that leaves me with little to do on the weekends at night since I do not care to go party. I would really enjoy being able to catch a bus to see a 7 pm showing or 9 pm showing at the Theater. Or go bowling later at night.

There is really not enough routes on campus to points of interest (ex. Walmart, Mall, ABC Store, Ski Slopes, certain apartment complexes) As a student I have no desire to go anywhere else in Watauga County, so bus routes to away football games and actual cities of interest would be nice.

There need to be more buses on the populated appalcart routes. I have waited almost an hour on a regular basis for the bus to come (orange). Also, I think the bus should run later so that students could have a safe ride home from the bar.

There need to be more routes accessible to the students of ASU. Perhaps an express route that runs directly to Walmart, the mall, and other major places that ASU students frequent.

There NEEDS to be another purple route. I'm tired of getting passed all the time and having to wait another 30-40 min for the bus. The purple route transports about as many people as the POP-105 route does yet they have 4 buses and people only have to wait about 15 min in between. I don't understand why purple couldn't have another bus. The bus is RARELY on time, I'm always late to classes because of it, and it is always passing people.

There needs to be buses to Charlotte for those of us who need to get to the airport over holidays, also maybe a bus to Asheville over the weekends. Buses should run on the weekends (even Sunday) and also throughout summer.

There needs to be more Appalcart routes, that run earlier in the morning and later in the evening. It would also be useful to have an additional route that comes down 105 heading North towards 321.

There needs to be more buses. The routes are good but they are full on a daily basis. Express route is full every morning. I also think buses should be available late at night. This would cut down on drunk driving. If I could hop on the bus and then take it home at 2:30 am I would in a heartbeat. I know a lot of other people I've talked to agree.

There needs to be more than one bus(green) an hour at east village apartments. Everyone that lives there drives to mountaineer village or lowes and takes the orange route which then causes the orange route to be overcrowded.
There should be a couple of buses that run until 3 a.m. on Thursday, Friday, and Saturday. Also, I believe that the express should run all year. It would also be great if all of the buses (purple, red, and express) didnt come to the walmart area and the school at the same time to provide more various times to catch the bus.
there should be a GPS system that can be accessed from the computer so you can see where to bus is and if it is full. there needs to be a seperate bus for the university highlands because if you live past them then you are left for up to and hour waiting for the bus to pick you up.
There should be a route that just drives a circle around highway 321, 105 extension, and highway 421. This route could minimize the number of riders on other routes, such as Orange.
There should be a route that makes a circle around Hwy 105 Extension, Hwy 421, and Hwy 321.
There should be webcams on the front of buses so we can check online to see where our bus is.
Time dilation for objects that travel close to the speed of light: $\Delta t = (\Delta t_p) / \sqrt{1 - (v^2/c^2)}$
Traffic in the area is very hard to deal with and if more people relied on public transportation there would be less congestion.
Trains Trains and more trains... expensive yes, but if linked with the rest of the state worth it
Transportation from Boone to Charlotte and vise versa would be extremely useful! I know many many people that would use that frequently, including myself.
Transportation is a necessary service and I am thankful to have it.
transportation to the Charlotte-metro area
Unreliable time schedule, I would ride the bus more frequently but have been left numerous times places, or been late to important occasions. Also, having more than one time an hour that the bus comes would be very helpful.
We are asked to plan our schedules around Appalcart times and yet we wait 20 min for the bus whenever we are on time or the bus leaves 5 min early and we miss it.
We live in a college town with thousands of college student...there is barely any parking and the bus is just the best way to get around! people have to work later than what the buses run...and end up having to walk home at night which isnt safe. it would get drunk drivers off the road if you woud run past 5pm on a saturday night!
We need a bus that runs until 3am Thursday-Saturday night.
We need more buses to come more often and to more places. That should be easy. :) we need to make a big effort toward improving the quality and availability of Appalcart not just for students, but also for area residents. (I know it's "free" for non-students, but your budget is supplemented by both the Town and the County in exchange for providing service to local residents, and I think you need to step up to that responsibility.) In order to reduce the horrendous traffic and parking situation in town. we desperately need to make mass transit a viable option for people - that means more routes, reliable and frequent service, and bus shelters. Especially during the winter, no one, unless they are desperate, is going to seriously consider standing in a ditch on the side of the rode, no shelter anywhere, with very cold temperatures and very windy conditions - and wait for a bus that is nowhere near schedule. Appalcart needs to make riding a bus an attractive alternative to driving a car - and so far you have not. You also need to pay more attention to where student housing is being built away from campus and service those areas. Traffic is getting worse and worse because students are living farther away from campus and driving in rather than riding the bus.
WE SERIOUSLY NEED MORE THAN ONE GREEN ROUTE.
Weekend schedules need to be better defined. It is difficult to know what bus runs on the weekend and makes what does question 16 have to do with bus transportation????
When you rely on the bus to take you to your car, so that you can get to appointments or work etc. It is difficult to be on time when the buses run late!!!!!!! It has been a huge frustration of mine.
You all are doing an awesome job! You rock!!!

You do a wonderful job and I am glad there is FREE public transportation. More people should be appreciative of this and not so critical. Thanks to all the wonderful people at APPALCART.

Appendix G

Project on Aging Survey

Watauga County Project on Aging Participation Evaluation of Transportation - 2009

1. Do you receive transportation to the Senior Center?

Yes: 20 No: 8 No Response: 1

2. Do you receive transportation for shopping and other services?

Yes: 21 No: 8 No Response: 0

3. Do you feel van transportation is a beneficial service?

Yes: 28 No: 0 No Response: 1

4. Is AppalCart staff courteous and helpful?

Yes: 28 No: 0 No Response: 1

Comments:

-“AppalCart is wonderful. The only negative comment that I have is that sometimes one has to take a tour of Boone to get to your destination. This is an acceptable deficiency for me.”

-“All drivers are very nice.”

-“Drivers are nice and courteous.”

-“They must be hand picked. The drivers are so nice.”

-“I enjoy the trips on the AppalCart and the places we go. I think it is a good thing for the seniors. I think the drivers are wonderful to look after all of us. I praise Tabitha for the good job she does. Keep up the good work and thank you.”

-“I enjoy riding the AppalCart. I like all the drivers.”

-“Don’t like drivers talking on cell phones.”

-“Very helpful to transport to Dr.’s and grocery store. Drivers are all very courteous and helpful.”

-“Don’t like drivers talking on cell phones.”

-“When one can mail a letter they should instead of going plus miles to pay car Ins..
Very nice for ones who can not pick up groceries or medicine.”

-“I think they do a good job.”

-“Would like the AppalCart to come more than 2 days a week up in Deep Gap. I also
would like to go to more activities at the Senior Center.”

-“I don’t know what I would do without it.”

-“Van drivers are good to us, especially Glenn.”

-“Real good to me. Tim Townsend is a real good person. John Eggers is a sweet person;
Gets out to see if I need anything.”

-“Couldn’t improve it.”

-“I appreciate the Appalcart very much; Thankful to have it.”

-“Safety and convenience primary and appreciate service.”

-“I enjoy the trips.”

-“I would not be able to go on the trips without AppalCart. Also good employees and I
feel very comfortable being with them. I feel we are fortunate to have them.”

-“I love AppalCart (and I mean it). I like the drivers and everything about it. Telephone
help. It has been a God-send for me.”

-“AppalCart is the best thing that happened for all of us seniors. The drivers have been just great especially during my surgery. It has been just wonderful and a lot of fun. I wish you all well. Hope the business keeps growing.”

-“It is a good service for people who don’t drive or the ones who aren’t able to drive.”

-“I love going on the trips. This summer was a good, happy time going on the AppalCart. I enjoyed all the trips. The drivers are great.”

-“Friendly drivers. Capable drivers.”

-“All drivers are very nice and friendly.”

Appendix H

Public Forum Comments

Appendix H

AppalCART CTSP- Public Forum Comments

**Forum #1: Watauga County Human Service Center
Tuesday, October 12, 2010
11 Participants**

Comments and Issues

- The sales tax is not a good idea. There are too many people out of work.
- Additional passenger waiting shelters are desired. One potential location is at Walmart, situated across the roadway from the existing shelter. AppalCART staff indicated that they sometimes have trouble getting permission to install shelters on private and public property. Vandalism is a problem with the shelters and homeless people sometimes use them as shelters from the weather. There was a discussion about how to maintain shelters, including using people assigned community service work (which would require supervision) and using a company that would take care of the shelters in return for selling advertising space on the shelters.
- More service to Blowing Rock is a good idea, including some specific stops along the way such as the Elk Motel, Summit Woods Apartments, and Ransom Apartments.
- Some people are not aware of the dial-a-ride service.
- While the fare-free service does on occasion attract problem riders, it has helped a lot of people, particularly those who do not have cars and need to make multiple trips, such as bringing children to daycare and going to work. The fare-free fixed-route has also resulted in the ADA paratransit service being fare-free, which has been helpful for people with disabilities.
- The senior citizens program would like better availability of large vehicles during the school year for their extra trips.
- Increased frequency of service is needed.
- It would be good to have service to Watauga Village Apartments, but it is not possible for a large vehicle to access the development.
- Perhaps designated sections of church parking lots could be used as park and rides.
- AppalCART is a “life-saver.”

Forum #2: Appalachian State University
Wednesday, October 13, 2010
5 Participants

Comments and Issues

- It would be good if the Red Route (or another route) ran later at night. Even an hour longer would be awesome.
- I would like to see hourly service to and from Blowing Rock. I drive almost daily to Boone and I have talked to several people who would use the service. Shoppers on the Parkway as well as Main Street merchants would benefit.
- Park and ride is in demand from ASU faculty and students alike. Those who reside in West Jefferson, Vilas, Banner Elk, would drive to outskirts and park/ride, and save \$200 campus vehicle registration fee.
- Real-time bus information is needed, including web and I-phone applications. Perhaps the I-phone app could be sold, with the revenue generated used to pay for the technology required to implement the system.

Forum #3: Town of Boone
Wednesday, October 13, 2010
1 participant

Comments and Issues

- The only participant at this evening session was the planner from the Town of Boone. We discussed how transit needs could be more fully incorporated into development projects through the site plan approval process.